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Chaire de l'Éducation
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Développement Durable



Université Saint-Joseph de Beyrouth

HARD SKILLS

SOFT SKILLS

**CHAIRE DE L'ÉDUCATION
À L'ÉCO-CITOYENNETÉ
ET AU DÉVELOPPEMENT
DURABLE (CEEDD)**

FONDATION DIANE

**Université Saint-Joseph
de Beyrouth (USJ)**

**SOFT SKILLS
AND HARD SKILLS
TRAINING
CURRICULUM**

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Acronym

CSO	Civil Society Organization
PSF	Practice Sharing Forum
THM	Town-Hall Meeting

I. Introduction

A curriculum's design and execution are guided by a set of beliefs, values, and principles known as a curriculum philosophy. A curriculum philosophy guides the selection of content, methods of instruction, and types of assessment in a curriculum's design and execution. It reflects a knowledge of how learning happens and what it means to be educated, drawing on theories of learning, social and cultural contexts, and learners' needs and goals. The philosophy can be shaped by the beliefs and experiences of those involved in the curriculum's creation and implementation, and it is an essential aspect of curriculum design that influences the approach to teaching and learning and decision-making throughout the curriculum development process.

In addition, a curriculum is a crucial guide for trainers that directs their practices toward developing specific skills and knowledge in a particular area. It is structured and organized to enhance trainees' learning and facilitate instructions.

This curriculum is part of a comprehensive training program aimed at building the capacity of CSOs in Lebanon. While the first curriculum focuses on technical aspects of water management, the second training focuses on soft and hard skills related to management, governance, and finance of CSOs. Together, these trainings aim to equip CSOs with the necessary knowledge and skills to implement sustainable water and wastewater management practices, as well as to develop themselves and help their communities through project implementation. The curriculum provides a framework for trainers to plan instructions for trainees and introduce them to the latest challenges and opportunities related to the water sector, while the soft and hard skills trainings will enable CSOs to effectively manage projects, engage in advocacy and civic engagement, and manage finances and fundraising.

This curriculum includes a combination of goals, methods, instructional practices, learning experiences, and materials that are designed to evaluate the target learning outcomes of the Lebanese CSOs, to inspire them to become advocates for sustainable water management and positively impact their community.

II. Goals of the curriculum

The curriculum goals are the intended outcomes of teaching and learning, representing the expectations that drive the instructional effort. These goals should encompass both the extent and the profundity of the knowledge and skills that trainees are expected to acquire.

The main objective of this curriculum is to equip CSOs staff with both soft and hard skills necessary for effective administration, finance, management, and implementation of sustainable development projects in the water sector. Through this curriculum, participants will learn about civic engagement, advocacy and lobbying, fundraising, financial management, budgeting, proposal writing, and project management specifically in the context of water sanitation, conservation, and management. The overall goal is to enhance the understanding of these topics and develop practical skills that can be utilized for effective citizenship and to promote more impactful water-related initiatives.

The curriculum is designed over 13 major goals:

- 1- To provide participants with knowledge and skills related to civic engagement, advocacy, and lobbying, fundraising and financial management, proposal writing, monitoring and evaluation planning, and project management.
- 2- To help participants visualize successful water conservation, sanitation, and management projects and identify the factors of success of those projects.
- 3- Visualize the components and outcome of successful water conservation, sanitation, and management projects.
- 4- Identify the factors of success of the projects and common denominators between them.
- 5- Understand the interdependence of needs and the role of individuals and entities in facing water-related challenges.
- 6- Understand the difference between Minimal and Maximal Citizenship stands and identify the positioning of various Civic initiatives related to water on the spectrum of Minimalist and Maximalism.
- 7- Identify the elements of minimalism and maximalism in current local projects and deduce the elements that can boost each project towards more maximalist approach including participation and dealing with root causes of negative situations.
- 8- Develop an advocacy plan and monitor and evaluate it.
- 9- Develop a fundraising plan and learn how to identify opportunities and donor requirements.
- 10- Develop a comprehensive proposal that clearly articulates the problem statement, goals and objectives, methodology, budget, and timeline.
- 11- Develop a comprehensive MEAL plan to monitor and evaluate the success of proposals.
- 12- Develop a budget for proposals, including identifying all the costs associated with the project and how to present these costs in a clear and organized way.
- 13- Understand the project management terms and concepts, including risk management, earned value analysis, and work breakdown structure, and be able to apply them to water-related projects.

These goals are divided into 6 outcome areas:

Civic Engagement: 6 hours

Overview of water sanitation, conservation and management successful projects (1 hour)

- Visualize the components and outcome of successful water conservation, sanitation and management projects (the possible reversibility of losses and degradation)
- Identify the factors of success of the projects
- Identify common denominators between the projects

Liaison with and between the relevant SDGs (1 hour)

- List the relevant SDGs
- Describe the possible links between SDGs in the service of Water sanitation, conservation and management

Micro to Macro challenges in Water sanitation, conservation, and management (1 hour)

- Categorize the current challenges on the regional, national and urban/rural levels
- List the scope of challenges and responsibilities
- Understand the interdependence of needs and the role of individuals and entities -and their collaboration- in facing the challenges

The concept of Maximal Citizenship (1 hour)

- Understand the difference between Minimal and Maximal Citizenship stands
- Identify the positioning of various Civic initiatives (related to Water) on the spectrum of Minimalist and Maximalism

Exposure of current projects and scaling them toward the Maximalism (1 hour)

- Identify the elements of minimalism and maximalism in current local projects
- Deduct the elements that can boost each project towards more maximalist approach including participation and dealing with root causes of negative situations

Challenges to overcome through Dialogue, Negotiation or Mediation to shift to Maximalism (1 hour)

- Identify challenges that hinder maximalist civic approaches in dealing with water matters
- Determine suitable approaches for management of challenges

Fundraising, Financial Management, and Budgeting: (6 hours)

Financial Sustainability and Fundraising (4 hours)

- Defining the financial resources development concept
- Introducing the different fundraising approaches

Fundraising Planning (1.5 hours)

- Setting a Fundraising Plan for the organization

Opportunity Identification and Qualification (0.5 hour)

- Learning where opportunities could be found
- Setting Criteria for Qualification and Understand Donor Requirements

Proposal Writing, Monitoring & Evaluation Planning: 12 hours

Introduction to Proposal Writing (2 hours)

- Understand the basics of proposal writing, including the purpose of a proposal, key elements that should be included, and how to structure a proposal.

Research and Planning (2 hours)

- Identify the problem that the proposal will address
- Conduct research to gather relevant information and data
- Define objectives and outcomes using the logframe and by developing the monitoring and evaluation (M&E) plan to allow them to systematically track and assess the progress and impact of their programs or projects
- Align the proposal with the needs of the audience, to create a persuasive and effective proposal

Writing Techniques and Strategies (1 hour)

- Emphasize the importance of clear and concise writing in proposals.
- Learn how to avoid jargon and technical language and use easily understood language

Developing the Proposal (4 hours)

- Develop a comprehensive proposal that clearly articulates the problem statement, goals and objectives, methodology, budget, and timeline.
- Effectively communicate the proposed project to potential funders or stakeholders

Measurement and Monitoring (2 hours)

- Develop a comprehensive MEAL plan to monitor and evaluate the success of their proposals
- Ensure accountability and learning throughout the project cycle

Budgeting proposals (1 hour)

- Develop a budget for their proposal, including identifying all the costs associated with the project and how to present these costs in a clear and organized way.

Project Management: 12 hours

Introducing Project Management (0.75 hour)

- Definition of a variety of PM terms and concepts.

Initialization (0.25 hour)

- Learn how Phase I has already been included in the Proposal Preparation course

Planning the Project / Preliminary Planning (2 hours)

- Prepare documentation and other admin requirements
- Finalize the Deliverables Register, the Change Control Procedure, the Communications Plan
- Update the Project Plan from that found in the Agreement
- Understand Risk Management
- Prepare and plan for "Monitoring and Evaluation"

Planning the Project / Project and Product Scope (3 hours)

- Understand the procedures needed to define the scope of each deliverable and those that related directly to the project
- Identify the procedures needed for testing (QC/QA)
- Verify Stakeholder Requirements

Planning the Project / Finalizing the Master Plan (2.5 hours)

- Develop the Master Plan including scope, schedules, budget, risk analysis.
- Learn Earned Value Analysis
- Learn procedures for developing the Work Breakdown Structure

Build Deliverables (0.5 hours)

- Learn the procedures for building deliverable products and services as per the FSD and ITB
- Conduct QA activities

Stabilizing Deliverables (Testing) (1.5 hours)

- Learn how to implement all aspects of testing (QC) and related QA
- Apply the Delivery and Acceptance Procedure (DAP) and issue Provisional Acceptances

Deployment Phase (0.5 hour)

- Update the deployment plan
- Startup operations and launch warranties, maintenance, and support agreements

Project Closure (1 hour)

- Develop Administrative, Site, Contractual, Financial Closure
- Develop Lessons Learnt Document
- Develop Project Termination Document, Team Closure, Completing the Monitoring and Evaluation Report.

Advocacy & Lobbying: (6 hours)

Understanding advocacy (1 hour)

- Importance of advocacy in water treatment and sanitation projects

Types of advocacy (1 hour)

- Identify the most efficient and adequate type of advocacy channel to be used in different cases for optimal results

Targeting NGOs (1 hour)

- Role of NGOs in advocating

Advocacy Plan (1.5 hours)

- Developing an advocacy plan

MEAL (1 hour)

- Monitoring and evaluating the advocacy plan

Conclusion (0.5 hours)

- Lobbying the advocacy plan

Communication & performance management: 12 hours

Professional communication (6 hours)

- Listen actively and speak appropriately
- Identify non-verbal communication signs and the impact on people's perceptions
- Give and receive instructions effectively
- Cooperate and work as a team member
- Read emails for information and ask for clarification
- Identify and practice good relationships with beneficiaries for networking and collaboration

Performance Management (6 hours)

- Know what is performance
- Define performance management

- Practice the 4 elements of the performance appraisal cycle
- Practice the performance appraisal checklist for managers

III. Methods

Methods are defined as the broader techniques used to help the trainees achieve learning outcomes. They relate to the general principles and management strategies used for instruction.

These choices support the facilitation of learning experiences to promote participant's ability understand and apply content and skills. Methods are differentiated to meet trainees' needs and interests, task demands, and learning environments. They are adjusted based on ongoing review of trainees' progress towards meeting the goals.

The pedagogical approach for this curriculum is a combination of different teaching methods, including interactive exercises, case studies, socio-cognitive debates, and problem tree analysis. The curriculum also includes theoretical and practical components to facilitate the learning process. There is a strong emphasis on active learning, where participants are encouraged to engage in problem-solving and critical thinking to identify representations and obstacles related to professional integration and water management. The curriculum also includes sessions that provide guidance and hands-on training in various aspects of water management, such as wastewater treatment and monitoring, distribution systems, and sanitation safety planning. The overall pedagogical approach aims to foster a deeper understanding of water and wastewater management concepts and their practical applications through an interactive and participatory learning process.

This curriculum is designed based on different learning theories described in the following paragraphs:

- The Cognitive learning theory that focuses on helping the participants to learn how to maximize their brain's potential can be applied via a socio-cognitive debate, problem tree analysis, brainstorming, etc. as it helps to connect new information with existing ideas hence deepening memory and retention capacity.
- The Behaviorism learning theory focuses on the idea that all behaviors are learned through interaction with the environment, role plays align with this theory by incorporating the participants in a new environment.
- The Constructivism theory focuses on the construction of knowledge by the trainees rather than just passively taking in information. As participants experience the world and reflect upon experiences via video analysis, problem situations, etc., they build their own representations and incorporate new information into their pre-existing knowledge.
- The Humanism learning theory claims that humans are not able to learn if their environment is not favorable or if they are in a bad psychological state. And finally, social learning theory suggests that social behavior is learned by observing and imitating the behavior of others, that's why throughout the training, the participants will learn by recalling the methods the trainers themselves use.
- The Connectivism theory emphasizes the role of technology and networks in learning. Connectivists believe that learning is a process of creating connections and that technology can enhance and support learning by facilitating connections between learners, resources, and ideas.

These theories are applied through the execution phases of the curriculum that are divided into 5 phases:

1. The initial stage of the curriculum focuses on diagnosing the participants' understanding and knowledge of the modules covered in the syllabus. The training employs interactive exercises and a socio-cognitive debate to identify representations and obstacles to the participants' professional integration. Case studies and problem situations are derived from the Lebanese context to address the complexity and diversity of the society.

2. The second phase covers the factors of success in water projects, it identifies common denominators between successful projects, and explores the relevant Sustainable Development Goals (SDGs). The challenges in water sanitation, conservation, and management are categorized on the regional, national, and urban/rural levels, and the interdependence of needs and the role of individuals and entities in facing challenges are discussed. The concept of Maximal Citizenship is introduced, and the positioning of various Civic initiatives related to water on the spectrum of Minimalist and Maximalism is identified. Current local projects are examined to determine how to boost them towards a maximalist approach. Finally, challenges to overcome in adopting maximalist civic approaches in dealing with water matters are explored, and suitable approaches for managing those challenges are determined.

3. This third phase focuses on understanding the importance of advocacy and lobbying in water treatment and sanitation projects. It also covers the identification of efficient advocacy channels and the role of NGOs in advocating. The phase further includes the development of an advocacy plan and the monitoring and evaluation of the plan using the MEAL approach. The duration of this phase is six hours.

4. This phase covers the essential skills and knowledge required for effective financial management and fundraising. The phase includes training on financial sustainability and fundraising, where participants will learn about different fundraising approaches and how to develop a fundraising plan for their organization. Additionally, part of this phase will be dedicated to identifying fundraising opportunities and understanding donor requirements, the rest of the phase will be devoted to fundraising planning. The phase will equip participants with the skills to define the financial resource development concept and set criteria for qualification. By the end of this phase, participants will have a comprehensive understanding of fundraising, financial management, and budgeting for water sanitation and conservation projects.

5. This phase focuses on equipping participants with the necessary skills to write effective proposals, develop monitoring and evaluation plans, and budget for their proposed projects. It covers the basics of proposal writing, including problem identification, research, objective setting, and aligning proposals with the needs of the audience. Participants will also learn writing techniques and strategies to make their proposals clear and concise. In addition, they will develop comprehensive proposals that articulate the problem statement, goals and objectives, methodology, budget, and timeline. The phase also emphasizes the importance of developing a monitoring and evaluation plan and a budget for the proposal. Participants will learn how to identify costs associated with the project and how to present these costs in a clear and organized way. Overall, the phase aims to equip participants with the skills and knowledge required to write persuasive and effective proposals that can attract funding and drive impact.

6. This phase covers various aspects of project management. It starts with an introduction to project management terms and concepts, followed by project initialization and planning, including preparing documentation and understanding risk management. The phase also covers project and product scope,

finalizing the master plan, building, and stabilizing deliverables, deployment, and project closure. It includes developing a comprehensive monitoring and evaluation plan, as well as documenting lessons learned and project termination.

7. The last phase is divided into two parts, with the first half focusing on professional communication and the second half on performance management. In the professional communication section, participants will learn how to listen actively and speak appropriately, identify non-verbal communication signs, give and receive instructions effectively, cooperate as a team member, read emails for information, and practice good customer service skills. The performance management section will cover the definition of performance, performance management, and the four elements of the performance appraisal cycle. Participants will also practice the performance appraisal checklist for managers.

IV. Materials

Materials are the tools selected to implement methods and achieve the goals of the curriculum. They are intentionally chosen to support a participant's learning and to reflect his interest, cultural diversity, world perspectives, and address all types of diverse learners.

Some potential tools that could be used to implement the methods and achieve the goals of the curriculum include interactive exercises, case studies, problem tree analysis approach, socio-cognitive debates, guidance documents, water quality monitoring equipment, flow and pressure measurement devices, leak detection technologies, as well as visualization tools such as diagrams and maps.

Additionally, relevant policies and legal frameworks may be referenced and analyzed as part of the curriculum. The selection of tools would be guided by the desired learning outcomes and the most effective ways to convey the information to the participants.

The table below resumes the themes developed and delivered by the trainers for **48** hours:

Module	Expert	Sessions	Time (hours)	Methods of Delivery
Civic Engagement	Wadiaa Khoury	Overview of Water sanitation, conservation and management successful projects	1	Sharing short documentaries and discussing the elements they contain
		Liaison with and between the relevant SDGs	1	Group work and World Café
		Micro to Macro challenges in Water sanitation, conservation and management	1	Brainstorming Group work on parts of scientific articles followed by sharing of feedback from each group
		The concept of Maximal Citizenship	1	Conceptual mapping
		Exposure of current projects and scaling them toward the Maximalism	1	Open space
		What challenges to overcome through Dialogue, Negotiation or Mediation in order to shift to Maximalism	1	Case Studies
Fundraising, Financial Management, and Budgeting	Antoun Andrea	Financial Sustainability and Fundraising	4	Participatory Learning + Exercise + FGDs
		Fundraising Planning	1.5	Participatory Learning + Exercise
		Opportunity Identification and Qualification	0.5	Participatory Learning + Exercise

Proposal Writing, Monitoring & Evaluation Planning	Sophie Mansour	Introduction to Proposal Writing	2	Lecture
		Research and Planning	2	Lecture and templates
		Writing Techniques and Strategies	1	Lecture
		Developing the Proposal	4	Lecture, templates and working groups
		Measurement and Monitoring	2	Lecture and templates
		Budgeting proposals	1	Lecture and templates
Project Management	Akram Najjar	Introducing Project Management	0.75	Presentation + Case Studies + Clarification of Templates
		Phase I Initialization	0.25	Presentation + Case Studies + Clarification of Templates
		Phase 2.1 Planning the Project / Preliminary Planning	2	Presentation + Case Studies + Clarification of Templates
		Phase 2.2 Planning the Project / Project and Product Scope	3	Presentation + Case Studies + Clarification of Templates
		Phase 2.3 Planning the Project / Finalizing the Master Plan	2.5	Presentation + Case Studies + Clarification of Templates
		Phase 3.1 / Build Deliverables	0.5	Presentation + Case Studies + Clarification of Templates
		Phase 3.2 / Stabilizing Deliverables (Testing)	1.5	Discussion
		Phase 3.3 / Deployment Phase	0.5	Presentation + Case Studies + Clarification of Templates
		Phase 4 / Project Closure	0.5	Presentation + Case Studies + Clarification of Templates
		Course Closure and Discussion	0.5	Presentation + Case Studies + Clarification of Templates
Advocacy & Lobbying	Carmen Nohra	Understanding advocacy	1	Participatory discussions and small group learning of each definition
		Types of advocacies	1	Group work and World Café
		Targeting NGOs	1	Group presentations
		Advocacy Plan		Group work / case studies

			1.5	
		MEAL	1	Based on the previous plan critical revision of flow and live examples of dos and don'ts
		Lobbying the Advocacy plan	0.5	Group presentations
Communication & Performance Management for better results	Carole Dib	Professional Communication	6	PowerPoint Presentation - Team work and discussions - Videos and discussions - Role play for body language - Case studies - Observation
		Performance Management	6	PowerPoint Presentation - Team Work and discussions - Videos and discussions - Activities and Practice time

V. Assessment

Assessment in a curriculum is an ongoing process of evaluating the knowledge, skills, and understanding that trainees have acquired through their learning experiences. It involves measuring learning outcomes and determining whether trainees have achieved the desired goals and objectives of the curriculum, which can be documented in various ways such as tests, exams, assignments, projects, presentations, and other forms of evaluation.

Feedback from assessments is used to make decisions about instructional approaches, teaching materials, and academic supports to enhance opportunities for trainees and guide future instruction.

The purpose of assessment is to provide feedback on the effectiveness of the teaching and learning process, identify areas for improvement, and help trainees identify their strengths and weaknesses. This allows for opportunities for remediation and further learning.

The curriculum and its implementation are evaluated as follows:

1. A satisfactory assessment for each training session via a questionnaire to assess the following:

- a. The quality of the material delivered
- b. Trainee's satisfaction on the trainers
- c. The level to which the training was to their expectations
- d. The level to which the training covered the learning outcomes

2. The acquired skills are evaluated via the practical simulations and monitoring during coaching provided for the preparation of training programs by the trainers (experts). – *Pre/Posttests to be included after approval.*

3. A workshop on a new type of research called « participative research » will be implemented. This type of research enables trainees to build their own development and knowledge. The trainings by the means of research are one of the latest trends in terms of training design. Participatory research consists of focusing on reflection and action done by the participants. In other words, participants will be trained through an active and innovative method by guiding them to build their own knowledge through research. The trainees will be assigned to research on water legislations after this workshop. The results of this research will be shared in a practice sharing forum (PSF).

4. The PSF will allow trainees to share their findings in front of experts in the field of water. This will serve as a double purpose as it's a networking opportunity for the CSO and it's a chance to assess the trainees' acquired skills and how they can apply on ground what they have learned. During these forums, professionals in the fields of water resources as well as representatives from relevant entities related to water in the area will be invited to talk about their expertise and knowledge about the topic. These PSFs promote collaboration and knowledge-sharing among participants, providing a space to discuss topics related to the work they done, and exchange ideas to improve overall performance and outcomes in the field.

5. The trainees will elaborate the town hall meetings (THMs) with coaches. Their acquired knowledge and skills during the training program will be evaluated through the organization and the implementation of the THMs. Coaches will be available to ensure the successful implementation of the THMs. These meetings are usually open to the public and allow attendees to ask questions, voice their opinions, and receive updates on current and upcoming initiatives. Town hall meetings are often used as a means of promoting transparency and community engagement.
6. The trainees will then be assigned to write a full project proposal to remediate to issues related to water sanitation and conservation in their region.

Annex I – Civic Engagement

5/8/23



1



2

1

5/8/23

Overview of Water sanitation, conservation and management successful projects

- Documentaries of John D. Liu, a filmmaker and environmental educator
- [Hope Springs - Community](#)
- [Hillbilly - China Waterbed - Community](#)
- [In search of sustainability - MALL.mtv](#)



3

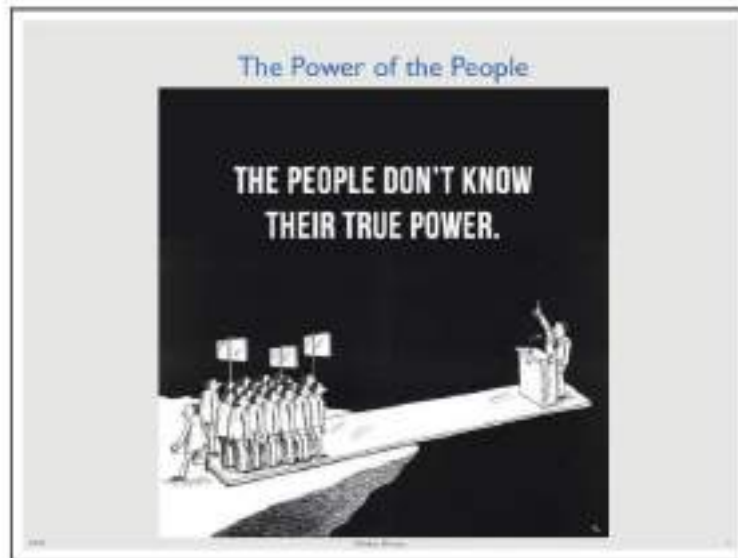
Water sanitation, conservation and management successful projects

- What are the elements of success of each of the projects?
- What's the common thread between the successful projects?

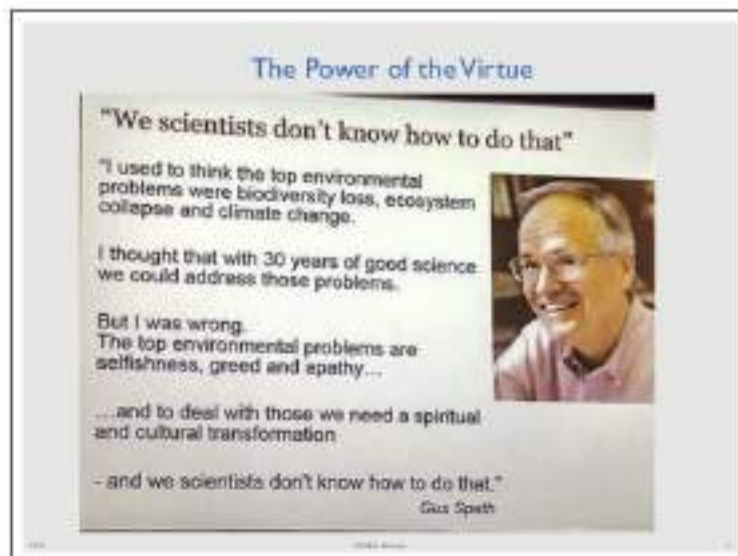


4

5/8/23



5



6

5/8/23



7



8

5/8/23

Between Micro and Macro challenges
in Water sanitation, conservation and management

- Rural Water Sanitation, Conservation and Management

TO

- Transboundary Aquifers

ALL WITHIN THE SCOPE OF CIVIC
RESPONSIBILITY AND ENGAGEMENT

9

Between Micro and Macro challenges
in Water sanitation, conservation and management



The image is a composite. On the left is a photograph of a rural landscape with a small stream and a person standing nearby. On the right is a map of Africa with a legend for Aquifer Productivity. The legend categories are:

- Very high productivity
- High productivity
- Medium productivity
- Low productivity
- Very low productivity

10



5/8/23

From Minimal to Maximal Citizenship

• Minimal Citizenship	• Maximal Citizenship
➢ Personally Responsible	➢ Participatory
	➢ Justice Oriented

11

From Minimal to Maximal Citizenship



12

5/8/23

From Minimal to Maximal Citizenship

- **Maximal Citizenship**
 - Participatory
 - Justice Oriented

CIVIC AGENCY

13

**Exposure of current projects
and scaling them toward the Maximalism**

- Participants' projects ...

14

5/8/23

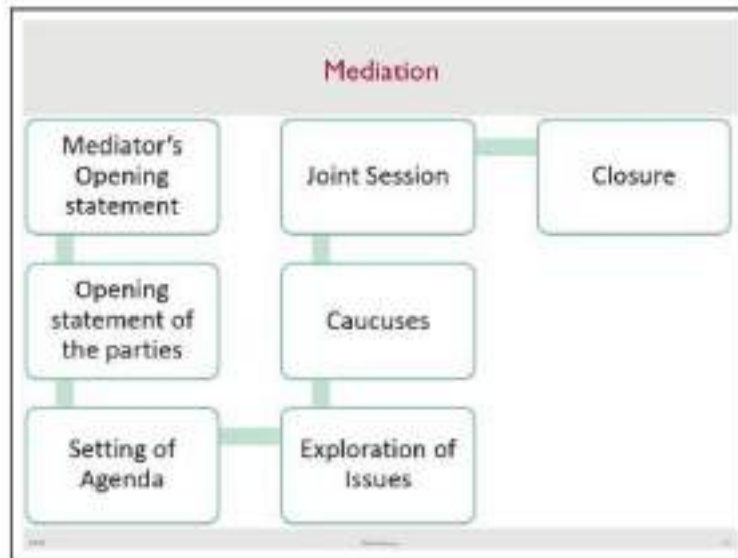
Overcoming challenges to shift to Maximalism

- Dialogue
- Negotiation
- Mediation

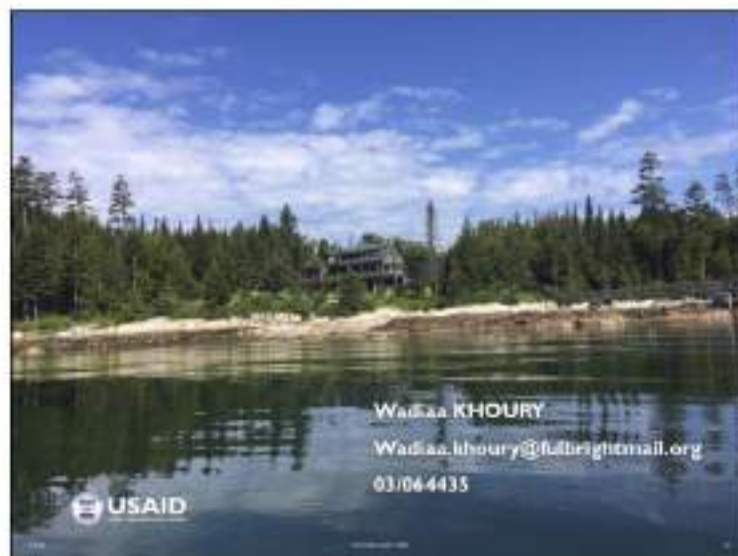
15



5/8/23



17



18

I.1 – SDGs Booklet





IN THE YEAR 2015, LEADERS FROM 193 COUNTRIES OF THE WORLD CAME TOGETHER TO FACE THE FUTURE.

And what they saw was daunting. Famines. Drought. Wars. Plagues. Poverty. Not just in some faraway place, but in their own cities and towns and villages.

They knew things didn't have to be this way. They knew we had enough food to feed the world, but that it wasn't getting shared. They knew there were medicines for HIV and other diseases, but they cost a lot. They knew that earthquakes and floods were inevitable, but that the high death tolls were not.

They also knew that billions of people worldwide shared their hope for a better future.

So leaders from these countries created a plan called the Sustainable Development Goals (SDGs). This set of 17 goals imagines a future just 15 years off that would be rid of poverty and hunger, and safe from the worst effects of climate change. It's an ambitious plan.

But there's ample evidence that we can succeed. In the past 15 years, the international community cut extreme poverty in half.

Now we can finish the job.

The United Nations Development Programme (UNDP) is one of the leading organizations working to fulfil the SDGs by the year 2030. Present in nearly 170 countries and territories, we help nations make the Goals a reality. We also champion the Goals so that people everywhere know how to do their part.

UNDP is proud to continue as a leader in this global movement.

Learn about the Sustainable Development Goals. What's your Goal?

1 NO POVERTY



END EXTREME POVERTY IN ALL FORMS BY 2030.

Yes, it's an ambitious goal—but we believe it can be done. In 2000, the world committed to halving the number of people living in extreme poverty by the year 2015 and we met this goal. However, more than 800 million people around the world still live on less than \$1.25 a day—that's about the equivalent of the entire population of Europe living in extreme poverty. Now it's time to build on what we learned and end poverty altogether.

2 ZERO HUNGER



END HUNGER, ACHIEVE FOOD SECURITY AND IMPROVED NUTRITION AND PROMOTE SUSTAINABLE AGRICULTURE

In the past 20 years, hunger has dropped by almost half. Many countries that used to suffer from famine and hunger can now meet the nutritional needs of their most vulnerable people. It's an incredible accomplishment. Now we can go further and end hunger and malnutrition once and for all. That means doing things such as promoting sustainable agriculture and supporting small farmers. It's a tall order. But for the sake of the nearly 1 out of every 9 people on earth who go to bed hungry every night, we've got to try. Imagine a world where everyone has access to sufficient and nutritious food all year round. Together, we can make that a reality by 2030.

3 GOOD HEALTH AND WELL-BEING



ENSURE HEALTHY LIVES AND PROMOTE WELL-BEING FOR ALL AT ALL AGES

We all know how important it is to be in good health. Our health affects everything from how much we enjoy life to what work we can perform. That's why there's a Goal to make sure everyone has health coverage and access to safe and effective medicines and vaccines. In the 25 years before the SDGs, we made big strides—preventable child deaths dropped by more than half, and maternal mortality went down by almost as much. And yet some other numbers remain tragically high, like the fact that 6 million children die every year before their fifth birthday, or that AIDS is the leading cause of death for adolescents in sub-Saharan Africa. We have the means to turn that around and make good health more than just a wish.

4 QUALITY EDUCATION



ENSURE INCLUSIVE AND EQUITABLE QUALITY EDUCATION AND PROMOTE LIFELONG LEARNING OPPORTUNITIES FOR ALL

First, the bad news on education. Poverty, armed conflict and other emergencies keep many, many kids around the world out of school. In fact, kids from the poorest households are four times more likely to be out of school than those of the richest households. Now for some good news. Since 2000, there has been enormous progress on the goal to provide primary education to all children worldwide: the total enrolment rate in developing regions has reached 91%. By measures in any school, that's a good grade. Now, let's get an even better grade for all kids, and achieve the goal of universal primary and secondary education, affordable vocational training, access to higher education and more.

5 GENDER EQUALITY



ACHIEVE GENDER EQUALITY AND EMPOWER ALL WOMEN AND GIRLS

We can celebrate the great progress the world has made in becoming more prosperous and fair. But there's a shadow to the celebration. In just about every way, women and girls lag behind. There are still gross inequalities in work and wages, lots of unpaid "women's work" such as child care and domestic work, and discrimination in public decision-making. But there are grounds for hope. More girls are in school now compared to in 2000. Most regions have reached gender parity in primary education. The percentage of women getting paid for their work is on the rise. The Sustainable Development Goals aim to build on these achievements to ensure that there is an end to discrimination against women and girls everywhere.

6 CLEAN WATER AND SANITATION



ENSURE AVAILABILITY AND SUSTAINABLE MANAGEMENT OF WATER AND SANITATION FOR ALL

Everyone on earth should have access to safe and affordable drinking water. That's the goal for 2030. While many people take clean drinking water and sanitation for granted, many others don't. Water scarcity affects more than 40 percent of people around the world, and that number is projected to go even higher as a result of climate change. If we continue the path we're on, by 2050 at least one in four people are likely to be affected by recurring water shortages. But we can take a new path—more international cooperation, protecting wetlands and rivers, sharing water-treatment technologies—that leads to accomplishing this Goal.

7 AFFORDABLE AND CLEAN ENERGY



ENSURE ACCESS TO AFFORDABLE, RELIABLE, SUSTAINABLE AND MODERN ENERGY FOR ALL

Between 1990 and 2010, the number of people with access to electricity increased by 1.7 billion. That's progress to be proud of. And yet as the world's population continues to rise, still more people will need cheap energy to light their homes and streets, use phones and computers, and do their everyday business. How we get that energy is at issue; fossil fuels and greenhouse gas emissions are making drastic changes in the climate, leading to big problems on every continent. Instead, we can become more energy-efficient and invest in clean energy sources such as solar and wind. That way we'll meet electricity needs and protect the environment. How's that for a balancing act?

8 DECENT WORK AND ECONOMIC GROWTH



PROMOTE SUSTAINED, INCLUSIVE AND SUSTAINABLE ECONOMIC GROWTH, FULL AND PRODUCTIVE EMPLOYMENT AND DECENT WORK FOR ALL

An important part of economic growth is that people have jobs that pay enough to support themselves and their families. The good news is that the middle class is growing worldwide—almost tripling in size in developing countries in the last 25 years, to more than a third of the population. But today, job growth is not keeping pace with the growing labour force. Things don't have to be that way. We can promote policies that encourage entrepreneurship and job creation. We can eradicate forced labour, slavery and human trafficking. And in the end we can achieve the goal of decent work for all women and men by 2030.

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



BUILD RESILIENT INFRASTRUCTURE, PROMOTE INCLUSIVE AND SUSTAINABLE INDUSTRIALIZATION AND FOSTER INNOVATION

Technological progress helps us address big global challenges such as creating jobs and becoming more energy efficient. For example, the world is becoming ever more interconnected and prosperous thanks to the internet. The more connected we are, the more we can all benefit from the wisdom and contributions of people everywhere on earth. And yet four billion people have no way of getting online, the vast majority of them in developing countries. The more we invest in innovation and infrastructure, the better off we'll all be. Bridging the digital divide, promoting sustainable industries, and investing in scientific research and innovation are all important ways to facilitate sustainable development.

10 REDUCED INEQUALITIES



REDUCE INEQUALITY WITHIN AND AMONG COUNTRIES

It's an old story: the rich get richer, and the poor get poorer. The divide has never been starker. We can and must adopt policies that create opportunity for everyone, regardless of who they are or where they come from. Income inequality is a global problem that requires global solutions. That means improving the regulation of financial markets and institutions, sending development aid where it is most needed and helping people migrate safely so they can pursue opportunities. Together, we can now change the direction of the old story of inequality.

11 SUSTAINABLE CITIES AND COMMUNITIES



MAKE CITIES AND HUMAN SETTLEMENTS INCLUSIVE, SAFE, RESILIENT AND SUSTAINABLE

If you're like most people, you live in a city. More than half the world's population now lives in cities, and that figure will go to about two-thirds of humanity by the year 2050. Cities are getting bigger. In 1990 there were ten "mega-cities" with 10 million inhabitants or more. In 2014, there were 28 mega-cities, home to 453 million people. Incredible, huh? A lot of people love cities; they're centers of culture and business and life. The thing is, they're also often centers of extreme poverty. To make cities sustainable for all, we can create good, affordable public housing. We can upgrade slum settlements. We can invest in public transport, create green spaces, and get a broader range of people involved in urban planning decisions. That way, we can keep the things we love about cities, and change the things we don't.

12 RESPONSIBLE CONSUMPTION AND PRODUCTION



ENSURE SUSTAINABLE CONSUMPTION AND PRODUCTION PATTERNS

Some people use a lot of stuff, and some people use very little—in fact, a big share of the world population is consuming too little to meet even their basic needs. Instead, we can have a world where everybody gets what they need to survive and thrive. And we can consume in a way that preserves our natural resources so that our children can enjoy them, and their children and their children after that. The hard part is how to achieve that goal. We can manage our natural resources more efficiently and dispose of toxic waste better. Cut per capita food waste in half globally. Get businesses and consumers to reduce and recycle waste. And help countries that have typically not consumed a lot to move towards more responsible consumption patterns.

13 CLIMATE ACTION



TAKE URGENT ACTION TO COMBAT CLIMATE CHANGE AND ITS IMPACTS

Every country in the world is seeing the drastic effects of climate change, some more than others. On average, the annual losses just from earthquakes, tsunamis, tropical cyclones and flooding count in the hundreds of billions of dollars. We can reduce the loss of life and property by helping more vulnerable regions—such as land-locked countries and island states—become more resilient. It is still possible, with the political will and technological measures, to limit the increase in global mean temperature to two degrees Celsius above pre-industrial levels—and thus avoid the worst effects of climate change. The Sustainable Development Goals lay out a way for countries to work together to meet this urgent challenge.

14 LIFE BELOW WATER



CONSERVE AND SUSTAINABLY USE THE OCEANS, SEAS AND MARINE RESOURCES FOR SUSTAINABLE DEVELOPMENT

The oceans make human life possible. Their temperature, their chemistry, their currents, their life forms. For one thing, more than 3 billion people depend on marine and coastal diversity for their livelihoods. But today we are seeing nearly a third of the world's fish stocks overexploited. That's not a sustainable way of life. Even people who live nowhere near the ocean can't live without it. Oceans absorb about 30 percent of the carbon dioxide that humans produce; but we're producing more carbon dioxide than ever before and that makes the oceans more acidic—26% more, since the start of the industrial revolution. Our trash doesn't help either—13,000 pieces of plastic litter on every square kilometer of ocean. Sounds bad, right? Don't despair! The Sustainable Development Goals indicate targets for managing and protecting life below water.

15 LIFE ON LAND



PROTECT, RESTORE AND PROMOTE SUSTAINABLE USE OF TERRESTRIAL ECOSYSTEMS, SUSTAINABLY MANAGE FORESTS, COMBAT DESERTIFICATION, AND HALT AND REVERSE LAND DEGRADATION AND HALT BIODIVERSITY LOSS

Humans and other animals rely on other forms of life on land for food, clean air, clean water, and as a means of combatting climate change. Plant life makes up 80% of the human diet. Forests, which cover 30% of the Earth's surface, help keep the air and water clean and the Earth's climate in balance. That's not to mention they're home to millions of animal species. But the land and life on it are in trouble. Arable land is disappearing 30 to 35 times faster than it has historically. Deserts are spreading. Animal breeds are going extinct. We can turn these trends around. Fortunately, the Sustainable Development Goals aim to conserve and restore the use of terrestrial ecosystems such as forests, wetlands, drylands and mountains by 2030.

16 PEACE, JUSTICE AND STRONG INSTITUTIONS



PROMOTE PEACEFUL AND INCLUSIVE SOCIETIES FOR SUSTAINABLE DEVELOPMENT, PROVIDE ACCESS TO JUSTICE FOR ALL AND BUILD EFFECTIVE, ACCOUNTABLE AND INCLUSIVE INSTITUTIONS AT ALL LEVELS

How can a country develop—how can people eat and teach and learn and work and raise families—without peace? And how can a country have peace without justice, without human rights, without government based on the rule of law? Some parts of the world enjoy relative peace and justice, and may come to take it for granted. Other parts seem to be plagued by armed conflict, crime, torture and exploitation, all of which hinders their development. The goal of peace and justice is one for all countries to strive towards. The Sustainable Development Goals aim to reduce all forms of violence and propose that governments and communities find lasting solutions to conflict and insecurity. That means strengthening the rule of law, reducing the flow of illicit arms, and bringing developing countries more into the center of institutions of global governance.

17 PARTNERSHIPS FOR THE GOALS



STRENGTHEN THE MEANS OF IMPLEMENTATION AND REVITALIZE THE GLOBAL PARTNERSHIP FOR SUSTAINABLE DEVELOPMENT

The Sustainable Development Goals are pretty big to-do list, don't you think? In fact, it's so big, you may just want to throw your hands up in the air. "Forget it! Can't be done! Why even try!" But we've got a lot going for us. The world is more interconnected today than ever before, thanks to the Internet, travel and global institutions. There's a growing consensus about the need to work together to stop climate change. And the Sustainable Development Goals are no small matter either. 193 countries agreed on these goals. Pretty incredible, isn't it? 193 countries agreeing on anything? The final goal lays out a way for nations to work together to achieve all the other Goals.

? WHAT CAN I DO TO HELP

There are many ways to show your support and help us reach the Sustainable Development Goals by 2030. Here are a few :

Make a donation

Money doesn't just make the world go around; it's also the most direct way to reduce and eradicate all forms of poverty.

Start a fundraiser

Fundraising is a great way to raise money, create awareness, and inspire others. Plus, it's fun!

Go shopping

Visit shop.undp.org for SDG merchandise, and show off the goals you're most passionate about.

Spread the word

Search for @UNDP on Twitter, Facebook and Instagram, and share the content you love.

To donate or learn more about fundraising, visit undp.org/takeaction

1.2 – Transboundary Aquifers of Africa

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Transboundary aquifers of Africa: Review of the current state of knowledge and progress towards sustainable development and management



Geert-Jan Nijsten^{a,*}, Greg Christelis^b, Karen G. Villholth^c, Eberhard Braune^d,
Chelikh Bécaye Gaye^e

^a International Groundwater Resources Assessment Centre (IGRAC), Weverstraat 7, 2611AX, Delft, The Netherlands

^b GWR Water Consultants, PO Box 21850, Windhoek, 9000, Namibia

^c International Water Management Institute (IWMI), Private Bag 3023, Silverton, 2127, Pretoria, South Africa

^d UNESCO Chair in Hydrology, University of the Western Cape, Bellville 7535, South Africa

^e Department of Geology, Faculty of Sciences and Technology, Université Cheikh Anta Diop, PO Box 5000, Senegal

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ABSTRACT

Study region: Transboundary aquifers (TBAs) of Africa.

Study focus: Review of work on TBAs in Africa, including an overview of assessments and management efforts that have taken place over the last half century.

New hydrological insights: Seventy-two TBAs have been mapped in Africa. They underlie 49% of the continent, where 32% of the population lives, often in arid or semi-arid regions. TBA inventories have progressed since 2000 and remain work in progress. Despite their importance only eleven TBAs have been subjected to more detailed studies. Cooperation has been formalised for seven TBAs. Most of these TBAs are in North Africa and the Sahel. The recent global Transboundary Waters Assessment Programme completed information at the national level to describe TBAs in terms of key indicators related to the water resource, socio-economic, and legal and institutional conditions. Availability of data at national level is low, hampering regional assessment. Comparing indicators, from questionnaire surveys, with those from a global water-use model showed variable levels of agreement, calling for further research. Reports on agreements scoping TBA management, indicate that this may be dealt with within international river/lake agreements, but reported inconsistencies between TBA sharing countries also indicate that implementation is limited. Increasing awareness and support to joint TBA management is noticeable amongst international organisations. However, such cooperation requires long-term commitment to produce impacts at the local level.

Abbreviations: AMCDR, African Ministers' Council on Water; ARDO, African Network of Data Organisations; FAO, Food and Agriculture Organization of the United Nations; GEF, Global Environment Facility; IAH, International Association of Hydrogeologists; IGRAC, International Groundwater Resources Assessment Centre; ISARM, Internationally Shared Aquifer Resource Management; IEA, International Atomic Energy Agency; IWMI, International Water Management Institute; IWMI, Integrated water resources management; Joint authority, Joint Authority for the Study and Development of the Nubian Sandstone Aquifer System; NSAS, Nubian Sandstone Aquifer System; NWSAS, North Western Sahara Aquifer System; OASRECOP, Orange-Senegal River Commission; OSS, Sahara and Sahel Observatory (Observatoire du Sahara et du Sahel); REC, Regional Economic Community; SADC, Southern African Development Community; SAP, Strategic Action Plan; TBA, transboundary aquifer; TWAP-Groundwater, Transboundary Waters Assessment Programme; WHO, World Meteorological Organization of the United Nations; UNESCO, United Nations Educational, Scientific and Cultural Organization; UNESCO-IHP, United Nations Educational, Scientific and Cultural Organization – International Hydrological Programme; UNDP, United Nations Development Programme

* Corresponding author at: International Groundwater Resources Assessment Centre (IGRAC), Weverstraat 7, 2611AX, Delft, The Netherlands.

E-mail addresses: geertjan.nijsten@ias-igrac.org (G.-J. Nijsten), greg.christelis@gmail.com (G. Christelis), k.villholth@reglar.org (K.G. Villholth), ebbraune12345@gmail.com (E. Braune), chelikhbecayegaye@gmail.com (C.B. Gaye).

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1. Introduction

Groundwater is an important source of supply for basic human needs and development. As a perennial source of water, it provides a buffer in times of drought that can be developed for local use at relatively low cost (Munyindima and Giordano, 2007). In many parts of Africa, groundwater is the only reliable source of water. Up to 75% of the population of Africa uses groundwater as the main drinking water source (UNOCA et al., 2000), and groundwater is important for rural livelihoods, livestock rearing and urban water supply (Villholth, 2013; Foster et al., 2008). As pressures on groundwater resources increase with economic development, population growth and climate change, it is increasingly important to understand the potential and management practices of transboundary aquifer resources. Cooperation for the development and management of transboundary aquifer (TBA) resources started in the 1970s in Northern Africa. Presently, seventy-two TBAs have been identified on mainland Africa (IGRAC and UNESCO-IHP, 2015a). The island states of Africa have no TBAs. Of the forty-seven mainland African countries, only Sierra Leone and Equatorial Guinea have no known TBAs. TBAs underlie 40% of the continent, and 33% of the population (381 million) live on TBAs.¹ By combining maps of aquifer storage and yield, produced by IGS et al. (2017), and the TBAs map, it appears that most of TBAs are in areas of high storage and higher yielding aquifers (Fig. 1). The groundwater stored within these TBAs is thus of importance for the development of Africa. Yet after nearly half a century of TBA activities in Africa only eleven TBAs have been studied in detail in an international context (Table A1 in Appendix A).

TBAs may be subject to conflicts of interests because of unequal resource partitioning and different management capacities within the social, economic and environmental contexts of sharing countries. Yet, TBA cooperation provides opportunity for cross-border dialogue and data sharing for better evaluation of the shared resource and more equitable and sustainable use of those resources (Raine and Christelis, 2014). Nonetheless, only seven aquifers are subject to specific agreements on joint research, monitoring or governance (Table A1 in Appendix A).

This paper aims to describe the current state of the TBA resources in Africa, and progress in their management and governance. Starting with a brief history of early international initiatives on TBAs, the study describes developments in mapping, assessment and monitoring of TBAs, and provides an overview of the progress in terms of management and governance of these potentially important shared resources. The paper concludes with a discussion, presenting priorities contributing to the sustainable management and development of transboundary groundwater resources in Africa.

2. Method

This research combines insights from literature on TBAs in Africa and experiences from ongoing studies, with results from the groundwater component of the Transboundary Waters Assessment Programme (TWAP-Groundwater). TWAP-Groundwater was a worldwide indicator-based assessment of 199 TBAs, also including 64 of the 72 TBAs in Africa (UNESCO-IHP and UNEP, 2016). Ten core and ten additional indicators were defined in thematic clusters based on groundwater quantity, groundwater quality, socio-economic, and governance-related factors. The indicators aim to capture the current state and projected trends of transboundary aquifers, allow global or regional comparisons, and make it possible to monitor the effectiveness of management interventions through repeated assessments (UNESCO-IHP et al., 2012). Indicator values were derived from the results of a questionnaire survey and from regional workshops, both involving experts from the TBA countries. In parallel, six of the core and three of the additional indicators (related to e.g. recharge, groundwater development stress and population) were calculated using the global water use model, WaterGAP. This enabled assessment of projections for 2030 and 2050 for particular indicators (Zündel and Döll, 2015).

UNESCO-IHP and UNEP (2016) presented overviews and conclusions at the global scale, but did not discuss specific regions in depth. Data from TWAP-Groundwater are available via an on-line data and information portal (IGRAC and UNESCO-IHP, 2016). The data for Africa are analysed, in combination with results from the literature survey to compile an overview of the state of transboundary groundwater resources in Africa in terms of groundwater resource quantity and quality, the socio-economic importance and their management and governance. Three case study reports are included to illustrate different levels of maturity in TBA research and cooperation.

3. Early history of TBA works in Africa

Due to their strategic importance in semi-arid and arid countries, North African states started studying their TBAs – especially the Nubian Sandstone Aquifer System (NSAS – AF63), and the North Western Sahara Aquifer System (NWSAS – AF69) – relatively early in the 1970's. Cooperation agreements were established in 1992 for NSAS (Quadri, 2017) and in 1997 for NWSAS (AbuZaid et al., 2015). Studies of the NWSAS and NSAS were led by the Sahara and Sahel Observatory (OSS) and the International Atomic Energy Agency (IAEA).

Africa wide TBA studies began around 2000 following concerns over the lack of systematic assessment and governance of transboundary groundwater by member states of UNESCO and WMO. The 'Regional Aquifer Systems in Arid Zones' conference held in Tripoli in 1999 established the concept of regional aquifers. This conference was instrumental in shaping the International Initiative on Shared Aquifers launched by UNESCO, FAO and IAH in 2000. This later became the UNESCO-led Internationally Shared Aquifer Resource Management (ISARM) programme (UNESCO et al., 2000; UNESCO-IHP, 2009). The African Ministers' Council on

¹ Calculations for 2015, based on data from (CHERN and DAV, 2005; PAU, 2014; IGRAC and UNESCO-IHP, 2015a; UNHRA, 2015).

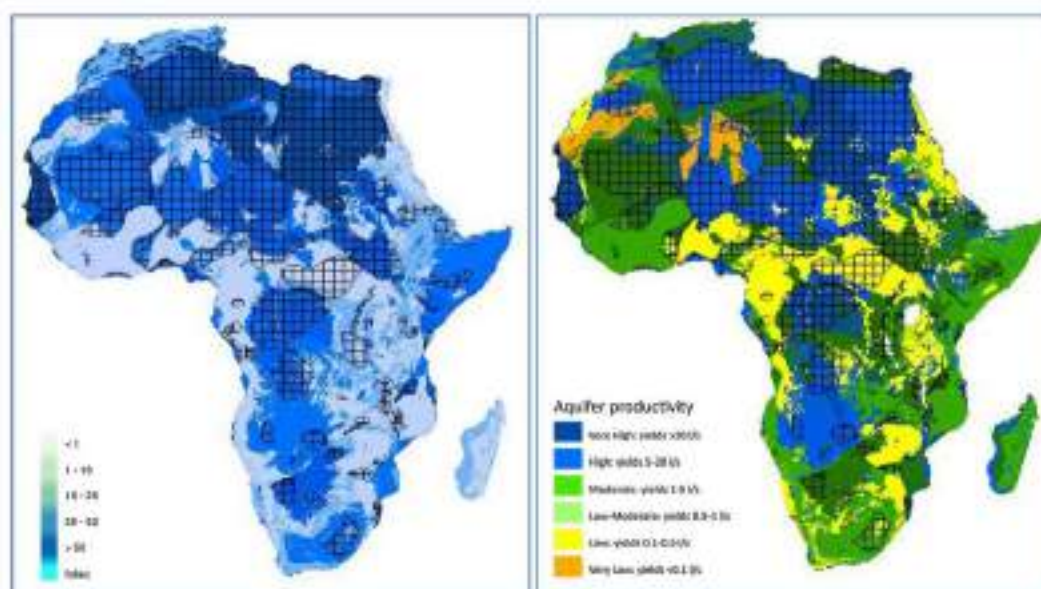


Fig. 1. Map of Transboundary Aquifers in Africa combined with aquifer storage [m] (left) and aquifer yields [l/s] (right). Sources: Transboundary aquifers: (IGRAC and UNESCO-IHP, 2015a), Aquifer storage and yield: (IGRAC et al., 2017).

Water (AMCOW), established in 2002, supported TBA management within the continent. In 2002, an ISARM workshop produced an inventory of 38 African TBAs with a map of their approximate locations (Appelgren, 2004). In 2005, IGRAC produced a map of 20 TBAs in the Southern African Development Community (SADC) region, with boundaries based on hydrogeological information, and developed a web-based system for storage and display of the TBA information for the SADC region (Vasak and Kukuric, 2006). World maps of TBAs have since been published, each update providing more detailed information for Africa (IGRAC, 2017). Since 2007, eleven (mostly ISARM) international conferences relevant to Africa have enhanced international networks to exchange information and share knowledge on TBAs (Fig. 2). Such conferences raised awareness on transboundary groundwater resources and triggered TBA-specific activities between neighbouring countries. ISARM, in line with integrated water resources management (IWRM) paradigms, recognised that TBA assessment should include hydrogeological characterisation, environmental and socio-economic aspects of the aquifer area as well as national legal and institutional contexts. To facilitate integrated assessments, guidelines for the multi-disciplinary assessment of TBAs have been compiled based on previous ISARM experience (IGRAC and UNESCO-IHP, 2015b). The ISARM programme also resulted in the indicator-based assessment of TBAs worldwide as part of TWAP-Groundwater (UNESCO-IHP and UNEP, 2016).

4. Mapping of TBAs

Since the first map of African TBAs in 2004 (Appelgren, 2004), additional TBAs have been identified. The 72 TBAs identified



Fig. 2. Timeline of international conferences dedicated to TBAs. Conferences on individual aquifers are excluded. The cooperation agreements on the Nubian Sandstone Aquifer System (NSAS) and the North Western Sahara Aquifer System are shown as reference points for early activities on individual TBAs in Africa.

today (Fig. 3 and Table A1 in Appendix A) may increase with additional hydrogeological knowledge, as indicated by the increased numbers on consecutive TBA maps (Fig. 4).

Although local hydrogeologists may have had more detailed knowledge on TBAs in their country, the ovals on the 2006 map are indicative of the limited international awareness on TBAs at that time. For 64 of the 72 TBAs (89%) boundaries are based on hydrogeological knowledge. The other 8 TBAs are known by approximate location only. The TWAP-Groundwater project improved mapping of TBAs: Nine new TBAs were recognised in Africa; ten TBAs which were previously only known by approximate location were mapped more accurately; for fifteen TBAs significant boundary changes were made (change in surface area > 10%); for three TBAs minor changes were made (change < 10%); and five TBAs were removed as having no transboundary significance because of limited regional hydraulic continuity. From this it may be concluded, that if management of (potential) issues is the only reason for cooperation, it may be efficient to define zones of transboundary impact within the larger TBAs, as transboundary groundwater issues will normally manifest locally in the border areas. For aquifer states also seeking cooperation to jointly deal with non-transboundary issues, this will be less relevant. Continued hydrogeological research and assessment will further refine TBA boundaries and definitions, but guidelines on defining TBAs including consequences of different approaches, would be instrumental.

5. Assessment of TBAs

Throughout Africa, especially in drought-prone rural areas, some hydrogeological characterisation has been conducted, usually for groundwater resource assessment, development and less so for groundwater management. TBA assessment only benefits from this research, if countries are willing to share information. Accessibility of information is however often hampered by a lack of functioning databases and information management structures.

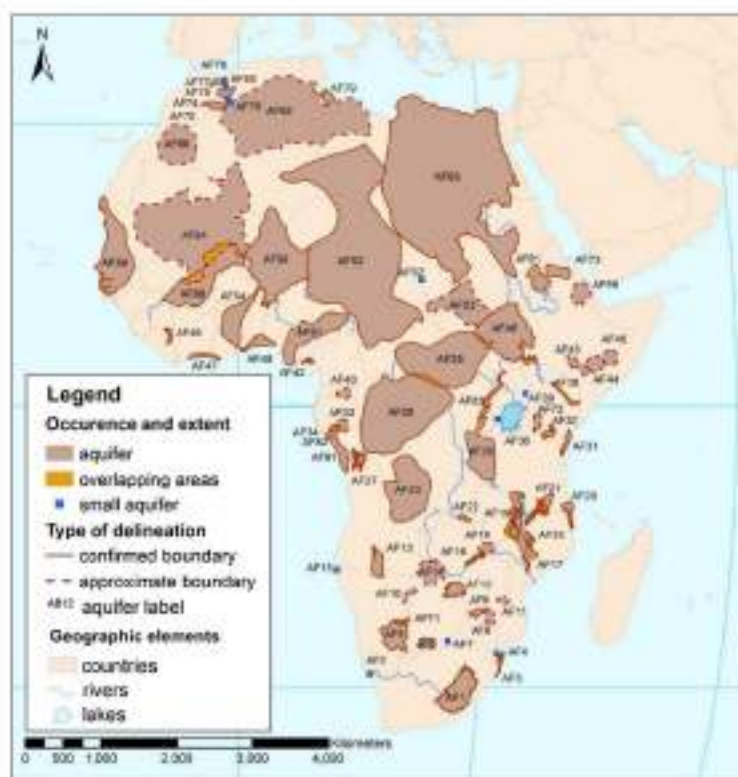


Fig. 3. Transboundary Aquifers of Africa, with TBA codes. After: (GURAC and UNESCO-IHP, 2015a).

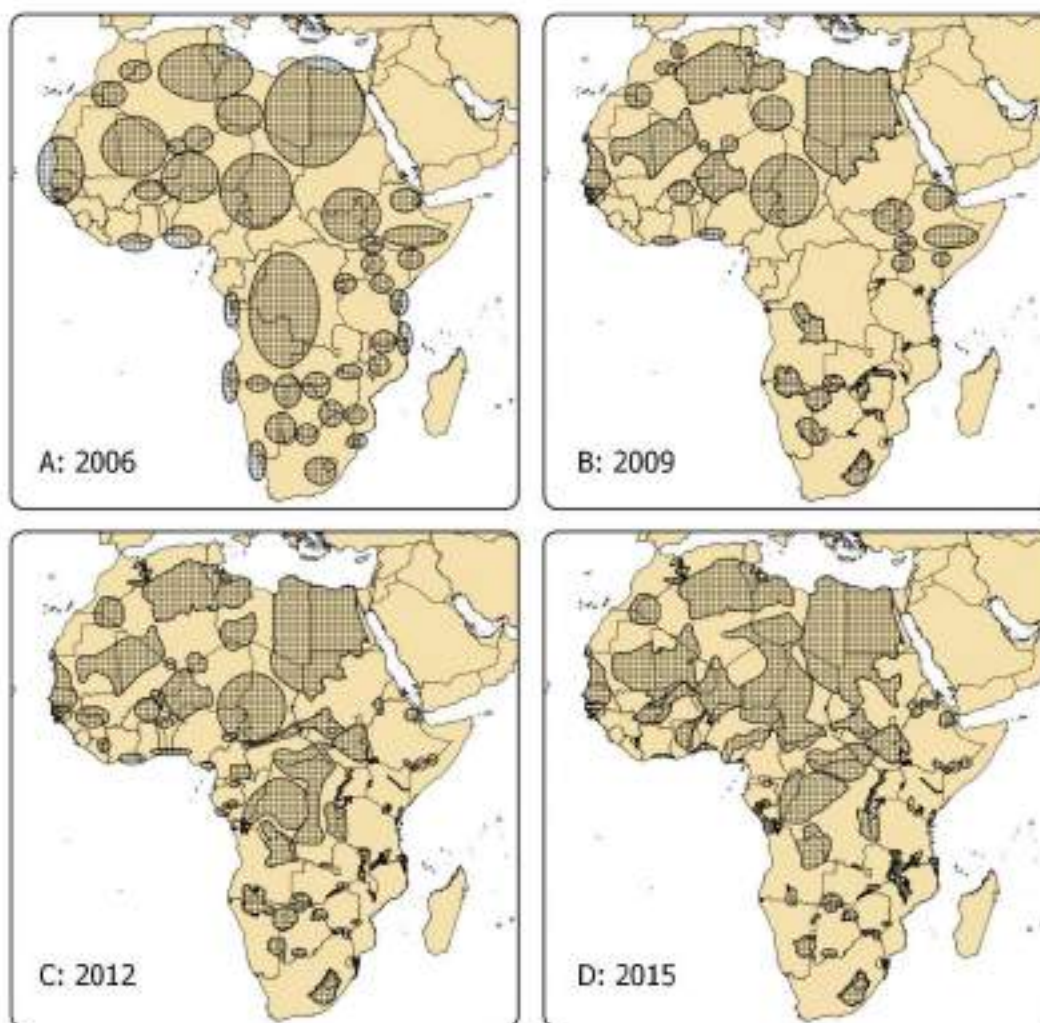


Fig. 4. Development in the mapping of transboundary aquifers in Africa over the last 2 decades. A: after [Struckmeier et al. \(2006\)](#), B: after [IGRAC \(2009\)](#), C: after [IGRAC \(2012\)](#), D: after [IGRAC and UNESCO-IHP \(2015a,b\)](#).

5.1. Aquifer-specific assessment

To date, eleven TBAs have been studied to a substantial degree in the Sahara/Sahel region and in Southern Africa ([Table A1 in Appendix A](#)). The International Atomic Energy Agency (IAEA) in cooperation with UNESCO, the Global Environment Facility (GEF) and the United Nations Development Programme (UNDP), supported investigation of TBAs in Northern Africa. Isotope hydrology methods aided the characterization of TBAs such as the NWSAS (AP09), the NSAS (AP03) and the Bullemeden Aquifer System (AP56) and paved the way for cooperation frameworks ([Brittain et al., 2015](#)). Pioneering efforts were also made by the Sahel and Sahara Observatory (OSS), when they conducted the ‘Aquifers of the Major Basins’ program starting in 1992, with focus on the Bullemeden Aquifer aiming to identify transboundary risks, formulate management policies and adopt a legal and institutional framework ([Cunn,](#)

2017). From 2012–2017, further investigations have been carried out in five TBA systems within the Sahel region (the Illiemedden Aquifer System – AF56, the Liptako-Gourma-Upper Volta System – AF54, the Senegalo-Mauritanian – AF58, the Lake Chad – AF52 and Taoudeni basins – AF64). The studies resulted in recommendations for governments to draw up plans to save water and protect it from pollution (IAEA, 2017). The findings will be integrated at regional level, and common priorities and recommendations to enhance the sustainable management and rational use of these shared aquifer systems, will be identified.

In more recent years, studies have also been initiated in the southern drought-prone parts of Africa, on the Stampriet Transboundary Aquifer System – AF5 (UNESCO-IHP and IGRAC, 2016) and the Ramotswa Transboundary Aquifer – AF7 (Alchenko et al., 2017). These studies aim to initiate coordinated monitoring and management of shared resources through joint research and assessment to build trust for further cooperation.

5.2. Results from TWAP-Groundwater comparative assessment for Africa

TWAP-Groundwater considered 64 of the 72 TBAs in Africa, mostly those larger than 5000 km² in area, shared by in total 45 countries (Table A1 in Appendix A) and consisting of 178 national segments. The model calculations were limited to the 34 larger TBAs, involving 112 national segments. Table 1 shows the distribution of national segments per core indicator category compiled from IGRAC and UNESCO-IHP (2016). Using the limited data yield from the questionnaires, indicators could only be calculated for a small number of country segments (indicated by non-zero values in Table A1 in Appendix A).

5.2.1. Groundwater quantity indicators

For sixty-four national TBA segments estimates of mean annual recharge rates were provided (Table 1). These range from highs of > 300 mm/year in four TBA country segments in humid areas to lows between 2 and 20 mm/year for 20 TBA segments in drier regions. Twenty-four country segments have reported recharge rates < 2 mm/year, as in arid areas of the NSAS (AF63), the northern parts of the Lake Chad Basin aquifer (AF52), the Taoudeni Basin aquifer (AF64) and the Ithazor–Illiemedden Basin aquifer (AF56). In areas of major irrigation, the model indicated return flows from irrigation for the NSAS (AF63) of 44% of total groundwater recharge in Egypt and 38% in Sudan (Riedel and Döll, 2015; UNESCO-IHP and UNEP, 2016). Mean annual groundwater recharge is a crucial quantity in a country's water balance, because it indicates the amount of groundwater that is utilizable on a sustainable basis. In general, countries provided information on this parameter, but only 5 countries indicated that dedicated recharge studies had been undertaken.

Groundwater depletion rates (mm/year averaged over a TBA total area), are mainly low. High to very high depletion rates are reported for 10 of the 30 country segments that supplied data via the questionnaires. These include TBAs in North and West Africa in arid areas with high abstraction rates, and TBA segments in Zambia, Malawi and South Africa where long-term abstraction from low replenishment aquifers can have detrimental impacts.

5.2.2. Groundwater quality

Data on the natural background groundwater quality, defined as the percentage of aquifer area where natural groundwater quality satisfies local drinking water standards, were obtained for only 38 country segments (Table 1). The TBA country segment with reported very low quality water is in the NSAS in Egypt, where < 20% of the area contains water suitable for human consumption. Data on groundwater pollution, defined as polluted zones as a percentage of the total aquifer (segment) area, are available for only 21 country segments (12%). Nearly all of these (20) report low pollution levels (Table 1).

5.2.3. Socio-economic aspects

Population density, defined as the number of people living within a TBA area divided by the areal extent of the aquifer, varies from very high in 39 country segments to very low in 38 country segments. TBAs with very high population density are found in Nigeria, most of West Africa's coastal aquifers and along the Rift Valley.

Human dependence on groundwater for domestic, agricultural and industrial water use is defined as groundwater abstraction as a percentage of total water use. Useable data were obtained only for 27 country segments, of which data from 17 indicate a dependence on groundwater of more than 60%. High dependence on groundwater is, as expected, in the fossil TBAs across mainly arid north Africa, and the arid parts of Southern Africa. High dependence on groundwater from TBAs is also reported for the more humid rural parts of Malawi and Tanzania. Surprisingly, the model-calculated dependence for TBAs in Malawi and Tanzania is low, contradicting the information from the questionnaires, highlighting the need for further research. The model study indicates a high dependence on groundwater for agriculture (irrigation) on TBA groundwater in Libya and Algeria, the Mauritanian part of the Taoudeni Basin (AF64) and the Kalahari Karoo Basin/Stampriet Artesian Aquifer System (AF5) in Namibia. The questionnaire survey yielded no information for comparison (Riedel and Döll, 2015; UNESCO-IHP and UNEP, 2016).

Groundwater development stress is defined as annual groundwater abstraction divided by annual recharge. Country segments with groundwater withdrawals exceeding renewable groundwater resources are in the Saharo and Sahel zone where groundwater recharge to exploited aquifers is extremely low or non-existent. Country segment with groundwater development stress values of 50–100% are reported for Senegal, Malawi, South Africa and Swaziland (UNESCO-IHP and UNEP, 2016). Groundwater development stress

^a The TWAP programme considered national or country segments of the transboundary aquifer as the primary reporting unit (UNESCO-IHP et al., 2012). A country segment is the part of the TBA located within one country.

Table 1

Distribution of African TBA country segments per indicator category for all TWAP-Groundwater core indicators. Based on the questionnaire outcomes (adapted from: (UNESCO-IHP and UNEP, 2014)). (For interpretation of the references to color in this Table legend, the reader is referred to the web version of this article.)

Groundwater Quantity	1.1 Recharge (mm / year)					
	Very high: >300 4	High: 100–300 8	Medium: 20–100 10	Low: 2–20 20	Very low: <2 24	No data 123
	3.1 Long term groundwater depletion (mm/year)					
Groundwater Quality	Very low: <2 16	Low: 2–20 2	Medium: 20–50 2	High: 50–100 2	Very high: >100 8	No data 157
	1.3 Natural background quality (% of surface area with good quality)					
	Very high: >80 20	High: 60–80 10	Medium: 40–60 3	Low: 20–40 4	Very low: <20 1	No data 149
Groundwater Quality	3.2 Groundwater pollution [%]					
	No pollution identified 1	Some pollution identified (not specified) 16	Low: 0–30 4	Medium: 30–65 0	High: >100 8	No data 166
	4.1 Population density (cap/km ²)					
Socio-economic	Very low: <5 38	Low: 5–10 25	Medium: 10–50 61	High: 50–100 23	Very high: >100 38	No data 0
	1.2 Renewable groundwater resources per capita (m ³ /year/capita)					
	Very high: >10000 0	High: 5000–10000 4	Medium: 1000–5000 10	Low: 100–1000 28	Very low: <100 28	No data 123
Socio-economic	2.1 Human dependency on groundwater (%)					
	Very low: <20 4	Low: 20–40 1	Medium: 40–60 2	High: 60–80 5	Very high: >80 0	No data 163
	4.2 Groundwater Development Stress [%]					
Socio-economic	Very low: <2 11	Low: 2–20 12	Medium: 20–50 7	High: 50–100 4	Very high: >100 15	No data 140
Legal & Institutional	5.1 Transboundary Legal Framework					
	1. Agreement with full scope for TBA management signed by all parties 14	2. Agreement with limited scope for TBA management signed by all parties 9	- 0	3. Agreement under preparation or available as an unsigned draft 7	4. No agreement exists, nor under preparation 83	No data 104
	5.2 Transboundary Institutional Framework					
Legal & Institutional	1. Dedicated transboundary institution fully operational 9	2. Dedicated transboundary institution in place, not fully operational 7	3. National / Domestic institution fully operational 13	4. National / Domestic institution in place, but not fully operational 45	5. No institution exists for TBA management 8	No data 105

Table 2

TBAs with at least one country segment under medium to very high groundwater development stress and a high dependence on groundwater (> 40%) in 2030 and/or 2050. Adapted from (Riccardi and Döll, 2015; UNESCO-IHP and UNEP, 2016).

Aquifer name	Current conditions (reference 2010)	Future conditions (2030 and/or 2050)
SE Kalahari Karoo Basin/Stungrriet Artesian Aquifer System (AP5)		X
Eastern Kalahari Karoo Basin (AP12)		X
Khakhre/Dry Dobeche (AP6)		X
Kora/Dohomey/Catier basin aquifer (AP48)	X	X
Lake Chad Basin (AP52)	X	X
Inrissar-Idrissiden Basin (AP56)		X
Northwest Sahara Aquifer System (NWSAS – AP99)	X	X
Alir Tib valley/Alir Triangle aquifer (AP59)		X
Mereb (AP73)	X	X
Nubian Sandstone Aquifer System (NSAS – AP63)		X

estimated from model results is mostly very low to low, even in the semi-arid and arid zones of Africa, except for the Algerian segment of the Toudeni (AF64) and the Libyan part of the Lake Chad Basin (AF52).

Riedel and Döll (2015) identified TBA hotspots where at least one country segment is experiencing medium to very high development stress and medium to very high human dependence on groundwater in 2010 and/or in the future (2020/2050). Ten of the nine-teen TBA hotspots identified are in Africa (Table 2). The need for improved management, including joint monitoring, is obviously more acute here.

