

Project Nexus

Implementation Steering Group

Initial results from our review of
shipper, iGT and GT project plans

Presented on 1 May 2015

Contents

1. Executive Summary

2. Progress on information gathering

3. Project plan assessment approach

4. Project plan assessment analysis

This document has been prepared only for Ofgem and solely for the purpose and on the terms agreed with Ofgem in our statement of work and under the framework agreement dated **11th August 2011**. We accept no liability (including for negligence) to anyone else in connection with our work or this document.

© 2015 PricewaterhouseCoopers LLP. All rights reserved. In this document, "PwC" refers to the UK member firm, and may sometimes refer to the PwC network. Each member firm is a separate legal entity. Please see www.pwc.com/structure for further details.

1. *Executive Summary*

Background and progress made to date:

- We have made good progress in obtaining plans, RAID logs and governance documents from parties impacted by Nexus. Of 41 organisations identified, we have evaluated documents from 24 organisations and confirmed nil responses from 4.
- This initial assessment is based, therefore, **on plans submitted by organisations covering 95% of supply points and 95% of Annual Quantity ('AQ')** as a reasonable approximation of gas volume.
- This assessment has been supported by further discussions with parties to better understand the information provided, with some further discussions scheduled over the next 5 days.

The approach we have taken in our analysis:

- We have evaluated the documents against a series of questions (see **page 10**), with the objective of determining levels of readiness for the 1 October go-live date and for participating, in a meaningful way, during the market trials that commence on 8 May 2015.
- In making our assessment, we have used our experience of good practices across both successful major transformation programmes and similar industry change to set an expectation of the criteria we would expect to be met in a 'safe', low risk change of this nature. We have then contrasted the attributes of the plans submitted by GTs, iGTs and shippers against this expectation (**see next page**).

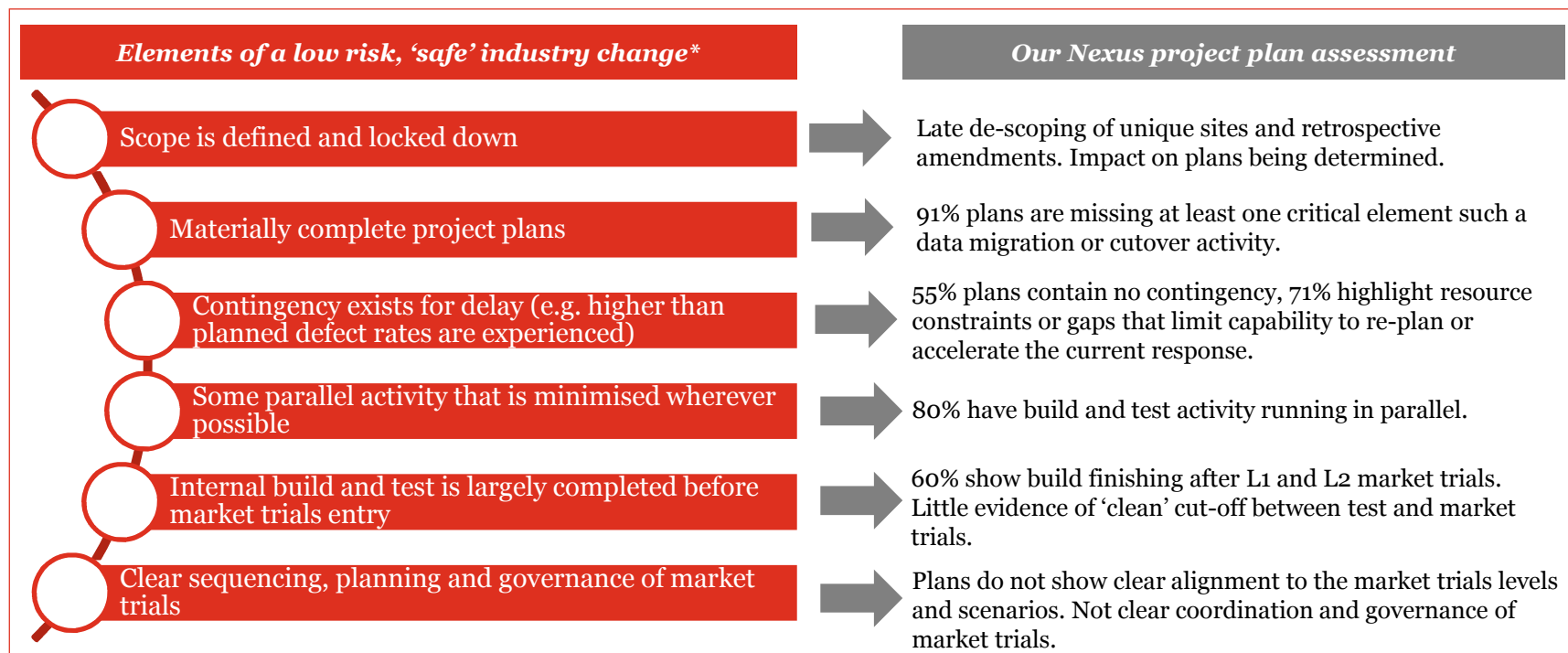
Key observations:

