

# **WLMHT Business Technology Strategy 2015 - 2020**

Authors: Andrew McEwan  
Deputy Director of Business Technology

Trevor Nelms  
Director of Business Technology

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# 1 Executive Summary

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*What are the opportunities to use technology for improving healthcare?*

*Candace Imison - Director of Policy, Nuffield Trust*

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The digital revolution of the 21<sup>st</sup> century is a comparable step change to the industrial revolution of the 18<sup>th</sup> century, utilising new technologies and transforming almost every aspect of daily life. The way we interact with each other, through social media to how we book holidays, buy groceries or conduct online banking changes the methods to communicate and control our lives at a push of a button. Whilst the commercial world has embraced new technology the NHS has been slower to react, in the words of William Gibson – “*the future is already here it’s just not very evenly distributed*”.

In 2014, recognising this gap, the NHS created the National Information Board and published the Personalised Health and Care 2020 (using Data and Technology to Transform Outcomes for Patients and Citizens) Framework, to identify and make better use of data and technology to: “*improve the health, transforming the quality and reducing the cost of health and care services*”

This strategy covering 2015 to 2020 will take stock of where we are, what the Trust has achieved and look at the new requirements as set out in the aforementioned framework. It will align with not only our own organisational roadmap of requirements but also those of our partner organisations across the NW London sector and in turn the overarching national agenda for digital transformation through Sustainable Transformation Plans.

It is important that technology is not seen as an adjunct to the provision of high quality clinical care but as an integral part, providing better, more efficient care and empowering citizens to control their access to information and services.

The Trust has achieved many of its stated aims as set out in the 2009 – 2014 strategy. RiO, the single Electronic Patient Record is now in use across the Trust, with Broadmoor successfully going live in October 2014. The Contact Centre has imbedded itself in the business becoming a vital single point of contact taking over 200,000 calls a year, handling estates and facilities and IT queries. The Service User and Carer line (SUTs) being a particular success with over 22,000 calls answered, never turning away a call even though the service user may be outside of the Trust’s sphere of influence. In 2016 this service successfully transferred into the newly established Single Point of Access team, providing one point of contact for referrals from GP and other health care providers.

We now look to the next five years, identifying central and local requirements and work with our colleagues not just in this Trust but across the health and social care spectrum to digitally enable services and citizens.

## 2 Background

### 2.1 Introduction

*“The term 'digital nervous system' is kind of an interesting one. The analogy, of course, is to the biological nervous system where you always have the information you need. You always are alert to the most important things, and you block out the information that's not important. Companies really need to have that same kind of thing: the information that's valuable getting to the people who need to know about it... “*

Bill Gates – Founder of Microsoft

This document sets out the Business Technology Strategy for the West London Mental Health NHS Trust. The strategy will cover the period 2015 – 2020 highlighting the key drivers for digital change and describing how technology can help and improve service user safety, outcome and experience. The strategy is about ‘making life easier’ for staff and service users, reducing costs, manual processes and duplications of activity. Technology is vital to the longevity of the Trust and the quality of care it provides. Through supporting the service user pathway, technology can enable clinical staff to concentrate on time with the service user rather than time consuming administrative processes. Working in collaboration in the development of technological solutions staff will be able to work across a breadth of areas and sites, letting information flow uninterrupted between services run by separate organisations providing seamless care to the service user. Technology is paramount when considering service reconfigurations and identifying required efficiency and cost savings. It is an integral part of life, providing the right information, to the right people at the right time.

### 2.2 The Role of a Business Technology Strategy

The Strategy will investigate integration, interoperability and collaboration, a flexible, secure ICT infrastructure, data quality and governance identifying requirements to ensure WLMHT stays at the forefront of healthcare delivery and the number one choice of provider in West London and beyond. It is not responsible for the data held within systems as this remains the responsibility of the person entering or amending the data but it is responsible for the capacity, integrity, availability and security of data and systems.

### 2.3 Approach

The first draft was brought together by West London’s Deputy Director of Business Technology based on Infrastructure changes including the development of new buildings and services and digital transformation initiatives. Further input was sort from Clinical Advisory Groups (CAGs) which have now become the Clinical Design Group (CDG), the Trust’s commissioning partners (CCGs), the Director of Business Technology, Chief Clinical Information Officer and wider stakeholders. The second draft (2016) will take inspiration from the Trusts Strategic Technology Investment Group alongside other factors including:

- The NHS England National Information Board (NIB) report – Personalised Health and Care 2020 – *Using Data and Technology to Transform the Outcomes for Patients and Citizens. Published November 2014.*
- Sustainability and Transformation Plans (2016)
- NHS North West London Local Digital Roadmap (June 2016).
- 2015 CQC inspection report.
- The Digital Strategy (DH). Published December 2014.
- Local restructures and changes to Service Provision.
- Local commissioning Priorities.

## 2.4 Strategic Background

An integrated Electronic Patient record (EPR) has been one of the key priorities for all healthcare organisations. Going forwards simply capturing service user data electronically will not be sufficient. There is now not just an expectation but a demand for all digital data to be made available at the point of care, across all care settings and to service users themselves. This will include interfacing with other applications, exchanging real-time live data and providing service user portals allowing direct access to appropriate clinical information. This vision is supported by the NIB Personalised Health Care framework which states, as a timeline; *for co-ordination and agreement on national and professional data standards required to achieve digital real-time and interoperable care records in 2015.* The Framework goes further in stating their aim is, by 2018, for all clinicians in primary care, urgent care, emergency care and other key transitions to be operating without the use of paper.

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### *To meet the challenge:*

- *We need to recognise the key issues and change what we do – which means altering how we do some things*
- *Recognise the world is changing; embrace the digital revolution to transform healthcare delivery before it is changed for you*
  - *Systematise how patients can be part of the care system, interacting differently*

Sir John Oldham

Chair of Independent Commission on Whole Person Care 2014

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The work achieved through the National Programme for IT (NPfIT) has advanced the clinical system greatly. With the demise of the programme, developments of systems were devolved to a local level with certain areas of health care having seen greater improvement and other areas having received little. The reliance on local developments will increase the pressure on budgets yet further and reinforces the approach of having high level board scrutiny on suggested developments. With a challenging financial situation the Trust must prioritise its investments in technology identifying those that deliver the greatest transformational change. It is vital this strategy focuses on getting the basics right and ensuring strong and well managed engagement from all staff in embracing & adopting technology.

## 2.5 Strategic Progress at WLMHT

Progress at WLMHT has been steady, with an EPR (RiO) fully deployed to all areas of the Trust, a document management solution (EDMS) implemented and a managed print service allowing staff to print, scan and copy no matter where they are based. Tenders successfully awarded for mobile telephony and fixed telephony will yield improved efficiencies, through streamlining work, and cost savings.

This has also seen:

- A Windows 7 and office 2010 replacement programme which has delivered quicker start up times and increased functionality to staff
- A Contact Centre becoming the Single Point of Contact for the Trust and the successful introduction of a Service User and Care (SUTs) line providing 24/7 contact to a trained health care professional for advice and guidance which has now transitioned into the Single Point of Access staffed by Mental Health Advisors and clinicians able to provide a single point for referrals
- Agreements to replace the local and wide area network and the storage area network in a dedicated, managed IT datacentre adhering to Tier 4 levels of resilience and supporting best practice in disaster recovery.
- Replacement telephony switchboard reducing the need for dedicated analogue lines and providing a platform for unified communications\*
- A new Storage Area Network installed at St Bernards, a new mobile and fixed line contract agreed with Telefonica and a Wide Area Network upgrade agreed with BT N3 providing faster more resilient links to the Trust's core applications

*\*See section 7.8*

The next five years will concentrate on delivering investment in the infrastructure and collaborating and integrating systems which are the critical foundation stones required to transform delivery to clinicians, collaborate with health and social care organisations, support staff working in community settings and provide accurate and timely information to service users receiving care from multiple venues. Investment in the infrastructure will need to continue particularly in the short term to ensure it is both appropriate and flexible to deliver future requirements as business technology and strategic drivers change. These investments will require strict governance to ensure the limited capital is spent in the most transformational way. To this end the Strategic Technology Investment Group (section 8) was setup to prioritise capital spent on all new investments.

Despite this progress the Trust is still too reliant on paper records, manual re-input of data and manual intervention to achieve data transfer. The introduction of RiO as the Electronic Record of choice has gone some way to improving this but there is still work required. Interoperability with primary, acute, social care and 3<sup>rd</sup> party systems depends on the consistent and timely entry of structured data especially in light of new data quality standards published by the NIB and monitored by the CQC from 2016. Clinical screens mapped to clinical processes will not only ensure appropriate data fields are populated but will also aid clinicians in their use of the clinical system, reducing resistance to change and improving timely access to good quality information.

As the Trust moves through its redevelopments seeking to transform and improve there is an assumption technology will be required to help transform services. Currently there is a

challenge to be met within the service around the structure and level of support business technology can provide. Further to this the simple application of technology to solve problems isn't always successful due to a requirement for service/business transformation to take place at the same time. Currently the service transformation ability of the Trust is limited or not undertaken when technology is being considered. It is fundamental to ensure the two functions, technology and service transformation, run alongside each other.

As reliance on ICT systems increase and with the challenge it faces from the advance of home computing systems, allowing greater access to data, anytime anywhere, business technology must be proactive rather than reactive. It must enable smarter ways of working, interoperate with systems, enable the improvement of data quality and ultimately help rather than hinder clinicians and service users. All too often staff experience of IT and in particular change in IT is poor, it is this perception the organisation must work to improve by maintaining focus on the clinicians, service user and their needs. The Trust has made some progress in this area with the adoption of a Clinical Design Group (CDG) and the appointment of a Chief Clinical Information Officer (CCIO) to lead the development and direction of the EPR. This will be supported by the creation of a programme of developments for RiO. All initiatives for the EPR functionality will be driven through the CDG, CCIO and the Strategic Technology Investment Group. More though is required to transform the service to ensure it can continue its journey moving from 'reactive' to 'proactive' that is seen as critical to all aspects of future Trust strategy. Specific areas to focus on might be customer service and service level agreements for service provision and monitoring. Staff ICT abilities within the Trust need to be measured and tested, usually prior to commencement in a new position and, where necessary, training plans should be included as part of the PDR process. This is especially important as the Trust's information relies on accurate use of technology. Significant returns could be gained from basic automations of core administration functions through business process automation and by making use of the EDMS system to provide a true task based workflow system.