5.2.4. Completeness and quality of the assessment

Data were provided for 43% of the national segments of TBAs, and as such the TWAP-Groundwater project managed to collect a lot of data previously only available in grey literature or at the national level. Data, however, are often incomplete so that not all indicators can be estimated (Table A1 in Appendix A). The chronic lack of available systematic data, both on static aquifer characteristics (such as aquifer thickness) and on time-dependent trends (such as groundwater abstraction), indicate that African countries require further hydrogeological characterisations as well as systematic monitoring of groundwater in TBAs. Because questionnaire responses were obtained separately from the individual countries, a complete and harmonized response per aquifer was seldom achieved, hampering assessment of aquifers as a whole.

The importance of groundwater in various TBAs and in Africa as a whole, as well as the state of the resource, is not obvious from the data collected. There are considerable differences between the outcomes of the questionnaire survey and the model results, which may question the validity of the indicators used in the analyses. It is not evident which method provides the most reliable results, and there is a clear need for 'ground truthing' using additional monitoring data and site-specific research. Harmonization of aquifer information across country boundaries is fundamental for joint management. The current lack of information can be taken as an indicator that joint aquifer management still has some way to go.

6. Monitoring TBAs

Long-term monitoring of groundwater levels, borehole abstractions and groundwater chemistry are essential inputs required for assessments and developing sustainable groundwater resources management policies. At national level, some states have systems in place for monitoring their groundwater resources. Unfortunately, most states display a near absence of active monitoring systems or monitoring archives with historic time series. The fragmentary nature of monitoring data and other information makes effective management of groundwater resources difficult, particularly at TBA level. Recent cooperation on the Stampriet TBA shared between Botswana, Namibia and South Africa, and the Ramotswa TBA shared by Botswana and South Africa, may result in the first joint groundwater monitoring programmes for Southern Africa (Alchemko et al., 2017; UNESCO-IHP and IGRAC, 2016). Deficiencies in monitoring of shared aquifers in Central African states are the result of poor institutional capacity due to the low importance given to groundwater resources and less donor attention. This has resulted in a lack of hydrogeological data. In Benin and Togo and other more humid regions, water resource programs have focused on surface water rather than groundwater. As a result, there are no long-term time series of groundwater monitoring data, nor a thorough conceptual understanding of aquifer characteristics such as structure, groundwater flow and chemical water quality. West African countries of the Sahel region have focused upon groundwater so that hydrogeological systems are well studied, and institutions responsible for the management and monitoring of aquifer systems, e.g. the Water Resources Management and Planning Directorate in Senegal and the Sahara and Sahel Observatory (OSS) in Mali, are well established. However, even in the arid Sahel region, not all TBA segments are covered. Within the Senegalo-Mauritanian Basin (AF58), there may be good information for the Senegalese segment, but little data are available from the Mauritania, Gambia and Guinea Bissau segments (UNESCO-IHP and UNEP, 2016). In general, the joint monitoring of transboundary groundwater is still largely absent and imbalance in efforts across borders exists. Within the Jullemeden Aquifer (AF56), shared by Mali, Niger and Nigeria, a Transboundary Diagnostic Analysis has been completed and a joint groundwater database and information system has been set up (OSS, 2011), but no joint monitoring has been initiated to date.

A major challenge in transboundary cooperation and joint monitoring is the harmonisation of systems, methods and data formats across aquifer boundaries. Such harmonisation was not apparent from the TWAP inventory. At all TBA management levels, i.e. at regional, river basin and TBA level, there needs to be increased focus on standardized data collection and harmonisation across borders. TBA states should be encouraged to commence joint monitoring of representative groundwater levels and water quality and promote data exchange as an early part of transboundary groundwater management and development. The database and portal developed by IGRAC and UNESCO-IHP (2016) can aid such cooperation.

7. Managing and governing TBAs

Africa is fortunate to have governance structures at both the continental level through AMGOW and at the regional level in the form of the eight Regional Economic Communities (RECs) of the African Union. In addition, the continent has several functioning

river and lake basin organisations. Critical for groundwater in Africa is AMCOW's commitment to the continent-wide strategic groundwater initiative through the Africa Groundwater Commission established in 2007 (AMCOW, 2008). The major river/lake basins have been identified as units for water management. This is challenging for the management of those TBAs which underlie several river/lake basins, or those TBAs located in areas not covered by international river or lake basin organisations, such as the NWSAS (AF69) or NSAS (AF63).

7.1. Progress in TBA governance

The NSAS (AF63, shared between Egypt, Libya, Chad and Sudan) has an agreement with full scope for TBA management signed by all parties (Conti, 2017; Tuijnheider and van der Gun, 2012). Although national institutions are in place, some are not fully operational. The Nile Basin Initiative (NBI), established in 1999, includes Burundi, DR Congo, Egypt, Ethiopia, Kenya, Rwanda, South Sudan, Sudan, Tanzania and Uganda with Eritrea as an observer. From 2008–2011, a collaborative study, mainstreaming groundwater considerations into the integrated management of the Nile River Basin, was undertaken to raise the profile of groundwater in the NBI and initiate joint actions on groundwater issues (Braam and Christella, 2014). This could potentially be relevant for the TBAs in or intersecting the basin (approx.10 TBAs).

The NWSAS (AF69, shared between Algeria, Libya and Tunisia) has an agreement with full scope for TBA management signed by all parties (Conti, 2017; Tuijnheider and van der Gun, 2012). An institutional arrangement for the assessment and consultative management of this TBA has been developed, consisting of a NWSAS Coordinating Unit, a NWSAS Steering Committee, the three countries with each their Institutions/Research Centres and an ad-hoc Scientific Committee. By mid-2008, the tri-partite institutional arrangement had been inaugurated and continues to function.

The Irbazer-Iallemeden Basin (AF56, shared between Algeria, Mali, Niger and Nigeria) has an agreement on joint policy implementation through a joint legal and institutional consultative mechanism adopted by the aquifer states (Tuijnheider and van der Gun, 2012). It also contains a joint risk mitigation and data sharing policy. In the TWAP-Groundwater assessment, the national reporting on the status of the institutional arrangements varied between TBA countries. This indicates that the agreement is not yet fully operational within relevant national institutions and departments dealing with groundwater management.

SADC-region: The SADC region is an example of a Regional Economic Community (REC) which has relatively advanced TBA management. The SADC Protocol on Shared Watercourses (SADC, 1998 and SADC, 2000) was instrumental in getting groundwater added into the programme of activities of the African Network of Basin Organizations (ANBO) in 2008. Some of the river basin organisations in the SADC region are starting to play a role in transboundary groundwater management. The Orange-Senqu River Commission (ORASECOM) was the first river basin commission in SADC to establish a Groundwater Hydrology Committee (in 2007) to facilitate dialogue between the basin states on TBA management. The ORASECOM agreement (ORASECOM, 2000) specifically mentions "hydrogeological" data among the data that the countries are obligated to exchange. ORASECOM was one of the parties suggesting to pilot TBA management principles in SADC focussing on the Stampriet transboundary aquifer system. This became a case study in the UNESCO-IHP-executed project on 'Governance of Groundwater Resources Governance in Transboundary Aquifers' (UNESCO-IHP and IGRAC, 2016). In 2017, ORASECOM decided that the Stampriet TBA Multi Country Cooperation Mechanism be housed within the ORASECOM Groundwater Hydrology Committee, with the aim to coordinate further joint study and assessment of the TBA (ORASECOM, 2017).

7.2. TWAP-Groundwater comparative assessment for Africa

Seven TBA-specific agreements exist in Africa (Table A1 in Appendix A) as reported by Conti (2017) and ORASECOM (2017). In TWAP-Groundwater, national experts from other TBAs have also reported that agreements scoping TBA management exist (Table 1). These findings indicate that management of TBAs may be dealt with within existing framework agreements on international river/lake basins. As such river and lake basin organisations may play an increasingly important role in TBA management, although at present there is little evidence of concrete activities related to TBA assessment, monitoring or management. As long as most of the TBAs have no agreement in place, the domestic legal and institutional frameworks for sustainable water resources management continue to play a key role in the coordinated cross-border management.

8. Case studies

This section describes three case studies of transboundary aquifers, ranging from a very large, well-studied transboundary aquifer with a long history of cooperation (Nubian Sandstone Aquifer System), to a small TBA which is currently under investigation by the states sharing the resource (Ramotswa TBA), and a TBA which is potentially at risk of pollution and population pressure and which is in need of joint assessment, monitoring and management (Coastal Sedimentary Basin 1).

8.1. The Nubian Sandstone Aquifer System – the heavyweight of TBAs in Africa

The Nubian Sandstone Aquifer system (NSAS – AF63) forms one of the largest aquifers in the world underlying some 2,500,000 km² of Egypt, Libya, Chad and Sudan, dominated by desert and arid to semi-arid climate (CEDARE, 2001). To the countries that share this TBA it is important as a source for drinking water and irrigation. The aquifer is confined in places and semi-confined in others. Isotopic studies reveal that groundwater was recharged during several humid phases during the Pleistocene (Sturchio et al., 2004) and Holocene periods (Edmunds et al., 2004; Edmunds and Wright, 1979; Wallin et al., 2005) within the unconfined Nubian sediments of southwestern Egypt, although present day groundwater recharge may also occur. The estimated groundwater storage is about 500,000 km³ with the recoverable amount estimated at around 3% (IAEA et al., 2013). Water quality varies, from excellent in the south to saline in the north of Libya (Alker, 2008). Exploitation of this enormous freshwater reserve has increased during the past forty years, with large abstractions by Egypt and Libya for irrigation and public water supply. The NSAS States cooperate through agreements made from 1992 to date. These agreements confirm increased cooperation, with the aquifer states being prepared to engage at increased levels and intensity of cooperation (Quadri, 2017). The agreement of the Joint Authority for the Study and Development (joint authority) of the NSAS, signed in 1992, was the first step in the process of cooperation. The only instrument on record regarding the joint authority is an “internal regulation” of the Authority, setting out the internal structure, functions, decision-making process, and funding of the Authority. The agreement carries no provisions regarding the management of the aquifer or groundwater stored in it. Two agreements made in 2000, mark an advance in the process of cooperation among the NSAS States. These agreements require that regular monitoring and updating and sharing of data and information from the NSAS are needed for the sustainable use of the aquifer’s groundwater resources. Regarding monitoring and information exchange, the four NSAS countries agreed to share data collected and analysed through the “Programme for the Development of a Regional Strategy for the Utilization of the NSAS”. A further step in the process of cooperation between the NSAS countries is the “Regional Action Programme for the Integrated NSAS Management”, funded by GEF and implemented by UNDP, IAEA, and UNESCO-IHP (IAEA et al., 2013). This project supports the development of a regional strategy for the integrated NSAS management, aimed at the equitable long-term exploitation of the aquifer. The project fosters a better understanding of aquifer issues and responses, while laying the basis of a regional Strategic Action Plan (SAP). The SAP agreement, signed by the NSAS countries and the Joint Authority in 2013, binds the Parties to agree, at a later stage, on actions for the sustainable management of the aquifer.

8.2. The Ramotswa Transboundary Aquifer – an example of recent joint efforts

The Ramotswa TBA (AF7), shared between Botswana and South Africa, is a TBA hotspot in SADC, impacted by increased water insecurity due to population growth and urbanisation in Botswana and from economic water scarcity in South Africa (Cubbing et al., 2008; Davies et al., 2013). Groundwater scarcity on the Botswana side is exacerbated by nitrate and faecal pollution of the aquifer due to onsite sanitation (Beger, 2001; Storch, 2003). The TBA, of small (300 km²) extent, is part of a segmented karstic dolomite formation within central southern Africa that is locally intensively used in South Africa (Meyer, 2014). A joint project involving Botswana and South Africa, initiated in 2015 and funded by USAID, aims to better understand the aquifer characteristics and issues around its use, and to improve water security through conjunctive use. The TBA was surveyed using a targeted airborne electromagnetic survey to improve the 3-D visualisation of the transboundary part of the dolomite aquifer, which is compartmentalised by fracture zones and dolerite dikes (Alchenko et al., 2017). Results from joint research based on national monitoring data identified groundwater flow directions and water quality issues, indicating potential cross-border issues of nitrate pollution and significant surface water-groundwater interconnections (Alchenko et al., 2017). Geo-data and information generated by this project are shared between the TBA countries and made available to stakeholders through a web-based system (IGRAC and IWMI, 2017). Information forms the basis for development of a strategic action plan identifying joint priorities. The bilateral Joint Permanent Technical Committee functions as an interim forum and precursor for taking forward a formal institutional arrangement for the long-term joint management of the aquifer.

8.3. Coastal Sedimentary Basin I – an example of a high priority aquifer

The Coastal Sedimentary Basin I (AF31) shared by Kenya (south coast) and Tanzania (north coast). It is a multi-layered sedimentary system with limestone horizons, and the groundwater is an important resource for the population. The sequence is characterized by a high primary porosity with secondary porosity resulting from karst dissolution as described in TBA information sheet AF31 in IGRAC and UNESCO-IHP (2016). The population density in the TBA is high (195 persons/km²) with a population of 2.9 million people within an aquifer area of 15,000 km². The main aquifer recharge mechanism is percolation of rainfall with natural discharge of groundwater to river base flow and the sea. The average depth to the water table is shallow from ground surface to 10 m below ground level. Up to 50% of the natural water quality does not meet drinking quality standards due to elevated levels of salinity. In some areas, high levels of pollution occur due to mining, agriculture and urban development (UNESCO-IHP and UNEP, 2016). The shallow groundwater levels are important in maintaining groundwater dependent ecosystems across the TBA.

The observed polluted zones, combined with the issues of salinization, and its location along the African east coast with high population pressure, makes this TBA a hotspot for future groundwater stress. Joint assessment and monitoring initiatives must be undertaken to develop effective management strategies and action plans to curb potential threats.

9. Discussion, conclusion and forward look

Many TBAs exist in Africa relative to other continents (IGRAC and UNESCO-IHP, 2015a), and those are underlying about 40% of the surface area of the continent. This provides rationale for focus on their management as a critical component of water resources management to improve water security and international cooperation. TBAs are diverse in size, climate, hydrogeology, human pressure and present levels of management, and therefore require in-depth studies.

Two historic phases of TBA management are discerned. The first occurred in North Africa from the 1970's, driven by the need to further develop and manage the large sedimentary aquifers predominantly in arid regions. The second phase began in the early 2000s, with the ISARM programme systematically identifying and mapping TBAs Africa-wide and initiating widespread cross-border discussions, defining issues and developing optimum ways to manage TBAs.

Some mainstreaming and best practise in TBA management are emerging from these studies. Achieving mature approaches requires time, and each TBA requires different levels of study and cooperation due to the uniqueness of each TBA. International support has facilitated management approaches, related to technical assessments and development of legal and institutional frameworks. International support tends to push for short term solutions, while critical trust-building processes have proven to take time to develop. Aquifer impacts from corrective TBA management, in terms of reversal of negative trends, are slow in manifesting, requiring long-term planning horizons and long-term monitoring that cannot be achieved by short-term projects. Similarly, inertia towards formalizing expanded legal frameworks and identifying the best bases for overseeing institutions, for example in existing river basin organisations, takes time and careful negotiation. These processes must be nurtured by international development support, but not driven in a desire to see rapid results, as this could lead to non-sustainable outcomes. AMCOW's increased commitment to groundwater, along with the Regional Economic Committees, could play an over-arching role in supporting coordination, lesson-learning and sharing for the benefit of Africa as a whole.

Mapping of TBAs has progressed steadily through international initiatives. Even though TBAs contain important resources for the development of Africa, only 11 of the currently known 72 TBAs have been studied in detail since TBA activities started nearly 50 years ago. These TBAs are mostly located in the semi-arid and arid regions of Africa, indicating that assessment of TBAs seems to be primarily driven by (potential) water scarcity issues. International organisations prove to be key in initiating TBA work. TWAP-Groundwater has shown that assessment of TBAs can hardly build on data and information from national studies as in many cases this information is either lacking, not accessible in a structured manner, or requires harmonisation between countries sharing a TBA. Because of this it is not possible, even with an indicator based assessment which requires little data, to assess the importance and state of these important groundwater resources of Africa. Global water use models may be able to fill the data gaps, but comparing indicators, determined using questionnaire surveys with results from a global water use model showed variable levels of agreement, calling for further in-depth research on both methods.

The argument that transboundary groundwater issues manifest locally in the border area, in zones of transboundary impact, at a scale smaller than the whole aquifer, and potentially only require involvement of a subset of aquifer states and stakeholders must be further explored. Similarly, nested and scale-dependent approaches to TBA management, with various degrees and levels of formal or informal arrangements, need further consideration, in particular for large TBAs, of which there are many in Africa. Such nesting or zoning, based on sound hydrogeological and scientific methods, will justify the allocation of limited resources for groundwater-related activities, while making them more efficient and effective. This approach also has the potential to focus cooperation at the bilateral level, which according to Puri and Aureli (2005) is more effective than multi-lateral cooperation.

TBA work in Africa has leveraged cooperation on groundwater more broadly between aquifer-sharing countries and at regional levels, creating incipient frameworks for broader collaboration on aquifer management. The transboundary nature of the shared resources, which receives augmented international attention, potentially increase national emphasis on groundwater resource management, which could improve the overall management of groundwater in Africa.

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Appendix A

Table A1

Transboundary aquifers of Africa: key figures, data availability from TWAP-Groundwater indicator assessment (number of countries for which indicators are available. Compiled from (IGRAC and UNESCO-IHP, 2016)) and known TBA-specific assessment, monitoring or existence of governance frameworks.

Code	Name	Area (1)	Pop. (2)	Pop. dens. (3)	No. of CS	TWAP										TBA specific		
						Quam.		Qual.		Sec.-Econ.				L&I		A	M	G
						1.1	3.1	1.2	3.2	4.1	1.2	2.1	4.2	5.1	5.2			
AF1	Karoo Sedimentary Aquifer/Orange-Senqu River Basin Aquifers	140	4600	3	2	2	0	1	0	2	2	2	2	2	2			X
AF2	Coastal Sedimentary Basin V	0.75	0.2	1	2	Not included in TWAP-Groundwater												
AF3	Coastal Sedimentary Basin VI/Coastal Plain Sedimentary Basin Aquifer	0.5	290	3	2	0	0	0	0	2	0	0	0	1	1			
AF4	Rhyolite-Breccia Aquifer	4.1	400	3	3	1	1	1	0	3	1	1	1	1	1			
AF5	Sonapriet Aquifer System	07	85	1	3	1	1	1	1	3	1	1	1	1	1	X	X	X
AF6	Khukha/Gray Dolomite	25	30	2	2	1	0	0	0	2	1	0	1	1	1			
AF7	Zaeraz/Lobane/Karoonwa Dolomite Basin Aquifer	0.3	19	3	2	1	0	0	0	2	1	0	0	1	1	X	OU	(X)
AF8	Lirapepo Basin	17	460	3	3	1	0	0	0	3	1	0	0	1	1			
AF9	Tali Rono Sub-Basin	12	120	3	3	1	1	0	0	3	1	0	1	1	1			
AF10	Northern Kalahari/Karoo Basin/Elash Graben Aquifer	11	6.2	1	2	1	1	1	0	2	1	1	1	1	1			
AF11	Sove Alluvial	9.9	380	3	3	0	0	0	0	2	0	0	0	2	2			
AF12	Eastern Kalahari Karoo Basin	34	250	2	2	0	0	0	0	2	0	0	0	1	1			
AF13	Corvella and Bosha Basin/Obangwana Aquifer System	41	260	2	2	1	1	1	0	2	1	1	1	1	1	(X)		(X)
AF14	New Karoo Sub-basin/Captivi deep-seated Aquifer	79	280	2	5	2	2	2	1	5	2	1	2	2	2			
AF15	Coastal Sedimentary Basin IV	1.2	0.62	1	2	Not included in TWAP-Groundwater												
AF16	Medium Zambesi Aquifer	9.4	300	3	2	1	1	1	1	2	1	0	1	2	2			
AF17	Shire Valley Alluvial Aquifer	5.5	580	4	2	1	1	1	1	2	1	1	1	2	2	(X)		
AF18	Arangwa Alluvial	19	270	3	2	1	1	1	1	2	1	0	1	2	2			
AF19	Sand and Gravel Aquifer	22	3600	4	3	2	2	2	2	3	2	1	2	2	2			
AF20	Coastal Sedimentary Basin III	23	1200	3	2	1	0	1	0	2	1	1	1	2	2			
AF21	Karoo Sandstone Aquifer	36	470	3	2	1	0	1	0	2	1	0	0	2	2			
AF22	Kalahari/Kotangiri Basin/Laobaba	7	420	3	2	1	0	0	0	2	1	0	0	1	1			
AF23	Congo Intra-cratonic Basin	330	4800	3	2	0	0	0	0	2	0	0	0	1	1			
AF24	Weathered Basement	11	130	4	4	2	2	3	2	4	2	1	2	3	3			
AF25	Karoo-Carbonate	540	5700	3	3	0	0	0	0	3	0	0	0	1	1			
AF26	Tanganyika	170	9100	3	3	1	0	1	0	3	1	0	0	1	1			
AF27	Dolomite Basin	19	1100	3	3	1	0	0	0	3	1	0	0	1	1			
AF29	Corvella	790	25000	3	3	Not included in TWAP-Groundwater												
AF31	Coastal Sedimentary Basin I/Karoo Sedimentary Aquifer	15	2900	4	2	1	0	1	1	2	1	0	0	1	1			
AF32	Shirangam Aquifer	13	2000	4	2	1	0	1	1	2	1	0	0	2	2			
AF33	AF33	21	110	2	2	No data provided by any of 2 countries												
AF34	AF34	6.5	80	2	2	No data provided by any of 2 countries												
AF36	Ragna Aquifer	5.2	580	4	3	1	0	2	1	3	1	0	1	3	3			
AF38	Merti Aquifer	12	230	3	2	1	0	0	0	2	1	0	1	2	2	X		
AF39	Mount Bilga Aquifer	4.9	1300	4	2	1	0	1	0	2	1	0	0	1	1			
AF40	AF40	18	54	2	2	No data provided by any of 2 countries												
AF42	Ris Delfey	5.8	2200	4	2	No data provided by any of 2 countries												
AF43	Dawa	31	400	3	3	2	1	2	0	3	2	1	1	2	2			
AF44	Aubba	31	340	3	2	No data provided by any of 2 countries												
AF45	Shabelle	28	300	3	2	0	0	0	0	2	0	0	0	1	1			
AF46	Sudd Basin	330	5500	3	5	2	1	2	2	5	2	2	2	2	2			
AF47	Tano Basin	14	4800	4	3	2	3	1	1	2	2	1	2	1	1			
AF48	Keta/Dabomey/Cotier Basin Aquifer	33	22000	4	3	2	2	3	2	4	2	2	2	3	3			
AF49	Cotee – Douane Aquifer	0.4	710	3	3	1	0	1	0	3	1	0	1	1	1			
AF51	Aquifer Vallée de la Benoue	200	34000	4	2	No data provided by any of 2 countries												
AF52	Lake Chad Basin	3000	45000	3	7	2	0	1	3	7	2	0	2	2	3	X		X

(continued on next page)

Table A1 (continued)

Code	Name	Area (1)	Pop. (2)	Pop. dens. (3)	No. of CS	TWAP										TBA specific		
						Quan.		Qual.		Soc. Econ.			L&I			A	M	G
						1.1	3.1	1.3	3.2	4.1	1.2	2.1	4.2	5.1	5.2			
AF53	Baggara Basin	210	4000	3	4	2	0	0	0	4	2	1	2	2	2			
AF54	Volta Basin	130	6300	3	5	2	0	0	0	5	2	1	1	2	1	X		
AF56	Inhazane-Tloletseles Basin	310	21000	3	5	2	0	1	0	5	2	0	1	3	1	X		X
AF58	Senegal-Maastantra Basin	280	16000	3	5	3	1	1	1	5	3	0	2	1	3	X		
AF59	Atar Rift valley/Atar Triangle Aquifer	51	870	3	3	2	1	2	0	3	2	0	2	2	2			
AF61	Gedaref	51	1800	3	3	1	0	0	0	3	1	0	1	1	0			
AF62	Dise	1.3	34	3	2	Not included in TWAP-Groundwater												
AF63	Nubian Sandstone Aquifer System (NSAS)*	2500	94000	3	5	5	0	0	0	5	5	0	5	5	5	X	X	X
AF64	Tasudeni/Tamoudi Basin	1100	5100	2	3	3	3	3	0	3	3	0	3	3	3	X		X
AF66	Système Aquifère de Tindouf	180	240	2	4	Not included in TWAP-Groundwater												
AF69	Northwest Sahara Aquifer System (NWSAS)*	1000	7100	2	3	3	3	0	0	3	3	3	3	3	3	X	X	X
AF70	Système Aquifère d'Ennedi*	17	120	2	2	0	0	0	0	2	0	0	0	0	2			
AF71	Negane Basin	8.6	5.3	1	2	No data provided by any of 2 countries												
AF72	Rift Aquifer	19	510	3	2	No data provided by any of 3 countries												
AF73	Mereb	34	3800	4	2	1	1	0	0	2	1	0	0	1	1			
AF74	Argal	3.7	96	3	2	Not included in TWAP-Groundwater												
AF75	Ain Beni Mobar*	15	67	2	2	2	2	0	0	2	2	0	0	2	2			
AF76	Chatt Tigr-Lakeuta	2.9	13	2	2	Not included in TWAP-Groundwater												
AF77	Figuig	1.2	3.7	2	2	Not included in TWAP-Groundwater												
AF78	Jbel El Hara	0.64	21	3	2	Not included in TWAP-Groundwater												
AF79	Système Aquifère de la Dyffara*	13	520	3	2	2	2	0	0	2	2	1	2	0	1			
AF80	Trifir*	9.3	840	3	2	2	0	0	0	3	2	0	2	2	2			
AF81	Aquifère Carier	41	2600	3	4	No data provided by any of 4 countries												
AF82	AF82	17	88	2	3	No data provided by any of 2 countries												
AF83	Aquifère du Rih	40	7900	4	5	0	0	1	0	5	0	0	0	1	1			
AF88	Aquifère extension Sud-Est de Tasudeni	300	13000	3	3	2	0	0	0	3	2	0	1	2	2	X		

(1) Surface area in 1000 km² (calculated based on: (GRAC and UNESCO-IMP, 2016)); (2) Population in 1000 persons/km² (calculated based on: GRAC and UNESCO-IMP, 2016) and (CEH and CIAT, 2010)); (3) Population density: 1. Very low (< 1 p/km²); 2. Low (1–10 p/km²); 3. Medium (10–100 p/km²); 4. High (> 100 p/km²); No. of CS: No of countries sharing TBA; TWAP: no. of country segments with indicators; Quan: Groundwater quantity indicators; 1.1: Mean annual groundwater recharge; 3.1: Groundwater depletion; Qual: Groundwater quality indicators; 1.3: Groundwater natural background quality; 3.2: Groundwater pollution; Soc.-Econ: Socio-economic indicators; 4.1: Population density; 1.2: Renewable groundwater per capita; 2.1: Human dependence on groundwater; 4.2: Groundwater development stress; L&I: Legal and institutional indicators; 5.1: Transboundary legal framework; 5.2: Transboundary institutional framework; TBA Specific: A: X: TBA specific assessment/research undertaken in an international context. (X): in preparation; M: X: Monitoring of groundwater in place in an international context. (X): in preparation; G: X: Governance framework existing Agreement and/or some form of formalized TBA specific cooperation in place. Source: Conti (2017), ORASCOM (2017); (X): in preparation. *): TBAs for which TWAP-Groundwater data and indicators are not available at country segment level, but only at TBA-level.

Note: There are currently 72 known TBAs in Africa, despite the highest TBA code being AF88. Over time TBAs have been merged, redefined or were taken off the map, resulting in some obsolete TBA codes (e.g. AF28 no longer exists). The TWAP included 64 of the TBAs in Africa.

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I.3 – What Kind of Citizen? The Politics of Educating for Democracy

WHAT KIND OF CITIZEN? THE POLITICS OF EDUCATING FOR DEMOCRACY

Joel Westheimer
University of Ottawa

Joseph Kahne
Mills College

Educators and policymakers are increasingly pursuing programs that aim to strengthen democracy through civic education, service learning, and other pedagogies. The nature of their underlying beliefs, however, differ. "What Kind of Citizen?" calls attention to the spectrum of ideas represented in education programs about what good citizenship is and what good citizens do. Our arguments derive from an analysis of both democratic theory and a two-year study of educational programs that aim to promote democracy. We detail three conceptions of the "good" citizen—personally responsible, participatory, and justice oriented—that underscore political implications of education for democracy. We demonstrate that the narrow and often ideologically conservative conception of citizenship embedded in many current efforts at teaching for democracy reflects not arbitrary choices but rather political choices with political consequences.

The notion of democracy occupies a privileged place in our society. Everyone believes democracy is desirable. Indeed, educators, policymakers, politicians, and community activists alike pursue dozens of agendas for change under the banner of furthering democracy. The nature of their underlying beliefs, however, differ. We titled this article "What Kind of Citizen?" to call attention to the spectrum of ideas about what good citizenship is and what good citizens do that are embodied by democratic education programs nationwide. We added the subtitle "The Politics of Education for Democracy" to underscore our belief that the narrow and often ideologically conservative conception of citizenship embedded in many current efforts at teaching for democracy reflects neither arbitrary choices nor pedagogical limitations but rather political choices with political consequences.

In what follows, we examine the politics of educating for democracy. Specifically, we draw on our two-year study of ten programs that aimed to advance the democratic purposes of education. We begin by detailing three conceptions of citizenship (personally responsible, participatory, and justice oriented) that emerged from our analysis of democratic theory and program goals and practices. We then discuss some of the potentially significant political implications of these differing conceptions. The bulk of our empirical work describes two of the ten programs we studied. One program aimed to advance participatory citizens and the other justice oriented citizens. Our data—both quantitative and qualitative—demonstrates that the

decisions educators make when designing and researching these programs often influence politically important outcomes regarding the ways students understand the strengths and weaknesses of our society and the ways that they should act as citizens in a democracy.

What Kind of Citizen?

Philosophers, historians and political scientists have long debated which conceptions of citizenship would best advance democracy (see, for example, Kaestle, 2000; Smith, 1997; Schudson, 1998). Indeed, as Connolly (1983) has argued, conceptions of democracy and citizenship have been and will likely always be debated – no single formulation will triumph. The work of John Dewey, for example, which has probably done the most to shape dialogues on education and democracy, has not led to resolution. Rather, scholars and practitioners have interpreted his ideas in multiple ways, so no single conception emerges. In large part, this diversity of perspectives occurs because the stakes are so high. Conceptions of “good citizenship” imply conceptions of the good society.

The diverse perspectives on citizenship also have significantly different implications for curriculum. For example, Walter Parker (1996) describes three very different conceptions of citizen education for a democratic society: “traditional,” “progressive,” and “advanced.” He explains that traditionalists emphasize an understanding of how government works (how a bill becomes a law, for example) and traditional subject area content as well as commitments to core democratic values – such as freedom of speech or liberty in general (see, for example, Butts, 1988). Progressives share a similar commitment to this knowledge, but they embrace visions like “strong democracy” (Barber, 1984) and place a greater emphasis on civic participation in its numerous forms (see, for example, Neumann, 1975; Hannah, 1936). Finally, “advanced” citizenship, according to Parker, is one that builds on the progressive perspective but adds careful attention to inherent tensions between pluralism and assimilation or to what Charles Taylor, labels the “politics of recognition” (1994, cited in Parker).

Other writers, frequently those on the left, place a greater emphasis on the need for social critique and structural change (Shor, 1992; Friere, 1970). Alternatively, those with an often conservative vision of citizenship education put forward a connection between citizenship and character (Bennett, 1995; 1998; Bennett, Cribb, & Finn, 1999). Rather than viewing problems in need of attention as structural, they emphasize problems in society caused by personal deficits. Some educators reflect the liberal vision of citizenship embedded in John Rawls’ (1971) writings, aiming, for example, to recognize the varied perspectives of the good that exist in a pluralistic society. What citizens require, in this view, is preparation for a society characterized by “durable pluralism” (see Strike, 1999). Still other visions emphasize preparing informed voters, preparing individuals for public deliberation, and preparing students to critically analyze social policies and priorities. Indeed, there exists a vast and valuable array of perspectives on the kinds of citizens democracies require and the kinds of curricula that can help to achieve these aims (see, for example, Callan, 1997; Fine, 1995; Gutmann, 1986; Soder et al., 2001; Youniss & Yates, 1997).

The particular framework we provide below was selected in order to highlight several important political dimensions of efforts to educate citizens for democracy. Our description of three “kinds of citizens” is not intended to be exhaustive. In addition, while we detail strategies related to these goals elsewhere (Kahne & Westheimer, 2003 and Westheimer & Kahne, 2002) the focus of this study is less about different strategies educators use to get to a particular democratic destination than about the varied conceptions of the destination itself, thus our focus: what kind of citizen?

Three Kinds of Citizens

Our framework aims to order some of these perspectives by grouping three differing kinds of answers to a question that is of central importance for both practitioners and scholars: *What kind of citizen do we need to support an effective democratic society?* In mapping the terrain that surrounds answers to this question, we found that three visions of "citizenship" were particularly helpful in making sense of the variation: the *personally responsible citizen*; the *participatory citizen*; and the *justice oriented citizen* (see Table 1).

These three categories were chosen because they satisfied our three main criteria: 1) they aligned well with prominent theoretical perspectives described above, 2) they highlight important differences in the ways educators conceive of democratic educational aims; that is, they frame distinctions that have significant implications for the politics of education for democracy, and 3) they articulate ideas and ideals that resonate with practitioners (teachers, administrators, and curriculum designers). To that end, we consulted with both the 10 teams of educators whose work we studied and with other leaders in the field in an effort to create categories and descriptions that aligned well with and communicated clearly their differing priorities.

Each vision of citizenship, therefore, reflects a relatively distinct set of theoretical and curricular goals. These visions are not cumulative. Programs that promote justice oriented citizens do not necessarily promote personal responsibility and participatory citizenship. In saying this, we do not mean to imply that a given program might not simultaneously further more than one of these agendas. For instance, while a curriculum designed principally to promote personally responsible citizens will generally look quite different than one that focuses primarily on developing capacities and commitments for participatory citizenship, it is possible for a given curriculum to further both goals. At the same time that such overlap may occur, we believe that drawing attention to the distinctions between these visions of citizenship is important. It highlights the value of examining the underlying goals and assumptions that drive different educational programs.

The Personally Responsible Citizen

The *personally responsible citizen* acts responsibly in his/her community by, for example, picking up litter, giving blood, recycling, obeying laws, and staying out of debt. The personally responsible citizen contributes to food or clothing drives when asked and volunteers to help those less fortunate whether in a soup kitchen or a senior center. Programs that seek to develop personally responsible citizens hope to build character and personal responsibility by emphasizing honesty, integrity, self-discipline, and hard work (Horace Mann, 1838; and currently proponents such as Lickona, 1993; Wynne, 1986).

Those in the character education movement frequently advance such perspectives. The Character Counts! Coalition, for example, advocates teaching students to "treat others with respect...deal peacefully with anger...be considerate of the feelings of others...follow the Golden Rule...use good manners" and so on (Character Counts!, 1996). Other programs that seek to develop personally responsible citizens hope to nurture compassion by engaging students in volunteer activities. As illustrated in the mission of the Points of Light Foundation, these programs hope to "help solve serious social problems" by "engag[ing] more people more effectively in volunteer service" (www.pointsoflight.org, April 2000).

The Participatory Citizen

Other educators see good citizens as those who actively participate in the civic affairs and the social life of the community at local, state, and national levels. We call this kind of citizen the *participatory citizen*. Proponents of this vision emphasize preparing students to engage in collective, community-based efforts. Educational programs designed to support the development of participatory citizens focus on teaching students about how government and community based organizations work and about the importance of planning and participating in organized efforts to care for those in need, for example, or in efforts to guide school policies. Skills associated with such collective endeavors—such as how to run a meeting—are also viewed as important (Newmann, 1975; also see Verba, et al., 1995 for an empirical analysis of the importance of such skills and activities). While the personally responsible citizen would contribute cans of food for the homeless, the participatory citizen might organize the food drive.

In the tradition of De Tocqueville, proponents of participatory citizenship argue that civic participation transcends particular community problems or opportunities. It also develops relationships, common understandings, trust, and collective commitments. Dewey (1916) put forward a vision of “Democracy as a Way of Life” and emphasized participation in collective endeavors. This perspective, like Benjamin Barber’s notion of “strong democracy,” adopts a broad notion of the political sphere – one in which citizens “with competing but overlapping interests can contrive to live together communally” (1984, 118).

[See Table 1]

The Justice Oriented Citizen

Our third image of a good citizen is, perhaps, the perspective that is least commonly pursued. Justice oriented educators argue that effective democratic citizens need opportunities to analyze and understand the interplay of social, economic, and political forces. We refer to this view as the justice oriented citizen because advocates of these priorities use rhetoric and analysis that calls explicit attention to matters of injustice and to the importance of pursuing social justice.² The vision of the justice oriented citizen shares with the vision of the participatory citizen an emphasis on collective work related to the life and issues of the community. Its focus on responding to social problems and to structural critique make it somewhat different, however. Building on perspectives like those of Freire and Shor noted earlier, educational programs that emphasize social change seek to prepare students to improve society by critically analyzing and addressing social issues and injustices. These programs are less likely to emphasize the need for charity and volunteerism as ends in themselves and more likely to teach about social movements and how to effect systemic change (See, for example, Ayers, 1998; Bigelow and Diamond, 1988; Issac, 1995). That today’s citizens are “bowling alone” (Putnam, 2000) would worry those focused on civic participation. Those who emphasize social justice, however, would worry more that when citizens do get together, they often fail to focus on root causes of problems. In other words, if participatory citizens are organizing the food drive and personally responsible citizens are donating food, justice oriented citizens are asking why people are hungry and acting on what they discover.

Although educators aiming to promote justice oriented citizens may well employ curriculum that makes political issues more explicit than those who emphasize personal responsibility or participatory citizenship, the focus on social change and social justice does not

imply an emphasis on particular political perspectives, conclusions, or priorities. (The range of structural approaches for alleviating poverty that exist, for example, spans the political spectrum.) Indeed, those working to prepare justice oriented citizens for a democracy do not aim to impart a fixed set of truths or critiques regarding the structure of the society.⁴ Rather, they work to engage students in informed analysis and discussion regarding social, political, and economic structures. They want students to consider collective strategies for change that challenge injustice and, when possible, address root causes of problems. The nature of this discussion is of critical importance. As many theorists of democracy make clear, it is fundamentally important that the process respect the varied voices and priorities of citizens while considering the evidence of experts, the analysis of government leaders or the particular preferences of a given group or of an individual leader. Similarly, students must learn to weigh the varied opinions and arguments of fellow students and teachers. Since conceptions of the greater good will differ, justice oriented students must develop the ability to communicate with and learn from those who hold different perspectives. This is not to say that consensus is always the appropriate outcome. Educating justice oriented citizens also requires that they be prepared to effectively promote their goals as individuals and groups in sometimes contentious political arenas.

The Limits of Personal Responsibility

Among competing conceptions of democratic values and citizenship, personal responsibility receives the most attention. This is especially true of the character education and community service movements, both of which are well-funded efforts to bring about these particular kinds of reforms. We find this emphasis an inadequate response to the challenges of educating a democratic citizenry. The limits of character education and of volunteerism and the conservative political orientation reflected in many of these efforts have been addressed elsewhere in some detail so we simply summarize them here. Critics note that the emphasis placed on individual character and behavior obscures the need for collective and often public sector initiatives; that this emphasis distracts attention from analysis of the causes of social problems and from systemic solutions; that volunteerism and kindness are put forward as ways of avoiding politics and policy (Barber, 1992; Boyte, 1991; Westheimer and Kahne, 2000; Kahne and Westheimer, 1996).

As a way of illustrating what we see as the limitations of personally responsible citizenship as it is commonly practiced in school-based programs, recall the central tenets of the Character Counts! Coalition. Certainly honesty, integrity, and responsibility for one's actions are valuable character traits for good neighbors and citizens. We are not arguing that personal responsibility or related virtuous behavior is unimportant. Similarly, in most circumstances, obeying laws that flow from democratic structures such as legislatures is essential. Such traits have the potential to strengthen a democracy by fostering social trust and willingness to commit to collective efforts, for example.⁵ There are a host of reasons that extend beyond our focus on democratic citizenship that could be used to justify efforts by educators to foster personal responsibility—trustworthy, helpful, hard working, and pleasant students. No one wants young people to lie, cheat, and steal.

At the same time, those visions of obedience and patriotism that are often and increasingly associated with this agenda can be at odds with democratic goals. And even the widely accepted goals—fostering honesty, good neighborliness, and so on—are not *inherently* about democracy. Indeed, government leaders in a totalitarian regime would be as delighted as

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leaders in a democracy if their young citizens learned the lessons put forward by many of the proponents of personally responsible citizenship: don't do drugs; show up to school; show up to work; give blood; help others during a flood; recycle; pick up litter; clean up a park; treat old people with respect. These are desirable traits for people living in a community. But they are not about democratic citizenship. To the extent that emphasis on these character traits detract from other important democratic priorities, they may actually hinder rather than make possible democratic participation and change. For example, a focus on loyalty or obedience (common components of character education as well) works against the kind of critical reflection and action many assume are essential in a democratic society.

Data regarding the way young people often think about their civic responsibilities, reinforces our concern regarding an exclusive focus on personally responsible citizenship. A study commissioned by the National Association of Secretaries of State (1999) found that less than 32 percent of eligible voters between the ages of 18 and 24 voted in the 1996 presidential election (in 1972, the comparable number was 50 percent), but that a whopping 94 percent of those aged 15-24 believed that "the most important thing I can do as a citizen is to help others" (also see Sax, et al., 1999). In a very real sense, youth seem to be "learning" that citizenship does not require democratic governments, politics, or even collective endeavors.

Research and evaluation of educational programs also frequently reflect this conservative and individualistic conception of personally responsible citizenship. Studies commonly ask participants, for example, whether they feel it is their responsibility to take care of those in need and whether problems of pollution and toxic waste are "everyone's responsibility" or "not my responsibility." They rarely ask questions about corporate responsibility—in what ways industries should be regulated, for example—or about ways government policies can advance or hinder solutions to social problems. Survey questions typically emphasize individual and charitable acts. They ignore important influences like social movements and government policy on efforts to improve society. Educators who seek to teach personally responsible citizenship and researchers who study their programs focus on individual acts of compassion and kindness, not on collective social action and the pursuit of social justice (Kahne, Westheimer, and Rogers, 2000).

Pursuit of Participatory and Justice-Oriented Citizens

Often, democratic theorists blend commitments to participation with commitments to justice. For example, Benjamin Barber's "strong democracy" focuses on forms of civic engagement that are "persuasively progressive and democratic...useful especially to those who are partisans of democratic struggle and social justice" (1998, 10). Similarly, Boyte and Kari (1996) invoke the populist tradition and emphasize the need to recognize the talent, intelligence, and capacities of ordinary people by engaging them in collective civic projects. They stress the importance of forms of civic participation that have historically been used to pursue social justice showcasing, for example, the work of civil rights activists who used nonviolent actions of civil disobedience.

From the standpoint of supporting the development of democratic communities, combining these commitments is rational. Developing commitments for civic participation and social justice as well as fostering the capacities to fulfill these commitments will support the development of a more democratic society. We should be wary of assuming that commitments to participatory citizenship and to justice necessarily align, however. These two orientations have potentially differing implications for educators. While pursuit of both goals may well support

development of a more democratic society, it is not clear whether making advances along one dimension will necessarily further progress on the other. Do programs that support civic participation necessarily promote students' capacities for critical analysis and social change? Conversely, does focusing on social justice provide the foundation for effective and committed civic actors? Or might such programs support the development of armchair activists who have articulate conversations over coffee, without ever acting? We now turn to these questions.

Our empirical investigation of this topic focuses on the subtle and not so subtle differences between programs that emphasize participation and those that emphasize justice. We focus this part of our discussion on goals of participatory and justice-oriented citizenship for two reasons. First, due to shortcomings of the personally responsible model as a means of developing citizens, none of the programs funded by the foundation that supported our study emphasized this approach. Moreover, as noted earlier, a significant body of work already addresses the conflicts and limitations of equating personal responsibility with democratic citizenship.

Below, we describe two of the programs we studied to draw attention to the differences in their civic and democratic priorities and to the tensions these differences raise for educators. Both programs worked with classes of high school students and both initiatives were designed to support the development of democratic and civic understandings and commitments. But their goals and strategies differed. The first, which we call Madison County Youth in Public Service, aims to develop participatory citizens; the second, which we call Bayside Students for Justice, aims to develop justice-oriented citizens.

Method

Sample

This paper focuses on data from two of the ten programs we studied as part of the Surdna Foundation's Democratic Values Initiative. The first, "Madison County Youth in Public Service," was located in a suburban/rural East Coast community outside a city of roughly 23,000 people. Two teachers were involved in this project, one from each of the county's high schools. Although we were not able to collect reports on students' ethnicity, teachers characterized the student population as almost entirely European American (with a few recent immigrants). An estimated three percent of the schools' students are persons of color. Each year, the teachers worked with one of their government classes, so over two years, four classes participated. Students needed to request to participate in this version of the 12th grade government class, and teachers characterized participants as slightly better than average in terms of academic background. Students who enrolled in the Advanced Placement government course could not participate. More girls (59 percent) than boys (41 percent) participated.

The second program, "Bayside Students For Justice," was a curriculum developed as part of a 12th grade Social Studies course for low-achieving students in a comprehensive urban high school on the west coast. The student population is typical of west coast city schools: a total of 25 students took part in the program, and 21 of them completed both pre and post surveys; of those taking the survey, 13 were female (62%) and 8 male (38%), 8 were African American (38%), 1 was Caucasian (5%), 8 were Asian or Pacific Islander (38%), 1 was Latino (5%), and 3 identified themselves as "Other" (10%). The group tested roughly at national norms and was relatively low-income with 40 percent living in public housing (data provided by the instructor).

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Procedures

Our study employs a mixed-methods approach – it combines qualitative data from observations and interviews with quantitative analysis of pre/post survey data. Our rationale for adopting a mixed-methods approach reflects what Lois-ellin Datta (1997) has labeled “the pragmatic basis” for mixed-method designs. That is, we employed the combination of methods we felt were best suited to our inquiry – the methods that would best enable us to gain insight and to communicate what we learned to relevant audiences (also see Patton, 1988).

At all 10 sites in our study, we collected four forms of data: observations, interviews, surveys, and documents prepared by program staff. Each year, our observations took place over a two to three day period in classrooms and at service sites. Over the two years of the study, we interviewed 61 students from “Madison County” (close to all participating students, in groups of 3 or 4). We interviewed 23 students from “Bayside” (either individually or in groups of 2 to 3). We aimed for a cross section of students in terms of academic ability, enthusiasm for the program, and gender. We also interviewed at least three staff members for each program towards the end of each year. Interviews lasted between 20 and 45 minutes and all interviews were both taped and transcribed. Finally, we conducted pre and post surveys of all participating students in September and June. In the case of Madison County Youth In Public Service, we studied the same program for two years⁸. Bayside’s program changed significantly after the first year of operation, and so it did not make sense to merge the data from years one and two. In this paper, we report data only from the second year.⁹ To receive feedback and as a check on our interpretations, we shared analysis on our quantitative and qualitative findings with those who ran the programs.

Measures and Analysis

Survey items were selected in an effort to assess capacities and orientations related to aspects of the three kinds of citizenship we identified. We also included several measures associated with students’ civic orientation and capacities: civic efficacy, vision, leadership efficacy, desire to volunteer in the future, knowledge/social capital for community development, following news stories, views on government responsibility for those in need, and employer responsibility for employees¹⁰. Together, these measures helped us see differences across programs in democratic orientation and capacities that they promoted¹¹.

The interviews and observations were designed to help us clarify students’ beliefs regarding what it means to be a good citizen and ways features of the curriculum may have affected those perspectives. We asked participants to identify and discuss particular social issues that are important to them and to community members. We encouraged them to describe their perspective on the nature of these problems, their causes, and possible ways of responding. Did they emphasize individual morality, the need for civic participation, a focus on challenging structures or social inequities? Next we asked participants to describe any ways their participation in the given program might have altered their attitudes, knowledge, or skills in relation to these issues.

We asked similar questions of teachers. We wanted to understand their priorities, their conception of responsible and effective citizenship, their perspective on civic education, their strategies, and the ways these approaches did and did not appear to be working. During these interviews we encouraged students and instructors to talk about specific “critical incidents” so that we could better understand the curricular components that promoted varied forms of development. Our methods here were informed by critical incident interviewing techniques (see Flanagan, 1954).

The analysis of interview and observation data occurred throughout data collection as well as after data collection was complete and followed the process described by Strauss (1990) as the "constant comparative method." This iterative process occurred through reflective and analytical memos between the researchers as well as the ongoing coding of field notes. In particular, we analyzed the interviews for recurring themes and patterns regarding student and teacher perceptions of how participation had affected students' beliefs regarding citizenship and democratic values. We also asked teachers to reflect on our observations not only to test the accuracy of statements but also to re-examine perceptions and conclusions, drawing on their insider knowledge.¹²

Authors' Predispositions

Given the ideological nature of the content of our inquiry, it makes sense for us to be explicit about our own perspectives with regard to personally responsible citizenship, participatory citizenship, and justice oriented citizenship. We think each vision has merit. However, although we value character traits such as honesty, diligence, and compassion, for reasons already discussed, we find the exclusive emphasis on personally responsible citizenship when estranged from analysis of social, political, and economic contexts (as it frequently is in practice) inadequate for advancing democracy. There is nothing inherently democratic about the traits of a personally responsible citizen and there are practices at times specifically undemocratic associated with programs that rely exclusively on notions of personal responsibility.

From our perspective, traits associated with participatory and justice oriented citizens, on the other hand, are essential. Not every program needs to simultaneously address all goals to be of value. But educators must attend to these priorities if schools are to prepare citizens for democracy.

Developing Participatory Citizens: Madison County Youth In Public Service

Madison County Youth in Public Service is run by two social studies teachers in a rural East Coast community. The idea for Youth in Public Service came to one of the teachers after she had attended a speech by Benjamin Barber about the importance of engaging students in public life. These teachers (one a twenty-year veteran and the other a second year teacher) taught a condensed and intensified version of a standard government course during the first semester of the academic year. For the second semester, they developed a service learning curriculum. Students focused on particular topics related to their government curriculum as they worked in small teams on public service projects in their county's administrative offices. Their goal, as one teacher explained, "is to produce kids that are active citizens in our community... kids that won't be afraid to go out and take part in their community... kids that understand that you have to have factual evidence to backup anything you say, anything you do."

One group of students investigated whether citizens in their community wanted curbside trash pickup that was organized by the county. They conducted phone interviews, undertook a cost analysis, and examined charts of projected housing growth to estimate growth in trash and its cost and environmental implications. Another group identified jobs that prisoners incarcerated for fewer than 90 days could perform and analyzed the cost of similar programs in other localities. Other students helped to develop a five-year plan for the fire and rescue department. For each project, students had to collect and analyze data, interact with

government agencies, write a report, and present their findings in a formal hearing before the county's Board of Supervisors.

The teachers of Youth in Public Service believed that placing students in internships where they worked on meaningful projects under the supervision of committed role models would:

- teach students how government worked;
- help students recognize the importance of being actively involved in community issues; and
- provide students with the skills required for effective and informed civic involvement.

As we discuss below, Madison County Youth In Public Service was quite successful at achieving many of these goals.

Making Civic Education Meaningful

Our interviews, observations, and survey data all indicated that the experience working in the local community had a significant impact on students, especially as it compared to traditional class work. Janine's reaction was typical:

I learned more by doing this than I would just sitting in a classroom. ... I mean, you really don't have hands-on activities in a classroom. But when you go out [to the public agencies] instead of getting to read about problems, we see the problems. Instead of, you know, writing down a solution, we make a solution.

Teresa, another student, said:

I kind of felt like everything that we had been taught in class, how the whole government works. ... We got to learn it and we got to go out and experience it. We saw things happening in front of us within the agency. I think it was more useful to put it together and see it happening instead of just reading from a book and learning from it.

Not only did the activities in the community help to enliven classroom learning, but many of the students' projects also tangibly affected the local community. Indeed, students talked about the powerful impact of realizing that what they did would or could make a difference:

I thought it was just going to be another project. You know, we do some research, it gets written down and we leave and it gets put on the shelf somewhere. But in five years, this [curbside recycling] is going to be a real thing. ... It's really going to happen.

I didn't expect [our work] to have such an impact. ... I mean, we've been in the newspaper, like, a lot.

By engaging students in projects in the community, Madison County Youth in Public Service had significant success making learning relevant to students, conveying practical knowledge about how to engage in community affairs, and demonstrating to students the ways classroom-based academic knowledge can be used for civic work in the community.

Making a Difference in the Lives of Others

The curriculum also developed students' desire to participate in civic affairs and a sense that they can make a difference in the lives of others. When asked about how the program influenced their thinking, most students talked about how the experience deepened their belief in the importance of civic involvement. Emily, for example, spoke about the difference between talking about a problem and doing something active:

Everyone needs to do their part if they want something to be done... In politics, the people always say their opinions and get mad about his and that but then they never do anything about what they feel... This [experience] makes me feel like you have to do your part.

Moreover, many students reported a strong sense that they could get things done if they tried:

We're just kids to most people, and I kind of figured that those people wouldn't really give us the time of day [but] they were always willing to help us.

I realized there's a lot more to government than being a senator or a representative. There's so many different things you can do for the [community] that aren't as high up.

Students also reported excitement at the prospect of getting involved in ways they did not know were available to them before their experience with the Youth in Public Service program:

I didn't know that [the sheriff's office] had meetings all the time... It makes me think that I'll go to them when I get older.

I think if more people were aware of [ways they could participate] we wouldn't have as many problems, because they would understand that... people do have an impact. But I think in our community... people just don't seem to think that they will, so they don't even try.

Our survey results help to further illustrate many of these effects. Student responses to questions asked on a five point Likert scale indicated statistically significant ($p < .05$) changes in pre- to post-test raw scores on several measures related to civic participation. As detailed in Table 2, students expressed a greater belief that they had a personal responsibility to help others (+0.21), a greater belief that government should help those in need (+0.24), a stronger sense that they could be effective leaders (+0.31), and an increased sense of agency—a sense that they could make a difference in their communities (+0.24). Students also reported that they had a greater commitment to community involvement (this increase, +0.19, was marginally significant with $p = .06$).

The robust nature of these results became clearer during the second year because a control group was also surveyed. This group had similar academic skills and were taught by the



same two teachers. We used t-tests to examine whether the gains noted above for the students that participated in the Madison County program were different than those that occurred in the control classrooms. For six of the seven measures on which Madison County students registered statistically significant gains, we found a statistically significant ($P < .05$) difference between the gains of the students in the Madison County program and those in the control classrooms¹¹. This, combined with the fact that the control group did not show statistically significant changes on any survey measures, adds to our confidence that the Madison County curriculum supported student development in ways consistent with a vision of participatory citizenship.

[See Tables 2 and 3]

A Vision of What to Do and the Knowledge and Skills Needed to Do It

Students consistently spoke of the needs in their community and of their ideas about how to address these needs. The group of students investigating curb-side trash pickup, for example, conducted surveys of community residents, researched other communities' recycling programs, met with County officials about their plan, and wrote letters to the editors of local newspapers. "We researched the Code of [Madison] County to find out, you know, the legal requirements," one student explained. Another group discovered that child immunization rates were low in their community and worked with the Health Department to develop ways to encourage parents to have their children immunized.



[We] worked on the computer a lot, putting records in, trying to find percentages [of children immunized] for the counties around us... We talked about outreach programs and stuff like that. We're basically trying to let parents know.

Other groups learned how to analyze the tax code, phoning the Commissioner of Revenue's office when they needed information or explanations; or wrote grants to raise money for student resources; or traveled to the state attorney's office to get information on crime rates in schools before surveying faculty and students.

The quantitative findings (see Table 2) demonstrated the gains in students' vision and sense of capacity for community engagement as well. Responses on Likert scales indicated increases in students' vision of how to help others (+0.30) and in their belief that they had knowledge and the "social capital" needed to support community development (+ 0.94, the greatest gain). The control groups showed no significant change in these measures.

The Politics of Participatory Citizenship

The Youth in Public Service program aimed to promote civic participation consistent with a vision of participatory citizenship, to link service to academic content, and to provide a meaningful research experience. We found the program to be notable for its success in these areas. But the program did not aim to foster the justice-oriented citizen's understanding of structural or root causes of problems. While students did study controversial topics—requiring prisoners to work for small or no earnings, for example, or evaluating a detention center for

juveniles—they did not consider structural issues or questions of systemic injustice. They did not examine data regarding the relationship between race, social class, and prison sentencing or question whether increased incarceration has lowered crime rates. They did not examine whether incarcerating juveniles (as opposed to other possible policies) increases or decreases the likelihood of future criminal activity or investigate which groups lobby for tougher or less strict sentencing laws. Nor did they identify or discuss the diverse ideologies that inform political stances on such issues. Similarly, the group of students who examined their County's tax structure to identify possible ways to finance needed school construction conducted a survey to find out residents' preferences. They found out that 108 of 121 residents said "no" to the idea of a local income tax. These students did not discuss the reasons so many residents oppose a local income tax or examine issues of equity when considering alternative options for taxation.

Students said they learned a great deal about micro-politics such as how different government offices compete for funding, why collaboration between county offices is sometimes difficult, and how to make things happen. However, teachers avoided broader, ideologically-based political issues. One group of students, for example, conducted research for the County Voter Registrar. Their plan was to survey Department of Motor Vehicles' customers to find out how the process could be improved. They struggled for more than a month to get permission from the DMV to conduct this survey. They were unable to make any progress until they contacted their state representative. Their request was then approved. As a student explained, "I basically learned about how our government works and who has pull." While valuable, their exploration did not consider the ways interest group and party politics have influenced voter registration policies. Students were not asked why some groups opposed practices that would ease the voter registration process.

In general, we did not find evidence in student interviews, our observations, or our analysis of survey data that student projects and associated analysis examined ideological and political issues related to interest groups and the political process, the causes of poverty, different groups' access to health care, or the fairness of different systems of taxation (even though two projects focused on issues related to health care and taxation). Students focused on particular programs and policies and aimed for technocratic/value neutral analysis.

Accordingly, survey data (see Table 2) did not indicate significant increases in measures related to justice oriented citizenship. The program did not appear to alter students' stated interest in politics or political activity (voting, writing letters) or affect their stated commitment to work for justice. Nor did it alter their perspective on the degree to which structural rather than individual factors might contribute to poverty.

These findings are consistent with the stated goals of those who run the program. When asked to list characteristics of a "good citizen," program leaders cited qualities such as "honesty," "civic participation," "takes responsibility for others," "becomes involved in solving public problems," "active participant rather than passive," "educated about democracy, makes decisions based on facts," and "loyalty to God/Country." To summarize, then, neither the goals of the teachers who developed and taught the Youth in Public Service curriculum nor the outcomes we measured included changes in students' interest in politics, their perspective on structural roots of social problems or their commitment to social justice.

Developing Justice Oriented Citizens: Bayside Students For Justice

In a comprehensive urban high school on the West Coast, a group of teachers developed the Bayside Students for Justice curriculum as part of a multi-school program tying school-based academic work to educational experiences in the community. Inspired by the United Nations' Declaration of Human Rights, these teachers implemented the Students for Justice curriculum with students diverse in ethnicity, language, and socioeconomic status, 40 percent of whom were living in public housing (see Methods section for complete demographics).

Bayside Students for Justice aimed to develop community activists. As one of the teachers for this program put it, "My goal is to turn students into activists [who are] empowered to focus on things that they care about in their own lives and to...show them avenues that they can use to achieve real social change, profound social change." The program advanced a justice oriented vision of citizenship seeking to teach students how to address structural issues of inequity and injustice and bring about social change. A program developer explained that:

A good citizen actively organizes with other people [to address] causes of injustice and suffering....A good citizen understands the complexities of social issues, political issues, and economic issues, and how they are tied together, and is not always willing to accept the definition of a problem as presented to them by politicians.

Some students in Bayside Students for Justice studied whether SAT exams are biased and created a pamphlet pointing out the weaknesses of the test in adequately predicting future student success in college. They distributed the pamphlet to the school and surrounding community. Another group examined child labor practices worldwide and the social, political, and economic issues these practices raise. These students held school-wide forums on their findings in an effort to inform students—many of whom wear the designer clothes and shoes manufactured by the corporations that the group investigated—of the child labor practices of these corporations. They also called on school officials to be aware of the labor practices employed by manufacturers from which the school purchased T-shirts and athletic uniforms. Jason's observation—typical of students interviewed about their experience—reflects the program's emphasis on justice: "It's amazing how all this exploitation is all around us and stuff, I mean we are even wearing clothes and we don't have [any] idea who makes them, how much they're paid, or where they work." A third group investigated what they found to be a dearth of adequate education programs in juvenile detention centers, eventually making a video to publicize their findings. In a presentation to the school, this group reported that "Instead of buying books, they used money to put bars on windows [that] don't even open." "We wanted to show that not all the kids in there are that bad," one of the students said. "If our youth is the future of our country, then we'd better take care of [them] even if they're in trouble."

The teachers of the Bayside Students for Justice program believed that having students seek out and address areas of injustice in society would:

- sensitize students to the diverse needs and perspectives of fellow citizens
- teach students to recognize injustice and critically assess root causes of social problems; and
- provide students with an understanding of how to change established systems and structures.

Bayside Students for Justice, like Madison County, was successful in meeting many of the curriculum planners' stated goals. Bayside students, for example, also noted the importance of making their classroom learning meaningful. One Bayside Students for Justice class member reported that "I don't like to learn just by reading because it goes in one ear and out the other; but in this class we can really make a difference." Others noted that: "This class was more exciting because it was more real," "We were out there instead of just with our heads in the books," and "I liked feeling like we could do something positive." Ayisha spoke about the connection this way: "Before this experience, I thought school was just about passing this test or that test...Now I finally see [that] you can use your knowledge of history to make a better world." Also, like their Madison County counterparts, Bayside students indicated an increased sense of civic efficacy (+0.47) likely owing to their experiences in the community, and an increased belief that government had a responsibility to help those in need (+0.29).

But while the Bayside and Madison County curricular experiences shared a number of features, other aspects of the curriculum, the goals, and the impact on students differed significantly. For example, survey results from Bayside reflected the program's emphasis on critical social analysis and on understanding political forces that affect social policy (see Table 3). Students reported significant increases on items measuring students' ability to consider structural explanations for poverty (+0.28) and on their interest in politics and political issues (+0.33) – scales on which Youth In Public Service students showed no change. Conversely, Bayside students did not demonstrate gains in their knowledge about particular community groups or about the technical challenges and possibilities associated with particular policies and initiatives while the Youth in Public Service students showed evidence of progress in these areas. Students who participated in Madison County Youth In Public Service reported statistically significant ($p < .05$) gains on survey items linked to leadership skills, vision, and knowledge related to civic participation (as well as in their sense of personal responsibility to help others) while Bayside students did not.

Our case study of Bayside helps us understand the reasons for these different outcomes. Specifically, at the center of Bayside's approach were commitments to critical and structural social analysis, to making the personal political, and to collective responsibility for action.

Critical and Structural Social Analysis

The class that best illustrates Bayside Students for Justice's focus on critical analysis and social critique was the one led by Nadia Franciscone, a veteran social studies teachers and one of the Bayside Students For Justice founders. Ms. Franciscone's sees an understanding of social justice as an essential component of informed citizenship. Adorning her classroom walls are several posters with quotations from well-known educators, religious leaders, and social critics. Bishop Dom Helder Camara: "When I give food to the poor, they call me a saint. When I ask why the poor have no food, they call me a communist." Paulo Freire: "Washing one's hands of the conflict between the powerful and the powerless means to side with the powerful not to be neutral."

Ms. Franciscone had her students study a variety of manifestations of violence in their community, including domestic violence, child abuse, and gang violence. They arrived at this choice through a process in which the teacher had them "map" their communities (to gain a sense of what issues affected their own lives and the lives of others) and write about an issue that deeply angered or affected them. Using a weighted vote, students came up with violence as an issue they found both common across their lives and deplorable in its social consequences.

Their work on this topic was combined with a domestic violence curriculum the teacher decided to use and a three-day retreat on violence prevention organized by the violence prevention group "Manalife/Womanalife."

In class, they focused on the causes and consequences of violence in their lives and in their community. They began by sharing stories of their own experiences with violence (at home, in their neighborhood, at school). One student, for example, talked about a shooting incident she had witnessed several blocks from her house. Another wrote about his experience with domestic violence in his family. What made this teacher's approach relatively unique, however, was not the focus on violence; many teachers discuss violence with students in urban classrooms.¹ What made the approach unique was the way this teacher engaged students in a discussion of social, political, and economic forces that contribute to violence.

In one classroom activity, students compared demographic data on per capita income broken down by neighborhood with data on the prevalence of violent crime also broken down by neighborhood. Students also explored different beliefs about violence expressed by politicians, writers, the media, and community groups and organizations. At virtually every stage of the curriculum, their own stories and incidents of violence reported in the media were examined in relation to broader social, political, and economic forces. Students used their own and their classmates' experiences as a means for exploring ways to prevent violence and promote human rights and social justice. In another class session, for example, Ms. Francisocono asked "What does violence reveal about what else is going on and how can we fix it?"² The class then created a reverse flow chart, starting at the bottom where an incident of domestic violence had occurred and connecting it to events and forces that might have provoked the violence. One student, Tameka, posited, "There must have been a lot of tension in the house." The following exchange ensued:

Teachers:	And what might have led to that much tension?
Keri:	Maybe Dad lost his job
Hector:	And then he started drinking
Keri:	Maybe there's no money
Teacher:	We can't really know, right, but there could be a lot of pressure on these people right now.

Through this and similar discussions, students focused their thinking on relationships between structural dynamics and the behavior of individuals.¹⁴

Making the Personal Political

At the same time that structural dynamics were examined in relation to individual behavior, personal responsibility also received substantial attention. For example, the retreat that the Bayside Students For Justice attended on violence prevention taught students to work hard at controlling anger and stressed the need to always consider the consequences of their actions. Many character traits of a personally responsible citizen are important to Bayside's enactment of the justice oriented citizen.

¹ In fact, violence prevention lessons are often part of programs that might easily be characterized as developing personally responsible citizens rather than justice oriented citizens (see "Making the Personal Political" below).

However, unlike many other programs that emphasize personal responsibility (like the character education programs we described earlier), Bayside's approach did not merely exhort students to adopt certain values or behaviors such as self-control, honesty, punctuality, and caring for others; it also included an implicit critique of the way society is structured and encouraged students to examine the relationship between those structures and the way individuals behave. Approaches like those used by Nadia Francisco challenge a conservative focus on personal responsibility without rejecting the basic premise that how children and adults behave is important. These approaches conclude that an individual's character does matter, but that character can best be understood – and changed – through social analysis and attention to root causes of social injustices. The program seeks to enhance students' understanding of society rather than simply giving students a list of values they are to embrace and behaviors they are magically to adopt.

Under the Manalive curriculum, Francisco's students discussed social, political, and economic factors that reinforce notions that men are superior to women and that they should enforce that superiority if it is challenged. As a result, some men turn violent and some women learn to tolerate their violence. Thus, in addition to talking about how to take greater responsibility for improving their own behavior with respect to violence and anger, Francisco's students talked about their own experiences with violence in order to better understand and develop strategies to change institutions, structures, or conditions that cause or encourage violent behavior.

Contrasting this curricular approach with the Character Counts! Coalition's take on how to avoid violence, it becomes clear the ways Bayside Students for Justice incorporates important aspects of the personally responsible citizen into its emphasis on both understanding unjust social contexts and pursuing just ones. Recall that the Character Counts! coalition advocates respect, good manners, dealing peacefully with anger, and so on. Francisco points out the limitations of this version of personal responsibility for teaching what she considers to be good citizenship by highlighting what she sees as the simplistic questions and answers that character education poses. She sees character educators making fallacious assumptions: "If I were individually responsible, the world would be a better place. There wouldn't be racism. There wouldn't be sexism... I think the authentic self is lovely [but] you get trained in these roles."

If there is a lesson to be learned about personal responsibility for Francisco, it is that the personal is political, that personal experiences and behavior both result from and are indicators of broader political forces. For Bayside Students For Justice, personal responsibility requires that one study and seek to change these forces. With this recognition, Francisco is able to structure curriculum that promotes citizens who are both personally responsible and justice oriented.

Collective Responsibility for Action

Not only do students learn about ways that individual behavior often results from societal factors, they also learn that social change is the product of collective effort. Even before students started the research and service aspects of their projects, their teacher noted that, through the process of community mapping and choosing their topic, students had begun to think of themselves differently. They had begun to see themselves as part of a youth community with the potential to transform and improve society to make it more just. One student put it this way:

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[How] can I make a difference? One person with good intentions in a bad world cannot make a difference. This is what the structure of our society makes me believe. Yet, I know that if I take the stand others will follow.

Consistently, in interviews and written assignments for class, students demonstrated their understanding of a collective rather than individual vision for effecting change. After listening in class to the song, "We Who Believe in Freedom" by Sweet Honey in the Rock, one young man wrote that: "whether the struggle is big or small it should be everyone's responsibility together... Movements are not about me, they're about us." Another student—a football player—observed that there's "a lot of camaraderie on the field, but in the classroom, it seems like everyone works as an individual to better themselves. In this class, we're working as a group to better everything around us."

Thus, in contrast to programs that seek to teach that "one person can make a difference," Bayside Students For Justice emphasized the need to address social problems collectively.

The Political Significance of Different Conceptions of Citizenship: Some Comparisons

Both Madison County Youth in Public Service and Bayside Students for Justice were effective at achieving goals consistent with their respective underlying conceptions of citizenship. Yet our qualitative and quantitative data regarding these programs demonstrate important differences in impact. Youth in Public Service appeared to have a powerful impact on students' capacities for and commitments to civic participation. Students could detail the skills they used (conducting polls, interviewing officials, making presentations, reading legislation) as well as the knowledge they gained about how government works. Survey measures of students' sense of personal responsibility to help others, their vision of how to help, and their leadership efficacy show significant changes (see Table 4). Especially notable in both the survey and interview data was the change in students' confidence that they had the knowledge or "social capital" to make things happen in the community. Interviews, observations, and examples of student work all reinforced the survey finding of a dramatic (+.94) increase in students' sense that they had knowledge of what resources were available to help with community projects and of how to contact and work effectively with community organizations to mobilize those resources. This confidence grew out of their involvement in substantive projects that required frequent interaction with multiple community actors and agencies.

In addition, Madison County students spoke extensively during interviews about the micro-politics and technical challenges associated with their projects. "I thought there was cooperation amongst the departments," one Madison student told us, "but then the more we got into it the more I realized Person One is in charge of A, B, and C and Person Two is in charge of X, Y, and Z." Students were frustrated that various departments did not work well together and with what they identified as "turf issues." Many noted a poor working relationship between the County and the City.

We did not, however, see evidence that the Youth in Public Service program sparked interest in or conveyed knowledge of broad social critiques and systemic reform. As noted in the discussion of the politics of participatory citizenship, Madison students tended to downplay or ignore explicitly political or ideologically contentious issues. They were not able to talk



Table 4. Educating for Different Kinds of Citizenship

FACTORS	PRE-POST C H A N G E	
	MADISON CTY. YOUTH IN PUBLIC SERVICE	BAYSIDE STUDENTS FOR JUSTICE
PERSONAL RESPONSIBILITY TO HELP OTHERS	.21*	.09
KNOWLEDGE/SOCIAL CAPITAL FOR COMMUNITY DEVELOPMENT	.94**	.17
LEADERSHIP EFFICACY	.31**	.12
INTEREST IN POLITICS	.03	.33*
STRUCTURAL/INDIVIDUAL EXPLANATIONS FOR POVERTY	-.10	.28*

*p < .05; **p < .01

about how varied interests and power relationships or issues of race and social class might be related to the lack of consensus on priorities and the inability of these varied groups to work effectively together. For example, Mark, a Madison County student explained that:

A lot of people have preconceived notions that [community work] is so political... that... everything [is] divided between Republicans and Democrats, [but] people don't realize that... what your political agenda is doesn't really matter because when you're helping out in the community, you're not helping a party, you're helping a person.

