Title of report:
East Sussex Better Together (ESBT) Digital Strategy, 2017/21.

Recommendation:
The Alliance Governing Board is recommended to endorse this updated Digital strategy and recommend it to the Alliance sovereign organisations. Investment requirements for its delivery will require consideration as part of the development of the 2018/19 Strategic Investment Plan.

Funding will be sought through individual business cases, which will be produced for each element of the programme with cost / benefits analysis included.

Executive Summary:
The East Sussex Better Together (ESBT) Digital Strategy was originally published in June 2016 and endorsed by the Governing Bodies at that time. This revised Digital Strategy reflects the significant work completed since then, the decisions made regarding the new model of accountable care, and the broader changes in technology, policy and guidance.

The strategy has four individual (but overlapping) work-streams:
1. Tactical Work - Exploiting Existing Technologies
2. Core Enablers
3. Empowering the Digital Citizen
4. Accountable Care Organisation - Organisational Development.

Each of these has been broken down, expanded and costed over four years. Given the complexity of, and the interdependencies between the various strands of work, the 'four years' of costing will be likely to extend beyond four years in regard to delivery. Depending on funding, prioritisation, organisational readiness and external factors such as NHS England (NHSE) guidance, it is very unlikely that even with full and immediate funding, all streams of work would commence at the same point in time. For costing purposes though, each stream is shown in tabular form across the same four year window.

The costs are estimated with as much accuracy as is possible in such a fluid and changeable environment. Included with this strategy as an appendix, is the Integrated Digital Care

Record Business Case. As with the strategy itself, the business case recognises the tension between our Sustainability and Transformation Partnership (STP) and ESBT in terms of readiness, and the need for ESBT to act positively in delivering core technology enablers before the STP is ready to act across a wider footprint. The business case recommends an approach that allows ESBT to move forward without creating the risk for rework or duplication, and further allows us to locally inform and adopt any STP-wide strategy as and when that is agreed.

Alliance Governing Board sponsor: Amanda Philpott, Chief Officer, EHS and HR CCGs

Author: Simon Jones, East Sussex Better Together Digital Programme Lead	**Date of report:** 08/09/17

Review by other committees: Reviewed by the ESBT Digital Programme Board on 18 September 2017 and the ESBT Alliance Executive in October 2017.

Health impact: Whilst the Digital programme itself will have indirect health impacts in providing technology that enables improved service delivery and patient safety, in regard to this update, there are no direct health impacts to report.

Financial implications: Progress will impact on the ability to deliver integration efficiencies and thereby budget savings, investments and reinvestment – and ultimately a financially balanced health and social care system.

Legal or compliance implications: None – legal or compliance risks will be dealt with on a project by project basis and are not detailed in this strategy.

Link to key objective and/or principal risks: Improving Health and Wellbeing; Financial Sustainability.

Link to East Sussex Better Together (ESBT) programme: The use of technology is recognised as a critical enabler to the success of an integrated health and social care system and the focus of the strategy reflects the key priorities for progress in support of this.

How has the patient and public engagement informed this work: Patient and public engagement is devolved to project level where engagement can be focused on specific benefits to recipients of services.

Equality Analysis (EA) Process - outcome:

Negative Impact   Neutral Impact   Positive Impact   No Impact   Not required for report
☐   ☐   ☐   ☐   ☒

EA Summary: Equality Impact Assessments will be carried out on a project by project basis.

Privacy Impact Assessment (PIA) – outcome:

No personal data used   Data processes sufficient   Actions required
☒   ☐   ☐

Actions: Privacy Impact Assessments will be carried out on a project by project basis.

East Sussex Better Together (ESBT) Digital Strategy, 2017-21

1. Executive Summary

East Sussex Better Together (ESBT) is our vehicle for transforming health and social care services. As we transition from our 150-week East Sussex Better Together (ESBT) programme to the new ESBT Alliance arrangement, we continue to transform health and social care in East Sussex, bringing together prevention work, primary and community care, social care, mental health, acute and specialist care.

Our ESBT Alliance is made up of five local partners: Eastbourne, Hailsham and Seaford (EHS) CCG, Hastings and Rother (HR) CCG, East Sussex County Council (ESCC), East Sussex Healthcare NHS Trust (ESHT) and associate partner Sussex Partnership NHS Foundation Trust (SPFT). We also work closely with GP practices and other organisations providing health and care to our local populations.

By working together, we have already begun to make significant improvements in care pathways across health and social care and to allow for the transformation we now need to build a new model of accountable care – through the ESBT Alliance – that integrates our whole health and social care system so that we can make best use of the £850m we spend every year to meet the health and care needs of the people of East Sussex.

To be successful, our ESBT programme, our work-streams and the potential new organisational arrangements will need to be underpinned and enabled by good information - for those who use services, those who provide services and those who commission services.

The ESBT Digital Board has been asked to prepare an updated strategy for the Digital aspects of ESBT. "Digital" as used in this document refers to:
- Information Management (IM) - how data flows through the system;
- Information Governance (IG) - how decisions are made as to who sees what data; and
- Information Technology (IT) – the technical systems that are used to store and move data.

This document is a more detailed and costed strategy. It sets out a vision for the future and the context in which we are working and planning.

2. Vision for Digital Strategy

2.1. Individual Perspective

As an individual I am able to access advice, information and support to help me lead a healthier lifestyle and maintain and/or improve my health and wellbeing. I can access information in a range of ways, including through the website and citizen portal, where I can not only find information, but I can contact voluntary and community groups and lifestyle services for further advice and support, and book appointments with my GP practice and other health and social care professionals or request a referral online when I need to. I am able to make use of 'Apps' and wearable technology (personal or prescribed) to help me manage my own health and wellbeing.

2.2. Patient/Client Perspective

As I experience services, I am confident that all the agencies/professionals involved in my care have instant access to all the information they need about me, within the parameters of my consent and in my best interests. When I move between services, there is a seamless transition and I do not have to repeat my story. The way I access services is the same, whichever location within the local health and care system I use to access them.

I use technology to enable me to look after myself better and to be fully involved in my own care. I am familiar with and contribute to my own records and understand my role in achieving the health outcomes I have agreed with my professionals. I know what to do and whom to contact when my condition changes/if there is a crisis and that the critical elements my care plans are available and agreed pathways can be delivered, particularly relating to my wishes in regard to End of Life Care.

I understand the key risks to my health and wellbeing and what I can do to help myself and also mitigate risks, in partnership with those who provide care for me.

2.3. Carer Perspective

With the consent of the person I care for, I am closely involved in the delivery and monitoring of their care and feel in control of what is happening. I know what I can do to help the person I care for to achieve their best possible health and social functioning. I know what to do and who to contact if his/her condition changes or if there is a crisis.

