

Failure Mode and Effects Analysis (Quality Risks Analysis) Form									
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ID: BSA-FMEF01

Model/Product: Book Search App

Product Manager: - [1]

Target Release Date: -

Project Manager: - [2]

Prepared By: Roman Nieviezhyn

Other Stakeholders: - [3]

FMEA Date: April 25, 2016

Quality Analyst: Roman Nieviezhyn [4]

FMEA Revision Date: N/A

[illegible]

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Risk ID Number [5]	Quality Risk Category [6]	Failure Mode/Quality Risk/Effect [7]	Impact [8]	Priority [9]	Likelihood [10]	Risk Priority Number [11]	Recommended Action [12]	Who/ Which Phase (Unit, Component, Integration, System)? [13]	Requirement Tracking [14]
2.000	Load, Capacity, and Volume	Failures in scaling of system to expected peak concurrent usage levels							
2.010		System search fails at or before X number of search requests	1		5	5	Cursory	Unit, Integration, System	
2.020		System HTTP server fails at or before X number of simultaneous connections	1		3	3	Opportunity testing	Unit, Integration, System	
2.030		System fails to send e-mail at or before X number of e-mails in queue	1		2	2	Opportunity testing	Integration, System	
Quality Risk Category Priority						2			
3.000	Reliability/ Stability	Failures to meet reasonable expectations of availability and MTBF							
3.010		HTTP server availability is lower than X percent	3		5	15	Opportunity testing	Unit, Integration, System	
3.020		Database availability is lower than X percent	3		5	15	Opportunity testing	Integration, System	
3.030		SMTP server availability is lower than X percent	3		5	15	Opportunity testing	Unit, Integration, System	
Quality Risk Category Priority						15			
4.000	Error Handling and Recovery	Failures due to beyond-peak or illegal conditions							
4.010		Loss of network or server causes loss of/damage to database	3		5	15	Opportunity testing	System	

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4.020		Saturated network/wireless network causes time-out error	3		5	15	Opportunity testing	Integration, System	
Quality Risk Category Priority						15			
5.000	Date Handling	Failures in date math and handling							
5.010		Time zone transitions result incorrect results etc.	5		5	25	Bug reporting	Integration, System	
Quality Risk Category Priority						25			
6.000	Operations and Maintenance	Failures that endanger continuing operation, including backup/restore processes							
6.010		Backup process affects system availability	5		5	25	Report bugs	Unit	
6.020		Backup/restore process results in lost data or configuration	5		5	25	Report bugs	Unit	
6.030		Can't apply minor release updates/patches	3		5	15	Opportunity testing	Integration, System	
Quality Risk Category Priority						15		System	
7.000	Usability	Failures in human factors, especially at the user interface							
7.010		Search form information is confusing, clumsy, or intimidating	4		4	16	Opportunity testing	System	
7.020		E-mail with results is confusing, clumsy, or intimidating	4		4	16	Opportunity testing	System	

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7.030		Search results page info is confusing, clumsy, or intimidating	4		4	16	Opportunity testing	System	
Quality Risk Category Priority						16			
8.000	Data Quality	Failures in processing, storing, or retrieving data							
8.010		Data lost during form submit to HTTP server	3		5	15	Opportunity testing	Integration, System	
8.020		Data lost during e-mail send	3		5	15	Opportunity testing	Integration, System	
#REF!		Data lost on server side due to network or server issues.	3		5	15	Opportunity testing	System	
Quality Risk Category Priority						15			
9.000	Performance	Failures to perform as required under expected loads							
9.010		Big response time to request when number of calls rise	4		4	16	Cursory testing	Unit, Integration, System	
9.020		Lag in e-mail notification as number of messages rise	4		4	16	Opportunity testing/Cursory testing	Unit, Integration, System	
Quality Risk Category Priority						16			
10.00	Localization	Failures in specific localities, including language, dictionary/thesaurus, and messages							
		ONE NATION APP - NO LOCALIZATION???							
Quality Risk Category Priority						0			