Since such issues were not discussed as part of the curriculum, it is not surprising that students' perspectives on the structural and individual causes of poverty, for example, did not change as a result of their participation. Nor did their interest in talking about or being involved in politics change.

To a much greater degree, Bayside's students talked about the need for forms of civic involvement that addressed issues of social justice and macro-level critique of society. When asked whether violence prevention programs like the Manalive retreat the students attended could eliminate violence, Desiree eagerly praised the program but then added:

There's some things that you see out there, the struggle [when] people are trying to do their best but still they're being brought down by society, and I think that's very troublesome.

Other students also emphasized the need to address root causes of problems such as poverty, governmental neglect, and racism. After telling the class about his cousin who was arrested for carrying a weapon, Derrick wondered aloud to the class about how best to proceed:

It would be great if nobody had weapons but where does [the violence] begin? If the police are discriminating [and] if I can't get a job...there's going to be a lot of anger...The police aren't going to act better because [I'm] trying to make my neighborhood better."

And Tamika put it this way: "Lots of people want to be nice [but] if you don't got food for your kids, how nice is that?"

Thus, compared with students from Madison County, students who took part in the Bayside Students For Justice curriculum appeared to emphasize social critique significantly more and technocratic skills associated with participation somewhat less. For example, students were more likely at the end of the program than at the beginning to posit structural explanations for social problems (stating, for example, that the problem of poverty resulted from too few jobs that pay wages high enough to support a family rather than being a result of individuals being lazy and not wanting to work). They were more likely than their Madison County peers to be interested in and want to discuss politics and political issues, and they were more likely to seek redress of root causes of difficult social ills. As one student told us after several months in the Bayside program, "when the economy's bad and people start blaming immigrants or whoever else they can blame, they've got to realize that there are big social, economic, and political issues tied together, that it's not the immigrants, no it's bigger than them."

To the extent that Bayside students learned about participatory skills, they focused on extra-governmental social activism that challenged rather than reinforced existing norms (such as community organizing or protesting). Evidence from observations, interviews, student work, and surveys of Bayside's students did not show an increase in students' knowledge about particular community resources. Unlike their Madison County peers, Bayside students' sense that they were effective community leaders (knowing how to run meetings, for example) remained unchanged. Nor was there any increase in students' *personal* responsibility to help others (as opposed to their inclination for collective action for change that was frequently expressed during interviews).

Thus, programs that successfully educate for democracy can promote very different outcomes. Some programs may foster the ability or the commitment to participate while others may prompt critical analysis that focuses on macro structural issues, the role of interest groups, power dynamics, and/or social justice. And these differences often are politically significant. Indeed, answering the question "Which program better develops citizens?" necessarily engages the politics that surround varied conceptions of citizenship because it begs a definition of a better citizen. Those who view civic participation as of primary importance would likely view the Madison County Youth In Public Service program as extraordinarily effective.

Alternatively, those educators who believe that students should learn how to examine social structures and deliberate principles and practices of justice might prefer participants in the Madison County program to couple their community action with talk about the need for structural change, about methods used historically to bring change about (those employed by various social movements, for example), or about social injustice.¹⁷

The social context and political norms of a given community can also shape curricular decisions and the impact of curriculum on students. Bayside and Madison County, for example, are very different communities. It may well be that Bayside's urban school environment

exposed students to more forms of injustice and rhetoric related to injustice than Madison County students encountered in their largely homogeneous and middle-class community. This exposure, in turn, may have made it more likely that Bayside students would gravitate towards justice oriented themes than that students from Madison County would do so⁶⁶. The differing political climates certainly influenced teacher's options. This was evident, for example, in the reaction of the Youth In Public Service Director to the social critique focus of Bayside Students For Justice and other groups (who met three times during our study to discuss their programs with each other). She told us: "If my superintendent or board heard me saying what you all are saying, I'd be fired." When it comes to politically contentious topics, context matters. The ways that contexts shape both the constraints placed on teachers and the curriculum's impact on students clearly deserves extensive study.

Conclusion

Proponents of the democratic purposes of education, especially advocates of participatory and justice oriented goals, frequently complain that they are fighting an uphill battle (Wood, 1993; Cuban & Shipp, 2000; Goodlad, 1979; Clark & Wasley, 1999). Traditional academic priorities and the current narrow emphasis on test scores crowd out other possibilities (Meier, 2000; Noddings, 1999; Ohanian, 2002). Given public schools' central role in helping to shape citizens, this conflict clearly is worthy of attention.

But what kind of citizens are the schools trying to shape? As educators interested in schooling's civic purposes, we maintain that it is not enough to argue that democratic values are as important as traditional academic priorities. We must also ask what kind of values. What political and ideological interests are embedded in or are easily attached to varied conceptions of citizenship? Varied priorities—personal responsibility, participatory citizenship and justice oriented citizenship—embody significantly different beliefs regarding the capacities and commitments citizens need in order for democracy to flourish; and they carry significantly different implications for pedagogy, curriculum, evaluation, and educational policy. Moreover, since ways educators advance these visions may privilege some political perspectives regarding the ways problems are framed and responded to, there is a politics to educating for democracy—a politics that deserves careful attention.

Our study of Madison County Youth in Public Service and of Bayside Students for Justice demonstrates the importance of distinguishing between programs that emphasize participatory citizenship and those that emphasize the pursuit of justice. While each program was effective in achieving its goals, qualitative and quantitative data regarding these programs demonstrated important differences in each program's impact. The study indicates that programs that champion participation do not necessarily develop students' abilities to analyze and critique root causes of social problems and visa versa (See Kahne, Chi, and Middaugh, 2003 for a study that comes to a similar conclusion). Although those committed to the democratic purposes of education may extol the value of linking priorities related to participation and justice, our study indicates that this outcome is not guaranteed. If both goals are priorities, those designing and implementing curriculum must give both explicit attention. Similarly, as noted earlier, related research has found that initiatives that support the development of personally responsible citizens may not be effective in increasing participation in local or national affairs. In fact, efforts to pursue some conceptions of personal responsibility appear to further a politically conservative vision of the role of government and the need for

structural change. Indeed, there are some indications that this curriculum and associated policy undermines efforts to prepare participatory and justice oriented citizens.

From the standpoint of research and evaluation, the implications for those interested in the development of democratic values and capacities are significant. Studies that fail to reflect the varied range of educational priorities in relation to democratic values and capacities will tell only part of the story. Moreover, because the desirability of many politically relevant outcomes is tightly tied to one's political preferences, consensus among scholars regarding "right" answers or sometimes even "better" answers to many relevant questions may be hard to achieve. Knowing, for example, whether a student now places greater emphasis on recycling or on environmental regulation does not enable us to say that a program was effective. However, it does help us understand the program's effects.

In acknowledging a lack of "right" answers, we do not mean to imply a sense of neutrality with respect to varied conceptions of democratic values. Instead, we mean to emphasize that politics and the interests of varied groups are often deeply embedded in the ways we conceptualize and study efforts to educate for democracy. Politics and the interests associated with the varied conceptions therefore require close attention. We can focus on whether a given curriculum changes students' sense of personal responsibility, government responsibility, or employer responsibility, for example. If we ask only about personal responsibility (and if discussions of personal responsibility are disconnected from analysis of the social, economic, and political context), we may well be reinforcing a conservative and often individualistic notion of citizenship. Yet this is the focus of many programs and of their associated evaluations. If citizenship also requires collective participation and critical analysis of social structures, then other lenses are needed as well.

Clearly, highlighting the political significance of different curricular choices must be done with care. Such dialogues may help clarify what is at stake, but raising these issues can also lead to dysfunctional stalemates and deepen differences rather than prompt more thoughtful inquiry. Yet not all discord is problematic – when the stakes are high, conflict may be both likely and appropriate. Indeed, thoughtful analysis requires that those designing curriculum and those studying its impact are cognizant of and responsive to these important distinctions and their political implications. The choices we make have consequences for the kind of society we ultimately help to create.

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Authors

Joel Westheimer is University Research Chair, an associate professor of education, and co-Director of *Democratic Dialogue* at the University of Ottawa. A former New York City public schools teacher, he teaches and writes on democracy, social justice, service learning, and community in education.

Joseph Kahne is the Kathryn P. Hannam Professor of American Studies, a professor of education, and co-director of the Institute for Civic Leadership, Mills College. A former New York City public schools teacher, his research, writing, and work with educators concerns the democratic purposes of schooling and urban school reform.

Table 1. Kinds of Citizens¹⁷

	Personally Responsible Citizen	Participatory Citizen	Justice Oriented Citizen
D E S C R I P T I O N	<p>Acts responsibly in his/her community</p> <p>Works and pays taxes</p> <p>Obeys laws</p> <p>Recycles, gives blood</p> <p>Volunteers to lend a hand in times of crisis</p>	<p>Active member of community organizations and/or improvement efforts</p> <p>Organizes community efforts to care for those in need, promote economic development, or clean up environment</p> <p>Knows how government agencies work</p> <p>Knows strategies for accomplishing collective tasks</p>	<p>Critically assesses social, political, and economic structures to see beyond surface causes</p> <p>Seeks out and addresses areas of injustice</p> <p>Knows about democratic social movements and how to effect systemic change</p>
S A M P L E	<p>Contributes food to a food drive</p>	<p>Helps to organize a food drive</p>	<p>Explores why people are hungry and acts to solve root causes</p>
A S S U M P T I O N S	<p>To solve social problems and improve society, citizens must have good character; they must be honest, responsible, and law-abiding members of the community</p>	<p>To solve social problems and improve society, citizens must actively participate and take leadership positions within established systems and community structures</p>	<p>To solve social problems and improve society, citizens must question, debate, and change established systems and structures when they reproduce patterns of injustice over time</p>

Table 2. Madison County Youth In Public Service

FACTORS (Cronbach's Alpha pre, post)	SAMPLE	CHANGE	PRE-TEST	POST-TEST	SD	Number of Students
PERSONAL RESPONSIBILITY TO HELP OTHERS (.62, .74)	Intervention	.21*	4.90	4.21	.01	61
	Control	-.06	3.99	3.92	.63	37
COMMITMENT TO COMMUNITY INVOLVEMENT (.56, .70)	Intervention	.09	4.27	4.46	.06	61
	Control	-.10	3.89	3.99	.54	37
INTEREST IN POLITICS (.81, .81)	Intervention	.01	3.41	3.44	.55	61
	Control	-.05	2.76	2.71	.63	37
STRUCTURAL/INDIVIDUAL EXPLANATIONS FOR POVERTY (.88, .80)	Intervention	-.10	3.13	3.03	.56	32
	Control	.14	3.37	3.51	.55	37
DESIRE TO WORK FOR JUSTICE (.65, .75)	Intervention	.67	3.87	3.14	.31	61
	Control	.83	2.84	2.88	.81	37
CIVIC EFFICACY (.66, .71)	Intervention	.34**	3.78	4.12	.00	61
	Control	.10	3.38	3.48	.34	37
VISION (.65, .71)	Intervention	.30*	2.65	2.93	.01	61
	Control	.12	2.63	2.75	.35	37
KNOWLEDGE/SOCIAL CAPITAL FOR COMMUNITY DEVELOPMENT (.67, .72)	Intervention	.84**	3.95	4.89	.00	60
	Control	-.25	3.13	2.90	.25	37
LEADERSHIP EFFICACY (.78, .80)	Intervention	.31**	3.60	3.91	.00	61
	Control	.01	3.37	3.60	.72	37
I WILL VOLUNTEER (.80, .86)	Intervention	.10	3.39	3.70	.14	61
	Control	-.09	3.28	3.18	.43	37
FOLLOW THE NEWS (.43, .40)	Intervention	.24**	3.33	3.59	.00	60
	Control	-.12	3.22	3.10	.27	37
GOV'T RESPONSIBILITY FOR THOSE IN NEED (.85, .81)	Intervention	.24*	3.10	3.34	.05	32
	Control	.60	3.28	3.28	1.00	37
EMPLOYER RESPONSIBILITY FOR EMPLOYEES (.83, .87)	Intervention	.09	3.81	3.9	.35	32
	Control	-.02	4.14	4.12	.83	37

*p < .05; **p < .01

Table 3. Bayside Students for Justice

FACTORS (Cronbach's Alpha pre, post)	CHANGE	PRE-TEST	POST-TEST	SD	Number of Students
PERSONAL RESPONSIBILITY TO HELP OTHERS (.62, .74)	.09	3.84	3.94	.60	21
COMMITMENT TO COMMUNITY INVOLVEMENT (.56, .70)	.07	3.38	3.45	.77	21
INTEREST IN POLITICS (.81, .81)	.33*	2.68	3.01	.02	21
STRUCTURAL/INDIVIDUAL EXPLANATIONS FOR POVERTY (.88, .80)	.26*	3.88	4.16	.04	21
DESIRE TO WORK FOR JUSTICE (.65, .75)	-.09	3.28	3.10	.54	21
CIVIC EFFICACY (.66, .71)	.47*	3.83	3.50	.04	21
VISION (.65, .71)	.36	2.43	2.79	.15	21
KNOWLEDGE/SOCIAL CAPITAL FOR COMMUNITY DEVELOPMENT (.67, .72)	.17	2.76	2.93	.43	21
LEADERSHIP EFFICACY (.78, .80)	.12	3.13	3.26	.03	21
I WILL VOLUNTEER (.80, .86)	.18	3.00	3.28	.22	21
FOLLOW THE NEWS (.43, .40)	.27*	3.13	3.40	.02	21
GOV'T RESPONSIBILITY FOR THOSE IN NEED (.85, .81)	.29*	3.28	3.48	.05	21
EMPLOYER RESPONSIBILITY FOR EMPLOYEES (.83, .87)	-.05	4.17	4.32	.73	21

*p < .05

¹ Our desire to respond to prominent educational theories related to democratic ideals and to develop a framework that practitioners would find both clear and meaningful led us to modify our categories in several ways. For example, we began this study emphasizing a distinction between "clarity" and "change". We had used this distinction in earlier writing (Kahne & Westheimer, 1996). Through the course of our work, however, it became clear that this distinction did not do enough to capture main currents in dialogues of practitioners and scholars regarding democratic educational goals and ways to achieve them. In addition, once our three categories were identified, we found that some of our rhetoric failed to clearly convey our intent. For example, we had initially titled our third category the "social reconstructionist." As a result of dialogues with practitioners this was changed to the "social reformer" and finally to the "justice oriented citizen."

² We should note here that adherents to the political philosophy of John Rawls also use a language of justice, but that this perspective is different from (though not necessarily in conflict with) what we describe as a "Justice-Oriented Citizen." For Rawlsians, the State's respect for different conceptions of the good and refusal to endorse particular conceptions of the good are matters of justice.

³ The strongest proponents of this perspective were likely the Social Reconstructionists who gained their greatest bearing between the two world wars. Educators like Harold Rugg (1921) argued that the teaching of history in particular and the school curriculum more generally should be developed in ways that connect with important and enduring social problems. George Counts (1932) asked, "Dare the School Build a New Social Order?" He wanted educators to critically assess varied social and economic institutions while also "engag[ing] in the positive task of creating a new tradition in American life" (262). These educators emphasized that truly effective citizens needed opportunities to analyze and understand the interplay of social, economic, and political forces and to take part in projects through which they might develop skills and commitments for working collectively to improve society.

⁴ For a discussion of the distinction between pursuit of justice oriented citizenship and indoctrination, see Westheimer & Kahne, 2002 and 2003.

⁵ Moreover, those with libertarian leanings sometimes argue that the practice of civic virtue and responsible behavior can diminish the need for democratic governance and that such personal qualities will enable democratic governments to work effectively.

⁶ Personal responsibility need not be framed in individualistic and conservative terms. Henry David Thoreau, for example, conceptualized personal responsibility in ways that were not conservative and one could also imagine visions of personal responsibility that embodied commitments to collective action. However, as put forward in most current public discussions related to citizenship, the focus is conservative and individualistic in that it emphasizes charity, personal morality, and the efforts of individuals rather than working to alter institutional structures through collective action.

⁷ We highlight these two programs because, of the four high school programs in the sample, these two were the ones that most clearly aligned with the two perspectives we wished to investigate (participatory and justice oriented citizenship). The other two high school programs, while compelling for several reasons, embraced a broader and less specific democratic vision.

⁸ During the second year, we also administered pre and post surveys to two control classrooms from Madison County. These classrooms were also twelfth grade government classrooms, served students of similar academic ability, and were taught by the same two teachers. An appropriate control classroom was not available in the case of Bayside.

⁹ For a discussion of the first year experience and findings see (Kahne & Westheimer, 2004).

¹⁰ As an indicator of personal responsibility we used a scale titled, "Personal responsibility to help others." It included items that measured students' individual commitments to recycle, for example. Our measure of participatory citizenship was titled "Commitment to community involvement." We also had three different scales related to social justice. One scale assessed students' interest in political affairs. Another scale assessed students' use of "structural vs. individual explanations for poverty."

Measures of commitment to community involvement, personal responsibility, volunteering, and vision, are adapted from the National Learning Through Service Survey developed by the Search Institute. Some of these measures, in turn were adapted from instruments developed by Conrad and Hedin. See Instruments and Scoring Guide of the Experiential Education Evaluation Project (St. Paul: Center for Youth Development and Research, University of Minnesota, 1981). Items related to Social Capital and Leadership Efficacy draw on a Leadership measure developed for the Community Service Leadership Workshop. Contact Jim Seiber, Issaquah School District 411, Issaquah, WA 98027. For a list of all items associated with each scale, please contact the authors.

¹¹ Given the ideological nature of the content of our inquiry, it makes sense for us to be explicit about our own

perspectives with regard to personally responsible citizenship, participatory citizenship, and justice oriented citizenship. We think each vision has merit. However, although we value character traits such as honesty, diligence, and compassion, for reasons already discussed, we find an exclusive emphasis on personally responsible citizenship inadequate for advancing democracy. There is nothing inherently democratic about the traits of a personally responsible citizen.

From our perspective, the traits associated with both participatory and justice oriented citizens, on the other hand, are essential. Not every program needs to simultaneously address both sets of goals to be of value. But educators must attend to both sets of priorities if schools are to prepare citizens for democracy.

¹² The descriptions that follow were captured from field notes and audio tapes. The quotations are verbatim. Names of schools, students, teachers, and geographical references are pseudonyms.

¹³ In one case, for our measure of civic efficacy, we did not find a statistically significant difference ($p = .22$). Thus, while our data indicates statistically significant gains in civic efficacy for students who experienced the Madison County curriculum, it is not clear that these changes were different than those experienced by students in the control classrooms.

¹⁴ Students in the Bayside program also expressed skepticism of corporate-sponsored civic initiatives (Coca Cola's sponsoring of Earth Day activities, for example, or Phillip Morris initiatives to "build our communities"). In interviews, they reported that, in general, it was unwise to count on businesses to set the tone for improving communities or solving difficult problems that do not have "making money" or advertising as a goal. A number of classroom discussions also focused on the differences between political or legislative approaches to environmental regulations and those voluntarily promoted by private corporations.

¹⁵ The distinctions we draw between participatory and justice-oriented citizenship assume a predisposition to the basic mechanics of legislative democracy common to many school-based programs. For example, the Bayside Students for Justice curriculum takes seriously the notion that critical analysis can only be fruitful in a democratic culture. Ms. Franciscono's students engaged in exercises such as planning a class party by the same means as Congress uses to pass a bill to teach the fundamentals of the democratic process. Madison County teachers conducted similar activities as well.

¹⁶ From responses on our pre surveys, we know that youth in the two communities started off in different places on several relevant measures. As detailed in tables 2 and 3, for example, Bayside students were far more likely to offer structural explanations for poverty than Madison County youth and Madison County youth were much more likely to express confidence in their knowledge related to community development. What's particularly interesting about our post survey results is that they demonstrate that on top of these initial differences, Bayside's curriculum led students to even more strongly support structural explanations and Madison County's curriculum led to students to hold even greater confidence in their knowledge related to community development.

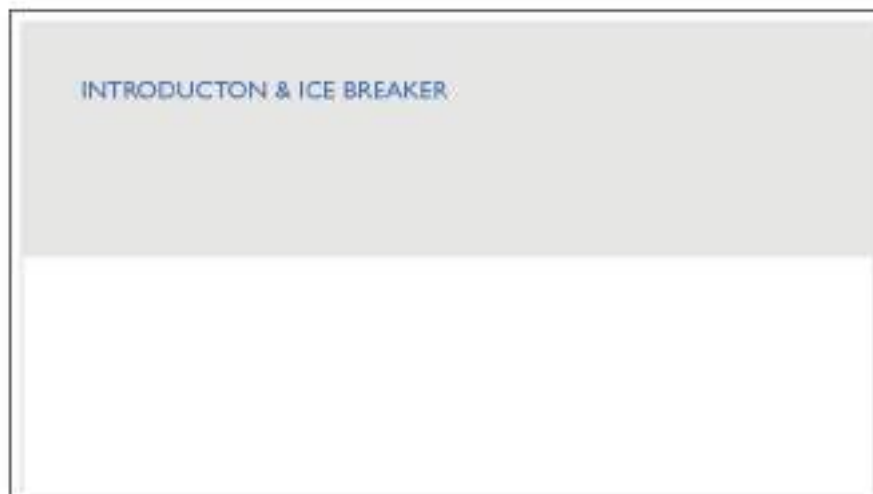
¹⁷ For help in structuring this table, we are indebted to James Toole and a focus group of Minnesota teachers

Annex 2 – Fundraising, Financial Management and Budgeting

5/8/23



1



2

1

5/8/23

MEET THE CAPACITY BUILDER
Antoun G. Andrea

- Founding Partner at Rain Makers – Turkey
- Executive Chairman at KeyLearn SAL – Lebanon
- Founder & Managing Partner at ANAT – Lebanon
- Founder & Managing Partner at AA Advisory – Lebanon



3

HOUSEKEEPING MATTERS

4

2

5/8/23

WORKSHOP LEARNING OUTCOMES

- Understand the financial resources development concept
- Familiarize with the nine fundraising approaches
- Set up a fundraising plan for the organization
- Know where to find funding opportunities
- Setting criteria for qualification and understand donor requirements

5

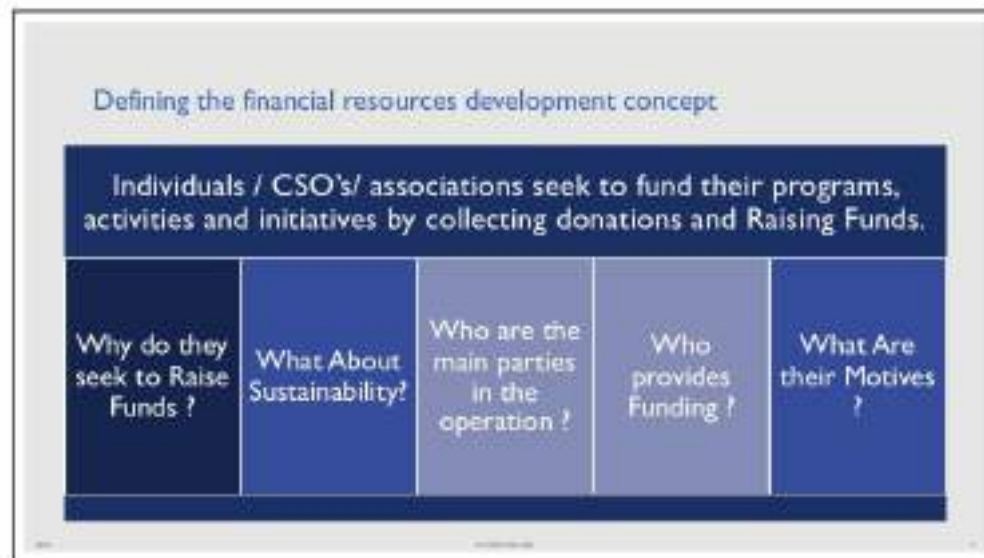
PRE-TEST

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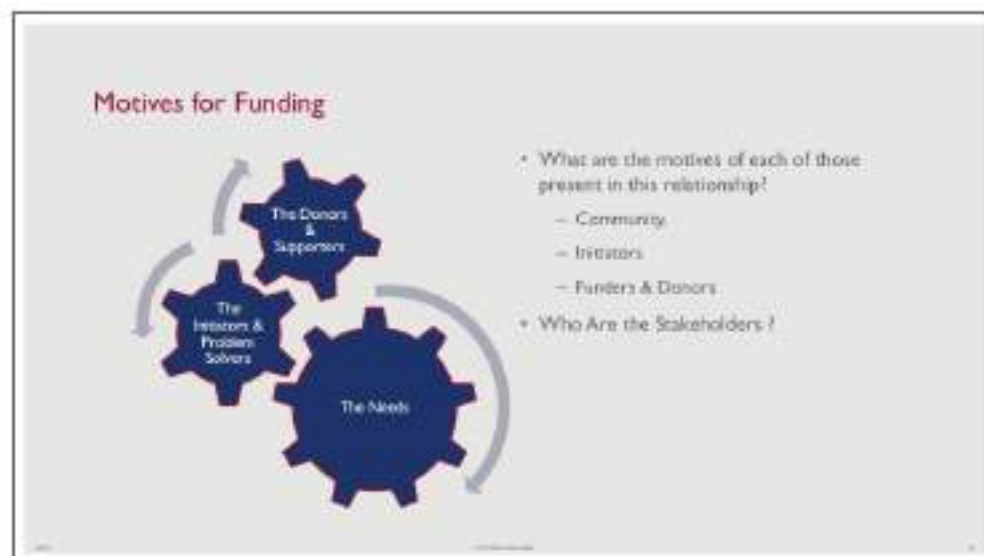
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11



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AGENDA



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Types of Fundraising



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Types of Fundraising

Grants & Proposals

Crowdfunding

Fundraising Events

Corporate & Foundations Sponsorships

Individual Donors & Major Donations

Member & Supporter Fees

Partnerships & In-Kind Support

Service Provisioning in Partnership with Government

Income Generating Services & Products

15

Grants & Proposals

General Description

Responding to calls for proposals and funding opportunities offered by Governments, UN, Foundations and International Organizations.

Best used in the following situations

- Funding Opportunity is aligned with organizational strategy and projects.
- Your organization is eligible and aligned with funder requirements and agenda.

Requirements & Needed Resources/Skills/Knowhow

- Your organization has all required documentations, policies, proofs and artifacts.
- Team members to identify opportunities, brainstorm and develop concept notes, know how to write proposals, budgets, M&E Plans..etc.

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5/8/23

Grants & Proposals

Pros	Cons
<ul style="list-style-type: none"> • Secures big amounts of funding • Once skilled at it, becomes easier to win more funding. • Gives capacity to grow and expand. 	<ul style="list-style-type: none"> • Limits self sustainability • Veers organization off the community and closer to donors' agenda • Time and resource consuming

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Types of Fundraising



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5/8/23

Crowdfunding

General Description

Calling in the general public to financially contribute to a cause, project or a community need that is pressing and can benefit from communal support.

Best used in the following situations

- The cause or community need is highly publicised and is a matter of public interest.
- Your organization has a big network of contacts, people it supported, members, alumni, partner organizations, media ...etc.

Requirements & Needed Resources/Skills/Knowhow

- Crowdfunding platform
- Team that knows how to use social media, online marketing, messaging for support.

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Crowdfunding

Pros	Cons
<ul style="list-style-type: none"> • Secures funding in a short period of time with potential to outperform expectations. • No complicated reporting. • Increases NGO's brand name, social capital and community support. 	<ul style="list-style-type: none"> • Might not reach target, thus might losing the full amount depending on platform • Cannot be regularly done. • Requires online boosting and marketing budget.

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Types of Fundraising



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Fundraising Events

General Description

Pre-Covid19 this was a common activity among many organizations whereby they organize Gala Dinners, Concerts, Movie Premiers, Hiking Trips, ... with extra fees to fundraising for the NGO. They usually include sponsorships, competitions, auctions, tombolas, and other means of supporting the NGO.

Best used in the following situations

- The team can secure a big audience with financial means to support the organization.
- The organization has skills in organizing events or can pay event organizers

Requirements & Needed Resources/Skills/Knowhow

- Event Management Team, Skills & Know How
- Invitee list of individuals who are financially capable and willing to support.

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5/8/23

Fundraising Events

Pros	Cons
<ul style="list-style-type: none"> • Builds good memories, relationships and media exposure. • Brings in non-earmarked funding. • Has no ceiling or limitations on how often or type of events. 	<ul style="list-style-type: none"> • Time and resource consuming. • May pose reputational risks if events fail.

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Types of Fundraising



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5/8/23

Corporate & Foundations Sponsorships

General Description

Securing funds or in-kind donations from corporate sector who has a CSR program or a corporate foundation that supports your cause.

Best used in the following situations

- Corporates have CSR goals and/or Foundations that are aligned with your goals.
- You have a strong community reputation and good marketing/outreach.

Requirements & Needed Resources/Skills/Knowhow

- Organizational leadership involvement in relationship building
- Proposal writing and negotiation skills

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Corporate & Foundations Sponsorships

Pros	Cons
<ul style="list-style-type: none"> • Creates community credibility • Ongoing funding from local community. • Can have many forms 	<ul style="list-style-type: none"> • Usually limited and dependent on the corporate meeting their bottom line to provide funding

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Types of Fundraising

Grants & Proposals

Crowdfunding

Fundraising Events

Corporate & Foundations Sponsorships

Individual Donors & Major Donations

Member & Supporter Fees

Partnerships & In-Kind Support

Service Provisioning in Partnership with Government

Income Generating Services & Products

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Individual Donors & Major Donations

General Description

Reaching out to high networth individuals (HNWIs) to cultivate a relationship with them and engage them in giving donations to the organization.

Best used in the following situations

- Organizational Leadership or head of Fundraising has good contacts/access to HNWI's
- The work of the organization is aligned with interests of HNWI's

Requirements & Needed Resources/Skills/Knowhow

- Team to identify, profile, cultivate and regularly engage HNWI's
- Leadership involvement to build relationship and do the ask.

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Individual Donors & Major Donations

Pros	Cons
<ul style="list-style-type: none"> • Can bring in big amounts of funding that is not earmarked. • Grows with time as HNWI's inform others and shed light on what they support. • Limited reporting requirements 	<ul style="list-style-type: none"> • Time and resources consuming. • Gifts/Donations may be far apart and thus requires patience and consistency. • Depends on presence of HNWI's around the NGO.

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Types of Fundraising



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Member & Supporter Fees

General Description

Monthly or annual fees are collected from members and supporters of the organization. This usually doesn't provide a big amount of funding, but increases community's sense of ownership and provides ongoing income for operational support of the organization.

Best used in the following situations:

- The organization is membership/volunteer based.
- The organization has alumni or graduates or x-beneficiaries that it keeps contact with.
- The organization has a wide network of fans/supporters who want to engage.

Requirements & Needed Resources/Skills/Knowhow

- CRM for membership system and payments collection

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Member & Supporter Fees

Pros	Cons
<ul style="list-style-type: none"> • Regular/ongoing financial support • Increases community's sense of ownership • Can grow exponentially 	<ul style="list-style-type: none"> • Small amounts, requires volume • Time consuming for outreach and follow up

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Types of Fundraising



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Partnerships & In-Kind Support

General Description

Building partnerships with local authorities, other NGOs, and the corporate sector on the basis of sharing resources, providing in-kind support or building win-win relationships that don't necessarily need/use money.

Best used in the following situations

- The organization identifies resources/tools/venues/systems/databases it needs that are available elsewhere
- The organization has something to offer the other partner

Requirements & Needed Resources/Skills/Knowhow

- Strong understanding of local players and community.
- Ability to conceive partnerships and win-win situations.

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Partnerships & In-Kind Support

Pros	Cons
<ul style="list-style-type: none"> • Builds strong relationships with local partners. • Reduces financial burdens • Builds on synergies 	<ul style="list-style-type: none"> • Requires time to build strong relationships and a customized modus operandi • Is prone for abuse or misuse

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Types of Fundraising



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Service Provisioning in Partnership with Government

General Description

Ministries of Social Affairs, Education, Sports, Agriculture... even your *Municipality* may have funds to subsidize or support local organizations by offering them certain services or products that NGOs can implement and get funds from the government for their services.

Best used in the following situations:

- The organization offers services needed by the government or funded by the government that fulfill a community need.
- The organization can manage a long-term cash flow deficit.

Requirements & Needed Resources/Skills/Knowhow

- Services or products that will be utilized.
- Financial capital to withstand late payments by government.

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Service Provisioning in Partnership with Government

Pros	Cons
<ul style="list-style-type: none"> • Enables organization's exponential growth and sustainability • Builds credibility with community and international donors 	<ul style="list-style-type: none"> • Requires ongoing and detailed management as a stand-alone system • Requires financial capital to start

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Types of Fundraising

Grants & Proposals

Crowdfunding

Fundraising Events

Corporate & Foundations Sponsorships

Individual Donors & Major Donations

Member & Supporter Fees

Partnerships & In-Kind Support

Service Provisioning in Partnership with Government

Income Generating Services & Products

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Income Generating Services & Products

General Description

This is similar to the social enterprise model whereby the organization operates a certain function/department/unit/portfolio as a business that generates income that feeds back into the organization's budget to be used elsewhere.

Best used in the following situations

- The organization has the capacity to offer services or products that are sellable in the market.
- There is a community need or market for the products that organization offers.

Requirements & Needed Resources/Skills/Knowhow

- Business knowhow and systems
- Dedicated team and resources

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Income Generating Services & Products

Pros	Cons
<ul style="list-style-type: none"> • Excellent for sustainability and breaking the donor-funding loop • Can grow substantially like any business • Provides non-earmarked funds 	<ul style="list-style-type: none"> • Requires a separate operation • May take time to become financially positive

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Types of Fundraising



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Setting a fundraising plan for the organization – Key Considerations

- Determine the Funding Target
- Give multiple means to donate/support to allow supporters of various financial abilities to participate
- Choose incentives for supporters:
 - give in return if possible (a symbolic gift in return for the donation / thank you message / mentioning the donor via social media...)
- Preparing the campaign theme: Formulating the impact of the donation/ Why should I donate and why now?
 - You can link the campaign to a specific event (World Day in Support of ...) or to holidays.
 - This may give additional support to the activities/actions.
- Who are your current supporters?
 - (their age/ from which region/ hobbies/ volunteer work...)
- Marketing the campaign in multiple ways (video / social media / image / poster / using influencers ...)
- Determine a time period for the campaign and plan for a variety of activities during this period.
- Start promoting your campaign from previous supporters

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Setting a fundraising plan for the organization

SUM	Approach	Timeframe	Required Resources	Costs	Notes

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Keep in Mind

- + Remember, fundraising is an investment of time, money, or both.
- + How long do you have to collect money?
- + Do you have the time to build relationships with major donors, which can take many years to bear fruit?
- + Thinking about how much time you have will help you decide which methods are the best for raising that money.
- + Are you ready to receive donations?
- + What are the rules and regulations that you need to be aware of?

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Some Tips for Post Fundraising Activities

- Once the campaign is over, celebrate the success and announce what has been achieved
- Say thank you to the workers and supporters of the campaign
 - Giving appreciation to generous donors is one of the most important things you can do to build a long-term relationship (stick to their vision guidelines).
 - Clarity and frankness with them.
 - Sincere and without exaggeration
 - Talk about the impact of the campaign
- Keep in touch with all supporters
 - Maintaining the good impact of their projects on the community
 - Constantly communicate with them
 - Organizing field visits for them

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Where to Find Opportunities – Online Platforms

- Some Platforms to consider when looking for
 - DevAid,
 - DevEx,
 - DARPE,
 - ItaietWeb,
 - Fund4forNGOs.org,
 - UNHQ. ex,
 - Europes,
 - WorldBank,
 - Grants.gov,
 - GrantsOnline.org,
 - AsianNGO.org,
 - Embassies' Websites
- Or look for service providers !

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AGENDA

Defining the
financial
resources
development
concept

Introducing the
different
fundraising
approaches

Setting a
fundraising plan
for the
organization

Learning where
opportunities
could be found

Setting criteria
for qualification
and understand
donor
requirements

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Qualification Criteria

- Develop clear criteria (objective, fact/evidence based) that allow you to know whether you select this opportunity or not.
- Qualification criteria can be Yes/No or Ranges, but it should be scorable.
- Wrong qualification criteria might lead you to miss good opportunities or spend time developing proposals for the wrong ones, so take it seriously!
- Have more than one opinion/person reviewing to ensure objectivity and consistency.

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Develop Qualification Criteria

Develop a list of criteria (at least 5) that you will use to better qualify opportunities that are relevant to your work. Use this time to think what actually matters to you in terms of opportunities that come.

Let's come back in 5 minutes.



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Understanding Donor Requirements

- Create a table that can act as a "Checklist" for all the requirements that the donor has.
- Identify where each requirement will be reflected in the proposal (Cover Page, Methodology, Schedule, Team Profiles, Organizational Portfolio/Documents, Budget...)
- Review the proposal prior to submission while ensuring that all donor requirements are included.
- Ask someone in your organization who was not participating in the proposal development to "Score" your proposal based on Donor RFP/Tender/NOFO/Call for Proposals after reviewing your proposal to get a somewhat objective assessment.

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Q & A

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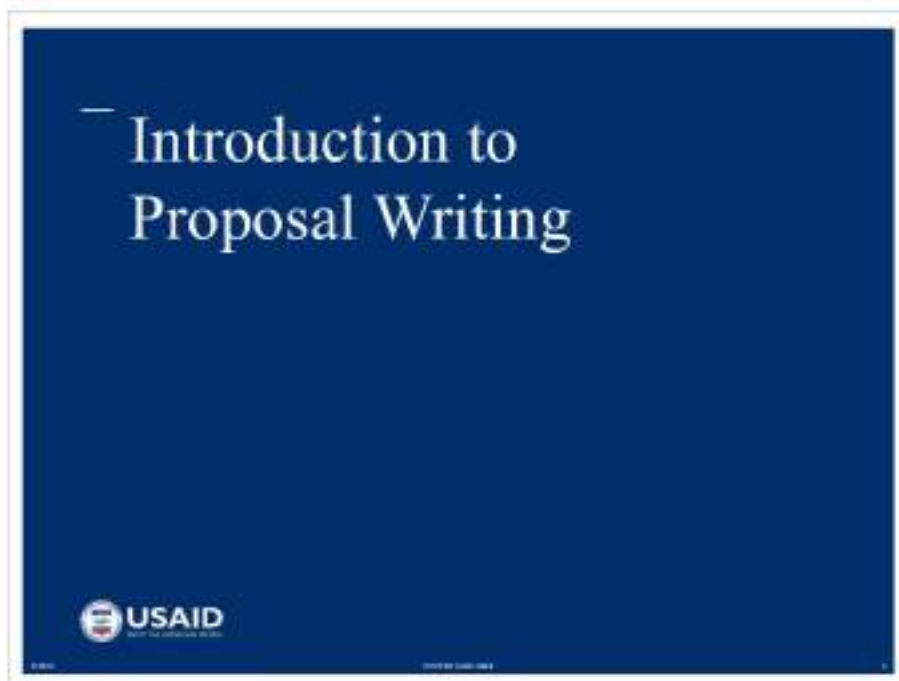


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Annex 3 – Proposal Writing, Monitoring & Evaluation Planning



What is a Proposal?

1. It is an Important document.
2. The donors' decision to finance your project will depend on what they read in the proposal.
3. Your proposal must demonstrate well-considered planning.

Module of Writing Proposal Based on Problem Based Learning

Dr. Hani Hani Hani / hani.hani@univ.edu / hani.hani@univ.edu / hani.hani@univ.edu

Abstract: The aim of this module is to provide a comprehensive overview of the problem-based learning (PBL) approach and its application in the field of education.

Abstract: The aim of this module is to provide a comprehensive overview of the problem-based learning (PBL) approach and its application in the field of education. The module will cover the following topics: the history and development of PBL, the theoretical foundations of PBL, the practical implementation of PBL, and the evaluation of PBL. The module will also provide a detailed overview of the various types of PBL, including individual, small group, and large group PBL, and the various types of PBL problems, including case studies, simulations, and role plays. The module will also provide a detailed overview of the various types of PBL, including individual, small group, and large group PBL, and the various types of PBL problems, including case studies, simulations, and role plays.

Keywords: Problem-based learning, PBL, education.

1. Introduction

Problem-based learning (PBL) is a student-centered approach to learning that emphasizes the use of real-world problems as the basis for learning. PBL is a student-centered approach to learning that emphasizes the use of real-world problems as the basis for learning.

The aim of this module is to provide a comprehensive overview of the problem-based learning (PBL) approach and its application in the field of education. The module will cover the following topics: the history and development of PBL, the theoretical foundations of PBL, the practical implementation of PBL, and the evaluation of PBL. The module will also provide a detailed overview of the various types of PBL, including individual, small group, and large group PBL, and the various types of PBL problems, including case studies, simulations, and role plays.

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Why do we write a Proposal?

1. **Fundraising:** enables NGOs to secure a fund by effectively communicating their mission, objectives, and impact to potential funders, including foundations, corporations, governments, and individual donors.
2. **Program Implementation:** providing a comprehensive plan for program implementation, including goals, objectives, activities, and budget.
3. **Partnerships and Collaborations:** by outlining collaboration details and expected outcomes NGOs establishes partnerships with other organizations, governments, or communities for collaborative project implementation.

Why do we write a Proposal?

4. Advocacy and Awareness: NGOs utilize proposals to outline advocacy campaigns, including strategies, activities, and expected impact, in order to raise awareness and promote positive change and mobilize support for the cause.

5. Monitoring and Evaluation: NGO proposals with monitoring and evaluation plans assess program effectiveness, facilitate data-driven decision-making, and reporting results to stakeholders.

6. Organizational Development: Proposals helps NGOs secure resources to strengthen internal capacity, improve operations, and enhance program delivery, through a well-prepared proposal.

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Key elements of a proposal

1

Introduction

Provide an overview of your organization and its mission.

2

Problem Statement

Clearly define the problem or issue your proposal aims to address.

3

Objectives

Clearly state the specific goals and outcomes you aim to achieve with this proposal.

4

Methodology or Approach

Describe the approach or methodology you will use to implement your proposal.

5

Times/Beneficiaries

Clearly identify the beneficiaries or the target group who will benefit from your proposal.

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Key elements of a proposal

- 6 **Budget**
Provide a detailed and realistic budget that outlines the costs associated with implementing your proposal.
- 7 **Monitoring and Evaluation**
Describe how you will monitor the progress and evaluate the impact of your proposal.
- 8 **Sustainability**
Explain how your proposal will be sustained beyond the project duration.
- 9 **Organization Information**
Highlight the organization's capacity, expertise, and credibility to carry out the proposed activities.
- 10 **Conclusion**
Summarize the main points of your proposal and reinforce the importance and relevance of your proposal to the SDGs objectives.
- 11 **Appendices**
Include any additional supporting materials.

How to start writing a proposal?



1

Proposal success requires a coordinator to combine parts based on template or methodology.



2

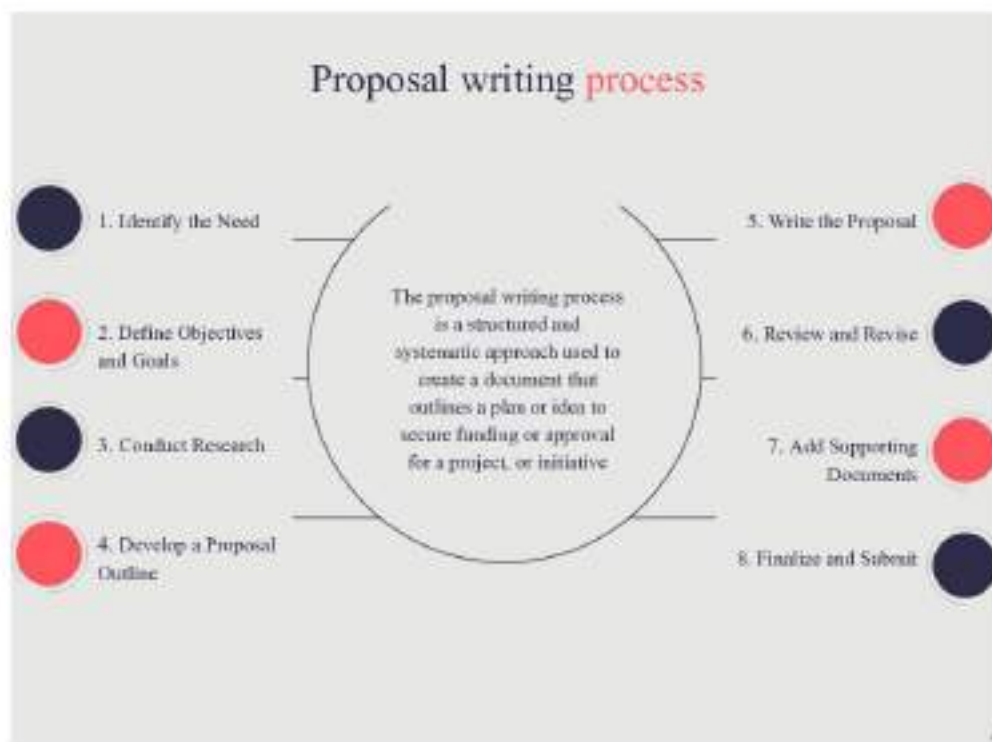
Determine if project ideas align with organization's strategy or donor's priorities.



3

Setting a baseline for the first project activity while writing the proposal is a sign of professionalism and a strong proposal.

To increase the chances of funding, organizations should develop projects based on the donor's timeline, manage their time, and consider forming coalitions. However, it's crucial to establish a common vision and clear roles and frameworks during the coalition-building process.



Research and Planning

Identifying the problem or opportunity



First thing to do is

Think carefully before starting to write the proposal—what is the problem and what positive change will the proposed research produce.



Identifying the **problem or opportunity** is a crucial step in proposal writing for an NGO. It helps define the purpose and relevance of the proposal, and sets the stage for addressing the issue at hand. It ends in summarizing the analysis of the problem or opportunity in a clear and concise problem statement.

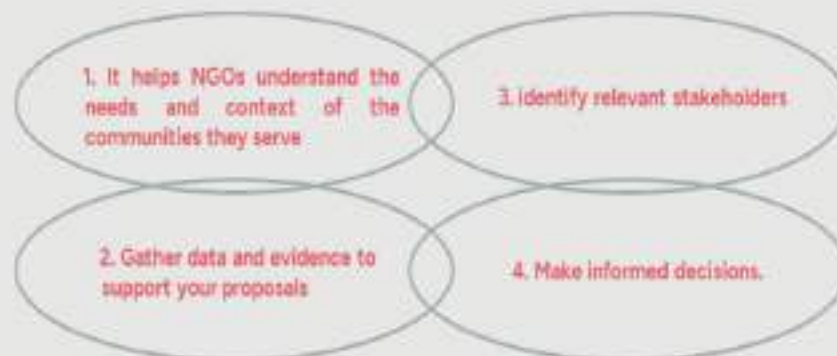


Expressing the **problem** in a concise, precise, and thorough manner aids in pinpointing the central aspect of the project, rather than merely addressing superficial manifestations. By effectively formulating and presenting the issue or problem at hand, you should include detailed description of the issue, its causes, and implications



Problem Description	Causes	Implications
<ul style="list-style-type: none"> • Accurate assessment of the circumstances that need changing • The group affected by the issue and how it impacts them • Quantitative description of the issue and its spread • Elements relevant to organizational needs • Stakeholders concerned by the issue and how they address it 	<ul style="list-style-type: none"> • Root cause of the issue • Factors causing the issue • The inter-relation between causing factors 	<ul style="list-style-type: none"> • Impacts of the issue • Groups affected by these implications and how they are affected • These implications' impact on social, political and economic contexts • Reasons to address the issue (justification)

Conducting a research forms the foundation of any well-structured and evidence-based proposal



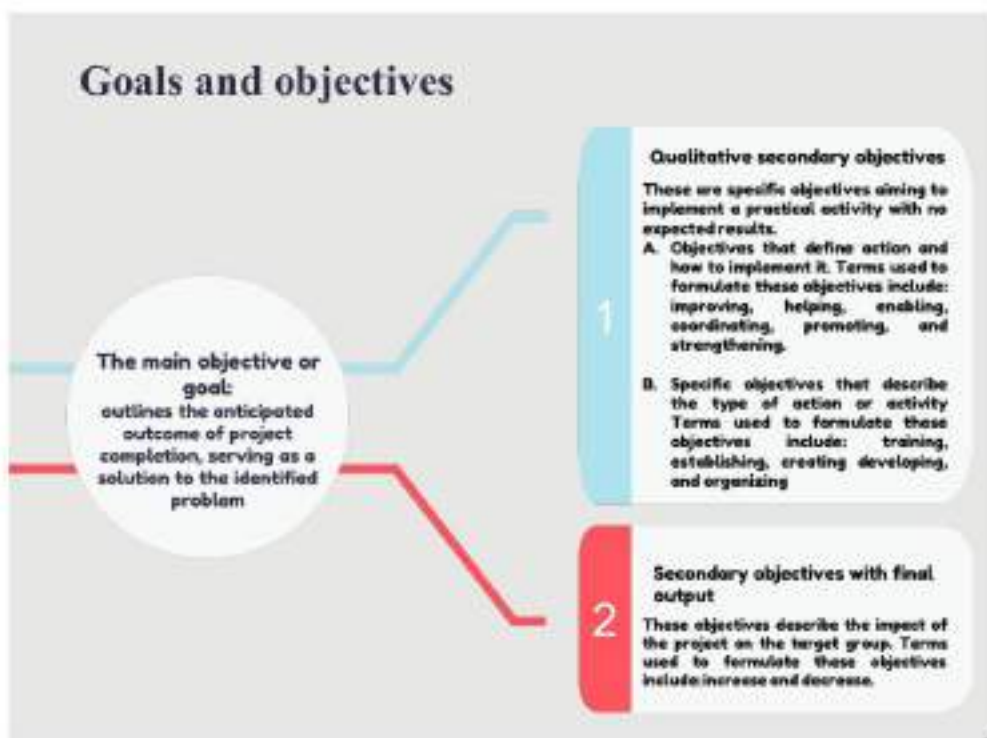
To secure a well-defined research



Developing a **research plan** involves several key steps that help NGOs outline the objectives, methods, timeline, resources, and ethical considerations for their research project.



NGO (non-governmental organization) is a legal entity that is not-for-profit and is established for the purpose of providing public services to developing countries. *Procedia Engineering* 75 (2014) 1191 – 1200



How to Define Goals and Objectives

1. Clearly state your overall goal: Start by articulating the broad, long-term goal of your project or program. This should be a concise and clear statement of what you aim to achieve.

2. Break down objectives into specific, measurable, achievable, relevant, and time-bound (SMART) outcomes; SMART outcomes are essential for effective proposal writing. Objectives should be Specific, stating what you want to achieve; Measurable, so that progress can be tracked; Achievable, considering available resources; Relevant, aligning with the project's purpose; and Time-bound, setting a deadline for achievement.

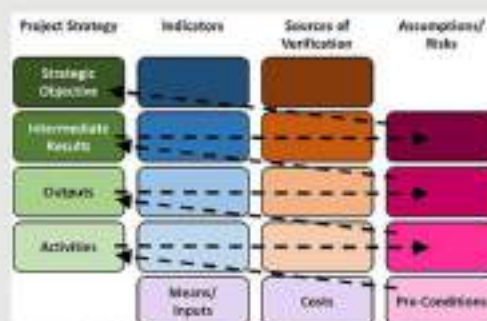


Logical Framework Approach

A strategic planning tool that provides a graphical representation of the connections and interactions among:

1. Impact
2. Outcome
3. Output
4. Activities
5. Input

The hierarchical and cause-and-effect relationship between these elements, along with the indicators used to measure progress, the assumptions and risks that can impact the success or failure of development interventions.



Logical Framework: Structure and Terminology (Lugar, 2006; www.undp.org)

Why the Logical Framework Approach?



01

Provide further clarity on how Impact, Outcome, Output, Activities, and Input are interrelated.

02

Precisely and clearly delineate the developmental priorities and ensure consistency in the logical and sequential arrangement of development objectives.

03

Identify the necessary interventions of high quality that need to be incorporated into the project to successfully accomplish the desired goals.

04

Identify the external factors that may support or impede the achievement of development intervention goals.

The Logical Framework Approach enables:

- Organizing projects systematically based on scientific principles
- Establishing priorities and goals for development
- Identifying mechanisms to achieve priority targets
- Aligning activities with expected outcomes
- Creating performance indicators to measure progress
- Recognizing assumptions and risks involved
- Defining responsibilities for project implementation
- Promoting transparency and accountability
- Encouraging consensus-building among project stakeholders

The logframe enables various stakeholders at all project stages, ranging from planning (proposal writing) to evaluation, to understand the situation and implement effective procedures. This is achieved through the utilization of four indicators that serve as a basis for sound decision-making.



TEMPLATE 1: THE LOGICAL FRAMEWORK MATRIX							
Goal (to impact, or overall objective)	Outcome (specific objectives)	Means (activities)	Means (activities)	Responsibility for implementation	Implementation Period		Budget (see Budget Management document)
					Starting Date	Ending Date	
1.	A.	1.					
		2.					
		3.					
		4.					
		5.					
		6.					
	B.	7.					
		8.					
		9.					
	C.	10.					
		11.					
		12.					
2.	A.	13.					
		14.					
		15.					
		16.					
		17.					
		18.					
	B.	19.					
		20.					
		21.					
	C.	22.					
		23.					
		24.					

Template example of The logical framework matrix.
(Source: Proposal writing: A Practical guide for Civil Society Organizations in Lebanon, version 1)

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Monitoring and evaluation plan



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Monitoring

A recurring procedure designed to collect data on various aspects of a project with the goal of providing project stakeholders with essential information for:

- Evaluating difficulties and finding solutions
- Keeping activities within the established timeline
- Assessing progress towards goal attainment, developing and/or reviewing future objectives.
- Making decisions related to human, financial, and physical resources.

TEMPLATE 8: MONITORING AND EVALUATION						
Activities	Management Tools	Indicators		Activities	Outputs	Overall Objectives
		Input	Outcome			

Template example of Monitoring and evaluation plan. (Source: Proposal writing: A Practical Guide for Civil Society Organizations in Lebanon, 2016.)

TEMPLATE 2: ACTION PLAN												
Goal:												
Timeframe for programme implementation	Months											
	1	2	3	4	5	6	7	8	9	10	11	12

Source: Regional writing: A Practical Guide for Civil Society Organisations in Lebanon context.

TEMPLATE 3: MONITORING AND EVALUATION

Frequency	Measurement Tools	Indicators		Activities	Outputs	General Objective
		Impact	Procedures			

Source: Proposal writing: A Practical Guide for Civil Society Organizations in Lebanon, 2016b.

The proposal addressed by NGOs must be tailored to the target audience by understanding their priorities, values, and concerns for several reasons

1. Relevance

- Tailoring a proposal to the target audience ensures that it is relevant to their specific needs and concerns.

2. Effectiveness

- Proposals that are tailored to the target audience are more likely to be effective in achieving their intended goals.

3. Participation

- Tailoring proposals to the target audience promotes participation and engagement. When NGOs take the time to understand the priorities, values, and concerns of the target audience, it demonstrates respect for their perspectives and creates opportunities for meaningful engagement.

4. Sustainability

- By understanding the priorities, values, and concerns of the target audience, NGOs can design proposals that are compatible with the local context and culture, and that can be integrated into existing systems and structures. This increases the chances of the proposal being adopted and sustained by the target audience even after the NGO's involvement ends.



Writing Techniques and Strategies

Proposal writing

- 01** Always pay attention to the language (use simple language, be logical, and avoid spelling mistakes)
- 02** Pay attention to the layout/presentation
 - Use your organization's logo on the first page
 - Use headers and footers
 - Use clear titles and paragraphs
 - Break the monotony
 - Add table of contents

Useful terms

To make the proposal writing process easier, organizations should be familiar with terms commonly used in donors' calls for proposals before describing the different phases of proposal writing.



Source: Proposal writing: A Practical Guide for Civil Society Organizations in Lebanon, Anwar.



Developing the Proposal

Preparation Phase

In order to make the **proposal writing process** more efficient, the preparation phase is important. This includes reviewing available literature and adding updated information and references for credibility. Various sources such as the organization's library, online resources, and public libraries should be used to prepare for subsequent phases such as literature review, field research, and identifying relevant funding sources. Other important aspects of the preparation phase include reviewing organizational capacities and objectives, setting an action plan to develop the project, and compiling a comprehensive file about the organization.

After completing the preparation phase, you can proceed to project development, writing, finalizing the proposal for submission, signing the partnership agreement with the donor organization, and initiating project implementation as further shown in the figure below.



PROJECT DEVELOPMENT AND FUNDING PHASES. Source: Proposal writing: A Practical Guide for CBO Sector Organisations (Liberationbooks)

Proposal Structure

1. Letter of approval
2. Cover
3. Summary
4. Introduction
5. Issue/Need (problem Statement)
6. Target group
7. Objectives and strategies
8. Approach and activities
9. Monitoring and evaluation plan
10. Sustainability plan
11. Budget
12. Annexes



Project Proposal

Project Title

Name

Organization Name

Address

City

State

Zip

Phone

Project Description

Project Budget

[illegible]

Letter of Approval

1. Letter of approval
2. Cover
3. Summary
4. Introduction
5. Issue/Need
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Why It is Important?

1. A document that the organization uses to communicate its work commitments to the donor organization.
2. It briefly states the organization's request and may refer to any previous meetings held between the two parties.

Cover

1. Letter of approval
2. Cover
3. Summary
4. Introduction
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Why It is Important?

1. The cover of a proposal should include the submission date, project name, applying organization's name and address, and contact person's name.
2. Adding a relevant picture can make the cover of the proposal more visually appealing.

Summary

1. Letter of approval
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Why it is Important?

1. The project summary provide a brief presentation of the issue addressed, project objectives, action plan and activities, requested funding amount, and information about the organization's capacities and strengths in leading the project.
2. It should be comprehensive yet concise to grab the readers' attention.

The executive summary in NGO proposals provides a concise overview of the proposal's important aspects, typically placed at the beginning of the document. It can be presented as a paragraph or a table.

What to include

For best effect, the executive summary should include the information that most interests the donor. Typically, these are:

1. Project location
2. The problem the project is trying to solve
3. The project approach to solving the problem
4. Number of targeted beneficiaries
5. Grant amount requested and time frame
6. Name of applying NGO(s)
7. Contact information
8. Impact

What NOT to include:

1. Organizational background – mention the name of the lead applicant's name, but no further details.
2. Project background
3. Detailed activities and objectives – focus on the goal and impact, not the details
4. Budget details – only include a total request to the donor
5. Risks or potential challenges to the project

Executive Summary

[NGO Name] is pleased to present this proposal to address a critical social issue and contribute to positive change in our community. This proposal outlines our organization's mission, goals, and strategies to effectively address the identified need and create meaningful impact.

Introduction

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Why it is important?

1. This section provides details about the organization's legal status, credentials, and ability to manage the proposed project. It also highlights the project's relevance to the organization's objectives and previous successful projects.

2. A brief description of the project's objectives and the addressed issue is included to emphasize the project's significance to the donor.

Issue/Need (problem statement)

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Why It is Important?

1. It provides a detailed description of a problem, including its scope and causes, and explains why it needs to be addressed.

2. It may include data and statistics to support the description and analysis of the problem.

What to remember when writing a problem statement

1. Problem Statement should provide a concise analysis of the issues or problems related to the project or the topic to be addressed by the project.
2. It should be precise and directly address the identified problems.
3. Incorporate quotes, live examples, references, research data, and press articles to support your statement.
4. Make sure it aligns with the donor's issues and priorities, and is specific to their requirements.

Effect > Problem > Cause

In the Problem Statement of the proposal, it is important to clearly outline the relationship between the Effect, Problem, and Cause. When faced with an issue, it can be beneficial to thoroughly examine its cause and effect relationship by taking steps back and forth. Continuously asking "Why" can be an effective approach to understanding the root cause of a problem. It's worth noting that a problem may have multiple causes and effects.

The goal of this undertaking is to effectively persuade readers that there is a singular and well-defined absence, gap, challenge, impediment, or obstacle that can be addressed and resolved. A problem statement, also known as a need statement, articulates a distinct problem that is being experienced by a specific group of individuals.

Example: Let's say you're preparing a problem statement for a proposal. You write, "We need resources to provide food for local children on weekends." Your problem, you say, is that you need resources.

But that's not the *real* problem. That's your solution — funds that will allow you to continue to implement your weekend feeding program.

The real problem is that a third of your local children live in poverty and they are hungry. There's not enough food at home. These children are enrolled in the National School Lunch Program and receive breakfast and lunch each weekday. But what do they eat on the weekends? Hunger leads to health problems, stunted growth, lack of concentration, poor school performance, and a host of emotional issues.



Source: www.nonprofitwriter.com

So in order to get started with writing your summary problem statement, ask Who, What, Where, When, and Why questions:

1. Who is affected? (local children)
2. Where is it happening? (throughout our county)
3. What is happening to them? (the children are hungry)
4. When is it happening? (every time school is out of session, including weekends and holidays)
5. Why is this an issue? (families and children live below the poverty line and can't afford enough food)

Source: www.nonprofitwriter.com

Now you can use those pieces of information to complete this problem statement template:

[Who is affected and Where] +
 [What's happening to them and When] +
 [Why this is an issue]

1. Who is affected and where are they? 1500 children. They live in our county.
2. What is happening to them and when? They live below the poverty line.
3. Why is this an issue? Children in poverty aren't getting enough to eat when school is out.

Source: www.nonprofitwriter.com

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You can start by filling in the gaps, and you may need to make some adjustments to achieve the final outcome. However, this will provide you with a strong foundation to begin with.

Problem Statement: More than 1500 county children + live below the poverty line + and aren't getting enough to eat on weekends.

The template is clear and helps you express the main problem in just one sentence. As you write your problem statement, you can add more details about who you're trying to help, evidence of the problem, examples, urgency, and your solution. The template lets you get straight to the point and keep your content focused on explaining the rest of the story.

Source: www.nonprofitwriter.com

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Target group

1. Letter of approval
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Why It is Important?

1. It provides information about the target group, how they are affected by the problem, and the project's geographical scope. It also analyzes the relationship between the target group and other communities.

2. It helps to understand the context and scope of the project, and the target group's needs, which is crucial for designing effective interventions.

Objectives and Strategies

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Why It is Important?

This section of the proposal is important as it outlines the primary and secondary objectives of the project, as well as the strategy that will be used to achieve them.

What to remember when writing a project objectives

1. Discuss the expected outcomes or results that you anticipate from the project.
2. Provide details about the specific population or group of people that the project aims to target, and describe the desired changes or improvements among that population.
3. Reflect on the systemic conditions or behaviors that need to be changed in order to achieve the overall goal or strategic objective of the project.
4. Ensure that the objectives are measurable and include indicators that can show what changes will occur, when they will occur, and how they will be achieved in terms of conditions, behaviors, and practices.
5. Make sure that the objectives can be verified at some point during the project's implementation to ensure accountability and progress tracking.

Some **Relevant Words to be used** while writing Objectives

- Decrease...
- Increase...
- Strengthen...
- Improve...
- Enhance...

Some **inappropriate words not to be used** while writing Objectives

- Train
- Provide
- Produce
- Establish
- Create

A project goal is a very general, high-level and long-term objective of the project.

Example: "Raise awareness about the importance of water conservation and sanitation through educational campaigns and community outreach."

This cannot be a project goal, but can be a general objective. While it is an important objective to raise awareness about water conservation and sanitation, it does not directly contribute to solving the problem or achieving specific outcomes. It is a general objective that sets the foundation for further actions and initiatives, such as educational campaigns and community outreach, which can be part of a larger project with specific goals and targets.

Project goals are typically specific, measurable, achievable, relevant, and time-bound (SMART) objectives, some examples of project goals could include:

1. Reduce water consumption in a community by 20% within the next 12 months through the implementation of water-saving technologies and behavioral change campaigns.
2. Enhance water governance and policy frameworks at the local, regional, or national level by conducting policy research, stakeholder consultations, and advocacy efforts, leading to the enactment of water conservation and sanitation policies or regulations.
3. Implement a community-based water monitoring program in a river basin, involving local communities, government agencies, and NGOs, to collect data on water quality, quantity, and ecosystem health, and use the findings to inform management decisions and improve water resource management practices.

Approach and activities

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Why it is important?

It provides details about the project's planned activities and how they will help achieve the stated objectives. It also includes an action plan with specific targets.

Activity	Start date	End date	Duration	Responsible	Resources	Costs	Impact	Output
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								

Indicator	Baseline	Target	Actual	Comments
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

Source: Proposal writing: A Practical Guide for Civil Society Organisations in Lebanon, Toronto.

Monitoring and evaluation plan

1. Letter of approval
2. Cover
3. Summary
4. Introduction
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Why It is Important?

It gives a summary of the project's monitoring plan, including the criteria used to measure progress and the indicators used to develop them. It also outlines the type of evaluation plan, whether it is conducted internally or externally.

Template for Monitoring and Evaluation						
Priority	Project Name	Indicators		Activities	Inputs	Output/Impact
		Quantitative	Qualitative			

Source: Proposal writing: A Practical Guide for Civil Society Organizations in Lebanon (2010)

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Sustainability Plan

1. Letter of approval
2. Cover
3. Summary
4. Introduction
5. Issue/Need
6. Target group
7. Objectives and strategies
8. Approach and activities
9. Monitoring and evaluation plan
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11. Budget
12. Annexes

Why It is Important?

This section outlines the organization's requirements for the project in terms of financial and human resources, as well as a plan for ensuring the project's long-term sustainability from both financial and management perspectives.

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The sustainability plan should solely focus on the long-term viability of the project, specifically addressing community, financial, and organizational sustainability aspects.



Source: proposalsforprogress.com

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Community sustainability in a project involves integrating it within the community and ensuring its continued success even without donor funding. It is important to involve beneficiaries in the planning and implementation process to foster a sense of ownership and incorporate their preferences into the project for long-term sustainability.



Source: proposalsforprogress.com

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Financial sustainability in a project involves securing funding sources for the project's long-term viability. This can be done through external sources like grants or internal sources like revenue-generating activities. Detailed information and a well-thought-out strategy are essential, especially for projects with recurring costs.



The diagram consists of a dark blue inverted triangle containing three circles. The top-left circle is labeled 'Community', the top-right circle is labeled 'Financial' and has a red border, and the bottom-center circle is labeled 'Organizational'. A blue arrow points downwards from the triangle to the text 'Project Sustainability'.

Source: proposals4engines.com

Organizational sustainability involves long-term survival, which donors seek for enduring partnerships. It can be achieved through external funding sources like grants or long-term funding, as well as internal sources like generating income or membership fees. Including this information in the sustainability plan is crucial to demonstrate reliability to donors.



The diagram consists of a dark blue inverted triangle containing three circles. The top-left circle is labeled 'Community', the top-right circle is labeled 'Financial', and the bottom-center circle is labeled 'Organizational' and has a red border. A blue arrow points downwards from the triangle to the text 'Project Sustainability'.

Source: proposals4engines.com

What makes for a successful sustainability plan?



Source: proposals4impact.com

Budget

1. Letter of approval
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Why It is Important?

This section offers a summary of the funds needed for the project, organized by budget items. It also includes a detailed description of the expected expenses and financial statements.

Annexes

1. Letter of approval
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Why It is Important?

Annexes should only be included if they are useful and provide necessary information. Examples of useful annexes include financial reports, detailed budgets, action plans, and endorsement letters from partners.

Measurement and Monitoring

Always try to package the project into an attractive proposal



Always follow a logical threat as many donors want the logical framework approach

NGOs commonly utilize the Logical Framework (LogFrame) as a primary tool for crafting effective project proposals. It serves as a framework for systematically organizing project information. **It takes a form of a 4×4 table**

Narrative Summary	Performance Indicators	Means of Verification	Project risks and Basic Assumptions
<p>Goals</p> <p>These are the main objectives of your project or topic. They usually need to be real, measurable and respond to existing problems in your community that you want to address. These problems beforehand to build a strong argument for your project. Also, remember to link your project to other existing projects working in the same field of interest in to highlight how your project will support ongoing attempts to solve said problems.</p>	<p>What are the quantitative and qualitative means to assess the project performance? For instance, the project could increase the number of people aware of an at-risk resource for the community. As such, the project performance will be assessed quantitatively. However, if your project will change an attitude or behaviour in the community, the performance will be more likely to be assessed qualitatively.</p>	<p>What resources are available to measure your needs? What is the project evaluation system?</p>	<p>What are the main potential to the development of your project? Can you already access the resources or is it more to that extent to progress the success of your project? If yes, what strategies are you implementing to keep those risks at the minimum? What are the basic assumptions behind the proposal of your project? What evidence can you provide as justification of your project?</p>
<p>Inputs</p> <p>Why does your community need the proposed project? Who are the beneficiaries and how they will eventually improve their lives by participating in the project? Usually, you should state the impact of the project in relation to a given set basic assumptions.</p>	<p>How will you assess the achievement of the project? Again, consider quantitative measures and qualitative indicators to measure the accomplishment of the project.</p>	<p>What resources you are willing to engage with in order to measure the achievement of the project? Consider people, money, processes and others.</p>	<p>If you are the basic assumptions to contribute a favorable environment for your project to have an impact on your community? Can you overcome any impediment? If the answer is yes, provide strategies you will achieve overcome potential impediments.</p>
<p>Outputs</p> <p>What are the main concrete outputs of the project? How is the project contributing to the resolution of a problem?</p>	<p>How can you quantitatively and qualitatively show the your impact? Please state the baseline and standards for the achievement of these outputs.</p>	<p>How will you verify the achievement of your output? What resources will you use to assess said achievement? Think about a monitoring system for the implementation of the project.</p>	<p>Can you foresee any potential disruption that could negatively impact the implementation of the project? If so, what is your strategy to deal with it?</p>
<p>Activities</p> <p>What are the activities that will enable the project to accomplish its goals by achieving its outputs?</p>	<p>What sort of activities is the project implementing? Describe these qualitatively and quantitatively. Remember to identify financial, human, and physical resources required to implement activities.</p>	<p>What resources will you cash due to assist the development of described activities?</p>	<p>What factors could possibly limit or the potential of your activities to reach an output? What strategy can you employ to limit the effect of the disruptive series of said event?</p>

Source: <https://goget.org>

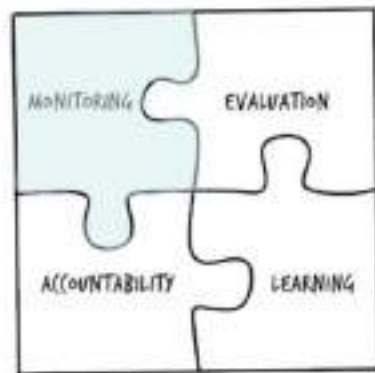
17

What is MEAL?

Source: <https://www.aidproject.com/2018/02/20/what-is-meal/>

Strong Monitoring, Evaluation, Accountability and Learning (MEAL) is critical to project success.

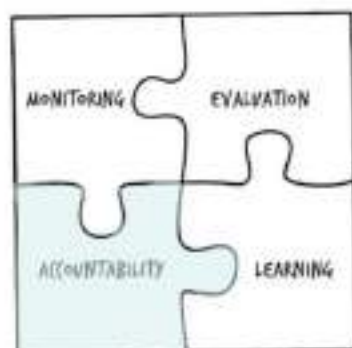
18



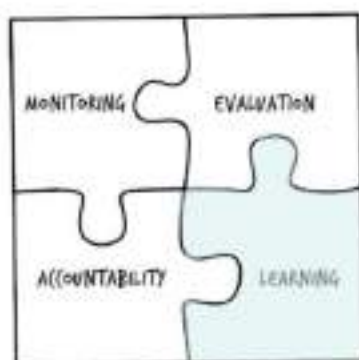
Monitoring refers to the ongoing and organized process of gathering and analyzing data related to the advancement of a project and any alterations in the project's surroundings.



