USING MODULARIZATION TO IMPROVE ON-TIME DELIVERY AND QUALITY

CHALLENGE

The case company employed CPC to help them develop an architecture as a basis or safe source from which to start their future customer projects. The architecture should contain a stable core with options, covering available functions, features, performance and related documentation. The project scope also entailed the development of a framework for how to collect, store and maintain knowledge gained from delivery projects, making it easily accessible for future use.

Existing procedures for knowledge sharing and reuse within the case company had previously not proven advantageous. The case company runs multiple projects in parallel with little or no collaboration across project teams; hence in-project development and experience gained tend to stay confined within the project-teams.

PROCESS

The CPC team analyzed the case company's former delivery projects and customer requirements - existing as well as expected. Similarities and differences among the solutions were mapped and visualized, facilitating easy comparison and decision making.

The mapping showed both rationalization and development opportunities. For example, non-value adding variance was eliminated, while expected future requirements were identified and put on the roadmap for further evaluation and development.

A new modular product architecture was developed for the sub-system. This modularized safe source offers flexibility towards contextual and customer related requirements. It was designed for reuse, always maintained and ready for use. The safe source consists of a stable, well identified core and configurable add-ons providing different functions as well as optional features, enabling the case company to develop and customize solutions based on up-to-date knowledge and experience. As such, the case company can avoid expensive and time-consuming development of various unique solutions that were previously based on randomly chosen and outdated projects.

Additionally, CPC led a pilot project in close cooperation with case company's system supplier on how module architectures can be structured in the company's PLM system and utilized as the company's solution and knowledge library.

THE CASE COMPANY

The case company is a leading global provider of technology-based solutions for the energy industry with production sites across more than 30 countries worldwide. The business covers design, manufacturing and service of technologically sophisticated systems and products for the oil and gas industry.

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CHANGE

The new modular product architecture offers significant reductions in time spent on engineering, documentation and assembly:

- → 65% reduction in time spent on hydraulics tubing engineering
- → 80% reduction in time spent on power and communications distribution
- → 90% reduction in time spent on writing assembly documentation
- → 105% increase in engineering on-time delivery
- → 70% reduction in quality notifications
- → Reduction of part numbers
- → Reduced throughput time and increased profitability

Additionally, quotes can be developed faster and more reliable as functions and features being configurable within the architecture are identified and visualized making it easy to access and confirm. Furthermore, the roadmap shows what is under development and when it is ready to be launched.

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