

# Planning of a FTTX Network Build Project

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Please review the Case Study and answer the Scoping Questions while waiting for session to begin



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## Case Study: FTTX Network Build Project

- HHP: 629 SFU (99 are Mobile Homes); 16 Duplex Units (32 units); 2 MDU with ( units in one and 8 units in other; 11 Churchs; 2 Cell Tower; 10 Government; 68 SBU (stand alone)
- Take Rate Anticipated: SFU 62%; DPLX 100%; MDU 100%; Government 100%; SBU 100%
- Construction Technique: F2 route = Aerial - 147 poles, F3 route = underground - 147,894 centerline road feet (28 miles)
- Rights-of-way: Behind of curb/edge of pavement, Major highways on backside of embankments nearest fence lines
- Minimal sidewalks, minimal curbs predominantly dirt shoulder
- Responsible for F2 and F3, as well as 100% customer service drops
- Regulatory mandate that project must occur and be completed within 9 months

# Case Study: FTTX Network Build Project



- Write your answers down in your notebook
- Answer the questions individually not as a group
- If you are not sure of the answer reflect that in your notebook, but also identify what steps you will take from which person (people) to obtain the required information
- Please note we will be referring to these questions and answers throughout the day, as such write your answers where you can easily refer to them throughout the day.
- Please do not look at how you may currently be executing projects, assume that your assignment as Project Manager is not to manage the contracted Vendor who is assigned turnkey responsibility but rather you are the PM responsible for the turnkey delivery of your project. As such if it makes it easier for you to understand this, then consider yourself the Vendor Project Manager.

# Scoping Questions #1

After reading the Project Scoping, please write down the answers to the following questions:

1. What is the specific **objective** of this project?
  - What would be the result of failure to meet the objective of the project?
2. What is the **time table** for this project?
  - What would be the result of failure to meet the timetable of the project?
3. What is the measurement for **success** for this project?
4. Are there any **outside dependencies** for this project?
5. What are the **limitations** on this project?

## Scoping Questions #2

6. Are any **Stakeholders** identified? If so, who are they?
7. What is the **SCOPE(s)** of the project?
  - Specific:
  - Measurable:
  - Achievable:
  - Relevant:
  - Time-Bound:
8. What **skill sets** are required for this project core staff?
9. What **special tools** will be required for the execution of this project?
10. What **Risks** can be identified for this project?

Telecommunications Project Management  
for  
FTTX Deployments

## Creating a realistic and achievable plan for the project

- Be **honest** with your forecasts!
- Solicit expertise in areas where you are not sure of the specifics (the project is not accomplished in the void, why should the plan be accomplished in the void?)
- Attempt to create core project team to assist in developing initial plan
- Recognize it is a living document so changes will happen
- Use the acronym – SMART - in developing the Deliverables Breakdown Structure (DBS)
  - Specific
  - **Measurable**
  - Achievable
  - Relevant
  - Time-bound

**ALWAYS PLAN BEFORE EXECUTING!**



# Working within project constraints

Constraints are those items that could impede the execution of the project. Some example are:

## **The Obvious:**

- No PLAN – just Execution
- Matrix organization
- Weather
- Budget
- Time Allowed
- Unions and labor
- Materials
- Regulatory approvals
- Site Acquisition

## **The Not So Obvious:**

- Team Morale
- Improperly defined scope (this is not scope creep because you did not really define the scope!)
- Poor Contract and or Procurement structure
- Corporate Politics
- “The BLAME Game”
- The ‘Over-Doer’

**List at least (5) constraints of each - ‘Obvious’ and ‘Not so Obvious’, other than those identified above.**

# Applying a project framework for **SUCCESS** (1)

All projects is like starting a new business.

- You have a **mandatory launch date** because you need to create revenue to pay for the business
- You have a **set amount of money** that you can spend because that is what the bank or your investor have provided
- You have to have a **quality product** so that your business can sell to its target customers
- You have **limited amount of resources** (manpower and equipment) so you have to maximize what they contribute to the business development phase
- You have to **communicate** about your product to its target clients and deliver on what you state

In other words you have to have a **PLAN** to create your business, a **PLAN** for how much **MONEY** you need, a **PLAN** for when it will begin creating revenue linked to the quality of the product. But also importantly you have to **COMMUNICATE** this **PLAN** to your target customers!