2.4. Practitioner Perspective

As a health/social care professional, I have access to all the information I need to have conversations with my clients/patients encouraging healthier lifestyle choices and sign-posting them to where they can get further advice, information and support or refer them myself if they would prefer. I also have all the information I need to look after my clients/patients in both routine and urgent situations. The information is available instantly, with no need for multiple systems or dual data entry, in a variety of settings that maximise the effectiveness of the time I spend at work. I have the tools I need to understand and manage the risks to my patient/client's health and social functioning and the tools I need to support self-care and self-management as much as possible.

I work and feel a strong affinity with my locality and its team and have the information I need to work on this locality population level, as well as with my own practice/caseload. I have the information I need to understand how to make changes to the services within my locality, both as a provider and as a commissioner.

I have the data I need to help me focus on the outcomes my commissioners want me to deliver and I am supported and incentivised to deliver these.

I know if I am the lead professional for an individual client/patient or if I am playing a supporting role; and I know which other agencies/practitioners are involved with the individuals where I am the lead. My most vulnerable patients/clients all have agreed electronic care plans that are regularly updated with no need for paper copies.

Activity and financial data for monitoring/invoicing are generated from my electronic record keeping, with no need for separate work.

I receive agreed data from my patients/clients on their care that is automatically integrated into their record; this data is relevant and valued and involves my patients/clients more fully in their own care.

When a new patient/client joins my list/caseload, I agree a confidentiality formula with them which covers their current and likely future care needs under a single agreement. The process for updating this is clear, efficient and automated. I am confident that the processes I use are legal and based on the principles of good IG.

My caseload/list is subject to regular data searches that are run automatically and that make me aware of risks and issues (Safeguarding for instance) with my list/caseload and offer me integrated solutions to meet these risks/issues.

2.5. Commissioner Perspective

I have a clear view of how my investment decisions translate into outcomes on the ground, both over the long and short term, across the whole system.

The data I need to evaluate new interventions and pilots is built into the digital system.

I am confident that the data I view to monitor services are the same as those used and seen by providers and patients/clients for their purposes. These data are available to me in real time, as with providers and patients/clients.

2.6. Whole System

We make decisions jointly on the design and procurement of our digital systems. We are supported to get the very best out of our digital systems.

As a whole system, we are able to update our IM processes and content quickly and consistently (e.g. if new National Institute for Health and Care Excellence (NICE) guidance is issued, the whole system will reflect this quickly and consistently in a synchronised way).

We have real-time system-wide information that helps us manage activity and risk, including predictive analysis of where problems may arise if no action is taken.

We have processes in place that regularly inform us of what the latest technology has to offer our patients/clients and for updating our plans accordingly.

We are all confident in the quality and consistency of the information we use.

Digital skills development is standard to all of us and no system is dependent on an individual/ small team but is everyone's business across the system.

We have processes in place that regularly inform us of what the latest technology has to offer our patients/clients and for updating our plans accordingly using defined data standards where available.

We drive the Digital market and buy what we want to buy, not what the market wants to sell us.

3. Context

3.1. National Context

The NHS Five Year Forward View sets out a national vision for a radically reformed NHS, working very closely with Local Authorities (especially social care). The document refers to the need to secure the very best that Digital has to offer patients and service providers. The recent publication of "Personalised Health and Care: a vision for 2020" set out the expectation that patients of the NHS will have a single, integrated record by **2020** and that the system will be paperless by **2018**.

There is a significant series of national initiatives to develop digital working across parts of the NHS, including the Summary Care Record (SCR), Electronic Prescription Service (EPS) and use of the NHS Number as standard. The CCGs locally have a good track record in delivering these changes, which provide firm foundations to on which to build. National guidance for 2017/18 sets out requirements to take this work further, including a greater emphasis on patients accessing records and services on line and the implementation and full take up of NHS e-Referrals.

3.2. Local Context

The ESBT Alliance has taken the decision to move towards a new health and care organisation as the overall direction of travel to deliver the best outcomes for our population, and deliver high quality integrated health and care services that are accessible and sustainable in the long term. We will take incremental steps to achieve this by **2020/21** by strengthening the commissioner provider ESBT Alliance arrangement for **2018/19**.

This provides both huge opportunities as well as some significant challenges, but ultimately offers the best opportunities for the Digital landscape and how it will enable better patient outcomes.

We will continue to actively engage with and contribute to the wider Sustainability and Transformation Partnership (STP) work on the creation and delivery of the Local Digital Roadmap (LDR), which is the Digital Plan supporting the ambition of the STP plan. ESBT will engage in a way that makes best sense, and will focus on the delivery of ESBT as our key contribution to the wider picture. Communication links across this wider STP Digital network are already well established with governance structures in place and functioning well. We will use these to ensure we play our part to the full in STP plans for digital developments and delivery

4. Key characteristics of Digital Systems under East Sussex Better Together (ESBT)

The Digital system(s) can function as if a single entity when patient/client care requires this and feels like a single entity to the user (even if in reality it is not). A single, information rich record, accessible with real time data, which can be relied upon completely, brings both silos of data and disparate practitioners together with huge benefits for the patient.

Provides an excellent user experience, regardless of who the user happens to be – professional or citizen.

Reduces administration through:
- no double data entry;
- reduced time for staff attempting to find information (both for themselves or on behalf of others); and

- data for patient/client care is enough to generate claims/bills/quality monitoring requirements.

Single Information Governance and Sharing process in line with the new the General Data Protection Regulation (GDPR)

Capable of tailored alerting for commissioners and providers to growing service pressures before a crisis arises.

Supports proactive care through alerts/prompts.

Jointly owned by patients/clients, to engage them in their own care/enable them to take more responsibility for it and their data.

Similarly, engages software suppliers as innovation and development partners. Given the constant and rapid change across the health and social care economy, traditional models of procurement and contract do not necessarily represent a good fit.

Adaptable to meet the evolving national guidelines, adhering where possible to data standards.

5. **Outline Strategic Planning**

The creation of a single Health and Social Care Accountable Care Organisation, provides (from a digital perspective) both genuine opportunity and significant challenge at the same time. Meeting the digital needs of evolving services as they merge, reform and develop whilst also creating both a new Information Technology (IT) and Digital Service and addressing all of the contractual, licensing and workforce elements, represents significant challenge for all involved. Timing is going to be critical but difficult.

Key elements include:
- The need to align with the overarching business plan / Target Operating Model (TOM) for ESBT once developed; where possible, the digital work needs to be business led.
- The delivery of the core enabling technologies for ESBT and how that work is balanced against the emerging STP requirements.
- The Digital Programme is broken into four logical streams, each very large in their own right (see section 6 below for details).
- The requirement to view this programme as the start of working together as ONE Digital function. Existing resources working for the ESBT Accountable Care System rather than their sovereign organisations.
- The need to bring forward the work on contracts and licencing so that contracts can be amended, novated, aligned and aggregated – and then managed centrally.

