NHSBT Board
July 28 2016

**Core Systems Modernisation (CSM) Programme
Business Case**

1. Status – Public

2. Executive Summary

2.1. This document summarises the Business Case for the Core Systems Modernisation (CSM) programme and requests funding for the first phase of implementation. The CSM Programme will enable NHSBT to transform the way our Blood, Tissue and Eye Service (TES) supply chains operate, and support the realisation of the Blood 2020 and TES strategies. It will implement a new Target Operating Model (TOM) and associated processes, supported by the implementation of the new IT platforms secured through the IT Platform Selection Project, and ultimately the necessary replacement of the existing legacy system.

2.2. The latest estimate suggests that the overall programme will cost £36.6m, including both the £2.6m spent to date on programme definition and mobilisation, plus a 25% contingency (ca £6.5m). The current roadmap suggests that NHSBT can decommission the Pulse system (the "minimum viable product") by the end of the 2018/19 financial year at a cost of around £27.6m to that point. Further work costing around £9.0m would then be required to complete the TOM in 2019.

2.3. The business case for the CSM programme is built on the enablement of strategy and mitigation of risk, with limited direct benefits. The programme will reduce existing IT development and maintenance costs from £3.0m to ca £1.6m per annum. The new platforms established by the CSM Programme will, however, also provide the platform for implementation of several programmes of work captured in the TOM that will deliver material cost saving and productivity benefits, such as session of the future and process automation. Savings of ca £15m-£20m are estimated from the resulting optimisation of the blood supply chain. These are facilitated by, but are outside the scope of, the CSM Programme.

2.4. This paper requests approval of £7.6m funding for the first implementation phase. This will cover delivery of three programme increments by the end of March 2017, which at this point, are anticipated to:

- Complete development of the functionality in scope for blood donor ready for deployment.
- Produce a detailed business readiness plan for donor to 'go-live' in the period after.
- Commence development of the functionality for a self-contained end-to-end pilot in blood (neo-natal platelets) and TES – anticipated to be ca 20% complete at that point.

2.5. It is anticipated that in January 2017 a formal report of progress and learning to date will be brought to the Board, along with an update of the overall business case that will seek approval to fund and commence the next programme phase from April 2017 onwards.

2.6. The CSM programme will require extensive focus and effort from across NHSBT and will have a material impact on our people, processes, technology and information. Our internal capability will be supplemented with external resource to support successful delivery of the programme. Around £7.1m of the £7.6m sought for approval, and £32.2m of the total cost of £36.6m, is accounted for by spend with external partners.

3. Action Requested

3.1. The Board is asked to:

- **Approve funding of £7.6m for the first implementation phase (three programme increments). This will result in the delivery of the blood donor facing solution ready for deployment and progress with the neo-natal platelet pilot and TES solution by March 2017.**

- **Note the intent to bring an updated business case to the January 2017 Board meeting that will reflect progress and learning to date and will seek approval for the next phase of the programme from April 2017 onwards.**

- **Support the submission of the business case to the Department of Health (DH) and Government Digital Services (GDS).**

4. Purpose of the Paper

4.1. This paper summarises the overall business case for the Core Systems Modernisation Programme and seeks specific approval for funding of the first implementation phase.

5. Background – Progress since the March Board Meeting

5.1. Appendix One summarises the background to the programme and progress to the end of March 2016.

5.2. At the March 2016 Board meeting, £2.2m funding was approved to progress the mobilisation stage of the programme. Since then the programme team has delivered this phase to plan and just below budget at £2.0m, across three main work-streams:

1) Business Readiness
- Updated the programme blueprint, definition of the transition states and reworked the cost model.
- On boarded 79 internal and 40 external resources onto the programme.
- Established a programme management office, plus governance and reporting arrangements.
- Established a communications and engagement work-stream.
- Developed our approach to both supplier management and regulatory compliance with external support.
- Completed multiple scaled agile training events.
- Commenced activity on the business change strategy and data migration strategy.

2) Manufacturing Software Selection
- Completed the software selection process for the manufacturing platform (Microsoft Dynamics AX).
- Commenced activity to procure the AX software and implementation partner in readiness for PI2 in October 2016.

