

# PHARMACY TECH COMPANY UPGRADES SOLUTIONS WITH FUNCTIONAL AND EXPLORATORY TESTING



## Overview

A leading provider of integrated pharmacy technology was looking to enhance a couple of their offerings. The solutions, which were developed using Agile and DevOps, involved continuous upgrades and delivery which requires a tedious documentation process. XTGlobal took up the reviewing and updating of the test case repository of almost 4000 test cases. They also conducted Smoke Testing, Sanity Testing, and Exploratory Testing which weeded out the obsolete test cases which were not relevant to the latest product versions. Smoke Testing improved the quality of continuous integration while Exploratory Testing made better utilization of the QA resources.

## About the Client

The client is a leading provider of Integrated Pharmacy Automation, Inventory, and Workflow Management solutions. They provide best-in-class pharmacy automation technologies to support health systems, hospital inpatient pharmacies, outpatient pharmacies, long-term care facilities and government pharmacies.

The client delivers best-in-class technology with unparalleled expertise focused on helping pharmacies of all sizes and types, with the primary goal of improving safety, productivity, and efficiency. They help pharmacies enhance their value chain in terms of safety, efficiency, productivity using innovative solutions. Their solutions are designed with category-leading automation hardware and seamless workflow software, all supported by unmatched industry knowledge.

## About the Products

The client has multiple products of which XTGlobal was tasked with enhancing:

1. A leading comprehensive pharmacy software solution to enable the health system pharmacy, implement a system of integrated tools for managing the pharmacy business and automating inventory functions.
2. A robotic automation based IV room compounding system to reliably and accurately prepare intravenous syringes and bags for pharmacies. It can decrease error-rates, increase safety and overall efficiency, and also proactively addresses the ever-evolving regulatory environment.

## The Challenges

The product development team went through the challenge of building and upgrading to newer versions simultaneously. As it is in Agile model with DevOps in place, it helped them manage the constraints and deliver continuously.

Typically, the documentation process would be tedious as requirements would have to be reviewed, finetuned, and edited according to changes (addition/removal) of functions in the subsequent product release.

Quality Assurance (QA) Testing plays a pivotal role in ensuring that the key value-adds of the product is not lost while upgrading the product versions.

However, working in parallel to continuous build releases with limitation in documentation of changes in product requirements adds more constraints to the product team.

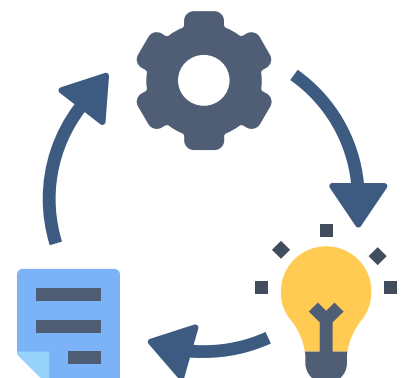
In general, the test case repository requires continuous monitoring, review, and update when a software product goes through upgrade process.

As the client's product has been continuously upgraded to new versions, it was identified that there were discrepancies in test cases, followed for every version upgrade.

There were originally 4000 test cases maintained. However, not all of them would apply for the latest versions. Having all of them for every version upgrade limits the efficiency of the delivery process.