6. **What does this look like in terms of a Digital Programme for East Sussex Better Together (ESBT)?**

The digitisation and joining together of currently disparate and isolated records (both paper and electronic), is critical to enabling service transformation. With the Integrated Digital Care Record underpinning the whole ecosystem of technology, bringing together data from systems across all services, there remains a broader set of identified

developments that are needed to provide genuinely joined up, accessible, digitally enabled services.

The list of projects is lengthy and to present them in a more logical format, they have been grouped into one of four work-streams (it should be noted that arguments can be made for many of these to be included in one or more of the work-streams and there are numerous interdependencies between many of the elements; therefore a 'best fit', logical approach has been taken). The four work-streams are:
- Tactical Work - Exploiting Existing Technologies
- Core Enablers
- Empowering the Digital Citizen
- ACO Organisational Development

Each of the four work-streams are explored in more detail below and include an estimate of costs, all of which have been estimated across a four year period.

7. Digital Programme Outline

7.1. Tactical Work - Exploiting Existing Technologies
Exploiting what we already have to deliver benefit and capability to operational services until strategic systems are in place. This stream also includes the ten Universal Capabilities set down by NHSE in regard to paperless NHS by 2018. Much of this work is already underway and some has been largely completed.

- Email and Calendar Integration (between ESCC and NHS)
- Electronic Discharge Notices from Acute to Social Care
- Unified Communications / Skype federation across all organisations
- Proliferate Wifi Access
- Managed Printing for Joint Teams
- Joint Finance Reporting
- Provision of a single Project Management toolset (including software)
- Application Sharing (e.g. TPP SystmOne and Liquid Logic)
- Data Analytics Pilots (111 / Clinical Hub & Over 85s Pathway)
- Ten NHSE Universal Priorities (see appendix 2 for the full list)
- Making best use of existing technology e.g.
- Summary Care Record (SCR)
- eSearcher
- Careflow
- Vitalpak
- eReferrals System (ERS)
- Electronic Prescriptions (EPS)

The vast majority of these can be considered business as usual (BAU) as they are being delivered by existing resources across the stakeholder organisations and appear on either local delivery roadmaps or as a part of the work being managed through the Architecture Design Authority (ADA)[1] and ESBT Digital Board, again, using existing

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[1] The Architectural Design Authority is made up of technical experts from each organisation within ESBT. They assess business requirements and work up the

resources. The decision to create an ESBT Accountable Care Systemwill ultimately do away with many of these streams of work, however, recognising that this is some way off, these will need to continue to be delivered and resourced accordingly. Consideration will need to be made of how any reallocation of existing internal resources onto bigger more strategic projects might impact on these pieces of work.

The work to consolidate all existing organisational digital roadmaps and ongoing projects should be coordinated through this stream. Being clear about the process for requesting IT/Digital change (above and beyond BAU work like passwords, new user accounts etc.) across all stakeholders and then creating efficient processes that allow new work to be assessed, prioritised and decisions made is paramount. Whilst this might feel more naturally placed in stream 4, it needs to start immediately and will therefore sit in stream 1 until subsumed as a part of the wider service creation work.

It is difficult to cost up ad-hoc work in advance, however it is important to note that the reallocation of existing resources onto the more strategic core enabler projects will probably mean a reduction in focus on these tactical projects, causing delay. To date, costs for these tactical projects has been low, using existing technologies and with existing licensing arrangements covering additional users in the main, however as we scale some of these up temporarily, there are likely to be additional costs incurred. To adequately coordinate and cover the costs of this work-stream, some additional project management resource should be assigned, along with a shared budget for costs incurred (things like firewalls, additional licences, odd pieces of technical kit for office moves etc.)

Costs(£k)	Yr 1	Yr 2	Yr 3	Yr 4	4 Yr Total	Comments
Project Manager	60	60	60	0	180	At some point in year 3, this will be BAU
Business Analyst Support	45	45	45	0	135	At some point in year 3, this will be BAU
Infrastructure / Software	200	200	200	100	700	Includes the deployment of an ESBT PM tool
Training x 3 posts	150	150	150	150	600	Trainers will be needed across the 4 streams
Totals	**455**	**455**	**455**	**250**	**1615**	

Training costs have been included in this section, however it is recognised that there will be a requirement for training support across all streams of work and that although there are IT training resources within existing teams, it is likely that they will need to remain committed to existing support programmes. The future landscape includes a significant number of new systems and changed processes and therefore additional training resources will be essential in supporting delivery and adoption. We expect that training costs will be budgeted for within the cost profile of individual projects, however, as with many elements within this strategy, the requirement is subject to significant change. Whilst we expect to receive training support from suppliers as well as some of the existing resources being released onto new work, the standard approach currently from most suppliers is to 'train the trainer', which means having additional in-house training capacity for this to work. The number of trainers needed will be dependent on

different technical solutions available, making recommendations on technical design and architecture to each project or programme.

the pace of deployment, number of users to be trained and the ability for existing resources to be released; therefore this cost could vary significantly.

It should also be noted that the training capacity included relates to IT training only, and not for practice or operational / business change related support.

7.2. Core Enablers

The primary focus of this stream is the development of an Integrated Digital Care Record, but it does include other key items. It should be noted that given the fact that all stakeholders across the Sussex and East Surrey STP require the same set of enabling technologies, these solutions may be procured and deployed for the STP as a whole, or on a 'Place' basis, depending on priorities, governance, funding, timing and organisational readiness.

Implementation / Development of an **Integrated Digital Care Record** (IDCR) and Professional Portal and Citizen Portal (includes other components such as a Citizen Master Index (CMI)). **Shared Care Plans**

The ability to see pertinent elements of specific care plans (such as end of life, long term conditions and mental health crisis care plans) in services that find this helpful. For example supporting 111 and the integrated urgent care services in the event of a crisis; if the paramedics are able to see the end of life care coordination preferences this may avoid the conveyance of the patient to hospital when their wish is to be cared for at home.

We are exploring the use of a number of systems, including 'BlackPear', the 'Coordinate my Care' solution (used only in London currently) as well as some App driven solutions like 'Virtucare'. As with all solutions being explored, they will need to fit well into the wider ecosystem if we are to avoid a lot of rework and additional cost in the future.

8. Analytics (both real time and risk stratification)

Covered in the IDCR Business Case (appendix 3) we will look at building two Analytics systems – one to provide risk stratification information (this is also being explored at an STP level as there are existing risk stratification data warehouses already in existence across the region), the second to provide real time data for predictive analysis and to feed the real time portals (citizen and professional).

