Processes Case Study: Controlling uncontrolled software changes

An example where the pragmatic introduction of ITIL-based change and release management was able to improve the quality of application service delivered to the business.

The Challenge

A fast-growing pre-IPO software and services company was facing problems with the quality and frequency of software changes into production.

Development was done using an "Agile" methodology but, due to time pressures, the testing aspects were sometimes victim of the drive to deliver to the market.

Consequently, code was sometimes delivered into production that exhibited significant errors that needed immediate fixing. This, in turn, led to further code deployments at short notice.

The net result of this culture was that the production software was frequently being upgraded (sometimes daily), generating deployment work that sometimes overwhelmed the IT Production teams. The consequent Incidents caused by faulty software generated further support demands, which in turn led to further pressures to release software upgrades.

The IT Production team morale was low, mirroring that of the development teams, and workloads were too high for the resources available. Essential pro-active maintenance was delayed, and customers' confidence levels in the software products were low.

Our Involvement

The spiral of decline needed to be addressed, and the recommendation was to design and implement a very basic Change Control mechanism in production, backed up by a Change Advisory Board ("CAB") based on ITIL principles.

The introduction of Change control was spearheaded by a multi-disciplined team of experienced experts and consultants both from inside and outside the company.

Dennis Adams Associates provided key input to the design process by being able to draw on experience in several areas:

- Formal training in PRINCE2 project process.
- Understanding of the Six-Sigma process improvement methodology, specifically the PDSA cycle.
- Knowledge of ITIL processes, their purpose, terminology, and principles.
- Practical understanding of the technical issues facing the IT Production database administrators, systems administrators etc.
- Prior experience of IT Change and Release Management processes in larger organisations, and observations and lessons learnt from seeing the implementation and operation of ITIL-based processes.
- Experience with working inside several small and medium-sized software organisations, where the pressures to deliver to the market could dominate other considerations.
- Understanding of the psychology and social impact of introducing processes to technical teams.

Since the culture of the company was very cautious about the impact of processes on their ability to deliver to customers, it was necessary to tailor the processes to the level of maturity that the company could support.

Approach

Introducing new processes requires the ability to overcome a mixture of cultural and technical hurdles. This is particularly true in the case of fast-growing organisation such as this client.

The Change Management project was led by a Six-Sigma black belt consultant, with key input from Dennis Adams Associates at all stages of the research, design, pilot and eventual final deployment.

The "PDSA" cycle (Plan-Do-Study-Act) indicates that implementing any new process should be done in "pilot" form. This was very much in line with the cultural limitations of the client company.

Since the company was split into different business lines, each responsible for software in it's own sector, it was a fairly straightforward decision to pilot the new CAB process with just one of the business divisions.

The decision was taken to design a basic weekly change cycle whereby all changes would require CAB approval prior to deployment. One of the key questions for the CAB to ask was whether the proposed implementation had been appropriately tested. Additional questions (such as whether there was a clear back out plan) were also included in the standard CAB terms of reference.

Given his experience of previous Change environments, the Dennis Adams Associates consultant was given permanent membership of the CAB, and acted in an advisory capacity to the CAB. He also ensured that all configuration changes were captured in the company's configuration management database (CMDB), thereby ensuring an appropriate audit trail for activities.

Benefits

One immediate effect of the new change processes was to streamline the workload of the deployment teams, resulting in fewer deployments, which were of higher quality. This meant that the deployment teams were able to concentrate of other Business as Usual ("BAU") support issues and pro-active maintenance.

From the developers' viewpoint, each software change (or release) now needed additional administrative work and testing before it could be deployed into production. This was seen as unnecessary bureaucracy by the developers, who typically gauged their success by the number of software releases they have been able to hand over.

However, it soon became apparent that the additional testing requirements were resulting in far higher quality of software, which broke the negative cycle of continuous release, 'patch' and re-release.

Freed from the back-log of fixing bugs which had been introduced in earlier releases, the developers were able to concentrate their effort on adding new business features such as better search routines, more efficient validation, faster integration and so on.

The net result was improved code quality, a reduction in support costs, and improved customer satisfaction.

Further Information

Dennis Adams Associates does not disclose any client names, details, or any commercially sensitive data with third parties.

For further enquiries, please contact us via our web site at **http://www.dennisadams.co.uk** or email to **info@dennisadams.co.uk**.