Evaluation refers to the process of assessing the design, implementation, and outcomes of a project from a user-centered perspective, whether it is in progress or has been completed.



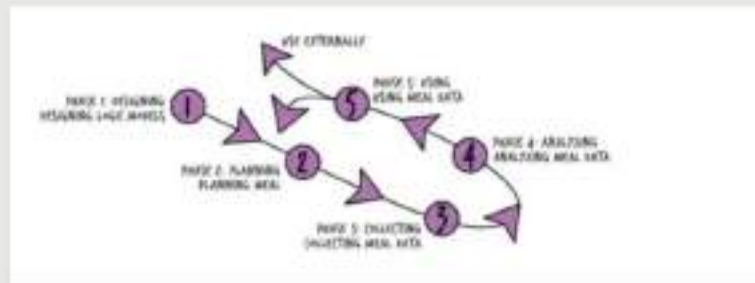
Accountability involves a dedication to acknowledge and address the requirements of various project stakeholders, such as beneficiaries, donors, partners, and the organization, while maintaining a balance among their needs.



Learning involves incorporating procedures for introspection within oneself, utilizing data and posing inquiries to inform more informed choices in project management.

When combined, these four elements form the foundation of a MEAL system. Each element has its own significance and is interconnected. It can be likened to puzzle pieces, with each having its own designated spot and role. However, for a MEAL system to be effective, these pieces need to be properly aligned, connected, and integrated to work harmoniously together.

How to use the MEAL plan



Phase 1 Designing Logic Models

Phase 4 Analyzing MEAL Data

Phase 2 Planning MEAL

Phase 5 Using MEAL Data

Phase 3 Collecting MEAL Data

Source: www.ipseducation.org

Logical framework approach

The Logic Framework approach (LFA) is a systematic methodology that provides a structure for designing, monitoring and managing projects.

It is a logical sequence of events, starting from the vision and mission of the project, through the design, implementation and evaluation of the project.

Level	Indicators	Assumptions
Impact	What are the long-term effects of the project?	What are the long-term effects of the project?
Outcome	What are the short-term effects of the project?	What are the short-term effects of the project?
Activities	What are the immediate effects of the project?	What are the immediate effects of the project?

Impact	What are the long-term effects of the project?
Outcome	What are the short-term effects of the project?
Activities	What are the immediate effects of the project?
Inputs	What are the resources used in the project?
Outputs	What are the results of the project?
Assumptions	What are the assumptions underlying the project?

Designing a Logical Framework

- 1. **Project Rationale** - Why is the project needed? What are the problems it aims to address?
- 2. **Objectives** - What are the long-term, medium-term and short-term objectives of the project?
- 3. **Activities** - What are the specific activities that will be carried out to achieve the objectives?
- 4. **Inputs** - What are the resources needed to carry out the activities?
- 5. **Outputs** - What are the results of the activities?
- 6. **Assumptions** - What are the assumptions underlying the project?

Monitoring and Evaluation (M & E)

M&E are the cornerstones of good project management. They improve impact, quality and accountability of current and future projects.

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Monitoring	Evaluation	Impact Assessment
Monitoring is the ongoing collection and analysis of information to track progress against plans and check assumptions for continued validity.	Evaluation is the periodic assessment of the effectiveness of a project or programme, based on evidence and analysis.	Impact Assessment is the systematic analysis of the likely effects of a project or programme, both positive and negative.

Monitoring	Evaluation	Impact Assessment
Monitoring is the ongoing collection and analysis of information to track progress against plans and check assumptions for continued validity.	Evaluation is the periodic assessment of the effectiveness of a project or programme, based on evidence and analysis.	Impact Assessment is the systematic analysis of the likely effects of a project or programme, both positive and negative.

Designing a Logical Framework

- 1. **Project Rationale** - Why is the project needed? What are the problems it aims to address?
- 2. **Objectives** - What are the long-term, medium-term and short-term objectives of the project?
- 3. **Activities** - What are the specific activities that will be carried out to achieve the objectives?
- 4. **Inputs** - What are the resources needed to carry out the activities?
- 5. **Outputs** - What are the results of the activities?
- 6. **Assumptions** - What are the assumptions underlying the project?

Monitoring and Evaluation (M & E)

M&E are the cornerstones of good project management. They improve impact, quality and accountability of current and future projects.

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Budgeting proposals



What does the Donor Look inside the Proposal Budget?

Transparency

- Donors require transparency in the development and implementation of a project, involving stakeholders and sharing ideas to build the project towards the desired objectives.

Impact

- The expected impact of a project is also critical, and donors seek enormous information about it.

Capacity

- The capacity of the organization proposing the project is another essential component, and donors assess the organization's skills, expertise, and experience in executing similar projects.

Competition and budget

- In highly competitive bids, donors often compare project proposals and evaluate the proposed budget, which can influence their decision significantly. It is crucial to understand the budget limit and develop a project proposal accordingly as what influences most donors is what type of 'budget' the NGO is proposing inside the proposal.

This budget proposal is an open-ended budget, distributing all costs by sector.

^aSource: author's calculations based on data from the 1990 Census.



Annex 4 – Project Management



1

Introducing : Akram Najjar

- B. Sc. In Mathematics and Physics
The American University of Beirut (1966)
- B. Sc. Electrical and Electronic Engineering
University of Hertfordshire in England (1969)
- M. Sc. in Systems Engineering
The American University of Beirut (1972)
- Senior Systems Analyst (Middle East Airlines) - 5 years
- Own Software companies - 20 years
 - Database - Beirut
 - Infotech - Dubai
- Business Technology Consulting - Since 1995

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2

Main Areas of Interest

- 1) Project Management
 - Developed own PM Framework
 - Applied it with several organizations
 - Founding member of the PMI Lebanon Chapter
- 2) Business Process Reengineering and Improvement
- 3) Data Analysis and Data Science
- 4) Technical Writing
- 5) Publication of 6 Technical Books (www.marginalbooks.com)

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3

Contacts

Name: Akram Najjar

Email: anajjar@infoconsult.com.lb

Mobile: 03-206805

Address: Solitaire – Floor
Abdul-Qader Street – Zoqaq El Blat
Beirut, Lebanon

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4

		Workshops	Reviews	Day 1 - (12 x 10 min)												Day 2 - (12 x 10 min)											
Sections				1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
0	Intro to Workshop																										
1	Prerequisites (ag project) Concepts and Tools																										
2	Phase 1.0 Initiation																										
3	Phase 2.0 Planning (Prerequisites)	2	4																								
4	Phase 2.1 Planning (Prerequisites) - The Change Control Procedure (CCP)	3	5																								
5	Phase 2.2 Planning (Prerequisites) - Monitoring and Evaluation		1																								
6	Phase 2.2 Planning (Scope) - How to Manage Quality in a Project		1																								
7	Phase 2.2 Planning (Scope) - Definition of Project and Work in Scope	2	8																								
8	Phase 2.2 Planning (Scope) - Work Breakdown Structures		3																								
9	Phase 2.2 Planning (Scope) - The Delivery and Acceptance Procedure (DAP)	1	9																								
10	Phase 2.2 Planning (Scope) - How to Manage Risk in a Project	1	13																								
11	Phase 2.2 Planning (Preparing the Master Plan)		1																								
12	Phase 2.2 Planning (Preparing the Master Plan) - Earned Value Analysis	14																									
13	Phase 3.0 Execution and Control (Build, Stabilize and Deploy)		1																								
14	Phase 4.0 How to Close Projects		2																								
15	What is Required for a Successful Project																										
16	Course Closure and Q&A																										

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5

Resource Material

- 1) On **OneDrive**, there is a zipped file containing 26 Resource Folders
- 2) **Contents:** workouts, templates, sample documents, databases, forms, etc.
- 3) Each **Resource Folder** has a number indicating the presentation it supports
- 4) **PowerPoint Presentations:** full presentations in PDF Format are found in Folder X01
- 5) **PM eBooks:** by the Trainer are found in Folder X02
- 6) Some **PM Humor** documents in X03

P01—Business Case
 P02—Project Announcement
 P03—Communications Plan
 P04—Deliverables Register
 P05—Inception Report
 P06—Pending Issues Register (Database)
 P07—Progress Report
 P08—Project Plan
 P09—Project Startup Meeting Agenda
 P10—Stakeholders
 P11—Change Control Procedure (CCP)
 P12—Monitoring and Evaluation
 P13—How to Manage Quality in a Project
 P14—Requirements Analysis
 P15—Requirements Analysis Example (Annual Report)
 P16—Test Scripts and Scenarios (TSS)
 P17—Work Breakdown Structures
 P18—Delivery and Acceptance Procedure (DAP)
 P19—Risk Analysis Management
 P20—Prepare Master Plan
 P21—Earned Value Analysis
 P22—Execute and Control (Build, Stabilize and Deploy)
 P23—Project Closeout
 X01—PowerPoint Presentations in PDF Format
 X02—PM Related Books by Alexei Nager
 X03—Project Humor

6




Jump to a Microsoft **PowerPoint** Presentation


Jump to Microsoft **Word** document

Jump to Microsoft **Excel** workbook

Jump to Microsoft **Project** document

Jump to Microsoft **Access** document

 Class **Exercise**

 **Demo** by Trainer

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7

Notes on Microsoft Word Documents

The WORD documents use the “**Fields**” feature of MS Word

Some of the fields are **automatically** updated by MS Word

Others have been **customized** by the trainer . . .

You can modify the customized fields as shown on the next slide

(You can also add your own customized fields)

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8

To update a field:

- 1) Select **FILE / INFO / PROPERTIES / ADVANCED PROPERTIES**
- 2) Select the **CUSTOM** Tab
- 3) Select the **Field** you want to change in the Properties
- 4) Enter the new values in the **VALUE** field and press OK

IT Project Plan - TEMPLATE v1.0.docx Properties

General Summary Statistics Contents **Custom**

Name: Checked by Client

Type: Text

Value:

☐ Link to content

Name	Value	Type
Date	May 20/14	Text
Version	v1.0	Text
Project	PROJECT001	Text
Beneficiary	BENEFICIARY001	Text

OK Cancel

9

The Document Information Form

In order to track the work done on each document, WORD documents have a Document Information Form which you need to update for each revision.

Document Information

Project Name	PROJECT001
Beneficiary	BENEFICIARY001
Author Name	AUTHOR001
Status	

Revision History

Author	Description of change	Version	Date

10



11



12



Project Management Concepts and Terms

Presentation 01

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1

Agenda

- A. Some Definitions: Projects, Deliverables, Scope
- B. Product and Project Management
- C. The Demand and Supply Relationship
- D. Standardized Project Phases
- E. The Risk of Turnkey Projects
- F. Ongoing Activities
- G. Terminology Alert

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2

A.

Some Definitions: Projects, Deliverables, Scope

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3

What
are
Projects?



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4

Definition of a Project:

- 1) A unique **Process** consisting of a planned set of co-ordinated and controlled **Activities**
- 2) Undertaken to achieve a unique **Objective** or Result that conforms to specific **Requirements** stated by the Project **Stakeholders**
- 3) The activities are Bound by the **Scope of the Project** and the **Products and Services** it will produce
- 4) The activities are Bound in **Time** by a specific schedule
- 5) The activities are Bound in **Cost** by a specific resources and their budget
- 6) The activities are planned for and executed by a **One Time Team** assisted by beneficiaries and contractors

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5

The Goal of every Project is
to Define, Build and Control the Following



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6

A Large Sign in a Workshop

- 1) We can do everything **very fast**
- 2) We can do everything **very cheaply**
- 3) We can give you **all the features** that you want

Pick any 2 of the above

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7

Important Terms: **Deliverables**

Any measurable, verifiable outcome, result or item that must be produced to complete a project.

From the Project Management Institute's
Guide to the Project Management Body of Knowledge

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8

Deliverables:

Deliverables are the main Products and Services to be built

They are "delivered" to internal or external beneficiaries

The Project has deliverables that are different from the delivered Products and Services:

Internal project documents

WBS

Project Plan

Risk Analysis Document

Progress Reports

M&E Report

Product Deliverables are produced in Phase 3 (Execution)

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9

So . . . to avoid many terms

We will use the terms "**Product**" and "**Deliverable**" in our discussion - **interchangeably**

We will mean by these the direct result or outcome of the Project



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10

Important Terms:

Scope - - - نطاق او مجال العمل

Scope comes from the Greek word: **Skopos** = **Space**

Scope = space or opportunity for unrestricted motion or Activity

Scope defines the **Limit of the Activities** we need to execute

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The Scope of a Project can only be Completed by Valid Activities

- 1) The Scope of a Project can be completed by executing Activities that are **within the Scope** of the Project
- 2) And by **NOT** executing any Activities **outside the Scope** of the Project
- 3) As with telling the Truth: the Whole Project and Nothing but the Project

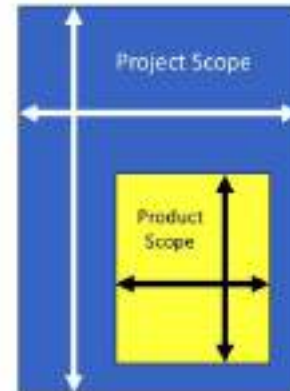


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There are 2 Sets of Activities in a Project

- 1) Activities that lead to the completion of the **Deliverables**
- 2) These are defined by the . . .
- 3) **Product Scope = Technical Specifications**
- 4) Activities that lead to the planning and control of the **Project**
- 5) These are defined by the . . .
- 6) **Project Scope = Project Plan**



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Product Scope = Technical Specifications

Product Scope defines the Activities needed to complete the final product or deliverable

Product Scope is defined by a set of **Technical Specifications**

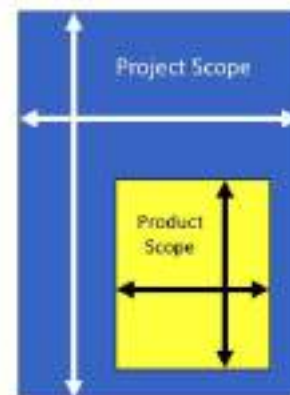
Technical does not mean "engineering"

Technical = not an Opinion

Technical = stated using an agreed upon precision

Technical = testable statements

We will have more to say about "specification" as an Activity



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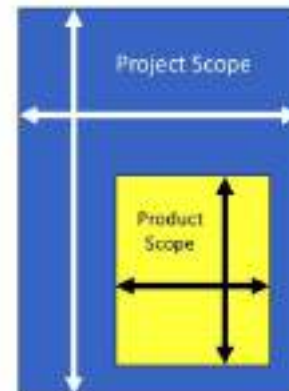
Project Scope = Project Plan

Project Scope is defined by Activities that are completed **outside the Product Scope**

They are part of the Project Management work needed to:

- Plan, monitor and control the activities of the project
- Schedule / Budget the project
- Assess the risks of the project
- Communicate within the project
- Apply Quality Management within the project
- Etc. (more later)

None of these contribute **directly** to the building of the products or services



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Product and Project Scope Creep

One of the most dangerous aspects of projects is

Product or Project Scope Creep

Later on, we will introduce the **Change Control Procedure (CCP)**

The purpose of CCP is to ensure that technical specs and project plans can only change under a controlled environment



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Example: Product Scope (Tech Specs) for a New Attendance System

- 1) Specs of the Attendance **Organizational** System
- 2) Specs of the Attendance **Software** Application
- 3) Specs of the required **Technological** Architecture
 - Fingerprint readers and related Hardware
 - Network / Software platform / Databases / Distribution
- 4) **Software Development** specs (or how to build the software . . . Instructions to builders)
- 5) Specs for all **Related** products and services:
 - Implementation, training, maintenance, documentation, etc.
- 6) Specs of **Non-functional Requirements**:
 - Environment conditions for fingerprint readers / physical security / etc.
- 7) **Interim product**: New technology survey
- 8) **Interim research**: Pricing, competition, etc.

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Example: Project Scope (Project Plan) for a New Attendance System

- 1) Project Plans
- 2) Work Breakdown Structure
- 3) Risk Analysis
- 4) Communications Plans
- 5) Budgets and Schedules
- 6) Monitoring and Evaluation Report
- 7) Quality Management procedures
- 8) Procurement

And more, many more, later

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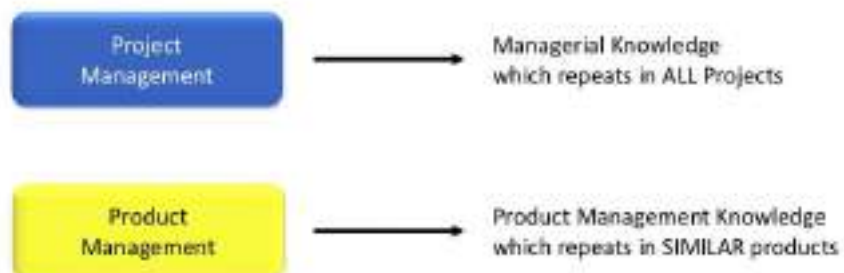
B.

Product and Project Management

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Knowledge about Project Management **vs** Knowledge about Product Knowledge



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Project Managers are NOT Product Managers

Projects were traditionally assigned to persons who are best at
Managing Products and Services

Examples:

- Assigning a full IT Software Application to the Chief Programmer
- Assigning the Launch of a new product to a Marketing expert
- Assigning the installation of a new machine and process in a factory to the Technical Supervisor
- Assigning an Electrical Engineer to manage the installation of a water station

Product Managers conducted some Project Management activities BUT NOT ALL

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Typical Activities of a Product Manager

- 1) Scope the Product
- 2) Design the Product in full
- 3) Develop Test Scripts and Scenarios
- 4) Define the Test Environment
- 5) Breakdown the Product Design / Building activities into Tasks
- 6) Estimate the required resources per Task
- 7) Estimate the duration per Task
- 8) Sequence the Tasks
- 9) Build the product
- 10) Test the product
- 11) Deploy the product

These were the only Tasks
in Traditional Projects

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Project Management Areas of Knowledge

This is the knowledge needed to plan and complete a Project
The following 10 areas are based on the [Project Management Institute's Guide](#):

- There are 4 core knowledge areas
- There are 5 facilitating knowledge areas
- And there is 1 integrating knowledge area

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Core Knowledge Areas



Facilitating Knowledge Areas

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Typical Responsibilities of a Project Manager

- 1) To be responsible for the Success/Failure of the Project
- 2) To Develop the Project Plan
- 3) To oversee the implementation of the Project Plan
- 4) To coordinate between all stakeholders
- 5) To consult with Product Manager on
 - Product scoping (including testing)
 - Scheduling
 - Resource assignment
 - Costing
- 6) To monitor and resolve issues
- 7) To manages communications

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Responsibilities of a Project Manager (Cont.)

- 8) To control Product / Project Scope thru Change Control Procedures
- 9) To manage all Quality Processes
- 10) To develop and lead an effective team
- 11) To define metrics and manage Performance Measurement
- 12) To obtain, allocate and monitor usage of resources
- 13) To report project progress to senior stakeholders
- 14) To resolve problems encountered by team members
- 15) To coordinate cross-project management
- 16) To analyze and manage risks
- 17) To manage relationships with Clients and Suppliers

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How Much of Product Knowledge does a Project Manager need to Know?

- 1) Theoretically, the PMI does not require the PM to be knowledgeable in Product work
- 2) This means an Electrical Engineer can, theoretically, run a Banking Project
- 3) However, we need to improve the communications between the Project and the Product Managers
- 4) **Recommendation:** the Project Manager should know enough about the Product to coordinate with and evaluate the work of the Product Team
- 5) **Suggestion:** Project Managers to be ex-Product Managers

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The Role of the PM vis-à-vis Management



- 1) Management does not understand Product Management
- 2) Product Management do not know how to talk to Management
- 3) Both can communicate well with Project Managers

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Confusing the Product Manager with the Project Manager

- 1) In the past, Management assigned Product Managers to manage Projects
- 2) Recently, Management woke up to problems resulting from this bad decision
- 3) They started assigning Project Managers to manage projects (also a mistake!)
- 4) PMs were selected from Product Managers without PM knowledge
- 5) They were still expected to conduct Product Activities (design, code, etc)
- 6) They were given a "BOSS" role over the whole team
- 7) What was a solution, became another problem!

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A Better Relationship between Product and Project Managers

One is Never the Boss of the Other

Their relationship is **coordinative**, **collaborative** and **cooperative**

They **cooperate** on all project activities:

Costing / Timing / Scope of Product / Planning / Monitoring

The Product Manager **produces** the product

The Project Manager **manages the project** to make sure the Product Manager can produce the product

In small projects, the 2 roles can be combined

But Project and Product management activities must be recognized as different

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C.

The Demand and Supply Relationship

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The Demand and Supply Relationship



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Vertical Management OR “Military Command and Control”

- 1) Staff are given tasks to complete
- 2) There is almost no **give and take** between Boss and Sub-ordinate
- 3) When **ordered** to complete a task the Sub-ordinate has no choice but to complete the task
- 4) **Differences** always exist between
The Boss's expectation and
The capability and capacity of the Sub-ordinates
- 5) These differences always result in **problems**

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How is Horizontal Management Different?

- 1) **Horizontal** Management relies on interactions
Between team members
Between team members and clients/suppliers
Between team members and remaining stakeholders
- 2) Each interaction must be defined as a **Contract** or an **Agreement**
- 3) Small “contracts” can even be verbal or email messages
- 4) There is always a party who is **Demanding**
- 5) And a party who is **Supplying**



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Characteristics of Agreements

- 1) **Scope of Work** must be clear
- 2) **Duties and Obligations** of both sides are clear
- 3) **Rights** of both sides are clear
- 4) The terms of the agreements are **Testable**
- 5) **Costs** and **Schedules** are clear

That sounds like a project plan!

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Benefits of Horizontal Demand/Supply

- 1) A Demand/Supply situation is always **Fair**
No one signs a one-sided agreement
- 2) There is always an **Equality** between the demanding and the supplying parties
- 3) Both sides will be motivated towards better **Delivery**
Clearer specs or scope of work
Better testing
Better delivery procedures

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And . . .

- 4) Tasks become **Effective** and **Efficient**
- 5) Agreements become **Transparent** (nothing is hidden or implicit)
Blame, disputes and conflicts are then minimized
- 6) Work is **Accountable**
Penalties and rewards are easier to handle
- 7) It is more **Flexible** to manage tasks because . . .
Clear agreements are easier to modify after mutual agreement

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BUT even if there is Equality
between Supply and Demand . . .

على الشاري الحذر

Buyer Beware

Caveat Emptor

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No Matter How Small or Large: we must define the Demand / Supply Relationship for **Every Task**

Train Users
 Photocopy manual
 Analyze Requirements
 Proofread documents
 Verify a Questionnaire's Validity
 Develop a Test Script
 Raise a Change Request



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D.

Standardized Project Phases

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Traditionally, Project Managers used **Product Life Cycle** phases to breakdown a project . . .

Instead of **Project Management** Phases

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Example of a Product Based Life Cycle

- 1) Select Suppliers
- 2) Buy Equipment
- 3) Deliver Equipment
- 4) Install Equipment
- 5) Test Installation
- 6) Test Initial Operation
- 7) Train Operators
- 8) Handover the equipment

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The Project Management industry
is standardizing its Phase Structure

We now concentrate on
Project Management Activities
and NOT on **Product Life Cycles**.

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Updated Phase Names

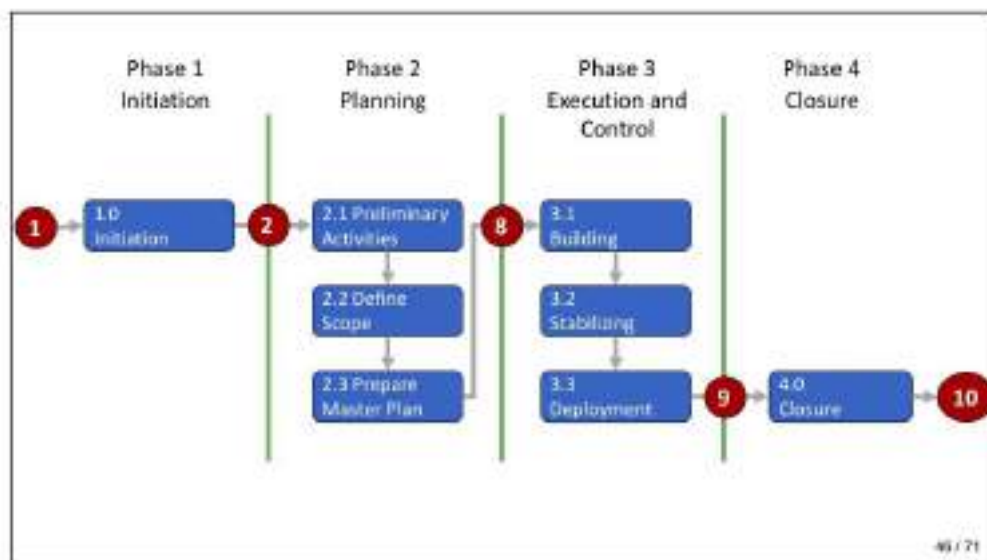
Initiation	Planning	Execution	Closure
(Inception)	(Elaboration)	(Construction)	(Transition)
(Envisioning)		(Development)	
(Development)		(Production)	

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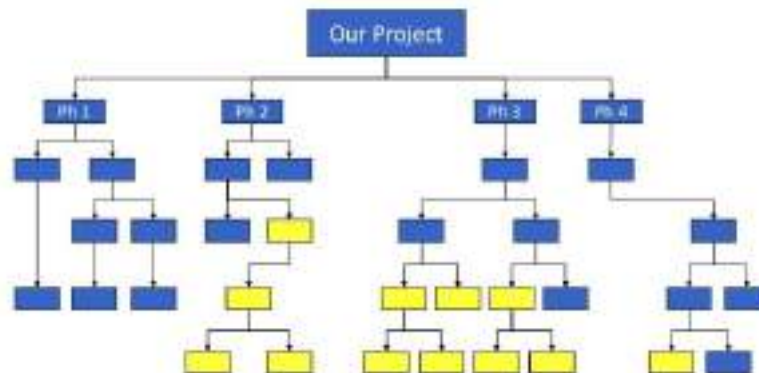


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Where are the Product Activities in our Project?



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The PMI and Project Phases

- 1) PMI does not prepare a Framework for completing a Project
- 2) PMI does not specify distinct phases for a Project
- 3) It simply provides the areas of knowledge you need to know to manage a project
- 4) PMI breaks down a project into more than 50 processes

It remains up to the Project Manager to group these processes into Project Management phases

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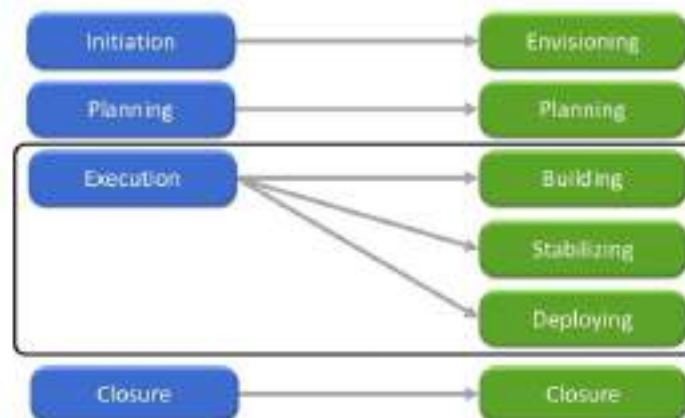


How Does Microsoft
Breakdown Phases in their
Software Projects?

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Microsoft has a Good Breakdown of Phase 3



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The 3 Main Activities of the Execution Phase

1. **Building:** to execute all activities needed to complete the building of each deliverable as per the Product Scope
Deliverable: Product ready to Test (Stabilize)
2. **Stabilizing:** to carry out all Quality Control and Assurance activities to ensure that the Scope is correct and that it is being built as per Schedule and according to Budget.
Deliverable: Product ready to Deploy
3. **Deployment:** to install, implement, distribute, deploy the deliverables to ensure they are ready for use/operation.
Deliverable: Product ready to Operate



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A Framework = a Generic and
Adaptable Project Management Plan

This course is based on a PM
Framework with the Activities
in its 4 Phases + Sub-Phases

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E.

The Risk of Turnkey Projects

20175

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In Turnkey Projects the provider is totally responsible for the design of the deliverables as well building the products, deploying them and handing over the "keys" of the project when the deliverables are ready for operation.



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Well . . .

- 1) In many sectors, this is already being done: construction, engineering and technological projects
- 2) In other sectors, this approach is wrongly applied . . . due to aggressive scheduling requirements and to ignorance

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55

What is the Problem with such an Approach?

- 1) Customization can be limited to what the provider already has designed
- 2) Providers are responsible for building the products they designed
- 3) When proposing, Providers cannot quote the price of building a product they have still have not designed
- 4) Providers would be encouraged to increase the price of building the product to hedge against unknown requirements that might arise during design (after agreement!)
- 5) Providers cannot be supervised as they are the designers
- 6) Providers might not have the dual experience of design and building (note the split in the construction industry)

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So why are some projects “Turnkey” based?



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The Turnkey Approach can be used . . .

- 1) When the project is limited in scope so that splitting the 4 phases into 2 x 2 would not be feasible
- 2) When the design is well known in advance (as in the case of customization of existing products . . .)
- 3) When the procurement cycles are too long to warrant two projects

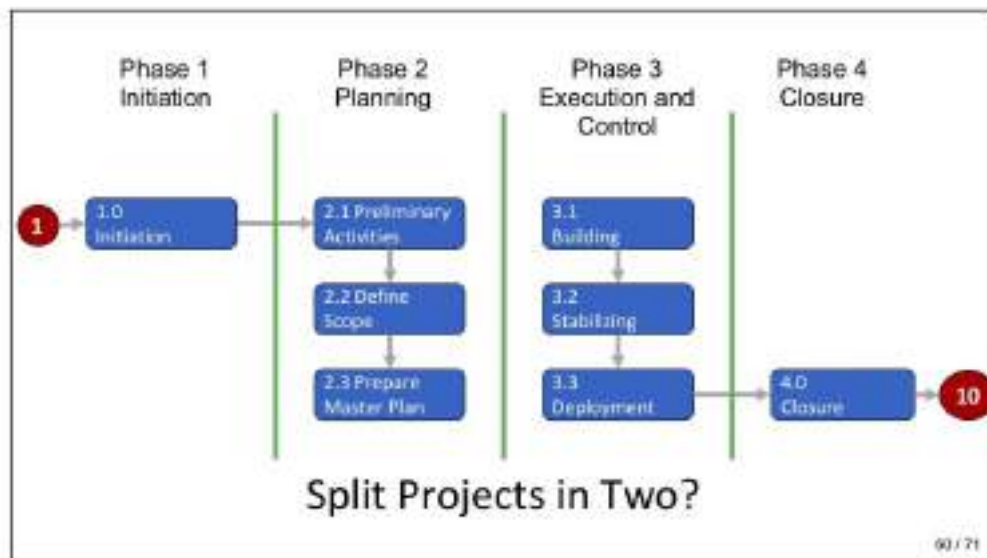
58 / 71

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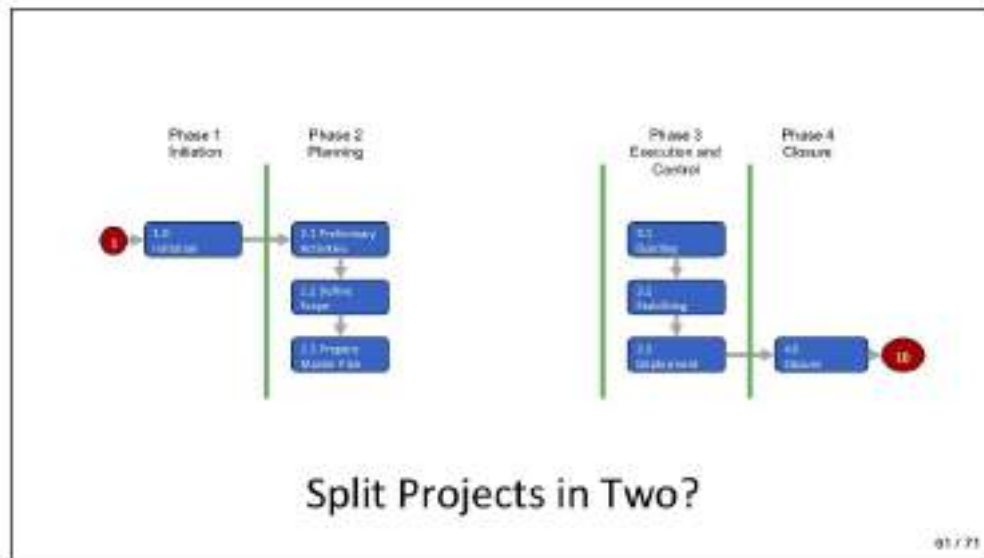
The Alternative . . .

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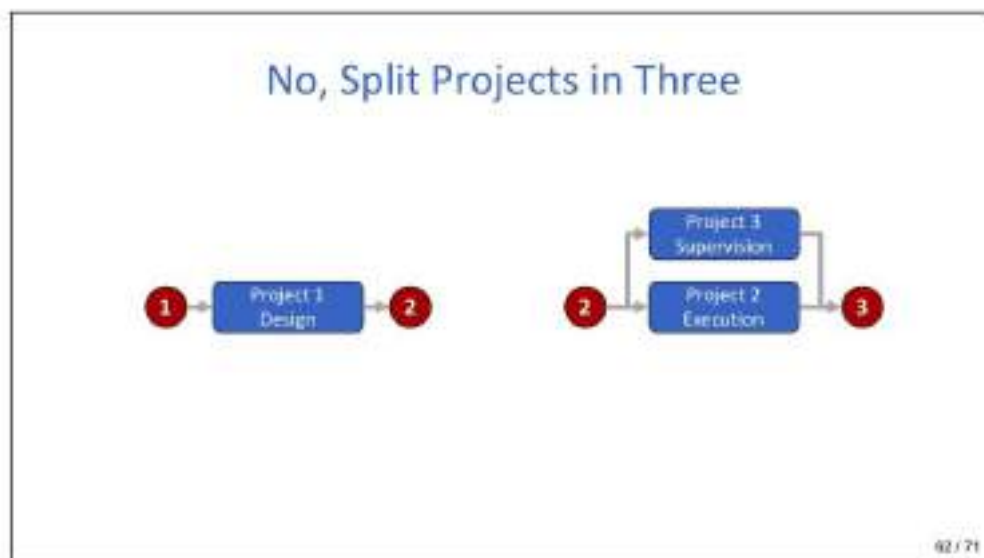
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F.

Ongoing Activities

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Ongoing Activities

Although most projects have clearly defined phases . . .

Many activities are continuously executed in a project

The example activities on the next slide will be discussed in the coming presentations

Each will be discussed at the time when it first appears in a project

(Mostly in [Phase 2.1 Planning \(Preliminaries\)](#))

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What are the Activities that are Continuously Executed in a Project?

- 1) Communications Management
- 2) Pending Issues Management
- 3) Delivery and Acceptance
- 4) Change Control Management
- 5) Deliverables Tracking Register
- 6) Budget Management
- 7) Schedule Management
- 8) Monitoring and Evaluation (Metrics)

These activities will be presented in the coming presentations . . . when it is their time to be launched

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G.

Terminology Alert

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We will often come across these overlapping terms in a project:

Client / Receiver / Beneficiary / Demanding Party

Supplier / Provider / Supplying Party

Another confusing dimensions:

Are these parties inside or outside our organization?

We can have internal beneficiaries and suppliers as well as outsiders

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- 1) We will use the term **Beneficiary** to stand for Client, Receiver, Demanding party, etc.
- 2) We will use the term **Provider** to stand for Supplier
- 3) (Whether inside or outside the organization)

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Other Terms

Various sectors use different names

Various PM institutions too

Some terms we will be using are now standard terms

These should not be associated with specific projects or sectors

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Examples . . .

Build: has come to mean execute or construct or develop . . . Any activity that results in a new product

Design: has come to mean specify the technical aspects of a product or a service . . . Any activity that defines technical specifications

Stabilization: this comes from Microsoft and is slowly taking over the term "Testing" . . . Testing is limited to testing whereas stabilization includes correcting, retesting and escalating (in case of giving up)

Execute, Implement, Deploy, Handover are sadly confused with one another . . . They will be clarified

Test Site: does not need to be a physical place . . . could be a dummy procedure

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Phase 1: Initiation

Presentation 02

1

Reminder of the Phases of a Project



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2

Course Organization

By now, you would have completed the Course with **Miss Sophie Mansour**

Its title is "**Preparation of Proposals**"

The Initiation Phase activities in a project are covered in the above course . . .

We shall go through a quick reminder of the workflow

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3

What is the Aim of the **Initiation** Phase?

- 1) To **respond** to the announcement of a potential project
- 2) To **collect input** to the project such as Technical Terms of Reference, Requests for Proposal, Letters of Interest to Join a project or other Bidding documents
- 3) To analyze these documents and investigate the **feasibility** of preparing a proposal for this project or expressing interest, etc.
- 4) To develop a **business case** before the proposal
- 5) To go through the steps needed to reach an **Agreement** with the Beneficiary (the party requiring the project or the receiver)

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4

Question: Do we ALWAYS have a Phase 1?

No

In case the project is internal, and Management is convinced of the need of the Project such as:

- New process to deal with some new regulation
- Internal business process improvement projects
- Immediate solution to critical problem area
- Training plan

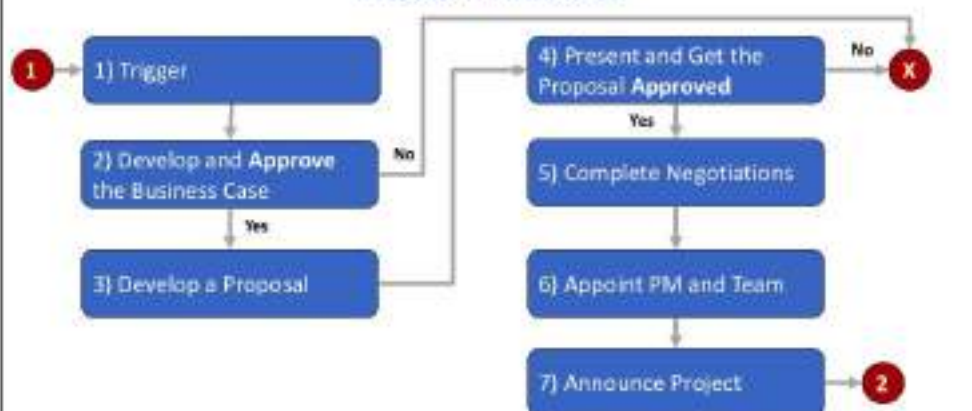
We might not need an Agreement, just a memorandum of understanding

However, many of the activities usually conducted in Phase 1 would still be needed

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5

Phase 1 - Initiation



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6

Activity 1: Trigger

Internal Triggers

- 1) An internal project based on a stakeholder's requirement
- 2) An internal project based on a process need (upgrade, replacement, improvement, etc.)

External Triggers

- 1) A request for proposal (RFP) or for quotations (RFQ)
- 2) Receipt of a request to issue a Letter of Interest (LOI)
- 3) Announcement of a tender (bidding documents)

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7

Activity 2: Investigate Feasibility

- 1) Identify all stakeholders (more in Phase 2)
- 2) Review general requirements
- 3) Analyze budgets and schedule requirements
- 4) Develop general scope requirements (products and project)
- 5) Prepare a Business Case

8 / 17

8

Activity 3:

Develop and Approve the Business Case

- 1) The Business Case is a general document that is a **proto-type of a Project Plan**
- 2) It is reviewed by stakeholders to verify that the proposed project meets their requirements
- 3) Based on their decision, we either continue or stop the project

9 / 17

9

Characteristics of the Business Case



It must be **Brief**

A typical project of one year requires no more than 1 week for Phase 1

Uses a **Reduced** structure as

The Project Plan

Accurate (correct)

Prepared by experts who do not need extensive research

General (not precise)

No need for specific detail

We will review a template for the Business Case later

10 / 17

10

Review the Business Case Template



The Resources Folder a Template and a sister document that explains the entry for each Section

11 / 17

11

Is the Business Case a Feasibility Study?

No

A Feasibility Study is usually developed in the later stages of planning

It requires much more detailed analysis of costs and benefits

The Business Case is a general justification for the project

It also recommends details for Planning the Project

12 / 17

12

Activity 4: Present and Get Proposal Approved

- 1) This activity develops a proposal that is reviewed by stakeholders before submission to the requesting party
- 2) This activity awaits approval . . .

Note: some project may not require an official proposal

Mostly true of clearly defined internal projects

A Memorandum of Understanding (MOU) is usually used in such a case

13 / 17

13

Activity 5: Complete Negotiations

This loop aims at meeting the changes of both beneficiary and provider

The result is a completely approved **Agreement**

14 / 17

14

Activity 6: Appoint the Project Manager and Team Members

Note that not all team members need to be appointed at this stage
Some may not be known as that would depend on the coming designs

18 / 17

15

Activity 8: Announce the Project



This is sometimes called the "Project Charter"

There are two usages for this term

- 1) Project Charter is the **Announcement** of the new project
- 2) Project Charter is the **Project Definition Document**

A general description of the Project

A proto-type of the Project Plan

We shall use **Project Announcement** OR **Project Charter**

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16

End of Presentation 02





Phase 2.1: Planning Preliminary Activities

Lecture 03

1

Agenda

- A. The Importance of Planning
- B. What is the purpose of the Project Plan
- C. The Preliminary Planning Activities
- D. Launching Several Procedures of High Importance

2/10

2

Documents to Review

- 1) Stakeholders Register
- 2) Deliverables Tracking Register
- 3) Communications Plan
- 4) Pending Issues Register
- 5) Inception Report
- 6) Project Plan Template

Workouts

- 1) Deliverables Register
- 2) Identify Stakeholders

3 / 01

3

A.

The Importance of Planning

4 / 01

4

Failing to Plan

=

Planning to Fail

9 / 01

5

The more you plan . . .

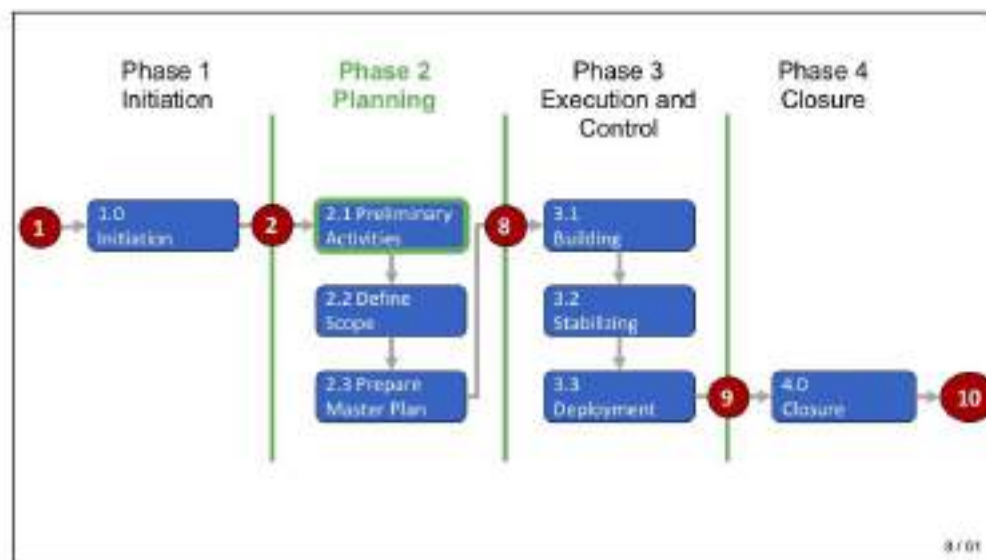
The luckier you get . . .

9 / 01

6



7



8

A **Project Plan** is essentially
a detailed elaboration of
the **Proposal** or the **Agreement**

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9

Before defining what a Project Plan is, we
need to know that an approved Project Plan
is a **commitment** to complete the **Scope** of
the **Product** and the **Project**

10 / 01

10

Remember the Supply and Demand Relationship?

You can think of a Project Plan as a grouping of many such relationships



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11

B.

What is the Purpose of the Project Plan

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12

What is the purpose of a Project Plan?

To define **background information** of the project:

Objectives, Impact, quantitative measures, etc.

To develop in precise terms the **technical specs** of all deliverables (product / project)

To define the **product life cycle** to build the deliverables

Defined through the WBS

To define **roles / responsibilities** assigned to team members

To define all **other project activities**:

Risks, communications, quality, procurement, etc.

To develop a **Master Schedule and Budget**

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13

The Project Plan (Phase 2) requires submission to stakeholders who need to review the document and approve it.

In this sub-phase, this would be our **third** approval step

The **first** one was the proposal

The **second** one was the agreement



14 / 01

14

Characteristics of Planning Activities

One purpose: to develop and commit to a **Project Plan**

Work always produces "**accurate**" or "**correct**" documents

However, the "**precision**" of the documents increases as we approach the Project Plan

There should be an agreement as to the level of required precision of results

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15

Planning Work is Iterative and Incremental

Incremental

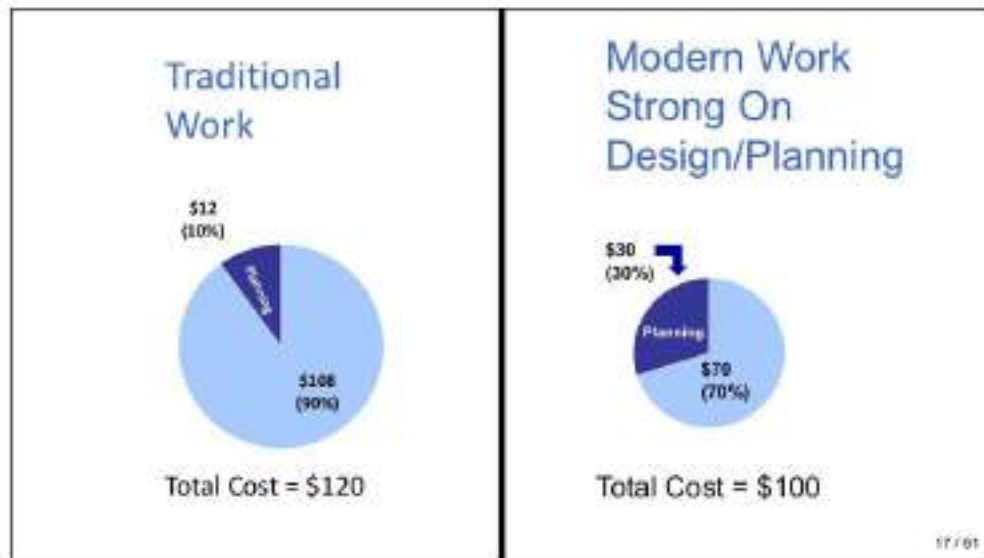


Iterative



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16



17



18

And now **Planning Activities** in more detail . . .

Yellow Blocks

Define **Product** (Deliverable)
Related Activities

Blue Blocks

Define **Project**
Related Activities

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Planning is broken down into 3 Sub-Phases

Phase 2.1: Preliminary Activities (this presentation)

Phase 2.2: Scope Definition

Phase 2.3: Finalizing the Project Plan

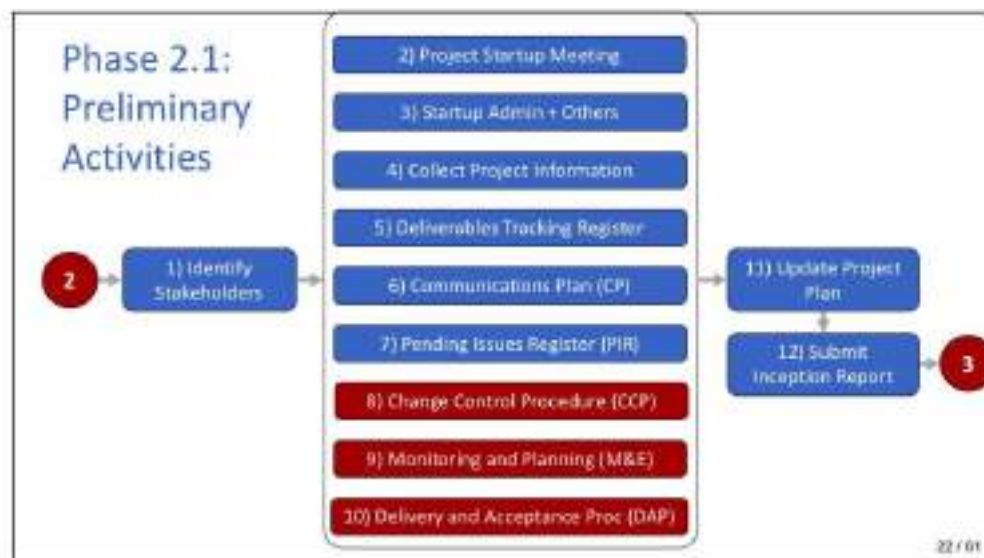
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20

C.

The Preliminary Planning Activities

21



22

Activity 1: Identify Stakeholders

What is a Stakeholder?



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What are Stakeholders?

They can be individuals or organizations

They can be real or "virtual"

But they all have a "claim" on the results of the project

Claims can be positive = Objectives of the Project

Claims can be negative

(People who wish the project to fail)

Identifying Claims helps identify
the Objectives of a Project



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The Importance of Identifying Stakeholders

In **PMBOK 5**, the PMI realized the importance of Stakeholders and added the 10th area: **Stakeholder Management**

Early Identification of Stakeholders of a project ensures that all **Objectives** of a project are included into the overall plan.

Failure to identify a Stakeholder will result in

- Incomplete analysis of requirements = poor scope definition
- Enmity of the Stakeholder
- The other is Risk Analysis

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25

Where can Stakeholders Help us?

- 1) Preparing Proposals
- 2) Analyzing the Requirements of the Project
- 3) Estimating the available resources / budget
- 4) Estimating the acceptable schedules
- 5) Approving the scope of work or the technical specifications
- 6) Approving the Project Plan
- 7) Approving the Change Control Procedure
- 8) Approving the Delivery and Approval Procedures

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And . . .

- 9) Approving the Communications Plan
- 10) Approving the Risk Management Plan
- 11) Defining the KPI's and Metrics needed for Monitoring and Evaluation
- 12) Approving all issues related to Quality
- 13) Advice on selection and approval of team members

Almost in every aspect of the project

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The Stakeholders Register



It contains ALL stakeholders in the project
This is a document that needs to be regularly updated
Stakeholders might change . . .

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How to Identify Stakeholders?

- 1) Brainstorming
- 2) Stakeholders list from previous projects
- 3) Organizational charts
- 4) Directories
- 5) Questionnaires
- 6) Forms
- 7) Observing work procedures
- 8) Process models, procedure manuals, forms

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Workout: Identify the Stakeholders



- 1) Your organization has decided to setup a Technical Library that contains books, journals, references, online subscriptions.
- 2) Other material that may be referenced by staff can be annual reports of other companies, brochures, technical specifications and manuals.
- 3) The library allows employees to work inside it or take out items.
- 4) It has a good software application that allows reviews of books, reservations and requests for other books.

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Activity 2: Project Startup Meeting



Conduct a startup meeting

It should include all stakeholders identified so far (in Activity 1)

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Activity 3: Startup Various Tasks

The following tasks may need to be planned:

- 1) **Administrative requirements:** access, announcements, etc.
- 2) **Financial requirements:** downpayments, bank procedures, etc.
- 3) **Project site:** plan office space, equipment, communications (to be completed in the early activities of Phase 3 (Execution))

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Activity 4: Collect Project Information

Collect all information related to the project
Plan the services needed for a repository of project data
(This will be completed in the Preliminaries of Phase 2)

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Activity 5: Clarify and Agree on All Deliverables

- 1) Most Tenders, ToR's and RFQ's define deliverables in an unclear manner
- 2) Often, the deliverables are not properly sequenced (hence numbered)
- 3) Sometimes, requirements cannot be translated into clear deliverables
- 4) There are some deliverables that are assumed without being stated
- 5) They state deliverables which overlap

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Solution:



The first functional step in any project should be the clarification of deliverables:

- Coding or defining ID's (with the proper breakdown and sequence)
- Scope
- Estimated Delivery Date

Result: **The Deliverables Tracking Register**

In Phase 3, we keep updating this register with the new status of delivery

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Workout: Define Deliverables



Consider a Case Project . . .

Identify all products and services

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Activity 6: Clarify and Agree on the Project Communications Plan(s)

Communications plans ensure that official project information can only be sent under specific conditions

Two people have 2×1 channel and 3 people have 2×3 channels

BUT : N people have $N \times (N-1)$ channels

Example :

6 people on the project

$6 \times 5 = 30$ channels of communications

Communications can be a major Cost

Communications can be a major Risk

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How to Plan Communications?

Define a Plan that contains a very clear description of each communication item using this set of very clear terms the 8 elements

Communicate the above plan

Quality Control requirement: introduce mechanisms to check that the plan is being implemented



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We Might Require More than One Communication Plan:

Plan to be used during the Project Preparation
 Plan to be used during the Execution Phase
 Plan to be used internally (all the above)
 Plan to be used with clients (for different phases)
 Plan to be used with suppliers (for different phases)
 Specific Plans with senior management
 Specific Plans with stakeholders
 Etc.

Prepare one whole plan
and then break it up

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Launch the Progress Report Process



The progress report is not one report
 Different units in the Project Team will need to maintain a Progress Report
 to be submitted to specific parties
 It is the Communications Plan that defines **who** should prepare **which**
 report and to submit it to **whom**

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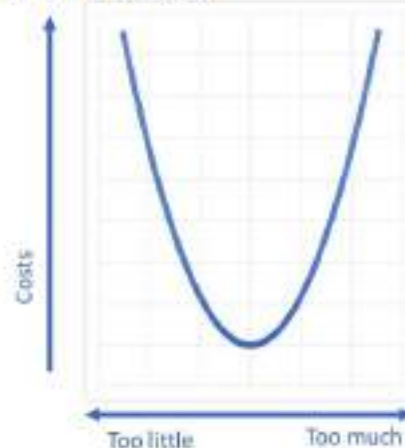


42

This Curve is found in Other Places

Risk Management: too little means not provisioning much for risk events and too much means spending a lot of effort to avoid risks

Quality Management: too little means not testing enough and too much means testing too much



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Activity 7: Setup a Pending Issues Register (PIR) and Procedure



- 1) Issues will arise at any time in the project
- 2) Issues can be of different types:
Scheduling / Resources / Stakeholders / Suppliers / Etc
- 3) Issues can be caused by various parties
And resolved by various parties
- 4) Issues are bad for a project as they destroy the Project Triangle: Scope / Schedules / Costs

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The Project Manager is Responsible for Managing Issues

- 1) The PM is responsible for maintaining the Issues Register
Database / Excel Sheet / Sharepoint Portal List / Etc
- 2) Reporting Issues by stakeholders should be part of the Communications Plan
- 3) Issues should be reviewed and attended to on a regular basis
- 4) Issues need to be published so that all members of the team realize their existence

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D.

Launching Several Procedures of High Importance

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Activity 8: Clarify and Agree on the Change Control Procedure (CCP)

Most contracts get executed without caring about Change Control
When delivery terms are defined

They are biased towards the provider or the beneficiary

A good Change Control Procedure (CCP) contains a clear definition of:

Areas where change is allowed

List of persons who can issue a Change Request

List of persons who can prepare an Impact Report for the change

List of persons who can review and a

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What Needs to be Done at this Stage?



The team needs to clarify to the Beneficiary and the Providers all aspects of the CCP

A Template will be shown

A list of items needs to be prepared

This is launched at this stage

CCP will be presented in a standalone session in [Presentation 4](#)

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Recommendation . . .

It may be a good idea to include templates for DAP and CCP to be included in the proposal

This way, the receiver will know that the PM cares about the robustness of the project

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Activity 9: Launch Monitoring & Evaluation



- 1) M&E is a crucial activity in Project Management
- 2) It is an ongoing activity to be launched as a preliminary process
- 3) M&E is strongly tied to a variety of metrics and KPI's that have to be continuously defined, monitored and evaluated

M&E will be presented in a standalone session in [Presentation 5](#)

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Activity 10: Clarify and Agree on the Delivery and Acceptance Plan (DAP)

Most contracts are happy to specify delivery only as a date

- No terms and conditions are defined for such deliveries

- No procedures are defined for such deliveries

This always result in conflicts, delays and poor quality of products

IF ever delivery terms are defined in a contract . . .

- They are usually biased towards your supplier OR

- They are usually biased towards your client

How to resolve these issues?

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The Delivery and Acceptance Procedure (DAP)

- 1) This procedure will be presented in the Scope Definition Sub-Phase 2.2
- 2) It consists of a variety of conditions placed on both Beneficiary and Provider
- 3) It is wider in scope than a User Acceptance Test (UAT)
- 4) UAT is constrained to testing the validity of a single product or service
- 5) DAP covers wider issues

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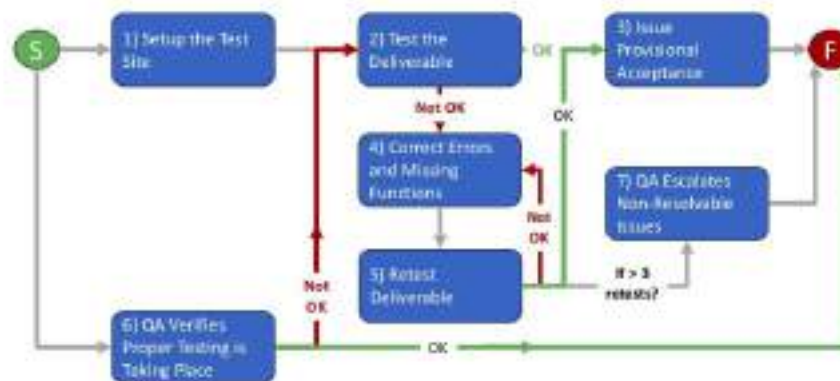
What is Included in the DAP?

- 1) The **test scripts and scenarios**
Used for testing the delivered product or service (UAT)
- 2) The specifications of the **test site**
Defines material, services and locations for testing
- 3) The **test plan**
Defines the schedule, the personnel and the conditions for testing
- 4) Finally, DAP consists of a **workflow**, applied on each delivery ... >>>

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The Testing Loop (Activity 9 of Phase 2.2)



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What Needs to be Done at this Stage?

The team needs to meet with the Beneficiary

The DAP is presented as a template

The Beneficiary will be told that there should be a specific DAP for each Deliverable in the Deliverables Tracking Register (DTR)

Purpose: to make it easier for the Beneficiary to prepare for their side of the delivery

DAP will be presented in a standalone session in [Presentation 8](#)

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Activity 11: Update the Proposed Project Plan



By now, you would have new data about

- Team and resource availability

- Other scheduling targets

- Revised issues related to DAP and CCP

Update the project plan prepared in the proposal

At the end of each Sub-Phase, such an update is recommended:

- Project Plan will be updated in Phase 2.2

- Project Plan will be finalized in Phase 2.3

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Activity 12: Submit an Inception Report

Some beneficiaries require the submission of an Inception Report in the early parts of the project

An Inception Report is essentially a revision of the **Proposal** which includes an update of:

- An update of the project plan as presented in the Agreement
- A plan of the coming sub-phases: Phase 2.2 and Phase 2.3
- A listing of the revised Deliverables Tracking Register
- Proposed Methodology
- Any work completed so far
- Any agreement related to the Communications Plan, DAP, CCP, etc.

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Why do we need an Inception Report?

By now, we would not have defined the scope of the products and services and other project definitions . . .

We cannot prepare a full project plan

Essentially, the Inception Report is the **Plan of the Planning Phase**

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Let us Review this Crucial Phase

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Phase 2.1: Preliminary Activities



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End of Lecture 03



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Phase 2.1 Planning – The Change Control Procedure (CCP)

Presentation 04

1

Documents to Review

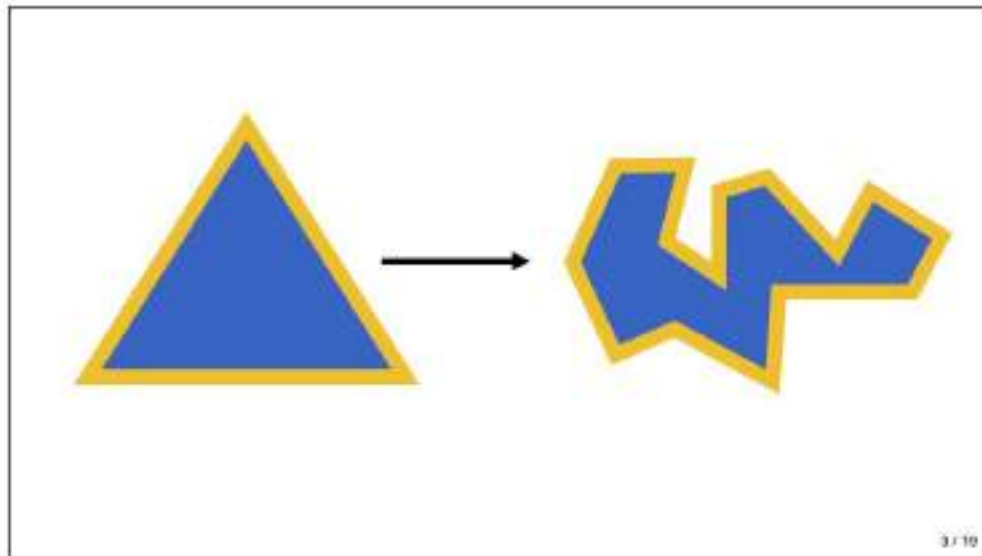
- 1) Change Request - FORM
- 2) Change Control Procedure (CCP) - TEMPLATE
- 3) Change Control Procedure (CCP) - EXPLANATION
- 4) Impact Report - TEMPLATE
- 5) Impact Report - EXPLANATION

Workouts

- 1) Why do we have changes in a project
- 2) Define Areas of Change to be Controlled
- 3) Define Sources of Change Requests

2 / 19

2



3

Definition of Change Control

Given there is a clear and approved baseline for

- Scope
- Budget
- Schedules

No change should be allowed in the project without a procedure that covers

- 1) An analysis of the impact of the change
- 2) A review and approval of the required change
- 3) A revision of the project to handle the approved change

4 / 10

4

Define the Baseline of Approved Items

As each item to be controlled gets approved, we should indicate that in the **Deliverables Tracking Register**.

Once an item is approved, any change to it must apply the **Change Control Procedure (CCP)**.

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5

Poor Change Control results in . . .

- 1) The Project will runaway: scope / budget / schedule
- 2) Conflicts will result between stakeholders
- 3) Deliveries will be inefficient
- 4) Trade-offs between the 3 sides of the triangle cannot be effected
- 5) The Project Manager will lose control over the Project
- 6) Stakeholders will be encouraged to interfere and change their mind
- 7) Product Managers will be encouraged to play down good scope definitions

6 / 10

6

Workout 1:

Why do we have Changes in a project?

Consider any case or generic project

Why do changes on approved items arise?



7 / 10

7

Elements of a Change Control Procedure (CCP)

- 1) Define the areas that cannot be changed without Change Control
Which items needs to be controlled for change?
- 2) Sources of Change Requests:
Who can ask for change?
- 3) Analyzers of Change Requests:
Who can analyze a change?
- 4) Reviewers/Approvers of Change Requests:
Who can review/approve a change?

8 / 10

8

The Key Document in the Procedure

The Change Request



9

A Typical Change Request Form

- 1) This is an Excel Sheet
- 2) However, it can be any other form (Access, ERP)
- 3) Recommendation: develop a database that is accessible to everyone who is part of the CCP
- 4) Found in the Resources folder

Change Request Form

Project Name		
Change Request ID		
Project Manager		
Issued By	Date	
Phase / Sub phase / Activity		
Type of Change		
Reason for Change		
Description		
Priority		
Estimated Area of Work		
Estimated Effort (Days)		
Impact on Schedule		
Estimated Costs/Resources		
Change Request History	Status	Date
Request has off		
Impact Report written		
Impact report on board		
Approval given		
By		
Signature		

10

1) Types of Allowed Changes

Approved project and product items fall into 2 categories:

- 1) Those that cannot be changed without approval (Change Control)
- 2) Those that can be changed without approval

Requirement 1: prepare a classification of Change Requests

- 1) Define all areas that are subject to Change Control
- 2) Define the extent to which changes are allowed

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11

Workout 2:

Define Areas of Change to be Controlled



- 1) Select a case project
- 2) Define the areas that can and those that cannot be changed
- 3) Guidelines
 - Requirements
 - Product specs
 - Schedules
 - Budgets
 - Contracts

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12

2) Sources of Change Requests (CRs)

Another requirement is a list of persons or parties that are allowed to raise a Change Request

Requirement 2: list of persons allowed to raise CRs

By now, we should be able to map or prepare a matrix showing:
Who can raise a request and in which area!

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13

Workout 3: Define Sources of Change Requests



Use the earlier case project
Define the persons that can raise Change Requests
Map the areas of change to the sources

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14

3) Analyzers of Change Requests



Every CR raised must be analyzed

The result of the analysis is called an **Impact Report**

The Impact Report includes such items as shown in the attached document

Requirement 3: list of persons who can prepare Impact Reports.

Again, these are to be mapped by Type of Change Request

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15

4) Reviewers of Change Requests

Every CR raised must be reviewed by one or more persons who are authorized to do so

For each type of request, this unit is called the Change Review Advisors (CRA)

The CRAs will review and

- Reject

- Request more analysis OR

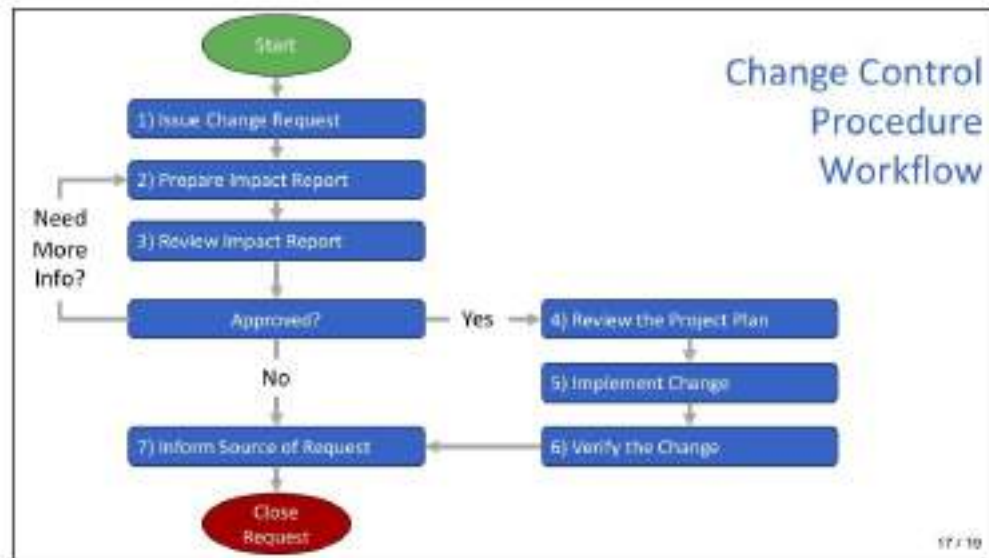
- Approve a Request for Change

Requirement 4: list of persons who can review and approve Change Requests

Again, these are to be mapped by Type of Change Request

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16



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Let us Review the CCP Templates

The slide features the text 'Let us Review the CCP Templates' in a blue font. To the right of the text is a small blue icon with a white 'W', representing the Microsoft Word application. The slide is otherwise plain white.

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18

End of Presentation 04





Monitoring and Evaluation

Presentation 05

1

Documents to Review

- 1) Typical Project Metrics (KPI's) for Monitoring and Evaluation

Workouts

N/A

2 / 29

2

Monitoring and Evaluation

This is an often-used term which is grown in the diversity of its meanings

Here is a typical definition . . .

3 / 29

3

Definition:

Monitoring and evaluation (M&E) is a process that involves **collecting** and **analyzing** data to measure **progress** toward achieving specific **goals** and **objectives**.

This process helps organizations to identify what is working and what is not and to make informed decisions on how to **improve** their programs and projects.

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4

This definition (and others) start by the objective of M&E and work **backwards** to the required measurements.

9 / 29

5

Here is a Broad Procedure for M&E

The first 3 steps are completed in collaboration with Stakeholders

The last 3 steps are the responsibility of the Team Members

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6

To Summarize the components of the M&E “Practice” . . . Here is a Broad Procedure

Step 1: identify the objectives of the products, services and the project

Step 2: define the Key Performance Indicators (KPI's) or the type of measure (metrics) that reflect such objectives

Step 3: define one or more goal for each of these objectives

Step 4: the team will then define the tasks needed to properly measure these goals to ensure that the objectives are being met

Step 5: monitor the measurements to evaluate the progress of the project in reaching its goals

Step 6: apply corrective actions and improvements in case of anomalies

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7

Step 1: Identify the Objectives of the Project

This step starts with the Proposal

It should be clearly defined in the Agreement

But most importantly, it should be detailed in the **Project Plan**

Step 1 should be completed in Phases 1 and 2.1 to be included in the Master Plan of Phase 2.3

Tip: Objectives can be broad, **but** they need to be broken down hierarchically until the point where they can be measured.

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8

Examples of the Objective of a Project

Product Objectives

- Staff need to be properly trained on equipment maintenance
- The following deliverables need to comply with Standard XYZ

Project Objectives

- Target dates are critical and must be met on time
- All deliverables must be certified by the Compliance Unit

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9

Step 2: For each Objective, Define a Key Performance Indicator (KPI)

A **KPI** is a quantifiable measure of performance over time for a specific objective.

Projects need KPIs to track progress, identify areas of improvement, and make strategic decisions.

KPI's will also be used to protect the objectives of a project (risk management)

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10

Each KPI must comply with the SMART Formula

- 1) Specific
- 2) Measurable
- 3) Achievable
- 4) Relevant
- 5) Time-based

Here is a KPI example

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11

KPI = Stakeholder Satisfaction Score (SSS)

- 1) **Specific:** SSS is a score that is the result of a stakeholder survey or questionnaire or form.
- 2) **Measurable:** surveys or questionnaires or forms must be designed to be measurable (that is not qualitative or subjective)
- 3) **Achievable:** SSS can be achieved by improving stakeholder satisfaction
- 4) **Relevant:** needless to say, the success of a project is directly proportional to the satisfaction of the stakeholders
- 5) **Time-based:** in this case, the method of evaluation can be periodic or linked to specific milestones in the project

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12

KPI Definitions Contain data such as . . .

- 1) **Collection** frequencies: days, weeks, months, quarters
- 2) **Minimum** required value
- 3) **Expected** required value
- 4) **Maximum** required value
- 5) **Direction** of value: Hi = Good or Hi = Bad (See next slide)
- 6) **Type of Measurement** (see next slide)

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13

The Comparison Issue

- 1) Some KPI's have scores with **different directions**
- 2) Some are **good, when High** and others are **bad when High**
- 3) KPI's are scored in different units

Conclusion: our KPI modules should be able to normalize scores so the score can range from **0 (worst)** to **1 (best)**

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14

What Can KPI Data Provide us with?

- 1) Breaches of Limits
- 2) Trends and forecasts
- 3) Comparisons of variables such as between departments, branches, periods, owners, risk categories (taxonomy), etc.
- 4) Regression between variables: is one variable dependent on other variables?
- 5) Notification of special patterns ("Out of Control" cases to be shown in the SPC presentation)
- 6) Capability of a process: is it efficient and effective?

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Let us Review some Suggested KPI's



This document contains a large number of KPI's
They are directly relevant to different aspects of a project

Alert

- 1) Avoid establishing a large number of KPI's to monitor
- 2) Avoid using KPI's that are complex or costly to collect
- 3) Ensure that all KPI's are reviewed and approved by the Stakeholders

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Step 3: Establish the Goals for each Objective

A Goal is a measurable, **desired level of performance** for a particular objective

A Goal will always have 3 components (Example: sales)

- 1) The measure itself or the unit (**amount per month**)
- 2) The desired level of performance (numeric or a described state) (**20,000**)
- 3) The time by which we need to attain this goal (**4 months from now**)

An Objective can have **more than one Goal**

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But what is the difference between
an **Objective** and a **Goal**?

