100 questions in 20 minutes – The art of clearing traps in testing

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I have been assigned to test Traffic light control system with very less time (4-5 days), how can i setup my test cases for this and also it is for live beta testing at b'lore.

Rgrds,
-- XXXXX

from   Pradeep Soundararajan (Pradeep.srajan@gmail.com)
to   xxxxxxxx@gmail.com

Hi XXXXX,

I usually do not help testers who ask for test ideas without putting their thought process because I consider it an act of killing their creativity. However, I would love to demonstrate a way that might be of help to you and I am helping you with this because I love this exercise. I have never had an opportunity to test a traffic light control system and I would love to work on different things. It is important for testers to clear traps and that ensures a lot better testing, although it might be a very new product that they are asked to test or it has no specifications. You might want to go through a subset of questions that I'd be asking, either to the stakeholders or to myself or to my team members or to the customer or to you or to anyone around me.

Here is a list of things I want you to run through your brain, after every question you read:

a) What if I had not asked this question?
b) What kind of information would I have missed had I not asked this question?
c) How much time and energy would I have spent to recover from a trap if I had not known the information that this question helped me get?
d) What more useful questions can I ask in the same context?

I better repeat because it is important that you run through this in your brain after every question you read:

a) What if I had not asked this question?
b) What kind of information would I have missed had I not asked this question?
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d) What more useful questions can I ask in the same context?

Start …

1. What am I supposed to test?

2. What is the mission that I have? (For now, today, tomorrow and thereafter)

3. What kind of problems I am supposed to look at?

4. Who else would be testing it?

5. What are the resources (hardware, software, and people) can I leverage to aid my testing effort?

6. Is this a different kind of traffic light system than what I see outside my window?

7. Where is it supposed to be fit?

8. Is it for road travel or for trains or flights?

9. What kind of traffic control is this product serving?

10. Who would be the users? (The traffic policeman or someone they hired)

11. What would be their knowledge of electronic systems?

12. Does it operate on a battery? What kind of a battery? What is its life?

13. Does it have a backup power if main power fails? And how does the backup power know if the main power failed?

14. Is it connected to sensors?

15. Does it have a camera attached to it?

16. What components are already tested? Are there test reports I could see?

17. Why do I have 4 days to test it?

18. What would be the most expensive bug to miss?

19. Who are our customers and what are their stated and implied expectations?

20. What does the customer mean by beta testing?

21. Is there a timed activity for the traffic control lights?

22. What would be the software components and is there a simulated environment to test?

23. What kind of a processor is used and what are its limitations?

24. If it works for Bangalore traffic, would it work elsewhere in the world, too?

25. Why is it important to be delivered in 4 days?

26. Am I testing the program that runs on the processor?

27. Do I have the knowledge to understand the code or can I find someone who could spot the obvious programming errors?

28. Where are the developers and how can I speak to them? Have they done any unit testing?

29. Is there a customized timer that can be set based on the traffic conditions?

30. How many poles is one system going to be networked?

31. What if a network fails?

32. Is this system fitted to a 6 way road or a 4 way road or a 2 way road?

33. Which side of the road would have maximum traffic?

34. How is the hardware shielded against wind, water and lightning?

35. When the system is installed and started, which side will start with a green signal?

36. How big is the display?

37. Would people also a see a countdown timer for waiting and moving?

38. Are there list of issues that similar product have that I can Google to find it out?

39. If the power goes and returns back in a second, would the system resume from it's previous state?

40. Is there a way to indicate the people if any error has occurred with the system so that they should be careful to cross the road?

41. Can I propose a way to indicate that an ambulance or fire brigade is on its way and hence the traffic has been halted for an emergency purpose?

42. How much am I going to be paid for this?

43. Would the traffic police do an acceptance testing and what are the tests they'd be running?

44. Am I testing a system that is being newly built or am I supposed to check a manufacturing sample?

45. What kind of communication happens to the police control room when a system failure occurs?

46. Is there some information being logged to help fixing a bug if found after deployment?

47. How can this product get an update? Can it be through some network?

48. How does the display look to someone having color blindness?

49. What is the documentation that is available or to be produced?

50. What are my test deliverables? Can I video record my testing?

51. Can I spend time visiting the site at which it is to be installed to understand the traffic situations there?

52. What kind of problems are fixed (in case found before giving to me) and what might be its impact on other areas or within the same component?

53. Has someone tested this or a similar system before and can I consult him for getting some valuable information that might help me do a better job?

54. I remember a couple of scenarios where there was confusion for people to move around because of the system malfunction. How does this system handle those?

