JAPAN
A relentless focus on quality

Vivek Jaykrishnan
Vice President, Capgemini Engineering

Masahiko Mochizuki
Head, Digital Engineering and
Manufacturing Services, Capgemini, Japan

WORLD QUALITY REPORT

2021-22 I THIRTEENTH EDITION

Japan's commitment to quality is widely recognized. As we noted last year, for this country in particular, it's instinctive; and while everybody involved in Japanese software development and test shares this commitment, there is still a separate and honored place for dedicated quality teams.

The metrics that matter: quality and business outcomes

It's no surprise, therefore, to find this year that, for the Japanese, the most important aspect of IT strategy was deemed to be the higher quality of software solutions. Over two-thirds (69%) of the country's respondents said this was vital, which was eight percentage points over the survey average. A high responsiveness to business demands also featured prominently (62%), and so, too, did the need to enhance security (60%), both of which were also to be expected.

The same trend is clear in relation specifically to testing and quality assurance (QA) objectives. Once again, we see that more than two-thirds (67%) of Japanese respondents felt that contributing to business growth and other business outcomes was highly important.

By contrast, far fewer people placed emphasis on the need for quality at speed. At a response level of 48%, the country was 14 percentage points below the global average. In another question, exactly the same proportion (48%) said their testing was optimized in terms of speed and cost – but against other application development targets, perceived success rates were higher. For example, over two-thirds (68%) felt their testing covered all that was needed. Once again, we see evidence here of the Japanese mindset. This is an environment in which responsibility for quality is common to all team members, and in which quality will always be a more important metric than speed or cost.

Japanese respondents were broadly happy with the extent to which they are meeting their targets for testing key applications. A higher-than-average proportion (60%) felt they always or almost always meet their quality goals, and even more (64%) felt they have the right expertise, and that they have sufficient test environments when required (a subject area to which we shall return later).

Agile and DevOps: slowly increasing curiosity

Last year, we observed that Japanese organizations aren't especially keen on new tools and approaches. There is further evidence of this in this year's responses relating to the adoption of agile and DevOps in QA environments. For example, reports of any improvements that have been achieved in these areas were substantially lower than average: far fewer Japanese respondents claimed significant gains in quality of software, for example. For these development disciplines to gain ground in Japan, organizations are going to need to see more substantial benefits.

There are signs, though, of increasing curiosity. When asked to rate critical factors for the successful adoption of agile or DevOps, the option that was rated highest by Japanese respondents related to business priorities, which, as we saw in relation to the first question, is highly important for them. A business mindset is implicit in these development environments – and so, too, is teamwork. Japanese organizations recognize they need to develop in this area, and a substantial number of them – in fact, almost half (46%) – said they were lacking in collaboration skills. This was substantially higher than the survey average of 30%. We believe that until now, QA team members in Japan have tended to be self-reliant, and less collegiate than their development colleagues. What we see here may be the beginnings of change.

Early days for intelligent test automation

We've seen that Japan is only starting to take more interest in test automation, and that it is less of a priority for many organizations. However, in our experience, there are certain sectors, such as medical devices and automotive, in which regulatory requirements and market needs have created the time-to-market pressures that test automation aims to solve – which may be why increasing the level of test automation was quite highly regarded by Japanese respondents this year as a means of achieving greater efficiency.

What's more, these time pressures have been intensified by the increased strain that the pandemic lockdown has brought upon the QA community. When Japanese respondents were asked which areas would need the most focus in the post-COVID world, the factor that received the highest rating was improving automation.

It may not yet be widespread, but where test automation is being practiced, Japanese organizations are seeing benefits. We just noted that automation tends to bring advantages in terms of speed and coverage, but for Japan, the benefits that matter most are more directly related to quality of output. The highest rated responses were better control and transparency of test activities, and the use of artificial intelligence (AI) and machine learning (ML) in areas such as self-healing. In this second case, we see automation not just detecting faults, but fixing them – and that, of course, is highly desirable for this quality-conscious nation.

The lowest-scoring automation benefit was the reduction of test costs: only 42% of Japanese respondents reported this. This is not surprising to us: not only does automation have an implicit cost that offsets savings to some extent, but cost is not as important a metric for Japan as the quality it buys.

Progress in test environments

The most popular plans for the use of automation techniques in the coming year were test environment virtualization and test data automation, which were rated highly by 56% and 50% of Japanese respondents respectively. These figures may have been influenced by those higher-pressure sectors such as automotive that we mentioned earlier, where remote working has reduced the availability of real data and has increased the need for virtualization.

This year's figures show the percentage of testing that occurs in such environments is still lower than average, but we expect the proportion to grow – and for the use of cloud-based test environments to increase, too. in the meantime, the use of traditional on-premises permanent test environments is still several points higher than the survey average. It's a further demonstration of the Japanese preference for perfecting the use of well-established working methods.

In general, Japanese organizations seem confident in their ability to achieve their test environment targets. Satisfaction levels for goals such as visibility, robustness, and availability are broadly in line with global averages. We see corroboration of this in response to an earlier question, where only 28% of Japanese respondents saw the need to enhance test environment provisioning solutions as an essential efficiency goal. At first sight, this may be counter-intuitive – but we feel the figure may be low because most Japanese respondents felt enhancement was not needed, and because they are largely comfortable with their performance in this area.

The wellspring of success

What emerges from this assessment is a fairly clear picture. Japan is a country that is prepared to embrace new ways of working, but they will have to be conducted on Japanese terms, and they will have to develop alongside continuing efforts to perfect approaches that are tried and trusted.

Is the focus on speed or cost? In general, it's not really on either of these. Of far more importance is the extent to which QA efforts deliver valuable business outcomes.

Greater still is the goal of quality itself – quality above every other consideration, because for Japanese organizations, it is the wellspring from which every other good thing flows. No wonder, then, that the effort and the determination are so relentless.

In association with: