Supply Chain - Impact of Importance and Technology in Software Release Management

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ABSTRACT

Today's market place is becoming gradually more dynamic and volatile as customers become more stylish and comfortable, always tend expect the right good quality developed software at the right time, at the affordable price and the right time and place. The software creation industry faces many kind pressures from the consumers to deliver the product at right time. The supply chain planning systems are companies to quick written manage the activities of the software release process. The creativity of planning and scheduling is the significant factor to attain the manufacturing task efficiently in the supply chain. Also public can find many issues regarding to software production planning and scheduling by both academic and business researchers.

Keywords: Software Maintenance, Software Development Management, Software Measurement Process, Software Standards Development.

I. INTRODUCTION

Software is a product delivering the computing potential embodied in computer hardware. It is also a vehicle to deliver the product as it acts as a basis for the control of the computer, the communication of information and the creation and control of other programs. Software is in information transformer-producing, managing, acquiring, modifying, displaying or transforming information that can be as simple as a single bit or as complex as a multimedia presentation.

During software product development, many versions of the software product could have been developed. Many versions of the software product are developed for reasons such as fixing a defect or simply because the same product has been developed to cater to different customers with some customer specific features added. Then, there could also be different versions of the software product for different operating system. The software project team will need to decide which versions will be deployed at the customer's site.

Software release is the stage when the software product has been fully developed and tested and ready to be deployed at the customer's site. However, before that happens, it needs to ensure that everything has been checked and there are no loose ends that need to be tied.

II. Software Change and Maintenance

The Software engineering activities perform a delivery of a software product to the customer. Typically, the development cycle of a software product span 1 to 2 years, while the maintenance phase spans 5 to 10 years. Maintenance activities involve making enhancements to software products to software products, adapting products to new environments and correcting problems. Software maintenance activities consume a large portion of the total life cycle budget.

Software maintenance involves understanding the scope and effect of a desired change as well as the constraints on making the change. Design during maintenance involves redesigning the product to incorporate the desired changes. The changes must then be implemented, internal documentation of the code must be updated and new test cases must be designed to access the adequacy of the modifications. Updated versions of the software must then be distributed to various customers' sites and configuration control records for each site must be updated.

III. Software Persisting Problems

Software related problems persisted throughout the evolution of the computer bases systems. Software engineering practices are being adopted to overcome the problems:

- New hardware advances continue to outpace our ability to build new software
- Ability to build new programs cannot keep pace with the demand for new programs
- Widespread uses of computers make the society increasingly dependent on reliable operation of the software
- It struggle to build software of high reliability and quality.

IV. Managerial Aspects of Software Maintenance

Successful software maintenance like all software engineering activities requires a combination of managerial skills and technical expertise. The most important aspect of software maintenance involves tracking and control of maintenance activities based on Software Strategy and Assessment, value and business process system, software configured and optimization.
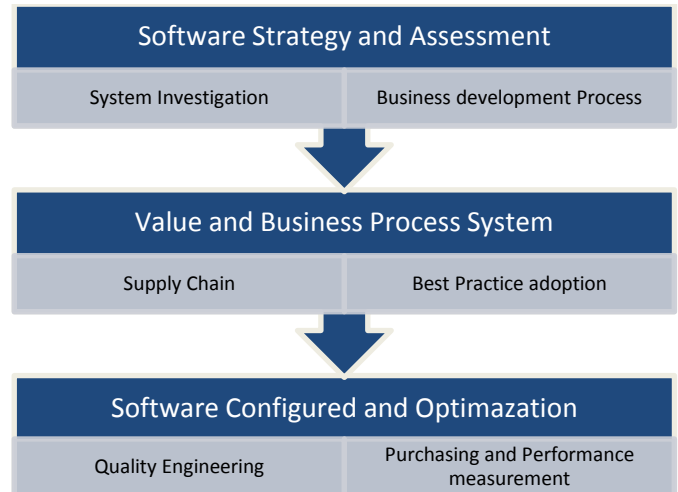

Figure 1: Significance of automotive and software maintenance industry

Software maintenance can be performed by the development team or by members of a separate organization. Maintenance by the same development team may result in poor maintenance documentation. Maintenance by a separate group forces more attention to standards and high quality documentation. It also has the advantage of releasing the development team to pursue other activities.

V. Software Release and Software Engineering Methodology

Software release is the last activity in a project. The software under construction is fully built and is now ready to be deployed at the customer's site. The project team develops the user and technical trends for the software product. If necessary, the project team also provides training to the end users. If there is any integration of the developed product with other external system required, then that integration is carried out. When everything is finished, the deployment of the complete software product at the customer's site is completed. Once all these software release activities are completed, the users can use the software product.

Comparison Parameter	Final release	Incremental release
Purpose	To improve quality	To build product incrementally
Product Size change	Remains Constant	Increase in each release
Product quality	Improves	Remains same
Development model	Waterfall	Agile with incremental product building
Time to Market	Fast	Fast
Product Size	Small to even large	Small to even large
Product Versions	Few	Few too many

When software products are developed incrementally, there will be a large number of releases. These releases can be both minor and major. All these minor and major releases are directly by the market/customer demands. The marketing team or the customer gets market feedback and provides their input to the vendor about the required features of the product.

VI. Software Supply Artifacts

A complete software product consists of many artifacts. Before its release, the project team has to verify the deliverables artifacts. All the deliverable artifacts need to be handed over to the customer at the time of software release. Here is a list of artifacts:

- The complete source code of the product.
- The binary executable code of the product.
- Hardware or software parts that are not part of the software development. Project but still may be part of a larger contract with the customer.
- The user manuals of the product.
- The technical manuals of the product.

Downloadable files if they exist. A downloadable file could be a file template that is needed by the users to create some documents. These prepared documents may need to be uploaded into the system (to complete a transaction or prepare a report) some or all of the artifacts from the above list could be included in the deliverables. The exact list of deliverable artifacts depends on the contract that was signed by the customer and the developer before the start of the project. To make sure that all the deliverables are handled over to the customer, you may create a checklist.

VII. Software Configuration and Supplier Management

Configuration management for a software product is the process of managing the files, artifacts, and source codes so that the software product can run. Maintaing the required files and source code for each version separately is difficult because, generally more than one version of the software product is maintained during development. A configuration management tool helps manage each version of a software product in isolation from the other versions of the product.

For a software project, the suppliers are the companies to whom some or all of that software development work is outsourced. If a project or a part of it is outsourced, then managing the suppliers is a crucial work task for the project manager. The project manager is always anxious about whether the delivery will happen at the right time from the supplier. Whenever problems arise during the execution of a project, the project manager will try to fix them using project management techniques. The software features will design continuously in customer demand or business trends, developed and test and to track iteration or sprints on the software product.

VIII. Conclusion

Software product has been developed in a software project; it needs to be released so that the bespoke or general customer can use it. Software release is a phase in any software development life cycle where the software product is already complete and ready to be deployed. A software release involves handling over the following artifacts to the customer: software product, user and technical manuals, and any other supporting material. End user training is also part of software release. The new technologies have helped organization to supply chain operation. The software project mangers decision making help in solving the issues and organizations need have representations for the supply chain the board levels to sustain the quality supply chain services offered to the customers. The software result is technological advancement and increased dependence on information and communication technology.

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