9. Integrated Appointments, Scheduling and Rostering

Offering citizens the ability to book their own appointments on line and self-serve effectively, means having good control of the capacity of those services. The number of appointments available needs to reflect the service's capacity at that point so that issues such as sudden absence can be proactively managed and patients are not let down. Deploying a rostering/scheduling system with an appointment front end makes absolute sense, however there is a great deal of complexity in delivering this in the context of the existing national eReferral System (eRS) and the need to change operational practice to manage this effectively. Existing requirements arising from ongoing projects in regard to electronic referrals are already being explored in how they might fit with the mandated use of eRS.

10. 111/ Integrated Urgent Care (IUC)

This is not an enabler as such, but rather a stream that is enabled by the digital programme. This is a pan-Sussex programme involving all seven CCGs and given its

critical importance and mandated components (NHSE Integrated Urgent Care Service Specification) is of high priority both within ESBT and the wider STP.

Resources to support the Digital elements of the IUC programme have been recruited and are in place and these costs are reflected in the finance table below.

The technology developments for IUC programme will rely heavily on the IDCR, telephony and the use of a consolidated Directory of Service (DoS) for Sussex (which due to its connection to citizen facing services, the DoS workstream is included in section 3, Empowering the Digital Citizen).

10.1. The IDCR

This is essentially the 'shared single patient record', whilst critically important, is not the only system or change that will need to be delivered in enabling digital transformation for ESBT, but is by far the most important. The IDCR touches or connects with much of the required ecosystem, and the diagram below illustrates this.
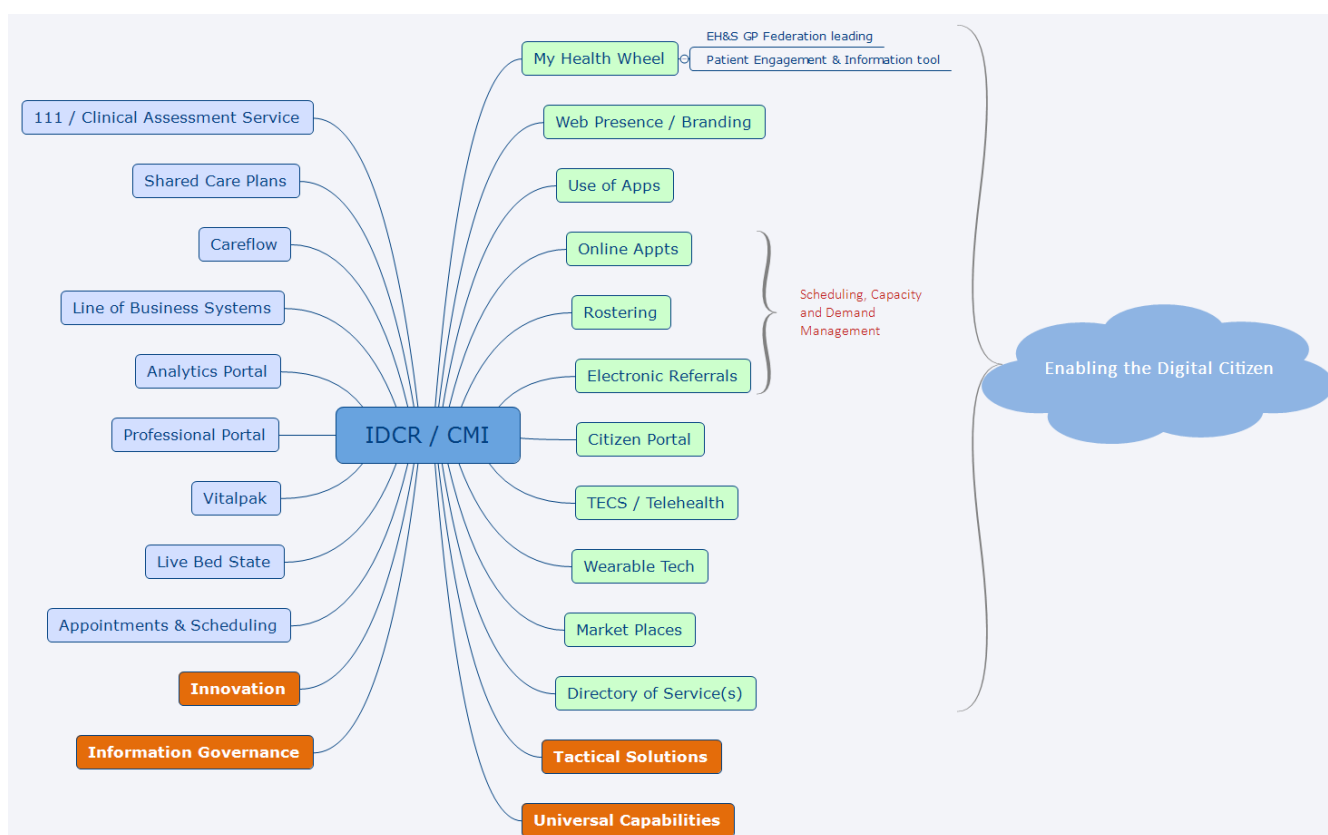
The full IDCR Business Case is attached as appendix 3. The IDCR costs below relate to the preferred option at time of writing which is both the most cost effective and flexible over the four year estimate profile. It also allows ESBT to make progress without generating unnecessary risk in regard to the STP plans and solutions that might be implemented as a result of that.

Also contained within the costings below, are estimates on the cost of an integrated scheduling system – i.e. one connected system that allows appointments, work scheduling / rostering and dynamic workforce management all in one.

Costs(£k)	Yr 1	Yr 2	Yr 3	Yr 4	£(k)

Patient Master Index	30	30	30	30	120
2 x Data Warehouse (incl. DR)	30	60	60	60	210
Purchased integration	200	350	350	500	1400
Technical resource	345	345	345	345	1380
Practitioner portal		30	30	30	90
Analytics portal		30	30	30	90
Citizen portal			50	100	150
Project Management	60	60	60	60	240
Business Analysis	50	50	100	100	300
PMO & Admin Overhead	40	40	40	40	160
Total IDCR costs	755	995	1095	1295	**4,140**
111 & Urgent Care	105	105	0	0	210
Shared Care Plans	100	100	100	100	400
Analytics (real time and risk stratification)	100	100	100	100	400
Appointment and Scheduling Rostering System	200	300	300	300	1100
Core Enabler (Non IDCR costs)	**505**	**605**	**500**	**500**	**2110**
Total Core Enabler Costs	**1,260**	**1,600**	**1,595**	**1,795**	**6,250**

10.2. Empowering the Digital Citizen
To deliver solutions that enable the citizen to self-help and for professionals to manage their care from a location of choice, including outside a care environment. Largely dependent on the Core Enablers, this focuses very much on providing the citizen with the tools they need to self-help and remain at home (or in their preferred place of care).