## Applying a project framework for **SUCCESS** (2)

- Be a **LEADER** not a **MANAGER**!
- Communicate, communicate, communicate – with ALL parties, not just a selected few.
  - Communications is not just emails and status report, it is face-to-face communications, it is personal delivery not impersonal ‘thrown over the wall’ information
- **PLAN** before **EXECUTION**
  - Even with a tight deadline, **PLAN** for successful delivery within the allotted timeframe, budget, while delivering the expected quality; or, **EXECUTE** and ask for more time, money, and forgiveness on the lack of quality!
- **MANAGE** the Project **PLAN**, **LEAD** the Project **TEAM**
  - Focus on the big picture as defined in the project plan, do not allow scope creep
  - Trust your Team

# Building a Project Charter or Scoping (PMP) (1)

- Normally we are not given a detailed project specification. Depending on the type of project it is (new technology roll out, network coverage expansion, upgrading of existing systems, etc.) the level of documentation provided will vary.
- As the Project Manager, we have to understand that no matter what type of project it is, we will never get the level of detail that we need to properly PLAN and EXECUTE the project. After all that is **OUR** job as the Project Manager to develop the Project PLAN with all its associated content (deliverables, schedule, BUDGET, execution plan, etc.).
- The key is to know what are the RIGHT questions to ask.

**Answer the next slide questions using the Case Study as the project you are addressing.**

## Building a Project Charter or Scoping (PMP) (2)

1. My organization's mission is to:
2. My Project helps achieve this mission by:
3. The Corporate Sponsor for my project is:
4. My project will increase the value of the business by (action or result):
5. The project was approved by (person, level in organisation):
6. I was involved in setting the budget and schedule: Yes/No
7. I have control over the resources required to complete the project: Yes/No
8. This project ranks \_\_\_\_\_ in the priorities of the business.
9. The importance of this project will be affected by (people, politics, other factors):
10. The ultimate (final) customer for the results of my project is:

# What is a Project PLAN? (1)

Is a Project Plan:

- A schedule?
- A Gantt Chart?
- A work breakdown structure (WBS)?

## **If none of these then what is it?**

It is a quantifiable document that clearly identifies why the project is needed and how it will be delivered in level of detail that is needed to successfully deliver the project product(s) in a predictable manner that can be tracked by all interested (affected) parties.

# What is a Project PLAN? (2)

This plan will include as a minimum the following information:

- **Overview:** Why the project is being conducted and its primary objectives
- **Scope:** Business needs, requirements, deliverables, constraints and work breakdown structure
- **Schedule:** Activities schedule and project milestones
- **Costs:** Project budget and its funding approach
- **Quality:** Quality measurement and control approach
- **Project Team and Resources:** The people working and resources needed on the project, with associated roles and responsibilities and usage
- **Communication:** Communication type, channels and the reporting approach
- **Risks:** Risk index, methods to identify and evaluate risks, risk mitigation and contingency planning
- **Procurements:** Required procurements and purchase processes
- **Closure:** Closure approach, including the deliverables hand-off protocol
- **Changes:** Procedures used to track changes in the project
- **Baselines:** Scope, schedule and budget baselines

# Project Planning

Developing the Project Plan is the MOST CRITICAL process of the project. However, most projects assigned to us, due to a perceived time schedule we begin to **EXECUTE** prior to developing a **PLAN**.

(refer to the LinkedIn print out in your materials “Project without a Plan is.pdf”)



What is most interesting in these comments is the acknowledgement of the need for the plan for the project to succeed, but a full recognition that most telecom projects go forward WITHOUT a PLAN! Why?

**Reflect (5) reasons you believe that a project goes straight into EXECUTION phase thus no PLAN.**

**Now take those (5) reasons and write down what you believe the outcome of your project will be like.**



# 6-Step Planning Process

# Step 1: Defining the Project Workload (1)

- Define who the Stakeholders are and ask them:
  - Individually, how they define the Project as being successful
  - Compare what each of them state as the measurement of 'Project Success'
- Ask each of your Project Core Team what they define as 'Project Success'
  - Compare what each of them individually state is a measurement of 'Project Success'
  - Compare what each individually state to the Stakeholders measurement of 'Project Success'
  - If the team is not in agreement, then 'Hidden Agendas' will be prevalent in the Execution

