Project Management – The Way Forward

MY REFLECTIVE ANALYSIS OF THE COURSE CONTENT

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Introduction

This document is my view about the strategic project management course. There are seven subjects in total as included in course lectures. Each subject is analyzed and discussed including my 20 years of experience in telecommunication business and 5 years of factory automation experience. My background is product management and project management. I also have worked as a telecommunication SME for technical matters. Currently my focus area is on AI/ML project management. I have lived in USA past 20 years, Currently I live in south Florida, USA.

Project value creation and valuation with uncertainty and project management viewpoint

Uncertainties if not properly analyzed and documented during the planning phase can in the worst case derail the project not to meet the client's expectations. Uncertainties must be part of the risk analysis. There are four uncertainties, variation, foreseen uncertainty, unforeseen uncertainty and finally chaos.

Variation is expected to happen always in the project delivery environment. In most cases, this requires minor adjustments during the delivery. To identify variation happens there must be properly set key performance indicators. Without any performance measurement tools, it is exceedingly difficult to identify when the project starts going in the wrong direction. It is important to identify variation at early stages. This guarantees variation will not become anything more serious. A project manager is mostly responsible for taking action to get the project back on track. One example of variance is cost. Earned value and planned value must be tracked in a frequent manner so everything stays within tolerance.

Foreseen uncertainty is something that might happen. Experience from earlier similar projects can be used to identify this type of uncertainty. When the lesson learned is well documented it can offer valuable information about foreseen uncertainties. During design and planning foreseen uncertainties are added in the risk management section including, potential impact, action plan and the owners. Early identification during the project delivery will mitigate the impact of foreseen uncertainty. Document creation of each case is critical so any future projects will benefit from the historical data. As an example, subcontractor performance in certain situations can lack the quality of work.

Unforeseen uncertainty is much more difficult to identify in the initial phase of the project. Unforeseen uncertainty in many cases is project-specific so there might not be any experience from the earlier projects. To minimize unforeseen uncertainties stakeholder brainstorming can be one highly effective tool for identification. The goal is to convert any possible unforeseen uncertainty into foreseen in any possible way. Also, eliminating unforeseen uncertainties totally is not possible as the project's internal and external

influences keep changing all the time. Some unforeseen uncertainties can also introduce new opportunities for project management to consider. Opportunities are something what can be implemented an ongoing project through change management or something benefiting the future projects. As always documentation of all is particularly important task.

Last is the chaos. In general, this is something professionally managed project should never experience during the delivery. This will create atmosphere where team members are not feeling respected, productive and they start feel frustration. Chaos happens because of weak management. With strong and effective management situations will never end in chaos. In many cases, strong and even difficult decision-making is required to solve the situation. Chaos during the planning and brainstorming might have some potential to bring added value. As it can create some extreme ideas about the project and possible new opportunities. If chaos happens all the data related to it must be analyzed and documented to eliminate it in the future.

Making the project successful is the primary goal of the project team. First, each project needs to have well well-defined project structure, scope and goal set. Performance KPIs and milestones need much planning and frequent monitoring. There must be an action plan and responsible owners for each case when is time to act. Management is the instance of monitoring and analyzing the progress. In case management is not strongly involved in project activities and does not show presence there is a high possibility project will fail. It does not require much when the project team starts losing touch and they might even feel the project is not important or high priority.

Scheduling and time challenges in a complex project environment

Setting up a schedule that corresponds to the real-world schedule is one of the most important tasks while planning the project activities. If the schedule is not correct or set too short, it can have a significant impact on cost increase. Also, when the schedule is too tight this can create an impact on quality. A team needs to take too many shortcuts to meet the original deadline. Once the quality is not as expected rework is an unfortunate outcome of this.

There are multiple tools to create a schedule depending on the stakeholder's needs. Gantt chart, PERT chart and critical path method are probably some of the most well-known and used during the planning phase with the project management community. During this course also design structure matrix (DSM) was introduced. This is a tool I have not used earlier.

