

IT and e-commerce Information Quality-How Testing Impacts the Business?

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Abstract—Usually when we perform testing of any application, we mainly look for the frontend, but we never realize how backend operation can actually intercept changes that can bring many issues in the application. With more India's online shopping registering a phenomenal 100 per cent annual growth, many retail chains and consumer durable companies are joining the Web bandwagon to tap the e shopping market. Users don't take a second to reject a site when they find any security issue, user interface issue or any other issue. According to Google, India have more than 120 million Internet users, out of which around half opt for online purchases and the number is growing every year.

1. INTRODUCTION

To win the trust of so many users it becomes very important to deliver a bug free application for this and this involves great testing effort which includes backend testing of e-commerce websites with domain specified testing thoroughly.

Users are mainly concerned with frontend of:

- Home Page
- PDP (Product Detail Page)
- PLP (Product Listing Page)
- Stock availability
- Cart
- Checkout
- Payment
- Search

Extra features like

- Coupons/Promotions/Payback points /Wallet
- Cross Sell/ Upsell
- You may also like/ Similar items/Accessories section
- Check for delivery option
- Compare tray

- Wish list /Email a friend/ / Notify the price
- Review

But a lot is happening at the backend. Being a tester are we confident enough that we will be able to deliver a reliable product to so many users?

2. HOW BACKEND TESTING CAN HELP TO ACHIEVE A MORE RELIABLE APPLICATION?

UI testing (WCMS Cockpit)

Web Content Management Module (WCMS) is multi-channel publishing system that allows you to easily maintain websites, both the transactional and non-transactional parts of sites. Provides an intuitive, graphical user interface for data presentation and management. Various content types can co-exist on a single page

- UI testing of the frontend making changes at the backend. There is a product cockpit WCMS where as a tester you can upload banner images/component (product) images/templates/
- As a tester you can define a Page adding products container /text /description/labels/images etc
- Components can be modified customized, and restricted as per the requirements.

Examples – BannerComponent, CMSParagraphComponent, RotatingImagesBannerComponent, FooterComponent, SiteLogoComponent, MiniCartComponent

- Things to Explore -Live Edit, Previews, Media Management, Advanced Search
- Media Management -A media can be anything that can be saved on a file system, such as a Flash animation file, a JPEG image, an MPEG video file, a CSV file, a text file, an XML file, and other of varying sizes.

- All the timer related (in terms of hours/days/weekly/monthly) information for requirements like if a sale existing for some time can be set from WCMS
- A tester can add images /text of varying sizes and notice the impact at the frontend.
- The components are handled in terms of responsive/desktop view to verify the UI impacts on mobile phones having varying resolutions and sizes.

2.2. Product Content Management (PCM)

Product Content Management (PCM) , delivers consolidation and centralized management of product information and attributes across all channels.

- Products entry added in the site for different categories and sub categories in staged /online version can be tested for home page /listing pages from this cockpit.
- Products can be uploaded in bulk and sync job is performed to test if all the products are available at the frontend.
- All the information related to products, in terms of price, stock availability, product approved/unapproved state, specifications can be set from here and synced.

2.3. Management Console (MC)

The Back office area is an administrative tool to help run e-commerce business efficiently. It enhances the capabilities of the Back office UI, providing ready-to-use, reusable components that enable to build custom business tools tailored to specific user needs, simplifying administrative tasks.

- To test the backend functionality and the impact for it, a tester need to have understanding of all the requirements and how to configure them at the backend.
- A tester can start testing by creating user groups in terms of admin, employees, users and giving them permission who can handle which part. Taking as an example you can create user group for cancel & return users who are going to handle process for cancelled and returned items.
- Products related are maintained here also. Testers can test various scenarios creating products at the backend :
 - Editing features like price, stock availability, description.
 - Products in the wish list section of the user.
 - Products in the minicart / cart section.
 - Emails/SMS templates and restriction for scenarios when order is placed/cancelled/returned/ notify the price of any product/Email a friend about the product.
 - Availability on the basis of Region/Pin code.