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*“Be crystal clear on how important it is to your business model, and then be relentless about trying to change digital capability”*

*Kay Boycott, CEO, Asthma UK*

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Whilst it should be acknowledged that challenges will always exist in achieving successful technology delivery it will be aided by a clear and concise view of what is to be delivered, its relative success factors, Trust development priorities and most importantly full and active support from all service areas.

The following are some examples of where improvements need to be made:

- Working collaboratively with partner organisation across the health and social care spectrum particularly with regards to mobile working and driving down cost of infrastructure.

- Developments on RiO to meet functional and service requirements
- Embedding the Clinical Design Group and the Strategic Technology Investment Group within the Trust with prioritised senior management attendance
- Up skilling of key personnel and teams based around ITIL best practice
- Identification and removal of single points of failure of both staff & infrastructure
- Implementation of a Tier 4 ICT Infrastructure providing a resilient base to work from (see section 7)
- Improve (cyber) security protocols and information governance compliance
- Improve disaster recovery systems and procedures
- Improve the transparency and benefits of the service to the Trust and manage Trust expectations through a service catalogue and realistic service level agreements
- Improved asset management of both hardware and software including the Trusts licence position
- Ensure the Business Technology department is funded realistically from the outset
- Flexible ways of working including device choice, connectivity and unified communications

Business Technology has come a long way and services have and will continually improve as there is a constant and increasing need by the Trust for help with service developments and improvements. This change needs to be accelerated due to the pace of change across the NHS and other partnering organisations, all of which have the same level of reliance on business technology. Improvements need to be made in the people, processes, communications and overall perception of the business technology service. This is a softer but critical element of our overall foundation stones for the future.

*“I would find it difficult to find an area of our business where there’s not potential for technology to improve what we do”*

Simon Gillespie, CEO, British Heart Foundation

## 3 Considerations and Principles

### 3.1 External Drivers

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*By 2020, there will be “fully interoperable electronic health records so that patient’s records are paperless”*

National Information Board: Five Year Forward View

*‘All patient and care records will be digital, interoperable and real-time by 2020’*

Personalised Health and Care 2020: a framework for action

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#### Sustainability and Transformation Plans (STPs) and Local Digital Roadmaps (LDRs)

The NHS 2016/17 Planning Guidance document introduced the concept of place-based Sustainability and Transformation Plans. The STPs are designed to ensure delivery of transformation, local health and care systems which harness opportunities digital technology offers. CCGs were mandated to lead local health and care systems to produce Local Digital Roadmaps identifying how they would achieve the national aim of operating paper-free at the point of care by 2020. The LDRs are designed to reference elements of the STP that they support. This Trust is part of the North West London Digital Roadmap along with eight CCGs, eight local authorities and nine acute Trusts. The strategy will draw on the requirements and obligations placed on the Trust in the plans and priorities of the NWL STP and LDR.

The NWL Care Community STP highlights the following areas and identifies the means to close the gap:

- **Care and quality gap** – through new models of care, digitally enabled by joined up patient records and better information to support care decisions.
- **Finance and efficiency gap** – by using technology to improve efficiency.
- **Health and wellbeing gap** – getting patients involved in their own care; advanced system-wide analytics.

The main impact on this strategy will be via the technology and innovation theme in the STP, highlighted below:

#### Technology & Innovation:

- fully digital care and support, integrated health and social care information, right information available in the right place at the right time, paperless services
- Integrated health and social care through shared data and whole systems intelligence
- Remove reliance on paper
- Involve citizens in their own health through digital empowerment

The NW London health and care LDR identified nine major priorities in the STP where technology was at its heart, highlighting its significance in the NHS transformation. See Fig 1

STP Priority	Digital STP Theme	Strategic LDR Approach
1. Support people who are mainly healthy to stay mentally and physically well, enabling and empowering them to make healthy choices and look after themselves	<ul style="list-style-type: none"> <li>• <b>Deliver digital empowerment</b></li> </ul>	<ul style="list-style-type: none"> <li>• Give citizens easier access to information about their health and care through Patient Online and the NWL Care Information Exchange</li> <li>• Patient Activation Measures (PAM) tool for every patient with an LTC</li> <li>• Innovation programme to find the right digital tools to help people manage their health and wellbeing – need to understand diversity of our citizens and deliver multiple solutions to accommodate different needs</li> </ul>
2. Reduce social isolation	<ul style="list-style-type: none"> <li>• <b>Deliver digital empowerment</b></li> <li>• <b>Integrate health and care records</b></li> </ul>	<ul style="list-style-type: none"> <li>• Innovation programme to find digital tools to create online communities of patients and carers</li> <li>• Support integrated health and social care models through shared care records; increase digital awareness</li> </ul>
3. Improve children’s mental and physical health and well-being	<ul style="list-style-type: none"> <li>• <b>Deliver digital empowerment</b></li> <li>• <b>Integrate health and care records</b></li> </ul>	<ul style="list-style-type: none"> <li>• Innovation programme to find digital tools to get children and young people involved in health and wellness</li> <li>• Support new care delivery models and specific integrated services through shared care records (e.g. digital Red Book)</li> </ul>
4. Ensure people access the right care in the right place at the right time	<ul style="list-style-type: none"> <li>• <b>Integrate health and care records</b></li> <li>• <b>Whole systems intelligence</b></li> <li>• <b>Deliver digital empowerment</b></li> </ul>	<ul style="list-style-type: none"> <li>• Support new models of out-of-hospital and proactive multi-disciplinary care through shared care records</li> <li>• Integrated discharge planning and management through shared care records across health and social care</li> <li>• Infrastructure and shared systems to support new primary care and wellbeing hubs, mobile clinical solutions</li> <li>• Improved care navigation via Integrated Urgent Care (111 service) driven by a Directory of Services linked to shared care records across different care settings</li> <li>• Integrated care dashboards and analytics to identify, plan and implement appropriate care models</li> <li>• Enable citizens (and carers) to access care services remotely through Patient Online (e.g. remote prescriptions) and NWL Care Information Exchange, remote consultations (e.g. videoconferencing) and telehealth</li> </ul>
5. Reduce the gap in life expectancy between adults with serious and long-term mental health needs and the rest of the population	<ul style="list-style-type: none"> <li>• <b>Deliver digital empowerment</b></li> <li>• <b>Integrate health and care records</b></li> </ul>	<ul style="list-style-type: none"> <li>• Innovation programme to find digital tools to engage with people who have (potentially diverse) mental health needs, including those with Learning Disabilities</li> <li>• Support new care delivery models and specific integrated services through shared care records</li> </ul>
6. Improve quality of care for people in the last phase of life, enable them to die in their place of choice	<ul style="list-style-type: none"> <li>• <b>Integrate health and care records</b></li> </ul>	<ul style="list-style-type: none"> <li>• Integrate Co-ordinate My Care (CMC) with acute, community and primary care systems; promote use of CMC in CCGs where usage is currently low, through education and training</li> </ul>
7. Improve consistency in patient outcomes and experience regardless of the day of the week that services are accessed	<ul style="list-style-type: none"> <li>• <b>Integrate health and care records</b></li> <li>• <b>Whole systems intelligence</b></li> </ul>	<ul style="list-style-type: none"> <li>• Support new models for out-of-hours care through shared care records (e.g. shared services in primary care, 24x7 on-call specialist and rapid response services in mental health, pan-NWL radiology reporting and interventional radiology networks in acute)</li> <li>• Integrated out-of-hours discharge planning and management through shared care records</li> <li>• Improved patient choices via Integrated Urgent Care (111 service) driven by a Directory of Services</li> <li>• Integrated care dashboards and analytics to track performance and consistency of out-of-hours care</li> </ul>
8. Reducing unwarranted variation in the management of long term conditions – diabetes, cardiovascular disease and respiratory disease	<ul style="list-style-type: none"> <li>• <b>Integrate health and care records</b></li> <li>• <b>Whole systems intelligence</b></li> <li>• <b>Deliver digital empowerment</b></li> </ul>	<ul style="list-style-type: none"> <li>• Support new models of multi-disciplinary care, delivered consistently across localities, through shared care records</li> <li>• Integrated care dashboards and analytics to track consistency of outcomes and patient experience</li> <li>• Patient engagement and self-help training for LTCs to help people manage their conditions and interventions</li> </ul>
9. Reduce health inequalities and disparity in outcomes for the top 3 killers: cancer, heart diseases and respiratory illness	<ul style="list-style-type: none"> <li>• <b>Integrate health and care records</b></li> <li>• <b>Whole systems intelligence</b></li> <li>• <b>Deliver digital empowerment</b></li> </ul>	<ul style="list-style-type: none"> <li>• Support new models of integrated, proactive multi-disciplinary care through shared care records</li> <li>• Integrated care dashboards and analytics to track consistency of outcomes and patient experience</li> <li>• Patient engagement and self-help training for LTCs to help people manage their conditions and intervention</li> </ul>

Figure 1 NWL Footprint

The Local Digital Roadmap alongside the Sustainability and Transformation Plan represent a significant undertaking with regards to digital technology. The requirement to integrate, innovate and evolve technology will impact all services the Trust offers and will require significant funding if these aims are to be achieved. In 2016 the government announced a sum of money to invest in NHS digital technology. This funding could only be accessed through the CCGs and aligned with the required improvement highlighted by the LDR. It is vital when decisions are made with regards to technology a view of the STP and LDR is taken to ensure the Trust is working in partnership with our NWL colleagues. Any deviation from these plans or significant underinvestment could result in the Trust failing to meet the expectation of our commissioners (CQUINS), service users and central government bodies (standard Contract Requirements).