3) Solution & Architecture
- Completed 90% of the level three "to be" process maps.
- Developed a testing strategy to underpin a dedicated 'automation / acceleration' scrum team focused on ensuring velocity plus quality of development.
- Completed the architecture for the first PI1, including application, data and integration, with the initial enterprise architecture also complete.
- Established the CSM agile release train, completing our first Big Room Planning event and the first scaled agile sprints for donor (underway since 6 July 2016) within PI 1.

5.3. In addition, as part of our solution and architecture work, this phase delivered programme increment zero, a small, scale technical proof of concept for the donor solution (three sprints over six weeks) that has successfully:
- 'Stood-up' our platforms on the requisite cloud infrastructure.
- Demonstrated our ability to configure on, and integrate, the Customer Relationship Management (CRM) system, the Enterprise Service Bus (ESB), Business Process Mapping System (BPMS) and our legacy core system (Pulse), using standard and existing Application Programme Interfaces (APIs).
- Utilised the CRM "out of the box" to create and update donor appointments.

- Created a web based application to emulate the current donor portal process for session search and appointment booking.
- Migrated test data for donor and venue details from Pulse to the new CRM.
- Developed an approach to automatically allow integration of donor data from our CRM with test result data in our legacy system.

5.4. PI0 successfully proved our planned integration approach i.e. using standard APIs to combine the new platforms with each other and importantly, given our planned delivery roadmap, also proved our ability to integrate with our legacy system in support of a safe migration. It also reinforces the potential ability to change platforms at a point in the future.

6. Programme Vision

6.1. The vision for the Core Systems Modernisation programme states:

"*The Core Systems Modernisation Programme will deliver new business capability across NHSBT to provide safe products through efficient supply chain processes, and is critical for delivering the Strategic Plan 2016/21, Blood 2020, IT and Tissue and Eye Service Strategies. It will ensure we operate an integrated, cost-efficient and best in class supply chain and service.*"

6.2. Our vision for the future within the Blood and TES supply chains has been captured in a target operating model (TOM) for each business unit that acts as a bridge between our 2020 strategy for blood, our current strategy for TES and the detailed projects that will deliver them. Figure one captures the high-level TOM for blood.

Figure One – High-level Target Operating Model Blood Supply Chain
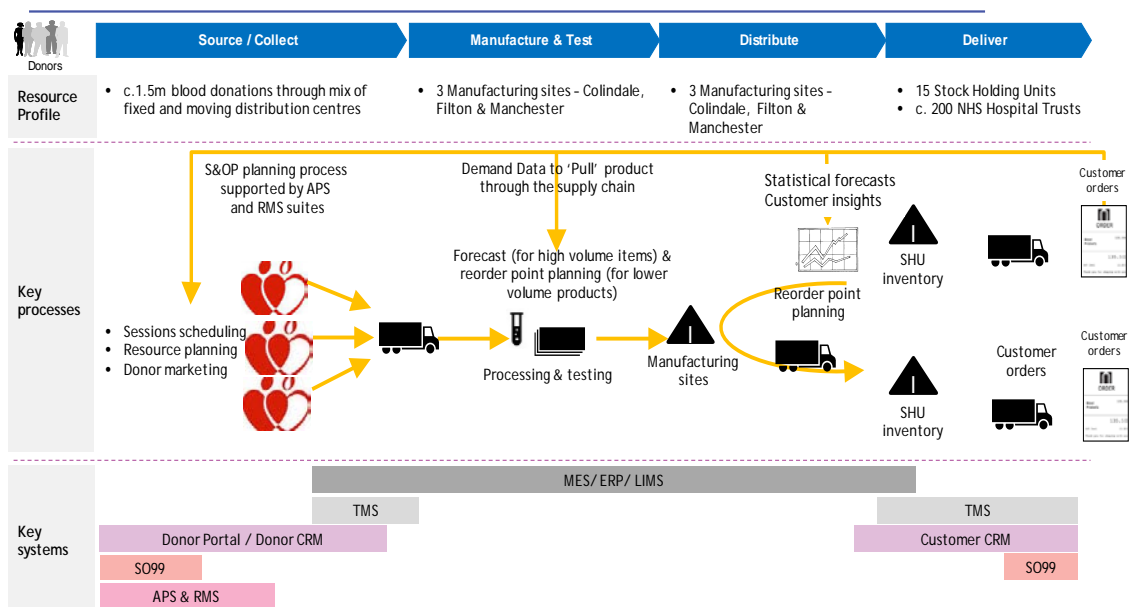
6.3. The TOM captures both elements that will be delivered through the CSM programme and those that will be delivered via other strategic change projects (e.g. session of the future and process automation), but enabled by the new IT platforms that we implement.

