

Project Management by Commissioning

a report by
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Offshore Commissioning Solutions (OCS) is unique in its approach to project management and commissioning services.

OCS was founded on the necessity of addressing three very real monumental problems observed in rig construction and commissioning projects – cost overruns, delivery delays and quality of construction that was not up to required international standards, often resulting in severely increased costs as well as poor – or impossible – operational ability. Early in the company's development it became very evident that in order to improve these issues, better information as well as better processing of that information was needed in order to better plan and execute these projects, and to make them as efficient as possible. With all of this in mind OCS looked at how best to resolve these issues, and has been very successful in developing solutions to help better plan and manage these very complex and high-cost projects.

With that goal in mind, OCS embarked on incorporating technological advances into the information processes in order to integrate planning, control and execution of these projects with both management and engineering solutions. By successfully doing so, OCS is leading the way in project management and commissioning management, making projects more transparent and easier to manage, and significantly decreasing cost and scheduling overruns while increasing quality assurance and the operational capabilities of the delivered product.

Successful Project Management

What constitutes a 'successful project'? Over the years I have heard many different viewpoints on this, but in pure simplistic terms it comes down to money or profit. Nobody embarks on a project to make a loss, exceed budget or produce a bad product.

However, saying that it is just this simplistic term 'profit' singularly, is too broad and really does not help us understand the philosophies of successful project management. Therefore, in order to fully understand what a successful project we need to break this down into three levels. We can then categorise every part of a project into one of the following categories:

- maintain the schedule;
- keeping the project within budget; and
- delivering an 'operational asset'.

Again this is somewhat simplistic, but these are the three goals that any project and project manager aims to achieve. The best lesson I have ever had in my entire career was when, during the first major

construction/commissioning project I was involved with, one simple question was asked in a weekly project meeting.

During this project, I was engaged as a commissioning engineer and had nothing to do with the project management, but this question changed my whole outlook on what was needed. At the time, everyone involved knew the project was a mess, but nobody was able to put their finger on the reason. The question when asked was to me like a light being switched on, and from that day forward my approach to projects became completely different.

At the time as I was only concerned with my own scope of work and had no project management experience, but it was quickly becoming very obvious to me that commissioning could not be taken singularly. The integration and dependencies of the construction process had such an impact on the commissioning schedule that there needed to be much more (and better) information available, in order to understand these dependencies and what was needed to get them completed.

I acknowledge you want to know what that question was. It was just a very simple question, and nothing too startling, but in all my experience to date I had never seen the reaction this question created. At the time, there were around 30 people in this meeting – shipyard personnel, the owner's project team, all the main vendors and myself. I was not considered as part of the project team since I was a third party commissioning consultant. Prior to the question being asked, there was a great deal of discussion, not particularly pleasant, with people blaming each other for various things. It was quite noisy with several people all-talking simultaneously. When the question was asked it seemed like an explosion as you could immediately see a huge amount of embarrassment in the room, and you could have heard a pin drop for probably ten seconds which seemed to last forever and it seemed everything was moving in slow motion while everyone was trying to come up with the correct answer to a question, which everyone should have already known.

'Does Anyone Know Where We Are?'

Yes, there was a dedicated project scheduler, but nobody could trust the schedule because it was not really achievable (we all know what this is like when management says the project will be finished on this date) and information flow was not very fast or easy to obtain. I was the one that broke the silence by saying: "I do not know where we are at the moment, but I can find out." With a sigh of relief the meeting resumed and I was left with the task of compiling various reports together to give a status report. When you think of it, that question is

the most important question to project management. After all, 'if you do not know where you are, how do you know where you are going?'

From that minute we started to develop a 'tracking system' – one we continue to develop and refine and which now is a total project management system. The tracking system OCS has developed is based on years of experience, research into shipyards and construction yards and how they manage their systems, how they are structured and what and how project information flows.

What we were finding was that:

- The planning processes were not very detailed.
- Information was not readily available – usually managed by each separate department and not easily shared between departments.
- Information that was being reported was usually incorrect or inaccurate.
- Information flow was very slow.
- Information management was very poor.