The full Local Digital Roadmap is available here and will be updated as new versions are released:



NW London Local  
Digital Roadmap

### CQC inspection Report – 2015

In October 2015 the Trust was inspected by the Care Quality Commission who found the Trust overall 'required improvement'. Though the inspection was centred on care to service users it found several areas where both use of technology and technology itself could be improved, these areas included:

- 1) Rationalising systems to ensure one contemporaneous patient record
- 2) Ensure all staff are fully trained on the RiO clinical system and look to ensure clinical best practice is included in the training
- 3) Real-time recording of observations such as seclusion and physical healthcare
- 4) Providing a service user view of the clinical record

These findings fall into the key deliverables highlighted in the STP and wider strategies including the key deliverables for NHS England's Strategic Systems and Technology Directorate, which also include:

- Enabling and supporting people to access and interact with their individual health records online should they wish to do so.
- Facilitating the widespread adoption of modern, safe standards of electronic record-keeping.
- The re-launch of the Choose and Book service to make eReferrals available to patients and health professionals for all secondary care by 2015
- Supporting hospitals to implement safe and effective electronic prescribing services for their patients

- Ensuring integrated digital care records (IDCRs) become universally available at the point of care for all clinical and care professionals
- Commissioning the nationally provided IT infrastructure which underpins NHS services, such as the Spine (the national system which enables information to be shared across NHS care settings), the Health and Social Care Network (HSCN) (the underlying network) and NHSmail (one option for secure email service).

*'From March 2018 all individuals will be enabled to view their care records and to record their own comments and preferences on their record, with access through multiple routes'*

National Information Board: Five Year Forward View

The direction of travel for the Trust seems clear:

- Providers will be required to improve their ability to produce more and better data to drive up the quality of the services provided by demonstrating how outcomes (patient and clinical) and patient experience compare against peers and the Trusts' historic performance.
- The need to improve the accessibility and use of care records for service users themselves.
- The need to create better "intelligence" from the data that already exists within the health systems will be a key cornerstone of this strategy and also, the ability to link data from outside the Trust so that service users, clinicians and commissioners can see the whole patient pathway.
- A significant need to invest in digital infrastructure to ensure underlying ICT systems are able to support the digital transformation highlighted in the LDR and STP as well as CQUINS and the standard NHS contract.

### 3.2 Internal Drivers

Observing the drivers external to the Trust the Strategy will have drivers applied to it from within the organisation itself. These include a requirement to run clinically and financially sustainable services looking to continually improve and make use of the ever changing ICT landscape whilst minimising risk. Other areas where internal drivers may come from include:

- Improved Patient Care
- Digital CQUIN targets external to LDR
- Organisational change
- Budget reductions
- New services
- Data analysis and scenario modelling
- Research & Development
- New business
- A requirement to work collaboratively with other Trusts

- Flexible working
- Competition for new business

These drivers will keep the Business Technology department under pressure and necessitates the strategies recommendation of high level scrutiny of all business technology related projects to ensure resources are appropriately allocated.

### 3.3 Basic Principles

The Trust will continue to move forwards building on the success of previous projects delivering the best solution for the money and resources available. It is the Trusts' desire to move from where we are today to an environment where all service user data is available to those who need it in a timely manner, where-ever they need it, to ensure a safe and effective experience that our staff would view as an indispensable asset. To get to this position the Trust will need:

- To deliver applications that support decision-making using timely and consistent information updated in real-time
- ICT systems that are seamless to staff, fit for purpose and efficient to run
- As few systems as possible
- A robust and secure and flexible infrastructure
- An ICT department that is appropriately skilled, resourced, structured and focused to deliver the appropriate support and SLA's

*Having access to the right information at the right time enables excellence. It helps professional's document handovers accurately and makes it easier to share information quickly across multi-disciplinary teams and with other providers... Access to accurate, timely and comprehensive information can transform the quality and efficiency of healthcare through improved clinical workflows, increased care optimisation and greater patient involvement. It is increasingly the hallmark of a modern, high quality healthcare system..."*

The Integrated Digital Care Fund: Achieving Integrated Health and Care Records, May 2014

### 3.4 Standard versus bespoke

It is essential, wherever possible, to have standard and consistent processes across the Trust. This allows clinical staff to move between areas, makes service user movement through the system easier as well as making processes and systems less complicated and more affordable whilst reducing training requirements and costs. By working with the Business Technology department these systems can be integrated or interoperable, to give a holistic view, as currently there is no one system that would meet the whole Trust's needs.

## 4 Integrated Electronic Patient Record

### 4.1 EPR

The key ambitions of an EPR are to provide secure, accurate information that can be shared both internally and externally to ensure integrated care; becoming the source of core information used to improve care and relieve cost pressures wherever possible. Significant progress has been made in the delivery of the EPR, with service user notes and EDMS delivered but requiring more work before fully utilised. In conjunction with the CCIO, further areas for development include process re-engineering, bed management and mobile data screens including electronic observations at the bedside. The strategy recognises the Trust has many different clinical specialities and processes but only one clinical record system. It is not practical to construct a single system that reflects the myriad of practice in place across all areas of the organisation. Therefore under the leadership of the CCIO, with the support of clinical colleagues and technical specialists the approach adopted is to reach agreement on the rationalisation of process and then reflect this in the design of the technology, making the system more intuitive to use and more useful for front line staff.

The strategy does recognise that one EPR may not be able to fully cover the mental and physical health services now offered by the Trust. For that reason a community physical health EPR may be required to provide the same accuracy and sharing potential as the current mental health EPR. This system will follow the same principles and ambitions as laid out in this strategy.

### 4.2 Integration & Interoperability

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*“the development of new models of care and integration of services, particularly across the divides between family doctors and hospitals, physical and mental health, and clinical and social care, with the objective of providing better, safer services more efficiently;”*

National Information Board: Personalised Health and Care 2020

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Digital integration is the ability to move data between digital and sometimes non-digital systems. This ability vastly improves the speed at which information can be accessed across organisations improving and making safer the care service users receive. The Trust recognises this challenge and, as part of the NWL Roadmap, is collaborating with partner Trusts to interoperate its electronic systems. One way of achieving this is through direct information exchange within systems though this can prove costly and time consuming, it remains a longer term aim of the Trust. Another way is to participate in a Care Information Exchange (CIE). A CIE is a service user led, integrated health and social care programme. It works through information from different organisations brought together within a care information system where the service user, if they wish to participate, can access test results, referral letters and monitoring data amongst other information from Health and social care systems. If given permission, health and social care staff will also be able to access and view this information providing them with a ‘whole record’ view.

The NWL CIE is currently funded by the Imperial Healthcare charity though this funding will end in 2018. At this point the health and social care organisations will be expected to fund the system directly. There is also a London wide CIE planned by the Healthy London Partnership, a London-wide NHS organisation. At the time of writing there was no further information on how or what this London wide CIE would look like or function. It may be it takes data from the various CIE's throughout London or it may take the data directly from systems therefore potentially rendering the NWL CIE redundant. The Trust will also be required to invest in technology and technical staff to support the integration whether this is direct integration of through a CIE.

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*“A more integrated health and care system will bring benefits to many people – better joined up care and support means a real difference to older people, those with long-term conditions like diabetes and to carers supporting their loved ones.”*

Norman Lamb – Minister of State,  
2012

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## 4.2 NHS National Number

The NHS National IT Strategy states:

*“All Patient data (in publicly funded health and social care) should be identified by the NHS number as the primary identifier at the point of care by 2015.”*

This means that every Trust system must contain the NHS number as the primary identifier at the point of care, not retrospectively. This has been further emphasised in the recent documentation from NHS England. The EPR should be the main system to feed the NHS number to every other necessary system in the Trust and must continue to do so ensuring data quality and consistency for all patient demographics.

## 4.3 Pathology ordering & reporting

Electronic ordering and reporting of blood tests can provide many benefits to the Trust. Electronic orders are easy to read for the laboratory reducing enquiries which would otherwise delay the test, tracking of orders through a web portal reduces queries on the status of the test and electronic transmission of results cuts down on administration through data entry into the service user's notes. By joining up results from different providers clinicians can have a whole person view of any blood tests order for a particular service user, enhancing the care and potentially reducing the number of repeat tests. It is the Trust's intention to ensure electronic ordering and reporting is used across the Trust. Currently the Trust can be broken down into four specific geographical areas which are provided by four separate pathology services. The setup depends on which geographical area Trust staff are working in and although all four areas allow some form of access to the ICE pathology servers there is no integration with the Trusts EPR. The following is a breakdown of the current status of the four areas:

### **Ealing and Hammersmith & Fulham**

The Trust is liaising with their acute hospital pathology partners, London North West Healthcare (LNWH) for Ealing and Imperial College Hospital (ICH) for Hammersmith & Fulham to establish electronic pathology ordering through their respective ICE servers. Both have agreed to do the following:

- Create the tests and ordering screens
- Print the complete pathology order forms that accompany the specimens to the laboratory
- Each printed pathology order will incorporate a sticky barcode label for each specimen

### **Hounslow**

Hounslow clinicians use West Middlesex University Hospital Trust's Pathology ICE Ordering & Results Service. This is the only service that allows electronic pathology ordering as well as resulting.

### **Broadmoor**

This service currently uses Wexham Park, ordering and reporting is entirely paper based. Electronic ordering and reporting needs to be setup and trained so as to ensure the service matches those in the boroughs including the associated benefits.

