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SaaS Supply Chain Software Testing

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Introduction

In the recent years we have seen the supply chain software industry offering more solutions in the software-as-a-service (SaaS) space. Many large-scale software providers that currently offer licensed software are now offering some version of their solution as software-as-a-service. The solutions offered in this model go from strategic planning and procurement through warehouse and transportation management systems.

Implementing SaaS software has many advantages, but to reach the expected savings from usage of the supply chain software solution, the system needs to be thoroughly tested during implementation and on a continuing basis.

Advantages of SaaS

A supply chain involves a large number of participants - from sources to customers and supply chain software solutions usually work in a network of systems with countless transactions and various data formats. Supply chain software is well suited for the SaaS model as the management of transactions can be built upon a pre-existing network and availability of the economies of scale. Also, software vendors can provide some best practice recommendation for the electronic communications.

Additionally, from a financial point of view, there are some short and long term advantages of the SaaS model. Short term advantages cover the minimal licensing fee and lack of initial infrastructure investment, whereas the long term advantages include reduced needs for IT resources and energy consumption. Lastly, the implementation duration of the project can often be shortened and the return on investment can be achieved very fast.

Testing SaaS

While the SaaS model eliminates many IT investments, to have a successful implementation and rip savings from the use of a supply chain software solution, verification of the system is still required.

Functional Testing

Once a solution is selected, users need to confirm the quality of workflows. Supply chain solutions are in the critical path of a company's revenue and verifying that the workflows will be transitioned to a new solution smoothly will reduce risks. An excellent set of functional use cases and test cases must be identified. This is also important since in the multi-tenant SaaS model there is less flexibility on modifications of the software where workflows fail to deliver the expected results. This functional test set should include cases that are repeatable and extendable and can be built upon during further phases of the implementation. Functional testing in this case should include all functions and interfaces.

Performance Testing

Performance is the key to success in a SaaS solution implementation. Performance must be tested from two points of view - transactions and users. Looking at it from the transactions point of view; testing needs to verify thousands of orders - shipments, EDI messages and responses from partners, carriers, suppliers, and customers for quick receiving and processing. From the user point of view, it needs to be confirmed that no latency is experienced by business users with the current in-house IT network and web-access. Navigation from page to page must be possible in fraction of seconds. Performance specifications and test cases for these requirements validate that once the system is live the service level expected is maintained.

Security Testing

Security can be a concern for many in the software-as-a-service model. Vital and strategic data is stored in supply chain systems and it is critical that the suppliers and customers have real-time visibility into this data. This is to be achieved at the highest security level. Maintaining security specifications and test cases to be executed on the production systems, verify that the data is secure.

Automation

Another advantage of a SaaS solution is the ease of upgrade. The software vendor will provide the latest software version and in addition offers intermediate updates of the system. For each of these larger upgrades, testing has to be completed for the specific requirement of each tenant of the SaaS solution to verify that the changes will not cause disturbance in the operation. This can efficiently be achieved by automating testing. Identifying key test scripts to be automated and running them on a new version before it is pushed to production and during an upgrade will provide greater confidence and no critical issues will arise and the business will run as usual.

Conclusion

The SaaS model for supply chain has many advantages from the financial and IT point of view. Trends in the market show that this offering is becoming more popular where companies have more choices therefore capable of choosing a SaaS solution that fits best with their workflows. However, it cannot be ignored that in this format, to make an implementation of a new system a complete success, a good testing strategy and process needs to be built into the project.

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