Release 2.0 Lessons Learned

Paper for Information

Date: **3 April 2019**

Classification: **DCC Public**

Background

On 28 October 2018, DCC deployed Release 2.0 core code into the production environment. This delivered changes to the DCC test and production systems to support a DUIS 2 interface for Service Users as well as new firmware for existing Single Band Communications Hubs (SBCH) to support GBCS 2 communication and support the subsequent introduction of Dual Band Communications Hubs.

Release 2.0 code into live was the first step towards customers making use of the new functionality. DCC is continuing to work with its customers on the transition to Release 2.0 Single and Dual Band Comms Hubs.

Release 2.0 lessons learned

DCC followed the five stages (identify, document, analyse, store and retrieve) to documenting lessons learned throughout the implementation of the Release 2.0 Programme in line with best practice. Identification of lessons learned was performed prior to, during and after the Release 2.0 implementation and involved representatives from DCC and its Service Providers.

The lessons learned process identified what went well, what went wrong and what needs to be improved. The identification and documentation were initially performed individually by DCC and its Service Providers, and subsequently collated and analysed as part of collaborative multi party workshops. During the workshops, lessons learned were categorised based on the degree of benefit. The highest and medium level of benefit (benefit to be gained through either improving or maintaining the required activity) were then reviewed and action plans to deliver or maintain the required improvement. These lessons learnt were retrieved for use and application by current programmes, such as SMETS1.

The Release 2.0 key lessons learned are at Appendix A.

The lessons learned identified fell into five key themes.

- **Programme Governance & Planning**
  Learnings in this area continue to inform assumptions in DCC's programme planning from the outset. The value of supplier co-location has been recognised as has the regular engagement of all stakeholders.
  Release 2.0 Dual Band Comms Hub, SMETS1 programmes continue and November 2019 Release have extended these working practices and values.

- **Testing**
  Test planning realises the importance to commit plans with stakeholders at the start of Test Phases. Standardised test packs have also been successful as has recognition of device testing and testing of business scenarios.
  Release 2.0 Dual Band Comms Hub continues to extend device integration testing and engagement with Meter Manufacturers. There is an effective engagement with the SEC Panel's Test Assurance Group to target test activity required to validate issues found.

- **Operational Readiness**
  The engagement with Operation teams throughout DCC and our partners in preparing for Operational Readiness Acceptance checks was successful and allowed for detailed planning of post implementation support walkthroughs.

Lessons learned from Operational Readiness will continue to be used within the delivery of Dual Band Comms Hubs firmware and are integrated into the SMETS1 programme.

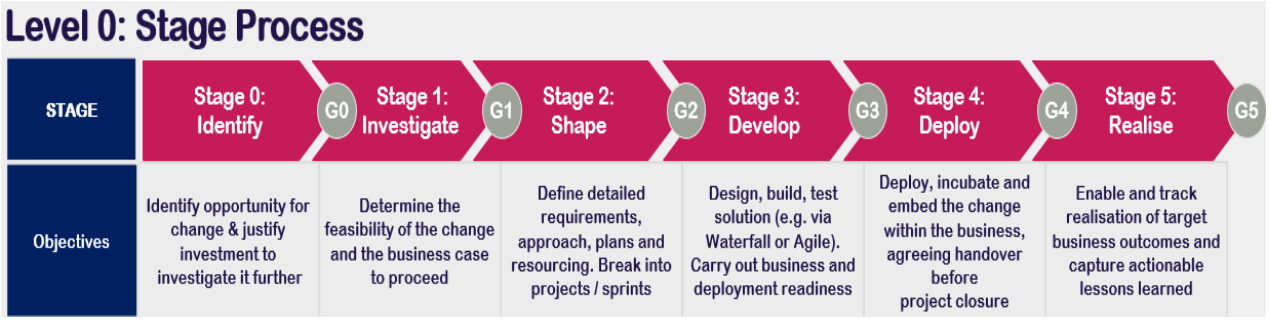
- **Transition to Operations (TTO)**
  Release 2.0 code implementation was the first major uplift of the DCC production environment where the existing service was live with meaningful volumes of live users. TTO was key in ensuring that the implementation occurred without impacting existing customers or services. This is an activity in which DCC continues to invest. DCC has strengthened its approach to TTO with the introduction of a standardised gating requirements with DCC's new Change Delivery Methodology.
  TTO Lessons Learned have been embedded into the DCC culture and forms a common approach with other programmes, including SMETS1 and November 2019 Release.

- **Implementation**
  Implementation activities were planned well, however, the detailed walkthrough sessions revealed a need to increase implementation resources. Responding to this lesson ensured that the Release 2 code implementation completed ahead of schedule.
  The implementation processes have been shared across DCC and our partners to ensure a similar robust approach to implementation.