**Here is your first major challenge, you have to get an agreed upon definition of how the project will be measured as being successful!**

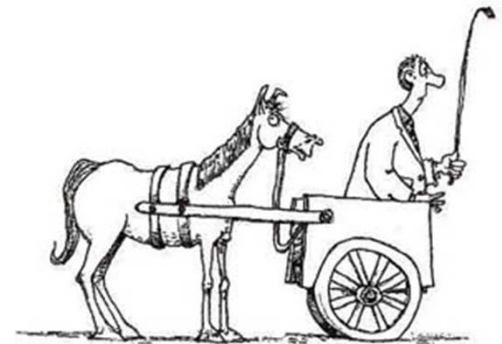
**Write down what you would state is the measurement of success of the Case Study assigned Project.**

## Step 1: Defining the Project Workload (2)

- Absent an agreed upon definition of project success, you will never be able to define what the deliverables are to accomplish the project!  
**No deliverables no need to execute the project! Or in other words no need for a project!**
- Develop a detailed Deliverables Breakdown Structure (DBS)
  - This is different than the WBS, as this is focused solely on what the project is to deliver not yet how it is going to be delivered

**Creating a WBS before the DBS is 'putting the cart before the horse'**

**Write down the deliverables that you believe is associated with the Case Study assigned project.**



## Step 1: Defining the Project Workload (3)

- Once you have the DBS, then you need to define what it will take to deliver each of the identified deliverables.
- For each deliverable, break it down into quantifiable steps that are needed to be taken to accomplish that specific deliverable.
  - DO NOT get confused, if the deliverable is part of the whole system, then the deliverable is what it means to make it ready to be integrated into the next deliverable. Keep things small enough to measure positive progress.
  - When breaking down the deliverables use the following method:
    - Specific
    - **M**easureable
    - **A**chievable
    - **R**elevant
    - **T**ime-Sensitive

**Using the SMART process, take the deliverables you identified previously and apply this process to define at least (3) of your deliverables.**

## Step 2: Building High-Confidence Estimates (1)

- The **VERY FIRST** time the Stakeholder(s) **SEEs** or **HEARS** anything related to the project they will state that is unacceptable and will then respond with their expectations (time, cost, and product).
- Unless the Project Manager properly manages this statement, the Stakeholders statement will become the Stakeholders expectations regardless of any future documentations that states otherwise
- **Projects are NOT about ESTIMATES!**
- Estimates are volatile and Stakeholders do not easily accept any variations from the initially presented information as acceptable, regardless of what you state when presenting the information
- This is why when we are given a project, there is normally already a budget assigned, a mandatory launch date associated with it, and a perceived resource requirement (after all there is a budget already assigned)

## Step 2: Building High-Confidence Estimates (2)

- Any Project Manager that develops the budget, schedule, and DBS in the void, is a Project Manager that is asking for a failed project!
- **First stage** never accept or create a SWAG (**Silly Wild Ass Guess**)
  - If you have a team someone will have experience, if you do not, then someone – somewhere in the world has experience – communicate with them and then quantify their statements
- **Second Stage** – break down the DBS into the lowest level of action that can be linked a specific resource
  - If there is more than one resource to the associated action, then you have not broken it down to the lowest level yet!

**Take your previously developed deliverables for the DBS, and break it down into the lowest level of activity that can be linked to a specific resource.**

## Step 2: Building High-Confidence Estimates (3)

- **Third stage** identify any RISKS associated with each deliverable – as identified using the SMART process
  - Do not belabor how to mitigate, reduce, or accept the risk at this stage, just identify what it is as it relates to the specific DBS item
- **Fourth Stage** – If you did not perform the specific task or activity, what would be the impact to the deliverable?
  - Any information used quantify it, never accept it at face value
  - While you may have been able to break it down to one specific resource (individual), if that is based on an assumption, then it is not necessarily accurate, so validate the assumption
    - Every assumption needs to be broken down into inter-dependencies