An **Objective** is what we need . . .

A **Goal** is a level to be reached to confirm we
have reached our Objective.

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18

Hints for Defining Goals . . .

Avoid goals that are = Processes or Activities

- Construct a new office (Where is the Metric here?)
- Hire 5 more Pharmacists (Where is the Metric here?)

Avoid goals that are based on previous performance

- This is called the "Better than last year by 10%" syndrome
- It will lead to complacency
- These are usually "Unstudied and Unresearched" Goals

What about "Stretch Goals"?

- Sometimes, goals are set to way beyond our capacity
- It gets management excited and then the walls fall down

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19

What do we Base our Goals on?

- 1) Past performance
- 2) Competitor's performance
- 3) Benchmarks in similar projects
- 4) Technical capabilities and resource constraints
- 5) Evidence that achieving goals will make us perform better
- 6) Feedback from stakeholders, receivers, providers and team members
- 7) Analysis on how achieving such goals will impact other measures

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A Goal is a point in a range of KPI Values



Example KPI: Stakeholder Satisfaction Score (out of 5)

Our goal is to reach a score of at least 4.2

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21

Step 4: Define the Tasks that Measure KPI's

Each KPI must be regularly measured (metrics)

It follows: each measurement must consist of one or more tasks in the Work Breakdown Structure (more about this practice, later)

This step will generate many tasks that are subsumed within the project

22 / 29

22

Example of Metrics

- 1) Each week, the team will count the number of tasks that were accepted without error on first delivery
- 2) Towards the end of the delivery cycle of each deliverable a satisfaction questionnaire needs to be filled by the related stakeholders
- 3) All metrics (25) that come out of Earned Value Analysis (lecture to be given later on)
- 4) Proportion of tasks that were delayed
- 5) Average delay of tasks

23 / 29

23

Type of Measurements

- 1) Counts
- 2) Days (or other time units)
- 3) Monetary values
- 4) Binary values: yes/no, accepted, rejected, received/delayed
- 5) Proportions and rates

All the above should have their frequency or point in time of the measurement clearly defined

24 / 29

24

Of course . . .

Most measurements need to have a parallel “qualitative” assessment

25 / 29

25

Suggested Metrics



In the resources folder, you will find a document that contains a large number of suggested metrics

These are grouped by different aspects of the project and the project

26 / 29

26

Step 5: Monitor the measurements to evaluate the progress of the project

Depending on the frequency of measurement of each KPI, the team will monitor the measurements

They will evaluate the measurements such as:

- 1) Has it reached its goal?
- 2) How far is it from its goal?
- 3) Is it in a critical region?
- 4) Are there problems with the measurement tasks
- 5) Is the team capable of correcting any anomalies?

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27

Step 6: Apply Corrective Actions and Improvements

Based on the findings of Step 5, the team and some stakeholders will ensure that the project has achieved its goals

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28

End of Presentation 05





How to Manage Quality in a Project

Presentation 06

1

Why is this Presentation on Quality given before the Activities of Phase 2.2?

Because of the two definitions of **Quality** that we will talk about next

Because the Activities of Phases 2.2 and 2.3 are almost totally based on our understanding of Quality Management

2 / 40

2

Agenda

- A. The Two Meanings of the Term "Quality"
- B. The Responsibilities of QC
- C. Who Tests Designs
- D. The Responsibilities of QA
- E. The Organization of the QC and QA Units
- F. The Activities in Phase 2.2 of the QC and QA Units

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3

Documents to Review

- 1) Typical Design QC and QA Tasks

Workouts

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4

A.

The Two Meanings of the Term "Quality"

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5

There are 2 Confusing Meanings of the term "Quality"

Quality 1 = the characteristics of the product as required by the stakeholders

النوعية

- Its features

- Its scope or functions

- Its technical specifications

Quality 2 = the extent to which the delivered product meets the requirements of the stakeholders

الجودة أو التأهيل

9 / 40

6

We should not confuse "Grade" with "Quality" when used as "Qualification"

Example: Hotel Stars

A hotel with 5 stars is of a HIGHER grade than one with 3 stars

But it will be of LOWER quality if the 5 stars keeps its facilities below standard

Example: MS-DOS and Windows 10

MS-DOS has lower Quality (Grade) because of its reduced features

However, it is solid and delivers exactly what is promised. It qualifies.

Windows 7 has a higher Quality (Grade) because of extensive features

But its consistent crashes and poor implementation of functionality reduces its "qualification"

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7

LOW Grade (Quality) is NOT a problem

As long as it is part of a Product's Scope or Specifications

It is the choice of the Receiver

LOW Quality (Qualification) is always a problem

It is not the choice of anyone

8 / 43

8

We have 2 Definitions of Quality . . .

Quality as **Scope** is critical when . . .

- Developing Specifications
- Defining various Project particulars: time, cost, etc.
- Controlling changes to the Scope that arise during the project

Quality as **Qualification** is critical when . . .

- Developing Test Scripts
- Developing Test Plans
- Testing deliverables
- Monitoring testing activities
- Verifying that the products and the projects are within scope

9 / 43

9

So, by accurately defining the **Scope**,
we guarantee to the Stakeholders that their required
Quality levels have been **agreed** upon.

Defining the Scope **does NOT guarantee**
that products will be properly delivered!

(We take care of this in the 2nd meaning of Quality)

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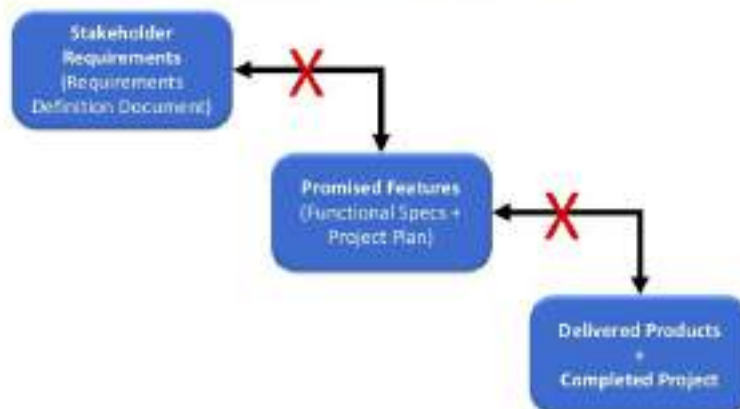
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Project Management
is about promises
in a world of Uncertainty

من وعد . . . وفى

11

Here is how Expectations Fail



12

The 4 Promises to Test



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13

Extending the Definition of Testing

Lack of quality is the **Difference** between

What is produced and what was promised

Our objective is **Variance Reduction**

100% Quality = Zero defects

Question: is there any such thing as "Positive" Quality?



We have some
problems here?

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14

This is where Promises Fail



- 1) Lack of documented and clear **promises**
- 2) Lack of documented and clear **test scripts**
- 3) Lack of documented and clear **test plans**
- 4) **Improper testing** of products and projects

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15

Solution?

- 1) Lack of documented and clear **promises**
We will discuss the importance of Scoping in the Planning Phase
- 2) Lack of documented and clear **test scripts**
- 3) Lack of documented and clear **test plans**
- 4) **Improper testing** of products and projects
The above 3 practices will be discussed after a few definitions

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16

Quality becomes a Circle
around the Triangle



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17

B.

The Responsibilities of QC

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18

Quality Control

QC = Testing

QC = Monitoring of project results
using Test Scripts and Scenarios
to determine if they comply with
(1) Technical Specs and (2) Project Plan

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19

Quality Control

When do we apply QC

Answer: *Always*

Where do we apply QC?

Answer: *Everywhere*

More specifically: we apply QC on both *Product* and *Project Activities*

(Remember the Demand / Supply agreements?)

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20

Typical QC in IT Product Delivery

Quality Control

- 1) Test Designs of ALL types
- 2) Check the Test Scripts and Scenarios
- 3) Verify Installations
- 4) Test Performance levels
- 5) Test Maintenance, Warranty and Support operations
- 6) Check Documentation
- 7) Evaluate Training
- 8) Test delivered ALL products / services / systems
- 9) Check delivery of ALL Non-functional requirements:
- 10) Legal documents / Licenses / Environmental Requirements / etc

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21

Typical QC in Construction Product Delivery

Quality Control

- 1) Test Designs of ALL types
- 2) Check the Test Scripts and Scenarios
- 3) Check delivered material
- 4) Verify Installations
- 5) Test Performance levels
- 6) Test related properties: radiation, fumes, vibration, corrosion
- 7) Test Maintenance, Warranty and Support operations
- 8) Check Documentation
- 9) Evaluate Training
- 10) Test ALL delivered products / services / systems
- 11) Check delivery of ALL Non-functional requirements

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Typical QC Applied to Project Deliverables

Quality Control

- 1) Verification of Requirements (more later)
- 2) Evaluation of Work Breakdown Structure (WBS)
- 3) Monitoring of Communications
- 4) Monitoring and Control of Schedules (MS Project)
- 5) Monitoring and Control of Costs/Resources (MS Project)
- 6) Check and evaluate Test Plans
- 7) Check and evaluate actual testing
- 8) Measure Performance in the project (KPIs)
- 9) Evaluate Contract Management / Supplier Relationships

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23

C.

Who Tests Designs?

28 / 34

24

Testing Designs (and other Documentation)

QC is usually applied to products

Designs are not often tested . . . A major failure

Design specs must be tested the same as any other deliverable

Ensure that:

- The correct design methods are used

- Standards are followed

- The resulting design addresses the requirements of the stakeholders

- The design provides feasible products / services

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25

How to Verify Technical Design

Trace every requirement to a feature in the new product

Ensure that no function has been designed **which is not traced back** to a requirement

Verify each function is the way its **stakeholders want it** to be

Use **DAP** on designs: deliver designs as you would any other deliverable

Check if the design is **testable**

Check if the design might **produce two different outputs**

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26

Example of “Designs” that MUST be Tested

Project Plans	Communications Plans
Work Breakdown Structures	Risk Analysis Documents
Technical Designs	Change Control Procedures
Market Survey plans	Contracts
Documentation	Standards Documents
Training Plans	Test Scripts / Scenarios

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27

Who Tests Designs?

Usually, a party that has the same experience and background as the designer

These are called “Peers”

A Peer can be of a major benefit to the overall development of the FSD and other scope documents

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Traditional Planning of Design Activities

(These steps assume that requirements and analysis have been done)

- 1) Design the item
- 2) Deliver the design
- 3) (Possibly) update the design

End of task!

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The following is a set of tasks setup in MS Project to cover
the **Delivery and Acceptance Procedure**
for a Design Process

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30

Task Name	Duration
Phase 2 - Planning	51 days
• Design Product (Functional Specifications Document)	51 days
1) Design the Product	30 days
2) Develop the Functional Specifications Document	6 days
3) Review the FSD (Peer)	3 days
4) Meet to Review the Comments of Peers	1 day
5) Incorporate Peer Comments and Feedback	1 day
6) Submit FSD for Technical Review by Users	0 days
7) Review FSD (Users)	4 days
8) Meet to Review Comments by Users	1 day
9) Prepare Review / Error Report	1 day
10) Incorporate Users Comments+Feedback into FSD	2 days
11) Resubmit FSD for Review by Users	0 days
12) Review FSD (Final Review by Users)	1 day
13) Buffer for Final Comments and Feedback	1 day
14) Approve Final Version of FSD	0 days

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D.

The Responsibilities of QA

32

Quality Assurance

QA provides stakeholders with the **Assurance** that the processes used to manage the scope of the product are:

- 1) Suitable and
- 2) Are being executed properly

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33

What are QA Activities?

Quality Assurance

- 1) QA verifies that QC test scripts and scenarios are good enough to trap variance
- 2) QA checks testing plans
- 3) QA checks that QC tests are actually taking place during stabilization
- 4) QA escalates any issue the Product and Project Managers are not able to resolve within the project
- 5) **Optional:** QA reviews PM processes to ensure they are compliant with internal standards

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Quality Assurance is
the Quality Control of Quality Control



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Life in Project Management is in
Two Main Modes

Planning

- 1) Plan product building activities
 - 2) Plan project activities
-
- 1) Prepare test scripts (PRDM+User+QC)
 - 2) Plan test activities (QC+PRDM+PRJM)
 - 3) Review test scripts (QA)
 - 4) Review test plans (QA)
 - 5) Plan QA activities (PRJM+QA)

Executing

- 1) Execute product building activities
 - 2) Execute project activities
-
- 1) Execute tests (QC+PRDM+User)
 - 2) Check tests are carried out (QA)
 - 3) Escalate unexplained variances (QA+PRJM+PRDM)

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E.

The Organization of the QC and QA Units

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Roles and Responsibilities in Quality Management

QC can be a Unit outside the Project/Product Teams

QC can be a Unit inside the Product Team

Either specialized Testers OR

Product Team members assigned for one time QC tasks

QC can be a Unit inside the Project Management Unit

QC can be outsourced

QA should be formed in a special unit

Outside the main project unit and reports to Management

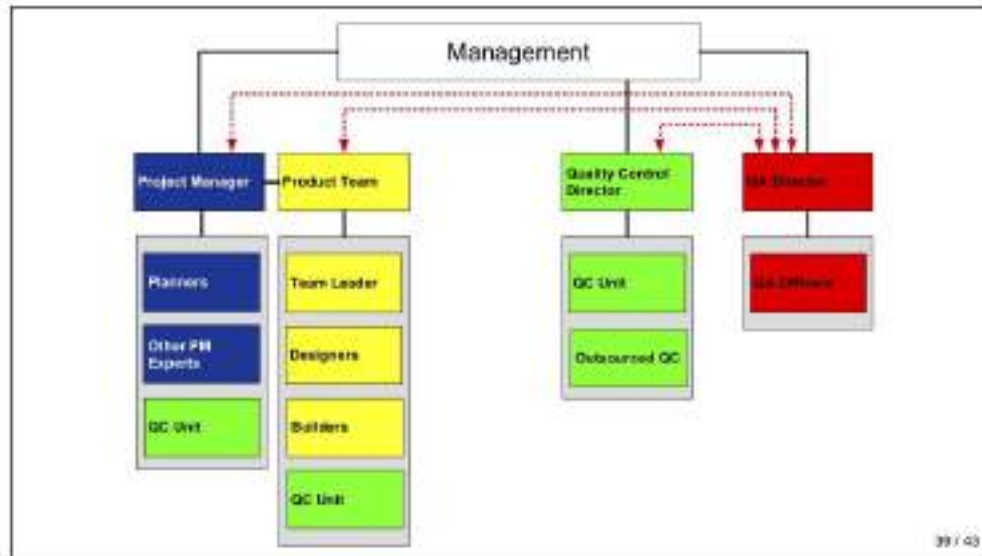
Coordinates with the Project Manager

Coordinates with the Product Team

Coordinates with the QC Unit (if separate from above)

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39

Can we be too Concerned with Quality?

If we spend too much on **Conformance** we risk incurring high costs

If we face a lot of **Non-Conformance**, we will also incur high costs

We need a balance



40

F.

The Activities in Phase 2.2 of the QC and QA Units

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Where in our Project are the main QC / QA Activities?

First of all:

The Blocks of QC / QA Activities
in the Planning (Scope) Phase (In the next Presentation)

Secondly:

The Blocks of QC / QA Activities
in the Execution Phase (in [Presentation 13](#))

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End of Presentation 06



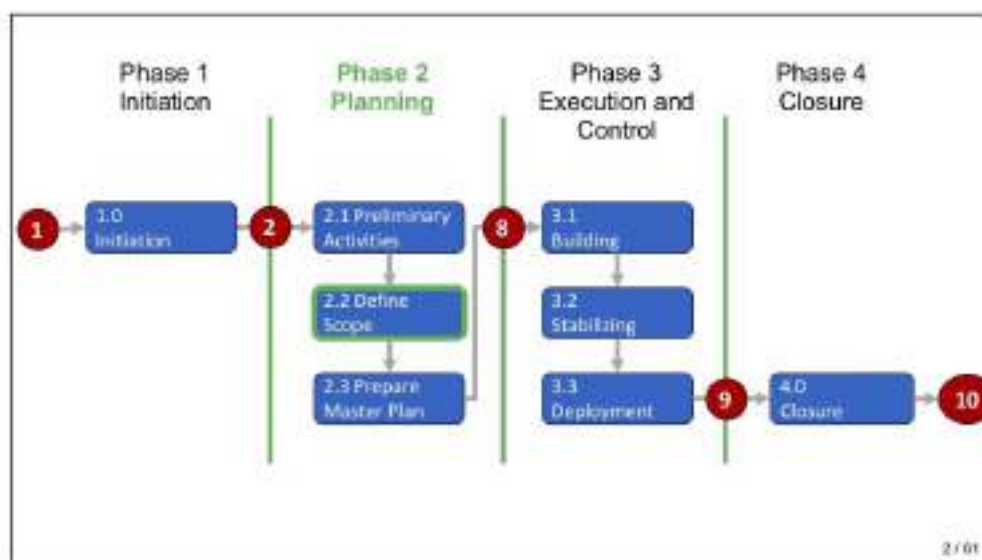


Phase 2.2 Planning

Definition of Project and Product Scope

Presentation 07

1



2

CRITICAL

This is a **Critical** Sub-Phase

It is the phase whose weakness is the cause of failure in most projects

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3

Phase 2.1: Preliminary Activities



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4

Agenda

- A. Introducing Scope Definition
- B. Product Scope Definitions
- C. Quality Management Definitions (Testing)
- D. Risk Analysis and Project Plan Updating

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5

Documents to Review

- 1) Requirements Form
- 2) RDD Database Structure
- 3) Requirements Database
- 4) Questions to Ask the Stakeholders
- 5) Requirements Definition Document (RDD)
- 6) Non-Functional Requirements (NFD's)
- 7) Verification of Requirements
- 8) Sample Test Script

Workouts

- 1) Develop a Requirements Structure
- 2) Develop a Test Script for a Case Study

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6

A.

Introducing Scope Definition

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7

There are 4 Major Milestones in this Sub-Phase

Very often, these are neither defined nor respected, if defined

Milestone 4: complete analysis of requirements

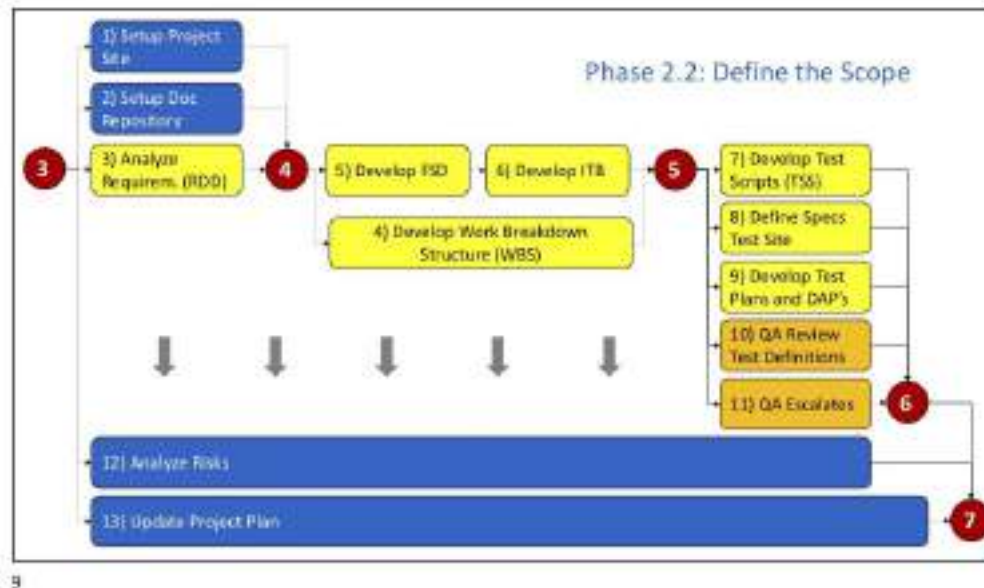
Milestone 5: complete the definition of the Functional Specifications (FSD) and if applicable, Instructions to Builders (ITB)

Milestone 6: complete the QC and QA definitions

Milestone 7: update the Risk Analysis and the Project Plan

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8



Activities 1 and 2: Preliminaries

Activity 1 is concerned with the setup of the **Project Site**

At the client's or in-house

This might not always be applicable

When applicable, it requires a definition of equipment and facilities needed

Assurance that all has been delivered and noted (for return in Phase 4)

Activity 2 sets up a **Document Repository** or project library

The purpose is to ensure documents are **not lost**

And that the team has **full access** to them

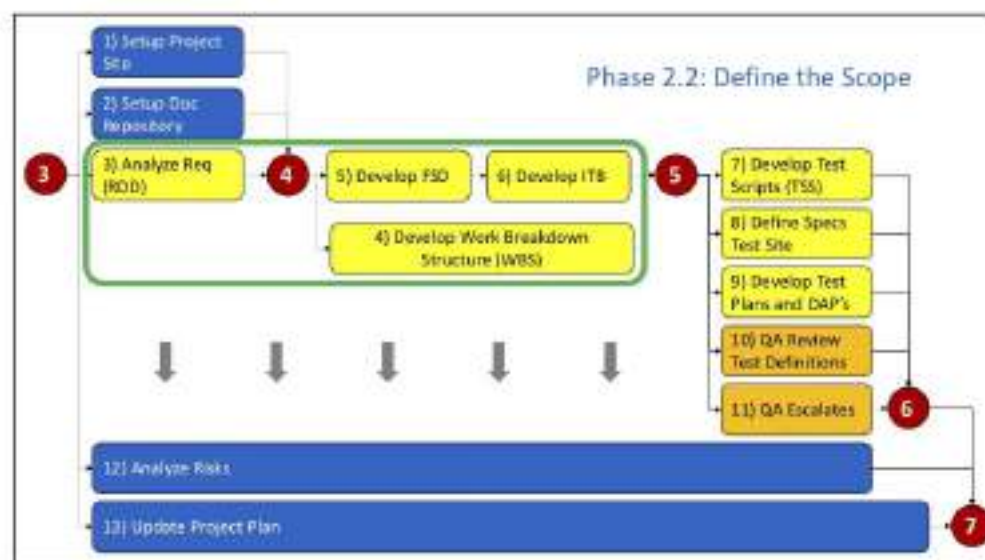
Often, a library management system needs to be installed to ensure proper **check in / check out** and **version control**

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B.

Product Scope Definitions

11



12

Activity 3: Analyze Requirements

This is one of the most misused and misunderstood terms in project management

Reason? Analysis of Requirements is often confused with Analysis and Design

Projects will move from Analysis of Requirements directly to Building

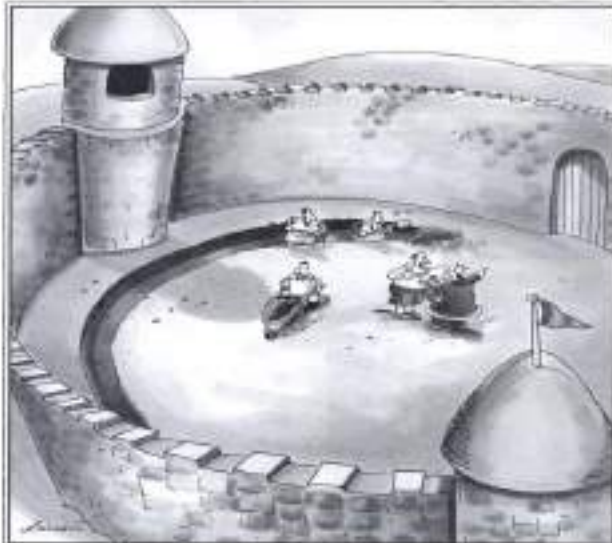
13 / 01

13



14

Suddenly,
A heated exchange
took place between
the **King** and
the **Moat Contractor**

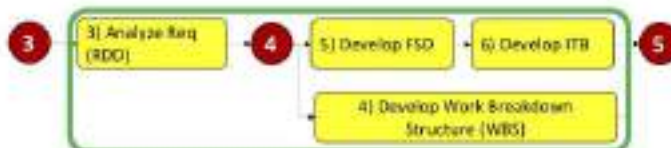


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Approach:

Always split the Analysis of Requirement
Activity from that of Functional Design



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What are Requirements?

- 1) Requirements are "statements or expressions of need"
- 2) They define the "What" the Stakeholders want and not "How" they want it
- 3) Therefore, Requirements are not Technical Specifications
- 4) Requirements Analysis is an **exploratory process**
- 5) It is neither a **solution nor a design process**
- 6) It results in a list of items that can be grouped by a grouping that is suitable to the client

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What is the Analysis of Requirements?

- 1) You would have started this activity in Phase 1 **in general terms**
- 2) Here, the **Product Team** will have to complete the Analysis to the finest detail
- 3) This is **NOT a Project Management** activity
- 4) It is the responsibility of the **Product Manager**
- 5) During the next few slides, we will have the chance to review some Requirements Analysis documents as found on the Document Folder

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Requirements Totally Involve Stakeholders

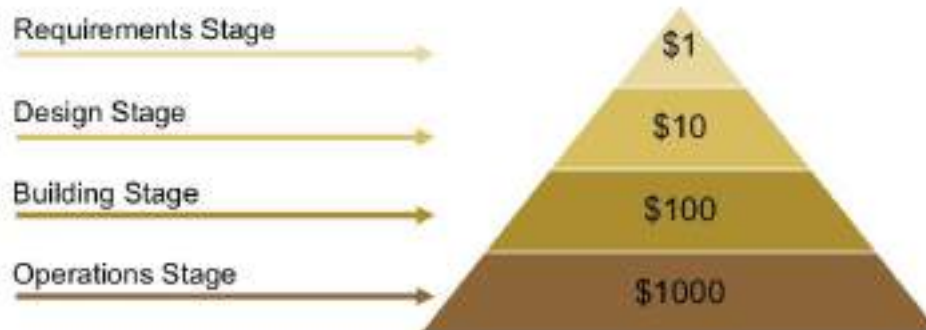
- 1) As discussed earlier, by now you should have a complete list of stakeholders
- 2) It is the responsibility of the Project Manager to ensure that all stakeholders have been identified
- 3) And that they have been contacted for this activity



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19

Assume the Cost of Finding an Error at the Requirements Stage = \$1



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Lots of Documentation for Requirements

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1) The Requirements Form

It can help if there is a
form that can document
each requirement

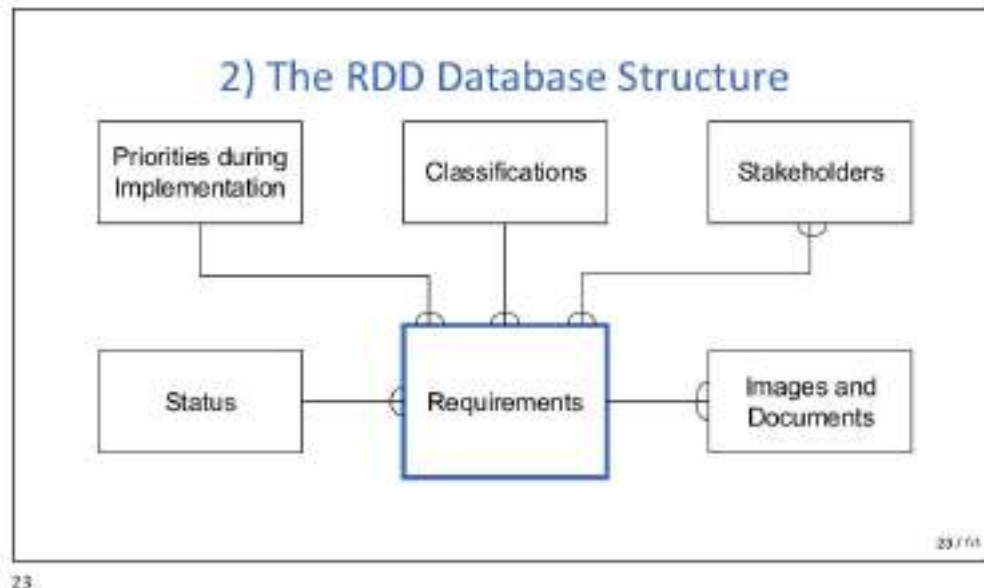
This is used to enter data
into the Requirements
Database

Requirements Definition Form

Requirement ID	
Date	
Version	
Description	
Classification	
Reason for Requirement	
Where in the System?	
Source of Requirement	
Stakeholders	
Status	
Priority	

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3) The Requirements Database



Included in the Resources Folder is a Microsoft Access Database that can be use to record all requirements

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Areas to Investigate during Analysis

- 1) Functional requirements
- 2) Problems and Issues
- 3) Business rules and regulations
- 4) Business events
- 5) Constraints and restrictions
- 6) Improvements on existing processes or systems
- 7) Desirable but not necessary features
- 8) Interfaces with other systems / processes
- 9) Non-functional requirements: Legal / Administrative / Contractual / Physical / Political / Data Migration / etc.

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4) Questions to Ask the Stakeholders



Here is a set of questions that are typical of the Analysis of Requirements

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Requirements are Hierarchical (We need iterative Analysis)

First capture:

I want to have employees request leaves and get them approved
(This is really a system or a process)

Second capture:

We need to break down the process into: leave request entry, approval screens, reporting functions

Third capture: Leave request entry is broken down into:

- a) I want to be able to enter the leave request
- b) I want to see the accrued leave on the date of the requested leave.
- c) I want to enter a colleague's name who can replace employee
- d) I want to notify colleague by email and get accept or reject response

Fourth capture, etc.

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5) The Requirements Definition Document (DD)



The requirements definition document is a **critical** document

It represents the accumulation of all verified requirements

It may have a "pending issues" section that lists problems or requirements awaiting resolution

In the next few activities, the RDD will be used to generate:

The Functional Specifications Document (FSD)

The Instructions to Builders (ITB)

One can say: "Designs aim to convert requirements into specifications"

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6) Non-Functional Requirements (NFD's)

NFD's are constraints and needs that are outside the **Functional Behavior** of the products and services

Example: for a Software System

- Licenses
- Performance
- Maintenance and support requirements
- Back-office requirements

Example: for the Installation of Heavy Machine in Power Complex

- Spare parts availability: location, period, pricing
- The cost of additional work, if required
- Procedure for access of equipment for maintenance
- Environmental constraints: temperature, fumes, radiation, etc.

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7) Verification of Requirements

Verification 1: ensure that all requirements are feasible

- Technical Feasibility
- Legal Feasibility
- Schedule and Budget Feasibility
- Priority

Verification 2: ensure requirements do not overlap or conflict

Verification 3: ensure matching between requirements and stakeholders

- There should be no stakeholder without a requirement
- There should be no requirement without a stakeholder

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30

Workout on Requirements Structure



You have been given the job of managing the production of the company's Annual Report

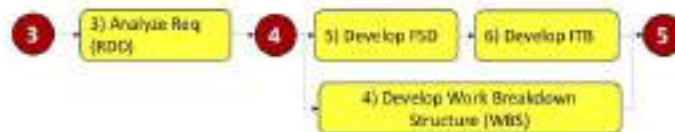
Prepare a breakdown of the requirements needed to define the final product

It is enough to prepare a classification or structure without specifying each

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We can see how important the RDD is for the remaining Product Scope Activities



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Activity 4: Develop the Work Breakdown Structure (WBS)



Having analyzed and verified the requirements, we are now in a position to start planning how to do the work

The practice we will follow is called "Work Breakdown Structure"

This is a chart that breakdown the project into phases, sub-phases, activities and tasks

WBS is carried out in parallel with Activities 5 and 6 (FSD + ITB)

We will now go over to [Presentation 8](#) on the WBS

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Activity 5: Develop the Functional Specifications Document (FSD)

This activity converts the approved RDD into a design of "how" the system would work after it is built.

The result of this activity is a set of Technical Specifications describing each one of the deliverables

It is the responsibility of the [Product Manager](#)

Again, it is the PM that monitors the proper execution of the specification activities

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Where do we Require Functional Specs?

In the past, Project Managers restricted Functional Specs to Products

Successful projects require technical specifications for:

- 1) Product / Services Descriptions
- 2) Required services, facilities, systems and processes
- 3) Documentation
- 4) Training
- 5) Warranty, Maintenance and Support
- 6) Surveys and other interim studies
- 7) Non-functional Requirements

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Characteristics of Technical Specifications

Objective	Detached from subjective definitions
Unambiguous	Will not lead to different interpretations
Complete	All aspects are addressed
Accurate / Correct	To be verified by peers or third parties
Detailed / Precise	Level of precision to be agreed upon
Testable	Untestable specs are undeliverable

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Ask yourself this question: Given the same Specs, can 2 different Contractors build the product in exactly the same way?



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Product and Project Managers
should envy the Construction/Engineering Industry



Why?

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Because they have near
100% precision
in their **Up Front**
Designs / Specifications



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Reminder:

In the presentation on Quality, we
looked into the issue of testing Designs

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Activity 6: Instructions to Builders (ITB)

Not to be confused with "Instructions to Bidders"

These are the technical instructions that the Product Manager develops for the Product / Services Building Team

The **Product Building Instructions** are based on the FSD

These are specifications of how to build each deliverable

They are to be read by the Builders (Product Team) and not by the Client

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When do we develop Building Instructions?

This depends on two factors:

Factor 1: Are we sure the project will take place?

If yes, then we can develop the Building Instructions during Planning

If no, then we leave the Building Instructions for the Building Phase

Factor 2: Are we doing the Building work or contracting it?

If yes, then at some time, we need to develop the Building Instructions

If no, then the development of the Building Instructions are the responsibility of the Contractor

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In Graphic Terms

	We Build	The Contractor Builds
Project Certain	During Planning	Responsibility Of Contractor
Project Uncertain	During Execution	Responsibility Of Contractor

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C.

Quality Management Definitions (Testing)

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Activities 7 to 11:

These Relate to Quality Management (QC/QA)

Activity 6: Develop Test Scripts and Scenarios

Activity 7: Define the Specs of the Test Site and Facilities

Activity 8: Develop Test Plans and DAP's

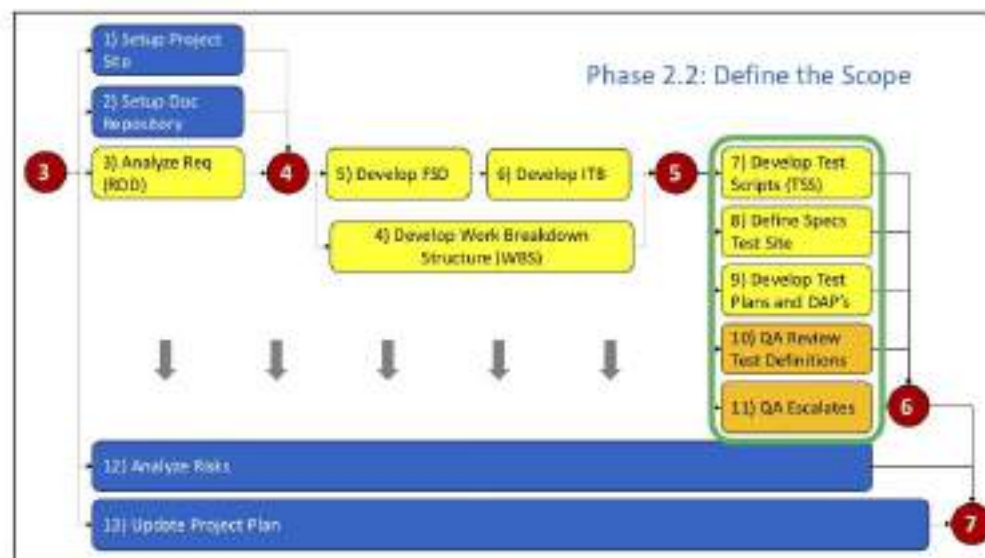
Activity 9: QA Reviews Test Definitions (all above)

Activity 10: QA Escalates non-resolvable issues

We shall cover these activities next

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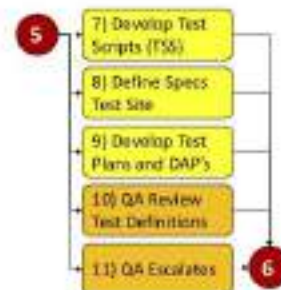
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Quality Management Activities as per the overall Activities of Phase 2.2

Most of the specifications in these activities will go into the Delivery and Acceptance Procedures (DAP) for each Deliverable



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Activity 7: Develop Test Scripts and Scenarios (TSS)

- 1) Test Scripts and Scenarios (TSS) = a generic name for ALL tests you apply to Deliverables
- 2) A Test Script is a step-by-step testing procedure
- 3) Scenarios are Test Scripts with the same steps but with **different data**
- 4) Remember the Demand and Supply approach?
- 5) Each Task must therefore have its own TSS - Size does not matter!

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Activity 7 (Cont.): Develop Test Scripts and Scenarios (TSS)



- 6) Test Scripts are generally prepared by the Product Manager assisted strongly by the Client
- 7) QA must review the Test Scripts (QC on QC!!)
- 8) We will now review a Typical Software Test Script

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Workout on Test Scripts



Let us select a typical deliverable

And . . . Develop a Test Script and Scenarios document for it

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Activity 8:

Define Specifications of the Test Site

- 1) The Test Site is often different from the location of product building
- 2) Define the Location
- 3) Specify the required services and facilities
Equipment / Communications / Power / Access, etc.
- 4) Develop Technical Specs for equipment
- 5) Identify and assign tasks to the resources building the Test Site

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Activity 8 (Cont.):

Define Specifications of the Test Site

- 6) The Test Site Specs are prepared by the Product Manager
- 7) They are reviewed by the Project Manager
- 8) They are reviewed by the Client / User (if in their site)
- 9) Specs will be used during the Execution Phase to build the Test Site
- 10) QA reviews the Test Site Specs

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Activity 9: Develop Test Plans and DAP's



Having developed a DAP Template earlier, we now adapt the template to define the procedure for each Deliverable

Test plans are elements to be included in the DAP

A specific DAP will be developed for each Deliverable

The following will be involved:

- The Team, the Beneficiary and the Provider (if known at that time)

- QA to review the results

- Any related Stakeholder

We will now go over to [Presentation 9](#) on DAP's

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Activity 10: QA Reviews Test Definitions

- 1) It is never enough to define the Test Definitions for use by the QC Unit
- 2) They need to be checked and verified (like everything in a project)
- 3) This is the task of the QA Unit

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54

Activity 11: QA Escalates Unresolvable Issues

Sometimes, issues arise during testing that are not due to

- Lack of testing

- Poor testing

- Poor products

- Delinquent behavior by the beneficiary or the provider

It is the responsibility of the QA unit to escalate these issues

99 / 01

55

D.

Risk Analysis and Project Plan Updating

99 / 01

56

Activity 12: Analyze Risks



- 1) Analysis of risks allows the Project Manager to be ready to respond to things that can damage the project
- 2) The earlier these are identified, the sooner the PM can provision for them
- 3) Risk Analysis is a **Planning Tool**
- 4) The proposal and the agreement would have analyzed risk, but in a broad manner

We will now go over to **Presentation 10** on Risk Management

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Activity 13: Update the Project Plan



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A Typical Structure of a Project Plan

- 1) Executive Summary
- 2) Introducing the Project
- 3) The Scope of the Products and Services
- 4) The Scope of the Project
- 5) The Action Plan and Project Schedule
- 6) Project Costs and Contract Value
- 7) Project Particulars and Measurements
- 8) Other Planning Activities
- 9) Related Project Issues



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Typical Project Plan Template

In the Resources Folder, we have a Project Plan Template
 We also have an Explanation of each Section AND
 A list of sections in Excel format with their Usage Index

We shall review these documents in more detail in Phase 2.3

90 / 01

60

End of Presentation 07





Phase 2.2 Planning Work Breakdown Structures (WBS)

Presentation 08

1

Documents to Review

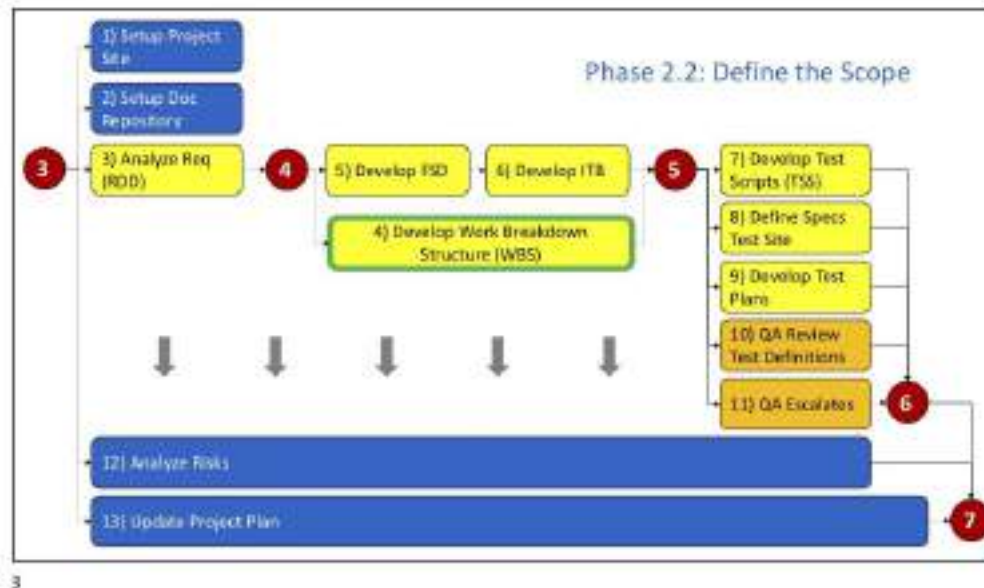
- 1) Microsoft Project Preset Fields for use in a WBS
- 2) Microsoft Project – Annual Report
- 3) Microsoft Project – Technical Library

Workouts

N/A

2 / 34

2



First Major Activity in Planning is the definition of the Scope of the Product:

- a) The Precise Definition of the Product Scope or the Design of the Deliverables.
- b) The Development of Test Scripts and Scenarios.

Second Major Activity is the breaking down of the work (activities) needed to complete the Scope (Execution).

To complete the WBS, we need to breakdown or decompose the whole project into a set of **Hierarchical Work Units**.

Each descending level represents an **increase in the details** of the description of work.

The Work Units are **ALL and Nothing More** than is needed to **complete** the Project and its Deliverables.

9 / 34

5

Remember:

The Work Breakdown Structure (WBS) is both

- a) A Process
- b) A Document

9 / 34

6

Question: What is a Good WBS?

A good WBS must contain ALL tasks needed to complete the Product and the Project

It must not contain Tasks outside the Project

Each Task must be accurately defined (see later)

The WBS must be prepared by all related parties

It must be approved by all related parties

Who are the related parties?

Project Team / Users / Beneficiaries / Suppliers / QC / QA

Procurement / HR / Finance

Most stakeholders!!

7 / 34

7

The Work Breakdown Structure (WBS) is a Planning and Control

The WBS is a key **document** / **process** in Project Management

We prepare it using Microsoft Project

The WBS decomposes a Project into individual work units

Phases / Sub-phases / Activities / Tasks

For each Task, the WBS shows a variety of data elements:

Deliverable

Responsible

Costs and Resources

Schedule

Etc. (More later)

8 / 34

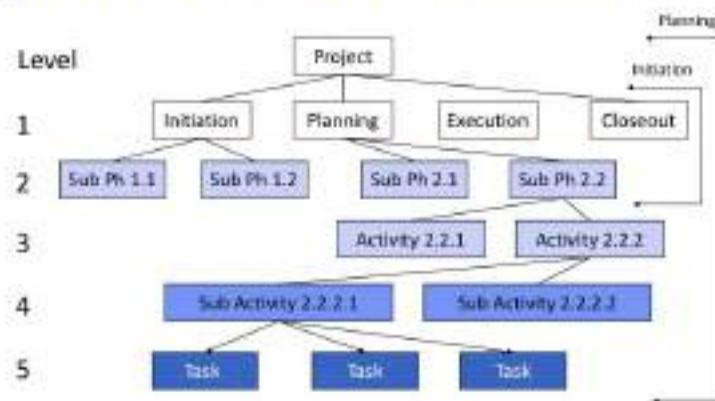
8

The WBS Decomposes a Project downwards in order to reach a complete description of Individual Tasks



9

A Typical Work Breakdown Structure



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10



11



12

What is a Task?

- 1) **Tasks** are the "Atoms" of the project
- 2) A Task is the **smallest** "work unit" to be Planned and Executed
- 3) A Task can only belong to one block above it: Activity / Sub-Phase / Phase
- 4) Tasks are found at the lowest level in a WBS (like a tree)
- 5) Tasks are like Leaves
- 6) They must not be further subdivided
- 7) If they need to be divided, they become Activities!
- 8) Microsoft Project requires each Task to be entered in one Row
- 9) Microsoft Project allows you to group Tasks to form Activities or Subphases

13 / 34

13

Examples of Tasks: Can You Break Them down any Further?

- 1) **Pour** 10 cubic meters of concrete for the base of the transformer
- 2) **Test** the data entry screen for Stock Item
- 3) **Review** the delivered training manual
- 4) **Develop** the project schedule
- 5) **Sign** the contract
- 6) **Train** 15 users on operating the machine (maybe)
- 7) **Test** the speed of a machine (maybe)
- 8) **Install** a database server (maybe)

(maybe) = in some projects, these Tasks might be wider than single functions and hence are not Tasks but Activities

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14

Definition of an Activity (Or Sub-Phase)

- 1) An **Activity** is a group of **Tasks** that relate to one another
- 2) An Activity is usually controlled by one responsible
- 3) Activities are defined in the middle levels of a WBS
- 4) Activities can be grouped under Phases and Sub-Phases
- 5) There is no difference between Sub-Phases and Activities
Except that Phases and Sub-Phases are above Activities in the WBS
- 6) Activities will be shown as Blocks in the PM Framework to be presented later on

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15

Examples of Activities

Design a Product

Test the Delivered System (Quality Control)

Train the Staff on the new procedure for VAT

Install all A/C equipment in one floor

Train 15 users on operation of machine

Specify all training steps: book hall, prepare material, conduct, etc.

Test the speed of a machine

Specify steps: prepare machine, conduct test 1, test 2, write report

Each of these **MUST** be broken down into lower-level Activities or Tasks (if no more levels are to be reached)

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16

Characteristics of Tasks in a WBS



Each Task **must** have a specified objective or deliverable

Each Task **must** be measurable: Time and cost

Each Task **must** have a scope that is testable

There **must** be a single responsible for each Task

Tasks **must** have duration, resources and costs.

These **must** aggregate upwards (bottom up) into the duration, resources and costs of Activities.

Quality Control (testing) **must** be defined for each Task

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17

When do we Prepare the WBS?



Initiation Phase: Business Case and Proposal Preparation

Prepare high levels only: Levels 1 and 2

Planning Phase: Project Plan

Prepare a fully detailed WBS

Execution / Closeout Phases:

Modify WBS only when revision is required

Modification takes place through a Change Control mechanism

18 / 34

18

Why use WBS?

- 1) To arrive at a complete 100% definition of ALL work to be done
Within the product and the project scope
- 2) To develop an objective / detached view of the work
- 3) To develop bottom-up estimates of quantitative measures
Resources/Costs + Schedule estimates
- 4) To assign responsibilities to roles or individuals
- 5) To manage risks by Task
- 6) To define other "variables" for the Tasks:
Location / Cost Accounts / Type of work / Nature of costing / Etc

19 / 34

19

Without Breaking down the Project Tasks, You will not be able to . . .

- 1) Conclude that all tasks in the project scope have been identified
- 2) Estimate durations
- 3) Estimate the quantity of resources to be assigned
- 4) Sequence the tasks
- 5) Assess the risks

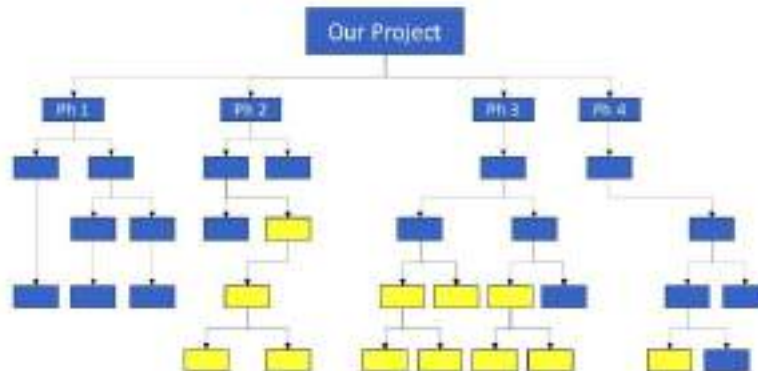
Meaning: we do not have a Project Triangle



20 / 34

20

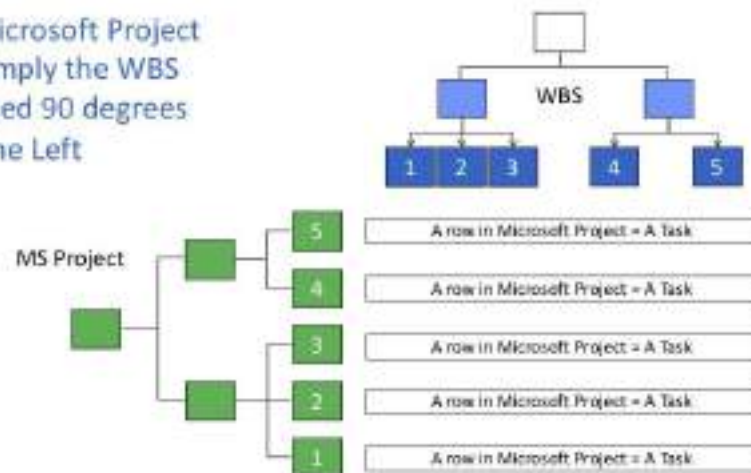
Where are the Product Activities in our Project?



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21

A Microsoft Project is simply the WBS turned 90 degrees to the Left



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22

What do we need to know about Tasks or Work Units?

Task description	Schedule
Objectives	Costs
Resources	Performance measure
Prerequisite Tasks	Responsibility
Deliverables	Risks
	Other data elements ...

23 / 34

23

Microsoft Project has a Large Number of Fields for each Task



There are over 200 preset fields that used to define each Task

There are over 20 groups of customizable fields for your own data:

- Number fields
- Start / Finish / Duration fields
- Text fields
- Flag (Yes/No)

There are 12 Baseline fields (10 of each)

There are numerous Enterprise fields (for use in Microsoft Project Server)

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24

MS Project Provides the Following Facilities for Preparing a WBS . . .



- Outlining (levels of phases / sub-phases / activities)
- Filtering of levels
- Automatic level numbering
- Multiple level number (to allow for different codes for blocks)
 - Cost account codes
 - PM codes
 - Client imposed codes
- Importing sub-projects
- Re-using blocks of Tasks

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25

A Common Question: How Small is a Task at the Lowest Level?

- 1) **General Practice:** projects with around 300 Tasks are just right for a single Project Manager to handle
- 2) Of course, this depends on the nature of the project
- 3) A project for installing 1500 pipes will have over 4000 tasks but due to repetition, it can be handled by a single Project Manager
- 4) Larger projects should be broken down into several subprojects

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26

Demonstration



Here are some projects that have been setup using Microsoft Project
They show the Work Breakdown Structure (before time/cost)

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27

General Rules and Guidelines for Limiting Breakdown

Rule 1: Go down to a level where the Task triangle can be controlled

Each Task must have a clearly defined scope, schedule and scope

Each Task must have clearly defined resource assignments and costs

Such definitions should not require further breakdown

Not too small: micromanagement

Not too large: overlapping responsibilities, different types of work, etc.

Rule 2: Go to a level where you can test the work

Each Task must be testable to ensure the success of Technical Tests, Quality Compliance and Scope Verification

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28

More . . .

Rule 3: Minimal Cost Control

Stop where cost of Tasks is around 0.5% of the total project cost

This means that the lower level would have around 200 Tasks

Example: In a project that costs \$1,000,000, we should worry about a Task costing in the order of \$50,000

Exception: if one task has a low cost but is critical such as a license or an approval

Rule 4: Minimal Schedule Control

Breakdown a Task so they are around 0.5% of the total duration

This means that the lower level would have around 200 Tasks

Example: a 1-year long project should have a Task controllable with a duration no less than 0.5 of a week or 2 – 3 days.

There is no point in controlling a Task of 3 – 4 hours in such a project

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29

And More . . .

Rule 5: Breakdown a Task if “risky”

Example: if you a 2-month delivery for a critical equipment, breakdown the 2 months into individual milestones

1. Order received
2. Equipment assembled
3. Bank receives documents
4. Supplier clears shipment at source airport
5. Shipment arrives at destination airport
6. Shipment cleared from customs
7. Shipment ready for delivery

Rule 6: Breakdown a Task if on the critical path

(You would need MS Project)

30 / 34

30

And Even More . . .

Rule 7: Breakdown a Task if in the "near" future

Example: In a 2-year project, there is a single task for training 50 people over 2 months but that is at the end of the project

Initially, show the task as a single Task of 2 months

Around 18 months into the project, breakdown the training task into individual tasks

Rule 8: Breakdown a Task if difficult or complex

Rule 9: Breakdown a Task if you don't know the executor

An executor you can trust can be assigned a single task of 1 month

If you do not know the executor, then breakdown the 1 month into individual milestones

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Guidelines for Developing a WBS

Breakdown the Scope before working on schedules and costs

Develop the WBS before the GANTT chart in Microsoft Project

Do not forget Tasks related to project management work:

Process management	Communications	Services
Administration	Documentation	Quality management

Do not make the WBS "project specific". You will not be able to:

- Compare across projects
- Reuse elements
- Learn from the WBS

Each a Task must have only one "owner"

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Guidelines (Continued)

Show ALL deliverables on the WBS

- All stakeholders must be satisfied

- Avoid a Tasks that are not deliverable oriented

- Example: using organizational units as WBS a Tasks: "Accounting"

- Example: using processes as WBS a Tasks: "Monitoring"

Use the "Verb + Noun" format to name a Tasks:

- Prepare Media Plan

- Develop technical specs

- Don't say: Design

- Don't say: Advertising

Add a "Subject" if you feel it clarifies a Task:

- Client Reviews Specifications

- QA Reviews Test Scripts

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33

End of Presentation 08



34



Phase 2.2 Planning – The Delivery and Acceptance Procedure (DAP)

Presentation 09

1 / 10

1

Documents to Review

- 1) Delivery and Acceptance (DAP) -
TEMPLATE
- 2) Delivery and Acceptance (DAP) -
EXPLANATION
- 3) Delivery and Acceptance - FORM

Workouts

- 1) Discuss a DAP case and
provide a suitable
alternative

2 / 10

2

When do we Meet the DAP?

In the preliminary sub-phase of planning (2.1), we develop a template for the standard DAP and review it with the beneficiary

Once the Deliverables Register is finalized, we should have one DAP for each Deliverable

CRITICAL

3 / 10

3

The Delivery and Acceptance Procedure (DAP)

Remember the Demand / Supply relationship?

The DAP is one of the most important **agreements** in a project

It ensures that deliveries follow a procedure that is efficient and equitable to the provider and the receiver

It covers any delivery . . .

- Between project and client

- Between supplier and project

- Internally between project and other departments

- Internally between team units

The DAP reinforces terms in the contract

- It can be considered as part of the contract

4 / 10

4

Why use the DAP when we have:

The User Acceptance Test (UAT)?

This is a strictly testing procedure but might cover "some" delivery issues

The Test Scripts and Scenarios (TSS)?

These are test scripts

The Test Plan?

This is our basis – it includes all that there is to do when delivering

The DAP is generic and determines the Test Plan

The Test Plan will be the exact procedure to use during actual deliveries and will be based on what was agreed upon in the DAP

8 / 10

5

What Should a DAP Cover?

The name of the deliverable

Test specifications: scripts, material, data

Test site: location, equipment, facilities

Provider team (delivering party)

Receiver team

Schedule

Authorities: Who will sign the error report?

Authorities: Who will issue the Provisional Acceptance (PA)?

Content of the error report

Delinquencies by any of the 2 sides

9 / 10

6

What is Provisional Acceptance (PA)?

It is a document that certifies that a specific Product has succeeded in passing testing as per the agreed upon DAP

AND **possibly** has passed any new tests needed after repair and correction of initial faults

PA is usually linked to payment terms

PA does not void warranties

A complete set of ALL PA's = Fully Accepted Deliverables

7 / 10

7

Delinquencies (Both Sides)

Receiver Delinquencies

Testing not completed in the agreed period

Receiver does not send the right personnel (authority/experience)

Corrected errors not reviewed in the agreed period

Provider Delinquencies

Testing not completed in the agreed period

Provider does not send the right personnel (authority/experience)

Correction of errors not completed in the agreed period

8 / 10

8

Receiver shall Issue Provisions Acceptance in case of any of their delinquencies

Provider shall be penalized (as in Agreement) in case of any of their delinquencies

9 / 10

9

Resolve this Issue by resorting to a Robust Demand/Supply Agreement



- 1) It is **not possible** at this stage to define all the terms for delivery and testing for acceptance
- 2) It is **possible** to agree over a **method** for delivery and testing for acceptance
- 3) Provider and Receiver should meet and agree on the components of such a method
- 4) An agreed upon DAP template should be drafted

10 / 10

10

And . . .

- 5) During Phase 2 (Planning), the Scoping Phase (2.2) shall then convert the DAP Template into a real DAP **for every deliverable** listed in the Deliverables Register
- 6) Include the DAP as part of the Communications Plan

11 / 10

11

Life Cycle of the DAP

In the Preliminaries of the Planning Phase:

- 1) Develop a Standard DAP Template for your use in different projects
- 2) Develop different Templates for specific delivery types:
Material / Equipment / Software / Services / Etc.
- 3) Agree with the receiver on the DAP and update the Template

In the Scope Sub-phase of the Planning Phase:

- 1) Finalize the Delivery and Acceptance Plans for each Deliverable

In the Execution Phase (when Stabilizing): (See next slide)

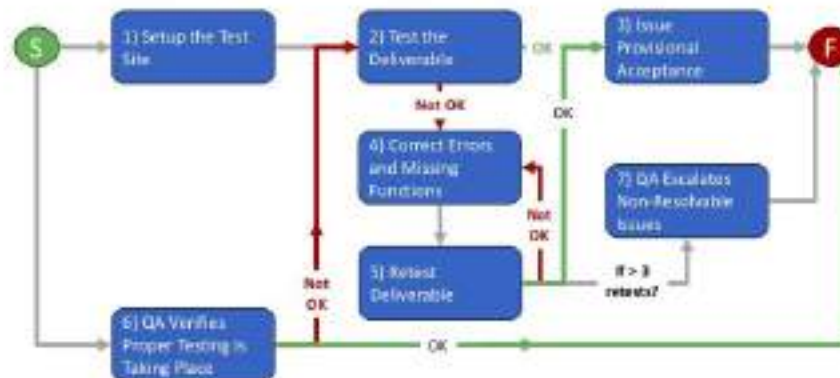
- 1) Apply the DAP
- 2) Aim at acquiring Provisional Acceptances per deliverable
- 3) It is possible for a single deliverable to have more than one PA

Remember: the DAP includes material from other Activities: Test scripts / Test Site Specs / Test Plans / Etc.

12 / 10

12

The Testing Loop (Activity 9 of Phase 2.2)



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13

Let us Review the DAP Template



There are two documents: a Template and an Explanation

There is also a typical Acceptance Form we can review

Let us try to develop a DAP (verbally) and see what happened in real life

14 / 10

14

Let us Review a Typical DAP Case



Project: for a government Ministry + International Organization

Deliverables: 12 documents specifying standards

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15

End of Presentation 09



16



Phase 2.2 Planning (Scope) How to Manage Risks in a Project

Presentation 10

1

Documents to Review

- 1) Risk Exposure Cutoff Matrix (10 x 5)
- 2) Risk Exposure Cutoff Matrix (10 x 10)
- 3) Risk - Taxonomy - Typical (1)
- 4) Risk - Taxonomy - Typical (2)
- 5) Risk - Taxonomy - Typical (3)
- 6) Risk Analysis Table
- 7) Risk Analysis Document - TEMPLATE
- 8) Risk Analysis Document - EXPLANATION
- 9) Risk Event Short - FORM
- 10) Risk Event Short - EXPLANATION
- 11) Risk Event Long - FORM
- 12) Risk Event Long - EXPLANATION
- 13) Risk Analysis Database
- 14) Top Ten Analysis

Workouts

- 1) Case Study Risk Analysis

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2

Agenda

- A. Introducing Risk Management
- B. Risk Analytics: Probability, Impact and Exposure
- C. Benefits and Misuse of Risk Management
- D. PMI's 6 Risk Processes: P1+P2: Identifying Risks
- E. PMI's 6 Risk Processes: P3+P4: Measuring Risks
- F. PMI's 6 Risk Processes: P5: Responding to Risks
- G. PMI's 6 Risk Processes: P6: Monitoring Risks

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3

A.

Introducing Risk Management

3 / 36

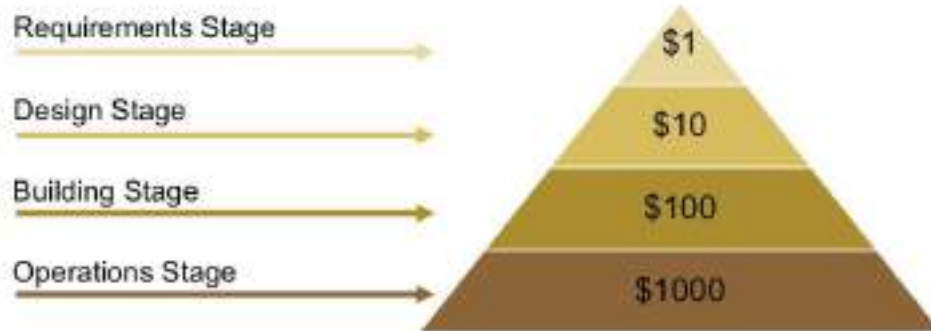
4

Know Your Enemy



5

Let us Assume that Solving a Possible Problem at the During Planning = \$1



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6

Risk Management is a
Planning Tool

It is NOT
a “management” buzz word

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7

To Manage Risks in a Project, the PM has to:

- 1) **Identify / Classify** events that can damage the project
- 2) Compute the **Exposure** or **Risk** for each event
- 3) Sort events in descending **Exposure**
- 4) Try to reduce the **probability** of such events arising
- 5) Try to reduce the **impact** such a situation will cause
- 6) Develop a **response** to the damaging event
- 7) **Monitor** risks throughout the project

8 / 90

8

B.

Risk Analytics: : Probability, Impact and Exposure

9/1/2016

9

Two Factors define each Damaging Events:

1) Probability	Very Likely	Medium	High	High
	Probable	Low	Medium	High
	Improbable	Low	Low	Medium
		Negligible	Damaging	Catastrophic
		2) Impact		

10

Computational Definitions:

Probability the likelihood that a damaging situation may arise from a cause within or outside the project.

Impact the damage that arises IF the situation actually takes place.

Exposure: the average impact of an event which = probability x impact



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11

What is Exposure?

Exposure = Probability x Impact

Mathematically, Exposure = **Average Impact** over a long time

We should calculate the exposure of ALL events

We then sort them in descending order

Then we address our response to events starting from the top

12 / 40

12

Why is Risk Exposure = Probability x Impact?

Example: Probability of delay in delivery of goods is 70%

Consider 100 deliveries

We expect 70 of them to have delays!

When a delay takes place, it will cost us \$500

The total cost of delays = $70 \times \$500 = \$35,000$

Exposure = the average cost over all deliveries

= $\$35,000 / 100 \text{ deliveries} = \350

Exposure = Average Impact

If we had assigned a number to the impact, (say 4 out of 5):

The average impact = $(70 \times 4) / 100 = 2.8$

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13

Exposure Scores for Different Probabilities (%) and Impacts (10)



		Impact									
		1	2	3	4	5	6	7	8	9	10
Probability	1.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
	0.90	0.90	1.80	2.70	3.60	4.50	5.40	6.30	7.20	8.10	9.00
	0.80	0.80	1.60	2.40	3.20	4.00	4.80	5.60	6.40	7.20	8.00
	0.70	0.70	1.40	2.10	2.80	3.50	4.20	4.90	5.60	6.30	7.00
	0.60	0.60	1.20	1.80	2.40	3.00	3.60	4.20	4.80	5.40	6.00
	0.50	0.50	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00
	0.40	0.40	0.80	1.20	1.60	2.00	2.40	2.80	3.20	3.60	4.00
	0.30	0.30	0.60	0.90	1.20	1.50	1.80	2.10	2.40	2.70	3.00
	0.20	0.20	0.40	0.60	0.80	1.00	1.20	1.40	1.60	1.80	2.00
	0.10	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		Low L		Up L	
High	>=	7.00	< or =	10.00	
Medium	>=	4.00	<	7.00	
Marginal	>=	2.00	<	4.00	
Negligible	>=	0.00	<	2.00	

14

What about Certain Event?

Certain Events have a probability of 100%
We should not include them in our table
They are not "potentially" damaging
They are "certainly" damaging

We should deal with them **now**



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15

C.

Benefits and Misuse of Risk Management

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16

The Benefits of Managing Risk:

- 1) To reduce the surprise in a project
- 2) To make it difficult to ignore risky events
- 3) To force the team to think in numbers
- 4) To give ourselves more time to solve the problems
- 5) To reduce "Blame"
- 6) To improve team spirit

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17

When do we Analyze Risk?

- 1) During planning
This is the most critical time
- 1) During major revisions of project plans
Scope / Time / Cost
- 1) When taking over an already running project
- 2) When a project goes into trouble
- 3) At the start of new phases

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18

If Risk Management is so important, why don't people do it all the time?

- 1) Because of a human tendency to postpone and ignore risk
- 2) Because we don't have time for Risk Management
- 3) Resolving risks is costly and requires money UP FRONT!
- 4) Admitting risks in a project may block its approval
- 5) Admitting risks implies "You don't know what you are doing"
- 6) There is an assumption that risk analysis is not precise
- 7) Because so far, we did not have a clear "Method"

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19

D.

PMI's 6 Risk Processes: P1+P2: Identifying Risks

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PMI's Risk Management Processes

Risk Management is one of the 10 Areas in the Guide to the Body of Knowledge of Project Management (PMBOK)



It consists of **6 processes**:

- 1) Risk Management Planning
- 2) Risk Identification
- 3) Qualitative Risk Analysis
- 4) Quantitative Risk Analysis
- 5) Risk Response Planning
- 6) Risk Monitoring/Control

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Process 1: Risk Management Planning

This process is usually covered in the preliminary phase

It covers an agreement about

- 1) The Risk Management unit
- 2) The risk parameters to use and how to measure them
- 3) The setup of risk tables or registers (spreadsheets or databases)
- 4) What approach to responses shall we take?

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22

Process 2: Identify Risky Events

Identify individual risky events

Classify them under suitable categories

Good practices:

- 1) Prepare standard lists of Risky Events for similar projects
- 2) Make them accessible to everyone
- 3) Let Project Managers use them instead of re-inventing them
- 4) Revisit them and update frequently based on lessons learned

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23

We can look for risks under the following:

Events: delays, breakdowns, environment, accidents

General states: experience, knowledge, quality levels, economy

Behavior: staff turnover, changes of mind, unreliability

Availability: resources, time, budget

Symptoms: morale, increasing errors, customer dissatisfaction

Production and Project Processes: methods, tools, support

Technology: maturity, knowledge, support, how much up to date

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24

Project Documents to Consult while Identifying Risky Events

- 1) Schedule: Tasks on the Critical Path
- 2) Resource Assignments
- 3) The Work Breakdown Structure (WBS)
 - Check for complex items
 - Check for unclear items
 - Check for large unbroken down blocks
- 4) Product specifications
 - Check for unclear specifications
 - Check for complex implementation
 - Check for implementation which is not feasible

25 / 40

25

And . . .

- 5) Check the Competence of the Team
- 6) Check your Assumptions
 - Question all facts / information taken for granted
- 7) Check your Constraints
 - Examine the limits and how far you are from them
- 8) Critical Success Factors (CSF)
 - Check Stakeholder statements for what they consider a success factor
- 9) Review earlier documentation:
 - Lessons Learned
 - Project Termination Reports

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26

And . . .

- 10) Use Standard Checklists prepared by your organization
- 11) Research published material specific to your sector
- 12) Interview experts
- 13) Conduct SWOT analysis
 - Strength and Opportunities:* what stops us from getting there?
 - Weakness and Threats:* how likely are these?
- 14) Develop Cause and Effect Diagrams to analyze causes of specific problems
- 15) Flow charts or other business maps or models
 - Analyze workflows / procedures

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27

Typical Risk Taxonomies



Here are 3 documents with typical breakdowns of risks
(Taxonomy or Classification)

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28

E.

PMI's 6 Risk Processes: P3+P4: Measuring Risks

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Process 3: Qualitative Analysis

- 1) These process is a qualitative search for Risky Events and Situations
- 2) This process will start by using the Risk Event Forms and documents (coming soon)

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30

Process 4: Quantitative Analysis: Develop the Risk Analysis Table and Document

The purpose of this process is to develop the calculations that would give us a list of risky events sorted by highest exposure

The Risk Analysis Table is shown next, followed by a tour of the Risk Management documents

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Example of a Risk Analysis Table

Top 5 Risks		Probability (%)	Impact (1 to 5)	Exposure
1	Risk Event	90%	4.50	4.05
2	Risk Event	60%	4.00	2.40
5	Risk Event	40%	3.00	1.20
3	Risk Event	30%	2.50	0.75
4	Risk Event	10%	1.00	0.10
				8.50
Maximum Impact		5		
Total Project Risk		8.50		
Average Event Risk		1.70		
Average Event Risk (%)		34%		
Max Project Risk		25.00		
Total Project Risk (%)		34%		

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Extension to Example: Add the Impact in \$ Value or Time if Known

Top 5 Risks	Probability (%)	Impact (1 to 5)	Exposure	Schedule Impact (In Days)	Schedule Exposure	Value Impact (in \$)	Cost Impact
1 Risk Event	90%	4.50	4.05				
2 Risk Event	60%	4.00	2.40			\$10,000	\$6,000
5 Risk Event	40%	3.00	1.20	4	1.6	\$6,000	\$2,000
3 Risk Event	30%	2.50	0.75				
4 Risk Event	10%	1.00	0.10	10	1		
			8.50		2.6		\$8,000

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The documents we will review

- 06 Risk Analysis Table
- 07 Risk Analysis Document - TEMPLATE
- 08 Risk Analysis Document - EXPLANATION
- 09 Risk Event Short - FORM
- 10 Risk Event Short - EXPLANATION
- 11 Risk Event Long - FORM
- 12 Risk Event Long - EXPLANATION
- 13 Risk Analysis Database



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Workout: Case Study Risk Analysis



Let us select a Case Project
And identify the risk events that might face it

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F.

PMI's 6 Risk Processes: P5: Responding to Risks

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Process 5: Risk Response Planning

Develop solutions

To reduce **probability**

To reduce **impact**

Risk Response Planning consists of

- 1) Risk Avoidance
- 2) Transfer
- 3) Mitigation
- 4) Acceptance



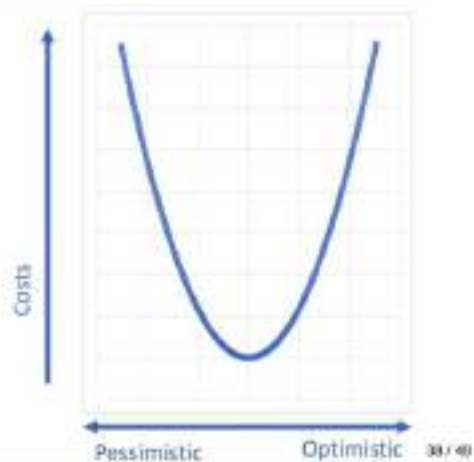
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Assessing our "Risk" Responses

If we are too **pessimistic** or **risk averse**, we will incur high costs of prevention

If we are too **optimistic** or **risk seekers** or having **risk appetite**, we will incur high costs from realized risks



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Risk Response Planning: 1) Avoidance

Eliminate the threat by eliminating its cause

Example: Risk of Supplier Delay:

Change Supplier

Example: Risk of a bad technological solution

Change the solution

Example: Risk of lack of competence

Train the team

We can then remove the Risky Event from our table!!