6.4. The TOM has been developed around an industry standard Supply Chain Operational Reference (SCOR) model with input from over 50 NHSBT senior managers.

6.5. As a result customers will see a number of changes:
- The new CRM portal (landing page) will direct customers to the services they need and replace the existing fragmented access points.
- Blood orders for stock, for individual patients need and for logistics will be in one place and will be routed efficiently.
- Web based ordering will be in place for all routine services and will reduce manual errors.
- The CRM will directly link to our billing process, so we will provide hospitals with information on their consignment notes and allow them to more easily reconcile their invoices.
- The new systems and processes will facilitate direct, real-time customer feedback, so they can tell us when things are going well or request a call-back when something has gone wrong.

6.6. Our whole blood and apheresis donors will experience:
- The opportunity for same day appointments, removing the issues and frustrations with walk-ins.
- Pre-validation checks will minimise the chance of donors being unable to donate on the day of donation.
- Tailored communications with donors to ensure we collect the optimum blood group mix to meet hospital and patient need.
- A digital donation process will mean no more paper forms to fill or bring to appointment.
- Improved services provided by the Donor Portal; improved integration between mobile applications and the donation process.
- Improved communication processes will enable provision of feedback with messages delivered via donors preferred channels, notifying donors when their donation is issued and ensuring consistent formats are applied across all channels.

6.7. During the development of the TOM and blueprint, it was established that Tissue and Eye Services categorically required their own TOM given they are a separate strategic operating unit with processes that are fundamentally different to blood. Delivery of the CSM programme will bring material control and productivity benefits to TES, including:
- The ability to automate / streamline screening processes.
- Product labelling that meets the requirements of customers and regulators.

- Removal of paper and spreadsheet based processes that will lead to a significant reduction in transcription risk and improve our ability to recall product more rapidly.
- Better planning and control capabilities through end-to-end process integration and real time data.
- Improved customer satisfaction and ease of doing business with customers with ability to scale and adapt more quickly to changing customer needs.

6.8. Both the Blood and TES target operating models reflect our intent to move from a 'push' model of operation to a 'pull' model. In simple terms, ensuring that we better match the demand from our customers, through to production plans, onto collection / retrieval plans and ultimately matched to the donors invited / referred. A pull model will smooth our workflow, more efficiently route donations through the end-to-end process and optimise use of every donation.

7. Implementation Plan

7.1. The programme will be delivered using our established programme governance methodology (Ascent) blended with deployment of our scaled agile methodology for software configuration. We intend to capture progress in an 'evolving reference model' to demonstrate value and provide confidence in the future solution to stakeholders.

7.2. The delivery roadmap is based around a series of high-level design principles. Adherence to the principles will be tested on an ongoing basis during the lifetime of the programme.

a) We will deliver the CSM programme through clearly defined programme increments.

b) Each programme increment will be scoped to deliver the minimum viable product to meet its stated objective.

c) The priority sequencing of the programme objectives will be:

- Objective 1: Remove NHSBT critical dependency on Pulse.

- Objective 2: Deliver early and incremental improvements in Blood and TES business capability.

- Objective 3: Deliver the Strategic Plan 2016/21.

d) The Transformation Plan will be focused on de-risking overall programme delivery, through:

- Delivering the solution in defined manageable stages.

- Proving the 'end to end' solution as early as possible.

- Sequencing the programme increments to meet critical business imperatives, particularly the enabling of benefits for other projects / programmes.

- Prioritising quick wins wherever possible.

7.3. The latest delivery plan (see Appendix Two) builds on the version discussed at the March 2016 Board meeting and reflects a better, albeit still high-level, understanding of the work effort to build each process matched to the programme increment structure, with more detail around the transition states to inform our business change readiness planning.