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11.000	Compatibility	Failures with certain supported browser/OS combinations							
11.010		Recent Google Chrome version doesn't work	1	5	5		Extensive testing	Integration, System	
11.020		Recent Safari version doesn't work	2	5	10		Cursory testing	Integration, System	
11.030		Recent IE version doesn't work	2	5	10		Cursory testing	Integration, System	
11.040		Older IE version doesn't work	3	3	9		Broad testing	Integration, System	
11.050		Recent Android handset HTML page doesn't work	5	5	25		Report bugs	Integration, System	
11.060		Recent Apple handset HTML page doesn't work	5	5	25		Report bugs	Integration, System	
Quality Risk Category Priority					5				
12.000	Security/Privacy	Failures to protect the system and secured data from fraudulent or malicious misuse							
12.010		Spam attack on clients	5	5	25		Report bugs	Unit, Integration, System	
Quality Risk Category Priority					25				
13.000	Installation/Migration	Failures that prevent or impede deploying the system							
13.010		Installation/set-up process of APP fails	1	2	2		Extensive testing	Unit, System	
13.020		Update for a new version of APP fails	3	5	15		Opportunity testing	Unit, System	

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Quality Risk Category Priority						2			
14.000	Documentation	Failures in operating instructions for users or system administrators							
14.010		Help screens misleading or wrong	5	5	25	Bug reporting	Bug reporting	System	
14.020		Written documentation misleading or wrong	5	5	25	Bug reporting	Bug reporting	System	
Quality Risk Category Priority						25			
15.000	Interfaces	Failures in interfaces between components							
15.010		APP <-> SMTP server fails	5	5	25	Cursory testing	Cursory testing	Integration, System	
Quality Risk Category Priority						25			

- [1] The person responsible for the product from inception to end-of-life.
- [2] The person responsible for managing the development effort up to the release point.
- [3] Other key quality and testing stakeholders affected by the quality of the system and/or the testing process.
- [4] The test manager responsible for assessing quality per this risk analysis and implementing Integration and System Test mitigation measures.
- [5] An identifier for the risk category and for the specific failure modes. This ID can be used to trace quality risk coverage by test cases.
- [6] The category or type of quality risk we are addressing. Certain generic categories of quality risk apply across most computer systems.
- [7] The specific problem or kind of failure we are concerned about.
- [8] The seriousness of the effect on a scale of one (most damaging) to five (least damaging).
 - 1. Loss of data.
 - 2. Loss of functionality.
 - 3. Loss of functionality with a workaround.
 - 4. Partial loss of functionality.
 - 5. Cosmetic error.
- [9] The damage to market viability on a scale of one (most devaluing) to five (least devaluing). In other words, assuming we have this failure mode—known or unknown—in our system on release, how seriously does it affect the value we can offer to our customers?
 - 1. Wipes out the value proposition, blocking alpha/beta testing, early releases, and product demos.
 - 2. Unacceptably compromises the value proposition for delivery to paying customers.
 - 3. Limits value of system partially, but schedule delay possibly unjustified.
 - 4. Affects customer value less than a schedule delay would.
 - 5. No effect on value delivered to customer.
- [10] The vulnerability, from one (most probable) to five (least probable), in terms of: a) existence in the product (e.g., based on technical risk factors like complexity and past defect history); b) escape from the development process (not including testing); and, c) intrusion on user operations. In other words, if we are confident that the programmers will not create bugs that cause the failure, or that the code review process will catch the bugs, or that the users will not use the product in a way to encounter the bugs, this is a low risk. If we believe, however, that the underlying bugs will exist, that the peer reviews will miss them, and users will run into them, it is a high risk.
 - 1. Certain to affect all users.
 - 2. Likely to impact some users.
 - 3. Possible impact on some users.
 - 4. Limited impact to few users.
 - 5. Unimaginable in actual usage.
- [11] This is the risk priority number, which is the severity (how bad) times the priority (expected customer impact) times the likelihood (will it get to the customers). Since we use 1-5 for all three parameters, this ranges from 1 (most dangerous quality risk) to 125 (least dangerous quality risk).
- [12] These will be simple action items. For example, "Develop component test case", "Include in code review checklist", etc.
- [13] The group responsible for implementing the recommended action and the project phase in which they are to implement it (U=unit, C=component, I=Integration, S=System).
- [14] A reference to the requirement ID(s) that correspond to this failure mode.