**Take the DBS deliverable identified in the Second Stage, and identify any Risk associated with the deliverable.**

**Take the DBS deliverable you identified in Second Stage question, answer the question.**

## Step 2: Building High-Confidence Estimates (4)

- **Fifth Stage** – When assigning a resource to a task associated with delivering a DBS item, clearly identify the who and the what that will be delivering it
  - **DO NOT USE GENERIC IDENTIFICATION** for the resource, this will create an artificial view that will result in a mistake in the schedule, dependencies, cost, and confidence by the Stakeholders
  - If you identify the resource by title, then you need to create multiple job titles based on the actual number of hours in the day that a single individual or resource (equipment) can be used to accomplish that task

**Take the deliverables, identifying the associated resources (skill and equipment) needed to perform the task.**



## Step 2: Building High-Confidence Estimates (5)

- **Sixth Stage** – Identify the inter-dependencies of the high level and granular deliverables

**Take the deliverables created, identifying the inter-related activities (or dependencies) of each to allow the next action to proceed or if the items can be performed simultaneously.**

## Step 3: Scheduling the Project (1)

A project schedule is the next step in understanding what it would take to deliver the identified Deliverable Breakdown Structure (DBS).

The schedule is NOT:

- The Gantt chart
- The Work Breakdown Structure (WBS)
- A series of dates
- A Milestones list
- A 'Tracker'
- A guess

It should be understood that when developing the schedule if you have broken the DBS down properly, then the associated tasks are at a granular level that it will be easy to identify the time to execute the task.

## Step 3: Scheduling the Project (2)

Based on the Step 2 inputs, you now have a very clear picture of what the Project final product(s) should be and associated activities needed to deliver those product(s).

However, what is not in that list are:

- Project Meetings
- Reporting requirements
- Holidays and staff vacations
- Training requirements
- Internal structure processing timeframes
- External Dependencies
- Site Acquisition timeframes
- Weather conditions
- Equipment breakdown
- Mandatory timeframes due to the Laws of Physics
- Materials and equipment lead times
- Manufacturing and Shipping timeframes
- World Events (i.e. World Series, Superbowl)

**Identify what required task that are not SPECIFIC to the deliverable but is critical to the successfully deliver of the Case Study Project.**

## Step 3: Scheduling the Project (3)

- Every resource (by name), whether manpower or equipment, must have a detailed calendar of availability linked to it.
  - So what is the dependency on equipment?
  - Without this calendar, assumptions of availability **WILL** be made that will have a direct negative affect on the project
    - So what would this do to the project delivery schedule?
    - So what would this do to the project budget?
- Does it take time for:
  - Project administration work?
  - For Project Meetings?
- Can you build something if the equipment and materials are not available?
- What is the internal company policies and timeframes/priorities in processing the project contracts, purchases, etc.?
  - What happens when key individuals assigned to support the project from the operational units are unavailable (i.e. vacation)?

## Step 3: Scheduling the Project (4)

- After understanding the DBS and what the associated tasks are to create the deliverable, as well as understanding the inter-dependencies, it is now time to understand the time it takes to accomplish the individual task.
- At the individual task level, assign a quantified time period to execute the task
  - If a time period cannot be assigned then the task is too granular
  - If the time period is larger than one-day, then the task is NOT granular enough
    - Telecom projects are by nature short in duration compared other type of projects, as such long term tasks are NOT optimal
- Develop the time to task independent of inter-dependencies

**Based on the prior DBS tasks, assign a time to task.**

## Step 3: Scheduling the Project (5)

Once you have the DBS and the time to task for the DBS, assign the required resources to the task.

- Do not be concerned with any conflicts of resources during this activity
  - It is imperative to be honest with the resources assigned to complete the task
  - Resources = Manpower, Materials, **AND** Equipment

**Based on the prior DBS, identify the required resources (manpower and equipment) for the individual tasks. For the case study exercise, we will not attempt to address the materials needs as those should come from the engineering but will need to be added once known.**

## Step 3: Scheduling the Project (6)

Identify the required administrative tasks and needed frequency associated with the:

- Normal operations of the Project
  - Meetings
  - Status Reporting
  - Contracts
  - Procurement
  - Budget management
- Required to deliver the project deliverables
- Training requirements

**Based on the DBS, identify the anticipated need for the administrative tasks needed for the successful delivery of the project.**

## Step 4: Creating a Project Timeline (1)

At the completion of Step 3, you have:

- Created the DBS and its associated tasks
- Time to task for each associated task within the DBS
- Resources needed for each DBS task
- Interdependencies of DBS tasks

With this information, it is now time to understand how long it will take to deliver the project based on the concept of having only one of each resource identified in Step 3.