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Risk Response Planning: 2) Transfer

Transfer risky event to another party who can handle it better

Example: risk of work accidents in a project

Insure the team

Example: risk of improper building of an item

Buy it, don't make it

Transfer does not eliminate the risk, but reduces its impact

Transfer may result in increases in costs and time

It may also result in new risks related to the appointed party

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40

Risk Response Planning: 3) Mitigation

Mitigate: to cause to become less hardened, to soften, to alleviate

Mitigation does not remove risks

Mitigation simply reduces the exposure in one of 2 ways:

Action A: Reduce Probability: reduce the probability of an event happening

Action B: Reduce the Impact: reduce the impact if it happens

(Or both!)

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Examples of Mitigation

1) Team Turnover:

Action A: reduce **probability** of turnover by increasing salaries, motivation, providing better responsibilities, etc

Action B: reduce **impact** by preparing contingency teams

2) Risks of changing specifications:

Action A: reduce **probability** of changing specifications (scope creep) by improving the quality of the specifications

Action B: we **cannot** reduce **impact** of scope creep when it happens

3) Risks of environmental damaging events (rain, storms):

Action A: we **cannot** reduce the **probability**

Action B: we can reduce **impact** of by finding solutions (tents, etc.)

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Risk Response Planning: 4) Acceptance

If we cannot do anything about the risk, we have to accept the consequences of the event

Action A: Active Acceptance

- We leave the event as it is - it may take place
- We develop contingency plans in case it happens
- Example: rain on the site

Action B: Passive Acceptance

- We leave the event as it is
- We accept its consequence of the event
- Example: accepting a penalty because of delay

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G.

PMI's 6 Risk Processes: P6: Monitoring Risks

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Process 6: Monitoring Risks in a Project

We said: be careful about Event X

Were we careful?

What did we do?

Did it happen and what were the costs of the damage?

Were we too optimistic and as a result cause project losses?

Were we too pessimistic and incurred additional response costs?

What was its rank in the previous period, and did it change rank?

Have new Risky Events been identified?

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45

Monitoring Risks

- 1) Start with the **Top Ten** events in the Agreement
- 2) Review risks periodically and note your responses to them
- 3) Indicate the **current** week's ranking
- 4) Indicate the **previous** week's ranking
- 5) Indicate the **number of weeks** in Top Ten
- 6) Allow for new events



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Sample Top Ten Analysis (Only 5 Shown)



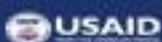
Risks **9 and 10**
are new

Risks **4 and 5**
have dropped out

Monthly Exposure Ranking				
This Week	Last Week	No of Weeks	Risk Item	Risk Resolution Progress
1	2	4	Inadequate planning	Working on revising the entire project plan
2	3	3	Poor definition of scope	Holding meetings with project customer and sponsor to clarify scope
3	1	2	Absence of leadership	Just assigned a new project manager to lead the project after old one quit
4	9	0	Poor cost estimates	Revising cost estimates
5	14	0	Poor time estimates	Revising schedule estimates

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End of Presentation 10



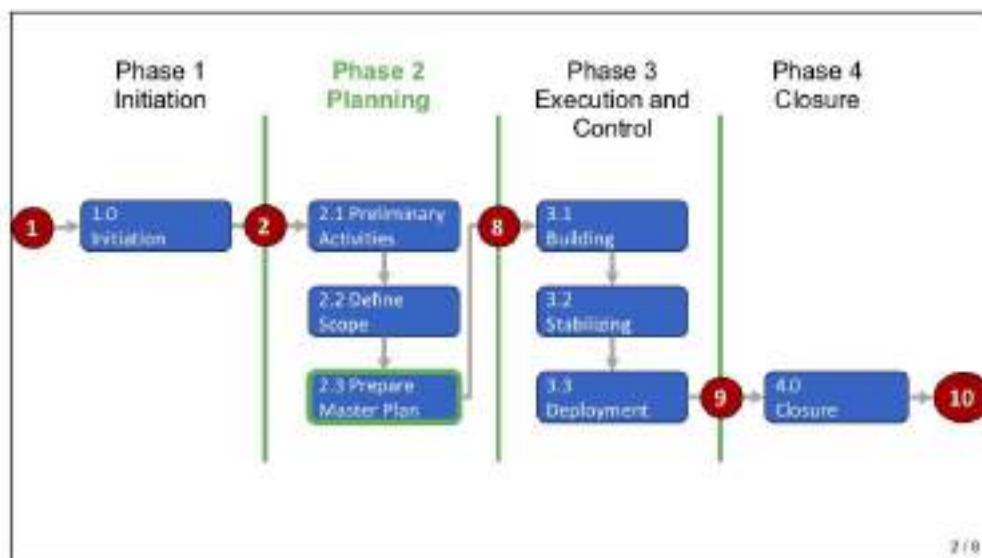
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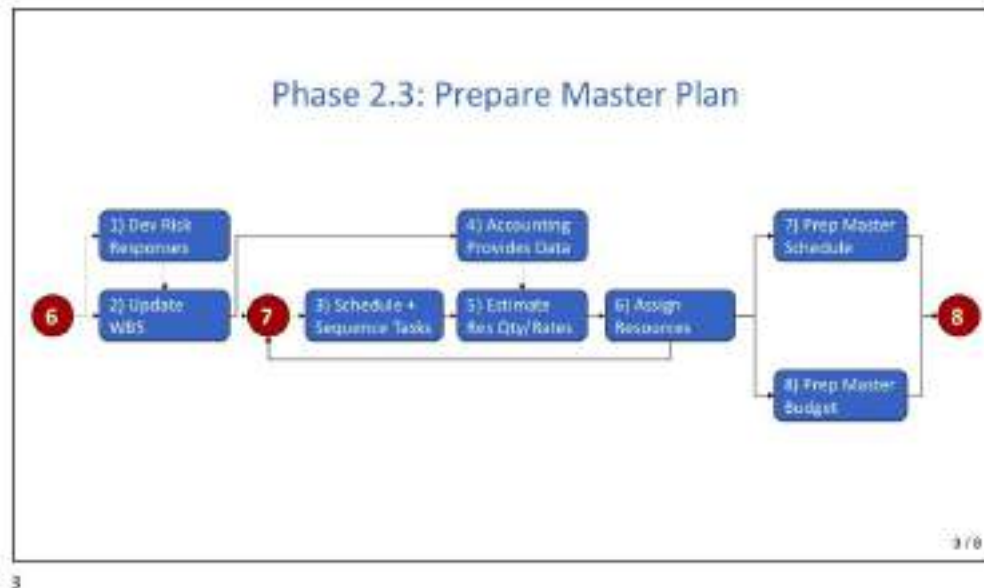
Phase 2.3 Planning Preparing the Master Plan

Presentation 11

1



2



3

Activity 1:

Develop Responses to the Identified Risks

- 1) Once the risks are identified and documented (in Phase 2.1), the PM should develop responses to each event/situation
- 2) Responses require review and approval since not all of them may be financially, contractually or technically feasible
- 3) Once the responses are approved, the PM should incorporate any tasks needed to respond to the risks in the new project plan
- 4) The Tasks should be identified and added to the Work Breakdown Structure to be developed next.

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4

Activity 2: Update the Work Breakdown Structure

- 1) Now that Risk Responses have been defined, we can update the Work Breakdown Structure (WBS)
- 2) This is the job of the Product Manager assisted by the Project Manager
- 3) Once the WBS is completed, it becomes the basis of
Developing the Master Schedule
Development the Master Budget

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5

Activities 3 to 8: Scheduling, Resource Planning and Budgeting

- 1) Most of these Activities are straightforward
- 2) Most often, they are developed using a Software Tool such as Microsoft Project or Primavera
- 3) Such tools will provide us with the quantitative side of the Project Plan
- 4) The qualitative components of the Project Plan still need to be updated

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6

Review of the Project Plan Template



Remember that by now, you would have already developed this plan
But . . . In an incomplete form
The purpose of this Sub-Phase is to complete the Project Plan or the
Master Plan

This template is a comprehensive document that includes more than you
might need in a project plan

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7

End of Presentation 11



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8



Managing Earned Value Analysis in Projects

Presentation 12

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1

Documents/Workouts

- A. A 5-Month Project
- B. Animation of SV and CV by Month
- H. Average Performance and Cost
- I. Technology System Project
- J. Calculating Time Variance - A Full Example
(Indicator 12) + Time Variance and Time Variance
for the Technology System Project
- K. Earned Schedule SV(t)
- L. Schedule Time Performance Index SPI(t)
- M. Burn Rate and EAC
- N. To Complete Schedule Performance Index TCSPi

Workouts in this presentation
are given the same Letters as
these Documents (found in
the Resources Folder)

(We will not show the
document icons for each
Workout)

Workouts C to G do not have
associated Documents

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2

Under the [Related Documents](#) folder in the [Resources Folder](#), you will find:

- 1) An Example of EVA using MS Project
- 2) The Full List of the 5 Measures and the 25 EVA Indicators

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3

Agenda

- A. Life before EVA and the 5 Measurements
- B. Indicators 1 to 4: A Few Basic Indicators
- C. Indicators 5 to 9: Rates derived from PV, EV, AC and Time
- D. Indicators 10 to 15: Time-based EVA Indicators
- E. Indicators 16 to 18: Percentages that Analyze Completion
- F. Indicators 19 to 23: Estimates and Forecasts of Completion
- G. Indicators 24 to 25: Indicators that Help us Know how to Complete a Delinquent Project

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4

A.

Life before EVA and the 5 Measurements

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5

Life before EVA: an Example

Project: budget = \$100,000, 12-month to produce 20 units

Status: after 6 months we find . . .

We have spent: \$64,000

We have produced: 8 completed, 2 partially completed units

How are we doing? What is our progress?

64% because this is what we have spent of our budget?

50% because we are half-way through?

More than >40% because (8 units in full + 2 in part)?

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6

Earned Value Analysis Solves this Problem:

- 1) It converts all schedules and costs into Monetary Values
- 2) It measures Earned (or Completed or Performed) Value

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Example: Installing Cable Sockets

Number of Sockets to install	= 1000 Sockets
Total Duration	= 50 days
The rate of installing	= 20 Sockets per day
The cost of installing	= \$10 per Socket
The total cost of installing	= \$10,000

These are Budgetary Costs (not actual costs)

They are what Management approves

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8

Terminology Has Changed . . .

Traditional Terms

BCWS	Budgeted Cost of Work Scheduled
BCWP	Budgeted Cost of Work Performed
ACWP	Actual Cost of Work Performed

PMI's New Terms

= PV	Planned Value
= EV	Earned Value
= AC	Actual Cost

PMI introduced much simpler to use terms

Unfortunately, many still use them, such as Microsoft

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9

The 3 Main Measurements for EVA

PV

1) Planned Value = **BLUE** signifies the Sky . . . hope

EV

2) Earned Value = **Green** signifies dynamic growth

AC

3) Actual Value = **Brown** signifies down to Earth . . . reality

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We also need:

4) Total approved **Budget** at Completion (BAC)

5) Total **Duration**

All in all, 5 easy measurements

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11

These 5 measurements will result in **25 KPI's**

Most of these can be considered as . . .

Key Performance Indicators (KPI's)

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EVA Asks the Questions

About the **Past**:

- Are we on schedule?
- Are we within budget?
- How efficient are we in meeting schedules and budgets?
- What is the trend to date?

And at any time, it can project our **Future** performance:

- When will we finish?
- What will it cost at the end?
- What will be the total variance in schedule terms?
- What will be the total variance in budgetary terms?

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PV: Planned Value (Budget Scheduled to Complete)

PV

PV = the cumulative **Planned Value** of the work scheduled up to a **specific Socket in time**

PV at the end of 10 days

- We must install 10 x 20 Sockets per day = 200
- The planned value = 200 Sockets x \$10 = \$2000

PV at the end of 18 days

- We must install 18 x 20 Sockets per day = 360
- The planned value = 360 Sockets x \$10 = \$3600

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BAC: Budget at Completion (\$) and Duration

BAC = our **projected total earning** from this project

BAC = is also = PV on the project's completion date

Total original budget **\$10,000**

Duration **50 days**

Later, we will use **EAC** which is **the revised estimate** of BAC

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EV: Earned Value

EV

The customer will only pay us according to completed work

EV = the Earned Value is the amount of budgeted work we actually completed up to a specific point in time

EV at the end of 10 days

Instead of 200 Sockets, we install 180

We get paid for $180 \times \$10 = \1800

If we install 230 instead of 200

We get paid for $230 \times \$10 = \2300

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AC: Actual Cost

AC

How much did the **performed** work actually cost?

AC = the value of the actual costs needed to complete work up to a specific point in time

AC at the end of 10 days

We do install the budgeted 200 Sockets BUT

Each Sockets cost us \$8 instead of \$10 to install (We are clever)

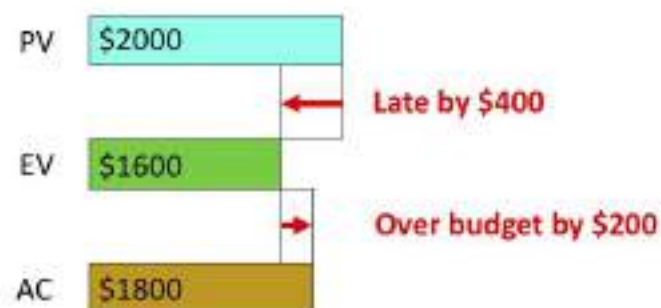
$AC = 200 \times \$8 = \1600

Remember the budget was $\$10 \times 200 = \2000

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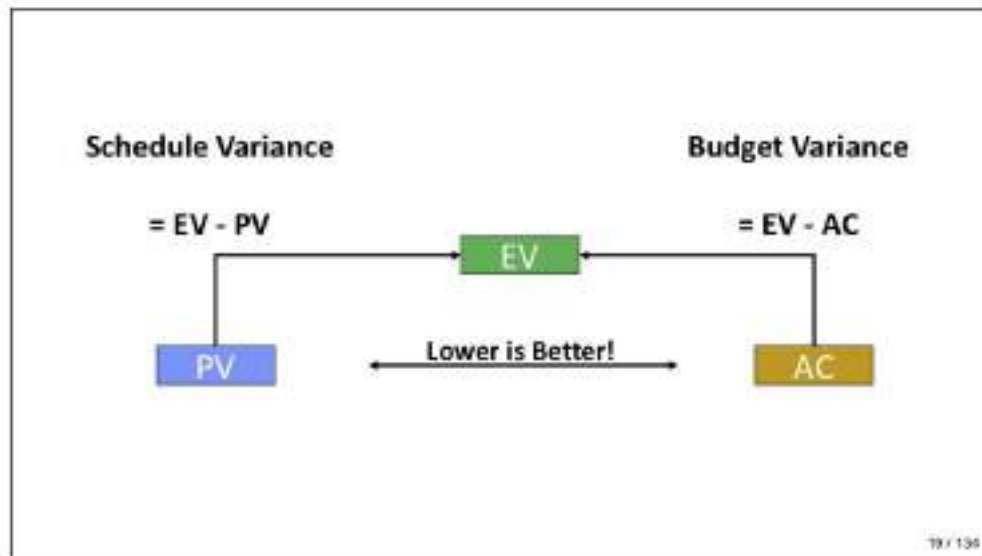
17

Graphic Example (Blocks of 10 days)



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18



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Going Back to our Example:

At the end of Day 10 we installed 150 Sockets

Our actual cost per Socket was \$12 or $\$12 \times 150 = \1800

PV = \$2000 10 days x 20 Sockets x \$10 per Socket

EV = \$1500 150 Sockets x \$10 per Socket

AC = \$1800 150 Sockets x \$12 per Socket

We are not doing well:

We are **below earning**

We are **above budget** in actual cost

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A.

Indicators 1 to 4: A Few Basic Indicators

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Indicator 1:

SV: Schedule Variance (Deviation):

Difference between **Earned Value** and **Planned Value**

$$SV = EV - PV$$

If SV is Positive

Work performed is more than budgeted

GOOD

If SV is Negative

Work performed is less than budgeted

BAD

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Indicator 2:**CV: Cost Variance (Deviation):**

CV = difference between **Earned Value** and **Actual Cost**

$$CV = EV - AC$$

If CV is Positive

Actual work is lower than Work performed - GOOD

If CV is Negative

Actual work is higher than Work performed - BAD

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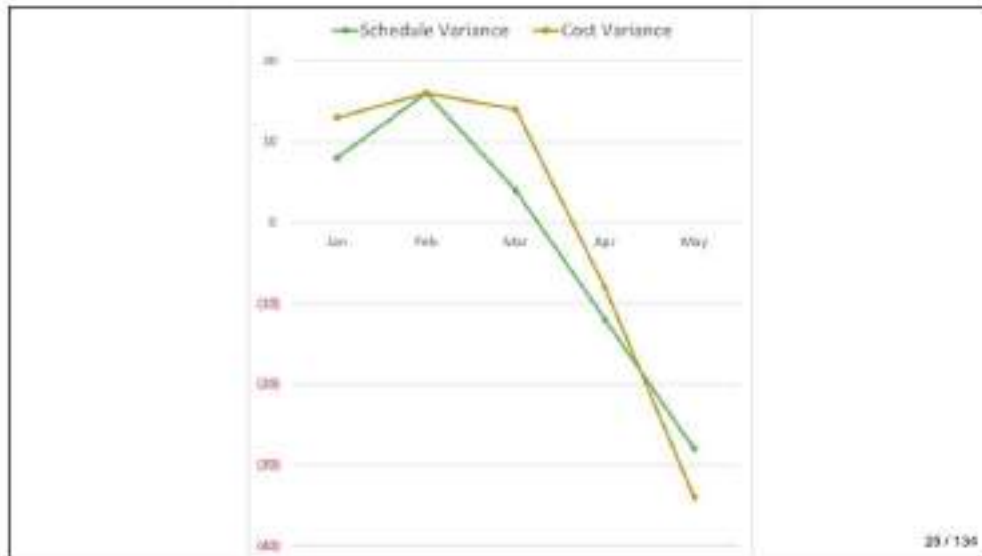
23

Workout A: A 5 Month Project

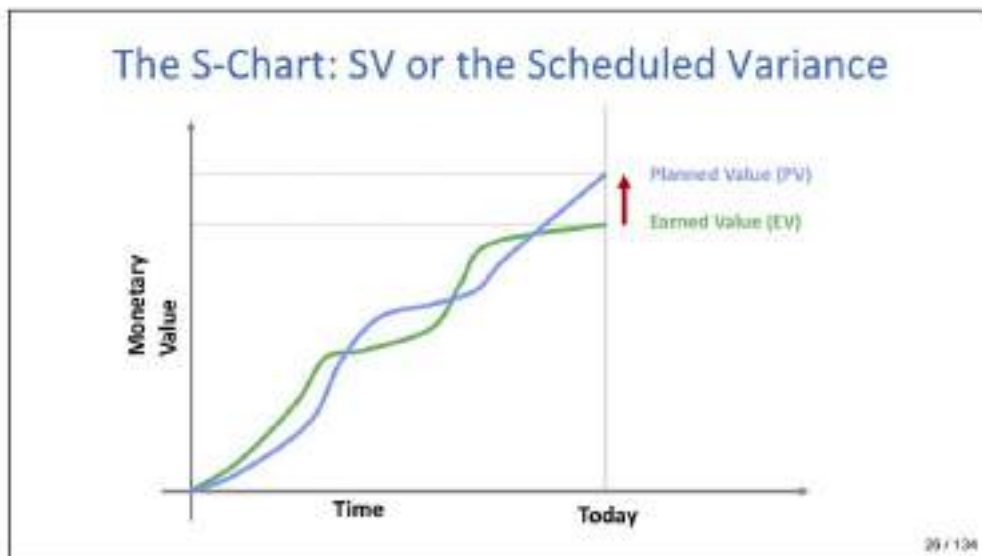
Month	Jan	Feb	Mar	Apr	May	Total
Budgeted Cost / Unit	4	4	4	4	4	
PV Units	25	25	25	25	25	125
PV Units Cum	25	50	75	100	125	
PV \$	100	100	100	100	100	500
PV \$ Cumulative	100	200	300	400	500	
EV Unit	27	27	22	21	21	118
EV Unit Cumulative	27	54	76	97	118	
EV \$	108	108	88	84	84	472
EV \$ Cumulative	108	216	304	388	472	
AC \$	95	105	90	106	110	506
AC \$ Cumulative	95	200	290	396	506	
Schedule Variance	8	16	4	(12)	(28)	
Cost Variance	13	16	14	(8)	(34)	

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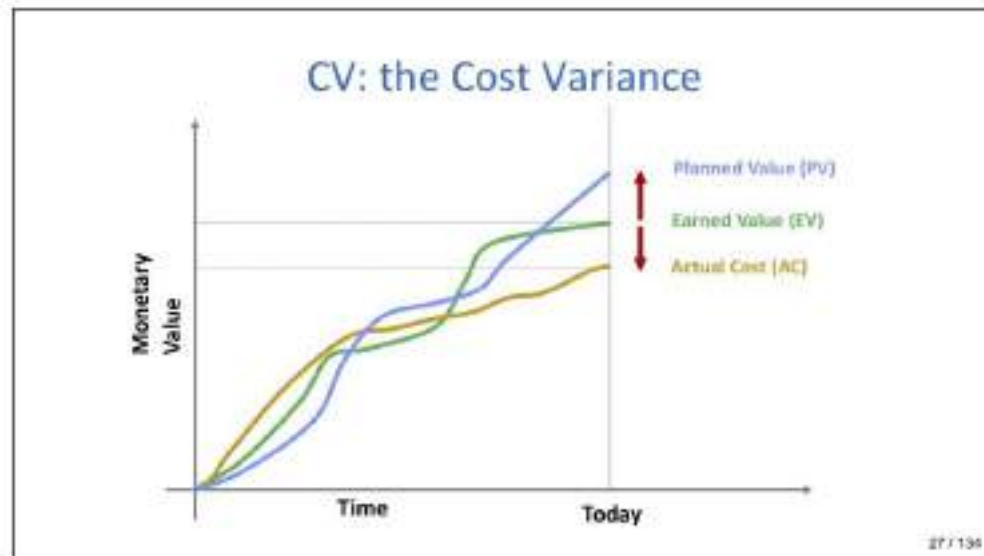
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Workout B: Animation of SV and CV by Month

This workout allows you to see the progress of SV and CV month by month

And how they are compared to the PV Chart

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Indicator 3:**SPI: Schedule Performance Index**

Efficiency Rating = Ratio between Earned Value and Planned Value

$$SPI = EV / PV$$

If SPI is greater than 1

Work performed is more than budgeted GOOD

If SPI is less than 1

Work performed is less than budgeted BAD

Example: if SPI = 0.8 we are late

Assume total project duration = 4 months

Divide Total Duration / SPI = 4 / 0.8 = 5 months

This is the duration we will reach if we go on working like this

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Going back to our Socket example for SPI:

PV = \$2000 10 days x 20 Sockets x \$10 per Socket

EV = \$1500 150 Sockets x \$10 per Socket

AC = \$1800 150 Sockets x \$12 per Socket

Schedule Variance =

$$SV = EV - PV = \$1500 - \$2000 = - \$500 \quad \text{BAD}$$

Schedule Performance Index =

$$SPI = EV / PV = \$1500 / \$2000 = 0.75 \quad \text{BAD}$$

Expected Completion Duration = Total Duration / SPI (Later called TEAC)

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Indicator 4: CPI: Cost Performance Index

Efficiency rating = ratio between Earned Value and Actual Cost

$$\text{CPI} = \text{EV} / \text{AC}$$

If CPI is greater than 1

Actual work is less than work performed GOOD

If CPI is less than 1

Actual work is higher than work performed BAD

Example: CPI = 0.7, we are above budget

ALSO: Assume our total project budget = \$5000 (This PV at end)

Divide Total Project Budget by CPI = $\$5000 / 0.7 = \7142

This is the cost we will reach if we go on working like this

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And our Socket example for CPI:

PV = \$2000 10 days x 20 Sockets x \$10 per Socket

EV = \$1500 150 Sockets x \$10 per Socket

AC = \$1800 150 Sockets x \$12 per Socket

Cost Variance =

$$\text{CV} = \text{EV} - \text{AC} = \$1500 - \$1800 = -\$300 \quad \text{BAD}$$

Cost Performance Index CPI =

$$\text{CPI} = \text{EV} / \text{AC} = \$1500 / \$1800 = 0.833 \quad \text{BAD}$$

$$\begin{aligned} \text{Expected Total Cost} &= \text{BAC} / \text{CPI} \\ &= \$10,000 / 0.833 = \$12,004 \end{aligned}$$

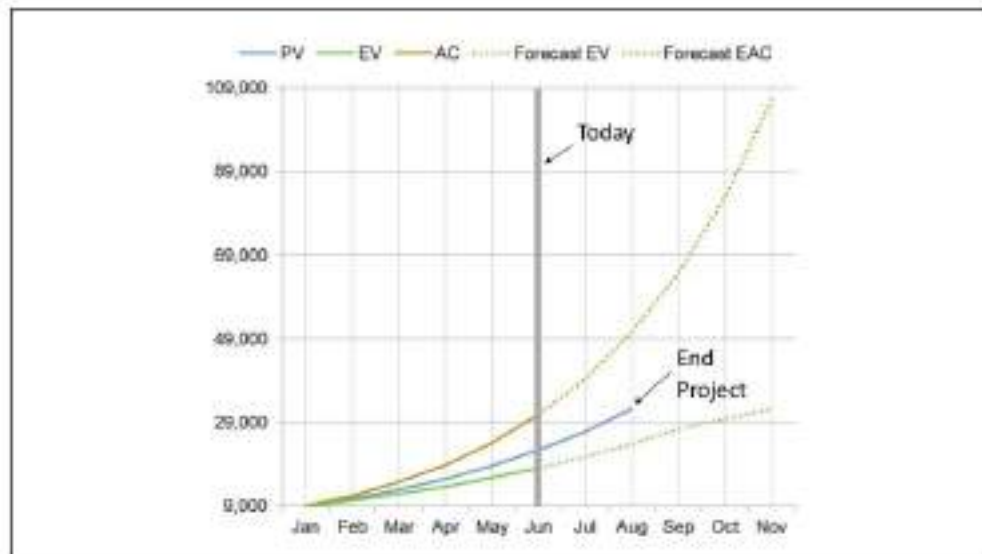
Efficiency reading: every \$0.833 we earn is costing is \$1

We often use $1/\text{CPI} = 0.833 = 1.2$

Efficiency reading: for every \$1 we earn, we are actually spending \$1.2

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You will sometimes see: CV % and SV %

SV Percent

$$= [(EV - PV) / PV] \times 100$$

$$= (SV / PV) \times 100$$

$$= [(1500 - 2000) / 2000] \times 100 = -25\%$$

We are 25% behind in time.

CV Percent

$$= [(EV - AC) / EV] \times 100$$

$$= (CV / EV) \times 100$$

$$= [(1500 - 1800) / 1500] \times 100 = -20\%$$

We have spent 20% more than allowed.

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Let us try some workouts

(Workouts C to G will be carried out in class
They are not available as Excel workbooks)

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Workout C:

If PV = \$10,000
 EV = \$7,000
 AC = \$5,000

What is the Scheduled Variance?
What is the Scheduled Variance Index?
What is the Scheduled Variance Percentage?
What is the Cost Variance?
What is the Cost Variance Index?
What is the Cost Variance Percentage?

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Solution Workout C:

If PV = \$10,000
 EV = \$7,000
 AC = \$5,000

What is the Scheduled Variance?	$7,000 - 10,000 = -3,000$
What is the Scheduled Variance Index?	$7,000 / 10,000 = 0.7$
What is the Scheduled Variance Percentage?	70%
What is the Cost Variance?	$7,000 - 5,000 = 2,000$
What is the Cost Variance Index?	$7,000 / 5,000 = 1.4$
What is the Cost Variance Percentage?	140%

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Workout D:

We are building a highway of = 4 Kilometers at \$1 Million/km
 The time to complete the highway = 4 months
 At the end of 3 months, here are our results:
 We completed 1 Kilometer + we spent \$ 2 Million
 How are we doing in Schedule terms?
 How are we doing in Budgetary terms?
 How much work remains (\$)?
 Estimate the total cost at completion?
 Compute the Budget Variance at Completion?
 If we going on working like this, when will we finish?

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Workout D Solution

We are building a highway of $\quad\quad\quad = 4$ Kilometers at \$1 Million/km

The time to complete the highway $\quad\quad\quad = 4$ months

At the end of 3 months, here are our results:

We completed 1 Kilometer and spent \$2 Million

How are we doing in Schedule terms?

$$SV = EV - PV = 1M - 3M = -2M$$

$$SPI = EV / PV = 1/3 = 0.333$$

$$SPI\% = SV / PV = -2M/3M = -66\% \text{ (late)}$$

How are we doing in Budgetary terms?

$$CV = EV - AC = 1M - 2M = -1M$$

$$CPI = EV / AC = 1M / 2M = 0.5$$

$$CPI\% = CV / EV = -1M/1M = 100\% \text{ (over budget)}$$

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And . . .

(Note, we are previewing some new Indicators)

How much work remains (\$)?

$$ETC = \text{Total PV} = 4M \text{ reduced by EV} = 4M - 1M = 3M$$

Estimate the total cost at completion?

$$EAC = \text{Actual Cost so far} + \text{Remaining Work} = 2M + 3M = 5M$$

What is the Variance in our Budget at Completion?

$$VAC = 4M - 5M \text{ (or 1M over budget)}$$

If we going on working like this, when will we finish?

$$\text{Total Duration} / SPI = 4 \text{ months} / (EV/PV) = 4 / 0.33 = 12.12 \text{ months}$$

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Workout E:

If both CV and SV are Positive, which of these statements is true?

- 1) The project is over budget but is on schedule
- 2) The project is under budget but behind schedule
- 3) The project is under budget and ahead of schedule
- 4) The above information is not enough to tell
- 5) The project is exactly on budget and on schedule

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Workout F:

Which is the Best Project – Use Variances?

Project	PV	EV	AC
A	1000	800	600
B	1050	1100	950
E	900	1200	1300

- 1) Which project is most likely going to finish **ahead of schedule**?
- 2) Which project will most likely finish **within time and cost** constraints?

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Workout F Solution

Project	PV	EV	AC	SV	CV
A	1000	800	600	(200)	200
B	1050	1100	950	50	150
E	900	1200	1300	300	(100)

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Workout G:

Which is the Best Project – Use **Indices**?

Project	PV	EV	AC
A	1000	800	600
B	1050	1100	950
E	900	1200	1300

- 1) Which project is most likely going to finish **ahead of schedule**?
- 2) Which project will most likely finish **within time and cost** constraints?

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Workout G Solution

Project	PV	EV	AC	SPI	CPI
A	1000	800	600	0.80	1.33
B	1050	1100	950	1.05	1.16
E	900	1200	1300	1.33	0.92

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Note: we can apply these indicators to any of the following:

- 1) Individual tasks
- 2) Work Breakdown Units
- 3) A group of tasks
- 4) Tasks by one responsible
- 5) Tasks in one location
- 6) Tasks of one type (design, collection, testing)
- 7) Tasks by one department

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C.

Indicators 5 to 9: Rates derived from PV, EV, AC and Time

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Indicator 5: The Burn Rate using BAC and CPI

Burn Rate = $1 / \text{CPI}$

It is the rate at which we actually use up the budget

Project 1: EV = \$160,000 and AC = \$140,000 > > > CPI = 1.143

Project 2: EV = \$7000 and AC = \$12,000 > > > CPI = 0.466

The burn rates for these two projects are:

Project 1: $1/\text{CPI} = 1 / 1.1428 = 0.875$

Project 2: $1/\text{CPI} = 1 / 0.466 = 2.14$

Project 1: for every \$1 we earn, we will burn \$0.875

Project 2: for every \$1 we earn, we will burn \$2.14

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Use the Burn Rate to Predict a new BAC

If we have a project with BAC = 500,000

CPI = 0.9529 (not good!)

1/CPI = $1/0.9529 = 1.0494$

For each \$ we earn, we burn \$1.0494

We get BAC = $500,000 * 1.0494 = 524,714$

Burn Rate was above 1

We are not burning our PV well . . .

We will end up with a higher BAC than planned

Unfortunately, EVA does not have a standard name for this calculation

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Workout M:

Contains various indicators, including the Burn Rate

(Out of sequence)

	A	B	C	D	E
1	Planned Value	\$850,000			#N/A
2	Earned Value	\$950,000			
3	Actual Costs	\$900,000			
4	BAC	\$450,000			
5	SV	\$100,000	=B2-B1		
6	SP1	1.12	=B2/B1		
7	CV	\$50,000	=B2-B3		
8	CPI	1.06	=B2/B3		
9	1/CPI	0.95	=1/B8		
10	CPI*SP1	1.18	=B8*B9		
11	ETC (Work Remaining)	(\$500,000)	=B5-B2		
12	EAC with CPI Adjustment	\$426,326	=B3+(B11)/B8		
13	VAC with CPI Adjustment	\$23,684	=B5-B12		
14	EAC with Cost-Schedule Adjustment	\$476,177	=B3+(B11)/B10		
15	VAC with Cost-Schedule Adjustment	(\$26,177)	=B5-B14		
16	EAC with CPI (80%)+SP1 (20%)	\$431,824	=B3+(B11)/(B5*B8)+B5/B*B6		
17	VAC with CPI (80%)+SP1 (20%)	\$18,176	=B5-B16		
18	A (Weight)	0.8			
19	B (Weight)	0.2			

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Indicator 6:

The Cost-Schedule Index or Critical Ratio (**CPI*SPI**)

The **Critical Ratio** is used to adjust forecasts

The adjustment makes the end of project forecasts more aligned with our actual CPI and SPI performances

We will use this ratio in coming indicators: **EAC** or **TEAC**

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Indicator 7:

The Average Spend Rate or PV Rate

This is the **average planned value per time period**

This is our planned (budgeted) spending rate

Spend Rate = **PV Rate** = **PV / Time Units Elapsed**
(from start till status date)

One consolidated chart will be shown after **Indicator 8**

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Indicator 8:**The Average Performance and Average Cost****The Average Performance = EV / Time Units Elapsed**

The average rate at which work has been accomplished since work began

After 10 days **Average Performance** is $\$1500 / 10 = \$150 / \text{day}$

The Average Cost = AC / Time Units Elapsed

The average rate at which we spend money on work we complete

After 10 days **Average Cost** is $\$1800 / 10 = \$180 / \text{day}$

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Workout H: Average Performance and Cost

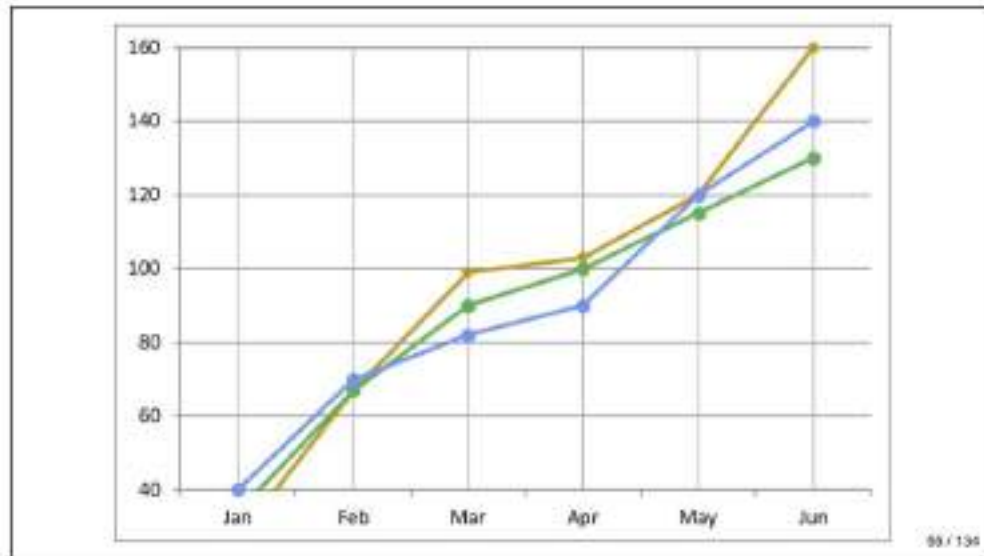
Measurements	Jan	Feb	Mar	Apr	May
PV (Planned Value)	40	70	82	90	120
EV (Earned Value)	34	67	90	100	115
AC (Actual Costs)	27	67	99	103	120

Indicators	Jan	Feb	Mar	Apr	May
PV Rate (Spending Rate = PV/Month)	40	35	27	23	24
Average Performance (EV/Month)	34	34	30	25	23
Average Cost (AC/Month)	27	34	33	26	24

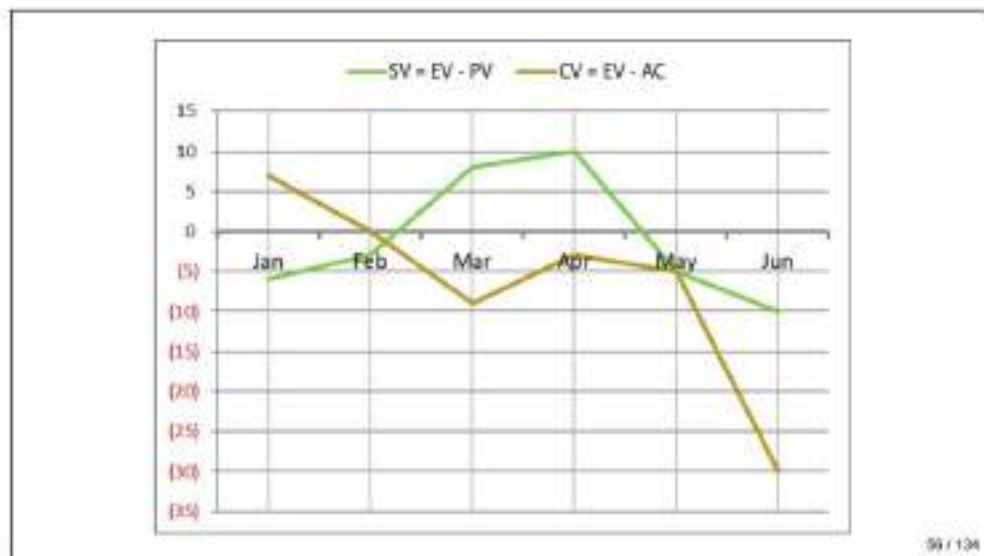
SV = EV - PV	(6)	(3)	8	10	(5)
CV = EV - AC	7	0	(9)	(3)	(5)

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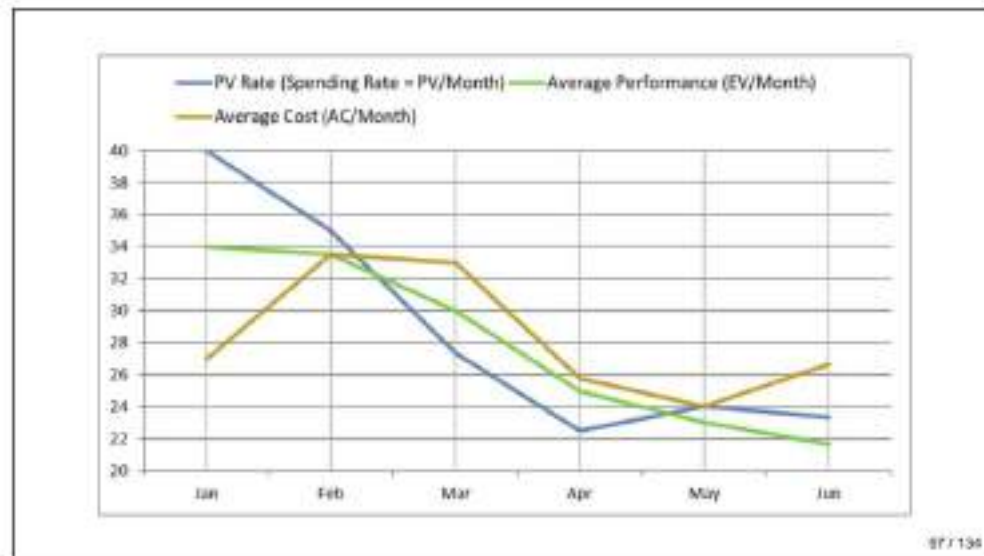
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Indicator 9:

The Average Expected Performance to Finish

It predicts the average rate at which work must be completed from now on if we wish to finish our project exactly on time

Average Expected Performance to Finish

$$= \text{Work Remaining} / \text{Remaining Duration}$$

After 5 days from the start: $PV = \$10 \times 20 \times 5 \text{ days} = \1000

Say $EV = \$850$ so average performance = $\$850 / 5 = \170

Work Remaining = $\$10,000 - \$850 = \$9150$

Indicator 9 = $\$9150 / 45 = \203.33

$\$203.33 / \$170 = 1.196$ so we have to work 19.6% faster

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A Typical Technology System Implementation Project

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Workout 1: A Technology System Project

This project takes place over 6 months

It will show:

- 1) Planned Value (PV)
- 2) Earned Value vs Planned Value (EV vs PV)
- 3) Earned Value vs Actual Cost (EV vs AC)

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Activity		Jan	Feb	Mar	Apr	May	Jun
Plan and staff project	PV	4,000					
Analyze requirements	PV	4,000	8,000				
Design database tables	PV			4,000	8,000		
Design forms, reports, and queries	PV				4,000	4,000	4,000
Develop a working prototype	PV					4,000	6,000
Test prototype	PV						2,000
Spec equipn/work comp	PV	3,000	3,000				
Receive and test equipment	PV			10,000	15,000		
Spec equipn/work comp	PV			6,000			
Layout cables and points	PV				4,000	4,000	
Monthly Budget		11,000	11,000	20,000	31,000	12,000	12,000
Cumulative Budget (PV or BCWS)		11,000	22,000	42,000	73,000	85,000	97,000

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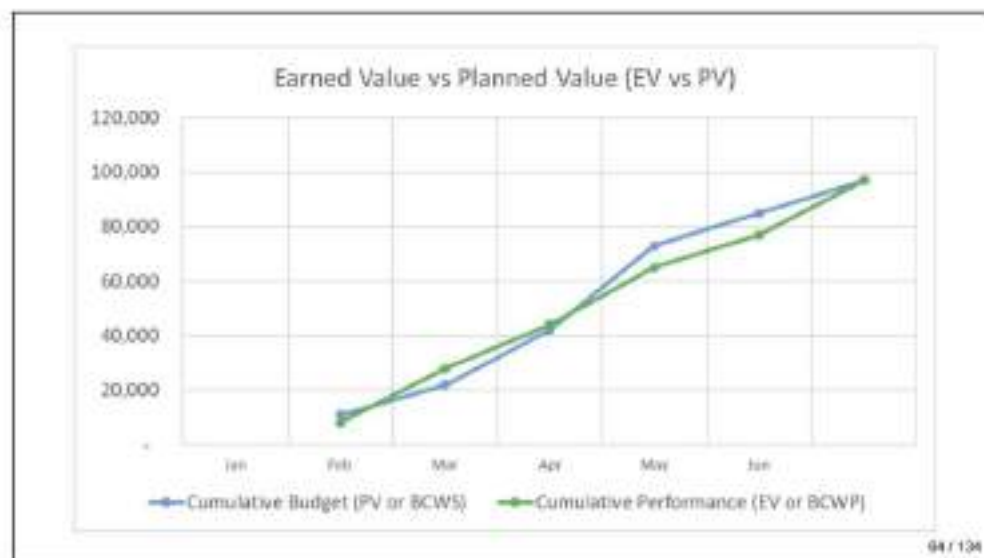
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Activity		Jan	Feb	Mar	Apr	May	Jun
Plan and staff project	PV	4,000					
Plan and staff project (EV)	EV	3,000	1,000				
Analyze requirements	PV	4,000	6,000				
Analyze requirements (EV)	EV	4,000	5,000	3,000			
Design database tables	PV			4,000	8,000		
Design database tables (EV)	EV			1,000	3,000	4,000	
Design forms, reports, and queries	PV				4,000	4,000	6,000
Design forms, reports, and queries (EV)	EV				2,000	2,000	6,000
Develop a working prototype	PV					4,000	6,000
Develop a working prototype (EV)	EV					4,000	10,000
Test prototype	PV						2,000
Test prototype (EV)	EV						2,000
Spec. equip+work comp	PV	3,000	3,000				
Spec. equip+work comp (EV)	EV	1,000	5,000				
Receive and test equipment	PV			10,000	15,000		
Receive and test equipment (EV)	EV		3,000	12,000	30,000		
Spec. equip+work comp	PV				5,000		
Spec. equip+work comp (EV)	EV		6,000				
Layout cables and points	PV				4,000	4,000	
Layout cables and points (EV)	EV				5,000	2,000	
Monthly Budget		11,000	11,000	20,000	31,000	32,000	12,000
Cumulative Budget (PV or BCWS)		11,000	22,000	42,000	73,000	85,000	97,000
Monthly Completion or Earnings		8,000	20,000	16,000	21,000	22,000	20,000
Cumulative Performance (EV or BCWP)		8,000	28,000	44,000	65,000	77,000	97,000

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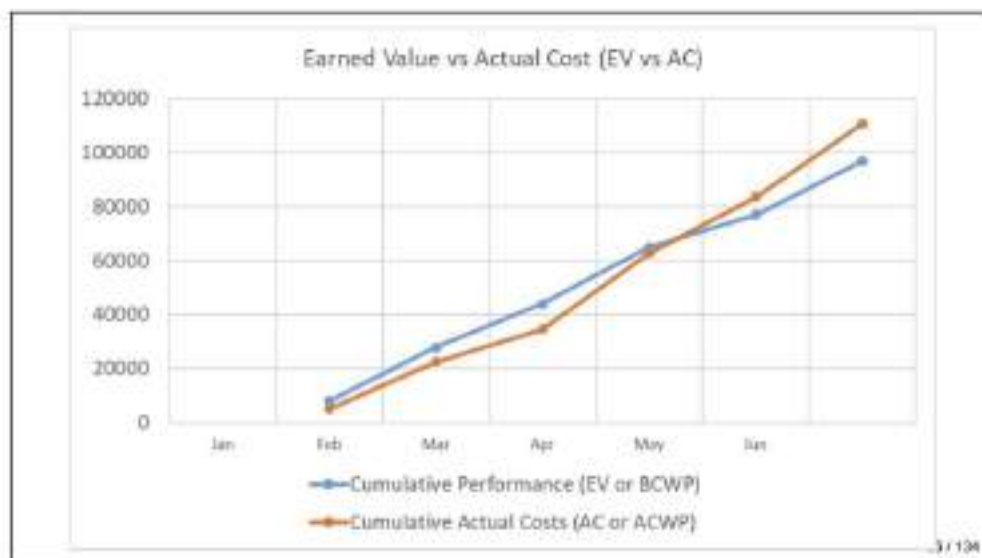


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Activity		Jan	Feb	Mar	Apr	May	Jun
Plan and staff project (EV)	EV	5,000	1,000				
Plan and staff project (AC)	AC	2,000	1,500				
Analyze requirements (EV)	EV	4,000	5,000	3,000			
Analyze requirements (AC)	AC	2,000	3,000	1,000			
Design database tables (EV)	EV			1,000	3,000	4,000	
Design database tables (AC)	AC			1,200	3,000	6,000	5,000
Design forms, reports, and queries (EV)	EV				2,000	2,000	8,000
Design forms, reports, and queries (AC)	AC				4,000	4,000	8,000
Develop a working prototype (EV)	EV					4,000	10,000
Develop a working prototype (AC)	AC					6,000	9,000
Test prototype (EV)	EV						2,000
Test prototype (AC)	AC						4,000
Spec equip+rs/work comp (EV)	EV	1,000	5,000				
Spec equip+rs/work comp (AC)	AC	1,000	5,000				
Receive and test equipment (EV)	EV		3,000	12,000	10,000		
Receive and test equipment (AC)	AC		2,000	10,000	12,000		
Receive and test network components (EV)	EV		6,000				
Receive and test network components (AC)	AC		6,000				
Layout cables and points (EV)	EV				6,000	2,000	
Layout cables and points (AC)	AC				9,000	5,000	
Monthly Completion or Earnings		8,000	20,000	16,000	21,000	12,000	20,000
Cumulative Performance (EV or BCWP)		8,000	28,000	44,000	65,000	77,000	97,000
Monthly Actual Costs		5,000	17,500	12,200	28,000	21,000	27,000
Cumulative Actual Costs (AC or ACWP)		5,000	22,500	34,700	62,700	83,700	110,700

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D.

Indicators 10 to 15: Time-based EVA Indicators

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Indicator 10:

TEAC – Time Estimate at Completion

When discussing Indicator 5, we saw that BAC / CPI gave us the expected budget at completion.

Apply the same logic to arrive at the expected duration at completion

$$TEAC = PD \text{ or } SAC (Planned Duration) / SPI$$

Example:

$$BAC = \$10,000$$

$$Planned\ Duration = 12\ month$$

$$PV = \$2000$$

$$EV = \$1500$$

$$SPI = \$1500 / \$2000 = 0.75 \text{ or } 75\%$$

$$TEAC = 12 / 0.75 = 16\ months$$

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Indicator 11:**TVAC – Time Variance at Completion**

This indicator measures the difference between the **Planned Duration** and the **Estimated Completion Time**.

$$\text{TVAC} = \text{Planned Duration} - \text{TEAC}$$

In our example in the previous slide, $\text{TVAC} = 12 - 16 = -4$ months

It has another fancy name for something we cannot forget is **DELAY** !

We will be late.

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Indicator 12:**TV – Time Variance**

This indicator has the same logic as the Schedule Variance SV

There is no algebraic way of getting the exact Time Variance

We will resort to educated estimates using the PV and EV curves of a project.

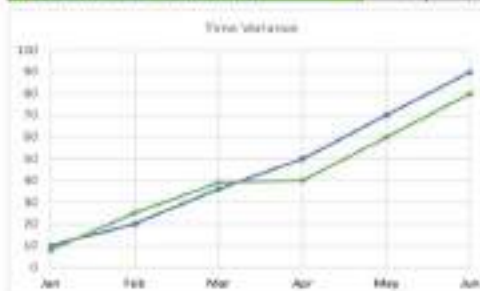
Review the example on the next slide

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Workout J: Time Variance (TV)

Status	Jan	Feb	Mar	Apr	May	Jun
PV (Planned Value)	10	20	36	50	70	90
EV (Earned Value)	8	25	39	40	60	80
SV (Schedule Variance)	(2)	5	3	(10)	(10)	(10)
SD (Status Date in months)	1	2	3	4	5	6



There is no algebraic way of getting the exact Time Variance.

We will resort to some educated estimates.

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TV Estimate

Here is a snapshot of the PV+EV curves

By End of April, $SV = EV(P1) - PV(P2)$

EV is lower so we are late by

$SV = \$50,000 - \$40,000 = -\$10,000$

Find **P3** on the PV at the same level of EV (**P1**) = \$40

P3 is behind **P1** (EV) which means we are late

How far behind?

There is no formula. Just geometric manipulation

Review the example after this slide . . .



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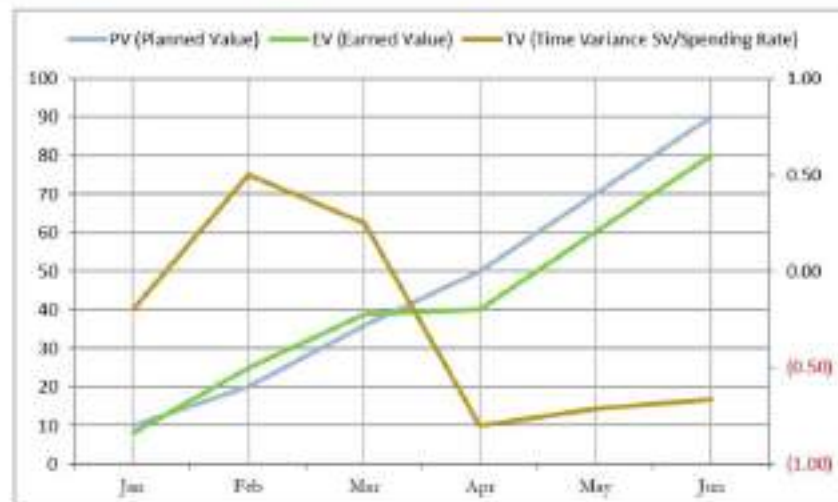
72

Here is a Table that Calculates TV by Month

Status	Jan	Feb	Mar	Apr	May	Jun
PV (Planned Value)	10	20	36	50	70	90
EV (Earned Value)	8	25	39	40	60	80
SV (Schedule Variance)	(2)	5	3	(10)	(10)	(10)
SD (Status Date in months)	1	2	3	4	5	6
Spending Rate (PV/SD)	10	10	12	13	14	15
TV (Time Variance SV/Spending Rate)	(0.20)	0.50	0.25	(0.80)	(0.71)	(0.67)

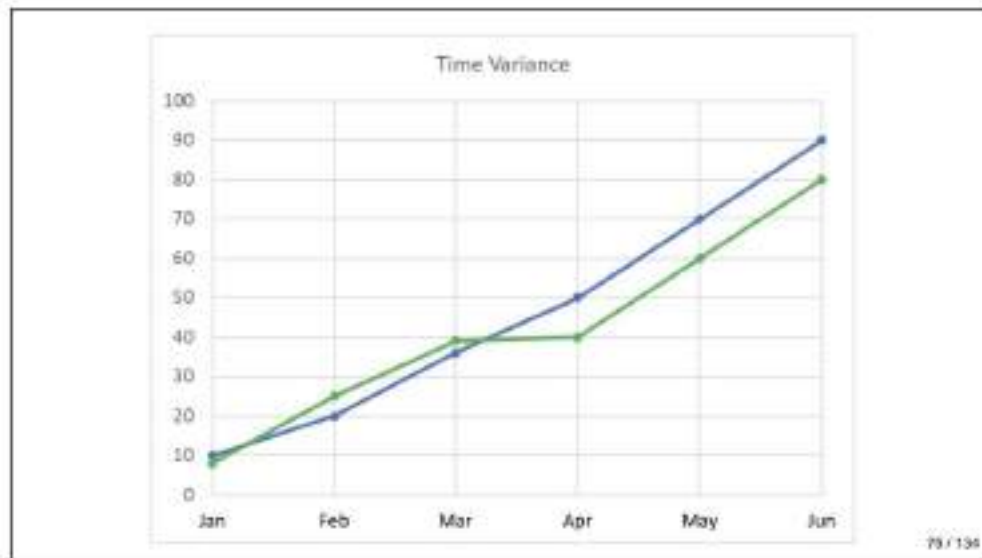
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More examples are given under [Workout J](#)

And ... The next indicator will use TV in its calculation

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Indicator 13: Earned Schedule SV(t)

This is equivalent to the **Schedule Variance** but in time units.

If we measure PV on the status date and if we know the Time Variance of EV, then:

$$\text{Earned Schedule SV(t)} = \text{SD (in time units)} - \text{TV (in time units)}$$

Using the following project, show an additional line for SV(t):

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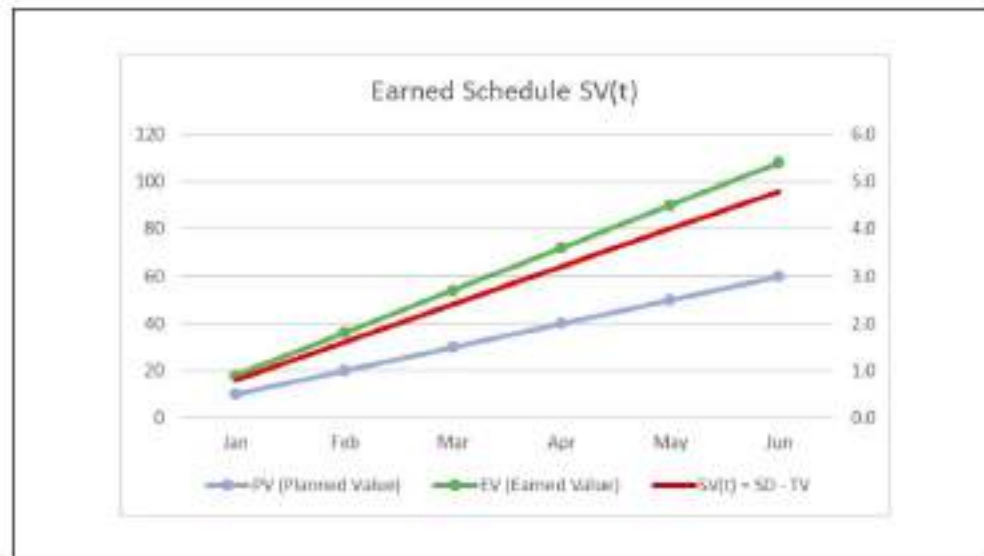
Workout K: Earned Schedule SV(t)

- 1) The last line shows the Earned Schedule SV(t).
- 2) The values are the effective time values for the Status Date.
- 3) By **end Feb**: instead of completing 2 months of work, we completed 1.6 months of work.
- 4) See curve on next slide

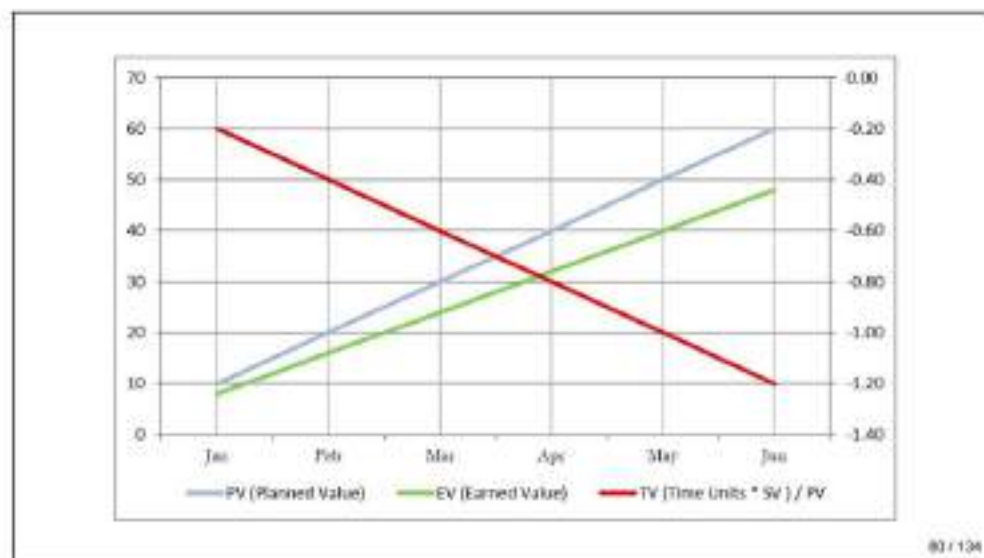
Status	Jan	Feb	Mar	Apr	May	Jun
PV (Planned Value)	10	20	30	40	50	60
EV (Earned Value)	8	16	24	32	40	48
SV (Schedule Variance)	-2	-4	-6	-8	-10	-12
SD (Status Date in months)	1	2	3	4	5	6
Spending Rate (PV/SD)	10	10	10	10	10	10
TV (Time Variance SV/Spending Rate)	-0.20	-0.40	-0.60	-0.80	-1.00	-1.20
TV (Time Units * SV) / PV	-0.20	-0.40	-0.60	-0.80	-1.00	-1.20
SV(t) = SD - TV	0.8	1.6	2.4	3.2	4.0	4.8

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Indicator 14:**Schedule Time Performance Index SPI(t)**

- 1) We can develop an index that is equivalent to SPI but again, basing it on a time value.
- 2) $SPI(t) = \text{Earned Schedule or } SV(t) / \text{Status Date (in time units)}$

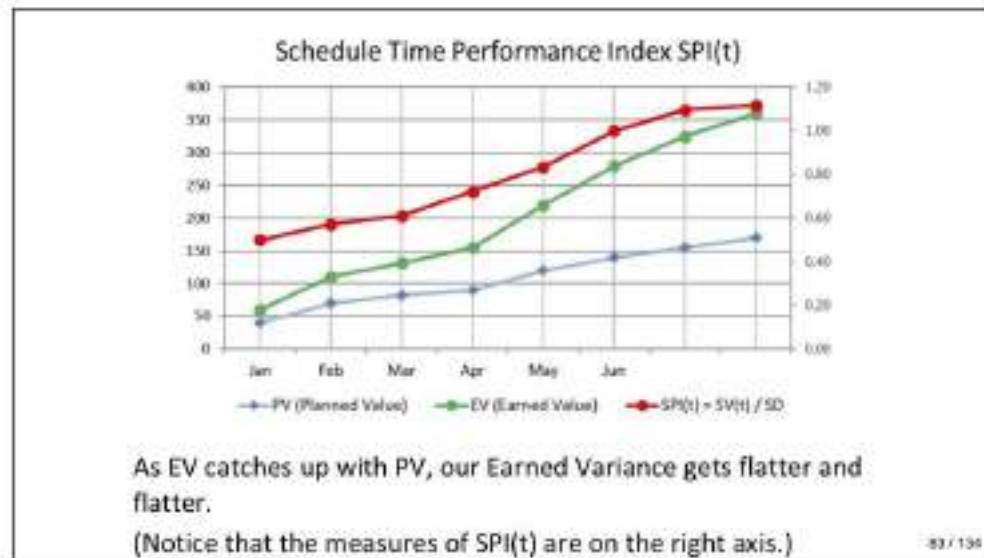
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Workout L: Schedule Time Performance Index SPI(t)

Status	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
PV (Planned Value)	40	70	82	90	120	140	155	170
EV (Earned Value)	20	40	50	65	100	140	170	190
SV (Schedule Variance)	-20	-30	-32	-25	-20	0	15	20
SD (Status Date in months)	1	2	3	4	5	6	7	8
Spending Rate (PV/SD)	40	35	27	23	24	23	22	21
TV (Time Variance SV/Spending Rate)	-0.50	-0.86	-1.17	-1.11	-0.83	0.00	0.68	0.94
TV (Time Units * SV) / PV	-0.50	-0.86	-1.17	-1.11	-0.83	0.00	0.68	0.94
SV(t) = SD - TV	0.50	1.14	1.83	2.89	4.17	6.00	7.68	8.94
SPI(t) = SV(t) / SD	0.50	0.57	0.61	0.72	0.83	1.00	1.10	1.12

- 1) By end of April, $SPI(t) = 2.9 / 4 = 0.72$.
- 2) Our TV = -1.11 so our Earned Variance(t) = $SV(t) = 4 + (-1.11) = 2.89$.
- 3) **We are 1.11 months behind.**
- 4) In Index terms, we are performing at the rate of 0.72 or are 0.28 behind.

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Indicator 15: DAC – Delay at Completion

DAC = Planned Duration – TEAC

DAC measures the difference between the planned duration of the project and the Time Estimate at Completion. (Remember that TEAC = PD / SPI).

Example:

The planned duration of a project is 12 months.

Its SPI at the end of the 5th month is 0.85.

If we go on with the same schedule performance or efficiency, we should finish by $12/0.85 = 14.11$ months.

Therefore, $DAC = PD - TEAC = 12 - 14.11 = -2.11$ (or a delay)

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E.

Indicators 16 to 18: Percentages that Analyze Completion

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Indicator 16: Work Scheduled for Completion (%)

Work Scheduled for Completion = PV/BAC

Ratio of scheduled work to date over the total budgeted work

At the end of Day 10, we finish installing 150 Sockets

PV = \$2000 10 days x 20 Sockets x \$10 per Socket

EV = \$1500 150 Sockets x \$10 per Socket

AC = \$1800 150 Sockets x \$12 per Socket

Work Scheduled for Completion = \$2000 / \$10,000 = 20%

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Indicator 17:**Percent Completed Work (Earned, Performed)****Percent Complete = EV / BAC**

Ratio of work performed to date over total budgeted work

At the end of Day 10, we finish installing 150 Sockets

PV = \$2000 10 days x 20 Sockets x \$10 per Socket

EV = \$1500 150 Sockets x \$10 per Socket

AC = \$1800 150 Sockets x \$12 per Socket

Percent Complete = \$1500/\$10,000 = 15%

If all is according to schedule, then EV/BAC = PV/BAC

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Indicator 18:**Percent (Actually) Spent****Percent Spent = AC / BAC**

Ratio of actual work costs over the total budgeted work

At the end of Day 10, we finish installing 150 Sockets

PV = \$2000 10 days x 20 Sockets x \$10 per Socket

EV = \$1500 150 Sockets x \$10 per Socket

AC = \$1800 150 Sockets x \$12 per Socket

Percent Spent (BAC) = \$1800/\$10,000 = 18%

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F.

Indicators 19 to 23: Estimates and Forecasts of Completion

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Indicator 19:

ETC: Estimate to Complete (\$)

This is sometimes called the **Work Remaining**

This is the value of Planned Work needed to complete the project

It is the Total Budget (BAC) reduced by the actual performed work (EV)

$$ETC = BAC - EV$$

PV = \$2000 10 days x 20 Sockets x \$10 per Socket

EV = \$1500 150 Sockets x \$10 per Socket

AC = \$1800 150 Sockets x \$12 per Socket

$$ETC = WR = BAC - EV = \$10,000 - \$1500 = \$8500$$

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From ETC, we can calculate the Average Expected Performance to Finish (\$ / Time Unit)

Average expected performance to finish

$$= \text{ETC} / \text{Remaining Duration}$$

This is the average rate at which work must be performed to finish on the date forecasted for completion of the work

After 10 days, remaining duration = $50 - 10 = 40$ days

Average Expected Performance to Finish

$$= \$8500 / 40 = \$212.5 / \text{day}$$

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Indicator 20:

EAC: Estimate at Completion (\$)

This is one of the most important indicators in EVA

Management is always interested in how much the project will cost on completion

The Estimated Cost is made up of **two components**:

AC: the actual costs so far (which is **Exactly** known)

ETC: the remaining work which is an **Estimate**

But **ETC** = $\text{BAC} - \text{EV}$

$$\begin{aligned} \text{As a first cut: } \text{EAC} &= \text{ETC} + \text{AC} \\ &= (\text{BAC} - \text{EV}) + \text{AC} \\ &= \text{BAC} - (\text{EV} - \text{AC}) \\ &= \text{BAC} - \text{CV} \end{aligned}$$

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EAC: Estimate at Completion (Cont.)

We can never know the exact amount of remaining work

For "realism", **we have to adjust** the estimate of remaining work

Adjustments depend on **how we view the future progress**

Are we late and do we expect to go on being late?

Or are we late but expect to improve our performance?

Are we spending too much and expect to go on spending too much?

Or we have spent too much so far, but we can improve our performance?

Such questions can be answered by using **SPI** and **CPI**

We can use SPI and CPI to adjust ETC then add it to AC

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To Make EAC Realistic, we use **5 Different Approaches** for Forecasting ETC

1) **Vanilla**: the project is well behaved:

No need to adjust performance

Estimate at Completion = BAC

2) **CPI is temporary and will be improved from now on**:

The initial CPI is not typical of this project and can be corrected

We can arrive at a new estimate of the cost at completion

Estimate at Completion = AC + ETC or AC + Remaining Work

Estimate at Completion = AC + (BAC – EV)

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The other 3 Approaches

3) CPI is endemic and will remain no matter what we do:

The adverse "inefficiencies" cannot be corrected

We need to estimate end of project cost with CPI as is

Estimate at Completion = $AC + (BAC - EV) / CPI$

4) SPI is also poor, we need to include it in the correction

We use the Cost-Schedule Index or Critical Ratio $CPI * SPI$

Estimate at Completion = $AC + (BAC - EV) / (CPI * SPI)$

5) Both SPI and CPI are poor but not 50/50:

We need to use weighted values

Estimate at Completion = $AC + (BAC - EV) / (a * CPI + b * SPI)$

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We will Evaluate EAC
for each of these 5 cases

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But First: Let us not Confuse ETC with EAC

ETC is a remainder measurement

ETC gives the \$ value of work needed to complete the project

We do not have different versions of ETC

ETC = BAC – EV = WR

EAC is a Total **estimate** and not a **remainder**

It gives the value of the whole project

It adds the amount already spent (AC) to ETC

Clever Project Managers adjust the second term (ETC) to give better estimates

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Let us Use our Cable Socket Numbers:

PV = \$2000 10 days x 20 Sockets x \$10 per Socket

EV = \$1500 150 Sockets x \$10 per Socket

AC = \$1800 150 Sockets x \$12 per Socket

SV = EV - PV = \$1500 - \$2000 = - \$500

SPI = EV / PV = \$1500 / \$2000 = 0.75

CV = EV - AC = \$1500 - \$1800 = - \$300

CPI = EV / AC = \$1500 / \$1800 = 0.833

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Approach 1: a Very Well-Behaved Project

This is an unusual and rare project:

$$BAC = \$10,000$$

$$PV = \$1500$$

$$EV = \$1500$$

$$AC = \$1500$$

$$SV = EV - PV = \$1500 - \$1500 = 0$$

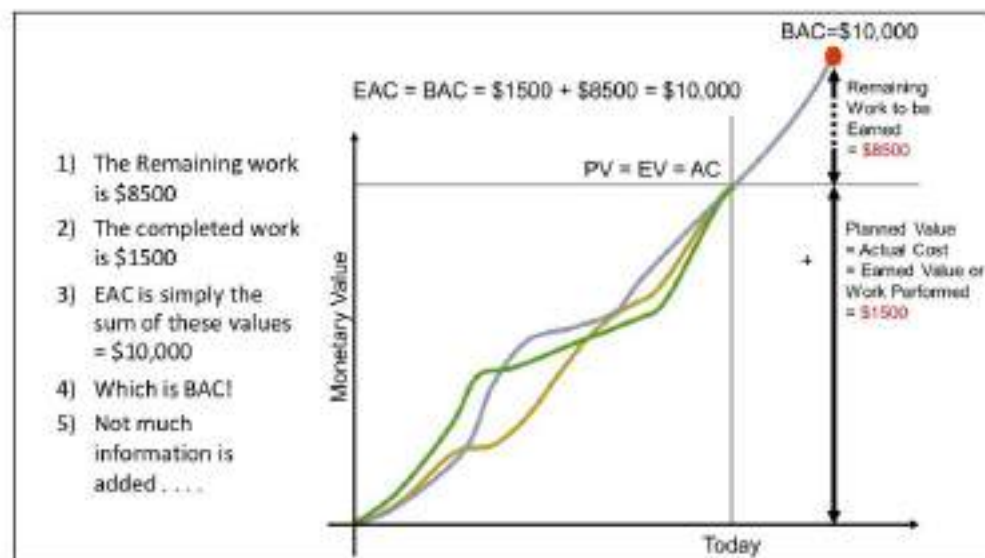
$$CV = EV - AC = \$1500 - \$1500 = 0$$

$$SPI = \$1500 / \$1500 = 1 = 100\%$$

$$CPI = \$1500 / \$1500 = 1 = 100\%$$

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Approach 2: Estimate Etc. at the Current Budget Rate assuming CPI is not Typical

Like all approaches for EAC, the only certain component we have is AC, the actual costs so far.

We use this when current variances (CV or CPI) are not typical

We can correct the situation that led to such variances

"A problem with the servers led to delays. This was corrected."