- 4 'nil' responses aside, the project plans identify, and are aligned to (at a high level), an end date of the **1 October 2015** and make reference to the Xoserve market trial period.
- The majority do not appear to have properly built their plans 'left to right' against these dates and are missing key activities that we would normally expect to be present. At face value, many plans are incomplete.
- Against what we consider a 'safe' project trajectory, the majority of plans contain significant parallel activity across the key build and test phases. The lack of available contingency in many plans will require very low levels of delays and issues in order for these phases to be successful.
- The market trials approach has significantly diverged from ideal. The majority of organisations have no clear 'cut-off' from the completion of their internal testing and their entry into market trials. Plans are not detailed enough to judge when organisations will join market trials and the levels / scenarios that they can contribute to.
- In 60% of plans, build activity does not complete in time for L1 (connectivity) and L2 (file format) market trial. In our view, this is a critical finding that shows the risks that organisations are taking in order to achieve 1 October go-live. Whilst L1 and L2 market trials do not require organisations to have full functionality built and tested, this calls into question whether build and test will be substantially complete prior to L3 and L4 market trials.

1. Executive Summary

Key observations continued:

- We have held follow-up discussions with 9 organisations (from 11 we will approach in total) to more fully understand the interplay between their internal testing and market trials (**page 18**). This highlighted that many of the large players in the market will be running their own system integration and user acceptance testing in parallel with market trials. This finding demonstrates that a significant proportion of the market will not achieve a clean cut off between their own testing and market trials. This increases the likelihood that market trials will not be effective and may be 'clogged up' with defects that relate to individual shipper, GT and iGT solutions, rather than identifying defects in the critical end-to-end market processes.



* Based on PwC experience of leading practice across successful transformation programmes and similar industry change. Note that this is supported by our project plan assessment framework set out on **page 10**.

1. *Executive Summary*

Key conclusions from our review of project plans across shippers, iGTs and GTs:

- Shipper, iGT and GT plans are generally focused on the delivery of each organisation's solution by the 1 October 2015.*
- Plans are not sequenced to support a meaningful, productive and efficient market trial. There is simply not enough time for organisations to test their own solutions and contribute to market trials.*
- We believe that 1 October 2015 should be retained as the target date for organisations to deliver their own solution, in advance of a delayed market trials phase.*

Supporting considerations in determining the start and end date of market trials:

- In our current view, and given the factors identified to date, a one to two month delay will not offer enough time to address the significant uncertainties that exist and create a clear cut-off between the completion of design, build and test and market trials.
- In our experience of major programmes, a one to two month extension is feasible where there remains a small number of known activities that can be clearly planned and scheduled into the extension period. Given that many organisations are yet to prove their solutions and the level of defects / issues that require resolution is broadly unknown at this stage, this does not lend itself to a short extension. This is exacerbated by the broad lack of contingency that now exists across the market.
- In addition, as many of the organisations are constrained by defined system release schedules that are already full over the next 12 to 18 months, any delay to accommodate a revised market trials phase would require some careful scheduling and re-planning.
- Our review of project plans and our follow-up discussions with some of the organisations strongly suggests that focus should remain on 1 October 2015 for all parties to deliver their own solutions, with an extended market trials nominally commencing on this date.
- This would allow organisations to solely focus their resources on proving their own solutions without the distraction of market trials, planning for cutover and wider business change management activity.
- Clearly, there needs to be consideration of the technical impact of delaying market go-live and the associated costs that would be involved

1. *Executive Summary*

Supporting considerations in determining the start and end date of market trials:

- Whilst a delay in implementation will inevitably be a disappointment for some parties and will almost certainly increase costs, we believe this is a safer course of action than going live without a full programme of market trials that have been efficiently and effectively executed.
- In terms of an end date for market trials and a delayed full market go-live date, we have not formally canvassed opinion on the options available. That said, there has been an almost uniform view raised by organisations that a change should be avoided in the six month period to 1 April 2016. This is the winter period of peak gas consumption and any resultant errors could be amplified. Further consultation and impact analysis is required, but go-live on, or around, this date appears to be a broadly favoured option at this stage.
- This would also allow time to implement improved governance over market trials, such as introducing defined entry criteria that organisations should meet before joining market trials.
- Clearly, this would require further consultation and impact analysis to determine if this is realistic in the context of wider industry changes. For example, identification of any dependencies to / from Smart DCC launch on 1 April 2016.