### **All Boroughs & Broadmoor**

Once the electronic ordering and reporting has been completed the next stage will be to provide click through functionality from RiO, EMIS and SystmOne into the ICE applications at London North West Health Care (Ealing), Imperial College Hospital (Hammersmith & Fulham), West Middlesex University Hospital (Hounslow) and Wexham Park (Broadmoor); maintaining the context of the patient when seeing their results or ordering pathology tests. This will require working with the Trusts' EPR provider, SystmOne and EMIS to establish interoperability with the pathology platform. Some of the clinical systems already have an application programmable interface (API) which allows integration, others will need to be developed at cost.

### **Clozapine Clinic**

The Trust's clozapine clinics account for approximately half of the pathology results for service users and yet these results are neither available in RiO, ICE or the NWL Diagnostic cloud. Investigation is required to understand how the Clozapine results could become available in one or all of the above applications for all Boroughs and Broadmoor.

There is some further scope for rationalisation of services which sits outside of this strategy. There is currently no single point of ownership of the pathology service. Each area does 'its own thing' with multiple laboratories used for processing of orders, different administrators in different boroughs depended upon for ICE training which usually a busy senior clinician. This is an area where the Trust may like to look to rationalising the service into one with a single, potentially cheaper, provider which would minimise the complexity of administration, training and support.

## **4.4 EPrescribing and Enterprise wide Healthcare Applications**

The Trust has identified a need to update the prescribing system, integrating this with the EPR. The main aim of the Electronic Prescribing and Medicines Administration (ePMA) system is to improve service user safety by reducing prescribing and administration errors that could result in medication errors and adverse drug events. This is also part of the NW London local capability of the Digital Roadmap. The Trust will therefore look to establish the RiO EPMA module to enable safe and consistent prescribing across the Trust.

## 5 Electronic Document Management

### 5.1 A Trust wide Solution

The Trust has, at the moment, a limited ability to access digital documents, restricted mainly to the EPR, as this is a key component providing clinicians with the ability to access electronic copies of paper documents either from previous historic episodes or from external agencies. Helping to provide a holistic view of the patient and their interactions with healthcare providers makes service user interaction with the clinician easier. It is also the ambition for the NHS to be paperless by 2020, this will require any EDMS solution to:

- Offer a facility which prevents new paper being generated through management and integration of electronic records, simply digitising paper records is not enough
- Version control of documents to ensure old documents are not accessed when new ones are available
- Task based activities and workflow allowing staff to keep track of work required on documents before archiving or storing them
- Help the Trust comply with the legal storage of documents

The Trust has some way to go to fully integrate the EDMS into not only the EPR but the culture of WLMHT which is still heavily dependent on paper with efficiencies in time and paper realised by adopting a paper light system. In line with typical NHS practice, the Trust has the ambition for the document management system to be the default repository for all important unstructured data held outside of a database or that was important to the running of the organisation or for which the Trust has a legal requirement to retain. The system would also act as an organisational knowledge bank reducing the time spent searching for documents or recreating them. Enforcing record management and information governance standards by preventing multiple versions of the same document and timely deletion of records (subject to statutory guidelines on the retention of certain documents) is a bonus to any Trust though work will be required to on records management as described below.

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*“We are committed to transforming transparency and participation in the NHS - the digital data revolution is key to improving outcomes and putting patients and carers more in control.”*

Tim Kelsey, National Director for Patients and Information, NHS Commissioning Board

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## 5.2. Records Management

The Trust has accumulated a lot of data across the email system, storage area network and physical records, putting the infrastructure under pressure requiring the Trust to invest further in storage capacity, both physical and electronic. The Trust must accept this position and invest in further integration work with the Electronic Documentation Management System (EDMS) using this to enforce document standards and retention periods as advised by statutory guidelines and Trust policy. Furthermore by combining the new multi-function devices (MFDs) with the EDMS system the Trust can reduce its reliance on paper and the archiving of such which will reduce the cost of physical storage and handling fees.

## 5.3 Service/Trust Transformation

As the Trust moves to support the changes within the NHS for both service and Trust transformation, Business Technology will be required to provide flexible and efficient solutions. To meet this end this strategy advises the following:

- Wherever possible rationalise the number of applications considering existing supplier options first and foremost therefore reducing sign-on, interface and overhead costs.
- As new/replacement applications are required integration with RiO will continue and be prioritised where necessary.
- Trust transformational initiatives will be supported with increased flexibility and innovative thought e.g. flexible working through mobile devices, unified communications allowing MDT meetings across boroughs and teams and online service user consultations via web or video link.
- A regular lifecycle review of applications within the Trust.

*“This is Service transformation – partly enabled by digital - **not** digital transformation”*

Sarah Prag - Digital Transformation coach

## 6 Business Intelligence

### 6.1 Data warehouse

*'The NHS DIGITAL, CQC, Monitor and NHS Trust Development Authority (NHS TDA) will publish by October 2015 data quality standards for all NHS care providers, including the progressive improvement in the timeliness accuracy and completeness with which data is entered into electronic records and made accessible to carers and patients. The CQC will from April 2016 take performance against these data quality standards into consideration, as part of its regulatory regime.'*

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A Data Warehouse is a single repository in which data is taken from operational systems cleaned, transformed, catalogued, cross-referenced and made available for use by managers, clinicians and other business professionals for business performance analysis, research and decision support.

Typically a Data Warehouse takes data from different operational systems to allow the data to be correlated across systems and data sources in a way that would not be possible in the operational systems alone.

It would be typical for an NHS Trust with modern ICT to operate a Data Warehouse that collates data from the EPR and all major systems to facilitate performance management and reporting. This must support the needs of managers, clinicians and other business professionals alike, including, where appropriate, external partners.

The Trust data warehouse still suffers from several operational issues:

- Data extracts are provided from many disparate systems not fully joined and correlated resulting in much manual intervention, re-work and duplication of effort.
- Data is still entered in an unstructured format by which we mean the data is added very much like a novel, in one mass of text, without the ability to discern between different data items, for example, blood pressure in a specified blood pressure box as opposed to free text in progress notes. Structured data is a requirement not just for reporting but for other innovations including integration of systems.
- Data is not always entered in a timely fashion, sometimes entered in batches when administration teams have the time to enter it, this has the effect of skewing real-time reporting as data may be out of date or missing completely.
- The RiO structure inherited after the national programme left the clinical screens not aligning to the Trust's clinical process, neither do teams in the Trust follow a standardised process both of which leads to data being entered into multiple places.

By tackling the disparate systems (removing redundant or double data entry), structuring the data, aligning the clinical processes and making the record accessible wherever the clinician maybe, the Trust can start to derive more use from the information which can be defined for the individual concerned to be able to execute their job effectively. This itself will then drive

the use of the electronic record as clinical, administration staff and service users see and realise the benefits of accurate, timely data entry. The development of dashboards with information being delivered on an individual basis based on roles rather than predefined reports will aid all staff in their day to day management of service. The Trust also needs to review the implementation of digital dashboards, which should be device agnostic and able to be reviewed remotely on any web browser providing real-time data.

In the future this should be expanded to include all data from other systems to create a Trust wide data warehouse based on a robust, cost effective and easily maintained platform. To achieve the desired goal the Trust will need to work to improve the quality of data by enforcing data quality rules and policies.

## 6.2 Data Quality

Data quality is critical, as identified by the NIB Framework and will be reported on by the CQC as part of its audit process from 2016. It is therefore essential that as the amount of data grows in line with this strategy data quality is supported at the highest levels of the Trust.

All electronic applications will consider data quality as a prerequisite and must ensure processes are implemented to support the quality of data entered. To aid staff to input in an accurate and timely fashion the systems must be attractive and intuitive to use with any outputs seen to provide real operational value or to make process more efficient (by reducing data entry further down the line or on other systems).

## 6.3 Commercial Opportunities

We are recognised as a Trust that is making significant progress with the electronic patient record, automated business processes through the Intranet amongst other areas across the NHS and as the focus on electronic solutions continues there are opportunities to gain revenue for the Trust as part of this work. We will at all times, assuming capacity allows, consider these opportunities and report to the WLMHT TMT. Opportunities to support other commercial offerings as part of Service and Trust Transformation will also be part of the overall prioritisation for example, building on the success of the contact centre to take on more tele-health working.