- Products added in Accessories/You may also like/similar sections
- Coupons/Promotions applied at the item level and order level
- Orders placed /cancelled /returned and their status
- Payment methods (online/Cash on delivery /Wallet/Payback points)
- Session timeout handling.
- Products handled in terms of micro site.

2.4. Customer Service Cockpit (CS Cockpit)

When customers can't find the answers they need, they can become frustrated and often click away from partially completed forms or abandon their shopping carts. In order to recover these customers, service contact points – including call centers, chat, email, and even Web-enabled customer self-service – need to be able to deliver the appropriate information and resolutions quickly.

CSAs can use the Customer Service Module to

- Create new orders on behalf of customers when they are not able to place order.
- Modify previously placed orders,
- Complete partial orders,
- Take payments,
- Cancel orders,
- Authorize returns, and refund payments.
- Customer Service Module even enables CSAs to create, modify, and manage customer profile details such as addresses, credit cards and contact preferences
- A single, highly responsive UI improves efficiency by enabling CSAs to process more transactions per hour or day. Easy access to key functionality enables CSAs to quickly get the information needed to identify and resolve issues. Because CSAs see the same personalized screens – catalogues, promotions, etc. – that customers see, you can transform customer service into a successful sales center and boost your revenue.
- It can be customized based on the requirements.
- Tickets can be created to handle internal managements of service agents and escalated.
- Based on the microsite customization can be done.

3. AFTER BACKEND TESTING HOW TO BE CONFIDENT ENOUGH WITH THE PERFORMANCE OF APPLICATION.

3.1 Automation Testing

Once the application is stable we can perform automation testing to save time for regression testing when enhancements are done. For automation testing scripts are generated using tools like selenium which is an open source tool or any paid tool like QTP. Scripts can be generated for:

- 1) Checkout Flow
- 2) Integration with 3rd party
- 3) Backend Functionality of the system

When interim deliverables are made or any enhancements are done, these scripts can be run to know if the application is stable or not to save testing time and bugs can be found easily. It helps in maintaining versions of the application as well.

Nowadays, e-commerce businesses are more dependent on mobile users and native application users. Therefore, it becomes very important to test mobile (responsive) application and native application as well.

Applications automation testing is the way to measure your web application's ability to conduct multiple transactions simultaneously while maintaining adequate response time. It also helps to isolate bottlenecks in any component of the network infrastructure to accurately pinpoint potential problems.

3.2. Testing of Mobile application

- First of all UI testing is done on various mobile or emulators or tabs. In this case you are accessing the desktop application only on mobile browsers. We need to do UI testing thoroughly to check user is able to access all the information and is easy to use.
- Then, we need to test if the desktop and responsive applications are in sync in terms of products visible at the frontend, stock maintenance, reviews etc.

- Mobile application can also be automated as well using various tools available in the market.
- Testing of functionalities remains the same as testing of desktop application.

3.3. Testing of Native application

- First of all we need to test whether the application is able to be install on different mobiles .We need to run apk file for android mobiles and ipa file for ios devices.
- UI testing of the application is done thoroughly of all the components on various devices.
- Then, we need to test if the desktop and native applications are in sync in terms of products visible at the frontend, stock maintenance, reviews etc.
- Testing of functionalities remains the same as testing of desktop application.

Testing is done as per the client's and customer's requirements. All the documents are maintained.

4. CONCLUSION

If testing is done properly including the backend and automation testing can affect the usability which in turn will affect the number of users using the application and profit margin will definitely go up. What's most important when testing e-commerce websites is to make sure that each feature has correctly implemented its requirements not just look and feel but logically also.

The hybris Web Content Management Module makes it easy to manage content across channels including online, mobile, and rich Internet applications from a single user interface.

- Simplify project administration with intuitive navigation, page editing, and preview functionality.
- Maximize success of promotions with A/B testing for pages and/or components.
- Ensure consistent site management – online and mobile – by managing content and multimedia assets from a single data source