1. Executive Summary

Key recommendations for the Steering Group:

- Below we set out a clear set of recommendations for consideration by the Steering Group. We have identified the relative level of effort that we believe is entailed to execute these actions and the level of impact we expect on the risk profile of the UK Link Replacement Programme and Project Nexus go-live.

#	Recommendation	Responsible	Relative effort to implement	Impact on risk profile
1	Project Assurance Manager ('PAM') to undertake further discussions to substantiate the position on market trials and interplay of internal build / testing (this is in progress and we will give a verbal update to the Steering Group).	PAM	Low	Low – improves data quality and the resulting decision making.
2	Consult on the options to create and implement a clean cut-off between the completion of design, build and test activity at each party (including Xoserve) and market trials. Based on the current data, we recommend that, 1 October 2015 is retained as the target date for Xoserve, shippers, iGTS and GTs to build and test their own internal solutions for Nexus. This is then followed by a well governed period of market trials and go-live at date in the region of 1 April 2016 .	PAM, Steering Group	Moderate to High	High – significant de-risking
3	All organisations should review their project plans and update for missing elements that are normally important to an IT-enabled change or transformation. For example, plans are likely to need to address: <ul style="list-style-type: none"> Data migration; Cutover activities (including provision for dress rehearsals); Contingency for dealing with issues, delays or higher defect rates; and Training and business change management activity. 	Shippers, GTs and iGTS	Moderate	Moderate – improves data quality and the resulting decision making.
4	Market trials governance should be improved by implementing: <ul style="list-style-type: none"> Formal oversight role of market trials by the Implementation Steering Group; A regime of entry criteria for organisations joining market trials to help 'protect' the market trials environment and ensure that parties are fully ready to join. For example, significant internal defects have been resolved. Reporting of when each organisation is committing to join market trials and how they will contribute to the testing of each level and scenario. 	PAM, Steering Group Xoserve	Moderate	High – significant de-risking

1. *Executive Summary*

Key recommendations for the Steering Group / continued:

#	Recommendation	Responsible	Relative effort to implement	Impact on risk profile
5	<p>Implement the go / no-go ('GONG') and market readiness criteria, with periodic self-reporting of how organisations are tracking towards these criteria.</p> <p>The self-reporting of progress should be supported by follow-up by PAM to validate and ensure a consistent interpretation of the criteria.</p> <p>This will provide visibility of how organisations are proving their solutions and whether defects are being resolved at a rate that is supportive of a successful market trials phase and go-live.</p>	PAM, Steering Group	Moderate	Moderate – improves the quality of data and the resulting decision making.

2. Progress on information gathering

We have contacted 41 organisations, **comprising of 97% of the total market AQ and 96% of supply points**. These iGTs, GTs and shippers were identified by Xoserve and Ofgem.

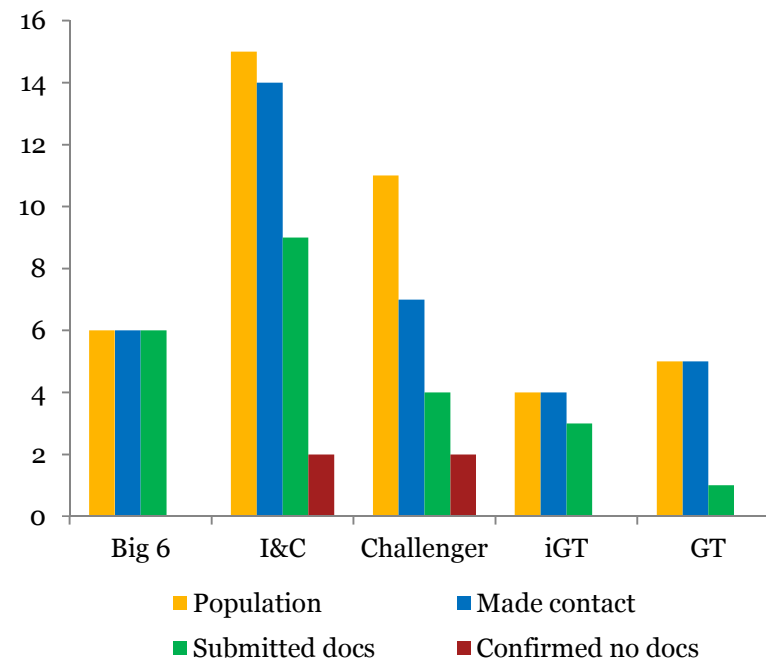
We have ratified the completeness of this group with the responsible Steering Group member, with cross reference to additional information provided by industry organisations such as the Cornwall Energy Supplier Forum.