7.4. The programme will commence our software build within the blood donor area, with two scrum teams established for the first programme increment. Given the dependency between CSM and the session of the future (SoF) programme; the material benefits that SoF will unlock and the relative self contained nature of the donor work programme; we have prioritised this aspect of the programme to be delivered first through implementation of the CRM platform.

7.5. Our current roadmap assumes delivery of donor functionality by the end of programme increment three, with deployment to a live environment to follow in the first quarter of next financial year (2017/18).

7.6. From programme increment two onwards (early October), we plan to accelerate up towards six scrum teams and start development of an 'end to end' solution for a self-contained product group (neo-natal platelets). It is currently assumed that six scrum teams is the maximum capacity CSM can operate at and ensure effective knowledge transfer into ICT, when balanced with other ongoing ICT programmes.

7.7. Delivery of an initial conference room pilot will precede testing in the live environment. It is anticipated that this approach will allow us to establish ca 70%-80% of the learning necessary to implement the programme, by testing our ability to implement and integrate the new platforms.

7.8. It will also provide the opportunity for early visibility of the new systems to our front-line operational teams and secure buy-in for roll-out of the final solution.

7.9. In parallel, we also intend to deliver an end to end solution for TES, with a 'finish to finish' completion for TES and neo-natal platelets anticipated by March 2018, with a deployment period again assumed for the following quarter.

7.10. The programme will then scale up our blood supply chain functionality to cover all products and deliver a sequential roll out on a site by site (regional) basis, with an anticipated completion of March 2019. With all of the requisite functionality built at this point, the final two sites / regions are effectively a data migration exercise.

7.11. The priority of the programme remains to deliver a minimum viable product, which will enable NHSBT to decommission the existing Pulse

system as soon as possible without compromising the safety and security of the Blood and TES supply chains.

7.12. Although we will not have fully migrated away from Pulse by April 2018, in line with the GDS request to complete by this point and avoid the need for a further contract extension with the incumbent provider, we will have demonstrated material progress towards doing so, with an expectation of completing the migration by March 2019.

7.13. Additional functionality will be implemented after exiting Pulse (MVP) to achieve the Blood 2020 and Tissue Services strategy (and their respective TOM's) by the end of 2019.

7.14. The programme delivery plan currently represents a best estimate based on assumptions around delivery of processes through defined programme increments and the number of scrum teams that can be accommodated to enable effective knowledge transfer. It will remain subject to change until we establish our velocity of configuration and learn from the early programme increments. We will look to accelerate the delivery plan and bring forward the migration off our legacy system if at all possible.

8. Impact on People, Process, Information and Technology

8.1. The blueprint we have developed articulates how we progress from the current as-is position to the current future state, and what the steps along the way are to achieving that end state (high-level transition states). Figure Two below summarises them.

Figure Two – Transition States

	TS-1	TS-2	TS-3	TS-4	TS-5	TS-6
	Donor	**Pilot**	**Site 1**	**Site 2**	**Site 3**	**Enhanced functionality**
User base	National	National	Geographical	Geographical	Geographical	National
Product scope	All Products	Neo-natal platelets & Tissues	All Products MVP	All Products MVP	All Products MVP	All Products
New technology for user	Donor	Manufacturing Customer	Manufacturing Customer Donor	Manufacturing Customer Donor	Manufacturing Customer Donor	Manufacturing Customer Donor APS
Technology not being used going forward by user base	Pulse	Pulse for Neo-natal Platelets & Tissues	Pulse	Pulse	Pulse (decommissioned)	
Active Pulse data feed?	Yes	Yes	Yes	Yes	Yes	No

8.2. The blueprint also describes the impact on our organisation in terms of people, process, information and technology. The CSM programme will bring a need for people change across Blood, TES, ICT and Diagnostic support, including:

- New roles and capabilities that will need to be recruited.
- A substantial amount of training will be required for current employees on the new systems and processes.
- The opportunity for productivity improvement in pursuit of current strategic productivity targets and potentially beyond.

8.3. CSM will change the 'day job' for many of our team as we will seek to:

- Use 'out of the box' processes as much as possible.
- We will not simply reconstruct the way we work now.
- We will need to adapt to new ways of working / processes.