- This will provide worse case scenario, in consideration of time to deliver the associated project deliverable(s)
- This is where the use of computer automation tools comes in extremely helpful as they reduce a lot of mistakes that will be made if trying to apply this action manually.



## Step 5: Developing a Risk Management Process (1)

In the third stage of Step 2, a preliminary list of risk were identified.

**Not conducting risk analysis may leave too much of the project to chance.**

To ensure it is clear how the idea of Risk is used lets baseline their definitions:

- **Risk:** event or factor that leads to a changed or different outcome
- **Uncertainty:** the range of outcomes that are possible, given the existence of risk
- **Chance:** uninfluenced possibility of a change in expected outcome

## Step 5: Developing a Risk Management Process (2)

Risk analysis is **NOT** producing lots of charts, statistics, evaluations, and analytical data. It **IS** about understanding what needs attention.

There are three phases of risk analysis:

- Identify the potential risks
- Assess their impact
- Develop strategy and tactics for dealing with them

**Do not get carried away with Risk analysis. Like all tools, it has limitations, and the real value is in what you learn from the exercise. Only keep going until you stop learning!**

## Step 5: Developing a Risk Management Process (3)

- **Identify the potential risks:** This step is a combination of brainstorming with the team, using checklists (if you have them), and talking to experts. There is NO magic formula.
- Do not rely on checklists alone, as they will not tell you what the team may know
- Use at least two of the techniques; overtime, you will develop your own checklists to help in the future

## Step 5: Developing a Risk Management Process (4)

- **Assessing Risk:** The first step in assessing risks is to determine the probability of occurrence, which can be as simple as high or low. If you need more granularity, use it.
- A common way of doing this is to use ranges of probabilities

**Risk analysis tools help us understand the mechanics and behavior of risk on our project. The trick is to avoid overanalysing risk. After all, any analysis is going to have to be based in part on best guesses of the future, so it will have limited accuracy.**

## Step 5: Developing a Risk Management Process (5)

- **Dealing with (or managing) risks:** There is no way to ‘manage’ risks, it is possible to influence the likely impact of some risks, hedge against others, etc.
- If we remain realistic about the process of risk management, we need to ensure that the worst (unacceptable risk events) do not occur
  - We accomplish this primarily through avoidance
- High impact risks need careful management and close monitoring
- Moderate and low risks need to be evaluated and appropriate plans put into place to address them

**Effective and timely communication of potential risk to project sponsors is an important part of risk management.**

## Step 6: Effectively matching resources to work (1)

As we have previously stated, resources are not limited to manpower. Instead it includes:

- Manpower
- IT Systems
- Hand Tools
- Installation Equipment
- Test Equipment
- Vehicles
- Heavy Equipment
- Contractors and Subcontractors
- Office and Warehouse Space
- Materials

**Matching skills to tasks is a skill of MANAGEMENT, however challenging people to perform the tasks is LEADERSHIP.**

## Step 6: Effectively matching resources to work (2)

When initially creating the PLAN, it is highly unlikely you will have a name to identify the manpower resource

- In this instance, you will create a title (place filler) that clearly identifies the skills needed
  - Do NOT fall into a common mistake: You know who will be doing the work so you are liberal with their assignments because they are a ‘go getter’
- Recognize that a team could be a single resource (i.e. Team of 3 Installers) but when creating this then the team assets must work together on the same task
- Link costs associated with this manpower resource, because even if it is ‘soft’ charge back, it is still attributable to the total cost of the project
- For each manpower resource, create an individual availability calendar

## Step 6: Effectively matching resources to work (3)

- When initially creating the PLAN, it is highly unlikely you will have a name to identify the non-manpower resource
- Link costs associated with this non-manpower resource, because even if it is 'soft' charge back, it is still attributable to the total cost of the project
- For each non-manpower resource, create an individual availability calendar
- The assignment of non-manpower resources is one of the areas that is most overlooked but results in high degree of project schedule slippages and cost overruns!

### **The \$5 cable stops the \$2Millon project**

- When tool kits are reflected, in the appendix of the PLAN, a comprehensive list of the minimum hand and electrical tools that is required to be in the tool kit is mandatory