Testing the water

Water competition and getting ahead with market readiness and systems testing

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" It is no secret that water companies are facing a multitude of difficult questions as a result of the opening of the business retail market. Should they compete? If so, where and how actively? And how should they structure their organisation to deliver this competitive capability?

What is less well articulated is that every choice a company makes will influence its approach to technology. Some IT requirements are common across the industry – for example, those to facilitate data exchange and to interface with the market operator. But undoubtedly a separated retail business that intends to compete for customers nationwide will have very different technology requirements to an operation that takes a purely defensive stance and remains a close part of its wider group.

There is a heady mix of strategic and technical choices to make. For the CIO, while system specification and build may be front of mind, quality assurance and testing must not be at the back. However it is common with internal IT implementations for critical testing activities to be bolted on at the back end after everything else is done – and more often than not, the scope of these activities is reduced to avoid missing delivery deadlines.

But preparing for business water retail is no ordinary IT implementation. There is an absolute deadline to meet, external forces calling many of the shots, the reputation of both the individual company and the whole industry to consider, and smooth interfaces with other market participants a baseline requirement. For these reasons, I believe testing cannot be a bolt-on afterthought in this case. Robust and thorough test activities should be planned as part of strategic decision making, brought into play much earlier than usual, and well provided for in the implementation timetable.

This thought leadership paper scrutinises these issues on two levels. It looks first at the sheer amount of change CIOs must grapple with; and then at the rigorous testing regimes that will be needed if policymakers and customers are to have confidence in the new market. "

Unprecedented change

With the exception of the occasional merger, the structure of the water industry has been static for two and a half decades. But retail market reform means water CIOs and their teams are now squaring up to respond to significant levels of change.

In the short term, there are all the preparations required to participate in the 2017 retail market. This is as much a challenge of discovery as of delivery. Companies are being asked to implement an entirely new requirement: to interface with a third party market operator and to pass data forward and back in a form that can be passed on to others. One of the closest examples of how this will work in practice can be found in energy, where the Data and Communications Company is being integrated with energy supplier systems. Moreover, although switching levels remain unknown at this stage, company systems must be fit to handle high volume interfaces reliably and effectively. All round, preparations for market participation are a far cry from a typical internal IT implementation.

But the change won't stop in 2017. Experience from the Scottish water market shows developments are ongoing, in terms of codes, central market operations and corporate reactions to an ever changing competitive landscape. A traditional "waterfall" approach to development, where software is introduced to perform a particular function by a particular date, will fall short of the dynamic demands of the new market. CIOs, even CEOs, will need to embrace delivery agility and come to value a more progressive approach that enables them to cope with repeated change.

For ambitious companies, simply "coping' with life in a dynamic market won't be enough. They will want to seize the new opportunities offered with both hands and lead the change rather than just respond to it. This was evident when energy was deregulated and water parallels are already emerging: the large English retailers that have gone to learn in the Scottish market are reminiscent of proactive international firms such as TXU which jumped at the chance of cutting their teeth in the UK's competitive energy market. Passive water companies should note that in energy, the most proactive and innovative players managed to hold their positions and increase market share. Those slow to act frequently lost ground.

Testing times

Though at first glance it may seem to be a side issue, robust IT testing practices will be a crucial part of water company responses to this high level of change. Testing must not be allowed to become the bottleneck on the critical path that delays market opening because it hasn't been given sufficient profile and attention. The gas industry provides a lesson here, drawn from Xoserve's Project Nexus work (see box). Nor can the market be allowed to open without company and central market systems being properly tested, lest systems stall and damage the entire competitive proposition.

Leading companies looking to shape the market will see well tested systems as a critical part of their competitive edge. But for all, there are plenty of good reasons why testing should be a priority rather than an afterthought:

- **Market expectation:** The Open Water programme has made it clear that it expects companies to test systems as part of their readiness preparations. This is set out in Technical Appendix 6 to the third Market Architecture Plan (MAP3). MOSL's business plan envisages user testing taking place between April and September 2016, ahead of shadow operation (see diagram).

- **Readiness licence condition:** Drawing on Ofgem's experience when it introduced the New Electricity Trading Arrangements, Ofwat has consulted on the introduction of a water company licence condition on readiness. One of the priority tasks identified is participation in the testing of the new market arrangements and technology readiness.

- **Corporate risk and cost:** Even without these push factors, companies should be aware of the corporate consequences of not being fully ready by April 2017. These include regulatory fines, reputational damage, customer confidence destruction and delaying market opening to the detriment of the company and wider industry. Moreover, if an untested or shoddily tested system proves a poor performer, it could prove extremely costly for the company over time.

Risks highlighted by ongoing Project Nexus

Xoserve delivers transactional services on behalf of all the major gas networks. At the last gas distribution price control, it identified a need for a major IT systems investment programme. This programme hugely impacted the operations of gas shippers and suppliers, and required them to implement business and IT changes to continue operating in the new landscape.

All suppliers initiated a programme under the Project Nexus banner to understand the potentially significant changes they had to make to their systems, processes and procedures. This proved challenging on a number of fronts and stacked up two key risks:

- Because of the extent of the change required affecting multiple systems and demanding a significant volume of IT change, industry deadlines could be missed.