We have run a number of Webex forums to brief organisations, with the majority attending and subsequently submitting documents. Of the organisations contacted:

- We have received **no contact from 6 organisations**, which we are now discussing with Ofgem. The 6 comprise of only **0.5%** of overall market supply points and AQ; and
- Of the remaining 35, 24 have submitted documents via the web portal and **4 have declared that they have no documents to submit** (less than 1% of supply points/AQ) as they do not have a plan, or believe that Nexus is low impact for their organisation.

We have excluded suppliers from our analysis that are using another shipper for their shipping activities. We are making the assumption that the shippers performing activities on behalf of suppliers are testing the integration of these suppliers. The integration is included in our proposed readiness assessment criteria.

We have conducted a number of one-to-one discussions to better understand the content of some of the plans submitted to us, especially where organisations have taken an ‘agile’ approach as opposed to a traditional ‘waterfall’ approach.



	Number of organisations	% Supply Points*	% Annual Quantity*
Responded	35	96%	97%
Submitted plans	24	95%	95%
Confirmed no submission	4	<1%	<1%
Big Six market share	6	87%	63%

* Consolidated SSP & LSP data

3. *Project plan assessment framework*

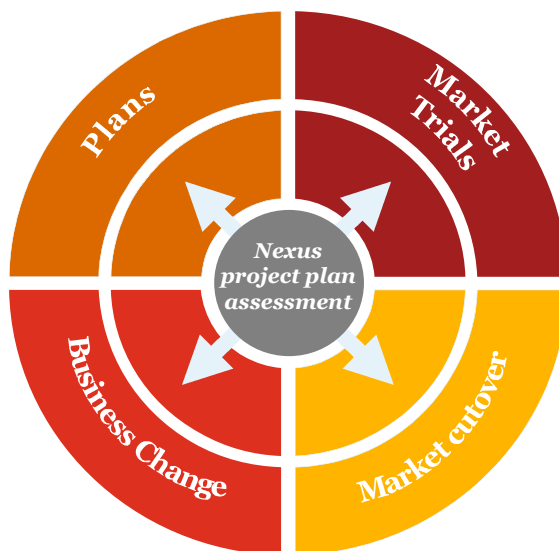
In order to independently assess the alignment of plans with the 1 October 2015 go-live date, we have asked organisations to provide up-to-date project plans, RAID logs and key governance documents, such as steering committee minutes. We have analysed the iGT, GT and shipper project artefacts against the following key assessment criteria, with our results presented against these criteria on the following pages. For the purposes of the executive summary, we have presented the results against what we consider to be the lowest risk, good practice approach for an industry change of this type (**page 4**).

Robustness and sequencing of plans

- Are there credible, up-to-date plans that support the key milestones? Are plans sequenced as we would expect and to a good level of detail? Are the critical path and all key dependencies identified?
- Is there evidence of the level of governance oversight that we would expect for projects of this nature? Are there clear status KPIs in place to judge progress?
- Are plans fully resourced? What key resource gaps exist?

Business change management activity

- Is there sufficient focus and time given to training staff for what is a significant level of change?
- What level of contingency exists if significant levels of defects are found? What provision for re-work and retesting is present?
- Have organisations included non-functional testing, such as load testing?



Alignment to the market trials timetable

- Do their plans support completion of their internal integration testing in time for meaningful and effective involvement in Industry testing?
- Are the preceding design, build and test phases likely to complete in time for effective internal integration testing?
- Is there enough time for executing the key scenarios for industry testing across all parties - such as full testing of the supply point gain / loss journey across different participants?

Market coordination and cutover activity

- Have companies designed credible cut-over plans in the run up to 1st October?
- Is there time to perform a dress rehearsal of the cutover and data migration?
- Is there evidence of market wide coordination where this is required?

4. Project plan assessment analysis

4. Project plan assessment results and analysis

Robustness and sequencing of project plans

1. Project plans are incomplete and are missing some key activities we would expect to be present

Observation

92% of plans are missing at least one element of the activities that we would expect to be included in a project plan for an IT enabled change such as Nexus and the UK Link Replacement Programme. For example, we would expect plans to include provision for data migration activity, a defined window in order to safely cutover system functionality and some contingency for delays. We are especially concerned to see that the majority of plans have no defined contingency time, which is further compounded by some RAID logs that record limited or no contingency available to deal with unexpected delays.

