

Agile Product Design & Engineering

- 37% increase in Sprint Period task completion
- 29% increase in milestone completion
- 31% reduction in days overrun
- 324:1 ROI

The Background

Our client's task was to design, test, and implement a performance improvement modification package, in order to mitigate potential additional costs through compensation payments for technical issues, breach of contract, or any other operation "shop visit" costs.

These potential costs can be substantial, and in order to avoid incurring them, the client needed to complete the programme in roughly half the time a similar programme would take.

According to a high-level estimate, the financial benefit of reducing the expected programme duration was estimated to be around \$3.2 million (£2.6 million) per week.

P7 were engaged to assist in the optimisation of the production output due to their focus on involving team members in the process. This is an essential element of the P7 principle of "People + Process = Performance".

"The planning sprints have been very effective in engaging the project teams in defining the tasks related to the IMS milestones. The ownership and responsibility moves to the task holder, including the duration of the task. The task completion within the sprints has improved significantly."

Programme Executive

"TVPM is a stage for leaders to lead. It allows us to continually learn. We are aligned and understand the project status at a glance. We know where we are against where we need to be with the relevant levels of granularity."

Chief Project Engineer





Challenges

The client's main challenge was that their in-service product was not achieving the targeted design cycles, which led to increased maintenance at shorter intervals, leading to an increase in costs.

Additional costs were incurred from contractual penalties whenever time on wing requirements were not met.

A previous Master Project Plan, based on benchmarking to similar programmes, overran by 24 months, and ended with limited understanding of the overall programme impact.

Additionally, there were no controls over the loading of tasks to teams or team members, meaning there was no way to measure efficiency or contribution. There was also a lack of transparency within the design and engineering environment in terms of priorities, performance and status, and an overall lack of understanding and control of cross-department interdependencies. There was an issue with the disparity with understanding between teams, and contribution of each team over geographical locations.

The client's objective was to provide a solution that addressed these problems, whilst developing a new approach to programme management, and a resulting culture shift that could be adopted by other priority programmes.



Solutions

There were 3 steps to the solution P7 developed with the client:

Step 1 - to analyse and challenge the existing project plan, in order to bring the project cycle within the contractual timeframe.

Vertical Value Stream Mapping [VSM] facilitated working sessions with the integrated project team in order to identify the major decisions to be made, and to increase right-first-time capability whilst reducing lead time. The aim was to optimise learning in the early project stages in order to reduce risk throughout the project life cycle.

Value Stream Analysis identified and prioritised the components that drive the project completion date back, and to analyse and challenge the current planning to create tangible lead times for product testing and manufacturing. It also enabled us to identify non-value adding process steps and eliminate idle time.

An Integrated Master Schedule [IMS] was developed for team-level planning. Links to related activities were provided, and critical pathways were defined. Planning platform P6 Primavera was introduced, and the milestones were linked to the defined activities to create the planning rules framework.

Rolling Wave “Sprint” Planning Cycles enabled more granular planning over Sprint periods, making it possible to define tasks by teams and individuals on a daily basis. This planning cycle also has the additional benefits of regular alignment and calibration of the complex team structures. Teams have full inclusion and responsibility within the Sprint cycles.

Task Allocation and Management using LeanKit was also implemented, wherein tasks are assigned to the individual and linked to the broader team, and can be managed in several ways including start date, due date and hours forecast. This enables work loading and levelling, which contributes to the overall requirements.

Data can be extracted from both Primavera and LeanKit to support the performance management of the project from a micro to macro level. The integration of project plans and tasks into digital platforms supported the global alignment, inclusion, and management of the project teams.



Solutions

Step 2 - to design and implement the Management Operating System [MOS] to engage and lead the teams towards achieving the project objectives on time.

Tiered Visual Performance Management [TVPM] created a place for candid conversations. The project objectives are cascaded in the TVPM, alongside associated KPIs, both vertically and horizontally within the project organisation. Daily progress reviews were conducted with individuals, teams and departments. Project status at a glance made identifying delays, inhibitors and priorities transparent, as well as supporting action, responsibility and timing. The TVPM also instilled accountability through all organisational levels.

An Escalation Procedure was implemented, in which escalation triggers were defined in order to better recognise raise and respond to abnormalities.

A Standard Diary for the project calibrated and aligned the governance structure throughout the project team structure. The Diary included meeting structures in order to optimise overall meeting efficiency.

Process Confirmation created leadership habitual confirmation routines in order to provide regular opportunities for go-look-see, employee engagement and coaching. Vital elements that are critical to programme success were confirmed on a team rotational basis.

The LeanKit task hopper fed into the TVPM system, which was linked to the planning Sprints and IMS. The teams met daily to allocate tasks from the hopper and measure the task burndown during the Sprint period. The KPIs within the system also accounted for quality and people measures.

The TVPM platform was the foundation for leadership to influence behaviours, expectations and deliverables within the company.

Solutions

Step 3 - to coach and mentor the project and programme managers in how to use the MOS system effectively. This was done using the 5 Step Knowledge Transfer process:

Prepare Me

Identify and notify the individuals to engage with the targeted Knowledge Transfer process. Explain the process steps and methodology.

Show Me

Train the Principles, Systems and Tools related to the chosen subject matter. Demonstrate the process and associated behaviours to the trainee [this is done at the Gemba, in the workplace where the work is done].

Let Me

Let the trainee practise under guidance from the coach in a safe environment to apply their learning and experiment with their behaviour and expected outcomes.

Support Me

Allow the trainee to stand alone in the application of the subject matter. The coach conducts Process Confirmation to ensure the capability is embedded and sustainable.

Coach Me

Capability development is transferred to the incumbent organisation to ensure structured talent management is ongoing and habitual. The preferred methodology is based around the TGROW approach.

The TGROW approach encourages a structured, regular coaching dialogue with the trainee. It is made up of 5 elements:

- Theme
- Options
- Goal
- Will to commit
- Reality

The project was implemented over a 10-month period, with specialist resources deployed relative to the step. Step 1 took place during the first 3 months of the project. Step 2 took place during months 2-4, while step 3 lasted from month 2 through to project completion at month 10.

Impact on Performance



39% increase in Sprint Period task completion



29% increase in milestone completion



31% reduction in days overrun
(and 11% decrease in equivalent hours)



324:1 ROI