55. If this is a different system, and would people traveling to Bangalore from different places get confused while passing through this signal?

56. Has there been a hardware inspection or test that has happened?

57. What is the height at which the display is to be installed and who has decided the height and what factors influenced in deciding the height?

58. What is the budget of the testing project?

59. Is there a set of competitor products that is available to me to compare and contrast with the product under test?

60. What new techniques or approaches should I learn to test this system, more effectively?

61. Do I or any of my colleagues know of someone who could teach me those techniques?

62. Am I allowed to have a brainstorming session of ideas from different people across different countries?

63. Would I need to sign an NDA before I start testing this?

64. If this is an open source project, can I hire more people into this testing activity?

65. What has been a satisfying system for the customer and how does he know he is satisfied and how long does it take for him to know he is satisfied?

66. Are the developers planning for another build or release while I continue to test? Why is another build soon on the pipeline even before I report any bugs?

67. What is my role in this project? Am I a tester or a manager?

68. How many pre-planned meetings would disrupt my testing activity?

69. Does any of my team members are on the verge of exercising pre-applied leave or vacation during this period and how would this impact the testing activity?

70. I have come across several algorithms for the traffic control systems in the past (during college projects and kits sold for learning micro-processors better), which algorithm is this and why is this chosen against others?

71. Is there a support team for this product? What kind of a support would they be giving and what kind of information would they want to give a faster and reliable support?

72. What is this system supposed to do when high voltage surges and spikes pass through the system?

73. Would the product need to be tested for high speed impacts. It is very common to see drink and drive people banging on the traffic signal, should it explode and kill the person who did that? ☺

74. Are there any mechanical parts that likely are to be worn out due to wear and tear over a period of time?

75. In India, there are places where traffic signals are ignored and people just criss cross, so is this one going to be in such a place?

76. Where does this product dock in to the pole?

77. How easily is a new system dock-able if one is removed for a malfunction?

78. How many directions do this system supposed to show? (For instance, the same signal can show... Green for Left and Red for Right and Orange for Straight)

79. Is there a provision for pedestrian crossing time indication?

80. Who would scrutinize my testing strategy and ideas?

81. Which country has the best traffic signal system that the public are happy about and is there a study or white paper that can help me understand how they achieved it?

82. Can this system be easily stolen? (Fact: In 1999 the traffic signal system in Nagpur, Maharashtra that had camera attached to it was stolen)

83. What are the important things I could be missing?

84. Traffic signal displays, if aren't bright enough aren't visible during foggy weather. Is this system supposed to perform during those conditions, too?

85. What technology does this system incorporate that by learning can help me improve my testing of this system?

86. Do all my team members understand the mission?

87. Is there a specific process that is mandated by the customer that we testers are supposed to follow and is there a room for negotiating the process?

88. How do I differentiate between manufacturing defects V/S a system / software bug of the hardware when a bug occurs at my black box test?

89. Are there spare components that are available that can help with my testing? (In case I blow up a component or two through my tests, testing shouldn't be stalled for the reason that no spares are available.)

90. What kind of test documentation would the customer or other stake holders be benefited with that I or my team can produce?

91. Are there any skills that would be helpful to do a better testing that I or my team members do not possess?

92. Is there someone I know with that skill who might be available for hire for a day or two?

93. What are the kinds of questions that people have had about this product?

94. Why not fit this right away in a place where there might not be much traffic disruption and observe the behavior of people and the system?

95. I have observed some traffic signal systems to be solar powered. Is this one such? How do we test the solar power system and is there someone whom I can hire to do that job?

96. What are the angles in which the pole can fall down and what would be the nearby buildings that might get affected because of this? Are there schools or hospitals to the reach of the pole if it falls? (Pretty common, in India, I guess)

97. What is the weight of the system and what is the weight of the pole? What material is the pole made of and what material would be used as a cover for this system?

98. What is the mounting mechanism of the system to the pole? (I have seen traffic signal lights twisted to a different angle because the screws gave up its life)

99. It is common in India or maybe abroad that birds sit on these traffic signals and dirty it with their excreta. Should this be an important scenario to test as the excreta might enter into the product and result in malfunction of it?

100. What if I stop asking questions now? And how bad a testing would it be?

If you ask for help and someone gives you a direct answer, they aren't helping you, instead a true help is one which makes you think to get an answer for the question you have and thereby you become wise to think more answers for the same or different questions you might have in mind.

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"Pradeep's first language is not English--his first language appears to be testing." -- Michael Bolton

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