10.3. Website refresh, rebrand to Accountable Care Organisation (ACO)
single point of access for all things health and social care in ESBT catchment (retiring older and obsolete websites)

There are large numbers of sites (small and large) which will need to be reviewed and decisions made about their future, with the aim of significantly reducing the overall number. The need for some external support in assisting with this has been identified by the business and £50k has been included in year 1 costs accordingly.

The aggregation of content management and website support capacity across the ACO into a single function is out of scope of (but dependent on) this programme. The digital and technical elements of supporting such capability will fall under Stream 4.

10.4. Rationalisation of Directories of Service (DoS).
DoS are effectively lists of services categorised and labelled for ease of access and there are an estimated 20+ in East Sussex alone.

These should be rationalised into a single version of the truth and managed centrally. This work is already underway under the aegis of the 111 programme/ Integrated Urgent Care /, which operates at a pan-Sussex level.

DoS are used to support:
- 111 and Urgent Care referrals
- Market Places – where services can be ordered, reviewed etc. on line

- Social Prescribing Platforms – for voluntary, 3rd sector and charity services available to primary care and other clinicians.
- Apps and other self-serve portals

It is likely that there will be a local ESBT DoS as well as a regional 111 DoS and they will need to connect and reconcile against each other to ensure parity and accuracy.

10.5. Creation of a single market place (underpinned by a single DoS as above)
A market place for local health and social care services where residents are able to locate and procure those services on line should they wish to. This might be the development of existing solutions like East Sussex 1 Space, or something new.

Assessment of the likely take up of a bespoke service market place given the ease and power of ubiquitous tools like Google and the cost of managing and maintaining a complex system like this.

10.6. Use of Apps for Citizens and Clinicians (either procured, developed or simply endorsed and supported), providing capabilities such as:
- Personal profile.
- Access to own record.
- Single sign in method – Authentication and Identity.
- Ability to book appointments for a range of growing services.
- Online self-assessments and referrals (integration with eReferral System).
- Communities of interest, forums & discussion groups.
- Personalised goal setting and action planning.
- Lifestyle tracking.
- Clinical tracking tools, both generic (weight, temperature) and specific (chemotherapy symptoms, urological symptoms etc.).
- Personal wearable technology such as Fitbits, Apple Watches etc.
- Communication (secure messaging) – will need to explore how this might fit with Careflow and Skype.
- Video conferencing – as above.
- Information content delivery (multimedia content, prescribed according to a person's needs).
- Document transfer.
- Creation of care plans – including Advance Care Planning in conjunction with clinicians.
- Care co-ordination – involving family members and other lay carers in the provision of support.
- Digital outreach; tools that allow structured campaigns of information to be made available to specific sub sets of patients on the basis of their demonstrated needs at a point in time.

There are large numbers of people with long term chronic conditions, multiple co-morbidities or suffering from serious, life changing illnesses for who an App that connects them to their care setting, provides information, advice and help, and a connection to those in a similar position for mutual support, can prove invaluable – life changing even.

What makes the Apps (and portals) powerful tools for users is the connection to information about themselves (IDCR), about local services (DoS) and things like their care plans, support groups of others who have experienced the same thing etc.

The business model employed by most App providers is to provide the App free to the end user and levy the charge against the organisation with which the App will connect (in this case, ESBT). The general cost principle applied is £1 per user per annum, plus the cost of set up, technical integration and testing. First year costs, irrespective of the number of citizens using the App, are in the region of £50k. From a citizen's perspective, they may like the look of a specific App and download it, however unless it is connected to ESBT back end systems and professionals within the setting are prepared to make use of it too, it is likely to be largely useless. Therefore, ESBT will need to source and endorse a set of Apps covering all conditions and requirements (which will naturally change over time) for citizens to use i.e. an ESBT App Store. The STP Digital leads are exploring the same idea at an STP level, and much like the approach recommended in the IDCR Business Case, ESBT will continue to develop local plans until such time as the STP has solid plans that can be explored.

NHSE and NHS Digital are currently beta testing a site which will endorse a set of Apps (circa 40) that they have tested, assessed and will support. Most of the Apps currently showing in this catalogue do not need any integration with any ESBT systems; however there are some that will and ESBT will need to carry out its own assessment as to whether these are a good fit locally. NHSE are not mandating the use of these Apps and at the moment it is unclear whether there is any funding attached to take up. A link to the site is here: https://apps.beta.nhs.uk/

From both a technical and financial perspective, ESBT cannot simply adopt any App one of our citizens decides is right for them and downloads free to their personal device, nor should we simply adopt the NHSE's approved set of Apps. A robust App Strategy will need to be developed and agreed, referencing and aligning with any STP Digital App Strategy, that tackles the issue of customer choice against uncontrolled cost to a financially pressed economy.

Initial thinking about links between online portals and Apps suggests that a sensible approach would be to mimic apps like Facebook where access through a full sized device like a laptop provides one level of functionality and service, whilst using an app on a smartphone provides a different experience. It is the same account and the core capabilities are available on each device are the same, but some more complex elements can only be completed on a larger device. This is offset by the convenience of having access to the app wherever you have your phone and internet access.

ESBT will publish an Application Programme Interface (API), which allows App vendors to connect to ESBT data (assuming they comply with stringent security protocols), so should their business model not push cost onto ESBT, they will be able to tailor their App to ESBT service recipients.

10.7. Use of Artificial Intelligence (AI).

It's difficult to know precisely where AI will be used first within ESBT, but one thing we can be certain of is that it is inevitable. Examples of where AI is being used, either in test or live, include:

DeepMind and Moorfields Hospital are working together to see if DeepMind's AI technology can be used to help spot early signs of eye conditions that human eye care experts might miss.

University College London Hospitals (UCLH) are attempting something similar. 700 scans of head and neck cancers will be given to DeepMind to see if its AI can be used in 'segmentation', the lengthy process whereby the areas to be treated or avoided during radiotherapy are delineated using patient scans. Currently, it's a process that takes four hours -- a figure that the DeepMind and the trust claim could eventually be cut down to one hour with the use of AI.

Hampshire County Council's Adult Social Care department is deploying Amazon Echo technology in a trial. It will provide 50 adult social care clients with a modified version of the device to remind people when to take medication or check when their carer is due to arrive. It will also connect to other technology in people's homes such as movement sensors so it can remind people to have a drink when they enter the kitchen.

There are a number of 'Self Diagnosis' AI Apps – notably, Babylon Health's work with 111 services in north London and an offering from Ada which similarly allows the user to work through a set of questions leading to a recommendation of how it should be treated and if any medical assistance will be needed.