## 7 Information Access and ICT Infrastructure

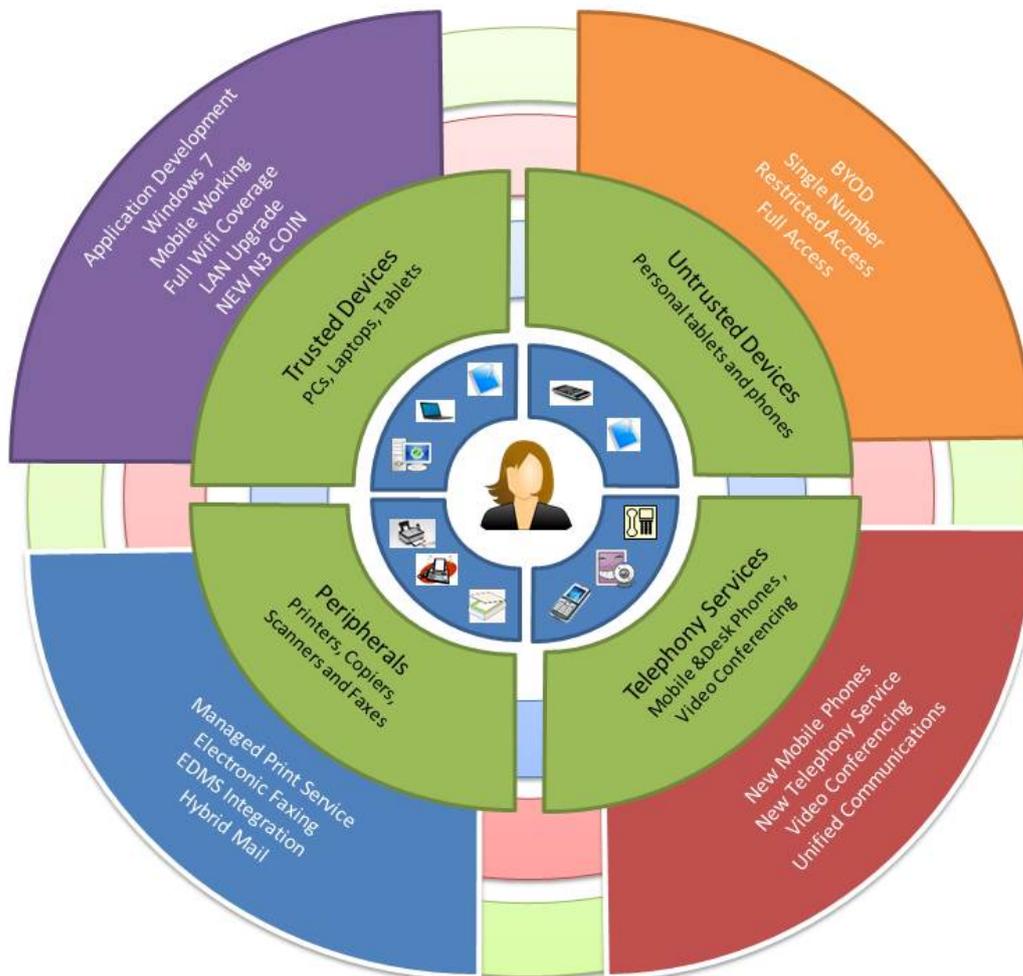


Figure 2: The many areas staff interact with technology

### 7.1 General

Infrastructure is crucial to the Trust and no ICT project, application delivery or data project will be successful if the infrastructure is not robust. The Trust's infrastructure is constantly being reviewed and, where applicable and in line with Trust priorities, replaced or upgraded, with the completion of a new IT Datacentre in St Bernards and a new Storage Area Network (SAN) providing a safe and reliable platform on which to host the Trusts applications and data. In 2015 a new Wide Area Network (WAN) was approved which will provide remote sites with resilient fast connections. The intention is to create a Tier 4 resilient platform across the Trust by 2018, adopting the best systems and infrastructure.

*Tier 4 Resilience: is the highest level of resilience. Tier 4 allows only 0.4 hours of downtime in a year. The Trust is aiming to meet this level in 2018.*

### 7.2 Desktop Systems

Industry practice acknowledges the PC platform is designed to have a life of 5 years and with advances in applications, security and technology older PCs become slow, unreliable and

unable to run the more recent application software, including Windows 10, which the Trust will be required to upgrade to by 2020. The majority of the clinical applications on the market today have minimum specifications for PCs and it is highly unlikely any PC over 5 years old will be able to meet such minimum specifications, which in turn means that older applications have to be run.

Recently the Trust undertook a windows 7 upgrade which resulted in many PCs retired, however, there are still currently 6+ year old PCs in operation. Whilst there is no central ICT budget there can be no central replacement program. The Trust should make provision within budgets to refresh those devices over 5 years of life and review the strategy for ICT budget control as currently these budgets sit within each service area, those areas which are cash rich can afford new devices, those who are cash poor struggle on older, less efficient machines. This leaves an inequality of hardware across the Trust.

### 7.3 Personal ICT Hardware

The standard current devices available are Desktop PC's, Dell Windows 8.1 tablets, laptops and toughbooks. The Trust also operates a Choose Your own Device policy which enables the use of certain personal devices to access email and calendar items. These devices have served the Trust well for a number of years but as technology changes so does the requirement from staff and service users as to how they access applications and data. Unified communications, for example, allows staff to access video, telephone, emails and applications on many mobile or portable devices. Some staff prefer to use their own devices which in some cases could reduce the cost to the Trust of providing hardware. This strategy recommends, where possible, to look at how it supports the devices we currently have and incorporates the 'new world' of small portable personal devices including smartphones and tablets. This maybe a return to thin clients in buildings which can sustain the infrastructure to providing a virtual desktop which can be device agnostic, safe and secure, allowing staff to use any device they so choose whilst protecting the data they are accessing. Mobility of devices will also allow staff to work more flexibly when away from a desk including on ward areas where observations can be entered real-time. This links into the recommendations on data quality as providing safe, easy access encourages the entering and use of data.

It is intended that these devices will all be in a position to run multiple applications, supporting interoperability, as required and that the overall strategy will limit the overall investment made by the Trust to best practice devices rather than 'trendy' fashion accessories.

### 7.4 Wired Network

The wired network can be broken down into 3 distinct areas, the core layer, distribution layer and edge layer. In 2014 the Business Technology team started a tender process to replace the current BT N3 COIN (Community of Interested Networks). This will see the current network re-provisioned with double the bandwidth as part of a new BT N3 COIN with work starting in 2016. See *figure 2*. There is a potential for extending, sharing and collaborating network provision with other organisations as part of the move to the Health & Social Care network (HSCN) – see 7.5 for more information.

The edge switches being the outlying switches that PC's and other network devices directly connect are still quite poor due to the policy of cascading older switches out towards the edge of the network making maximum use their life as newer switches were brought into the more strategically critical areas. These older devices are a mixture of devices by various manufacturers some of which will, by now, no longer be supported. As part of this strategy a

phased approach needs to be adopted to review and replace all the edge devices with modern, secure devices which support the POE standard (Power of Ethernet allows some devices such as Wi-Fi points to draw power through the network). This will not only provide extra functionality to the sites they are located in but also allow the small network team to manage the estate centrally ensuring devices are updated regularly maintaining the security of the network. The efficiencies provided by this tool will allow more work to be undertaken without the requirement of growing the team. Once complete it is anticipated that a hardware refresh will be required between 5-7 years.

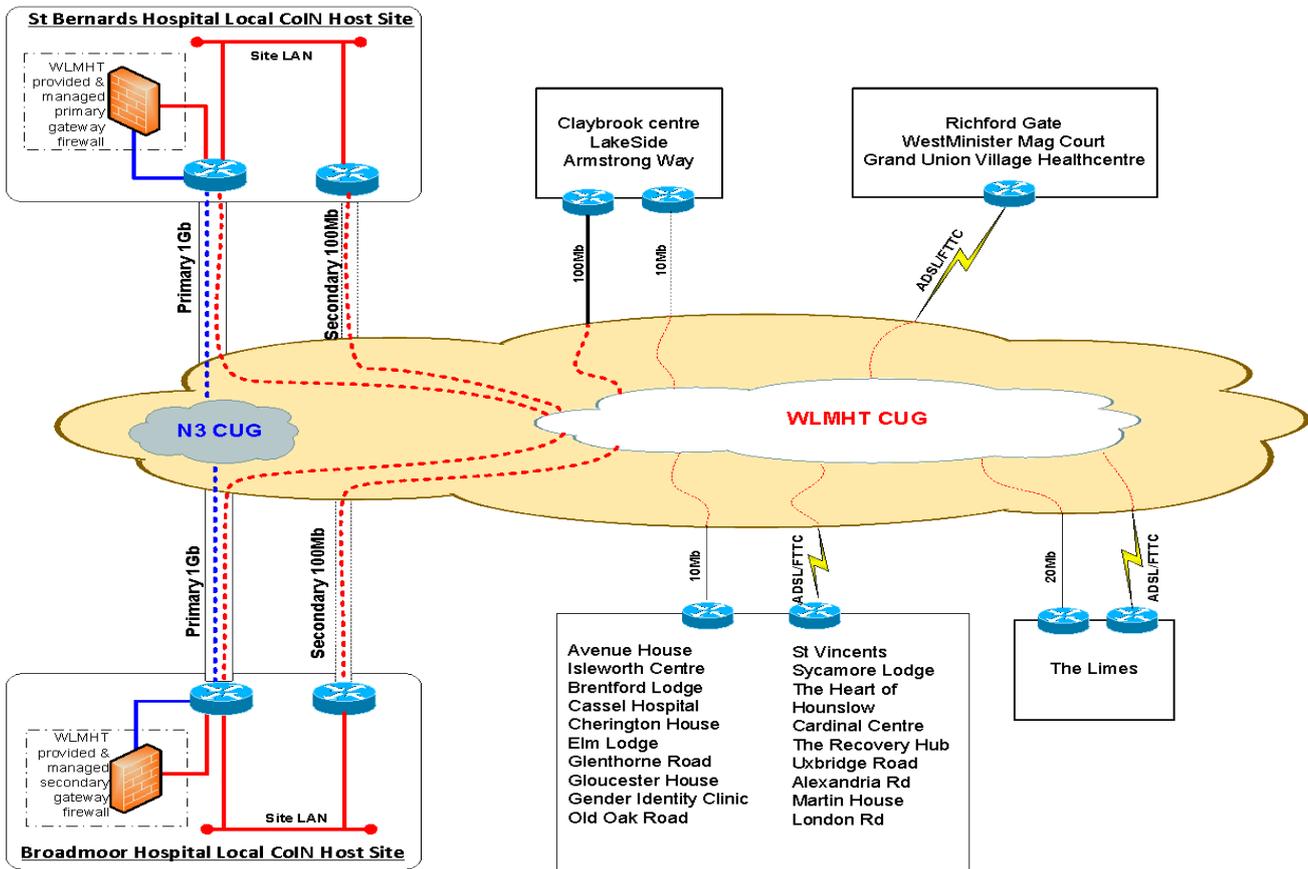


Figure 2 Proposed replacement wide area network connecting datacentres at St Bernards and Broadmoor.

## 7.5 Health and Social Care Network (HSCN)

In July 2017 the current BT N3 network contract across the NHS expires and will be replaced with a more flexible network. The HSCN proposition aims to support Health and Social care organisations to access information and services from any location at any time without the need for complex, bespoke and expensive ICT arrangements. The key principles of HSCN are:

- Establish network arrangements that support the integration of health and social care, regional collaboration and flexible work patterns
- Establish a marketplace of assured suppliers, improving customer choice, supporting innovation and delivers value for money
- Reduce duplication by enabling health and social care organisations to reuse and share existing network infrastructure and services to access the information required.
- Reduce reliance on a centrally managed, national, private network.