Gantt chart is the tool that is used and updated while delivering the project. A chart is created during the planning phase. It includes the activities, start/end date, duration,

dependencies and resource counts. While delivering the project chart is updated daily or when any milestones are reached. This is to track project progress to maintain earlier defined and set schedule. Tracking and monitoring is important to guarantee smooth project delivery. Usually, this chart is frequently shared with upper management as it is easy to read and understand.

PERT chart or diagram, the great benefits of this chart is the task duration estimation method. This is great for projects when task duration is not highly predictable. This is probabilistic method. With three different time estimation inputs expected time is estimated. The three-time estimations are optimistic time, pessimistic time and most likely time. Optimistic time is the minimum expected time to complete the task. Pessimistic time is the maximum expected time for task completion. Most likely time is the time for seamless task completion. The formula for expected time estimation is.

$$T_e = \frac{O + 4M + P}{6}$$

The critical path method (CPM) is a great tool when task durations are well known. CPM is a deterministic method. With CPM we can find out the project duration from start to finish, the longest path. Each task has the earliest and latest times for task start and finish. Node diagram is the visualization tool. It includes the tasks, critical path and early/late dates. The biggest benefits of CPM are finding out the slack time and what tasks are possible to execute in parallel.

PERT and CPM are used together as tools to supplement each other. Both tools are updated during the project execution.

Design Structure Matrix, DSM, which was introduced during the course is new to me. I have not used it earlier in any project. But I can see it has great features that other scheduling tools do not have. What I like most is the interface and communication requirement definitions between the teams. Communication is always a huge challenge and it is in too many cases the reason for project failures. If DSM can introduce methods or tools to improve inter/intra-team communication that is already a great reason to try it. I will use it in my next project as I now understand it better.

One unbelievably valuable information source is the documentation from earlier similar kinds of projects. There is no better information than historical data to define and estimate any new project. Using the data as a baseline information is highly advised. Also, the detailed notes on what was changed during the delivery are great input information for any new project start.

Overall project manager must be open-minded to try new things for smoother and more efficient project delivery. This is the way better new project management methods are found.

Corporate responsibility and sustainability in project business

Old days the most important criteria for project win and the successful delivery were solely the financial reasons to make profit. Fortunately, there is a shift towards different not only money-oriented values. Ever increasingly companies are seeing benefits of the softer values. These might not give instant rewards but any company what is determined to be in business for a longer period must consider their social responsibilities and overall impact on an environment considering sustainability. There is constant regulatory and ever-increasing public pressure to include these aspects in each new project. Not everyone is familiar with responsibility and sustainability-related subjects. Training or knowledge sharing must be in place, so everyone has an understanding of what the expectations and methods are and how to reach the goal in a way all the stakeholders are satisfied. The feeling of being part of something greater is one important aspect of what employers are looking for.

Many cases surrounding society and infrastructure are part of decision-making or giving significant input on how a project will meet the expectations and how a project is an active part of the bigger picture.

In the telecommunication business, there is a lot of pressure from carrier service providers and society to build wireless networks that consume less energy. Of the total system operating cost electricity consumption is the major one. New innovations are frequently introduced. This is a win-win situation for environmental reasons and carrier providers can save money and be part of a sustainable industry.

Buying projects in project networks

Turnkey projects are quite common in the telecommunication industry. Customers are expecting complete project deliveries from the product and service vendors. In general, vendors are using multiple subcontractors to deliver services while products are mostly coming from telecommunication equipment providers or the vendor itself. Worldwide there are about a handful of companies who can sell complete turnkey projects to carrier service providers. Depending on the region, not all the vendors are competing against each other. This is mostly due to political reasons.

Contractor procurement is extremely critical as the quality of subcontractors varies a lot. Subcontractors are validated and tested frequently. Only the ones passing the approval criteria can work on the projects. A scoring system is used.

Defining the scope of the work is especially important as most of the work is done in daily cooperation with a buyer/customer. Delivery of the project usually happens in multiple locations. Depending on the project and the region it can be anything from 5 to 20 different market locations. Many times, buyers at any market location can demand something that

is not in the scope. It is especially important each market is kept in a communication loop regarding project details from the early phases of the project.