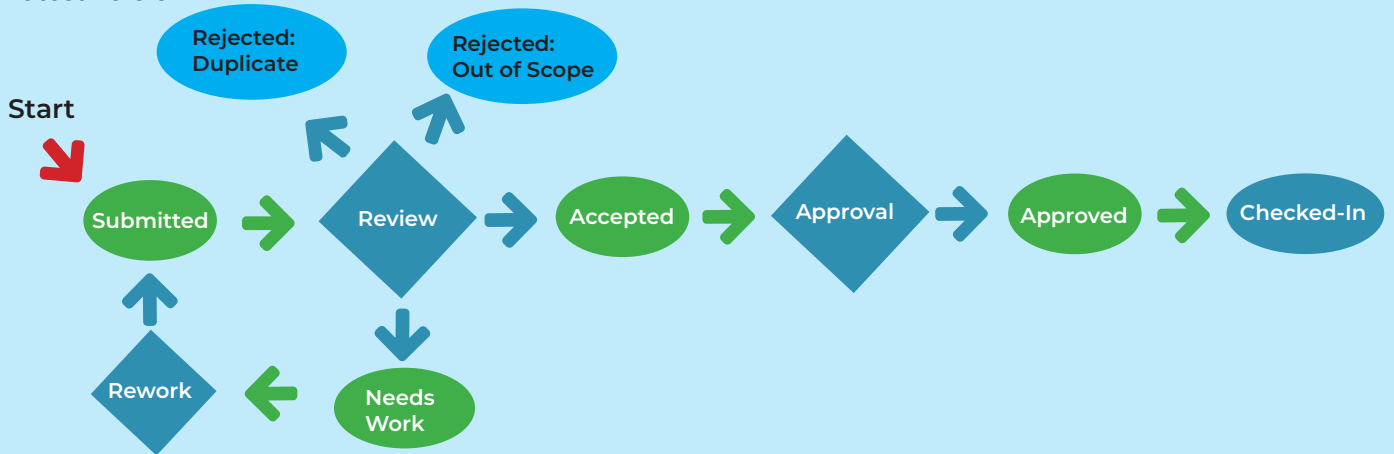
## Solutions

Having understood the limitations and challenges, the XTGlobal QA team identified that there are 3 key testing activities which carry more significance when compared to the rest of the activities in the entire QA Testing life cycle.



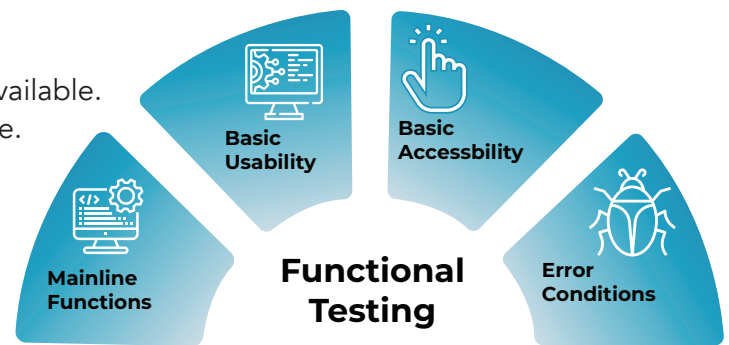
## Reviewing & Updating Test Case Repository

- Reviewed almost 4000 test cases followed in older versions.
- Filtered the ones which would not apply for the latest version.
- Edited the ones which required few changes.
- Maintained the history of changes.



## Functional Testing

- Analyzed the requirements and current test cases available.
- Created new test cases, for the latest version release.
- Identified test input data.
- Executed the test cases and logged the defects.



## Smoke Testing

- In DevOps cycle, build-verification step or doing a smoke test is an essential activity of the continuous integration maturity stage.
- Performed a Sanity Testing of new build before they qualify for the main testing.



## Exploratory Testing

- This is an ad-hoc testing activity which occurs while the QA team waits for completely reviewed business requirements or does not find sufficient details in the requirements.
- The Exploratory Testing which was done parallelly, helped the QA process to uncover the defects that are not easily covered in the regular scope of other tests. Exploratory Testing involves discovery, investigation, and learning in order to perform test design and test execution simultaneously without using any tests scripts and is thus a more “cognitive” activity.



Learn



Analysis



Test Design



Test Execution

## Results

- 20% of test cases maintained were categorized as obsolete as latest product versions do not require them.
- Smoke Testing influenced the quality of continuous integration in DevOps Maturity Model.
- Exploratory Testing helped better utilization of QA resources and saved time in waiting for complete product requirements.
- Functional Testing improved the quality of product release by ensuring that it has no defect and meets the version release requirements.

## About XTGlobal

XTGlobal, established in 1998, is a strategic provider of IT, software development, and consulting solutions for companies across the world. We derive solutions based on latest tools and technologies, customized to our clients' unique requirements. Our partnerships with Cloud Leaders like Oracle, Microsoft, and AWS give us the ability to build advanced capabilities for our clients.

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