The idea-t framework

Influencing the design-evaluation and acquisition of tools to support testing

These12 heuristics are at the heart of the idea-t framework, designed to provoke thought and ideas when designing or choosing a test tool. Start with the heuristic questions, add your own questions and relevant details. Expect this to be iterative, move between the three themes of **Why? Who? And Context?** You might find it useful to start a mind-map to help log questions and thoughts.

Why?	H01. Why do we need this tool?: Why the tool is needed, what goals it supports, and what goals it doesn't support. What problem is the tool intended to solve, and if a tool is the best option for solving the problem. We found nearly a third of comments made about challenges with implementing tools successfully were management and organizational in origin and were often about conflicting goals across the organization. A mutual understanding across stakeholders of why the tool is needed, what goals it supports, and importantly what goals it doesn't support is vital. Consider: Freedom from Risk, Meeting user goals, Appropriateness
Who?	H02. Who will use or be affected by the tool?: Who (else) will use the tool? Who provides information for inputs? Who uses information from outputs? We found a broad and non-stereotypical group of people testing and using tools. Some stakeholders may not use the tool but may influence the goals for the tool. As you identify Why the tool is needed, you might find that different stakeholders have different perceptions of why the tool is required and what it should do.. Heuristics H03, H04, H05, H06 will give you more information about "who?" Think about Satisfaction, Meeting user goals, Appropriateness.
	H03. What previous experiences do people bring to the tool?: What previous experiences, expectations and skill levels do people bring? Thinking about previous experiences will help you focus on understanding expectations and skill levels, as well as communication styles. Different people will have different skills in technology, the tool set, testing, and the product domain. Consider: Effectiveness, Satisfaction, Learnability, Appropriateness, User error protection, Recognizability.
	H04. What communication needs or preferences do people have?: People have different communication styles, preferred media, speed, level of detail, accessibility needs, all change how people want to receive and impart information. Corporate, management, team and technical levels may require different information and details; the tool may not be directly used, but the data and information flows will be used. Provide multiple routes, methods and media for information and data sharing. Reduce the need to duplicate data. Consider: Effectiveness, Satisfaction, Flexibility, Learnability, Accessibility, Recognizability.
	H05. Is the learning goal "tool mastery" or "task completion"?: People may want to master the tool/become expert or just to learn enough to enable them to complete a specific task. Consider both personal choice and organizational pressure. The learning goal impacts investment versus cost. If just achieving the next task is the goal, then short bursts of 2-minute videos might be a good way to deliver information about the tool, or provision of wizards to step through tasks. Learning for mastery might require longer blocks of dedicated time, information about underlying principles, and practice sessions. Consider: Effectiveness, Flexibility, Learnability, User error protection.
	H06. What learning preferences do people have?: Solo, pair or group learning. Video, audio, text, diagrams? Online or face to face? Guided or exploratory? We found that people's general work preferences and communication styles did not necessarily match their learning preferences. For example, someone who enjoyed pair working might prefer solo learning, and the other way around. A person wanting to master a tool may want different media to when they want to accomplish the next task in a different too. H04, H05 and H06 are linked, but not the same. Consider: Effectiveness, Flexibility, Learnability, User error protection, Recognizability.

Need more information? The heuristics repository READ ME has links to "how to use" information, flowcharts, and examples of how people have used the heuristics. Quality attributes in the table were identified in the research as important to testers for their tools.

Context?	H07. Where will the tool be used?: Location affects availability of the tool. Offices, at home, on customer sites, countries / time zones, behind firewalls, indoors, outdoors, quiet or noisy environments. Think about geography, technical environment and physical environment. Location may be of the tool, the person, or their co-workers. We found that people were sometimes blocked from successful use of the tool by constraints in all three areas; for example, tools behind role-based firewalls, but mandated for use by people in that role. Consider: Context coverage, Operability.
	H08. What workflows will the tool be part of? Workflows transcend tools and individuals, weaving across and between teams and organizations. Workflows include tasks that could be supported by a tool and tasks upstream and downstream from the tool. Workflows are described by experts in texts such as standards, syllabi, training courses, textbooks, blogs, etc. but those descriptions do not always reflect the reality of what people need to do. Consider: Effectiveness, Context coverage, Operability, User goals, Appropriateness, Maintainability, Functionality, Security, Compatibility, Recognizability
	H09. What risks are associated with those workflows? The domain and technology, as well as the organizational culture will affect the level of risk that people face, affecting their approaches, and the support they need from tools. Key points This is very context dependent; think about what risks the tool will help to mitigate, what risks it won't mitigate... whether there are risks increased by using the tool, and whether those change for other people. Evaluate which of the quality attributes are most important for the customers and users of the tool.. Consider: Freedom from Risk, Context coverage, Operability, Appropriateness, Performance, Maintainability, Reliability, Scalability.
	H10. What autonomy of work styles is allowed in those workflows and teams? Organizational culture, autonomy and authority; supporting solo, pair /group work; team's confidence in their process (maturity, assurance, experience level, skills). Should the tool support different styles of working (solo, paired etc.) and should the tool allow workflows to be tailored? We found the answers to these questions depended on the domain and level of risk in an organization, as well as perceptions of the experience and confidence of the teams doing the work, and rules around user management in the tool. Consider: Context coverage, Flexibility, Satisfaction, Operability, Accessibility, Maintainability, Security
	H11. When will the tool be used? Level of urgency during the SDLC, speed a person can work with the tool (blockers, accessibility), staging tasks in the workflow (learning and retaining knowledge) There may be a different urgency on workflows supported by the tool at different times. Risks may change; perceptions of quality may change. Some people may require longer than others to complete what looks like the same workflow task: they might be working at a greater level of detail, they might be learning/onboarding, they might be using assistive technology that changes the way they receive and impart information, they may be waiting on other activities. We found organizations had expectations of how long tasks should take, which tools did not always support. We found frustrations at the level of support/speed of response from tools owners and users. Consider: Efficiency, Context coverage, Operability, Accessibility, Appropriateness, Performance, Maintainability, Compatibility, Reliability, Recognizability.
	H12. How long will the tool be used?: How long to get return on investment (ROI)? Maintainability and reliability over time. Decommissioning. What is the life span of the tool? Think about how long it will be used for, how long it will be maintained. Think about the impact if it becomes shelfware. Can we move easily from this tool to another and move our data? Can we move this tool to another environment? Consider decommissioning challenges. Consider: Context coverage, Freedom from Risk, Portability, Maintainability.

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