Payment is almost always set to be milestone-based. Once the seller can meet earlier set performance criteria it triggers the payment and equipment is handed over to the buyer.

In general project delivery happens in customer premises in very tight cooperation between seller and buyer. As the equipment is already in production while the seller is still working on performance improvements buyer wants to guarantee there is minimal impact on the end users.

Project sales and marketing: focus on private as well as public stakeholders

Any professional project company selling services and/or equipment is looking for a long-term relationship with a buyer. Point of contact are many cases even at a very personal level. Once the seller has established a trustful relationship with the buyer it is much easier to become a key supplier for any future business. Buyer is always looking for an additional value for any euro they spend. In the end, it is all about the price and the seller's capabilities. Once the relationship is on steady ground discussions about innovation and new technologies are much easier. Buyer in general has requests or desires about new improvements and features differentiating them from the competitors. Now supplier is much more motivated to work on innovations as there is a better chance for a long-term business. This can mean a short-term sacrifice for long-term benefits in years to come. In the end, in many cases, this same new technology is sold to other buyers. It is all about who is the first to implement the new technology.

Let us have a few words about five core areas of the services.

Strategic, services must be part of any professional company portfolio. This is how a company can differentiate itself from any competition. Buyers are ever increasingly ready to buy everything as a turnkey. This simplifies the communication and responsibility issues are clear. Any project offer should have at least an option with all the services included.

Financial, services increase the value and value-based pricing. This is a great supplier benefit. Services almost always have higher profit margins than simple equipment sales. For added value, the customer is ready to pay more.

Marketing and sales, to gain a new market share always requires a lot of effort and funding. If the seller can establish a long-term service relationship with a customer this will reduce the pre-sale efforts. Services can fill the gap in cases like equipment sales happening every few years. The relationship is frequently maintained through the services. Marketing and

sales must be able to prove there's extra value if you buy from us. But not over promise as this will lead to challenges during the project delivery.

Research and development, when buyer and seller are close relationship discussion about products and services is more mutually beneficiary. Both sides are benefiting from product and service innovations. The seller has something that the competition might not have and the buyer has the latest technologies that their customer can use and benefit.

Project implementation, companies with good relationships can implement new technologies much more efficiently as the organizations are more familiar to each other. Both sides already know how the process works and things are done on either side. Also, close personal relationships and knowledge of skills help to put resources in the right job roles during the delivery. If the delivery happens in a production environment, then smooth minimum service impacting delivery is an extremely important requirement.

In my business area of telecommunication, we are looking for partnerships with customers and with subcontractors. In the end, we aim to be one team reaching for a common goal. Once the right subcontractor partners are found and the relationship is on a good ground lot of unnecessary non-productive activities are eliminated. All the time and effort are put into mutual business interests.

Collaborative project delivery models: challenges for implementation and application to the industrial context

If collaborative project delivery means solely an alliance model, I do not have so much experience on this subject. As a concept, it sounds overly exciting method of delivering projects as all the risks and opportunities are shared with every organization equally. I think the biggest challenge of the alliance model is the transparency of cost and pricing. Not many project delivery companies are willing to share this information in competitive markets. Mostly because competition can get access to it and try to benefit from this information. Services pricing is the one with a high-profit margin possibility. In my industry of telecommunication large part of services are nowadays delivered in low-cost countries to create higher profits. Already very severe competitive markets, opening this to customers and potentially leaking information to competition can be extremely dangerous. In the end, it is all about survival.

A partnership is the closest delivery approach I have experienced. Everything else but financial information is transparent. In this model, all the project organizations are as one team. All the work is done in one premise. Either market, regional or national level project office. This brings high synergy. There are daily discussions between customer and supplier and smooth information flow is a must.