BAC = \$10,000 (or PV at the end)

AC = \$1800

EV = \$1500

CV = -\$300

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Approach 2: Calculations

$$EAC = AC + ETC = AC + (BAC - EV)$$

$$EAC = \$1800 + (\$10,000 - \$1500) = \$1800 + \$8500 = \$10,300$$

Another way to get a "feel" for this approach is to regroup the terms:

$$EAC = BAC - (EV - AC) = BAC - CV$$

$$EAC = \$10,000 - (-\$300) = \$10,300$$

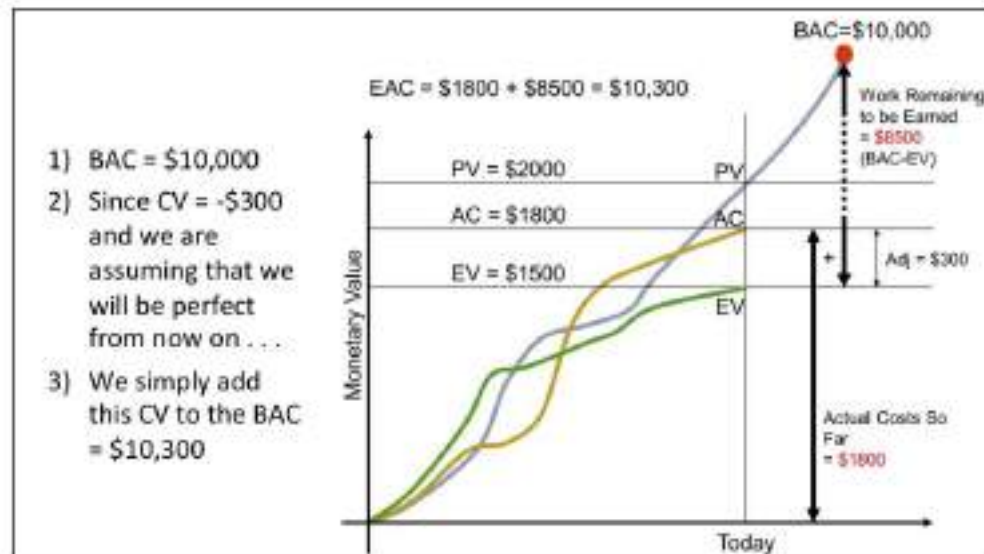
Correct BAC by any Budget Over-run or Under-run so far

OR

Adjust the total Budget at Completion by the Cost Variance

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Approach 3: Forecast the Remaining Work (ETC) using the Current CPI

"This **costing** problem will NOT GO AWAY" (nothing about scheduling!)

"We will go on spending at a rate higher than budgeted"

CPI will be constant so we correct ETC by CPI:

$$\begin{aligned} \text{EAC} &= \text{Actual Cost} & + & \text{Remaining Work / CPI} \\ \text{EAC} &= \text{AC} & + & \text{ETC / CPI} \\ \text{EAC} &= \text{AC} & + & (\text{BAC} - \text{EV}) / \text{CPI} \end{aligned}$$

If CPI < 1, ETC will be larger. Variance will keep growing

If CPI > 1, ETC will be smaller, things will get better

If CPI = 1 (on Budget), then Approach A = B

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Approach 3: Calculations

$$\text{CPI} = \text{EV} / \text{AC} = \$1500 / \$1800 = 0.833$$

$$\text{Actual Cost} = \text{AC} = \$1800$$

$$\begin{aligned} \text{EAC} &= \text{AC} + ((\text{BAC} - \text{EV}) / \text{CPI}) \\ &= \$1800 + ((\$10,000 - \$1500) / 0.833) \\ &= \$1800 + \$8500 / 0.833 \\ &= \$1800 + \$10,200 \\ &= \$12,000 \end{aligned}$$

It is the \$10,200 we need to explain . . .

\$8500 increased by $\text{CPI} = 1 / 0.833$ which is $\$8500 / 0.833 = \$10,200$

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The Effect of $\text{CPI} < 1$ on our Computation

Think of 0.833 as follows:

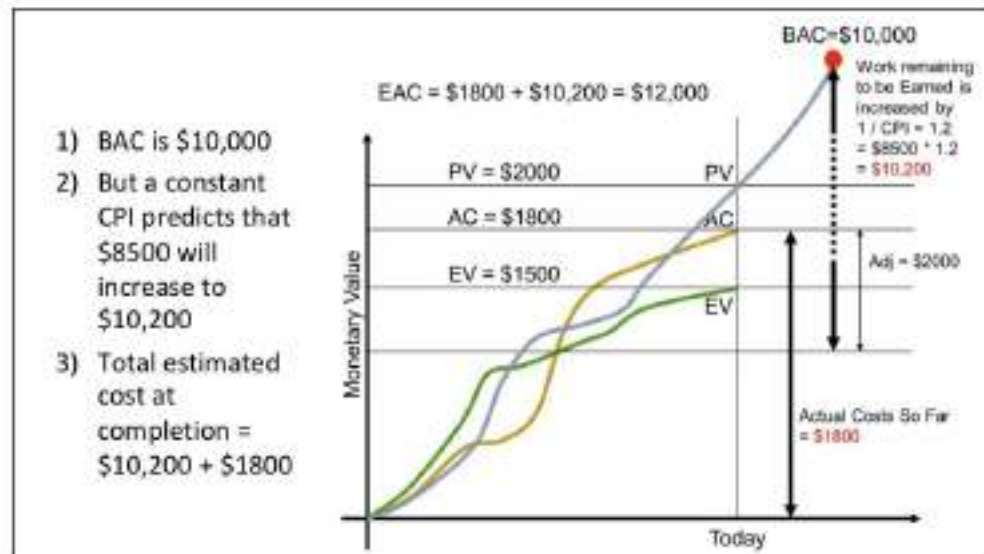
For every \$0.833 we earn, we have to spend \$1

Since $1 / 0.833 = 1.2$, our remaining work will increase by 1.2

To earn the remaining amount of EV, we need to spend more on "actual work"

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What if $CPI > 1$?

Assume: $CPI = EV / AC = 1.4$
 Then $1 / CPI = 1 / 1.4 = 0.714$

Our multiplier is less than 1
 Our remaining work will decrease by a factor of 0.714

For every \$1 we spend, we will earn \$1.4 OR
 To earn the remaining amount of EV, we need to spend less on "actual work"

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An Easier Formula . . . $EAC = AC \times (BAC / EV)$ (Just a little Algebra)

$$EAC = AC + (BAC - EV) / CPI$$

$$EAC = AC + (BAC - EV) / (EV / AC)$$

$$EAC = AC + (BAC - EV) \times (AC / EV)$$

$$EAC = AC \times (1 + (BAC - EV) / EV)$$

$$EAC = AC \times (EV + BAC - EV) / EV$$

$$EAC = AC \times BAC / EV$$

$$EAC = \$1800 \times \$10,000 / \$1500 = \$12,000$$

Much easier to use!

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Approach 4: Assume the Remaining Work (ETC) will have the same CPI and SPI

"These **costing** and **scheduling** problems will NOT GO AWAY"

"We will go on spending at a rate higher than budgeted AND falling behind our schedule"

CPI and SPI will be constant, so we use **CPI * SPI** to correct ETC

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Approach 4: Calculations

BAC = \$10,000 (or PV at the end)

AC = \$1800

EV = \$1500

CV = -\$300

$CPI = EV / AC = 0.833$

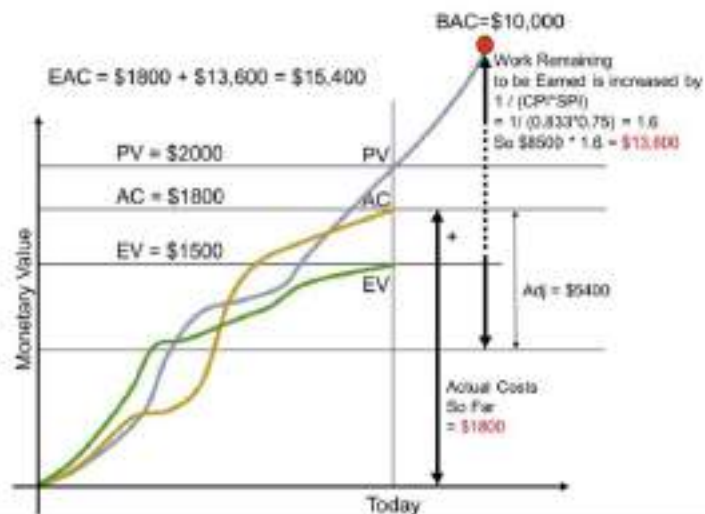
$SPI = EV / PV = 0.75$

$$\begin{aligned}
 EAC &= AC + \frac{(BAC - EV)}{(CPI * SPI)} \\
 EAC &= \$1800 + \frac{(\$10,000 - \$1500)}{(0.75 * 0.833)} \\
 EAC &= 15,400
 \end{aligned}$$

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- 1) The \$5400 adjustment came from two components
- 2) We have \$300 from the AC (as earlier)
- 3) Since $SPI = 0.75$, we have an additional cost due to CPI and SPI
- 4) $\$8500 / (0.75 * 0.833)$
- 5) This is = \$5100



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Approach 5: Forecast the Remaining Work (ETC) using Weighted CPI and SPI

In some cases, we might wish to give SPI more weight than CPI (or vice versa)

In Approach 3, we multiplied to get the adjustment

$$SPI \times CPI = 0.75 \times 0.833 = 0.624$$

We now use **a** and **b** as weighting % keeping **a + b = 100%**

Say **a = 20%** and **b = 80%**

The new adjustment = $20\% \times 0.75 + 80\% \times 0.833 = 0.78475$

$$EAC = AC + (BAC - EV) / (a \times CPI + b \times SPI)$$

$$EAC = \$1800 + (\$10,000 - \$1500) / 0.78475$$

$$EAC = \$12,631$$

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Workout M:
Contains various
indicators,
including EAC

(Out of sequence)

Activity	Jan	Feb	Mar	Apr	May	Jun
Planned Value	90,000	93,000	99,000	105,000	112,000	120,000
Earned Value	95,000	99,000	106,000	113,000	118,000	125,000
Actual Costs	99,000	103,000	106,800	116,000	118,000	120,000
BAC	120,000					
SV	5,000	6,000	5,000	8,000	6,000	-5,000
SPI	1.06	1.06	1.05	1.08	1.05	0.96
CV	(4,000)	(4,000)	(2,000)	(3,000)	0	5,000
CPI	0.98	0.96	0.98	0.97	1.00	1.04
CPI*SPI	1.01	1.02	1.03	1.05	1.05	1.00
ETC (Work Remaining)	35,000	31,000	26,000	17,000	12,000	5,000
EAC with CPI Adjustment	135,474	135,253	132,500	133,451	130,000	124,800
VAC with CPI Adjustment	(5,474)	(5,253)	(2,500)	(3,451)	0	5,200
EAC with Cost-Schedule Adjustment	133,554	133,298	131,226	132,216	129,390	124,962
VAC with Cost-Schedule Adjustment	(3,554)	(3,298)	(1,226)	(2,216)	610	5,038
EAC with CPI (80%)+SPI (20%)	134,755	134,574	132,130	133,095	129,873	124,875
VAC with CPI (80%)+SPI (20%)	(4,755)	(4,574)	(2,130)	(3,095)	127	5,125
A (Weight)	0.8					
B (Weight)	0.2					

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Indicator 21: Percent Spent (EAC)

Use the EAC corresponding to one of the 4 Approaches you used to compute it

In this case, Approach A (at current Budget Rates)

Percent Spent (EAC) = AC / EAC

Percent Spent (EAC) = $\$1800 / \$10,300 = 17.47\%$

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Indicator 22: VAC: Variance at Completion (\$)

VAC measures the predicted value of possible Budget Over or Under Runs at completion of project (or Task)

$VAC = BAC - EAC$

Which EAC?

Select one of the 5 Approaches that is appropriate to the project

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Indicator 23: Variance at Completion (%)

Measures the percentage of VAC out of BAC

$$\text{VAC} = (\text{BAC} - \text{EAC}) / \text{BAC}$$

Negative is BAD!

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G.

**Indicators 24 to 25:
Indicators that Help us
Know how to Complete a
Delinquent Project**

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Indicator 24:

To-Complete-Performance-Index (TCPI)

Before we define TCPI, let us see what we use it for

Earlier, we saw how CPI measures our cost efficiency: so far

If $CPI = EV / AC = 0.8$, we are spending \$1 and achieving \$0.833 of work

TCPI does a similar job but looks forward

TCPI answers the questions:

What CPI we need to have to finish our project on Budget (BAC)?

OR How far are we from a realistic CPI?

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Definition of TCPI

TCPI = the ratio of the **remaining work** to the **remaining funds**

The remaining funds are usually computed using BAC if the project is well behaved (ETC = BAC):

$$TCPI = \frac{(BAC - EV)}{(BAC - AC)}$$

If we feel that BAC is no more valid (because we have unfavorable CPI), then we use EAC (in one of its other 4 forms)

$$TCPI = \frac{(BAC - EV)}{(EAC - AC)}$$

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How do we Read TCPI?

BAC = \$1000

EV = \$600 and AC = \$650

$$TCPI = \frac{(BAC - EV)}{(BAC - AC)}$$

Remaining work = BAC – EV = \$1000 – \$600 = \$400

Remaining funds = BAC – AC = \$1000 – \$650 = \$350

TCPI = \$400 / \$350 = 1.14

For every \$1 of funds we have, we have to do \$1.14 of work to meet BAC

If we have \$400 to spend and \$350 of work to do TCPI = \$350 / \$400 = 0.875

This is good: for every \$0.875 we spend, we can achieve \$1 of work

But that is not enough.

We need to know if it is realistic for us to reach such a TCPI

We have to compare TCPI with CPI

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Using our Cable Socket Example:

$TCPI = (BAC - EV) / (BAC - AC)$

$TCPI = (\$10,000 - \$1500) / (\$10,000 - \$1800)$
 $= \$8500 / \8200
 $= 1.0365$

This means we have more work than funds to spend

For every \$1 spent, we should complete \$1.0365 of work

BUT $CPI = EV / AC = \$1500 / \$1800 = 0.833$

Since CPI is **much less** than TCPI, we have no chance to achieve a good end!

Compare with CPI: if TCPI > CPI the team is anticipating a productivity improvement

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Another Example

$$TCPI = \frac{(BAC - EV)}{(BAC - AC)}$$

BAC = \$200

EV = \$140

AC = \$150

CPI = \$140 / \$150 = 0.9333

For each \$ we spend, we have been earning \$0.9333

What CPI is required to bring us back on budget?

$TCPI = (\$200 - \$140) / (\$200 - \$150) = \$60 / \$50 = 1.2$

Can we really reach a situation where CPI = 1.2?

This is not far from 0.9333 so it is likely

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Example on How to Use TCPI

- 1) Often, BAC may be too difficult to reach (if $TCPI > 1.10$ or higher)
- 2) We need to change plans
- 3) We seek a new estimate of BAC based on EAC (adjusting CPI).
- 4) On approval, this becomes the new BAC.
- 5) Since EAC is the estimate at completion of the cost of the project, we only apply it to the denominator.
- 6) The numerator is related to schedule performance and is not affected by CPI.

1	BAC	130,000
2	EV	62,000
3	AC	72,000
4	$CPI = EV / AC$	0.86
5	BAC - EV (Work Remaining)	68,000
6	BAC - AC (Remaining Funds)	58,000
7	$TCPI = (BAC - EV) / (BAC - AC)$	1.17

8	$EAC = AC + (BAC - EV) / CPI$	150,968
9	EAC - AC (Adjusted Remaining Funds)	78,968
10	$TCPI = (BAC - EV) / (EAC - AC)$	0.86

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Interpretation

- 1) On the status date, the project CPI = 0.86 (row 4)
- 2) TCPI uses BAC only (\$130,000) = TCPI = 1.17 (row 7)
- 3) Uplifting the project from 0.86 to 1.17 may seem reasonable but . . .
- 4) We might not reach BAC as we have not been performing properly.
- 5) Inform management to adjust BAC to EAC using CPI in row 9:
 - ii $EAC = AC + (BAC - EV) / CPI = \$150,968$
- 6) Use EAC in the TCPI formula $TCPI = (BAC - EV) / (EAC - AC)$, to get in row 10 TCPI = 0.86 (in row 10)
- 7) The change from \$130,000 to \$150,968 is an increase of 18% which may or may not be achievable

1	BAC	130,000
2	EV	62,000
3	AC	72,000
4	$CPI = EV / AC$	0.86
5	BAC - EV (Work Remaining)	68,000
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7	$TCPI = (BAC - EV) / (BAC - AC)$	1.17
8	$EAC = AC + (BAC - EV) / CPI$	150,968
9	EAC - AC (Adjusted Remaining Funds)	78,968
10	$TCPI = (BAC - EV) / (EAC - AC)$	0.86

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Another Example:

Activity	Jan	Feb	Mar	Apr	May	Jun
EV	8,000	28,000	44,000	65,000	77,000	97,000
AC	5,000	22,500	46,000	67,000	88,000	115,000
BAC	97,000					
BAC - EV	89,000	69,000	53,000	32,000	20,000	0
BAC - AC	92,000	74,500	51,000	30,000	9,000	-18,000
CPI	1.60	1.24	0.96	0.97	0.88	
TCPI	0.97	0.93	1.04	1.07	2.22	
EAC Adj	60,625	77,946	101,409	99,985	110,857	
EAC - AC	55,625					
TCPI Adj	1.60	0.89	0.52	0.32	0.18	

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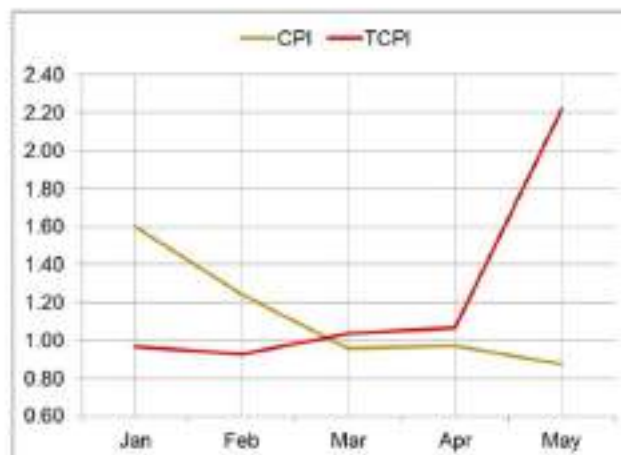
Interpretation

Activity	Jan	Feb	Mar	Apr	May	Jun
CPI	1.60	1.24	0.96	0.97	0.88	
TCPI	0.97	0.93	1.04	1.07	2.22	

- 1) Project starts well with $CPI > 1$.
- 2) By end Jan, TCPI says to reach BAC as planned, we can afford to go to a CPI of 0.97 (starting end of January). By end Feb, a higher CPI corresponds to a more relaxed $TCPI = 0.93$.
- 3) By end Mar, trouble starts $CPI < 1$. TCPI suggests we should aim at a CPI of 1.04: acceptable since it is not too much higher than March's CPI of 0.96.
- 4) By end May: tragedy as the drop in CPI to 0.88 must drastically be raised to 2.22 which is not possible. In the end, we do finish on time but we are way over budget.
- 5) **Conclusion:** jumping from a $CPI < 1$ to a $TCPI > 1$ is considered realistic if TCPI is between 1 and 1.10. Values of $TCPI > 1.10$ may mean that even with approved increases in the budget, reaching such efficiencies when we had a low CPI may not be realistic.

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Visually:



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The following document is found in the Resources Folder under the "Related Documents" folder

It presents a full writeup of a Case Study on [TCPI](#)

[Indicator 24 - A Worked Out Case Study on TCPI.docx](#)

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A variant of TCPI: TCSPI

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Indicator 25:

To-Complete-Schedule-Performance-Index TCSPi

This is a variant of TCPI and applies the same logic to Scheduling as to Costs (Budgets)

It is not a frequent indicator as Project Managers are more concerned with Costs than with Schedules

Remember $TCPI = \frac{(BAC - EV)}{(BAC - AC)}$

Now we have $TSPi = \frac{(BAC - EV)}{(BAC - PV)}$

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An Example . . .

$$BAC = \$30,000$$

$$EV = \$9000$$

$$PV = \$15,000$$

$$SPI = EV / PV = 0.6$$

$$TSPi = (\$30,000 - \$9000) / (\$30,000 - \$15,000) = 1.4$$

To get the project to finish on time, we need an SPI of 1.4

It is currently 0.6

This is very ambitious

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Workout N:**To-Complete-Schedule-Performance-Index TCSPI**

Activity	Jan	Feb	Mar	Apr	May	Jun
PV	9,000	22,500	46,000	67,000	88,000	100,000
EV	10,000	24,000	44,000	65,000	80,000	
BAC	100000					
BAC - EV	90,000	76,000	56,000	35,000	20,000	
BAC - PV	91000	77500	54000	33000	12000	
SPI	1.11	1.07	0.96	0.97	0.91	
TCSPI	0.99	0.98	1.04	1.06	1.67	

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End of Presentation 12



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Phase 3 Execute and Control (Build and Stabilize Deliverables)

—
Presentation 13

1

Agenda

- A. The Building and Stabilizing Activities
- B. The Deployment Activities

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A.

The Building and Stabilizing Activities

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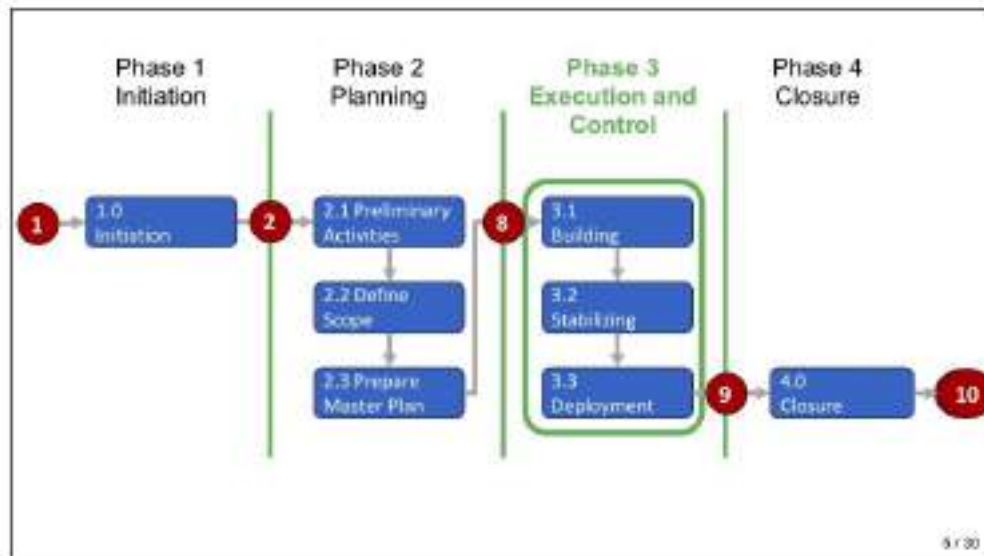
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Reminder of the Project Phases



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4



5

Ironically

Most of the effort in a project is consumed in Phase 3 (Building and Stabilizing)

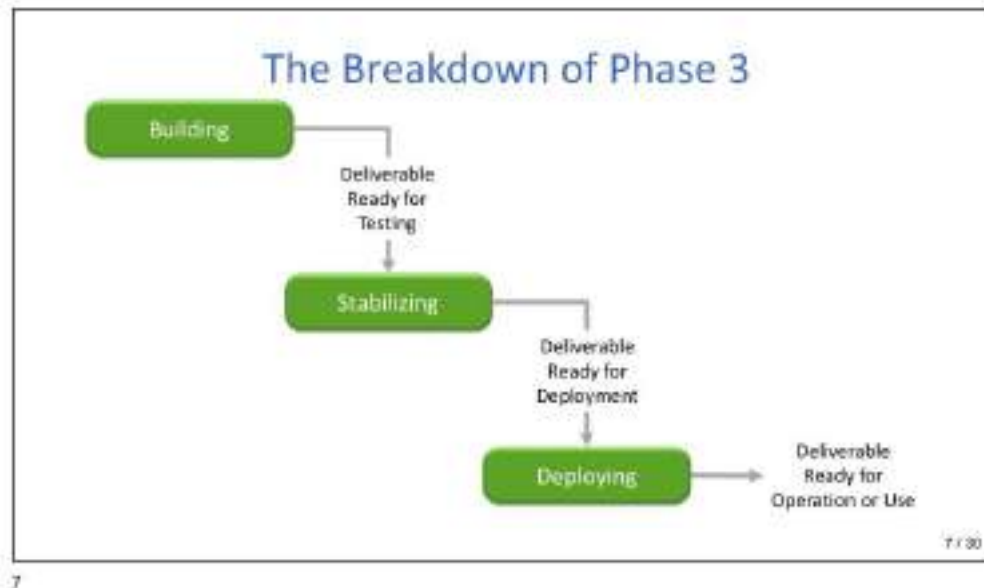
However, in this workshop, we will spend less time on Phases 3 than on the Phase 2

Reasons?

The better we plan, the less we need to monitor and control

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6



7

The 3 Main Activities of the Execution Phase

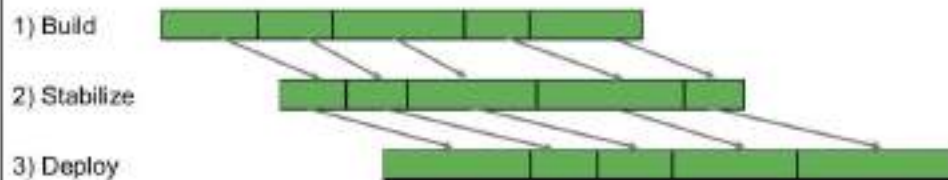
1. **Building:** to execute activities needed to complete the building of each deliverable as per the Technical Specs
Deliverable: Product ready to Test
2. **Stabilizing:** to conduct QC and QA on each Deliverable and to ensure that they are being built as per Schedule and according to Budget OR to execute the DAP for each deliverable.
Deliverable: Product ready to Deploy
3. **Deployment:** to install, implement, distribute, deploy each deliverable to ensure they are ready for use/operation.
Deliverable: Product ready to Operate

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Can there be Overlap?

Yes . . . Phase 3 is Deliverable-Based



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What Happened to the Instruction to Builders (ITB)?

Reminder: this is the set of instructions to the builders on the step-by-step procedures of how to build each Deliverable

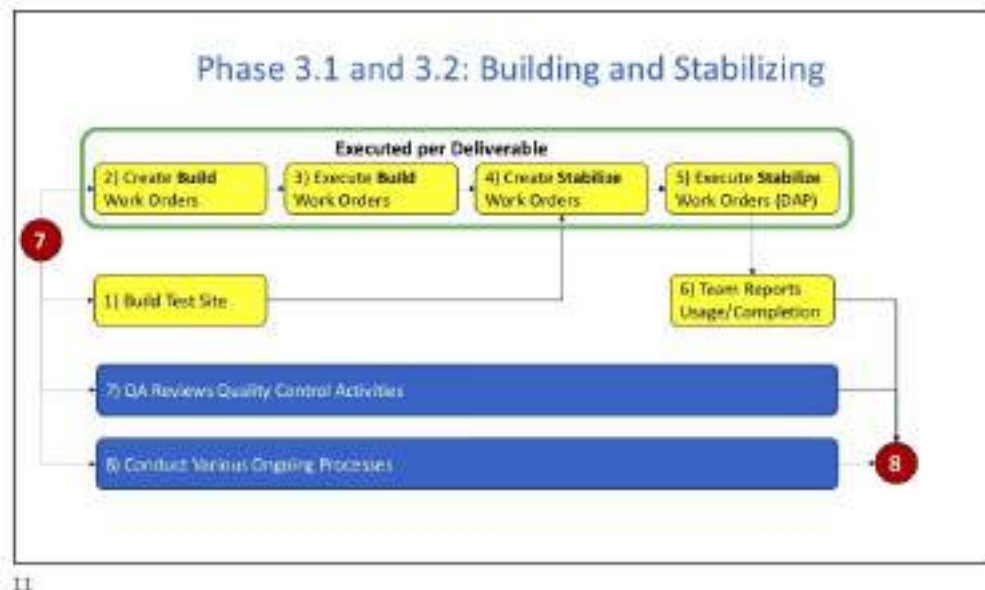
As we noted earlier, the ITB might have already been prepared

In some cases, it would have been postponed to Phase 3

This is prepared for each Deliverable before we conduct Building and Stabilization

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Activity 1: Build and Test the Test Site

As per the specs defined earlier, the site gets built
 The site is tested following the QC/QA procedures in the related DAP

Activity 2: Create Build Work Orders

Based on the approved WBS, the PM and the Product Manager will each create Word Orders for their teams and as per the schedule

A **Work Order** is an instruction that defines

- The instructions on how to build whatever is promised in the Task(s)
- The test scripts and scenarios (TSS)
- The schedule
- The agreed upon resources (so far, quantities only – Not NAMES)

A **Work Order** can be for individual tasks or for a group of tasks that make up part or the whole of a Deliverable

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Activity 3: Execute Work Build Work Orders

This is the actual building part of Phase 3

This is pure “production”

This is executed once for each deliverable

Testing comes later

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Activity 4: Create Stabilize Work Orders

Based on the approved DAP, the PM and the Product Manager will each create Work Orders for their teams and as per the schedule

There will be a DAP for each Deliverable

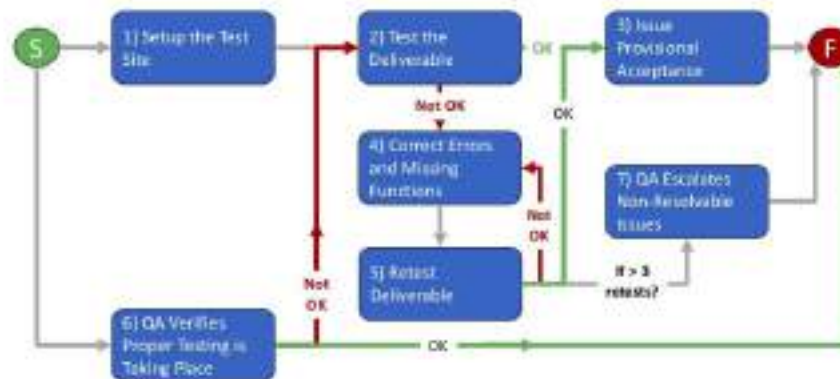
They will follow the specific DAP's developed and approved earlier

Here is a reminder of the DAP workflow . . .

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The Testing Loop (Activity 9 of Phase 2.2)



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Activity 5: Execute Work Stabilize Work Orders (DAP)

This is the actual testing and correction part of Phase 3

For each Deliverable, there will be a single approved DAP

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Activity 6: Team Reports Usage and Completion

Each Task Responsible reports % completion (on a regular basis)

At key % points (say 50% and 75%), and for key Deliverables, this info is entered into the [Deliverables Tracking Register](#)

As each task reaches 100% completion, the PM needs to report it to the Beneficiary

If a group of tasks contribute to the completion of a full Deliverable, this info is also entered into the [Deliverables Tracking Register](#)

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Activity 7: Conduct Various Ongoing Processes

The activities on the next slide were mentioned before
Most were presented in detail

These are ongoing and they yield proper results for monitoring and evaluation

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Activities that are Continuously Executed

- 1) Communications Management
- 2) Pending Issues Management
- 3) Delivery and Acceptance
- 4) Change Control Management
- 5) Deliverables Register Management
- 6) Cost Management
- 7) Schedule Management
- 8) Monitoring and Evaluation (Metrics)

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Example:

Track/Monitor Actual Performance and Progress

Use a Software Project Planning Tool to control Cost and Schedule behavior

Monitor and Control Schedule

- Monitor timing of tasks
- Actual schedule data: (see next slide)
- Variances between planned and actual schedules

Monitor and Control Costs

- Monitor the usage of planned resources and additional requirements (if approved)
- Compare quantity and rate estimated with actual figures
- Actual costing data (see next slide)

Monitor Earned Value indicators

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What do we track in Microsoft Project?

	Task	Assignment
Enter the Actual Start Date for a Task	Yes	Yes
Enter the Actual Finish Date for a Task	Yes	Yes
Enter % Complete for a Task	Yes	No
Enter the Actual Duration for a Task	Yes	No
Enter the Remaining Duration for a Task	Yes	No
Enter the Actual Work (Hours) for a Task	Yes	Yes
Enter the % Work Complete for a Task	Yes	Yes
Enter the Remaining Work for a Task	Yes	Yes
Enter the Actual Overtime Work for an Assignment	No	Yes
Enter the Actual Material Usage for an Assignment	No	Yes
Enter the Actual Cost for an Assignment	No	Yes
Enter the Actual Fixed Costs for an Assignment	Yes	No

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We also Monitor the Metrics Planned for in Phase 2



Let us review the document: [Typical Project Metrics \(KPI\)](#)

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Activity 8: QA Reviews QC Activities and Project Processes

As per the earlier Quality Management presentation, the QA will continuously conduct these reviews:

- 1) Check if proper building processes are used
- 2) Check if proper testing is being carried out
- 3) Check if there are any unresolvable issues and proceed to escalate these to the proper authorities

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By Now, it is hoped that all Deliverables have been pass as accepted . . .

Technically, the delivery is over

BUT since **deployment** is also a deliverable and is very often part of the contract, we are left with deployment.

This is not a standard procedure

It may or may not start within the period of the project or indeed be part of it

It may also include warranties, maintenance and support activities

Here is a summarized version of Deployment Activities

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B.

The Deployment Activities

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Are Warranties, Maintenance and Support in Phase 3? In the Project at all?

Example: We deliver, install and operate a transformer for 2 months
Sometimes, Maintenance, Warranty and Support are separate projects on their own

At others, they are operational services assigned to ongoing departments
The Project Manager is therefore responsible for:

- Proper specification of Maintenance / Warranty / Support

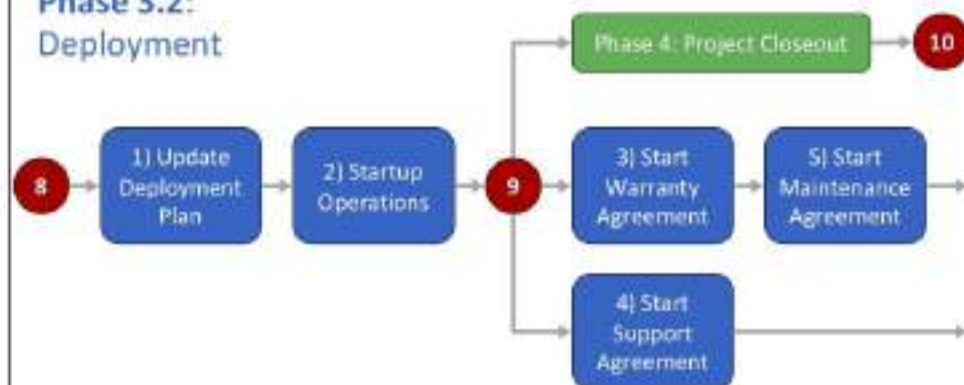
- Launching of Maintenance / Warranty / Support as the case may be

The actual activities are not part of the project

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Phase 3.2: Deployment



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Phase 4 How to Close a Project

Presentation 14

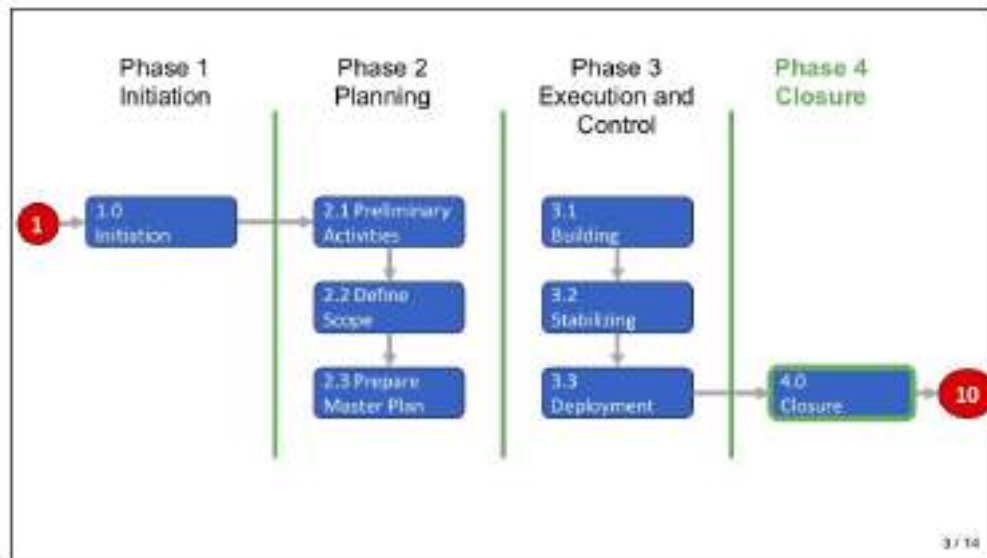
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Reminder of the Project Phases

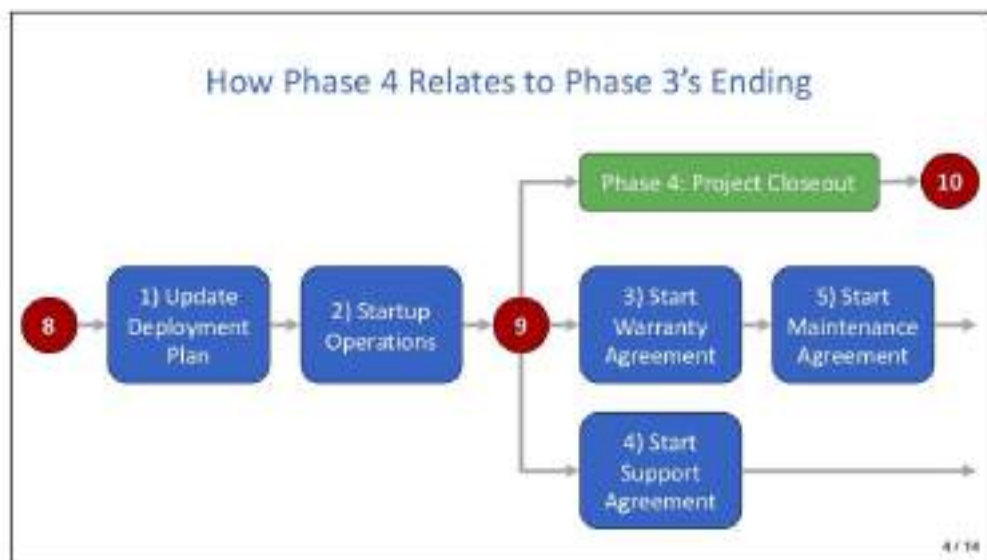


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2



3



4

Phase 4: The Closeout Phase



In Phase 4 we conduct Project activities that complete the scope of the Project Plan

The end of Phase 4 signals an Agreement with Stakeholders that the final **Project Scope** has been completed

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The End of Phase 4 means an Agreement between all Stakeholders that:

- 1) The deliverables are stable and most likely already in operation
- 2) All problems have been resolved
- 3) All deliverables have been certified as accepted
- 4) All terms of the contract have been satisfied
- 5) Ownership has been transferred from the Project Team to team that is to operate and handle the new products

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Here are the major activities in Phase 4

Activities 1 to 4: Various Closeouts

Activity 5: Project Termination Report

Activity 6: Complete the Monitoring and Evaluation Report

Activity 7: Team Closeout

Activity 8: Project Closeout

Most of these activities are a participation of the project manager and the product manager(s)

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Phase 4: Closure



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Activities 1 to 4: Various Closeouts

Each individual aspect of the project needs to be closed on its own

- Site

- Administrative

- Contractual

- Financial

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The Project Termination Check List



This is a suggested list to be used as a reminder when closing aspects of the project as in the previous 4 activities.

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Activity 5: Project Termination Report



The team will meet with the stakeholders and develop this report
It is essentially an internal evaluation of the project
It includes sections on the "lessons learnt"
(Much of this report will be shared with the M&E report in Activity 6)

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Activity 6: Complete the Monitoring and Evaluation Report

Having been regularly issuing Monitoring and Evaluation updates, the team and the stakeholders will finalize the M&E report

The report is essentially similar to the Project Termination Report with 2 differences . . .

- 1) It concentrates on the KPI's defined for M&E
- 2) It is the accumulation of all M&E steps throughout Phase 2 and 3

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Activity 7: Team Closeout

Having completed all their responsibilities, the team is closed out
By this is meant, each member would return to his/her own department
or unit or company

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Project
Scope
Completed

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End of Presentation 14





What is Required for a Successful Project?

Lecture 15

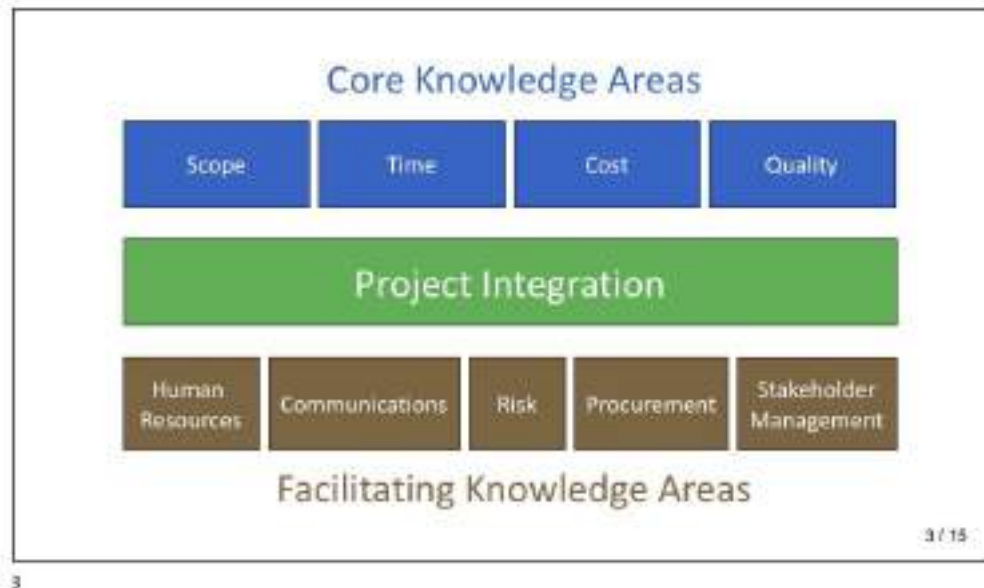
2 / 15

1

We will classify the Requirements by the 10
Project Knowledge Areas of the Project
Management Institute

2 / 15

2



3

1) Project Integration

1) Project Announcement	Document
2) Interim Project Plans	Document
3) Project Plan(s)	Document
4) Project Monitoring Tool	Software
5) Issues Management	Software
6) Lessons Learned	Document
7) Project Termination Report	Document

4 / 15

4

More . . .

8) KPI's List for Monitoring and Evaluation	Document
9) Management Focus on PM Methods	Pre-Requisite
10) Management Commitment to Project	Pre-Requisite
11) Standardized Formal Procedures	Pre-Requisite

5 / 15

5

2) Scope Management

1) Clearly Defined Project Objectives	Pre-Requisite
2) Technical Specifications	Document(s)
3) Action Plan for Product Building	Document / Software
4) Initial Deliverables Register	Document
5) Deliverables Tracking Register	Document
6) Change Control Procedure (CCP)	Procedure
7) Work Breakdown Structure	Software

6 / 15

6

3) Time Management

- | | |
|--|----------|
| 1) Master Schedule (during planning) | Software |
| 2) Schedule Control (during execution) | Software |

7 / 15

7

4) Cost Management

- | | |
|-----------------------------------|---------------------|
| 1) Resources | List |
| 2) Accurate Resource Rates | List |
| 3) Estimating Database | Software / Document |
| 4) Resource Assignments / Control | Software |
| 5) Bill of Quantities | Document |

8 / 15

8

5) Quality Management

1) Test Scripts and Scenarios	Document(s)
2) Clear Acceptance criteria	Document (Del register)
3) Delivery and Acceptance Procedure	Procedure
4) Test Data / Material	Objects
5) Test Site Specifications	Document
6) Quality Standards	Procedures / Document
7) Quality Assurance Tasks	Procedures

9 / 15

9

6) Human Resource

1) Roles and Responsibilities	Document
2) Training Plan	Document / Software
3) Staff Acquisition	Procedure
4) Team Management Procedures	Procedure
5) Collaboration Tools	Software

10 / 15

10

7) Risk Management

- | | |
|----------------------------|----------------------|
| 1) Risk Event Forms | Form |
| 2) Risk Analysis Document | Document / Software |
| 3) Risk Response Plan | Document |
| 4) Risk Monitoring | Procedure / Activity |
| 5) Effective Risk Taxonomy | Document |

11 / 15

11

8) Communications Management

- | | |
|--------------------------|----------------------|
| 1) Communications Plan | Procedure / Document |
| 2) Performance Reporting | Procedure / Activity |
| 3) Progress Reports | Document |

12 / 15

12

9) Procurement Management

1) Procurement Procedures	Procedure
2) Tendering / Bidding Procedures	Procedure
3) Contract Management	Activity
4) Source Selection	Activity
5) Vendor Evaluation Procedure	Procedure
6) Vendor Assessment Procedure	Procedure

13 / 15

13

10) Stakeholder Management

1) Stakeholders List	Document
2) Stakeholder Awareness and Buy-in	Pre-Requisite
3) Requirements Analysis	Document
4) Stakeholder/Requirements Verification	Procedure

14 / 15

14

End of Lecture 15



10/2/20

Annex 5 – Advocacy and Lobbying

5/8/23



1

UNDERSTANDING ADVOCACY

Importance of advocacy in water treatment and sanitation projects

- **Definition of Advocacy**
Advocacy is actively supporting a cause or group to create positive change through influencing decision-making and policy. It aims to raise awareness, build support, and effect change.
- **Types of Advocacy**
 - 1 - Public & Policy advocacy
 - 2 - Legal advocacy
 - 3 - Grassroots advocacy
 - 4 - Corporate advocacy
 - 5 - International advocacy
- **Like many levels of advocacy, some that have been built**

TIME: 1.5 Hours

2

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TYPES OF ADVOCACY

Advocacy refers to the act of publicly supporting or promoting a particular cause or policy. There are different types of advocacy that individuals, organizations, or groups may engage in depending on their goals and target audience. Here are some examples:

1. **Public & Policy advocacy:** This involves advocating for a particular issue or cause through public forums, such as rallies, protests, meetings, and demonstrations. Public advocacy aims to raise awareness about a particular issue and put pressure on decision-makers to take action.
2. **Legal advocacy:** This involves using the legal system to advocate for a particular issue or cause. Legal advocates may work to change or challenge laws or policies that are perceived as unjust or discriminatory.
3. **Grassroots advocacy:** This involves mobilizing a community of individuals to advocate for a particular issue or cause. Grassroots advocates may use social media, email campaigns, or other outreach efforts to engage and educate members of the public about the issue and encourage them to take action.
4. **Corporate advocacy:** This involves advocating for a particular issue or cause within a corporate setting. Corporate advocates may work to change company policies or practices that are perceived as harmful or unethical.
5. **International advocacy:** This involves advocating for human rights, social justice, or environmental issues on a global scale. International advocates may work with international organizations, such as the United Nations, to push for policy changes and raise awareness about the issue.

THE HOUR

3

TARGETING THE NGOs

Role of the NGOs in advocacy

- Identifying NGOs working on water treatment and sanitation in Lebanon.
(Matrix: Approach events NGO work in Lebanon | Matrix: Approach NGOs in the audience)
- Understanding the role of NGOs in advocacy efforts and the role each from the NGOs in the audience based on their alignment.
- Developing a network of NGOs to support advocacy efforts.
(Based on Mission / Size / Region)



THE HOUR

4

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ADVOCACY PLAN

Developing an advocacy plan

- Setting advocacy objectives:** Define the issue, determine your shared outcome, make a specific and measurable, identify your target audience, craft your message, determine your strategy and regularly evaluate and adapt as needed.
- Identifying target audience and stakeholders:** Define the issue, determine advocacy goals, identify primary and secondary audiences, determine stakeholders, and analyze their perspectives and interests.
- Developing advocacy messages and materials:** involves creating a clear and compelling message that communicates your advocacy objectives to your target audience and stakeholders, and creating materials such as brochures, videos, or social media posts to support your message.
- Choosing appropriate advocacy tactics and strategies:** involves selecting the most effective and appropriate methods to achieve your advocacy objectives, such as direct lobbying, coalitions, public relations, or grassroots mobilization, based on your issue, audience, and resources.

Remember, advocacy is an ongoing process, and it takes time and persistence to achieve meaningful change.

TIME: 1 Hour

5

MONITORING AND EVALUATING THE ADVOCACY PLAN

Planning and evaluation (P&E) are critical for effective advocacy activities as they help to track progress, measure impact, and make adjustments to improve effectiveness. Here are some steps you can take to monitor and evaluate your advocacy activities:

Define your M&E plan → Collect & analyze data → Adapt & improve the advocacy plan → Regularly review your plan

Remember M&E is vital for effective advocacy. Develop a clear plan, collect data, evaluate results, make adjustments, and regularly review to ensure impactful and effective advocacy.

TIME: 1 Hour



6

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CONCLUSION

Lobbying the advocacy plan:

- Plan properly
- Identifying the channels and entities
- Lobby for results
- Reach decision makers effectively



THE 0.5 Hour

7

— THANK YOU



8

Annex 6 – Soft Skills: Communication & Performance Management for better results

6.1 – Professional Communication

5/9/2023



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Introduce yourself

- Name
- Position
- Number of years with current company
- Hobbies
- What are your expectations?




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Expectations

Why are we here?



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Outcomes

Participants will be able to:

- Listen actively and speak appropriately
- Identify non-verbal communication signs and the impact on people's perceptions
- Identify and practice professional relationship skills, including conflict resolution to ensure a good networking and collaboration
- Give and receive instructions effectively
- Cooperate and work as a team member
- Read emails for information and ask for clarification
- Know how to conduct a meeting

Communication / Teresa Caple-Nelson, PhD

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Module One: Getting Started

Welcome to the Communication Strategies workshop. For the better part of every day, we are communicating to and with others. Whether it's the speech you deliver in the boardroom, the level of attention you give your spouse when they are talking to you, or the look that you give to the cat, to your environment..., it all means something. This workshop will help participants understand the different methods of communication and how to make the most of each of them.

*Wise men talk
because they have
something to say;
fools, because they
have to say
something.*

Plato

Communication / Teresa Caple-Nelson, PhD

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Workshop Objectives




- Understand what communication is;
- Identify ways that communication can happen;
- Identify barriers to communication and how to overcome them;
- Develop non-verbal and paraverbal communication skills;
- Use the STAR method to speak on the spot / Presentation skills;
- Listen actively and effectively;
- Ask good questions;
- Use appreciative inquiry (AI) as a communication tool to solve problems;
- Establish a professional relationship and cope with beneficiaries;
- Adeptly converse and network with others;
- Identify and mitigate precipitating factors;
- Establish common ground with others;
- Use "I" messages;
- The YOU Attitude;
- Conduct a meeting.

Communication / Teresa Cusack-McIntyre (20)

Leadership & Innovation Management



Pre-Assignment Review

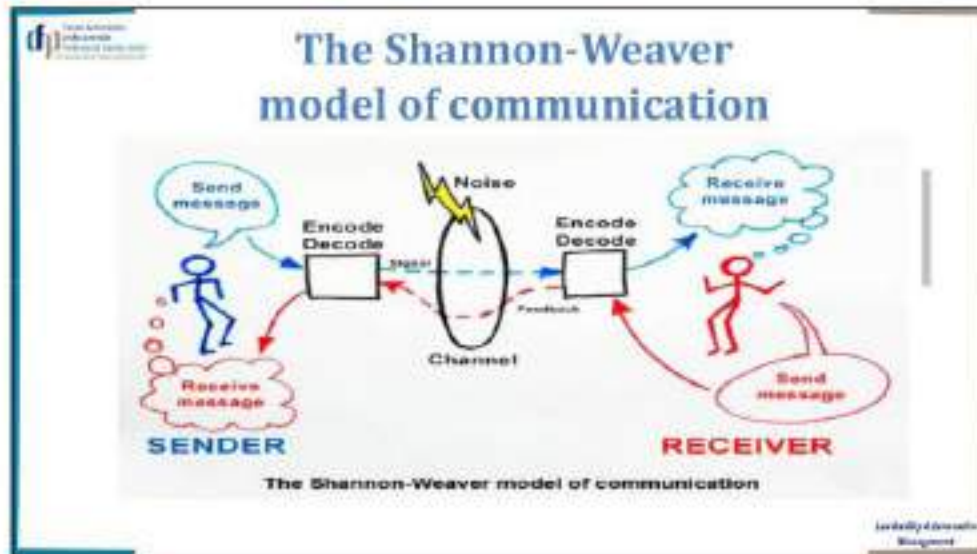


- The purpose of the Pre-Assignment is to get you thinking about the communication strategies that you are already using and where you need to improve.
- Think of a situation where you missed an opportunity because of a lack of communication, and what communication skills in particular could have alleviated the problem (individual work). Take some time now to share your thoughts (group work).

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Module Two: The Big Picture

When we say the word, "communication," what do you think of?

Go to www.menti.com and use the code 27078103

The more elaborate our means of communication, the less we communicate.
Joseph Priestley

Communication / Teacher Candy Robinson ©

5/9/2023

What is Communication?

The effectiveness of your communication can have many different effects on your life, including items such as:

- Level of stress
- Relationships with others
- Level of satisfaction with your life
- Productivity
- Ability to meet your goals and achieve your dreams
- Ability to solve problems

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How Do We Communicate?


We communicate in three major ways:

- **Spoken:** There are two components to spoken communication.
 - **Verbal:** This is what you are saying.
 - **Paraverbal:** This means how you say it – your tone, speed, pitch, and volume.
- **Non-Verbal:** These are the gestures and body language that accompany your words. Some examples: arms folded across your chest, tracing circles in the air, tapping your feet, or having a hunched-over posture.
- **Written:** Communication can also take place via texting, e-mail, or written words.

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Department of Education
Texas

Other Factors in Communication


Other communication factors that we need to consider.

- **METHOD:** The method in which the communicator shares his or her message is important as it has an effect on the message itself.
- **MASS:** The number of people receiving the message.
- **AUDIENCE:** The person or people receiving the message affect the message, too.



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See daily 4 days a week
Blended



Department of Education
Texas

Module Three: Understanding Communication Barriers

Like most things in life, however, communication is far more complicated than it seems. Let's look at some of the most common barriers and how to reduce their impact on communication.

When you come right down to it, how many people speak the same language even when they speak the same language?
—Russell Hoban

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An Overview of Common Barriers

Common things that people list as barriers include:

- I can't explain the message to the other person in words that they understand.
- I can't show the other person what I mean.
- I don't have enough time to communicate effectively.
- The person I am trying to communicate with doesn't have the same background as me, and is missing the bigger picture of my message.

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Language Barriers

Of course, one of the biggest barriers to written and spoken communication is language. This can appear in three main forms:

- The people communicating speak different languages.
- The language being used is not the first language for one or more people involved in the communication.
- The people communicating speak the same language, but are from different regions and therefore have different dialects and or unique subtleties.

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Cultural Barriers

- There can also be times when people speak the same language, but are from a different culture, where different words or gestures can mean different things.
- If you have the opportunity to prepare, find out as much as you can about the other person's culture and background, and how it differs from yours.

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Differences in Time and Place

So how can you get over the challenges of time and place? First, identify that there is a difference in time and place. Next, try these tips to reduce its impact.

- Make small talk about the weather in your respective regions. This will help you get a picture of the person's physical environment.
- Try to set up phone calls and meetings at a time that is convenient for you both.
- If appropriate, e-mail can be an "anytime, anywhere" bridge. For example, if Bill had sent Joe an e-mail describing the problem, Joe could have addressed it at a better time for him, such as later on in the day. Clearly, this is not always practical (for example, if the problem is urgent, or if it is a complicated issue that requires extensive explanation), but this option should be considered.

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Module Four: Paraverbal Communication Skills

Try saying these three sentences out loud, placing the emphasis on the underlined word.

- "I didn't say you were wrong."
(Implying it wasn't me)
- "I didn't say you were wrong."
(Implying I communicated it in another way)
- "I didn't say you were wrong."
(Implying I said something else)

Many attempts to communicate are nullified by saying too much.
Robert Greenleaf

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The Power of Pitch

- Pitch can be most simply defined as the key of your voice. A high pitch is often interpreted as anxious or upset. A low pitch sounds more serious and authoritative.
- If you naturally speak in a very high-pitched or low-pitched voice, work on varying your pitch to encompass all ranges of your vocal cords.



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The Truth about Tone

Here are some tips on creating a positive, authoritative tone.

- Try lowering the pitch of your voice a bit.
- Smile! This will warm up anyone's voice.
- Sit up straight and listen.
- Monitor your inner monologue. Negative thinking will seep into the tone of your voice.

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The Strength of Speed

- The pace at which you speak also has a tremendous effect on your communication ability.
- Speed also has an effect on the tone and emotional quality of your message.
- One easy way to check your pitch, tone, and speed is to record yourself speaking.

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Module Five: Non-Verbal Communication

The first goal of this module: to help you understand how to use body language to become a more effective communicator. Another goal, one which you will achieve with time and practice, is to be able to interpret body language, add it to the message you are receiving, and understand the message being sent appropriately.

The most important thing in communication is to hear what isn't being said.
Peter Drucker

Communication / Thomas Cappel-Markmann (20)

Understanding the Mehrabian Study

In 1971, psychologist Albert Mehrabian published a famous study called Silent Messages. In it, he made several conclusions about the way the spoken word is received. Although this study has been misquoted often throughout the years, its basic conclusion is that 7% of our message is verbal, 38% is paraverbal, and 55% is from body language.

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All About Body Language

THE WAY THAT WE ARE STANDING OR SITTING

- Sitting hunched over typically indicates stress or discomfort.
- Leaning back when standing or sitting indicates a casual and relaxed demeanor.
- Standing ramrod straight typically indicates stiffness and anxiety.

THE POSITION OF OUR ARMS, LEGS, FEET, AND HANDS

- Crossed arms and legs often indicate a closed mind.
- Fidgeting is usually a sign of boredom or nervousness.

FACIAL EXPRESSIONS

- Smiles and frowns speak a million words.
- A raised eyebrow can mean inquisitiveness, curiosity, or disbelief.
- Chewing one's lips can indicate thinking, or it can be a sign of boredom, anxiety, or nervousness.

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video

<https://www.youtube.com/watch?v=4jwUXV4QaTw>

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Interpreting Gestures

Gestures	Interpretation
Nodding head	
Shaking head	
Moving head from side to side	
Shrugging shoulders	
Crossed arms	
Tapping hands or fingers	
Shaking index finger	
Thumbs up	
Thumbs down	
Pointing index finger at someone/something	
Pointing middle finger (vertically)	
Handshake	
Flap of the hand	
Waving hand	
Waving both hands over head	
Crossed legs or ankles	
Tapping toes or feet	

Interactivity & Discussion Management

Interpreting Gestures

Gestures	Interpretation
Nodding head	Yes
Shaking head	No
Moving head from side to side	Maybe
Shrugging shoulders	Not sure, I don't know
Crossed arms	Defensive
Tapping hands or fingers	Bored, anxious, nervous
Shaking index finger	Angry
Thumbs up	Agreement, OK
Thumbs down	Disagreement, not OK
Pointing index finger at someone/something	Indicating, blaming
Pointing middle finger (vertically)	Vulgar expression
Handshake	Welcome, introduction
Flap of the hand	Doesn't matter, go ahead
Waving hand	Hello
Waving both hands over head	Help, attention
Crossed legs or ankles	Defensive
Tapping toes or feet	Bored, anxious, nervous

Interactivity & Discussion Management





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 **Module Six: Speaking Like a STAR**

Now that we have explored all the quasi-verbal elements of communication, let's look at the actual message you are sending. You can ensure any message is clear, complete, correct, and concise, with the STAR acronym. This module will explore the STAR acronym in conjunction with the six roots of open questions which will be explored in more detail later on in the workshop.

*Be sincere;
be brief;
be seated.*
*Franklin
D.
Roosevelt*

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 **S = Situation** 

First, state what the situation is. Try to make this no longer than one sentence. If you are having trouble, ask yourself, "Where?", "Who?", and, "When?". This will provide a base for message so it can be clear and concise.


Example: "On Tuesday, I was in a director's meeting at the main plant."

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T = Task




Next, briefly state what your task was. Again, this should be no longer than one sentence. Use the question, "What?" to frame your sentence, and add the "Why?" if appropriate.


Example: "I was asked to present last year's sales figures to the group."

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Chapel Hill



A = Action




Now, state what you did to resolve the problem in one sentence. Use the question, "How?" to frame this part of the statement. The Action part will provide a solid description and state the precise actions that will resolve any issues.

Example: "I pulled out my laptop, fired up PowerPoint, and presented my slide show."

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R = Result

Last, state what the result was. This will often use a combination of the six roots. Again, a precise short description of the results that come about from your previous steps will finish on a strong definite note.

Example: "Everyone was wowed by my prep work, and by our great figures!"

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Summary

- Let's look at a complete example using STAR.


Let's say you're out with friends on the weekend. Someone asks you what the highlight of your week at work was.

(mentimeter code to create)

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Module Seven: Listening Skills

So far, we have discussed all the components of sending a message:

- Non-verbal
- Para-verbal
- Verbal

Now, let's turn the tables and look at how to effectively receive messages.


When people talk, listen completely.
Ernest Hemingway

Communication / Teacher Center / Module Seven




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Active listening



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Let's try it again



Seven Ways to Listen Better Today

1. When you're listening, listen.
2. Avoid interruptions.
3. Aim to spend at least 90% of your time listening and less than 10% of your time talking.
4. When you do talk, make sure it's related to what the other person is saying.
5. Do not offer advice unless the other person asks you for it. If you are not sure what they want, ask!
6. Make sure the physical environment is conducive to listening. Try to reduce noise and distractions.
7. If it is a conversation where you are required to take notes, try not to let the note-taking disturb the flow of the conversation.

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 **Understanding Active Listening**

There are three basic steps to actively listening.

1. Try to identify where the other person is coming from. This concept is also called the frame of reference.
2. Listen to what is being said closely and attentively.
3. Respond appropriately, either non-verbally (such as a nod to indicate you are listening), with a question (to ask for clarification), or by paraphrasing.


Conversation / Tenen Cuddy Neuroscience (20)  Verbal & Nonverbal Communication

 **Sending Good Signals to Others**

- **NON-VERBAL:** As shown in the Mehrabian study, body language plays an important part in our communications with others.
- **QUASI-VERBAL:** Fillers words like, "uh-huh," and "mm-hmmm," show the speaker that you are awake and interested in the conversation.
- **VERBAL:** Asking open questions using the six roots discussed earlier, paraphrasing, and asking summary questions.

Conversation / Tenen Cuddy Neuroscience (20)  Verbal & Nonverbal Communication

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Module Eight: Asking Good Questions

Good questioning skills are another building block of successful communication. We have already encountered several possible scenarios where questions helped us gather information, clarify facts, and communicate with others. In this module, we will look closer at these questioning techniques that you can use throughout the communication process.

The important thing is not to stop questioning. Curiosity has its own reason for existing.

Albert Einstein

Communication / Tenen Center for Leadership (20)



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Open Questions

Open questions use one of six words as a root:

- Who?
- What?
- Where?
- When?
- Why?
- How?



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Closed Questions


Closed questions are the opposite of open questions; their very structure limits the answer to yes or no, or a specific piece of information. Some examples include:

- Do you like chocolate?
- Were you born in December?
- Is it five o'clock yet?



Conversation / Tenet Core Curriculum (10)


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Probing Questions

- **CLARIFICATION:** By probing for clarification, you invite the other person to share more information so that you can fully understand their message.
- **COMPLETENESS AND CORRECTNESS:** These types of questions can help you ensure you have the full, true story.
- **DETERMINING RELEVANCE:** This category will help you determine how or if a particular point is related to the conversation at hand.
- **DRILLING DOWN:** Use these types of questions to nail down vague statements.
- **SUMMARIZING:** These questions are framed more like a statement. They pull together all the relevant points.



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Using "I" Messages



- Framing your message appropriately can greatly increase the power of your communication.
- Instead of starting a sentence with "you," try using the "I message" instead for positive and constructive feedback. This format places the responsibility with the speaker, makes a clear statement, and offers constructive feedback.

Ex. Sometimes, you speak in a very low voice. I often have difficulty hearing you when you speak at that volume. It often makes me feel frustrated

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Written style: The YOU attitude

- Replace terms such as I, me, mine, we, us, and ours with **you** and **yours**
- It's a matter of demonstrating genuine interest in your readers and concern for their needs
- Try to think like the person who will read you
- Be aware that on some occasions, it's better to **avoid** using you, particularly if doing so will sound overly authoritative or accusing



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The YOU Attitude

<p>Instead of This</p> <p>Tuesday is the only day that we can promise quick response to purchase order requests; we are exempted the rest of the week.</p> <p>We offer MP3 players with 50, 75, or 100 gigabytes of storage capacity.</p>	<p>Write This</p> <p>If you need a quick response, please submit your purchase order requests on Tuesday.</p> <p>You can choose an MP3 player with 50, 75, or 100 gigabytes of storage.</p>
<p>Instead of This</p> <p>You failed to deliver the customer's order on time. You must correct all five copies by noon.</p>	<p>Write This</p> <p>The customer didn't receive the order on time. All five copies must be corrected by noon.</p>

Communications - Trainers Center Workbook 2016

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Business e-mail Basics

- Before sending an e-mail, ask yourself is it necessary?
- Expectations of writing quality are higher, and the consequences of bad writing or poor judgment can be much more serious
- Include informative, compelling subject lines
- Choose the first few words carefully to grab your reader's attention.
- Avoid emoticons for all types of external business communication and for formal internal communication
- Use professional signature
- Double-check attachment, recipients, ...



Imaginative Business Email: Use a Quote

Look:
"The word you will regret not including isn't 'no'."

Yes:
"I'll have your product in the mail within 107-110 days."

Communications - Trainers Center Workbook 2016

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Business E-mails

DON'Ts	DOs
send or forward chain e-mails	use a subject line that summarizes your message, adjusting it as the message changes over time
put anything in an e-mail that you don't want the world to see	make your request in the first line of your e-mail. (And if that's all you need to say, stop there!)
write a message in capital letters—this is the equivalent of SHOUTING	end your e-mail with a brief sign-off such as, "Thank you," followed by your name and contact information
routinely C.C. everyone. Reducing inbox clutter is a great way to increase communication	think of a work e-mail as a binding communication
hit send until you've spell-checked your e-mail	let others know if you've received an e-mail in error

Communication / Tenet Core Network (3)

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Communication Channels

Use Written Communication	Use Verbal Communication
Conveying facts	Conveying emotion and feelings
Message needs to become part of a permanent file	Message does not need to be permanent
There is little time urgency	There is time urgency
You don't need immediate feedback	You need immediate feedback
The ideas are complicated	Ideas are simple or can be made simple with explanations

Communication / Tenet Core Network (3)

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When do we choose to communicate in writing?

- To communicate with several individuals
- If the amount of information is large
- If the information is difficult to understand
- People are far away – Different Time Zones
- You need to document

Avoid Written communication when message is:

- Personal
- Sensitive
- Confidential

Written Communication

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Activity

Purpose	Kind of Written Communication
1. Applying for a job	
2. Examining an incident, accident or error to describe what happened	
3. Booking a conference room at a hotel	
4. Telling colleagues to attend a meeting	
6. Providing the results of research and testing	
7. Telling colleagues about a new member of staff	
8. Complaining about a delivery service	
9. Thanking a customer	
10. Describe in details how a project is going	
11. Sending out a meeting agenda	
12. Resigning	
13. Providing information on a regular interval	

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University of California, Berkeley

Module Nine: Appreciative Inquiry (AI)

Traditional communication often focuses on what is wrong and how we can fix it. Think back to your last performance review, visit to the doctor, or your latest disagreement with a friend or spouse. Appreciative inquiry does the opposite: it focuses on what is right and how we can make it better. **Many organizations have found it to be a refreshing, energizing way of approaching problems and revitalizing their people.**

Conversation / Thomas Casey-Kavanaugh (20)

If you ask the wrong question, of course, you get the wrong answer.
Amory Lovins




Center for Innovation
and Entrepreneurship
University of California, Berkeley

The Purpose of AI

To understand the purpose of Appreciative Inquiry, let's look at each of its parts.

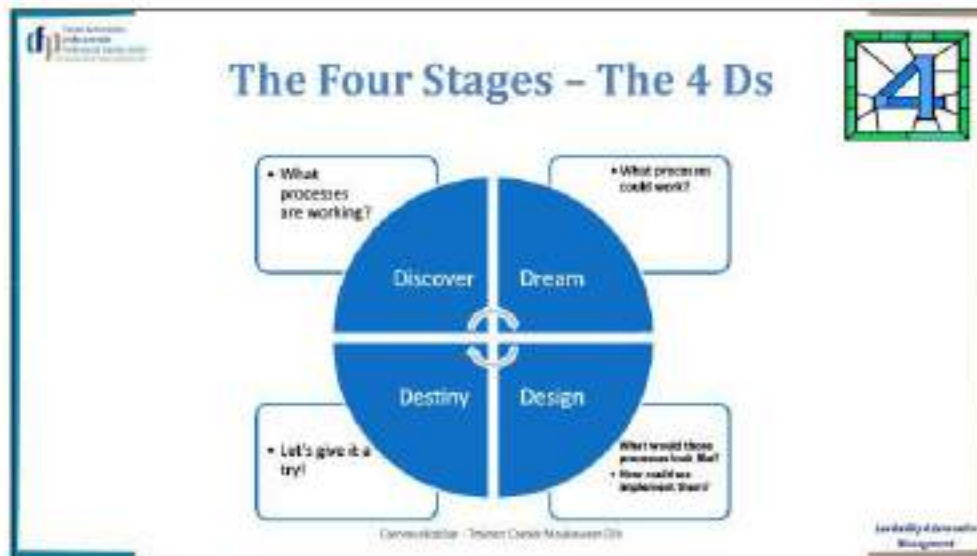
- Appreciate is defined by the Random House dictionary as, "to value or regard highly; to be fully conscious of; be aware of; detect; to rise in value."
- In the same dictionary, inquiry is defined as, "the act of inquiring or of seeking information by questioning."



Conversation / Thomas Casey-Kavanaugh (20)

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Examples and Case Studies

Appreciative inquiry has been used in many different ways in many different organizations. Some projects where it has been a key tool include:

- Creation of learning network for organizational psychologists at the California School of Professional Psychology.
- Process improvement at John Deere that resulted in millions of dollars in savings.
- Relief efforts for children orphaned by AIDS in Zimbabwe.
- Integration of mental health services in England.

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Professional relationships & Conflict resolution techniques

- Importance of good relationships
- Ways to give/ask for exceptional quality service
- Effective communication with beneficiaries
- Handling conflict with difficult people



Continuation - Teacher Course Materials (20)

Availability of documents
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What is Customer Service and Why is it so Important?

Definition of Customer Service - Customer service is how we meet the needs of the people who use our services.



Continuation - Teacher Course Materials (20)

Availability of documents
Management

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Levels of Services

a) **Poor service:** those giving service do not seem to care, do not make effort to please others.

b) **Mediocre service:** service provided is okay. Those providing service care about clients but might not be able to provide everyone with his needs.


c) **Exceptional service:** quality of service is always excellent, beneficiaries always feel happy and well taken care of and recommends the service to people they know.

(68%) stop doing business with a company/stakeholder due to rudeness or indifference. You strive for exceptional service! (applicable in relationships and everywhere in life)

Communication / Tenet Core Modules (10)

Leadership & Decision Management

What are 3 main characteristics of a professional relationship?



3 Traits of a Strong Professional Relationship

- A clear purpose. Our relationships are based on how we are connected, related, and specifically relevant to one another.
- An understanding of the type of relationship needed.
- A commitment to pursuing the relationship even when times get tough.