I was looking at this process from the role of a 'commissioning engineer' – what I needed was to know what was required to complete a system before I could start the commissioning. For instance, if we have a schedule that states that a system is to start on 'X' date then I wanted to know the status of:

- equipment installation;
- cable installation;
- piping installation; and
- any outstanding technical queries, change orders or engineering issues.

By tracking each of those items and their associated tasks (equipment alignment, piping tests, etc.), and knowing when they were completed or scheduled to be completed, we could more accurately predict the commissioning date, eventually leading to a project completion date – and we could immediately see delays or potential delays. OCS then set out to design a system that would accurately do exactly that – provide an almost 'minute by minute' snapshot of the status of every cable, every pipe, every piece of equipment, every system – leading to an accurate, always up-to-date status of the entire project. By knowing where each piece of the project was and therefore the entire project – we can accurately predict delays, problems and whether target dates are viable.

What has been achieved is that we now have an information system that is transparent between all departments/sections of the shipyard, vendors, and owners. We can also see what is remaining to be completed in a system – how many cables remain to be pulled and tested, how many piping spools tests are left, the status of mechanical and electrical completions and what punch lists are outstanding, etc.

In addition, we can track all technical queries as well as outstanding change orders, and other issues, that are critical to the project schedule. The managing process of a project now can be 'assisted' by the commissioning department, who can monitor and 'encourage' other departments and personnel to complete their work so that the system can be handed over to the commissioning team in order to get

it completed on schedule. This process can also be applied to other section/division supervisors that can check any dependencies that may affect their schedule. With this transparent approach we have several persons monitoring and checking the schedule and by doing so increasing efficiency.

By consolidating all project information into a single location or tracking system, we create a completely 'transparent' system – all needed information is readily available and integrated – and significantly improve information flow, progress tracking and overall project management.

The advantages of a Single 'Transparent' Information Management System are:

- several people are helping manage the project: commissioning manager, QA Manager, construction manager, section supervisors etc.;
- project information and status is completely transparent;
- information is instantly available to make management decisions;
- it becomes easy to manage labour resources, oversee their progress and assist where necessary;
- by collating and identifying all the necessary information for equipment, construction, and testing etc, advance planning becomes easy, so the project is better planned;
- consolidating information and reporting into one system means that no matter where the project is being constructed, the same information and reporting system is used and construction can be completed in several different locations or countries; and
- corporate management, engineering, etc. can view and make comments on the project.

Meeting the Successful Projects Management Objectives

While not the only consideration on a project, a solid and informative information management system goes a long way to help ensure the three main project management objectives are met:

- maintain the schedule;
- keeping the project within budget; and
- delivering an 'operational asset'.

With the information made readily available, better planning will be developed, which will in turn will help maintain the schedule and minimise budget overruns.

With the greater identification of all equipment and systems to be installed and inspected, this will lead to a much more controlled quality management system since all records are noted and inspection processes identified prior to the work being carried out.

With the identification and breakdown of all commissioning equipment, systems and processes these can be better planned, this being the case then the asset will hopefully be able to go to work immediately or with minimal downtime.

I will quickly state two obvious points that are also crucial to a successful project, and should not have to be pointed out, but past experience says they must:

- get the most experienced personnel to do the project; and
- ensure the engineering is viable and completed before the project is started.

I will not go into details on these subjects here, as they are somewhat beyond the scope of this discussion and would involve lengthy discussions on their own, but careful consideration should be given both of these subjects, most especially not starting the project prior to completing the engineering.

With all the above stated I would like to finish with a couple of quotations that should nicely fit into this equation:

- 'Planning without action is futile, action without planning is fatal' (author unknown); and
- 'The really nice thing about not planning is that failure comes as a complete surprise and is not preceded by long periods of worry and depression!'

OCS provides many services – some are listed below. If you require any further information, please contact one of our offices.

OCS provides:

- project management services;
- commissioning services;
- audits of assets;
- risk assessment;
- hazardous equipment inspections;
- software development;
- IT services;
- training for hazardous area equipment; and
- failure mode effect analysis. ■

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