8.4. A programme of this size and nature will require a major focused effort from across NHSBT with internal capability supplemented with a material amount of external resource to support successful delivery and knowledge transfer as we develop and build capability of our own.

8.5. Our delivery partners will provide expertise and resource to enable us to successfully define the IT architecture, implement and integrate the various platforms. They will also provide key resource to support the successful development of the early stages of the programme, plugging capacity and capability gaps.

8.6. The new technology 'platforms' that we will implement will be hosted in the Cloud, representing a fundamental change from the current hosting model.

8.7. Currently data is disparate and is not governed at the level it should be across the organisation. There is a material amount of data held offline in spreadsheets and databases that will need to be migrated into the new technology platforms. The master data management action plan will require effective implementation if the programme is to be successful.

9. Financials

9.1. The latest financial plan builds on the bottom-up cost model, built during the definition phase. This will be further developed as we progress through the various phases of work.

9.2. The cost model captures not only the IT delivery element of the programme, but also key governance and design elements that are essential to success, such as strong programme management, an independent solution architecture, mobilisation phase and data migration.

9.3. The latest estimates of one-off costs, suggests that the programme will cost ca £36.6m, including both the £2.6m spent to date on programme definition and mobilisation, plus a 25% contingency (ca £6.5m). Delivery

of MVP to enable migration off our legacy system is forecast at £27.6m (including 25% contingency of £4.7m).

9.4. There is a material amount of external resource assumed within the model. Around £7.1m of the £7.6m sought for approval, and £32.2m of the total cost of £36.6m, is accounted for by spend with external partners, who bring the capacity and capability needed to deliver a programme of this nature.

9.5. Figure Three summarises the cost estimates.

9.6. Further iterative updates to the business case and requests for tranches of funding will follow. The first will be presented to the January 2017 Board meeting, which will reflect learning from the first two programme increments.

Figure Three – Summarised Cost Estimate

Category	2015/16	2016/17	2017/18	2018/19	2019/20	Total
Programme Definition	£0.6					£0.6
Mobilisation & Design		£2.0				£2.0
Programme Level		£0.6	£0.9	£0.9		£2.4
Architecture & Enablers		£0.6	£1.2	£1.1		£2.9
Automation / Testing / Systems Teams		£1.3	£0.9	£0.3		£2.5
Parallel running license / environments		£0.3	£1.6	£1.6	-£1.5	£2.0
Transition State 1: Donor (£0.3m in M&D)		£2.4				£2.4
Transition State 2: Neonatal Pilot		£2.4	£3.6			£6.0
Transition State 3: Tissue Services			£2.5			£2.5
Transition State 4: All Products Site 1			£1.2	£2.4		£3.6
Transition State 5: All Products Site 2				£0.4		£0.4
Transition State 6: All Products Site 3				£0.4		£0.4
Exit current core system (MVP)	£0.6	£9.6	£11.8	£7.1	-£1.5	£27.6
Programme Level					£0.7	£0.7
Architecture & Enablers					£0.9	£0.9
Automation / Testing / Systems Teams					£0.3	£0.3
TOM Delivery				£1.8	£5.4	£7.2
Programme Total	£0.6	£9.6	£11.8	£8.9	£5.7	£36.6

9.7. Although the business case for the CSM programme is built on the enablement of strategy and the mitigation of risk (see Appendix One), it is estimated that the annual recurring cost of maintaining and developing the core system will reduce from ca £3.0m per annum to ca £1.6m. This is the main financial benefit delivered by the CSM programme. Further, less material savings in TES, donor and customer functions take the total financial benefit to £1.8m.

9.8. The CSM programme will also provide the platform for implementation of several programmes of work captured in the TOM that will deliver material

cost saving and productivity benefits such as session of the future and process automation. An optimised blood supply chain would suggest savings of ca £15m-£20m are achievable (but outside the scope of CSM).

9.9. In TES an estimated £0.2m saving is set in the context of a ca £9m turnover business and the CSM programme will support the income growth agenda in this area.

9.10. In addition, there are numerous un-quantified benefits summarised in Section six above, which will support delivery of our 2020 strategy performance outcomes.

10. Stakeholder Engagement and Communications

10.1. The CSM team have identified the stakeholder groups that the programme will need to engage with as we move forward. A communications and engagement plan has been developed and implemented by a dedicated work-stream.