What makes AI special is that the system learns as it goes – the more information it collects the better it gets at making accurate judgements. Moorfields Hospital are feeding in one million eye scan images to help it learn – and the more you speak to voice activation apps like Siri, Alexa or Google, the better they become at understanding your requests.

AI is therefore included within this strategy and costs have been included from year 2 recognising not only its inevitability but that ESBT is unlikely to be ready to deploy any systems until then.

Costs(£k)	Yr 1	Yr 2	Yr 3	Yr 4	4 Yr Total
Review of all existing ESBT sites, portals and online capability[2]	50	0	0	0	**50**
Website rationalisation, refresh and rebrand to ACO.[3]	0	0	0	0	**0**
Rationalisation of Directories of Service	0	0	0	0	**0**
Creation of a single market place	0	150	50	50	**250**
Creation of management function for DoS and site creation.[4]	50	50	50	50	**200**
App portal covering wide capability e.g. Vitrucare or Patient Knows Best	100	100	150	150	**500**
Use of Artificial Intelligence (AI) Bots		100	100	100	**300**
Citizen portal - access to a citizen's own record and additional capabilities.[5]	0	0	0	0	**0**
Identity and Authentication (who are you and how you prove it)	100	50	50	50	**250**

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[2] This is not a technical piece of work, however speaking to business leads, there is recognition that some external support in year 1 will probably be needed, hence the £50k cost.

[3] As per the review of existing sites, there is no digital cost to this.

[4] The costs relate to a post needed to manage this work

[5] Included within the IDCR work in Stream 2

Ability to book appointments on line for a range of services[6]	0	0	0	0	**0**
Integration of wearable technology	0	50	100	150	**300**
TECS - the integration and use of Telehealth, Telecare etc.[7]	0	0	0	0	**0**
Total Cost	**450**	**400**	**500**	**550**	**1900**

11. Accountable Care Organisational Development

Recognising the demands of creating a health and care organisation and the need to create new combined and aggregated structures, systems, processes and business services to support front line delivery. This is a hugely complex stream of work but only represents the digital strand within the much larger work to create a new health and care organisation. Similar projects will be dealing with Workforce and Human Resources (HR), Finance, Property, Procurement and other business support services; addressing how they come together to efficiently service a new system. Digital also has a place in supporting those other strands – for instance, the new Health and Care Organisation will want (as far as possible) single, best of breed systems for Finance, HR etc.

There are broadly two elements:

11.1. The formation of a Digital Service for the Accountable Care System.
There are many possible models; totally in-house, outsourced or some mix of the two.

Support the creation of ESBT ACO 'Business Services' function (including IT/Digital).

Amalgamation of all existing Digital work into a single programme for prioritisation, supported by a single Digital PMO to manage the prioritisation and authorisation process (gateways).

Align and assign resources to ESBT rather than their current host organisation beginning the formation of a single ESBT Digital team.

Agreement on core back office systems and platforms e.g. Electronic Document. Management (EDM), Unified Communications etc.

Design of technical architecture and consequential work – network, data centre (where systems are hosted), telephony etc. – reflecting the service strategy and therefore the balance of in-house and external provision which could potentially form part of a wider 'business services' strategy.*

*Much of this work is already underway under the aegis of the ADA and is contained in Stream 1 - Tactical Work - Exploiting Existing Technologies. As previously stated, most of the Stream 1 work will migrate to other streams as the organisation develops.

11.2. Supporting the digital needs of other business services in sourcing the right systems to support them
These might be one of the existing systems in use in one organisation or where none of them are suitable for the expanded requirements of a new health and care organisation, a completely new solution.

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[6] Included within Stream 2
[7] Technology Enabled Care Services (TECS) No costs are showing because TECS is an established programme with funding of its own and has included technology within its scope.

Aggregation and rationalisation of systems (Finance, HR, Procurement, Property etc.)

The work to migrate to a single finance system is of particular complexity, if it is at all possible (it may be that for various reasons, ESBT will need to run with more than one finance system). This alone is likely to take many years to achieve completely and may have significant cost implications.

Aggregation, rationalisation and renegotiation of support, maintenance and licensing contracts to support new working arrangements.

Migration and novation of contracts and licenses to the new organisation – timing is going to be critical if a sudden delay in the legal formation of the ACO necessitates wholesale extension of contracts.

Both of these will be driven by the milestones and timescales agreed for the creation of the new health and care organisation.

An early piece of work will be to decide what the IT and Digital Target Operating Model (TOM) will be for the ACO. That then informs the journey ESBT needs to take to the formation of an efficient and high quality digital service. As with all services, there are significant workforce, engagement, consultation and wider change management issues to be addressed and planned for within this stream of work.

Costs are difficult to estimate at this stage and as stated, this stream of the ESBT Digital Programme forms a subset of a larger programme being led by the business. The table below estimates those elements that will fall to the digital function to support, however timing is also to be dictated by the wider programme, so all costs are starting from year 2 when the roadmap to the new health and care organisation is published.

Costs(£k)	Yr 1	Yr 2	Yr 3	Yr 4	£(k)
1 x Project Manager per business function (x 5)	0	300	300	300	900
1 x Business Analyst per business function (x 5)	0	225	225	225	675
Technical / Developer support	0	200	200	200	600
Total costs	0	725	725	725	**2,175**

These costs reflect the cost of work to rationalise back office systems. Work will include:
- Gathering the requirements of the merged ACO service concerned (Finance, HR etc.)
- Assessing whether existing systems are fit for purpose
- Selecting a solution – either existing or new
- Specify and procure new system if needed – this could be lengthy work
- Develop a delivery and data migration plan
- Deploy, migrate data (potentially from multiple systems – often very complex and requiring application developer skills)
- Training of all necessary staff

12. Proposed IDCR Model

In the original Digital strategy document published in June 2016, we looked at a range of possible models for providing integration across the health and social care economy and since then a huge amount of work has been done in mapping the existing technology and data ecosystem(s) across all ESBT constituent organisations. Given the singular significance of this work in underpinning almost every aspect of service integration, as well as the NHSE requirement that we deliver this at STP scale, we have agreed to two step approach to integration. This allows ESBT to drive forward at pace but leaves us able to adopt wider technologies as and when all stakeholders within the STP are similarly ready to actively progress this work.