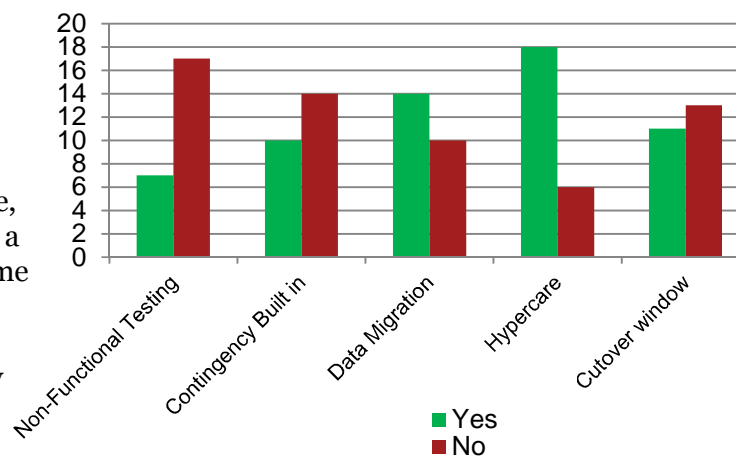
Impact

The omission of activities, such as data migration, could require catch-up and re-planning at a later stage of the programme, leading to delays and putting achievement of 1 October go-live at risk. Inclusion of these activities into plans now could equally delay the programme. Note that subsequent discussions with some of the organisations highlighted that some activities are under consideration, but have not been formally included in their plans.

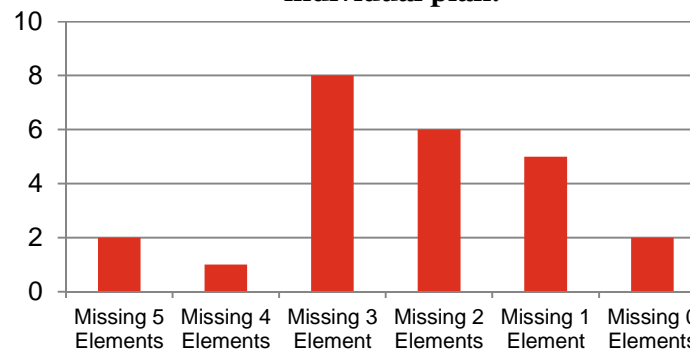
Recommendation

Update plans to ensure that all critical activities are included and are appropriately resourced and sequenced (**Shippers, iGTs and GTs**).

The number of plans missing key activities:



The number of activities missing in each individual plan:



4. Project plan assessment results and analysis

Robustness and sequencing of project plans

2. Most plans identify the 1 October 2015 go-live date as the key target delivery date

Observation

Of the 24 plans, all identify the 1 October 2015 go-live as the first target delivery date. This is balanced by the fact that many are missing what we would consider to be key activities. A number of organisations are taking a release based approach, with first release of key functionality ready for the 1 October deadline. The organisations that we have spoken with are planning for the minimum functionality required for UNC compliance to be in place for 1 October, with further releases required to deliver full functionality requirements.

Impact

Organisations are planning to deliver solutions for 1 October 2015. However, many do not have appropriate provision for market trials, so whilst solutions may be tested from the shipper, iGT or GT perspective, they will not be subjected to rigorous market trials (see later observations).

Recommendation

Update plans to include missing critical activities. The PAM should tacitly confirm with each organisation following a release strategy that all critical functionality will be delivered in release 1 (**Shippers, iGTs and GTs**).

3. Parallel running of build and test activity is widespread amongst organisations

Observation

80% of plans have an element of parallel running of key project activities, such as build and test, to achieve the 1 October go-live.

A small number of organisations are following 'agile' methodology that entails a more flexible approach to phasing build, test and deployment activity. The majority are following a more traditional 'waterfall' approach and are showing overlapping activity across the critical build, test and market trials activities.

Impact

Re-planning for issues, such as build / test delays and resolving a higher level of defects than planned, is likely to represent a significant challenge. Organisations are likely to have no capacity or contingency to deal with a higher rate of defects.

Recommendation

Implement tracking of build, test and defect resolution to provide early warning that the existing plans are at risk. Note that these aspects are incorporated into the proposed readiness criteria (**Programme Assurance Manager 'PAM'**).