10.2. Our initial engagement plan has included specific internal presentations at various senior leadership events and functional meetings; plus engagement with key external stakeholders (Savant, MHRA, HTA, NBTC) and ongoing dialogue with GDS lead by the Chief Digital Officer.

11. Dependencies, Risks and Assurance

11.1. Delivery of the CSM programme will be dependent on a number of key projects and these, along with our risks, are captured in our programme RAID log. The current key risks are captured in Appendix Three.

11.2. A proactive focus on identifying and managing risks and bringing in lessons learned from internal and external projects will be maintained throughout the life of this programme.

11.3. All of our platforms have been procured as 'Software as a Service' (SaaS). As a result, the provision of infrastructure will be the responsibility of the SaaS provider, based on requirements specified in a Service Level Agreement for performance, availability and recovery in line with the needs of our critical service resilience.

11.4. The CSM programme is highly complex and has significant implications across the Blood and TES supply chains. The Programme Board is accountable for assuring that the programme is conducted properly. It is considered critical that appropriate, external assurance is applied, providing confidence of outcome delivery to the organisation. As a result, regular audits have been commissioned utilising the internal audit contract to provide assurance. The first will take place during the summer of 2016.

12. Next Steps

12.1. The business case will be taken to further iterations as the programme progresses, with requests for funding made in tranches and based on the learning secured from the previous phase.

12.2. The key next steps are focused on:

- Securing external approval for the business case from DH and GDS.
- Completing PI1 for Donor by the end of September 2016.
- Completing the development of our business change strategy and commencing our data migration plan by the end of September 2016.
- Preparing for PI2 and the scale-up from two to six functional scrum teams.
- Completing the procurement of the manufacturing software and partner, on-boarding resource in time for PI2 in October 2016.
- Begin the configuration for the neo-natal pilot and TES activity from October 2016 onwards.

12.3. A progress report will be provided to the Board in January 2017 following completion of our first two programme increments, along with an update of the overall business case that will seek approval to fund and commence the next programme phase from April 2017 onwards.

Author(s)	Responsible Director(s)	NED Reviewers
Mick Burton Accountable Executive Core Systems Modernisation	**Peter Lidstone** Manufacturing & Logistics Director	**Jeremy Monroe** **Professor Paresh Vyas**

Further information available on request

1	CSM Programme Business Case
2	Target Operating Model Blood
3	Blueprint Blood
4	Target Operating Model Tissue and Eye Services
5	Blueprint Tissue and Eye Services
6	Validation Master Plan
7	Supplier Management Plan
8	Programme Test Strategy
9	Communications and Engagement Plan
10	Risks, Assumptions, Issues and Dependencies (RAID) Log
11	Assurance Audit - Terms of Reference

Appendix One – Summary of the Background to the Programme

1. The IT Strategic Framework approved by the Board in November 2014 identified that NHSBT should implement a simplified set of commercially available IT platforms, hosted in the cloud and developed iteratively to accelerate the delivery of value to our users and customers.

2. The delivery of these standard platforms will, over time, contribute to increased productivity and a reduction in the total cost of ownership of IT. It will also contribute to greater predictability of IT spend through the adoption of subscription based revenue models of funding.

3. In addition, during early 2015, the Transformation Discovery Project identified that the current technologies used in Blood Supply and Tissue Services, which having served us well in the past, do not allow us to meet the demands of our ambitions as detailed in the Strategic Plan 2016/21, Blood 2020, IT and Tissue Strategies. The gap to deliver the Blood 2020 strategy with current core systems was summarised in the table below.

Current Systems Ability to Deliver Blood 2020 Strategy

Pillar	Challenge
Pillar 1 - Blood donation and donor experience	Sufficiency of supply
	Modernisation / securing the donor base of the future
	Deliver a step change in Performance
	Exceling at Customer service for our donors
	Improve efficiency and productivity
Pillar 2 - Manufacturing operations	Sufficiency of supply
	Modernisation of manufacturing operations
	Deliver a step change in performance in manufacturing operatons
	Improve efficiency and productivity
Pillar 3 - Hospital Interface and Customer Service	Patient Blood Management and transfusion training
	Tailored service and transport optimisation
	Expand the vendor-managed inventory programme
	Develop a modern customer interface
Pillar 4- Integration with hospitals - integrated Transfusion Sevices	Optimising Red Cell Immunohaematology (RCI)
	Integrating patient care pathways
	Integrating Red cell Diagnostics: Transfusion Hubs and associated Networks

Key	
Minimal	
Partial	
Enable	
Not applicable	

4. The Transformation Discovery project defined the functionality that the platforms would need to both replace Pulse and enable delivery of the 2020 strategy and beyond.