12.1. Federated System Approach

Each service retains its core systems, with integration being the key focus. Relevant info is presented in sovereign systems alongside the main data sets.
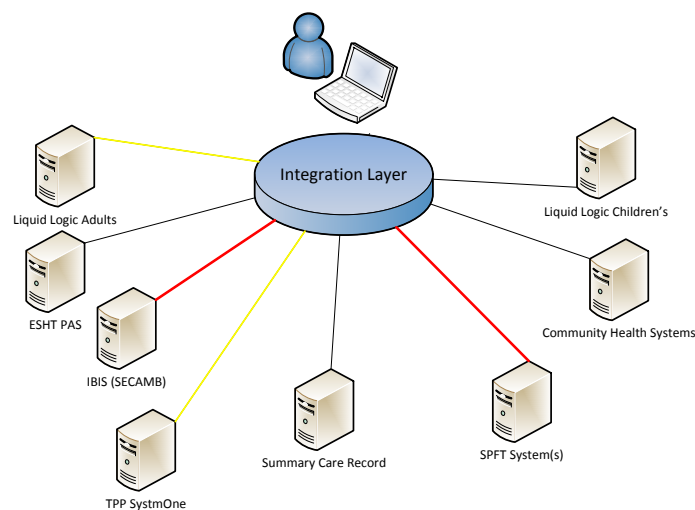
Step One

The diagram below illustrates the model we would like to adopt and it should be noted that a separate business case outlining the costs and detail of how this will work has been written and submitted for approval (appendix 3).
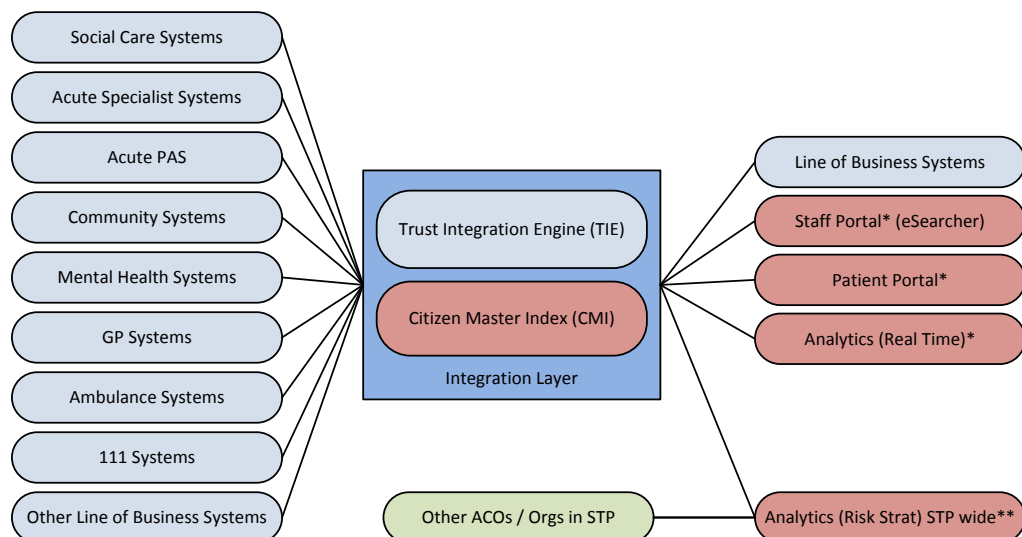
*   Things we need to buy or develop ourselves
** Current plan is to procure and deliver this at an STP level

We will work on the principle that staff will access all the data they need through their primary system – we don't want them to have to go elsewhere to get the information they need to be able to work. We know from our own experience and that of other sites, that if staff need to log into a second system to access data, take up will be greatly reduced and more difficult to embed (potentially to the point where it fails completely).

There are a small handful of systems that do not allow us to display external data within their software, and critically, one of these is the SystmOne community system, one of the largest systems in use within ESHT. This is NOT a technical issue, but commercial and is well known nationally as a blocker to integration. For SystmOne users then, irrespective of the chosen route to integration, this presents a major issue. To address this as far as possible, we will implement single sign on so that the secondary system required to provide access to the data is as easy as possible to access and use. Unfortunately, there is no way of creating a contextual search (meaning the record being viewed in SystmOne is automatically drawn from the secondary system), so users will have to manually look up the same person twice – once in each system. This is a significant limitation on the part of SystmOne (supplied by TPP) and serious consideration should be made in regard to replacing it when the current contract expires a few years from now unless TPP radically change their approach to integration and open their system to this kind of capability. TPP are a part of the GP Connect programme and are piloting integration with EMIS as well as the use of open connectivity (Application Programme Interfaces – APIs), which offers some hope, however until this is readily available and a proven capability, we will have to make the assumption that TPP will remain a significant obstacle to genuine system integration.

As you can see from the diagram, there are a number of component systems and technology we will need to make this work. From the work already completed, we know that we already own a number of the core technologies and there are broadly two options on how we plug the gaps:
- Find a supplier/partner, or
- Do it ourselves

The business case contains the detailed analysis of these options however the critical factors can be summarised as:

We need to make progress for ESBT, however
NHS England has been explicit in its view that IDCRs must be procured and delivered at scale (STP minimum) and it makes sense from financial (economies of scale) and wider (regional) integration perspectives,

If we procure a mainstream solution (of which there are many) and at some point after ESBT has committed contractually, the rest of the STP selects a different supplier, there is potentially significant rework and cost involved in integrating data across the STP as well as the reputational damage this would cause.

For the complete detail and assessment of all options, please see the full IDCR Business Case.

13. Delivery, Governance and Decision Making

The speed at which guidance, policy and national directives change, alongside a hugely dynamic Digital market generating new technologies and opportunities almost daily, far outstrips the ability of large, public sector organisations to make decisions and deploy new systems. The ability to "future proof" our work is therefore vitally important to future success and to avoid unnecessary duplication, rework and the associated delays and costs this incurs. The strategies outlined in this document aim to compensate for this uncertainty and the need for ESBT to be able to alter plans with little or no notice.

The governance model for Digital is very well established and has worked well to date. The diagram below shows how the ESBT Digital Governance model aligns with that of the STP. There are strong working relationships between Digital leads across the STP but with so many stakeholders in varying states of readiness, agreeing plans is proving slower than hoped. This tension is reflected in the approach to an ESBT IDCR as outlined in the Business Case.