As a Trust which works across boundaries its community services staff regularly find themselves working out of properties which no regular access to the Trust network. Some access can be gained though data SIMs however these rely on connection to the 4G mobile network the signal of which cannot be guaranteed. The most reliable method is through a wired connection be it directly through a cable or via Wi-Fi. The business Technology team already collaborate with other NHS and Social care organisations though access to their networks has been limited. The HSCN programme has only just started but it is hoped will provide the Trust with the ability to collaborate with other Trusts to provide network access to its staff whilst also potentially reducing the cost of its network provision.

## 7.6 Resilient Storage & Datacentres

As highlighted earlier in the strategy secure storage and easy access of data is vital to the working of the Trust. Recently new infrastructure was procured which will provide the Trust with the ability to cheaply host its own servers and data. Going forwards the Trust needs to compare the option of moving to a cloud based system, whereby data and applications are held offsite, usually in a datacentre shared with other organisations. This can be within the NHS or in commercially run premises. As ever the security of the data and systems is paramount as is the cost of running such offsite systems. Work carried out by another Trust indicated the cost of moving the entire datacentre offsite was not matched by the reduction in revenue cost. It is hoped as more suppliers come on-board the cost of hosting applications will fall until it comes within an economically affordable envelope when compared to a capital purchase of locally supported hardware. It should be noted that moving data offsite does not instantly make it available to staff wherever they may be. This access generally comes from the applications which make the data available rather than the location of the data.

## 7.7 Telephony

In 2014 an outline business case to purchase a new switchboard was approved by the Informatics Sub-committee. Within the business case it identified a need to re-provide core telephony services in the new Broadmoor hospital. This phase of the procurement has been completed and is due to be installed in 16/17, it is intended for the solution to be extended across the rest of the Trust in 17/18. The telephony solution will allow the Trust to extend Voice over IP connectivity (VOIP) to all buildings\*\*, reducing the need for specific copper wired network and the associated costs. VOIP will also provide more flexibility to staff and combined with the whole system will provide a single number which will follow staff from desk to mobile, softphones possibly replacing desk phones, again reducing cost.

*\*\*VOIP connectivity will require appropriate switches to be installed as outlined in the network section*

## 7.8 Unified Communications

Unified communications (UC) can have many meanings but in this strategy refers to the integration of communication tools and devices to help people communicate and interact in real-time. It includes IP telephony, presence technology and instant messaging amongst others. It usually implies front-end systems for example smartphones, Video conferencing utilities are integrated with back-end systems, such as Active Directory or the core IP network as shown in the diagram below.



Unified communications can bring many benefits to staff and potentially to service users. By being able to see when people are available, start video calls and communicate in real-time wherever and whenever UC allows staff and services to be more efficient, offers flexibility, increases teamwork particularly across multidisciplinary teams and can reduce costs. As the Trust replaces its telephony system it should look to integrate its systems to offer a UC experience to Staff, bringing together video conferencing, messaging, email and presence. This will require an agreed project to look not only at the technology required but also the service transformation to ensure any investment in technology is utilised to its fullest in changing the way the Trust works.

## 7.9 Wi-Fi

Wi-Fi is an enabler, a carrier of services and a solution which allows staff to work more flexibly, not tied to a wired desk. The Trust will only have two buildings which are fully covered by resilient Wi-Fi, the Medium Secure Unit in 2016 and new Broadmoor in 17/18. Some buildings have limited Wi-Fi including Lakeside, whereby areas of the building are covered but when staff move out of these areas the connection will be lost. Although acknowledged as a requirement by the Trust Management Team, there is no identified project to supply every Trust building with resilient Wi-Fi, instead, where Wi-Fi is identified as a requirement in other service improvements for example recording of electronic observations, finance to upgrade the Wi-Fi will be requested. There is an onus on the Trust through national plans and the LDR

to provide free Wi-Fi access to public areas, this can be achieved through the modern Wi-Fi solution or through private companies.

## 7.10 Desktop and Server Licensing

All upgrades to products such as Microsoft Office, Windows Operating systems and Microsoft Server applications are now the responsibility of the Trust. The Trust has entered into an enterprise agreement with Microsoft which ensures compliance with the latest licencing conditions. The Trust also receives preferential rates compared with purchasing on the open market. In 2017 the Trust will need to decide whether to renew this 3 year agreement or look to cloud based technologies to host servers and software. This will be an on-going financial requirement on the Trust with the Business Technology team looking to minimise licence usage, making use of all technologies including open source to keep costs from escalating where possible.

## 7.11 Email

NHS Digital will be requiring all email systems either locally or nationally to meet the ISO1596 standard for security by June 2017. The Trust therefore has a choice to either work to bring the local email system up to the standard and then certify the system every year, look to move to a national system such as NHSMail2 which already meets this standard or move to any system which meets the compliance rules, including Office 365. The Trust will need to look at all options available and make a decision based on the requirements whilst keeping in mind the desire for unified communications linking instant messaging, telephony, video, presence and mobiles to support a fully mobile and flexible workforce.

## 7.12 IP based systems

More building support systems are becoming reliant on the Trust IP network, these systems include building management and CCTV cameras. To prevent individual systems from proliferating when new buildings come online systems should be rationalised to a few suppliers. This will help with management and support of such systems.

## 8 People Governance and Policies

### 8.1 Governance and Programme Management

Programme management should recognise there is only a limited amount of resource, both people and money, to any organisation. As such projects or programmes need to be prioritised and agreed. IT delivery will always be more successful when the focus is on a smaller number of significant change initiatives. This ensures all resource is focused on the agreed big strategic drivers and resource planning can be undertaken to support its delivery. The Strategic Technology Investment Group will oversee the approval of all projects and resource allocation. Projects will be identified by their ability to provide multiple benefits, the most 'bang for buck' and will have a golden thread of technology running through them. The STIGs governance structure is shown below:

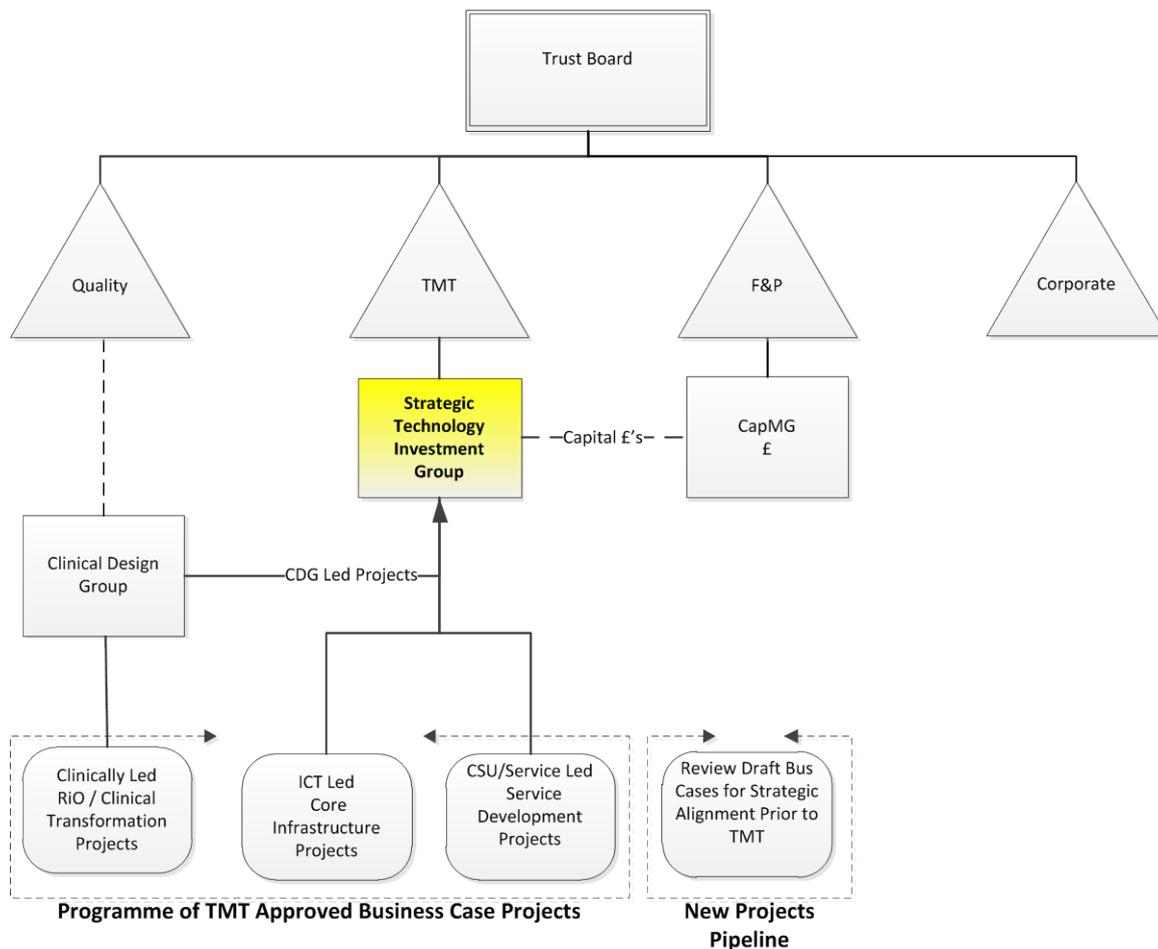


Figure 3 – Strategic Technology Investment Group Governance

In any organisation, ICT must be directed by the business and mapped onto the business goals of the organisation. In terms of WLMHT, ICT should be directed and managed to achieve the business and clinical priorities of the Trust. This will be achieved by the new programme management framework where IT resources will be prioritised to achieve the strategic aims and drivers of the Trust.