Strategic projects, capabilities and long-term value creation for companies and societies

There are two different approaches to deliver projects. Traditional delivery model and systemic delivery model. Systemic model approach is not only focusing to project itself but how the project fits in current ecosystem and how it survives the future challenges. These can be regulatory, technology or environmental changes. Workflows enable the system level connections cross the boundaries and it is core feature of systemic model. In my thinking it is also possible to expand the traditional model by implementing some systemic model features in it. Shaping is one task that can also benefit the traditional model. This is to consider in more detail how the project fits to current system and what are project and product life cycle expectations. This would be a hybrid model picking the most beneficial features from both models to create the best fit for a current situation. The final decision for delivery model selection is made after all the input information is available for analysis.

In telecommunication industry projects both delivery models are used. In general, smaller project deliveries are many cases traditional deliveries. These can be for example setting up the system to support a mass event. Adding capacity to the network to handle higher traffic volumes. Once the event is over added capacity is turned off. When new technology like 5G is introduced this case delivery model is more systemic type. As this technology introduces many new features and a wider range of new possibilities not even available earlier the delivery approach must include more careful ecosystem consideration than the traditional model offers. The shaping phase most likely requires multiple re-shaping as technology and applications around 5G involve and change frequently. Product lifecycle needs to consider next-generation product introductions and roadmaps. Current products will not become obsolete, but the utilization rate will most likely reduce when better more efficient and sustainable products become available. All the different types of workflows and governance of them are extremely critical. There are so many players and existing systems must the into account during the different phases of the project execution.

Conclusions

As each project is unique there is no one fit for all approach. At the early stages of the planning phase, it is critical and a must to understand what the team is trying to achieve before the project is completed. Does the project fit in the current project portfolio, is the project part of the short- or long-term company strategies? Are there competent personnel to execute the project successfully to meet all stakeholder requirements? Will it be a win-win for everyone? How are the social responsibility and sustainability-related aspects included in project execution? How is profitability seen? These are just a few items to consider. Once all the input information is ready for analysis project delivery method selection can start. All the parties, or members of each team, should be included in these discussions.

Project planning is crucial for successful project execution. All the communication and documentation are created in detail level and agreed by stakeholders at different levels. There must standardized process to collect all the information. This will guarantee smooth delivery and high customer satisfaction during and after project delivery. Team needs to keep in mind ultimately customer is looking for added value on their investment.

Project manager is the person solely responsible of the project. PM must all the time have great understanding of the project's progress and all the project-related performance measurements show a green light. Proactiveness is the key contributor to successful execution. Depending on the project size project management team can include multiple project managers with specific scope and project coordinators are the helping hands to run routine tasks. Program managers are responsible for the company's portfolio and project managers have a close relationship with them. All this requires strong management with extremely strict rules and actions to follow the earlier agreed plan and schedule. With uncertainties at any level project manager must act with a correct response as early uncertainties are identified. A project manager is a person who creates relationships from either side of the table. Once PM achieves the status of a reliable partner this will create an extremely positive and optimistic atmosphere in the whole project team. Once everyone feels they are part of something great this will help to reach the goal with less effort and team efficiency and satisfaction will be extremely high.

For a company to be considered as a reliable project partner resources must have top skills to execute each task they assigned. Without proper training and competence improvement, this will be extremely challenging. When project team members are selected each role requires skill assessment before assigning any names to each role. If a company has a standard system this can be used in multiple projects. As new technologies are introduced and existing ones changing rapidly competence development is a critical activity. It can be just one costly very visible failure and it can take years to achieve the same status as before the incident.

Company project portfolio strategy must come from upper management. They are the leaders who have a vision of the company's future. Without clear vision company is navigating in darkness. Upper management needs to have a good understanding and knowledge of competition, market status and share, future technologies, and where the company will be in years to come. With this information strategy is built. It must be something that is truly clear as it is shared with all the company personnel. A company as a whole must follow the strategy as this guarantees reaching the common goal.

A strategic project management course of seven lectures created a great framework for my future projects. There are many new aspects I can consider and even implement in my project method selection and project deliveries. Implementing different methods to further improve project execution comes from a curiosity about process improvement. What was great yesterday might not work tomorrow.

References

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