ESBT Informatics Governance Structure   STP/LDR Governance
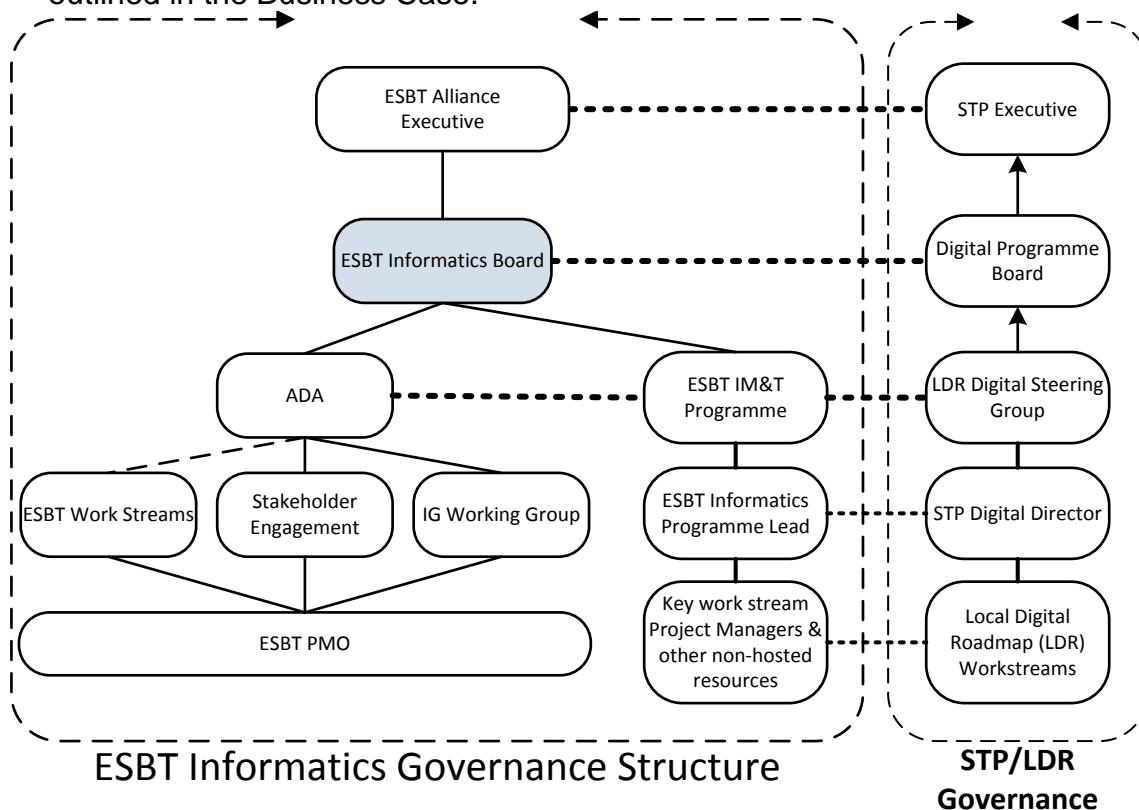
14. Structures
To date, the ESBT Digital Board has met monthly since May 2016 with both business and digital representatives from all stakeholder organisations attending. It is chaired by the Chief Finance Officer of the CCGs.

The Architectural Design Authority (ADA) also meets monthly to work through progress on live projects as well as to discuss technical design solutions and issues arising from the work. The ADA is, and has been, key in making things happen across all organisations within ESBT.

15. Stakeholder Mapping – (Appendix 1)
The current high level stakeholder map is attached as Appendix 1. It should be noted that the map is not comprehensive and is subject to significant change.

16.   Consolidated Costs

Costs(£k)	Yr 1	Yr 2	Yr 3	Yr 4	Total
1. **Tactical Work - Exploiting Existing Technologies**	455	455	455	250	1615
2. **Core Enablers**	1,260	1,600	1,595	1,795	6250
3. **Empowering the Digital Citizen**	450	400	500	550	1900
4. **ACO Organisational Development**	0	725	725	725	2175
20% Contingency, reflecting the level of variation and uncertainty[8]	433	636	655	664	2388
Final Estimate Programme TOTAL	**2598**	**3816**	**3930**	**3984**	**14328**

These are significant sums of money in a time of incredible financial challenge. The amount of organisational change involved in creating an Accountable Care Organisation and the growing expectations of both governing bodies like NHSE and more importantly, those of our citizens, combined with historic underinvestment in technology creates a significant gap that needs bridging in a relatively short space of time.

We also know that during the course of this four year strategy, nothing will remain static - and therefore both ambition and costs will change significantly within this timeframe. The ESBT Digital Strategy has been written to try and compensate for theses 'known unknowns', best illustrated by the IDCR Business Case.

17.   Conclusion and Recommendations
Designing an IT strategy for ESBT and an emerging delivery model presents a significant challenge. Trying to design and build technical solutions when there are low levels of certainty about the precise shape of services and the future in general, can create a sense of paralysis whilst each element waits for a decision from another.

This strategy and accompanying IDCR Business Case aims to show how we can take certain strands of work forward and create something solid on which to build, but crucially without overcommitting ESBT to any strategy that it can't amend as the situation changes (as we know it will).

The strategy itself will need to remain dynamic and a live document flexing with emergent need, evolving into a working programme plan as progress is made.

18.   Recommendations
The Governing Bodies are recommended to **endorse** this updated Digital strategy and consider the investment requirements for its delivery as part of the development of the 2018/19 Strategic Investment Plan.

Funding will be sought through individual business cases, which will be produced for each element of the programme with cost / benefits analysis included.

Simon Jones, ESBT Digital Programme lead
September 2017

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[8] Note: A contingency of 20% is standard within the IT industry for programmes of this scale - and given the level of uncertainty and fluidity currently impacting on this programme, 20% is a sensible level to set.

Appendix 1

Stakeholder
Citizens / Patients / Clients and Carers
EHS and HR CCGs
East Sussex County Council
East Sussex Healthcare NHS Trust (ESHT)
STP Partner Organisations
GP Federation-Hastings/St Leonards
GP Federation Bexhill
GP Federation Rural Rother
GP Federation Eastbourne/Hailsham/Seaford
Sussex Partnership NHS Foundation Trust (SPFT)
South East Coast Ambulance Service NHS Foundation
Trust (SECAMB)
Integrated Care 24 (IC24)
Maidstone and Tunbridge Wells NHS Trust (MTW)
Sussex Community NHS Foundation Trust (SCT)
Brighton and Sussex University Hospitals NHS Trust
(BSUH)
Care Homes
Hospices
Independent Providers
Voluntary Sector
Neighbouring CCGs
South East Commissioning Support Unit (CSU)
System Suppliers

Appendix 2

Ten Universal Priorities
1) Professionals across Care settings can access GP held information
2) Clinicians in U&EC settings can access key GP held information
3) Patients can access their GP record
4) GP's can refer electronically to secondary care
5) GP's receive timely electronic discharge summaries from secondary care
6) Social Care receive timely electronic assessment, Discharge and Withdrawal Notices from Acute Care
7) Clinicians in unscheduled care settings can access child protection information (CP-IS Project)
8) Professionals across care settings made aware of end of life preference information
9) GP's and community pharmacists can utilise prescriptions
10) Patients can book appointments and order repeat prescriptions from their GP practice

For more information, please see https://www.england.nhs.uk/wp-content/uploads/2017/03/univrsl-capabl-info-resources.pdf