

Company Wide Software Deployment

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Abstract — This paper reviews the deployment of a new software tool in a private company and the issues that it triggered due to an ill prepared user base. It also covers the quick solutions established to address the issues in a timely manner while capturing the lessons learned & preparing for a new deployment in a near possible future.

Key Terms — Product Data Management (PDM), Software Deployment, Teamcenter, Voice of the Customer (VOC)

INTRODUCTION

A company-wide software tool was deployed at a defense & space company in Puerto Rico. This deployment was filled with complaints from all the areas it is used in the company. The cycle time of all works in progress and new work performed with the tool was considerably delayed and therefore, there were monetary losses.

This paper captures the drivers of these issues, what went wrong, how they were addressed and some recommendations for short time solutions as well as long-term preparation for new deployments. Also, methods will be shared to proficiently handle these deployments to avoid major impact to product lines and product deliveries. As part of the project, recommendations were made to the corresponding people to minimize the current issues with the tool.

BACKGROUND

The whole process of deploying a software across a company can be a stressful and tedious situation, so trying to make the process as efficient as possible will guarantee a smaller gap for errors. Deployments are not a tooling problem, but a process problem [1]. Whenever issues arise at the deployment of a software, one must understand that the tool is not at fault, but the process which deployed it.

At some point during year 2017, the employees of a defense and space company in Puerto Rico were notified that within a month period everyone will be switching to the new Product Data Management tool under Teamcenter suite. This update made the old web-based PDM system obsolete. When the day to go live arrived, many types of users came across problems that delayed their cycle time on tasks. Some of the most common initial issues or complaints were about missing data or features from their day-to-day tasks they used to perform. Another complaint that was spoken of constantly was the full shutdown of the previous web-based tool without previous substantial experience in the new tool.

VOICE OF THE CUSTOMER

In order to capture feedback and identify the drivers for the complaints and issues with the new PDM tool, a Voice of the Customer was performed within a small sample of employees from all the different teams that depend on daily basis of this tool. The 6 feedback repeated the most during the VOC are captured below:

- New tool is very complicated. Too many features which the user is not familiar with.
- Even though there was training available, it was optional. Not everyone got familiarized with the tool by the launch of it.
- The people who trial tested the tool all hail from the same group who do not use the tool on a daily basis.
- Finding specific information is complicated and sometimes it prompts errors. The data migration was held by the same group that tested the tool. When asked, they said they migrated what they considered necessarily.
- The group managing complaints and troubleshooting has been overwhelmed since

launch. Sometimes focusing on the large problems and letting all the small ones fall through the cracks.

- Many of the work-in-progress reports and approval are facing delays issues since the migration. This could be caused to unfamiliarity with the tool, missing features, incomplete migration of documents or a combination of these.

METHODOLOGY

The methodology established, so the points captured on the voice of the customer are addressed, was the following:

- Capture Feedback from all groups involved regarding documentation and features frequently used. Voice of the Customer.
- Provide a Trial/Testing period in which at least 1 person from all groups is involved.
- Include a training comparing the “old way” vs the “new way” of fetching data, or finding documentations.
- Trainings should be mandatory for regular/daily users.
- Establish a tool or system to quickly capture issues/complaints post-launch for quick assessment and fix.

FEEDBACK TOOL

In order to capture complaints and address issues, a web tool was established in which users could submit/report tickets regarding the different situations encountered when using the new PDM tool. Some of the data was made available to share on this project which will be discussed below.

One of the main categories of tickets submitted was about Engineering Change Orders (ECN) and their workflow through the routes of approval. This is a critical process where PDM is used to create, maintain and monitor the full workflow of the ECNs as required. This issue was captured on the Voice of the Customer under delays to the cycle time of tasks. In Table 1 one can appreciate the

amount of tickets submitted corresponding to this category in the first 3 months after tool launch.

Table 1
ECN/Workflow Tickets

Date	Open Tickets
7/28/17	92
8/25/17	303
9/29/17	215
10/27/17	217

Another category of impact is the Data Tickets. This category corresponds to all the issues the users encountered about data loss or data issues within the new tool. Table 2 contains the amount of open tickets on this category on the first 3 months after the tool launch.

