Taken together, the Nordic countries that feature in this survey – Sweden, Norway, Denmark, and Finland – form the second-largest group of respondents, after those from the US. They are drawn from right across the spectrum of sectors, with more than half representing the public sector; financial services; consumer products, retail, and distribution (CPRD); and telecoms, media, and entertainment (TME).

In the last two years, we have seen agile and DevOps models emerge as a growing trend across the region, and we expect the momentum to continue for the next three years. We have also seen more emphasis on quality assurance (QA) in general, rather than on testing in particular, but QA’s importance is very much in the context of the extent to which it can help with time to market. In increasingly competitive markets, speed of delivery is crucial, and to a greater degree than in some other parts of Europe, Nordic countries are still maturing in this respect.

There are also some industry-specific trends. For instance, in Norway and elsewhere in the region, the growth of self-service in the consumer products and retail sector has necessitated a broadening of scope in QA, as well as increased investment in logistics operations to satisfy the increased demand that self-service creates. And of course, extended logistics operations mean an extended QA remit, too.

The business imperative

Each year in the World Quality Report, we ask people’s views on the importance of various objectives affecting testing and QA – and this year’s Nordic responses are all above the survey average. We see them not just as high, but also as interrelated. Contribution to business growth and business outcomes may be the main driver here, but in a sense, it is a factor in all the others, too. Forestalling software defects, ensuring end-user satisfaction, safeguarding security and quality, protecting the brand – all these and more are predicated on building and sustaining the good relationships with customers on which every business depends.

It seems organizations in every country face an issue with insufficient time to test their key applications – but for Nordic businesses, the challenge is greater still, with 63% of them reporting it as a problem against a survey-wide average of 49%. Time-to-market pressures are largely the cause here; QA and testing are part of the whole development lifecycle, and they are being squeezed alongside everything else.

New developments: seeking clarity

Given the growing significance of agile and DevOps that we noted in the introduction to this article, it is somewhat of a surprise to find our survey respondents allocating lower-than-average percentages of overall project/team effort allocated for testing in these areas: 21% for agile, against an overall survey average of 25%; and 24% for DevOps, against an overall average of 27%. In our experience, these figures are not representative of what we see in the field. The Nordic market is moving towards these development methodologies and, although organizations may not yet have caught up on the QA and testing side, it seems clear to us that they will.

Nordic businesses are facing challenges in their bid to catch up on agile developments. Our survey shows 68% of respondents from the region mention a lack of appropriate test environments and data, against an average for the rest of the world of 56%. This is indeed a significant issue for Nordic companies.
Do agile and DevOps change the skills Nordic organizations need from their QA and test professionals? Given the relative immaturity of the market in respect of these disciplines, we would expect to see references to skills gaps, specifically in knowledge of business processes; in test environment and test data skills; and also in test automation skills. However, our survey shows that Nordic organizations are surprisingly sanguine about their skills coverage in these areas – in business process knowledge, especially. We can’t account for it: new development methodologies, coupled with developments in other areas, including artificial intelligence, machine learning, test automation, and the management of test data and cloud-based test environments, mean that the range of skills needed in QA and test is deepening and broadening all the time. We see the demand growing, in particular for Software Development Engineer in Test (SDET).

Elsewhere in our survey, we see Nordic organizations claim to be in some respects more active in AI and machine-learning projects than other countries. For example, 58% of Nordic businesses say they have AI projects in place on QA, as opposed to 42% in the rest of the world; and 34% say there have machine-learning projects in place on external projects, against 27% elsewhere. But this, too, is a surprise. While we hear a great deal of discussion about these areas, the levels of activity we see in Sweden, Norway, and Finland do not match these claims; and the comparatively low levels of investment in AI (an average of 18% of total IT budget, against a rest-of-world average of 21%) does seem right to us. So, too, does the skills need; 48% of Nordic respondents say there is a gap in the understanding of AI implications on business processes, versus 36% in the rest of the world.

**Trends in spending**

Finally, Nordic spend on QA and test is interesting. Over the last three years, 95% of the region’s organizations experienced an increase in proportional effort and cost spending on activities in these areas – a reflection, we feel, of the increasing commitment to new approaches, such as agile and DevOps, that is being driven by competition and consumer need.

And yet, when asked to look ahead, they are saying that 23% of their total IT budgets will be assigned to testing and its associated costs, compared to 27% of total budget for businesses in the rest of the world. Why should there be this difference? It could be because Nordic businesses realize that, as time passes, QA and test are likely to lose their discrete status. Instead, they will increasingly be wrapped into overall development cycles, and will be less of a separate budget line item.