4. *Project plan assessment results and analysis*

Robustness and sequencing of project plans

4. Resource constraints and 3rd party dependencies are highlighted as 'high' or 'medium' project risks

Observation

From the 18 project risk and issue registers that have been submitted:

- **71% (17 out of 24)** raised resource constraints and gaps as a medium or high risk; and
- **17%** identified reliance on 3rd parties as a medium or high dependency or risk to the overall project delivery. Note that many plans highlight 3rd party involvement, even though this may not be specifically identified as a risk to delivery.

Impact

Resources are already constrained across the majority of organisations, with some highlighting some key gaps in their existing teams. This suggests that organisations have limited capability to increase resources in the short to medium term to further safeguard delivery and the 1 October go-live. In addition, changes must be coordinated across not only their own organisations, but also across a number of 3rd parties that are developing system solutions.

Recommendation

For information – no specific action highlighted at this point.

4. Project plan assessment results and analysis

Alignment to the market trials timetable

1. The majority of project plans do not specifically identify, or align to, the phases of market trials identified by Xoserve.

Observation

We found little evidence that project plans specifically consider the timings of the tranches and scenarios identified by Xoserve in their market trials documentation. The majority of organisations do not appear to have planned their interaction with market trials in detail and have simply identified the start and end dates in their plans.

Impact

This may result in organisations either missing market trials or attempting testing on mass at the end of the market trial window. Missing L1/L2 testing could disrupt L3/L4 testing if there are unresolved connectivity or file format issues. Uneven entry into testing could place considerable pressure on Xoserve if this creates an unmanageable volume of defects. Any delay to the completion of market trials is likely to put Xoserve's achievement of 1 October go-live at considerable risk.

Recommendation

Improve project plans so they specifically align with the levels and scenarios identified by Xoserve for market trials **(Shippers, iGTs and GTs)**.

2. There is a lack of clarity on whether build and internal testing will be completed in time for L3 and L4 market trials

Observation

80% of participants have indicated within their plans a parallel approach or 'agile' approach to testing. In these cases, build, test and market trials activity is sequenced in parallel, with no clean cut-off between phases. Owing to a general lack of detail in many plans regarding the sequencing between internal testing and market trials, it is unclear whether internal testing can, and will be, aligned to the scenarios as scheduled by Xoserve during Level 3 and 4 functional testing.

Impact

Entry into market trials without thorough internal testing being completed could increase the volume of defects identified and put the completion of market trials and then go-live at risk. In particular, it may not be clear whether defects are due to Xoserve's systems or the organisation's systems.

Recommendation

Improve project plans so that the critical path of build completion, internal testing completion and market trials entry is specifically identified **(Shippers, iGTs and GTs)**.

4. Project plan assessment results and analysis

Alignment to the market trials timetable

3. Many participants will not complete 'build' activity in time to start L1 and L2 Market Trial activity

Observation

Xoserve's Market Trial schedule provides L1 (connectivity) and L2 (file format) testing between 5 May and 30 June. We have shown the organisations in each segment that will have 'build' completed in time for L1 and L2 market trials, during this phase and post this phase. **40%** of the total population will complete build complete in time for L1 and L2 market trials, but **60%** will not complete build before the start date of L1 and L2 market trials. Note that we would expect organisations to complete both **build** and **internal testing** before starting market trials.