Table 2
Data Tickets

Date	Open Tickets
7/17	24
8/17	94
9/17	105
10/17	143

BI-WEEKLY NEWSLETTER

Another recommendation made, that derived from the VOC, was to establish some sort of informative document for all employees in which they are informed of any communications, improvements, common issues and their fix, or lessons learned from the new PDM tool. This was established in form of a newsletter that is delivered bi-weekly to all users of the tool. The newsletter also contains links to other sites like the ticket submission page or where the best practices of the tool are kept.

ADDITIONAL TRAINING

Since the current lack of training needed to be addressed, some additional power point trainings were made available. Amongst these, one ppt stood

above the others: Old vs New comparison of the tool. What this training did is to compare how a certain process was performed on the old tool and it showed how to perform the exact same process on the new tool. Before this training was made available, the only way to know about how to perform the same tasks as before was to contact someone from the launch team, and even they were not greatly experienced. This idea came straight from the established methodology to address the VOC points.

OUTCOME

Monitoring continued months after implementing the before mentioned solutions to the major points made in the VOC. Additional data gathered up until February 2018 about the Ticket system and its trend after the implementations of the quick solutions back in October 2017 is shared on Table 3 and Table 4. From Table 3 one can appreciate how the amount of open tickets continued the decreasing trend in 2018.

Table 3
ECN/Workflow Tickets

Date	Open Tickets
7/28/17	92
8/25/17	303
9/29/17	215
10/27/17	217
11/24/17	142
12/29/17	114
1/5/2018	112
1/26/18	98
2/2/18	93
2/26/18	80

Figure 1 is a graphical representation to easily capture the trend observed.

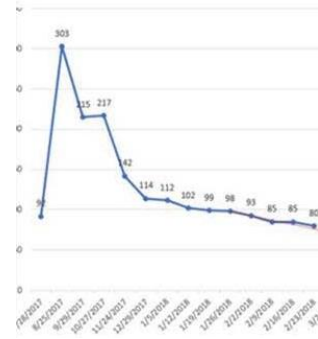


Figure 1
ECN/Workflow Trend

The trend found in the ECN/Workflow tickets was repeated on the Data Tickets received on the following months as shown in Table 4.

Table 4
Data Tickets

Date	Open Tickets
7/17	24
8/17	94
9/17	105
10/17	143
11/17	155
12/17	84
1/18	76
2/18	39

As with Table 3, Table 4 shows a similar trend in the decrease of open tickets/complaints regarding the missing/erroneous data. As it was done for Table 3, Figure 2 is a graphical representation for the open Data Tickets.



Figure 2
Open Data Tickets Trend

FUTURE DEPLOYMENTS

The consideration for future deployments was also made during a meeting held between the parties involved. Besides the solutions implemented discussed on the paragraphs above, there were also additions or goals established for any future deployment.

One of these goals was to provide a trial/test period for at least 1 person from all the groups that use the tool on daily basis. Also, the trainings for the new tool will be mandatory instead of optional for the daily users, this way it is ensured that the users will be somewhat familiarized with the tool.

CONCLUSION

Going back to the thought presented on the background, “deploying a software can be stressful and tedious” [1]. Not only is it difficult for the daily user but to those who manage and implemented the tool which have to take complaints and users frustrations on daily basis.

After the implementation of the discussed quick solutions to the problems made heard on the VOC, the trend of complaints/Tickets could be appreciated decreasing as time moved on. Should the trend continue as expected, the number of tickets to be on the one digit range in a few months.

Even though recommendations and processes were established for a future software tool deployment, one must take into consideration that “every software deployment will be different from one another.” [2]. Every software will be unique and different from one to another, so maybe these quick fixes worked for the situation reviewed, however, they might not work the same way in another deployed software.

By combining Product Data Management and Software Configuration Management one ensures the mastery of the development process even before making the deployment [3]. This could be an aspect that might help for future deployments in order to avoid most of the issues that surfaced during this one.

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