JAPAN

A commitment to quality

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WORLD QUALITY REPORT

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THE CLOSER YOU LOOK
THE MORE YOU SEE

Japan's high regard for quality doesn't change. Over several years in this report, we've noted how instinctive it is for the Japanese to maintain quality. As we'll see, though, that doesn't mean they can't adapt to new circumstances.

Across the Japanese economy, we're seeing some interesting trends. The transportation sector in general, and the automotive industry in particular, are aggressively investing in research and development (R&D). This is especially the case in quality engineering processes, including those that relate to new platforms, connectivity, security, electrification, carbon neutrality, and autonomous devices. In life sciences, investment levels are largely flat, while in other sectors the spending is decreasing.

The pursuit of quality is prompted by its inherent value and by desired business outcomes, but another important driver in Japan is security. Even though time can be a key imperative, especially in fast-moving markets such as financial services, the quality of cybersecurity simply can't be subordinated. It's a real challenge, especially when new technologies such as blockchain are involved.

Automation is well established in the physical world in industries such as manufacturing, but it's increasingly common in software, and especially in quality engineering (QE). The pace accelerated in recent years, and since then it's been normalized. For instance, a medical technology company introduced test automation during the COVID-19 period and has since used it as a starting point from which to roll out a new global test automation framework. In Japan, test automation is used not just for the usual time-to-market and budget reasons, but to maintain the importance of quality within the overall cost-of-ownership model.

The emergence of agile and DevOps

In previous years, agile has not been a popular development approach, but its adoption is now increasing among larger Japanese organizations, and the use of tools to support it is growing.

The high value that the country places on quality means there is great determination to detect errors and their root causes early. As Japanese organizations start to adopt agile and DevOps approaches, they expect this "early warning system" mindset to be incorporated. In many countries, QE responsibility is handled in agile workflows by hybrid team members. By contrast, in Japan, quality is still adjudged to be of sufficient importance and to have its own dedicated teams. For example, there's a computer-aided engineering business that ensures that quality is in everyone's brief, but also runs a separate team to work offline and gauge the feasibility of products, processes, and the overall approach.
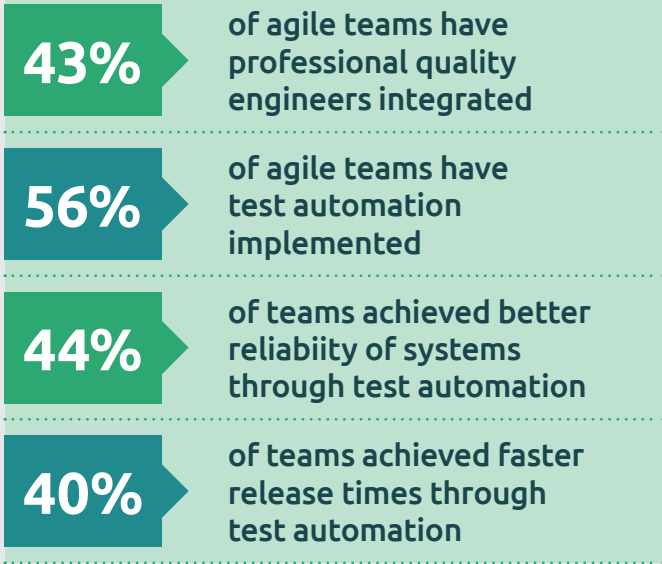
Green QE and emerging technologies

Green quality engineering may be in its infancy in some countries, but in Japan, it's already being practiced as standard in some industries. Service providers are working with several major enterprises to develop QE approaches that capture data in a bid to make processes and assets carbon neutral. Automotive companies are committing to sustainable quality practices, not just concerning their ultimate end-products, but in terms of the development and test routes implicit in their production.

We're also seeing that the increasing adoption of new technologies and QE techniques have been introduced to ensure high standards are maintained. As one might expect, digital twins are being deployed in the automotive industry, and so too is blockchain, which is used to track electric vehicle (EV) batteries. There's recognition that these emerging technologies can be applied in traditional industries, not just in new or obvious sectors. We find that companies of all kinds are expecting service providers to bring their experience and knowledge to bear in their markets too.

Constant evolution

In one sense, nothing has changed in Japan. The focus on quality is as absolute as it ever was. In another sense, QE is evolving. For one thing, it's accommodating itself to the adoption of agile and DevOps. For another, it's extending beyond Japanese shores into the global markets in which Japanese organizations operate. In addition, QE is being woven into the development and application of new and emerging technologies, as well as into sustainable businesses and business practices.

Survey watch: Agile Quality Maturity of Japanese organizations

43% of agile teams have professional quality engineers integrated

56% of agile teams have test automation implemented

44% of teams achieved better reliabiity of systems through test automation

40% of teams achieved faster release times through test automation