Over the coming years the recommendation is that senior managers in the Business Technology directorate, along with the CCIO role, act as business partners who will engage

with key areas of the Trust to fully understand their needs and direction. The desired future state should see significantly improved perception of ICT via clearer communications, SLA achievements and prioritisation of plans.

## 8.2 Security

There is an increasing focus on IT Security, Information Governance and associated issues across the public sector and whilst the Trust has policies and processes in place these need to be continually kept up to date and defences put in against the latest threats to the Trust. Security must be appropriate in that it ensures the security of our data and staff but also is designed to ensure that users gain access required to do their job. The IG Toolkit is the main system used by the NHS to ensure the Trust meets a certain standard in Information Governance. The Trust must maintain level 2 across the Toolkit to ensure success in its bid to become a Foundation Trust. Further to this it is the ambition of the Trust to reach and maintain level 3 of the toolkit. Information governance has and will come under the scrutiny of both internal and external auditors. The Trust has regular network penetration testing and it is recommended that all new systems or services before going live are subjected to this testing. As more systems become connected to the internet cyber security needs to be addressed. This, often complex, area is incorporated within version 14 of the IG Toolkit with 'Cyber Essentials' now something the Trust must aim to complete. Cyber essentials is a security framework which identifies fundamental technical security controls which organisations need to have in place to help defend against internet borne threats. At present within the Business Technology team, whilst all staff have a duty of responsibility with regards to security of systems, there is, currently, no dedicated security resource. This must be rectified or the Trust risks an information security breach or failure to meet legal obligations.

## 8.3 Change Management of systems and processes.

Change to systems through security patches, upgrades or development of new functionality is the biggest cause of system outages. To ensure the Trust maintains its capability and availability of systems a Change Advisory Board will be established for both application and infrastructure changes. This may delay some improvements by ensuring all changes are tested appropriately on non-live systems before applied to the live environment but is essential to prevent adhoc changes preventing staff from accessing vital data.

## 8.4 Single sign-on (SSO)

The issue of a single sign-on to access all systems is considered a goal in all NHS organisations where there are numerous different systems.

Currently the Trust has a limited SSO with the email and Intranet system both allowing access through sign on via the primary network login. The implementation of a single sign on product across the Trust could potentially streamline the login process for use by clinicians and their use of multiple systems each requiring separate user names and passwords. The number of systems a user needs access to on average is 3, but this figure can be far greater depending on specialty and the number of systems required to perform patient administration, treatment or administration.

By introducing these technologies the Trust will meet several requirements in terms of Information Governance and the Care Records Service.

## 8.5 Resources – Staff

To deliver the large number of projects and keep on top of day to day business requirement the ICT team must be fully resourced to deliver a realistic annual programme of work. A team restructure was completed in the early part of 2016 based on current resources, identified and eliminated single points of failure, with a view to providing the Trust with reassurance that, in the event of failure, the Business Technology team are able to work even in the absence of one or two key members. As the Trust grows it takes on new systems and sites, a particular example is the new physical care service. These new sites and staff require support from the Business Technology team. If the team numbers stay as they are the response they can deliver to the Trust as a whole will decrease. There are two options available to the Trust: the Service Level Agreement between the business and the department will need to be amended to reflect the increase in business and the reduction in service response or the team will need to be increased to meet the service level the Trust requires.

It is also vital to ensure business technology staff are skilled to an appropriate identified level with the Trust supporting staff to achieve and maintain this level.

## 8.6 Culture and Process Change

These enablers are crucial for all whether transformational or small changes within one area and are often the element that is missed. It is essential we ensure that “our people come with us” and the inevitable changes take place. The Trust has the desire to use LEAN techniques to make business processes more efficient and align its RiO clinical screens with clinical processes, this will require support from top to bottom ensuring staff are part of the journey. Wider scale business/service transformation needs to take place when technology is considered, although the team can support this change it is not resourced to lead on re-examination of process and improvements to working practices.

## 8.7 Training and Skills

The Trust has no formal programme for testing or identifying IT skills across its staff. With most roles requiring some form of ICT access it is vital we identify skills gaps and plan training around the efficient use of ICT. This links into data quality and reaping benefits of ICT systems which will not be realised unless Staff know how to use systems properly, this is especially so with the introduction of new technology and systems and the enhancements they bring. It is recommended the Trust carries out a detailed ICT training and skills audit along with the Learning and Development team and on the back of this produces an ICT training strategy.

## 9 Appendix 1: Essential Components required to deliver the strategy

### GENERAL

**1.1 The Business Technology team must focus on fewer key transformational projects rather than the plethora of projects currently fielded by the team.** Reasoning:- With Business Technology staff required to work on both business as usual and project work with competing deadlines, firefighting tends to be the norm with very little delivered for the amount of effort given. It would be a better use of resources to identify the projects which will deliver the greatest efficiencies and prioritise the workload.

**1.2 The Strategic Technology Investment Group (STIG) must become pivotal in governing projects which can be given the limited ICT resources.** Reasoning:- Business Technology cannot on its own decide what work is or isn't a priority. A Trust wide consensus on where resources should be used is required, agreed and adhered too with new projects and their prioritisation agreed.

**1.3 When Business Technology changes, improvements or installations are first conceived the cost of the impact to the Trust and in particular, the Business Technology service, needs to be assessed and, where necessary, the budget uplifted to ensure continuity of service delivery.** Reasoning:- New systems increase the administration require by BT staff. If the number of staff stays the same but the number of systems increase the quality of service delivered to the Trust decreases. To ensure Business Technology are able to deliver sustainable services if new systems are implemented the impact on budget and staff resourcing needs to be addressed.

### External Drivers

**3.1 The Trust must take note of the NWL STP and LDR and ensure the infrastructure and technology services are supported both managerially and financially to achieve the stated aims.** Reasoning:- The Trust is part of the NWL group which has ambitions aims to become paperless by 2020. A failure to meet the groups ambitions at least in part could damage relationships for the Trust and impact on potential growth.

### Standard versus bespoke

**3.4 The Trust must ensure, as far as possible, services use consistent processes to ensure clinicians and service users are able to move between services with as little**

***inconvenience as possible and maximise efficiencies.*** Reasoning:- Staff and service users move across internal Trust boundaries to be faced with different processes which decrease the level of care, trust and efficiency. By having consistent processes staff can work anywhere within the Trust with the knowledge that processes are standardised as appropriate and information is located in an agreed structure.

## Integrated Electronic Patient Record

***4.1 The Trust should take a holistic view of all clinical applications and pull together a roadmap for delivery utilising a few key suppliers by 2016.*** Reasoning:- Cost improvements may be gained through a reduction of licences, resources etc by utilising fewer suppliers and building on that which is already running within the Trust. Furthermore when software becomes embedded with the Trust staff are more likely to adopt the use of something that is already known i.e. resistance to change is lowered and training requirements cut.

***4.1 The Trust must ensure the main EPR becomes the master patient index.*** Reasoning: The CQC inspection report identified the need to have one master patient record - a centralised area for service user data gives a full patient view for the clinician, a better experience for the service user, allows easier integration with other systems both internal and external and ensures more accurate reporting via the data warehouse.

***4.1 For those systems which are required to work alongside the main EPR, wherever possible, interfaces must be developed reducing the amount of data entry duplication and therefore improving data quality.*** Reasoning:- Improve data quality (reporting) and increase efficiency of staff resulting in better care for service users.

***4.1 A community EPR system should be investigated and implemented to allow the Trust to expand its activities.*** Reasoning:- The current EPR is very mental health centric and cannot deliver the requirements which will aid community services.

***4.2 The Trust need to recognise the importance of the CIE and invest the time and technology to make the best use of these systems.*** Reasoning:-The CIE is part of the NW London Digital Roadmap which the Trust has signed up to. The CIE could deliver benefits to both clinicians and service users.

***4.3 Pathology ordering and resulting should, as soon as possible, become electronic and integrated with the EPR.*** – Reasoning:- Gives a more seamless experience for the service user and creates a more efficient workforce.

***4.3 Ensure Clozapine results are delivered electronically alongside other blood results.*** Reasoning:- Clozapine accounts for over half of the pathology requests and yet none of these are available in RiO or ICE or the diagnostic Cloud.

## Electronic Prescribing Medicines Administration

**4.4 The Trust will implement the EPMA module for both the mental health EPR and any potential community EPR.** Reasoning:- To improve patient safety and reduce prescribing and admin errors.

## Electronic Document Management

**5.1 The Trust must look to remove paper where possible via the rollout of digital processes and digital documentation whilst enforcing record management across the Trust** Reasoning:- Staff unable to find information easily, too many variations of electronic documents and too much paper held by services. An EDMS system needs to be linked to standard processes to ensure the Trust is paperlight and information is held in a standard structure enabling staff to search or add information no matter where they move to within the Trust. Governance of information would be enforced to ensure statutory guidelines on records management are met. Potentially a new project to look at the role and transformation of EDMS across the Trust will be required.

**5.1 The Trust must continue a prioritised and planned approach to scanning for patient records to reduce the paper creation.** Reasoning:- linked to digitised documentation above

## Records Management

**5.2 The Trust must invest in and develop a single, enforceable repository for any type of information across the Trust to enforce document standards, reduce the archiving of paper and ensure information is easily retrievable when required by frontline staff.** Reasoning:- linked to 5.1, reducing paper, streamlining processes and enforcing version control will help the staff in their working environment.

**5.2 The Trust must review current archived physical records for compliance against Trust policy and legal obligations.** Reasoning:- Reducing the physical records held by the Trust will reduce the cost of storage and ensure it complies with statutory legislation.

## Service/Trust Transformation

**5.3 The Trust must ensure where technology is implemented services understand and act on service transformation as part of the technology project.** Reasoning:- Installing technology itself will not release the desired effect. It is essential for services to look at redesigning their processes to take advantage of the technology to run alongside the delivery of the technology i.e. an integral part of all projects within the Trust.