5. In addition to the technology and business drivers, NHSBT have been given clear direction by the Cabinet Office to replace our existing core systems and decommission them within three years. On the 26 March 2015, Cabinet Office approved our existing core systems (Pulse) spend for the next three years subject to the following conditions:

   • We should follow the GDS Service Design Manual in designing and delivering replacement systems.
   • We must choose technologies adhere to open standards and minimise risk of lock-in.
   • We must plan to decommission Pulse prior to the end of the three year contract.
   • We must return for approval of any further spend on the Pulse and Hematos systems.

6. At the meeting in September 2015, the Board approved the rationale for selecting a platforms approach based on choosing 'best of breed' for each capability required i.e. selecting the best 3-4 platforms for NHSBT needs and integrating them.

7. Since that time, ICT colleagues have lead a platform selection project (with operational input) to choose our platforms. Although multiple packages providing the richest functionality was the preferred option, the software selection process kept open the option of running combinations of solutions with a reduced number of vendors and partners.

8. The table below summarises the progress made.

Platform and Partner Selection

Platform	Software	Partner
Business Process mapping	IBM	T-impact
Customer Relationship Management	Microsoft Dynamics CRM	Cap Gemini
Enterprise Service Bus	Mulesoft	Open Answers
Manufacturing Platform	Microsoft Dynamics AX – procurement complete by Sept 2016	TBC – procurement by Sept 2016
Delivery / Integration Partner	-	Glue Reply

9. In the programme definition phase, January to March 2016, the programme team worked with external supplier support from Ernst and Young (EY) to produce:

   1) A target operating model (TOM) for the Blood, Tissue and Eye Service supply chains.
   2) An updated high-level programme plan.
   3) A blueprint for each business unit to define how we progress from the current as-is position to the to-be TOM (transition states).
   4) A clear programme mobilisation plan (next steps).
   5) An updated view of costs and benefits.
   6) A stakeholder mapping analysis.