- The uncertainty of the initial Xoserve requirements caused a risk to project delivery. Suppliers were forced to deploy a series of mitigation activities to manage these risks, including prioritising business processes and scenarios for testing.
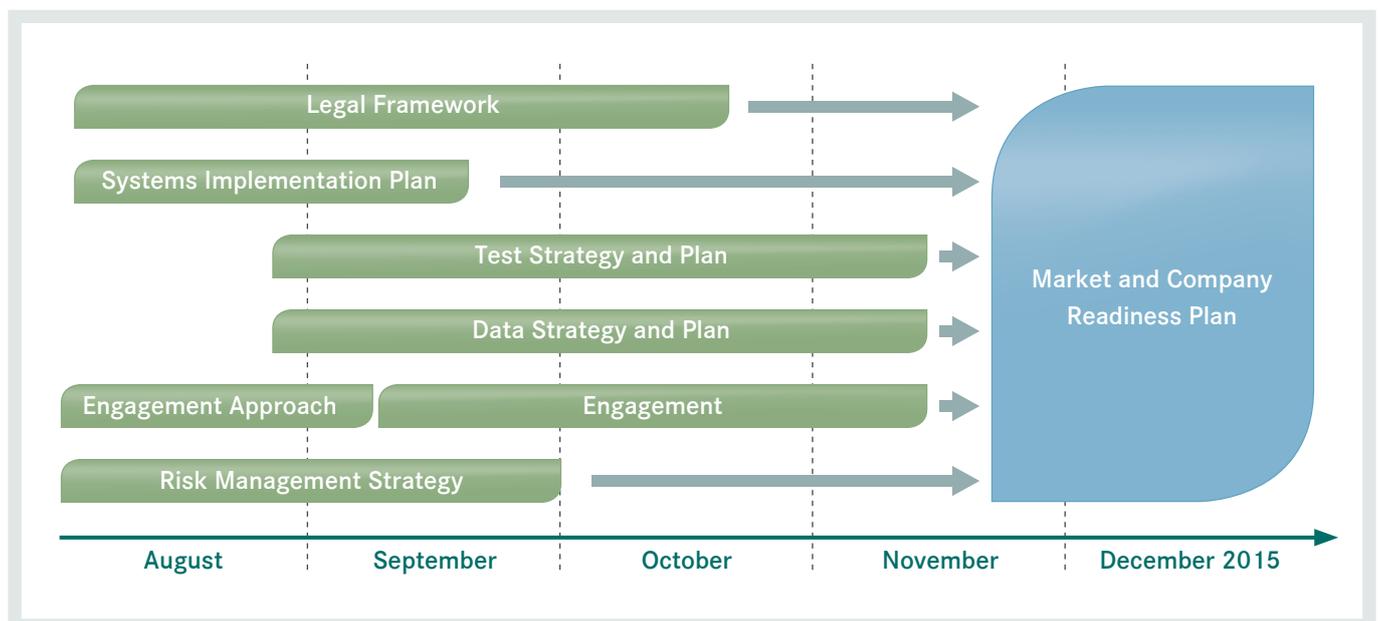
To finalise the market and company readiness plan, MOSL will need to progress a number of key inputs in parallel, as shown.

Source: MOSL

Delivering and operating a successful retail market will be demanding, and many delivery aspects will need to be checked for effective and efficient operation. At the simplest level, all systems and processes associated with participation in the market will need rigid integration testing, following best practice. Companies will need to ensure end-to-end business processes work correctly and efficiently.

Drilling down one step further, companies need to check they are able to perform key market activities at transaction level – for instance, to switch a customer or reconcile a wholesale charge. But more than that, boards should seek assurance on performance testing – for example, that systems can handle not just a single switch from a transactional point of view but switching at volumes in line with strategic corporate retail ambitions, meeting the SLA's laid out in the market specification.

In addition to these specific testing requirements, CIOs will need assurance that new retail systems integrate smoothly with the business as a whole – its billing systems, customer relationship management systems and so on – and don't throw up any issues for wider operation in the run up to market opening. This can be achieved through full end-to-end integration testing. But they should turn their thoughts too to regression testing: ensuring the market interface and data flows will still work once enhancements or patches are added to internal IT programmes and in light of the inevitable development of codes post market opening. Here, automation and agility will be vital.

Forward thinking companies may even want to explore the DevOps approach – a software development method that stresses collaboration between software developers and users and aims to help an organisation rapidly produce software products and services to improve operations performance. CIOs will need to look at how they organise IT for the new retail competition.

Readiness & assurance

For each strand of testing a company deploys, it will need to have in place a clear, reasoned test assurance strategy; an operational testing programme; and documented evidence of compliance and of how any problems discovered along the way have been addressed. It can choose from a number of delivery routes – from internally managing the testing programme or working with an existing contractor, to outsourcing some or all of the work to a systems integrator or specialist testing consultancy.

Whichever option is preferred, the company must ensure the governance of its testing work is solid and that its compliance data is compiled and presented in a way that would stand up to external scrutiny. This will help foster customer and other stakeholder confidence in the run up to go-live. The company may find that the tried and tested methods of specialists in this space provide the right level of confidence.

Throughout, CIOs and their teams must remember that while an adequate quality assurance and testing strategy is vital to check individual systems and processes work, it is also about much more than that. Robust testing provides assurance at every step; assurance that the company will be market ready, wholesale ready, retail ready, ready to manage ongoing change, and ready to continue to run a successful business for all its stakeholders.

SQS can help you answer the following:

- What does a good IT strategy look like in this changing, reforming water market?
- Have companies prepared testing strategies yet? When do they expect to and how much time will they allow for testing?
- How do companies intend to carry out testing? Who is best placed to conduct the tests?
- How will companies address the requirement to continually respond to change in an efficient way? How can they sustain good quality testing at an affordable cost over and over again?
- How will companies develop their IT capabilities in a world where wholesale and retail operations are to some extent separated?

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