DCC will continue to capture lessons learned as part of the Release 2.0 Dual Band Comms Hub programme.

Change Delivery Methodology

Some of the lessons learned identified in Release 2.0 will be addressed through DCC's new Change Delivery Methodology (CDM). In January 2019, DCC enforced a mandatory requirement for every change initiative within the business to adhere to a CDM. The CDM provides a defined method of delivering end-to-end change across the wide and varied portfolio of change within DCC. It defines a repeatable, staged approach; standards, and governance required to deliver change for our customers externally and internally in a flexible but controlled and auditable manner. The CDM contains the following 6 stages:



The CDM has also emphasised significant importance of lessons learned activities. From Stage 1 (Investigate) right through to Stage 4 (Deploy), it is mandatory for lessons learned to be captured on a log. Prior to exiting a stage, the log must be i) assured by a PMO manager, and ii) approved at Steering Committee. During Stage 4 the Project Manager will summarise the lessons learned log into the closure report. Finally, in Stage 5 (Realise), the lessons learned report will be reviewed

and decisions will be made on how to use the knowledge gained on future projects. All outcomes will be communicated and shared both internally and externally.

Our next step in maturing this approach will be to introduce a mandatory activity in Stage 1, where project teams will need to demonstrate how positive and negative lessons from previous projects will be embedded or avoided (respectively) into their own projects. Finally, the DCC Portfolio Office intend to hold quarterly reviews on actionable lessons learned, to ensure these valuable lessons are being embedded into the business and are not easily forgotten or lost.

Recommendation

The Panel is requested to:

- **NOTE** the Release 2.0 lessons learned at Appendix A. DCC welcomes views from the Panel on the lessons learned.

Appendix A – Lessons learned table

Theme	**Success / Problem Description** *[Is the lesson a success or a problem? Additionally, provide a description of what the positive or negative event/ situation was]*	**Effect / Impact / Benefit Gained** *[What is the effect or impact or the problem/success described in column E?]*	**Causes/Trigger** *[What is the root cause of how the problem/success manifested? Describe if this could have been prevented and give the details as to why it was missed]*	**Recommendations and Comments** *[Provide details on how the problem is being/was solved. Additionally, if it is a success, provide recommendations that will allow other Project Managers to replicate this]*	**Follow-up Actions** *[Include details of any further actions, work-off plans, defects etc.]*
Programme Governance & Planning	TTO delivery to live was provided a month when 2 would have been more suitable	Created TTO scheduling Risk. Risk managed, no issues occurred	Caused by assumptions on TTO governance requirements. Preventable	Allow longer for TTO governance	CDM Plan templates contain governance and review activities as standard ensuring clear scheduling and any risks to plan are detected at an early stage. DBCH has adopted this methodology and the standard MSP Plan template. Ongoing monitoring required through Programme Governance Gates
Programme Governance & Planning	Finding template checklists from previous releases was not straightforward and slowed guidance for R2 TTO requirements to Service Providers	Lengthened TTO mobilisation and analysis unnecessarily. No Risk / Issue raised	Caused by not storing / logging of all activities on previous programmes. Preventable	Log, Store, Archive documentation better	DCC has strengthened its PMO and Portfolio Governance through implementation of CDM Share TTO stories and inform other programmes. Ongoing monitoring required through Programme Governance Gates
Programme Governance & Planning	Success - Early engagement with BEIS, and weekly review period showing governance progress and LSC development	Positive effect of quicker approval process at the end of the governance process	Continue doing	Continue doing, share with other programmes	Leadership engagement with bi-weekly senior leader sessions worked well and this approach has been adopted on other programmes.
Programme Governance & Planning	Success - The collaborative approach engendered through structured co-location was invaluable in providing collective understanding and team ethic	Improved collaborative work culture with DCC partners	Continue doing	Continue doing, share with other programmes	Co-location approach has also been implemented in SMETS1