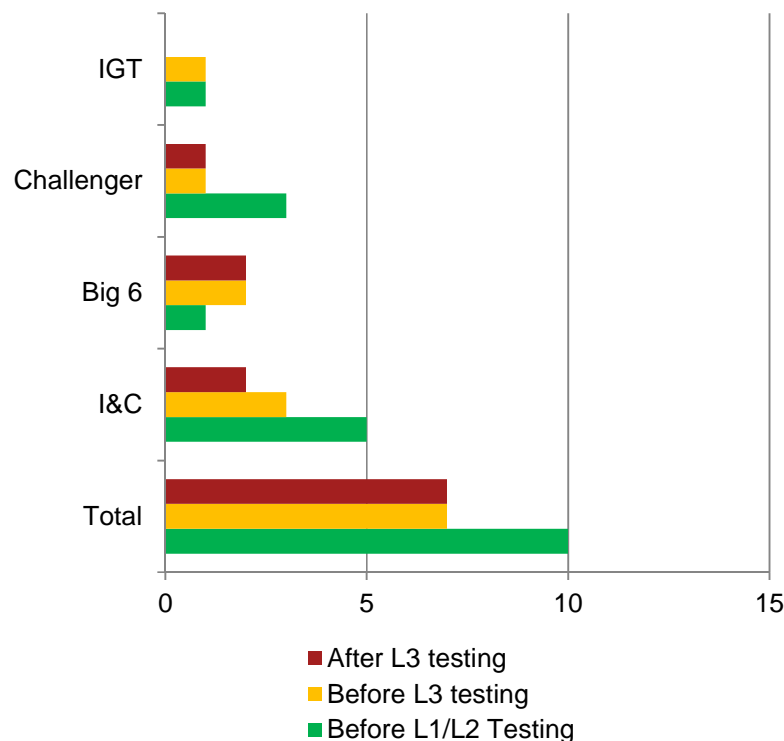
Impact

The majority of organisations will start L1 or L2 market trials late. Participants that fail to complete connectivity and file format testing prior to L3 and L4 (functional) testing may enter these later phases with connectivity and file format issues. This increases the likelihood that later Market Trial phases may be rendered less efficient as organisations resolve issues that could have been caught earlier.

Recommendation

Consider options for creating a clean cut-off between design, build and test activity and market trials (**PAM, Steering Group**).

Completion of solution build activity in relation to market trials (L1 to L3):



4. Project plan assessment results and analysis

Alignment to the market trials timetable

4. Key activities, such as integration testing and user acceptance testing, are already being run outside of an optimal sequence

Observation

Due to timing constraints, we saw a small number of organisations (4) already planning to complete aspects of user acceptance testing ('UAT') after the completion of market trials.

In addition, our subsequent discussions with a cross section of shippers and GTs have highlighted that they are completing integration testing and UAT in parallel, and sometimes after market trials. It is also evident that some organisations will not play a meaningful role in market trials as they will not start this phase until August.

This is not, in our view, aligned with a low risk approach to a 'safe' market change (see next page).

Impact

Whilst it is likely that the organisations concerned have sequenced their integration testing and UAT activity to focus earlier on the higher risk functionality required for market trials, this will increase the likelihood of late breaking issues and defects.

These organisations may enter market trials without having identified all defects, which may lead to inefficiency in the market trials phase as these defects are identified and dealt with.

Recommendation

Consider the options for increasing resources in order that UAT is substantially complete prior to starting L3 and L4 market trials (**Shippers, iGTs and GTs**).

Consider options for creating a clean cut-off between design, build and test activity and market trials (**PAM, Steering Group**).

4. Project plan assessment results and analysis

Alignment to the market trials timetable

5. Further follow-up shows many organisations will not have a clean cut-off between their internal testing and market trials. As plans do not adequately describe the interplay between internal testing and market trials, we have approached a cross section of 11 shippers and GTs to better understand this aspect. The results from the 9 organisations interviewed to date show significant parallel activity across integration testing, UAT and market trials.

Participant	Date of completion of design and build	Internal testing completion date	Market trials start date	Overlapping phases
A	Release 1: 10/04/15 Release 2: 15/05/15	Release 1: 31/05/15 Release 2: 27/06/15	Connectivity: 05/05/15 Release 1: 01/06/15 Release 2: 01/07/15	UAT and market trials
B	Phased build completion: 07/05/15: Core gas operations and flows 07/07/15: Pricing and quotation 10/07/15: BI / reporting delivery	August 2015	01/07/15 to 28/08/15	UAT, system testing and market trials
C	'As-is' system landscape to be used so already complete	30/06/15	Connectivity: 05/05 Market: 01/06	Internal testing and market trials
D	15/06/15	System test complete: 17/07 Integration test complete: 15/08/15 UAT complete: 15/09	01/06/15	System testing, integration testing, UAT and market trials
E	21/04/15	System test complete: 30/06 UAT complete: 15/09	Connectivity: 05/05/15 Market: 01/06/15	System testing, UAT and market trials
F	15/07/15	System test complete: 31/07/15 Integration test complete: 31/08/15 UAT complete: 31/08/15	15/08/2015	Design, build, system testing, integration testing, UAT and market trials
G	31/08/15	August 2015	Connectivity: 05/05/15 Market: 30/06/15	Build, internal testing and market trials
H	15/06/15	Agile approach: August 2015	Connectivity: 05/05/15 Market: 15/06/15	Internal testing and market trials
J	Unclear	August 2015	05/05/15 for connectivity 01/06/15 for functional	Internal testing and market trials
Market coverage of the above parties AQ = 68%, supply points = 94%				

4. Project plan assessment results and analysis

Business change management activity

1. Some plans do not have adequate consideration of business change management activity, such as training

Observation

As would be expected, all of the plans reviewed focus heavily on system implementation/change activities. However, some do not contain all of the elements we would expect to adequately cover wider people and process change management. As we have previously highlighted to the steering group, a focus on people and process change management is also required to ensure system changes are well adopted*.