10. At the March Board 2016 meeting, £2.2m funding was approved to progress the mobilisation stage of the programme.

Appendix Two – High-level Programme Plan and Transition States

Note: the programme delivery plan currently represents a best estimate based on assumptions around delivery of processes through defined programme increments and the number of scrum teams that can be accommodated to enable effective knowledge transfer. It will remain uncertain until we establish our velocity of configuration and learn from the early programme increments. We will look to accelerate the delivery plan and bring forward the migration off our legacy system if at all possible.
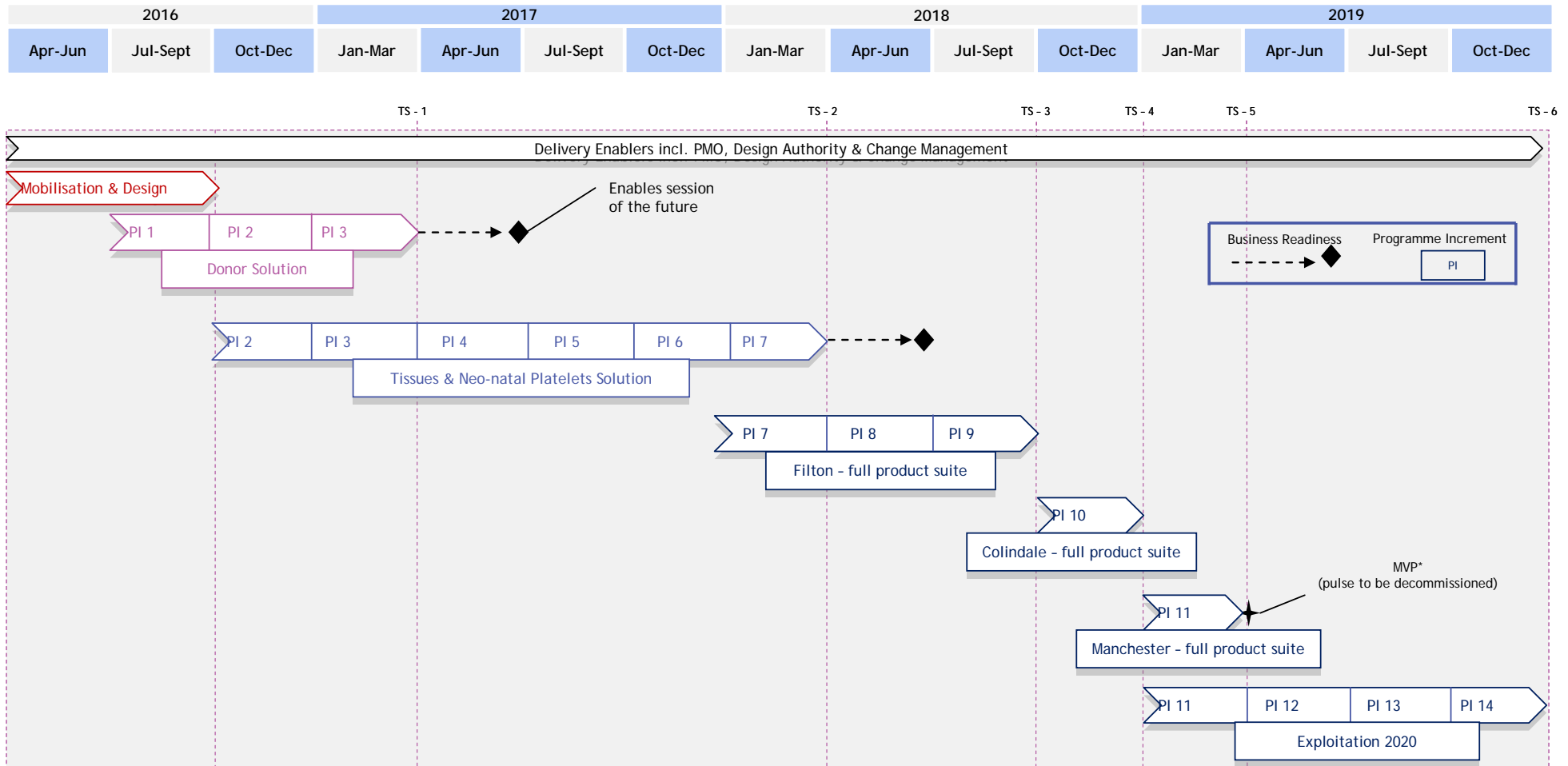
Appendix Three – Risk Register Extract

	Description of KEY Risks	Consequence	Severity Score	Mitigation Strategy
1	The scale and complexity of development and integration required for this programme is considerably more than NHSBT has historically undertaken	The programme will fail to deliver change on time, or may not be able to deliver change successfully at all	15	• Engage with integration partner to augment internal skills and capability, whilst retaining overall control within NHSBT
2	Current infrastructure (especially network and internet access) and desktop environment is not sufficient to rollout cloud based (or internal) solutions	Poor user experience, especially poor speeds will negatively impact user appetite to adopt the system	15	• Dependency management established with Desktop Modernisation Programme and network upgrade plan
3	The availability of business resources (time & people) to effectively support and implement changes may conflict with operational priorities	Delivery failure and/or additional time/cost	15	• Advance notice of estimated resource draw and agreed via the CPB/TPB • Agreement to fund backfill • Adoption of productive Agile approach • Regular review of priorities at TPB where required
4	There is a risk that NHSBT may either not receive the required regulatory approval to go live with the new platforms, or be delayed in doing so due to its regulators being unfamiliar with the development and testing approach being adopted (Agile)	Delivery failure and/or additional time/cost	15	• Early and ongoing engagement with regulators • Updated SDLC in place mapped to agile approach • External expertise secured to develop a validation master plan
5	Users may choose to 'over-configure' the system and select not to use out of the box functionality and re-create the legacy system	Delivery delays, over-spend, system does not meet strategic requirements	20	• Tightly manage the teams during sprint developments – escalate issues to the AE