## Data warehouse

**6.1 The Trust should implement a best of breed corporate data warehouse and Business intelligence solution.** Reasoning:- The Trust needs to report on statutory targets and reports from various bodies including NHS England and commissioners inc PBR. These reports will be more easily and efficiently produced through a well-managed and informed data warehouse.

**6.1 Personal dashboards, where possible, should be capable of providing real-time data.** Reasoning:- Providing top quality data to clinicians will enable them to carry out their duties more efficiently, and will ensure those caring for service users comply with statutory timelines etc

## Data Quality

**6.2 The Trust must ensure data quality must remain a top priority; this will need to be supported by process and behavioural changes.** Reasoning:- With the EPR being the master record it is vital for staff to keep it updated accurately and in a timely fashion, also linked to reporting recommendations above amongst others, quality data is vital across the Trust. Vital to deliver integration to other systems not just within the Trust but across the wider healthcare community.

## Commercial Opportunities

**6.3 Review Business Technology services and take advantage of commercial opportunities.** Reasoning:- The Trust could take advantage of commercial opportunities to help cover costs and increase the presence of the Trust in the wider health care community.

## Desktop Systems

**7.2 The Trust must continue to build a resilient platform to improve standardisation and security ensuring the projects are suitably resourced. By the end of 2018 the Trust should aim to have a Tier 4 resilient infrastructure.** Reasoning:- Technology is now the bedrock of all organisations with most data held by electronic systems. A solid and stable infrastructure with a reduced number of outages will ensure staff are able to carry out their roles more easily and service users receive the best possible care.

**7.2 The maximum age for a Trust PC should be 5 years with the Trust planning to replace devices as they hit their 5<sup>th</sup> year.** Reasoning:- as devices age they become slower and more unreliable. There is no central budget available to carry out a technology refresh. The department would like to aim towards a 5 year limit for all devices, with those coming to retirement replaced with better, more powerful devices which are appropriate for their use.

## Personal ICT Hardware

**7.3 The Trust develop and support an IT device strategy/policy which will govern the replacement and number of devices, with, where appropriate, the number of devices held by an individual limited to one.** Reasoning:- the Type of device should be chosen based on its use rather than desirability. The number of devices should be reduced if possible to reduce year on year licence costs.

**7.3 Review the devices offered by the Trust and how these devices connect back into the network.** Reasoning:- Whilst a like for like replacement of devices is easiest it may make sense to look at the developing trends in IT to ensure fat clients are still the best option for the Trust.

## Wired Network

**7.4 The Trust must ensure older switches are replaced with a standard Power Over Ethernet (POE) switch taking advantage of the latest technology.** Reasoning:- Older switches take more management and prevent the introduction of flexible technology such as Wi-Fi.

**7.5 The Trust must work collaboratively with other organisations to share network provision providing a more reliable link to the core Trust network.** Reasoning:- As the Trust grows and staff work out of more non-Trust properties the requirement to provide reliable access to applications grows. With the advent of the HSCN the Trust should be able to work with other organisations to reduce the requirement of locating Trust specific network connections into remote properties.

## Resilient Storage & Datacentres

**7.6 Business Technology will review the requirement and costs of hosting data onsite or looking at hosted solutions.** Reasoning:- Monitor costs of supporting the SAN and decide if this is best placed inside the Trust or cloud based to reduce costs.

## Telephony

**7.7 The Trust must support and resource the replacement of the current telephony system ensuring its completion by 2018.** Reasoning:- Provide a better experience for the staff linking applications to provide a unified communication experience and allow the decommission of the current system which are currently installed in property marked to be sold.

**7.7 The Trust should look into a unified communications project looking at the current and future technology being implemented.** Reasoning:- Unified comms will allow staff work more flexibly, improve communications with colleagues and service users and potentially reduce costs.

## Unified Communications

**7.8 The Trust should take advantage of unified communications by investing in a project to look into the technology required alongside service transformation, costs and benefits.** Reasoning:- UC can bring many benefits to Staff and potentially service users, with the investments in technology the Trust should ensure these are leveraged to the fullest.

## Wi-Fi

**7.9 The Trust ensure it is not held back in its developments with Wi-Fi and flexible working the Trust must look at the provision of Wi-Fi and how this is best supported.** Reasoning:- To allow the Trust to redesign its processes the flexibility of Wi-Fi needs to be integrated into all Trust properties. The Trust also has a requirement to provide public Wi-Fi as part of its digital roadmap.

## Desktop and Server Licensing

**7.10 The Trust must identify and plan when it will be roll out new Microsoft Products so provision can be made for the software licensing costs.** Reasoning:- Windows 7 and Office 2010 will require replacing by 2020. This will come at a cost to the Trust and will require planning and financing.

**7.10 The Trust should monitor usage of software and harvest underutilised licences for redistribution where applicable.** Reasoning:- Some software is purchased and underutilised. The strategy suggests that where software is no longer used it is taken back and given to those areas that require it to save spending more on licences.

## Email

**7.11 The Trust must review its approach to email and unified communications and ensure a project is resourced to look at updating or migrating its current systems.** Reasoning:- The Trust has to meet ISO 1596 requirement re email security by June 2017. It should take this opportunity to ensure the email system can integrate with the Trust telephony system to provide a unified communications experience.

## IP based systems

**7.12 Ensure when new IP based systems are installed, the Business Technology department is resourced to be able to support them.** Reasoning :- With more and more systems running on the network (IP) the directorate needs to be able to provide support ensuring the Trust does not suffer failures due to poor resourcing.

## Programme Management

**8.1 The Trust must implement a robust portfolio management framework during 2015 to ensure the focused delivery of the ICT strategy.** Reasoning:- To ensure the resources available to the Trust are focused and able to deliver.

**8.1 Roadmaps need to be developed and updated for day to day systems to ensure critical upgrades and patches can be planned well in advance.** Reasoning:- Systems and software will always require upgrades/patches to ensure they are secure and bugs are fixed. It is vital to be aware of upcoming upgrades/patches so testing and release management can be undertaken reducing unplanned outages to the Trust.

## Security

**8.3 The Trust must develop and expand its ICT security function and look to adopt the ISO IEC 27000 security standard.** Reasoning:- As more and more data is held electronically it is vital for the Trust to ensure the security of systems and data is taken seriously. One standard to aim for would be the ISO 27000 which would give assurance to the Trust and its stakeholders.

**8.3 The Trust continue to undertake ICT security Audits and repeat these regularly.** Reasoning:- Linked to 3.7 above, the Trust must provide assurance around security of its systems and data.

**8.3 The Trust must ensure as part of any project to setup a new system a network penetration test is built into the overall project cost to ensure the system is safe and secure.** Reasoning:- Linked to 3.7 & 3.8 above.

**8.3 The Trust must work to meet the cyber essentials security scheme to ensure it meets the IG Toolkit requirement.** Reasoning: To ensure the Trust has in place the necessary controls to protect against internet-borne threats.

**8.3 The Trust must ensure any 3<sup>rd</sup> party contracts include clauses covering cyber security, patches and upgrades and their response to identified issues.** Reasoning:- With more systems online the risk of cyber-attacks increase. 3<sup>rd</sup> party contracts must ensure a provision for constant patching and upgrades to ensure the risk is minimised.

### Change Management of systems and processes

**8.4 The Trust must develop and implement a robust and appropriate test & release strategy which ensures standards are maintained.** Reasoning:- linked to 3.6 to reduce outage to the Trust proper test and release management needs to be resourced and undertaken.

### Single sign-on (SSO)

**8.5 The Trust will review the feasibility of single sign on across the Trust.** Reasoning:- reducing the number of sign-ons will reduce the number of passwords which staff must handle in their day to day life.

### Resources – Staff

**8.5 The Trust should ensure the directorate is adequately resourced to provide support to the ever increasing technological needs of the organisation.** Reasoning:- With more requirements placed on technology through digital roadmaps and central initiatives the directorate will need to be fully resourced and trained to support the Trust.

### Training and Skills

**8.7 Upon recruitment Trust staff are required to take a Training Needs Analysis with the results built into their PDR.** Reasoning:- With technology leading the change in healthcare and with more systems becoming electronic it is absolutely vital the Trust identify training requirements of its staff at the first point of contact and build this into their PDR. This will drive up efficiency and data accuracy.

**8.7 The Trust should develop an ICT training team to ensure staff have the necessary skills to support the Trust's vision of ICT at the heart of everything we do.** Reasoning:-

supports 4.4 above. A well-resourced training team will ensure staff are ably supported and not afraid to use technology in their day to day life thus reducing resistance to change.

## 10 Appendix 2: Glossary

**CCG:** Combined Commissioning Group

**CDG:** Clinical Design Group

**CfH:** Connecting for Health

**COIN:** Community of Interest Network

**CSSG:** Clinical Standards and Strategy Group

**CSU:** Clinical Service Unit

**CPA:** Care Programme Approach

**CQUIN:** Commissioning for Quality and Innovation

**DH:** Department of Health

**DW:** Data Warehouse

**FTE:** Foundation Trust Equivalence

**ICT:** Information & Communications Technology

**IDT:** Information Delivery Tool

**IG:** Information Governance

**IM:** Information Management

**IM&T:** Information Management & Technology

**ISSG:** Information Strategy Steering Group

**LPfIT:** London Programme for IT

**MS:** Microsoft

**NIB:** National Information Board

**NPfIT:** National Programme for IT

**ODG:** Operational Delivery Group

**PC:** Personal Computer

**PbR:** Payment by Results

**RAG:** Red Amber Green

**RFID:** Radio Frequency Identification

**SLR:** Service Line Reporting

**SLA:** Service Level Agreement

**SDD:** Service Definition Document

**STIG:** Strategic Technology Investment Group

**UC:** Unified Communications

**VOIP:** Voice over IP

**WLMHT:** West London Mental Health Trust