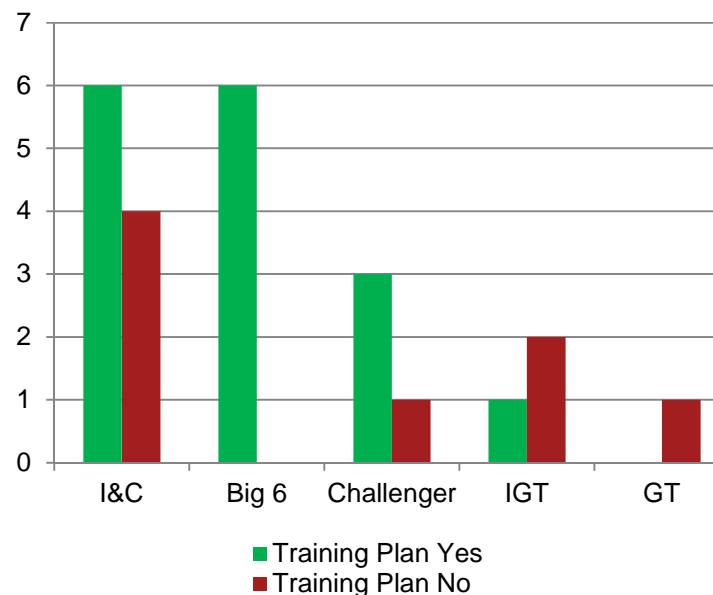
Impact

A lack of consideration for process and people changes creates little confidence that organisations will be able to operate the changed systems and processes efficiently from 1 October. It may take an extended period of time for market processes to stabilise and meet expected processing times across all parties.

Recommendation

Improve project plans so that key business change management activities are incorporated (**Shippers, iGTs and GTs**).

Analysis of whether shipper, GT and iGT plans address training activity:



* Note that PwC research into the drivers of successful technology-enabled programmes has highlighted that 70% of programmes fail to achieve their objectives as they do not focus on embedding the system change in processes and the behaviour of their people.

4. *Project plan assessment results and analysis*

Market coordination and cutover activity

1. Limited scope exists to absorb any delays in market trials or other activity managed by Xoserve

Observation

13 organisations have identified 'high' or 'medium' risks around the lack of flexibility in their plans to react to late breaking changes from Xoserve and any substantial movement in the published dates for market trials.

Whilst organisations are aligning to 1 October go-live, they are highlighting that they are resource constrained and already following a sub-optimal sequence of activity in some cases. The majority of plans have no contingency and will be at risk if further activities cannot be performed in parallel to accommodate a delay.

Impact

Any shift or delay in the existing timetable (including market trials) provided by Xoserve could result in the 1 October go-live being unobtainable.

Recommendation

For information – no specific action highlighted at this point.

2. The coordination and governance of market trials should be improved

Observation

Whilst organisations are not yet planning with the expected rigour for market trials, we believe that stronger governance and monitoring of Market Trial participation is required to ensure that any significant issues in end-to-end market processes are flushed out prior to go-live. For example, monitoring and reporting the following:

- Which organisations are taking part in each level of market trials and the scenarios that they will engage in; and
- Readiness to join market trials – e.g. confirming internal testing has been successfully completed before entry.

More broadly, it is unclear who is governing market trials and who will determine if these have been a success.

Impact

Poor coordination of market trials could result in organisations either missing, partially contributing, delaying and ultimately undermining the completion of market trails.

Recommendation

Implement clear governance, entry criteria and success criteria for market trials (**Ofgem, Steering Group**).

4. *Project plan assessment results and analysis*

Market coordination and cutover activity

3. Project plans are generally weak in the area of cutover planning

Observation

Project Nexus is a significant change for the organisations impacted, with some reporting that it is the largest change implemented over recent years. As a result, organisations are seeing impacts across a number of their core systems that will require careful planning and sequencing. Against this background, we have seen little acknowledgement of cutover planning and 'blackout' periods where the technical and data changes are applied to organisations' systems so that they are ready for 1st October.

Impact

Whilst there is time to address this, we are concerned that organisations have not sufficiently thought through this activity and this may further strain plans with little or no contingency for new or previously unidentified activities. Introducing a cutover or black out window may reduce the time available to complete build and test activity, resulting in a delay to go-live.

Recommendation

Improve project plans to identify cutover activities and any 'black out' period that may be needed (**Shippers, iGTs and GTs**).