The confluence—roiling with opportunity and constraints—isn’t a unique problem space. The challenges common here (fragmentation, connectivity, security, etc.) are also present in desktop, web, and embedded systems. But while the confluence’s challenges aren’t unique, the ways in which they come together are. The multiple, simultaneous evolutionary jumps in methodology, process, and tools are all the more challenging to navigate due to the often conflicting and contradictory forces at play.

UNIQUE CHALLENGES
- Fragmentation
- Connectivity
- Security

WAYS THEY COME TOGETHER
- Evolutionary jumps
- Methodology
- Process
- Tools

Conflicting and contradictory forces

User expectations

Unlike the early days of the web, mobile users have highly-sophisticated expectations around functionality, stability, performance, and usability. These expectations, combined with user demands for 4-D contextualized data and the extreme constraints in IA stemming from limited screen real estate, require QA professionals to understand their users to a degree not previously required.

Mobile adoption

Mobile is the four-dimensional contextualization of data

Mobile relies on where and when you access it. But, with great contextualization comes great responsibility to respond to your users' needs and expectations.

Mobile adoption has occurred at a faster rate than any previous computing equivalent. People are using the low-barrier technology in greater numbers and at an earlier point than any comparable technology. The combination of mobile's technological immaturity with its high market penetration has two prominent implications for QA:

1. Mobile's testing tools and frameworks are underdeveloped, resulting in a higher reliance on manual processes.
2. Users' quality expectations for software and hardware are at least as high as the current state of desktop and web computing.

Quality assurance is a prescient mindset steeped in heuristics.

It applies heuristics gained through testing assumptions and outputs to the task of understanding the present state of a project and inferring what the future is likely to hold.

Agile

A project’s grammatical framework

The agile development framework is used to deliver value and expose risks. It doesn’t say what to do—it helps determine how and when to do things, allowing you to better structure your strategy to achieve project goals.

Mobile developers have released a massive body of work for the various operating systems. In this highly-competitive environment, the frequency of app updates and their responsiveness to users' needs and expectations are a real differentiator. These factors, in part, are pushing mobile developers to adopt more robust agile practices.

User expectations

Percentage of users who expect a site to load quickly on their mobile device as it does on their desktop

- 71% in 2009
- 58% in 2011

Percentage of users who will leave after waiting five seconds for a mobile site to load

- 74% in 2009
- 20% in 2011

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