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Programme Governance & Planning	Success - 1 manager taking responsibility for the all the required output from one supplier, e.g. CSPN	This meant that all Programme related issues were reviewed at a single progress meeting and it was easier to identify inter dependencies and issues in one go. When this role was discontinued it was more difficult	Continue doing	Continue doing, share with other programmes	Extend this approach, it is extremely helpful to a have a Project, as it provides clarity and focus for both parties. Ongoing monitoring required through commercial and governance approach
Programme Governance & Planning	Success – continue to have commercial Rough Order of Magnitude (ROM) Walkthroughs	Created greater understanding of the commercial justification and delivery approach, thereby improving commercial approval process	Continue doing	Continue doing, share with other programmes	DCC Commercial team to embed ROM walkthrough as part of its standard approach
Testing	Sev 2 defects to be investigated and escalated quicker	E.g. Sev 2 on a DBCH was sat in the code from the start of testing and identified much earlier but the defect was closed as being intermittent.	Caused by competing priorities on testing throughput, with defect resolution, and revised firmware versions to resolve known issues	Test assurance to review internal processes, particularly on escalation	DCC Test Assurance reviewing internal processes. Is there anything we could / should have done differently which would have surfaced this much earlier?
Testing	Test plan governance occurred at the end of the testing phase	Created test priority conflicts	Caused by Sev 2 test conflicts with CH firmware	SI to lead on test throughput the reporting	TA Governance to discuss reporting with Test Assurance Managers
Testing	Increase the level of automation in meter-based testing in SIT/DIT	Created increased manual test solutions	Caused by increased complexity CH & meter combinations	SI has invested in increased test automation	SI has confirmed and provided statistics to show an increased investment in test automation. This has been applied to SMETS1.
Testing	Create catalogue approach to regression packs	Further test efficiency gains through re-useable test suites and catalogues	Caused by reviewing Test scope and approach conversations	Review creation of a test catalogue with SI	SI to investigate how to create catalogue regression packs
Testing	Meter availability has constrained testing.	Meter availability has constrained testing. Consequently, it continues to be challenging to reach consensus in relation to pathway to DBCH Mass Manufacturing	Meter manufacturers not developing / providing 868 meters in line with R2 plan	DCC has increased engagement with Customers and Meter manufacturers	Continue to work with Customers and Meter manufacturers on the availability and appetite for meters and CH compatibility
Testing	Success - Significant improvements in conduct of SIT and DIT testing through decryption of message payloads	Improved test throughput	Continue doing	Continue doing, share with other programmes	Testing the message payload was a lesson learned from R1.3 and is the approach we now adopt as it provides more accuracy

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Testing	Success - Significant improvements in conduct of SIT and DIT testing through use of critical business scenarios	Improved test throughput	Continue doing	Continue doing, share with other programmes	Testing the critical business scenarios was a lesson learned from R1.3 and is the approach we now adopt as it provides more accuracy
Testing	Success - Standard packs for regression test, FRT etc. allowed for efficient testing	Simplified testing scope and approach	Continue doing	Continue doing, share with other programmes	Defined Final Regression Testing and End of Cycle Regression testing; different scenarios, Day 1 testing can all be re-used going forward Other programmes to also ensure standard packs are followed
Operational Readiness	Success - Pre-OA, early and focused time with Ops Senior Leadership Team (SLT)	Preparation for final OA conversation and early feedback so as to smooth the journey to live, ensure Ops SLT requirements are met	Continue doing	Continue doing, share with other programmes	Pre-OA activities are now standard expectations within the MSP Plan templates following the implementation of CDM. Ongoing monitoring required through Programme Governance Gates
Operational Readiness	Success - 'Golden hour' bridges and dedicated Incident Management with support from DSP, CSP and DCC has been invaluable in completing early triage and determining if issues are related to release or not.	Quickly able to triage incidents and heightened visibility	Continue doing	Continue doing, share with other programmes	Previously we had 'Red Line' but we introduced both red line and special attention with the Golden Hour. Customers were involved in this. Ongoing monitoring required through Programme Implementation Gates
TTO	TTO to start much sooner in future programmes	Created TTO scheduling and artefact delivery risks	TTO was scheduled to start later in the programme. Preventable	TTO embedded as a dedicated programme within DCC Programme Delivery	The implementation of the DCC delivery methodology (CDM) has TTO starting earlier in programme engagement. TTO stories are shared with other programmes. Ongoing monitoring required through Programme Governance Gates
TTO	Performance and Capacity. NFRs were decided against current performance and standards	Created NFR scheduling and artefact delivery risks. NFR delivery issues raised and resolved	Caused by assumption that current Volume, Performance and Capacity NFRs were correct.	Perform and retain detailed analysis on how Volume, Performance and Capacity NFRs have been agreed	NFR's are now gathered up front and agreed with more definition i.e. explicit metrics allowing us to direct contractors on what they are going to do. Detailed Planning up front has been implemented on SMETS1 programme. Ongoing monitoring required through Programme Governance Gates

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TTO	Success - Clear plan broken down to swim lanes and dependencies for TTO governance activities	Positive effect of efficient delivery of TTO	Continue doing	Continue doing, share with other programmes	Shared best practices across other programmes. Ongoing monitoring required through Programme Governance Gates
Implementation	Deployment on the night activities should consider multiple roles for when there can be bottlenecks to advancing. E.g. reviewing tests for assurance was a bottleneck in UIT deployment which was then corrected with 2 resources for production deployment	Created issue for UIT cutover. Resolved for PROD cutover	Caused by assumption that 1 resource was sufficient for test assurance checks. Prevented for PROD release	Re-planned and prevented by securing additional resources for PROD release	Shared implementation stories and practices across DCC and partners. Ongoing monitoring required through Programme Governance Gates