Communication / Tenet Core Modules (10)

Leadership & Decision Management

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Good relationships / service will have these positive effects:

- a) You will keep your stakeholders and your stakeholders will recommend you to others
- b) You will stand out from your competitors
- c) It makes the workplace more enjoyable (so staff stay)
- d) It shows your stakeholders they are important
- e) Customer service if done right will create word of mouth advertising
- f) It is the cheapest form of positive advertising

Bad relationships / service will have these negative effects:

- a) Bad reputation
- b) Loss of confidence and trust
- c) Ends business relationships
- d) Bad reference for career
- e) Loss of a job



Communication / Teacher Centre Materials (20)

Availability & Download Management

Guidelines - Ensuring exceptional relationships

A. Exceptional relationships / service

- ✓ Anticipates the others' needs
- ✓ Tries to understand what others is thinking
- ✓ Meets and exceeds others' highest expectations

B. Basic Needs – Each one needs to feel:

- ✓ Welcome
- ✓ Understood
- ✓ Important
- ✓ Comfortable

C. Meeting Basic Needs – To make everyone feel:

Welcome:

- ☐ Be friendly
- ☐ Greet by family name
- ☐ Introduce yourself
- ☐ Use a positive tone of voice
- ☐ Smile / Lighten up

Understood:

- ☐ Listen carefully ☐ Repeat or rephrase to make things clearer

Important:

- ☐ Refer to people by name
- ☐ Show interest in their need
- ☐ Ask open-ended questions to understand their needs
- ☐ Thank them for coming

Comfortable:

- ☐ Use open body language
- ☐ Show concern


Communication / Teacher Centre Materials (20)

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**Perception activity - Look at the picture for 5 seconds, then
write down what you see in the picture**




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What do you see in the picture?




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Guidelines - Ensuring exceptional relationships


D. Perceptions
 Perception is how we see, hear or understand a situation. No two people see a situation exactly the same! Others do NOT always think the way you do. S/he may therefore not see a situation the way you do. Always check to see what the person you are talking to is thinking. Never make assumptions!

E. Meeting & Exceeding Expectations
 Make sure you know your colleague/client/ visitor... 's attitudes, beliefs, ideas & feelings. Try to see things the way he/she does. This will help you meet & exceed his expectations.

F. Get Feedback on the Service You Provide - Find out from beneficiaries how they liked your service... and what can be done to make it better

Communication / Tenet Care Network (TCN)

Leadership & Governance
 Management



Conflict resolution

Ask participants if they have ever had to deal with a situation where they have either had an angry partner or they have been an angry partner.

What happened and how was the situation handled?

One or two people to share their experiences. (5 min)

Communication / Tenet Care Network (TCN)

Leadership & Governance
 Management

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Conflict resolution

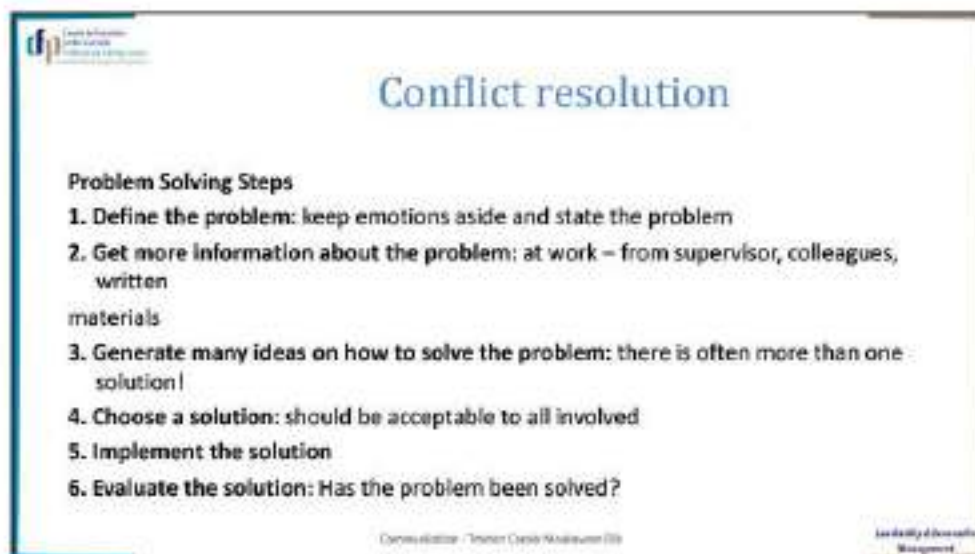
Conflict is disagreement between people.

Resolving conflict means finding a way to take care of the problem that everyone can agree to.

To **handle conflict** you may want to follow the steps listed below.

Conflict resolution / Teacher Center Materials (20)

Conflict resolution / Management



Conflict resolution


Problem Solving Steps

1. **Define the problem:** keep emotions aside and state the problem
2. **Get more information about the problem:** at work – from supervisor, colleagues, written materials
3. **Generate many ideas on how to solve the problem:** there is often more than one solution
4. **Choose a solution:** should be acceptable to all involved
5. **Implement the solution**
6. **Evaluate the solution:** Has the problem been solved?

Conflict resolution / Teacher Center Materials (20)

Conflict resolution / Management

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Conflict resolution

REAL Solutions
Solutions should be **REAL***:

R Realistic: applicable not only in theory but also in practice
E Effective: the solution is an answer to the problem
A Acceptable: the solution is accepted by all of those involved
L Logical: the solution is not based on emotion but is fair

Communication / Teacher Cindy Neukirch (20)

Availability of Resources
Management



Conflict resolution

Problem Solving Tips

- ✓ Often there is more than one solution to a problem. Be open to different possibilities!
- ✓ Your experiences, culture and background will influence the solutions you think of.
- ✓ Avoid making assumptions.
- ✓ Never give up!
- ✓ Be prepared to listen openly to different points of view.
- ✓ Focus on the solution you want, not on things that cannot be changed.
- ✓ Remember to use your good listening, speaking and cooperation skills when problem solving with others.

Communication / Teacher Cindy Neukirch (20)

Availability of Resources
Management

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Conflict resolution

Scenarios for Problem-Solving Steps

Cards to be distributed for problem-solving group work

Conflict resolution / Teacher Cards / Materials (20)

Availability of resources / Management

Analysis Tools

- The SWOT matrix
- Attitude grid
- Mapping of external stakeholders – Allies / Resistors

Strength Weakness

Opportunity Threat

Allies

Resistors

Conflict resolution / Teacher Cards / Materials (20)

Availability of resources / Management

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3 Types of Objectives

- Cognitive (informative): Awareness of the targets
- Emotional: Relation, sympathy, ...
- Influential: Behavioral change, buy-in, break habits



Communication / Teacher Centered Classroom (TC)

Availability of resources Management

SMART Objectives

- S**pecific: Details exactly what needs to be done
- M**easurable: Achievement can be measured
- A**ction-oriented: Using "action verb"
- R**ealistic: Feasible to attain
- T**ime-bound: Timeline is clearly stated

Communication / Teacher Centered Classroom (TC)

Availability of resources Management

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SMART Exercise

Is this a SMART objective?

1. Decrease the amount of time my customers spend at cashier to price a product
2. Have more people walking into my shop
3. Perform the inventory of my stock 2 times per day within the next 2 weeks
4. Before the end of February, make my customers happier about buying products from my shop
5. Become the number 1 preferred shop in the neighborhood before spring

Communication / Tenen Cuddy-Nakamura (20)

Leadership & Business Management


Module ten: How to Plan and Lead Effective Meetings

Although this workshop is coming to a close, we hope that your journey to improve your business communication skills and your corporate communication knowledge is just beginning. Please take a moment to review and update your action plan. This will be a key tool to guide your progress in the days, weeks, months, and years to come. We wish you the best of luck on the rest of your travels!


Communication is the real work of leadership
Nitin Nohria

Communication / Tenen Cuddy-Nakamura (20)

5/9/2023



Planning meetings



Purpose:
Plan meetings with purpose. Define the purpose or objective of the meeting. To help you determine what your meeting objective is, complete this sentence:
At the close of the meeting, I want the group to ...

Attendees:
Who needs to attend this meeting to accomplish the purpose? For a meeting to be successful rather than wasteful, you need to make sure the right people are there.

Common codes - Trainer Center Worksheet File

Locally distributed Management



Planning meetings



Agenda:
An agenda is crucial to meeting success in three ways:
1) it clarifies the objectives so people understand the meeting purpose and tasks;
2) distributing the agenda prior to the meeting helps people plan and prepare to make an effective contribution;
3) during the meeting, the agenda provides direction and focus for the discussion.

Location and Time:
Select a meeting place that best matches the attendees' needs, the objective, and the meeting structure.

Structure:
How should the meeting be organized to best accomplish the purpose? Some techniques may include: guest speakers, videos, brainstorming modules, panel modules, discussion groups, demonstrations, etc.


Responsibilities:
There should be a mutual understanding of not only the meeting purpose, but also individual assignments and how they fit into the total program.

Confirmation:
If it is a first meeting or if the meeting is on a new day or time, individually contact all students a week to three days before the meeting day.

Common codes - Trainer Center Worksheet File

Locally distributed Management

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Leading Effective Meetings

- Begin and End on Time
- Use the Agenda
- Establish and Use Ground Rules
- Manage Dominating Individuals
- Summarize



Leadership & Communication
Management



Center for International
Business and Leadership
Studies


Module eleven: Wrapping Up

Although this workshop is coming to a close, we hope that your journey to improve your business communication skills and your corporate communication knowledge is just beginning. Please take a moment to review and update your action plan. This will be a key tool to guide your progress in the days, weeks, months, and years to come. We wish you the best of luck on the rest of your travels!


Communication is the real work of leadership
Nitin Nohria

Communication / Tenen Center for Leadership Studies

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Words from the Wise



- **HUBERT H. HUMPHREY:** The right to be heard does not automatically include the right to be taken seriously.
- **MICHEL DE MONTAIGNE:** I quote others only in order the better to express myself.
- **WOODROW WILSON:** If I am to speak ten minutes, I need a week for preparation; if fifteen minutes, three days; if half an hour, two days; if an hour, I am ready now.

Communication / Teacher Center Resource File

Leadership & Communication Management



Conclusion:

Why Communication is an important soft skill in the leadership world?

- Communication is an essential soft skill for leaders in the modern world.
- It is the key to successful collaboration, problem solving, and decision making.
- Effective communication allows leaders to build trust and understanding with their team, create a shared vision, and motivate their team to achieve their goals.
- It also helps leaders to better understand their team's needs and concerns, and to provide feedback and guidance.
- Communication is the foundation of successful leadership, and it is essential for creating a productive and successful team.

Communication / Teacher Center Resource File

Leadership & Communication Management

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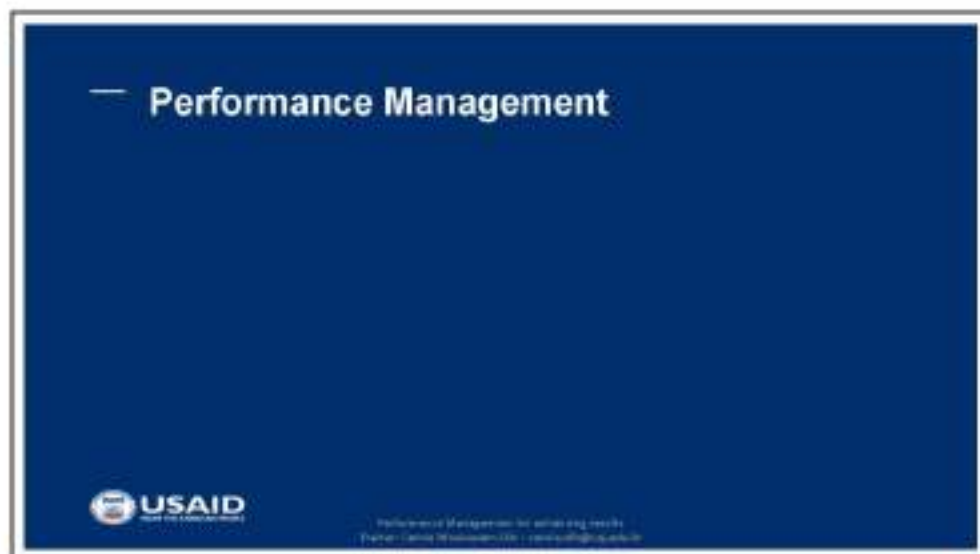


6.2 – Performance Management

5/9/2023



1



2

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Introduce Yourself

- Name
- Position
- Number of years with current company
- Hobbies
- What are your expectations?

HELLO
MY NAME
IS



Followers are encouraged to follow the following rules: 1. Follow the rules of the game.

3

Expectations

Why are we here?



4

5/9/2023

Agenda

1. What is Performance?
2. Performance Management
3. The Performance Appraisal Cycle
4. Performance Appraisal Checklist for Managers



Performance Management for Improving Results, Thomas
Derry, McGraw-Hill, 2012

5

Agenda

1. What is Performance?
2. Performance Management
3. The Performance Appraisal Cycle
4. Performance Appraisal Checklist for Managers



Performance Management for Improving Results, Thomas
Derry, McGraw-Hill, 2012

6

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Activity

Split in teams of two:

Define Performance

Give two examples on good performance

Give two examples on a bad performance



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What is Performance?



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9



10

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Agenda

1. What is Performance?
2. Performance Management
3. The Performance Appraisal Cycle
4. Performance Appraisal Checklist for Managers



11

What is Performance Management?

Performance management (PM) includes activities which ensure that goals are consistently being met in an effective and efficient manner. Performance management can focus on the performance of an organization, a department, employee, or even the processes to build a product or service, as well as many other areas.

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Activity

What are the benefits of PM for:

- Employees
- Organizations



Performance Management for Improving Results, Harvard
Global Knowledge 2020

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1. Knowing what is expected from them
2. Working towards developing their skills & abilities to deliver based on the expectations
3. Gaining the support needed to meet expectations
4. Having regular feedback regarding their performance
5. Taking the opportunity to discuss individual & team objectives



Performance Management - Employees' Benefits

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1. Identifying High Potentials
2. Taking corrective measures with employees experiencing difficulties
3. Providing proof for major decisions such as: Promotions, Pay Increase, Transfers, Training & Development budget
4. Focusing employees on what is important to the organization
5. Motivating employees who will be rewarded for outstanding performance

Performance Management -Organizations' Benefits

15

What the PA is NOT about:

- It's **not** about judging
- It's **not** when there is a problem
- It's **not** about putting poor performers down
- It's **not** the only time when you want to give feedback
- It's **not** about comparison



Performance Management for Improving Results - Harvard
Executive Education

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Agenda

1. What is Performance?
2. Performance Management
3. The Performance Appraisal Cycle
4. Performance Appraisal Checklist for Managers



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Performance Appraisal Cycle



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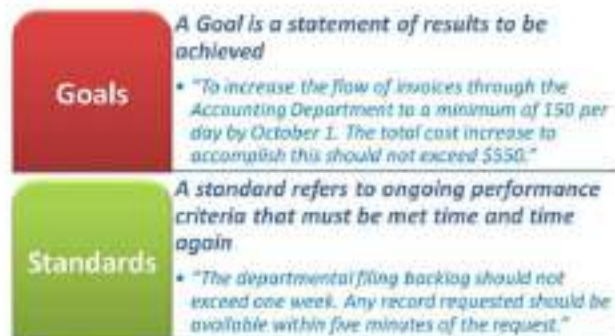
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Performance Appraisal Cycle



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Goals and Standards



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S.M.A.R.T. Goals



21

Performance Appraisal Cycle



22

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Activity

What in your opinion a "Direct Manager" should do to monitor and support their team members performance



23

Monitor and Support the Performance



Observing
Behavior



Giving
Feedback



Asking the Right
Questions



Listening



Coaching
Others



Supporting
& Encouraging

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Monitor and Support the Performance



Observing Behavior

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Perception - Activity: Picture this!



Look at the picture for 5 seconds, then write down what
you see in the picture



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What Do You See In The Picture?



remember
this?

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remember
this?

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Monitor and Support the Performance



Observing
Behavior



Giving
Feedback

Performance Management for Improving Health Outcomes
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Giving Feedback



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Tips For Giving And Receiving Feedback



Performance Management for Improving Results: Tools and Techniques (20)

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Effects of Feedback



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Focusing on Constructive Feedback What to Say? CONTENT

- Identify the topic or issue involved
- Provide the specifics of what occurred with evidence*
- Ask lots of open ended questions
- Concentrate on the facts
- Agree on what needs to happen in the future

**Without the specifics, you only have praise or criticism*



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Focusing on Constructive Feedback How to Say It? MANNER

- Start each key point with an "I" message
- Be direct – get to the point
- Be sincere – avoid giving mixed messages
- Express concern with specifics
- State Observations and not interpretations
- Give feedback person-to-person (face or phone), not through messengers or whatsapp!



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Focusing on Constructive Feedback When to Say It? TIMING

- ASAP (as soon as possible) or "real time"



4 CAREER RES

1. Context

2. Manner

3. Timing

4. Frequency

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Focusing on Constructive Feedback How Often to Say It? FREQUENCY

- On an on-going basis



4 CAREER RES

1. Context

2. Manner

3. Timing

4. Frequency

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Focusing on Constructive Feedback

Timing – When you say it

Frequency – How often you say it

- ASAP (as soon as possible) or “real time”
- On an on-going basis

4 CATEGORIES

1. Content

2. Manner

3. Timing

4. Frequency

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Log File

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	Denial	Anger	Exploration	Acceptance
Emotions/Thoughts				
What People Say at First	<ul style="list-style-type: none"> • "That can't be right" • "This date can't be right" • "Yes, I don't know what you are talking about" • "Yes, I would think that I would do that?" 	What People Say Later: <ul style="list-style-type: none"> • "I can't understand this remark" • "It is not fair. Why me?" • "I got it but I don't like it." • "Everyone is out to get me" 	What People Say After a While: <ul style="list-style-type: none"> • "What could this mean?" • "What should I do?" • "How can I improve?" 	What People Say in the End: <ul style="list-style-type: none"> • "What else can I do?" • "I needed to have a discussion like this." • "This has been helpful."

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Role Play



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The "Johari Window" Model

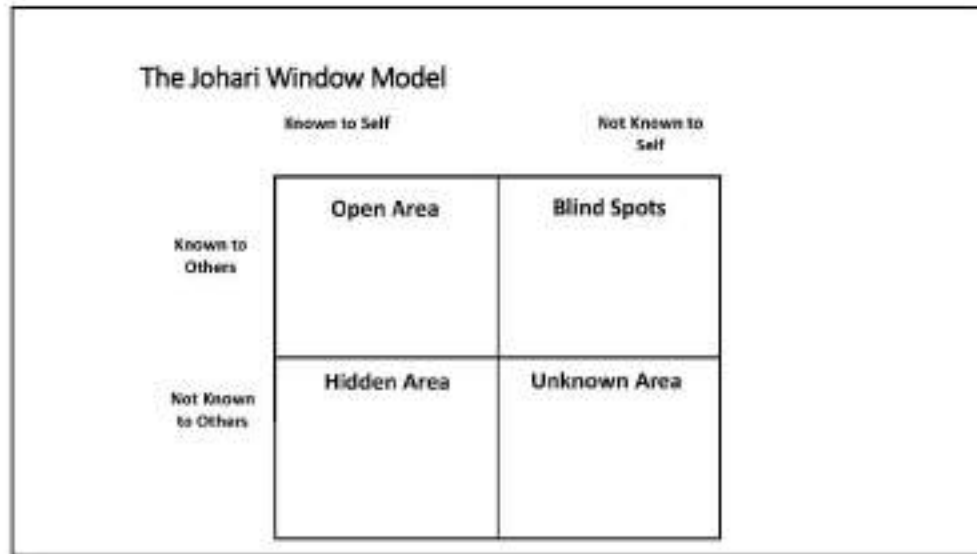
- Tool for illustrating and improving self-awareness and mutual understanding between individuals within a group
- Joseph Luft and Harry Ingham



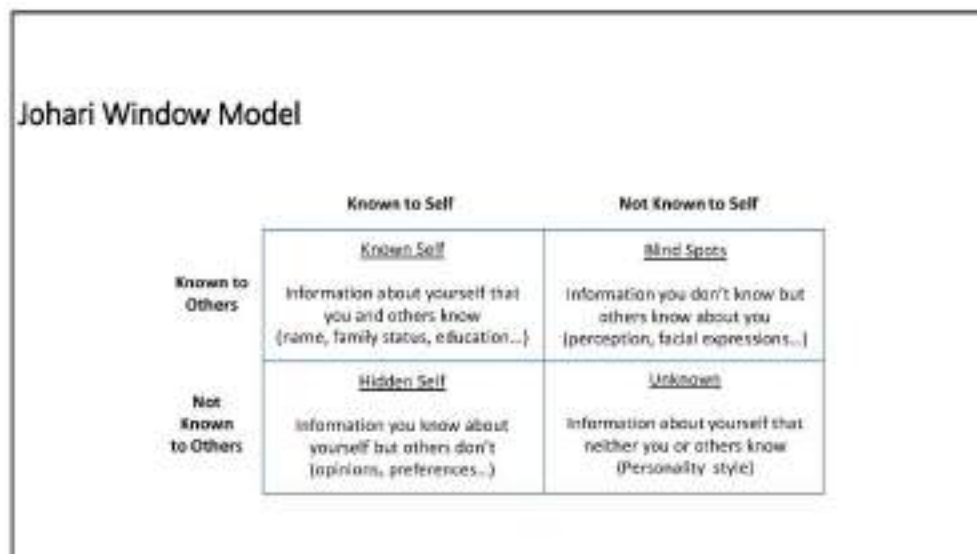
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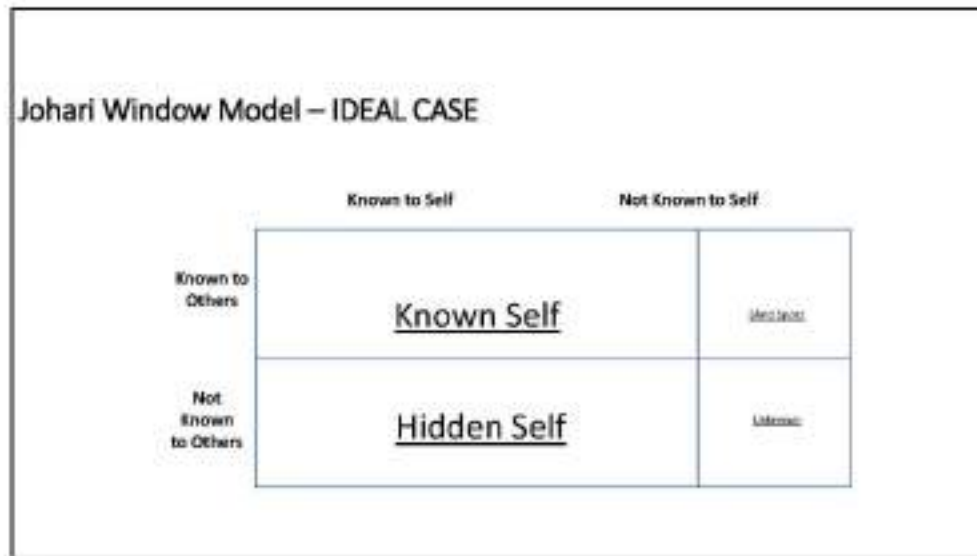


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Video



Feedback_+fixing+performance+problems.avi

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Monitor and Support the Performance



Observing Behavior



Giving Feedback



Asking the Right Questions



Listening

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Active Listening



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Let's try it again



Remember
this?

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Listening Skills

Active listening is a must:

- Ask open ended questions
- Show positive body language and eye contact
- Don't interrupt
- Summarize what had been said



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Questioning Skills - Types of questions

Open Ended Questions

- What?
- When?
- Where?
- Why?
- Who?
- How?

Closed Questions

- Answered by "Yes" or "No"

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Monitor and Support the Performance



Observing
Behavior



Giving
Feedback



Asking the Right
Questions



Listening



Coaching
Others

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Fundamentals of Coaching - Definitions

Managing

- Making sure people do what they were supposed to do

Coaching

- Helping to identify the skills and capabilities that are within the person, and enabling them to use them to the best of their ability

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Activity

In groups of three list the characteristic
of a coach



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Coach Characteristics



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Fundamentals of Coaching - Video



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1. Motivating
2. Delegating
3. Problem-solving
4. Relationship issues
5. Team building
6. Restructuring

coaching

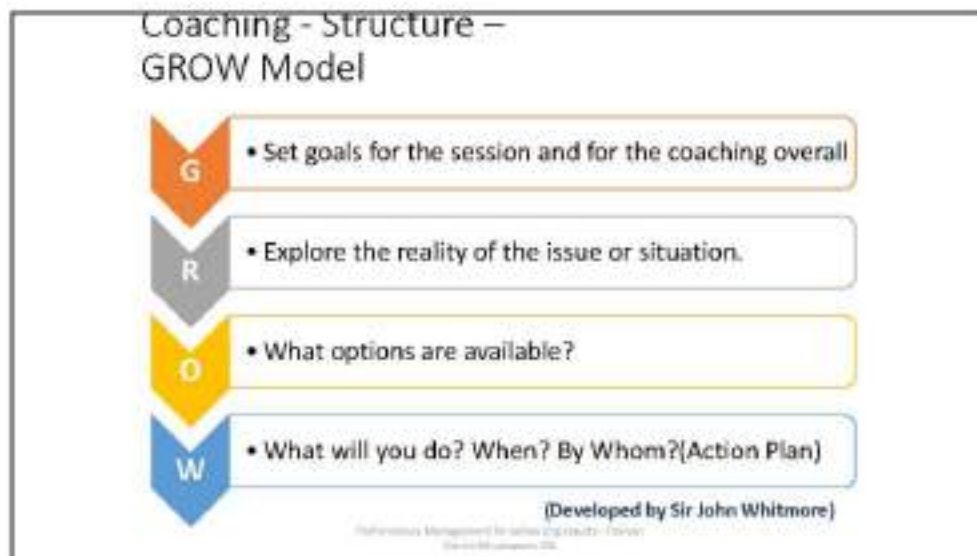
Cases in Which I Use Coaching

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Coaching - Structure - GROW Model- Questions

1. Goals

- What do we want to achieve?
- What is the topic or issue on which you would like to work?
- What would you like to get out of this session?
- What would be the best outcome for you from this session?



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Coaching - Structure - GROW Model - Questions

2. Reality

- What is happening now?
- How do you know that this is accurate?
- What effect does this have on yourself, on others?
- How much control do you have on this situation?
- What really is the issue here? What's the bottom line?
- What is it really about?
- What else?



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Coaching - Structure - GROW Model - Questions

3. Options

- What alternative ways are there to approach this issue?
- What would you do if you had more resources or more control?
- What would you do if you could start again?
- Who might be able to help you?
- Would you like suggestions from me?
- What are the benefits and pitfalls of each option?
- Which would give the best result?
- Which option would you most like to act on?



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Coaching - Structure - GROW Model - Questions

4. Wrap up (by putting an action Plan)

- What option will you choose?
- What are the next steps?
- When will you do what?
- What might get in the way?
- What support might you need?
- Who needs to know your plans?
- Is there anything else we need to talk about?
- When should we meet again?
- How do you want me to hold you accountable?



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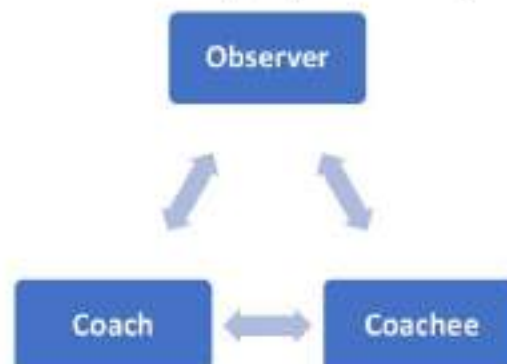
Coaching - Structure - GROW Model



(Developed by Sir John Whitmore)

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GROW model role play – 10 min/ round



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Monitor and Support the Performance



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Maslow's Hierarchy of Needs



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Performance Appraisal Cycle



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Assess and Measure – 2 Steps



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1. Review the job requirements and the objectives previously agreed upon
2. Review the log file where you have your notes gather your examples (both + & -)
3. Identify any special assignments the employee has worked on during the appraisal period
4. Fill the first PA draft
5. Have the employee do his/her own PA draft
6. Schedule the session (Time and Place)

Manager's Preparation For PA

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Activity

Team of 4 people:

- Pitfalls to avoid in an appraisal
- Elements of a successful appraisal

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Assess and Measure – 2 Steps



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Beginning the Appraisal Discussion

- Discussion to be held in a private place to avoid interruptions
- Discussion should begin on a positive and friendly note:
 - Highlighting a positive achievement and discussing it
 - Asking the employee to review his/her accomplishments for the appraisal period



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Unsatisfactory Performance

- If unsatisfactory performance is because the employee is not aware of the expectations:
 - Expectations must be made clear
 - Commitment to meet expectations must be made
- If expectations are not being met for some other reason:
 - Manager must first learn why
 - Manager and employee must agree on a corrective action plan



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Discussing Unsatisfactory Performance

- A nonthreatening work atmosphere helps employees discuss their shortcomings
- If the employee does not bring up areas of weak performance, the manager should do so
 - Example:
"Your sales reports are excellent but they are never on time. Can you explain why?"



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Why An Employee Says Very Little During An Appraisal Discussion

- Purpose of the appraisal is not understood and employee is afraid to express an opinion
- No opportunity to express an opinion
- No time to prepare for the discussion
- Thoughts and ideas of the employee are quickly discounted
- Significant personal crisis affecting performance
- Anger
- A feeling that the whole process is meaningless



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Methods to Create an Open Atmosphere

Be descriptive rather than judgmental

- Judgmental: "How could you do such a dumb thing?"
- Descriptive: "Can you explain what caused this incident?"

Be supportive, not authoritarian

- Authoritarian: "Here is what we will do to get this done on time"
- Supportive: "What do you suggest we do to get this done on time in the future?"

Be flexible, not superiorly

- Superiorly: "I was doing it this way before you were here"
- Flexibly: "We have done it this way for years, but I would like to hear your ideas on how we can do it better"

Be accepting, not dogmatic

- Dogmatic: "This is the best solution"
- Accepting: "This is the best solution I would come up with. What other possibilities do you see?"

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Appraisal Questions – Benefits of effective Questions

They require the manager's commitment to listen

They stimulate thoughts about specific issues (by giving specific examples)

They solicit another person's ideas, point of view and/or feelings

They provide an opportunity to test an idea against the reasoning of someone else

They elicit important information that might not otherwise be revealed

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Types of Questions

Open-Ended Questions

- Cannot be answered by yes or no
- Require an opinion or expression of feelings

Reflective Questions

- Repeats a statement the other person has made
- Selects the most significant feeling or idea stated

Directive Questions

- Used to solicit information about a particular point or issue
- Usually reserved till after the other person has finished talking on the subject
- Used to sustain communication or obtain information in which you are specifically interested

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Performance Appraisal Cycle



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1. Don't cover too many areas in any one discussion.
2. Concentrate on those that deserve the most attention
3. Make sure there are specific examples that can be used to support your points
4. Develop positive approaches to correcting problems
5. Be prepared to provide praise and positive reinforcement for items that deserve it
6. Identify development activities that will improve the employee's performance in present assignments
7. Provide preparation for future assignments
8. Note any goal to be accomplished during the forthcoming appraisal period
9. Plan to involve the employee in all aspects of the discussion

Guidelines to Develop an Action Plan

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Personal Development and Growth

Encouraging the employee to talk about personal growth needs can be supported by:

- Discussion to explore developmental alternatives
- Testing to which extent the employee has thought of his/her developmental objectives
- Providing a supportive climate for learning

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Personal Development and Growth

Employee developmental plans need to be specific and include agreement for:

- What the employee needs to do
- When the employee needs to do it
- What the manager needs to do and when
- Once development is completed, how it is to be applied

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1. Start on time and Outline the structure of the meeting
2. Explain how the employee performed - comparing to the job's expectations
3. Review each goal together - don't forget your examples (log file)
4. Identify strengths and potential areas for development
5. Gain agreement on the appraisal rating
6. Schedule the next meeting to set the next period's SMART Objectives

Always give constructive feedback and end positively

Guidelines to Develop an Action Plan

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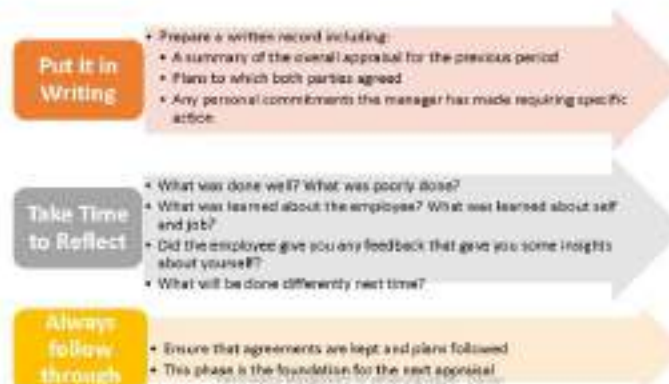
Closing the Appraisal Discussion



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Following Up – Three Suggestions



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Practice Time!!



PRACTICE

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Annex 7 – Participatory Action Research Workshop

7.1 – PowerPoint Presentation

— Participatory Action Research (PAR)



- What is Participatory Action Research?
- Why would you use PAR?
- Who should be involved in PAR?
- When should you employ PAR?
- How do you institute and carry out PAR?
- Challenges and learnings
- The key practices to ensure that the PAR approach is utilized in the best way
- Recommendations

What is Participatory Action Research?

- It is research conducted by and for those most directly affected by the issue, condition, situation, or intervention being studied or evaluated.
- Participatory Action Research (PAR) can be understood by breaking down the three components in its name.

What is Participatory Action Research?

- Firstly, it is a form of **Research**.
- It is a way of trying to understand how the world works and can involve qualitative and quantitative methods.

What is Participatory Action Research?

- Secondly, this way of understanding how the world works involves Action.
- Kurt Lewin came up with the idea of action research in the 1950's and said that, "if you truly want to understand something, try to change it".

What is Participatory Action Research?

- Secondly, this way of understanding how the world works involves Action.
- The recent definition describing PAR as "a philosophical approach to research that recognizes the **need for persons being studied** to participate in the design and conduct all phases (e.g. design, execution, and dissemination) of any research that affects them".

What is Participatory Action Research?

- Secondly, this way of understanding how the world works involves Action.
- The core of action research is: investigating the underlying causes of an issue or problem by attempting to bring about change.

What is Participatory Action Research?

- Action research is an iterative process by which participants **identify a problem** and **seek to change** it, then assess the effect (if any) their efforts had.
- Each opportunity for reflection is an opportunity to build knowledge: when an action doesn't bring about change, it reveals information about the nature of the problem and generates new ideas for action.

What is Participatory Action Research?

“Over time, you learn more and more”.

What is Participatory Action Research?

- Thirdly, the action research needs to be **Participatory**.
- Not all action research is participatory: a group of experts could get together and do action research about other people.

What is Participatory Action Research?

- Thirdly, the action research needs to be **Participatory**.
- Participatory action research means that the **people affected by a problem**, or whose lives will change due to the project, are **themselves** doing the action research.

What is Participatory Action Research?

- Thirdly, the action research needs to be **Participatory**.
- Those people are learning about the problem, developing ideas of how to change it, learning what does and doesn't work, and developing new actions to overcome new challenges.

What is Participatory Action Research?

- Thirdly, the action research needs to be **Participatory**.
- In this way, participants build their own knowledge about their world and the ways in which they can instigate change and build their capabilities to create change.

What is Participatory Action Research?

- PAR is not a specific method or group of methods.
- It can involve qualitative methods such as **storytelling**, photovoice, **documents analysis**, mapping, **semi-structured interviews**, journals, **focus groups** and more.
- It can also involve quantitative methods, such as surveys, or it can involve a mix of any of these methods (statistical studies).

What is Participatory Action Research?

- Development organisations talk a lot about 'community participation' in projects.
- PAR challenges practitioners to be **self-critical** about how deep that participation really is.

What is Participatory Action Research?

Rajesh Tandon's three criteria for participation:

- People's role in setting the agenda of inquiry
- People's participation in the data collection and analysis
- People's control over the use of outcomes and the whole process

What is Participatory Action Research?

- When PAR is carried out in a truly participatory manner, significant changes can and do occur.
- Not only do changes occur in terms of changing the problem that was originally identified, but also in participants' understanding of their community and their places in it.

Participatory Action Research vs Action Research

- Action research and participatory research are two distinct approaches to conducting research that share some similarities but also have some key differences.
- Action research is a research methodology that involves collaborating with stakeholders to identify problems, implement solutions, and evaluate outcomes.

Participatory Action Research vs Action Research

- The goal of action research is to generate practical knowledge that can be used to improve a specific situation or address a specific problem.
- Action research typically involves cycles of planning, action, and reflection, with the researcher and stakeholders working together throughout the process.

Participatory Action Research vs Action Research

- Participatory research is an approach to research that emphasizes the participation of the people who are the subjects of the research.
- Participatory research is based on the principle that those who are affected by research should have a say in how it is conducted, and should be involved in interpreting and using the findings.

Participatory Action Research vs Action Research

- Participatory research typically involves working closely with community members, listening to their perspectives and experiences, and involving them in all stages of the research process.
- The main difference between action research and participatory research is their respective foci.

Participatory Action Research vs Action Research

- Action research is primarily focused on solving a particular problem or improving a specific situation.

while

- Participatory research is focused on ensuring that the research is conducted in a way that is respectful of the people being studied and that their voices and experiences are heard and valued.

Why would you use PAR?

- It yields better and more nearly complete and accurate information from the community.
- Involving the community in research makes a positive outcome that meets community needs more likely.
- Action research trains citizen researchers who can turn their skills to other problems as well.
- Involvement changes people's perceptions of themselves and of what they can do.

Why would you use PAR?

- Skills learned in the course of action research carry over into other areas of researchers' lives.
- A participatory action research process can help to break down racial, ethnic, and class barriers.
- Action research helps people better understand the forces that influence their lives.
- Community based participatory action research can move communities toward positive social change.

Who should be involved in PAR?

- People most affected by the issue or intervention under study.
- Other members of the affected population.
- Decision-makers.
- Academics with an interest in the issue or intervention in question.
- Health, human service, and public agency staff and volunteers.
- Community members at large

Who should be involved in PAR?

- There's time to properly train and acclimate community researchers.
- The research and analysis necessary relies on interviews, experience, knowledge of the community, and an understanding of the issue or intervention from the inside, rather than on academic skills or an understanding of statistics.

When should you employ PAR?

- You need an entry to the community or group from whom the information is being gathered.
- You're concerned with buy-in and support from the community.
- You want to have an effect on and empower the community researchers.
- You want to set the stage for long-term social change.

How do you institute and carry out PAR?

- You recruit a community research team.
- You orient and train the research team.
- The team determines the questions, the research or evaluation will try to answer.

How do you institute and carry out PAR?

- The team plans and structures the research activity.
- As a team, you carry out your plan.
- The team prepares and presents a report and recommendations on its work.
- You take, or try to bring about, appropriate action.

How do you institute and carry out PAR?

- You evaluate the process.
- You provide an opportunity for team members to reflect on and discuss their learning and the effects of the experience of being involved in a p.a.r. process.
- You maintain gains by keeping team members involved.

Semi-structured interviews

- Semi-structured interviews are a type of qualitative research method that involves asking open-ended questions to explore a particular topic or phenomenon.

Semi-structured interviews

- The following is a guide to conducting semi-structured interviews:
 1. Define the research question or topic: Before conducting semi-structured interviews, it is important to have a clear research question or topic that you want to explore. This will help guide the development of the interview questions.
 2. Develop the interview questions: Semi-structured interviews are based on a set of open-ended questions, but allow for flexibility in the wording and order of questions. Develop a list of questions that will help you explore the research question or topic. Begin with broad, open-ended questions and then move to more specific questions that explore the topic in greater depth.

Semi-structured interviews

3. Choose the participants: Select participants who are relevant to the research question or topic. Consider the demographic characteristics of the participants, as well as their knowledge and experiences related to the topic.

4. Schedule and conduct the interviews: Contact the participants and schedule a time to conduct the interviews. Semi-structured interviews can be conducted in person, over the phone, or via video conferencing. Begin by introducing yourself and the purpose of the interview. Ask the questions in a conversational manner, allowing the participants to elaborate on their answers.

Semi-structured interviews

5. Record the interviews: Use a recording device to capture the interviews. Make sure that the participant is comfortable with being recorded and obtain their consent before beginning the interview.

6. Analyze the data: Once the interviews are complete, transcribe the recordings and analyze the data. Look for themes and patterns in the responses to the interview questions. Use these themes and patterns to develop a deeper understanding of the research question or topic.

Semi-structured interviews

7. Report the findings: Present the findings of the semi-structured interviews in a clear and concise manner. Use quotes from the participants to illustrate key themes and patterns. Include a discussion of the implications of the findings for future research or practice.

- Remember: to be respectful of the participants and their time, and to ensure that their confidentiality and privacy are protected. Semi-structured interviews can be a powerful tool for exploring complex topics and gaining insights from the perspectives of those who are most affected by them.

Semi-structured interview sample

- Hello, thank you for taking the time to participate in this interview. My name is [Researcher's name] and I am conducting a study on water sanitation practices in this community. The purpose of this interview is to learn about your experiences and practices related to water sanitation. The interview will take approximately [time frame] and will be audio recorded. Before we begin, do you have any questions or concerns?

Semi-structured interview sample

- Questions:

1. Can you tell me about your current water sanitation practices at home? How do you ensure that your water is safe to drink?
2. What are some of the challenges you face in maintaining good water sanitation practices? Have these challenges changed over time?
3. Have you ever experienced any health issues related to water contamination? If so, can you describe what happened?
4. Have you received any education or training on water sanitation practices? If so, can you describe what you learned and how you apply it in your daily life?

Semi-structured interview sample

5. Can you describe the water sanitation practices in your community? Do you feel that these practices are adequate for ensuring safe drinking water for everyone?
 6. Are there any policies or regulations in place in your community related to water sanitation? Do you feel that these policies are effective?
 7. Have you ever had to pay for water sanitation services or products? If so, can you describe the cost and how it affected you financially?
 8. How do you think water sanitation practices can be improved in your community? What changes would you like to see?
 9. Is there anything else you would like to add about your experiences and practices related to water sanitation?
- Conclusion: Thank you for sharing your experiences with me today. Your insights will be very valuable for my research. If you have any further thoughts or would like to provide additional feedback, please feel free to contact me. Thank you again for your time.

Survey

SURVEY.docx

Corpus Analysis

- Several techniques can be used to analyze the corpus:
 1. Word frequency analysis: Identify the most commonly occurring words in your corpus. This can help you get a sense of the overall themes and topics.
 2. Collocation analysis: Look for pairs or groups of words that commonly appear together in your corpus. This can help you identify patterns and relationships between different terms.
 3. Sentiment analysis: Analyze the overall sentiment or tone of the corpus to see whether it is positive, negative, or neutral.
 4. Named entity recognition: Identify and extract entities such as organizations, technologies, and locations that are relevant to your research question.
 5. Topic modeling: Use unsupervised machine learning algorithms to identify clusters of documents that share common themes or topics.

Corpus Analysis

- Word frequency analysis:

Depending on the document, you may need to pre-process the text before performing the analysis. For example, you might need to remove stop words (commonly occurring words such as "the" or "and"), or perform stemming (reducing words to their root form, such as "running" to "run").

1. Tokenize the text: Tokenization refers to breaking the text into individual words or tokens. (This can be done also using software tools or programming languages such as Python).
2. Count the frequency of each word: Once you have tokenized the text, count the number of times each word occurs in the document.
3. Create a frequency distribution: Create a frequency distribution to display the number of times each word occurs in the document. This can be done using software tools such as Microsoft Excel, R, or Python.

Corpus Analysis

- Word frequency analysis:

4. Visualize the results: Use a variety of visualizations to help you better understand the patterns and relationships in the frequency distribution. For example, you might create a bar chart to display the most commonly occurring words, or a word cloud to highlight the most frequently occurring terms.
5. Interpret the results: Based on your analysis, draw conclusions about the document you've analyzed. Consider the strengths and limitations of your analysis, and think about how your findings might be relevant to your research question.

Corpus Analysis

- Collocation analysis:

(Same steps of Word frequency analysis with taking into consideration the pairs/groups of words)

1. Identify candidate collocations: Identify pairs or groups of words that commonly appear together in your corpus.
2. Calculate collocation statistics: Once you have identified candidate collocations, calculate collocation statistics such as mutual information, t-score, or chi-square. These statistics help you identify which collocations are most significant and meaningful.
3. Visualize the results: Use a variety of visualizations to help you better understand the patterns and relationships in the collocation analysis. For example, you might create a network diagram to visualize the collocations and their relationships, or use heatmaps to display the strength of the associations between words.

Corpus Analysis

- Collocation analysis:

4. Interpret the results: Based on your analysis, draw conclusions about the water sanitation and conservation topic you're researching. Consider the strengths and limitations of your analysis, and think about how your findings might be relevant to your research question.

5. Write up your findings: Finally, write up your findings in a clear and concise manner, and consider how they might contribute to existing literature on water sanitation and conservation.

Methods	Tools	Data analysis
Semi-structured interview	Guide of interview (open ended) questions Video or recordings	Categorization (qualitative) Transcription
Survey	Questionnaire (descriptive data + factors)	Statistical studies
Corpus and official documents analysis	Guide for corpus analysis	Categorization

Case Study

Case study PAR_WASH.docx

Challenges and learnings

- Who clearly defines the identity groups?
- Working with self-identified sub-groups in communities
- Working within existing systems
- Group Sustainability
- Acknowledging and navigating power relationships

The key practices to ensure that the PAR approach is utilized in the best way

- Creating a safe and inviting environment:
 - ✓ Creating an environment that inspires trust in the convening body
 - ✓ Working with the PAR groups to develop safe space agreements

The key practices to ensure that the PAR approach is utilized in the best way

- Eliciting participants views and attentive listening:
 - ✓ Acknowledging the implicit, body language and emotions that people are expressing (especially when working across multiple languages, different disability groups ...)
 - ✓ Considering local languages, local sign language and appropriate forms of inquiry, learning, planning and interaction techniques

The key practices to ensure that the PAR approach is utilized in the best way

- Exploring ways to accommodate differences in language, ability, meaning and symbolism:
 - ✓ Building on local forms of inquiry, learning, planning and interaction that are well established and work well in either literate or non-literate contexts as well as appropriate for both the deaf and blind community members

The key practices to ensure that the PAR approach is utilized in the best way

- Building on group and individual differences:
 - ✓ Paying attention to differences in views and knowledge that may affect how people assess the same issues
 - ✓ Forming sub-groups based on age, gender, marital status, religion, type of disability, their local village, and other relevant indicators

The key practices to ensure that the PAR approach is utilized in the best way

- Clarifying the community members goals at each and every PAR session:
 - ✓ Discussing and clarifying what people expect from a process
 - ✓ Use various forms of attentive listening to make sure people's expectations are clearly understood

The key practices to ensure that the PAR approach is utilized in the best way

- Reflecting on process with the PAR community and within the logistics and facilitation team:
 - ✓ Welcoming questions or comments about the process being used in a discussion
 - ✓ State what needs to change in a positive way and adjust when possible
 - ✓ When unsure on how to proceed, share doubts with the PAR group and ask for help

The key practices to ensure that the PAR approach is utilized in the best way

- Encouraging creative expression:
 - ✓ Using humour, games, physical movement, ice-breakers and other forms of creative expression to build awareness, energise the group and connect to emotions. This helps facilitate teamwork, release tension and ground learning in real-life settings

The key practices to ensure that the PAR approach is utilized in the best way

- Choosing the right technology and facilitation techniques, and changing them collaboratively with input with the PAR groups when they don't work:
 - ✓ Determining what facilitation techniques and technology should be used
 - ✓ Determining how to gather and analyse information with the support of visual or physical or tactile tools (for PwD) that help understand and discuss patterns emerging from the findings

The key practices to ensure that the PAR approach is utilized in the best way

- Choosing the right technology and facilitation techniques, and changing them collaboratively with input with the PAR groups when they don't work:
 - ✓ Deciding whether to use drawings, objects, flip charts, note taking or floor democracy to facilitate data collection and analysis
 - ✓ Making a list of the supplies and equipment needed for each discussion (such as cards, post-its, masking tape, scissors, markers of different colours, drawing paper, flip charts and stands for all groups, a laptop computer and video projector, etc.)

The key practices to ensure that the PAR approach is utilized in the best way

- Being flexible, adapting and changing according to the group's needs:
 - ✓ Being able to change plans and adjust or replace a tool with a different one along the way
 - ✓ Having a clear understanding of where the group wants to go with an inquiry helps manage the change
 - ✓ Varying the methods and the kinds of activities and facilitation techniques used, if only to avoid fatigue

The key practices to ensure that the PAR approach is utilized in the best way

- Managing time:
 - ✓ Planning enough time to go through all the steps of a PAR tool, with breaks during the process as needed
 - ✓ The group may decide at any time to stop the exercise, find more information about the questions being raised and complete the exercise later
 - ✓ Saving time by dividing the group into smaller groups, and then asking each one to complete one part of the assessment

The key practices to ensure that the PAR approach is utilized in the best way

- Adjusting the level of participation:
 - ✓ Planning realistic ways to help people participate in an inquiry process
 - ✓ Having multiple facilitators working with different groups with different needs
 - ✓ Having several tools aimed at achieving the same outcomes to adjust level or skills, abilities and time

Recommendations

- Engage in more consistent and more public practices of self-reflexivity about the risks, challenges, and failures of starting and maintaining a Participatory Action Research project.
- Building Relationships: Moving towards more transformative ways of working with marginalised people.

Recommendations

- Leverage transdisciplinary planning theories, methods, and tools, seek out multiple epistemological standpoints and engage in systems thinking:
 - ✓ A key operational element underlying the PAR project is the use of 'systems thinking' as a set of tools for integration
 - ✓ The primary theories used to inform the systems thinking and facilitation in practice are: human's principles, rights-based research, participatory research principles

Recommendations

- Engage in inclusive and consistent dialogue about risk assessment, concerns, and contextual issues with all stakeholders.
- Ensure careful evaluation of how the project fosters inclusion, distributes power, and moves toward outcomes that are more just from all stakeholder perspectives.

7.2 – Survey

Introduction: Hello, thank you for taking the time to participate in this survey. The purpose of this survey is to gather information about water sanitation practices and experiences in your community. This information will be used to identify areas for improvement and to develop strategies to ensure safe drinking water for everyone. Your responses will be kept confidential and will only be used for research purposes.

Questions:

- What is your age range?
 - Under 18
 - 18-24
 - 25-34
 - 35-44
 - 45-54
 - 55-64
 - 65 and above
- What is your gender?
 - Male
 - Female
 - Other (please specify)
- How long have you lived in your current community?
 - Less than a year
 - 1-5 years
 - 6-10 years
 - More than 10 years
- How often do you drink tap water at home?
 - Daily
 - Several times a week
 - Once a week
 - Rarely
 - Never
- How concerned are you about the safety of your tap water?
 - Very concerned
 - Somewhat concerned
 - Not very concerned
 - Not at all concerned
- What water sanitation practices do you follow at home? (check all that apply)
 - Boiling water before drinking
 - Using a water filter

- Adding chlorine or other disinfectants to the water
 - Using bottled water
 - Other (please specify)
- Have you or anyone in your household ever experienced any health issues related to water contamination?
- Yes
 - No
 - Not sure
- How would you rate the water sanitation practices in your community?
- Excellent
 - Good
 - Fair
 - Poor
- Have you ever had to pay for water sanitation services or products? If so, can you describe the cost and how it affected you financially?
- How do you think water sanitation practices can be improved in your community? What changes would you like to see?

Conclusion: Thank you for taking the time to complete this survey. Your responses will be very valuable for our research. If you have any further thoughts or would like to provide additional feedback, please feel free to contact us. Thank you again for your participation.

7.3 – Case Study WASH

CASE STUDY

Water, Sanitation and Hygiene (WASH) has been a core focus of many development agencies: improving access to clean and safe water and sanitation services and facilities, together with good hygiene practices is of the utmost importance in ending preventable disease and increasing the quality of life for millions of people worldwide. WASH is a basic human right for everyone not just for survival but also to support thriving in life. Increasingly, greater attention has been paid to the social, rather than purely technical and environmental, dimensions of WASH. Non-governmental organisations (NGOs), community based organisations (CBOs), multi-lateral agencies and governments alike have been bringing to the centre the need to understand how gender and other intersectional identities impact a person's ability to access safe and sanitary WASH facilities and how WASH interventions can be used as a 'vehicle' and entry point towards contributing to strategic gender and inclusive outcomes.

As part of their commitment to WASH and gender equality, the Australian Government's Department of Foreign Affairs and Trade (DFAT) created the Water for Women Fund (WFW). This four and half years (since 2018), 110.6 million Australian Dollar investment supports 18 projects across 15 countries in the Asia Pacific region to "support improved health, equality and wellbeing in Asia and the Pacific communities through socially inclusive and sustainable water, sanitation and hygiene (WASH) projects". This commitment includes making WASH more accessible for women, people with disabilities (PWD) and other marginalised groups. The Fund also has an intention to 'push the boundaries' of creating transformative change in some of the poorest regions in the Asia Pacific.

Context :

In Indonesia, WFW is partnering with Plan International Australia (PIA) and Yayasan Plan International Indonesia (YPII) to implement the "WASH and Beyond – Transforming Lives in Eastern Indonesia" project in five districts in Eastern Indonesia. The project has four long-term outcomes:

- End of Project (EOP) Outcome 1 -System strengthening: Government of Indonesia (GoI) and private sector invest and deliver gender equality and socially inclusive (GESI) sanitation and hygiene (STBM) in two project districts (including implementation and replication).
- EOP Outcome 2 -WASH access: 450,000 people (227,000 females, 223,000 males) in 19 sub-districts including marginalised groups (particularly women, girls, PwD) have equitable universal access to, and use, sustainable WASH services

- EOP Outcome 3 –GESI outcomes/‘beyond WASH’: Marginalised people including women, girls, PwD are agents of change in claiming their rights in households, communities and public domains.
- EOP Outcome 4 –Evidence and influence: Practices of national and international actors are informed by project evidence.

Edge Effect, a social enterprise that supports development and humanitarian agencies to work in genuine partnerships with marginalized individuals and communities, supported the development of, and are leading activities to deliver, the project’s EOP Outcome 3. Much time and investment were spent to set up the tri-party partnership involving YPII, Edge Effect and PIA. This has included developing joint ‘Ways of Working’ protocols to support working together, such as being clear about roles and expectations.

To achieve the project’s EOP Outcome 3, Edge Effect and YPII (with the support of PIA), alongside marginalized groups in the five distinct in Eastern Indonesia, are using Participatory Action Research (PAR) as the project’s principle approach to exploring WASH issues in local communities. This approach allows the team to unearth local WASH priorities, and support locally led actions around increasing advocacy and rights to safe, accessible and inclusive public WASH. One of the primary objectives of this project is to increase knowledge of rights, confidence, self-awareness and capacity to act within the groups of women and PwD involved in the PAR. The PAR approach therefore contributes to achieving practical WASH accessibility for marginalized people, whilst at the same time also contributing to shifting power dynamics that are the root causes of entrenched inequalities within the project area.

Using PAR to transform lives in Eastern Indonesia:

It is transformative PAR philosophy that the WFW project tri-party partnership employs within the project. In Ruteng (Manggarai district, Nusa Tenggara Timur province) and Sumbawa (Sumbawa district, Nusa Tenggara Barat province), this means creating spaces for, and providing support to, marginalised women and PwD that enables them to recognise and assert their rights and needs for accessible and dignified public WASH. To begin scoping visits and trial PARs were undertaken within the project area to guide future PAR processes including group selection, group discussion of ways of working, PAR in development and cross-linguistic contexts, and support for PAR group activities between PAR sessions. Through this preparatory phase, some PwD in one project district made clear that their preference was to work within a PAR group with people having the same disabilities (rather than a general people with disabilities PAR group) so as to be able to closely relate experiences with each other. This illustrates the

importance of the scoping and trial PARs, as this issue would not otherwise have been uncovered. In response to this preference the PAR design was adapted to accommodate for five (rather than two) PAR groups across the two project districts of as indicated in the following table:

Group Number	Group	Number of participants
1	Sumbawa women's group	15
2	Sumbawa PwD group A Women and men who are deaf, or who have physical disabilities	17
3	Sumbawa PwD group B Women and men who are blind or have visual impairment	17
4	Ruteng women's group	15
5	Ruteng PwD group Women and men who are blind or have physical disabilities or intellectual disabilities	9

Table 1: PAR groups within Plan's 'WASH and Beyond –Transforming Lives in Eastern Indonesia' project

To support the women's and PwD PAR groups, the project has designed for 6 iterative PAR cycles comprising of: 1) Experiencing (share); 2) Reflection (think); 3) Planning (plan); and 4) Action (act), as shown in Figure 1. The iterative cycles of the four stages allows for PAR group members to collectively identify WASH issues that impact the group the most, and lead their own changes without the WFW project tri-party partners making assumptions and leading them towards particular changes. This process intentionally puts the power in the hands of marginalized people as part of the transformative journey.

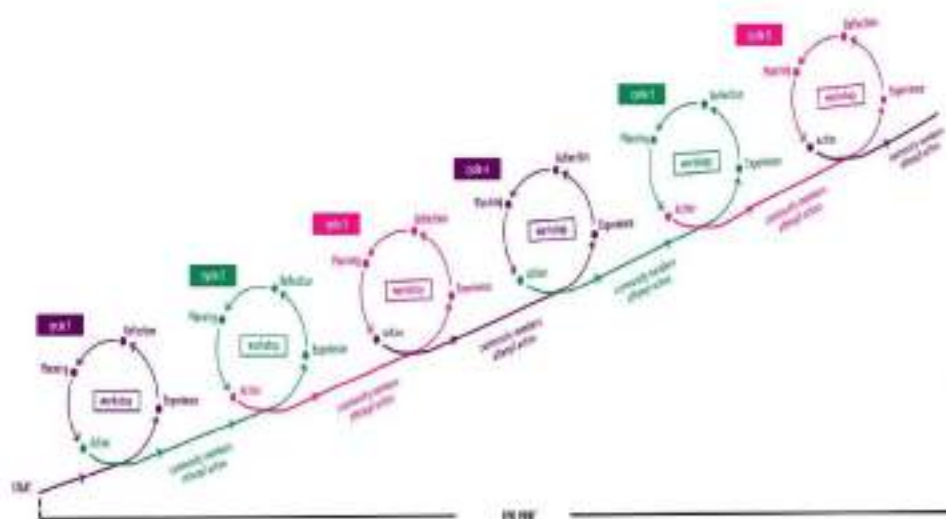


Figure 1. The project's iterative PAR cycle process

Tandon's (2002) three criteria for participation were used to develop the PAR groups and sessions. Additionally, the project established district-level Leadership and Reference groups including PAR group members, women's and disabled persons organizations (DPOs), government representatives (village, sub-district and district levels), and community leaders. The Leadership and Reference groups foster collaboration between marginalized people with the wider community and reduce anticipated challenges in advocating for inclusive and safe WASH, including by talking directly to district-level decision-makers who can make decisions that support cohesive communities. Additionally, YPII has offered PAR group members facilitated workshops for learning and understanding WASH more comprehensively.

Setting the agenda of inquiry:

In the WFW project to date the five PAR groups of marginalized women and PwD (women and men with disabilities) have worked together to prioritize the WASH issues most relevant for each group. Over the two districts, two main priorities were identified: safe, accessible and inclusive public toilets; and cleaning up waste in local urban villages and waterways.

Urban waste in waterways is a significant challenge in Indonesia. Plastic in particular is very easy to find in daily life in Indonesia: in coffee cups, shopping bags, snack packaging, bottled water. It's everywhere. For the women's PAR group in Ruteng, the focus has been on solid waste because women are concerned for their children's health: when the waste collects in

open drains, it ultimately blocks pipes; and when pipes are blocked, water backs up creating breeding grounds for mosquitoes, which brings malaria and other mosquito-borne illnesses; during rainy season, the blocked drains cause flooding, which means contaminated water (and the mosquitoes it attracts) flows into nearby houses; when the pressure of the water builds up, the waste, including the oils and chemicals it contains, is pushed into rice fields, throwing the delicate ecosystem of rice paddies out of sync and killing the fish that both eat malaria-causing mosquitos and are relied upon as a food resource for women and their families; this results in not only poor rice crops, which increases the cost of rice, but means women need to buy fish rather than simply harvesting the fish from their rice paddies. Plastic waste thus increases the risk and incidence of disease, exacerbates food insecurity, and increases financial precariousness for women in Ruteng.

For the women in Sumbawa, blocked toilets were identified as the first WASH challenge. When asked some probing questions, they shared that sewerage drains are blocked because of solid waste. The women of Sumbawa suggested the reason may be because the waste is not consistently nor hygienically disposed of: household waste is often thrown directly in the local river or stored in rice sacks outside houses that local dogs rip into and then spread throughout the urban villages. The rubbish in the river means that it is no longer considered healthy enough to actively grow vegetable crops in, and fishing in the river is now non-existent. The issue of private household toilet blockages revealed a lack of solid waste collection service and led Sumbawa women to choose to focus on waste as their agenda for the PAR WASH inquiry.

The women's PAR group in Ruteng observed that plastic waste was the greatest challenge because it is visible and ubiquitous in their community. It was only through guided reflective practice and conversations that the entire story of waste emerged: that it not only was unhygienic and a nuisance, but that it inadvertently increases food insecurity and financial precariousness for women and their families. Furthermore, the process of identifying why waste is so harmful was in itself an opportunity for the PAR group women to share knowledge of their communities in a way that is contextually appropriate. For example, Lita's (a female PAR participant) analysis was "As we see rubbish everywhere in rivers and waterways, and that it eventually causes illness and flooding, our group decided on this purpose for the PAR". If, for instance, an expert had come in and told these groups, using diagrams and quantitative studies, that plastic waste and toxins have a negative effect on rice productivity, or fish farming, or vegetable crops in the river, the real-life implications and backward linkages would not be as powerfully identified.

Both of the PwD PAR groups in Sumbawa are focusing on improving public toilet facilities. One group is made up of mostly young adults, who enjoy hanging out at the local park. Dea, one of the PAR participants, reflected "the issue of toilet is a problem that a solution must be sought for, both individually and in groups". Unfortunately, there are significant barriers to this very important social and community connection; the public toilets located in and around the park are not universally accessible. This means that this cohort of young PwD are often isolated from their friends or they have limited access to the park dependent on very personal circumstances.

People leading data collection and analysis:

As the outcomes of the PAR prioritization sessions described above demonstrate, the PAR process necessitates reflection and collaboration within participant groups. This requires and produces data.

As described in the previous section the women PAR group in Sumbawa are focusing on reducing solid waste in the environment - explicitly in relation to the local waterways and the river. They are now actively leading a local action research process and leading some PAR workshop activities. They are involved in data collection, taking photos as documentation and creating a survey, with 60 responses from local community members. Their findings relate to who throws their rubbish in the river, and why. Analysis of data from the surveys, has allowed the women's PAR group to know who gets solid waste pick-up, and who doesn't and whether this service is considered affordable or not. Findings show both that the waste collection trucks can't get into the small alleyways where the people near the river live, and that for some the cost of solid waste collection is unaffordable.

The PwD PAR group in Ruteng, who are also focusing on solid waste, have also undertaken a survey of local knowledge of waste collection services. The group collected 43 surveys from people in 10 urban villages, finding out that there was little understanding from community members about waste collection, if it costs money, if it happens, and if so, how often. This led them to find the relevant local government policies on solid waste collection and they are now starting up a community awareness campaign with the local radio station. Remi, a PAR participant, expressed "I'm very, very happy with the issues we [the PAR group] chose because they are relevant to what is happening in the community. I am proud of the group's actions taken, even though there are challenges in carrying out the actions".

The PwD PAR group A in Sumbawa, which identified as their priority an agenda of safe, accessible and inclusive public toilets, has been working to map the location and condition of current public toilets in Sumbawa. They took photos of toilets to highlight the lack of safety, accessibility and

inclusiveness. In response, and working together, the group then agreed on a set of universal design principles, and developed a flyer outlining their advocacy goals of safe, accessible and inclusive public toilets. Creation of this flyer drew on contributions from all members of the group: some members took photos, others designed the flyer, and others drafted the words for the flyer. As a group, they then created a petition to hand out to the public. As a strategic move to strengthen the petition's call for community change, the group also focused on obtaining support from other people and groups that would use accessible toilets in the local parks, including older people and parents with young children.

The PwD group B in Sumbawa started with a community mapping exercise, mapping all the public toilets they use in the local area. They then began talking to GoI officials who spoke of a commitment to accessible toilets in the hospital and health centres. Enthused to hear about this commitment and existing support, the PwD group B developed a basic tool to assess the accessibility of public toilets, which they used while visiting the specific toilets within their self-defined PAR scope. When trying to visit the supposedly accessible toilets in the local hospital which the local officials talked about, to carry out the assessment the group was told it was only for high fee-paying clients, demonstrating that inclusive practice continues to lag behind official commitments and rhetoric. The group has since created a Facebook page documenting the stories of PwD and the lack of safe, accessible and inclusive toilets. Many people in this particular group are involved in locally led massage clinic run by the blind organisation, Himitras. They are asking their massage clients to 'like' and share the Facebook page with their friends, ensuring the page goes beyond the networks of people with disabilities.

The PAR groups are using their lived experiences and local knowledge as opportunities to focus on building increased advocacy skills. For example, the women's PAR group in Ruteng have taken photos showing the process of waste deposits in Ruteng town, creating resources to utilise in their advocacy campaigns. This increased their ability to be assertive, action their knowledge about rights, and show their capacity to act. The women have used their newly formed confidence, skills and knowledge to already generate some concrete outcomes from the project: building support with local arisans (community prayer groups) and organising monthly clean up days in their Kelurahan (urban villages); successfully advocating to the local government for bins made from old large oil drums to be re-purposed into rubbish cans; and securing commitments from local village leaders to collect rubbish from specific pick up points. The group is now working alongside the

local department of the Gol's environmental agency to think about more systemic changes that can be made.

Between each PAR session there is 8 weeks during which all of the PAR group participants are learning and practicing the skills necessary to hold combined bi-monthly community meetings, taking turns to create agendas, take minutes, facilitate community discussions and learn from each other. Community meetings are underway in both Sumbawa and Ruteng and are regularly attended by local Gol leaders, religious leaders and other interest groups like women leaders, traditional leaders and disability leaders. These in Leadership and Reference group meetings create opportunities for marginalised community members to increase their knowledge about GESI rights, dialogue with Gol decision-makers at a district level, and create advocacy opportunities for changes in Gol decision making, furthering the platform for Gol to adopt safety improvements within city WASH planning and decision-making.

The strength of the PAR processes described above lies in working alongside community members as leaders and lived experience experts. This is exemplified by Hadijah's (a PAR participant and person with disability) reflection, "I was very happy when deciding on our groups' goals. I am personally very happy and proud, because people with disabilities were able to decide on what actions to take, as usually people with disabilities are still underestimated". Facilitating skill development predicated on community input is the driver of change in this project. Building the advocacy skills of the participants - driven by implementing advocacy projects instigated by marginalised communities themselves - captures the success of experiential learning and is supporting increased advocacy by these communities, and the achievement of the rights of marginalised groups for safe, accessible and inclusive WASH.

Snapshot of successes to date:

Overall, the 'WASH and Beyond - Transforming Lives in Eastern Indonesia' project work is leading to progress against its four EOP outcomes, and some PAR participants could already be said to be 'agents of change' (Project EOP Outcome 3).

Significant progress has been made in achieving the anticipated GESI changes. The PAR process has been successful in increasing confidence, assertiveness, knowledge and capacity to act; and women and PWD (people living with different seeing, hearing and physical disabilities) participants are actively involved in evidence gathering, planning, taking actions and reflecting on results. The women and PwD PAR groups have action plans to improve public WASH and have undertaken data collection such as

monitoring the accessibility of toilets against a community-generated checklist. Women and PwD groups have met with district government and other community leaders to successfully advocate, for example, for a solid waste collection program. The ability to achieve these changes should not be underestimated. A five-point monitoring, evaluation and learning (MEL) process is being used to assess PAR facilitation to track participants' views regarding group cohesion, group purpose, relevance and leadership, pace and community learning. Further, a multi-dimensional 'Star Tool' is being used to focus on outcomes for the group, and to track community perceptions of key WASH indicators. To support men, boys and community leaders towards GESI, they have been included in several project related STBM (sanitation and hygiene) GESI trainings/meetings and learning events at sub-district and district levels.

As an example of the results to date, the Ruteng women's PAR group's efforts so far has resulted in: 1) The GoI have placed a series of public bins along the roads in the main town; 2) GoI have officially endorsed a monthly urban village clean-up; 3) The Camat (head of sub-district) has made his car available for mobilising this monthly clean-up; and 4) The Camat has formalised (decreed) this women's group as part of the village STBM team in each of their respective villages.

An unexpected outcome has been three marriages of people that met within the PwD PARs, and one of these couples are currently pregnant. The benefits of bringing people together around a common cause can be love!

Annex 8 – Training Evaluation Form



مشروع ترشيد إدارة المياه والصرف الصحي في
لبنان

تقييم جودة وفعالية التدريب حول "ترشيد إدارة المياه والصرف الصحي"

إن رنكم على هذا الاستبيان مهم جداً في مساعدتنا على تقييم فعالية ونوعية التدريب. الرجاء الإجابة على جميع الأسئلة.

تتراوح الأرقام بين 1 و 4 بحيث أن (1) يرمز إلى المعدل الأدنى و (4) إلى المعدل الأعلى.

شكراً لتعاونكم!

التاريخ:

إسم المدرب:

عنوان ومكان التدريب:

1- محتوى التدريب / التوجيه	
هل محتوى التدريب واضح وسهل الفهم؟	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>
هل محتوى التدريب منظم تنظيماً جيداً؟	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>
هل قام التدريب بتلبية الاحتياجات الخاصة بك أو توقعاتك؟	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>
هل زادت مهارتك / معرفتك بسبب التدريب؟	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>
هل ستكون/ستكونين قادر/ة على تطبيق ما تعلمته خلال التدريب على وظيفتك؟	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>
كيف تقيم/تقيمين التدريب ككل؟	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>

2- التفسير	
هل كانت المدرب/ة ملماً/ة بموضوع التدريب؟	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>
هل شجعت المدرب/ة المشاركة خلال التدريب؟	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>
هل قام/ت المدرب/ة بتحضير جيد ومنظم؟	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>
هل قام/ت المدرب/ة بالتواصل بوضوح وفعالية؟	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>
هل تم الرد على أسئلتك بوضوح؟	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>

3- مكان التدريب	
هل كانت غرفة التدريب والمرافقات كافية ومريحة؟	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>
هل كانت المساعدات البصرية مفيدة في فهم المواد التدريبية؟	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>

4- ملاحظات

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Annex 9 – Active Methods Used

Below is a description of the active methods used:

Active methods	Description
Brainstorming	Brainstorming is a method of generating ideas and sharing knowledge to solve a particular problem, in which participants are encouraged to think without interruption. Brainstorming is a group activity where each participant shares their ideas as soon as they come to mind.
Situational analysis	Situation analysis is basically the process of critically evaluating the internal and external conditions that affect an organization, which is done prior to a new initiative or project. It provides the knowledge to identify the current opportunities and challenges to your organization
Conceptual change	Conceptual change is a particularly profound kind of learning—it goes beyond revising one's specific beliefs and involves restructuring the very concepts used to formulate those beliefs. Explaining how this kind of learning occurs is central to understanding the tremendous power and creativity of human thought.
Conceptual map	A concept map is a diagram or graphical tool that visually represents relationships between concepts and ideas. Most concept maps depict ideas as boxes or circles (also called nodes), which are structured hierarchically and connected with lines or arrows (also called arcs).
“Future wheel” or “Problem tree analysis”	Problem tree analysis (also called Situational analysis or just Problem analysis) helps to find solutions by mapping out the anatomy of cause and effect around an issue.
Focus group	A focus group is a research method that brings together a small group of people to answer questions in a moderated setting.
Flipped pedagogy	Flipped classroom is a “pedagogical approach in which direct instruction moves from the group learning space to the individual learning space, and the resulting group space is transformed into a dynamic, interactive learning environment where the educator guides students as they apply concepts and engage creatively in the subject matter.
Videos + discussion	
Interactive presentation	

Role play	Role-playing takes place between two or more people, who act out roles to explore a particular scenario.
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