

Smart testing drives seamless technology migration of POS software



STAG's rapid understanding of the product under test and setting up a good test baseline significantly contributed to the successful technology upgrade of POS software and go-to-market with no quality degradation, within the stipulated timeframe, for a global leader in the secure electronic payment domain.



Domain -
Retail / POS



Technology - Silverlight, ASP3.0,
Windows 7, MS SQL, IE 8 and FF13

CUSTOMER AND PRODUCT BACKGROUND

Our client has been a global leader in the domain of secure electronic payment technologies for the last two decades.

The product in question was the client's POS Terminal Management software, developed in Web 2.2. It enables remote monitoring and management of electronic payment devices. The product has been in the market for the last 20 years and has, understandably, captured a large market base.

PROBLEM STATEMENT




In today's technology-driven business world, growing business demands necessitate upgrades in technology to support the capability to fulfil those demands. That was one of the reasons for the client's decision to upgrade the POS Terminal Management software to the Web 3.0 platform.

The current version of the software had a large installed base, which made seamless migration without errors a tricky affair. A secondary problem was to complete this platform shift within a stringent timeframe, without compromising on the high quality standards that the earlier version of the product had set. Moreover, creating a dedicated in-house testing team was not an option for the company; its decision was to outsource the testing requirements to an independent third-party vendor with a proven track record.

Understanding the product, a complex one with 35 features embedded into a rich user interface, was a challenge as there was limited availability of product documentation and no previous artefacts – test cases or scenarios – for reference. Additionally, the product development team of the client was based out of the US, and the interaction with them was limited to WebEx, bringing another level of challenges in the product knowledge transfer.

SOLUTION

The primary step was a detailed independent analysis of the client’s software, to have a clear understanding of product functionality in the shortest time possible. This was achieved by applying the Landscaping technique of HBT. Next, a sound test strategy and design was put in place, in a time period of three weeks. Then, applying HBT’s Cleanliness Criteria and Interaction Matrix technique, a set of more than 3000 test cases were created. These test cases were categorized into multiple levels – L1, L2, L4 and L5 with each level having sufficient positive as well as negative test cases. The software under test was subjected to 3 cycles of testing, with each test cycle lasting 2 weeks.

-  #Test Cases Created - 3000+
-  #Defects Detected - 128
-  #Testing Cycles - 3

There was significant cycle-wise reduction in the number of defects. Critical defects were isolated and prevented from escaping to the field.

Test Case Details					
	Test Type	#Test Scenarios		#Test Cases	
L5	Flow correctness test	20	100 : 0	20	100 : 0
L4	Functionality test	363	60 : 40	522	59 : 41
L2	User interface test	68	100 : 0	1896	100 : 0
L1	Data validation test	184	50 : 50	540	60 : 40
		635	65:35	2978	85:15

Test Base Line		
	#EUT*	#PDTs*
L5	20 flows	1
L4	38 features	11
L2	55 screens	8
L1	18 screens	4
		24

Effort & Time Distribution						
	Understanding & Base-ling	Design	Execution			Total
			Cycle1	Cycle 2	Cycle 3	
Effort [PD]	12	15	30	24	18	99
	12%	15%	30%	24%	18%	
1 - day to install the product						
Time [days]	4	5	10	8	6	33

* EUT - Entity under test, PDT - Potential defect type

OUTCOME AND VALUE ADDITIONS

Good test base-lining, organizing and streamlining test assets helped achieve test completeness, adequacy, better asset maintenance and re-usage leading to improving test effectiveness and defect finding ability by **3x**.

This paved way to complete the testing within the stipulated timeframe, while the client was able to bring seamless technology migration of the product and go-to-market without compromising on the quality standards of the previous product version, as per the business plan.