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# World Quality Report

## Japan

Japan's commitment to quality is instinctive – and it's woven almost indistinguishably into every aspect of business

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In Japan, for historic and cultural reasons, the commitment to quality in most aspects of life is instinctive. In business, and especially in production industries such as manufacturing and high-tech, it's hardly seen as an individual factor – it's too intrinsic a part of everything to be regarded as anything separate.

In particular, Japan has had more focus on quality than on cost and time. We see this reflected in responses to the first question in this year's survey. It explains why 59% of the respondents mention "detect software defects before go-live" to be the most important objective.

Almost two-thirds (63%) of Japanese respondents mention "ensure end-user satisfaction" as a key objective. This is in line with expectations. One reason is that customization needs in Japan are higher than elsewhere for any IT or engineering software; the final decision is not made by management alone. End-user consensus is needed for every sign-off on IT deployments. Indeed, elsewhere in the survey, we see "enhancing customer experience" rated higher than in other geographies as the most important aspect of the IT strategy.

Culturally, Japanese companies have been focused on corporate image and brand, but it is not a differentiator, and traditionally it is not given separate focus. Quality is not regarded separately, either – but instead, as we have noted, it is woven into the consciousness of the business.

### End-to-end ambitions

In Japan as elsewhere, the chief technical challenge in applications development is the lack of end-to-end automation from build to deployment. For the world as a whole, 63% of respondents mention this issue – but for Japan, the figure is even higher, at 71%. Our own interactions


with business corroborate this. It may be because automation is complicated in Japan by a greater need for customization, even for packaged, large-enterprise, and engineering IT software.

It's no surprise to note that, among the challenges specific to testing key applications, the response that ranks at the bottom in Japan is "we don't have the right/sufficient experts for this task." Only 18% of Japanese respondents mention this, against a survey-wide average of 30%. It's a tangible demonstration of the point that quality is ingrained in the country's way of life, and in its work and education.

The relatively high level of customization in Japan creates a challenge in applying testing to agile developments. Specifically, more than half of respondents (52%) say they encounter difficulties in reusing and repeating tests across different sprints and iterations, against a global average response of 39%. Customization and the consequent difficulty of automating tests are the likely causes here.

Elsewhere in the survey, but on a related note, we also see a distinct lack of skilled resources in test automation. A high proportion of Japanese respondents mention this issue, compared to 46% for our survey respondents as a whole. It's a further sign that test automation has not yet been fully adopted, and that manual testing still seems to be primarily used. Skills regarded as particularly important for next-generation automation engineers include knowledge of test automation architecture, knowledge of test-driven development and behavior-driven development, and agile testing, especially at the API level.

Indeed, creating automation tests is not the main focus for any team. Despite the focus on providing feedback on quality as early as possible, automation has traditionally not



been given a high priority in Japan, largely because of the high proportion of bespoke activity, and it hence tends to be pushed back. The perception of a lack of time in which to conduct automated test cases indicated in this year's survey therefore seems to be valid.

## Intelligence and security

In many countries, the introduction of artificial intelligence (AI) is still at a fairly early stage, but in Japan, it's interesting to note that the intention to use AI in quality assurance receives quite a high rating: well over half (57%) of Japanese respondents say they have AI projects in place on QA, against a survey-wide average of 42%. This reiterates the extreme focus on quality which Japanese companies have had historically, and emphasizes their commitment to continuous improvement in this area. Key considerations in this respect include the use of smart analytics to predict the risk of defects and risk areas for each application, with 44% of Japanese respondents rating this highly, against a survey average of 24%.

A new question for this year's survey relates to secure development strategies. For Japanese respondents, we see cybersecurity emerging as a key skills need, and we also note the importance of finding a structured way of dealing with security requirements.

What's more, in our experience, Japanese customers are not yet adopting security to the same extent as other geographies. This means they need to focus much more on requirements to understand the impact of security on their business, and they also need to continue to explore and evaluate their security requirements.

## QA and test budgets

Finally, a look at cost and efficiency, and in particular, at factors that have had the greatest impact on the increase of QA and test budgets. The relatively high figures for Japan in some categories are further indicators that the country is still maturing in use of agile and faster release cycles, and that detecting defects, longer test cycles, and the increased inefficiency of some test activities, all have a bearing on budgets. All these factors are, of course, at least partly the result of the lack of automation to which we referred earlier.

They are all also the result of the Japanese commitment to quality that we mentioned at the outset. It's a commitment that overrides budget issues. For instance, when a major Japanese manufacturer experienced a quality issue in the US, it significantly increased its QA spend right across its supply chain in response to pressure from the market. Detailed inspections were requested at every level. This resulted in higher detection rates for unrelated and hitherto-undetected defects, leading to longer test cycles, and thereby creating further budgetary pressures.

Every business obviously has to operate within margins, and must aim to turn a profit. But equally, every business is a product of its own culture – and quality is an area in which no one can imagine Japan accepting compromise. We can expect to see continuing and growing enthusiasm for the adoption of new, and better, quality assurance practices in the years to come.

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