Digital Strategy 2020 - 2023

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Introduction

This document sets out a refreshed Ulster University Digital Strategic vision and plan for 2020 to 2023. It details how Information Services will provide technical, digital, information and application strategies to underpin the operational running of the University, whilst enabling transformation and growth.

It recognises the fundamental change brought about by COVID and the need to develop solutions to support greater mobility in a secure, sustainable, and agile manner. Including the greater use of cloud and managed services, remote solutions and standardised platforms, and the centralisation of procurement and support services.

All of which requires a new operating model and solution set, with a cultural shift that focuses on partnerships, collaboration, and shared outcomes across all corners of the University.

It builds upon principles and ambitions outlined within the 2018 Digital Strategy based upon 'empowering people through digital", and provides staff and students access to enabling technologies and digital services across a range of foundation infrastructure and end user platforms, both in a localised, cloud, and mobile manner.

The ambition is the delivery of robust, scalable, resilient and performant applications and infrastructure that are seamless to our users. With technology services enabling access to information at the right time, in the right setting, on the right device, in context, and in a secure way.

This vision will be enabled by building upon existing strategies, structures, technologies, processes, and relationships, whilst implementing best practice ways of working and taking advantage of new and emerging solutions. Some will require investment, though we will redirect existing funding where possible.

Through the lens of a staff member a newly formed Digital Services will be highly visible, engaged, supportive, responsive, and always professional in our approach. Service reporting will be improved, and our work will be based upon the use of best practice in areas of service management, process, governance, and policy. We will operate as a trusted partner to the wider university and a strategic enabler.

For the student, the digital journey needs to be seamless with greater emphasis and focus placed upon their Digital wants, needs, and requirements. This is our intent.

Points discussed within this Digital Strategy are:

- Need to stabilise, optimise and transform existing service offer.
- Deliver against recommendations identified through the 2018 Digital Strategy.
- Provide best in class foundation technology and digital services capability.
- Adopt 'best practice' standards, frameworks, and processes to assure service quality.
- Service & Application review.
- Improved governance across cyber, delivery and reporting.
- Place our staff and students at the core of everything we do, and delight in service delivery.
- Become a trusted and fully engaged partner across all functions of the University estate, and the student population.

Key to which will be re-branding of the Information Services Division (ISD) to Digital Services, building a new model of working, and re-defining the service offer.

In delivery we work in a spirit of partnership and collaboration, and develop a more formalised approach to service delivery, which in the early stages may be disruptive. We will develop and propose a centralised approach to standardisation and procurement of technology assets, and a review of the funding model needed to enable this Digital Strategy.

This Digital Strategy is based upon a three-point plan.

- Stabilisation, i.e., 'fixing what is broken'.
- Optimisation, 'leverage what is already in place'.
- Transformation' design, develop and build a new service delivery model and long-term application and information strategy.

To enable transformation and growth we must develop and adapt accordingly, and although this strategy makes not ask for increased funding it may be required as we develop our delivery plans.

Strategic Review & Solutions

Review existing technology and application solution sets, including service offer, the organisational structure, infrastructure, digital, technical, information and application estate, and cyber security controls and plans.

Some technology sets in use are current but others are aged need upgrading or replacing, this is known as the 'technical debt' and will also be reviewed.

Historically solutions been procured in a decentralised manner whereby standardisation was difficult to achieve, and in these environments ISD have little, or no, oversight or control. This poses a security threat and must be addressed.

Elements of Cyber Security technical controls are in place but not centrally managed or delivered in a unified way. This poses a significant risk and could, if left unattended, result in system loss, data loss, financial loss and reputational damage to the University. This must be addressed.

In doing so Digital Services will positively engage stakeholders to

- Review, rationalise and develop enabling infrastructure, commodity technology platforms and applications required to support digital transformation and enable new ways of working.
- Develop and promote solutions to consolidate and standardise solutions sets.
- Listen to our customers and develop services to promote the delivery of information at the right time, in the right setting and on the right device.
- Build trust and confidence in the work that we do, and service we provide. Digital Services will become a trusted advisor and strategic partner to all functions of the University.
- Develop a robust approach to Cyber Security preparedness and incident response.

We will do this in a way that reflects our values and behaviors and ensures Digital Services, staff, and students have access to highly available infrastructure, information, digital, applications and technology services.

This will be enabled through:

- Leveraging existing investment in infrastructure and technology platforms.
- Implementation of modern teaching and learning solutions and technology infrastructure.
- Implementation of commercially focused sourcing strategies.
- Development of digital partnerships and working with suppliers to design and deploy solutions that are scalable across the Higher Education economy.
- Standardisation
- Investment in Cyber Security

In doing so Digital Services will

- Review all existing services and develop and well-constructed and clear service catalogue, including details on service criticality, service response and those services which required 24x7 service and support.
- Review all Enterprise applications and work to develop a future applications roadmap.

2018 Digital Strategy Review – GAP Analysis

The roadmap included within the 2018 Digital Strategy outlined a series of ambitions, deliverables, and outcomes across each of the strategic themes. Although no timeline was placed upon delivery phasing was based upon a three-point approach, i.e., Now "Baseline", Soon "Transitional" and "Future" Strategic

It is unclear if, when, or how, each item progressed, but Digital Services will review each deliverable and engage with stakeholders to ascertain their current and future state. This will be undertaken in conjunction with the applications review and outputs from which will inform the future application strategy and roadmap.

Cyber Security

A cross university approach to dealing with the Cyber threat is required, as is recognition that our current operating approach is not fit for purpose.

Investment for assessments, training, accreditation, tolling and dealing with the 'technical debt' is also required.

Cyber cannot be viewed as a like to have, but a must have, and it cannot be limited to the remit of the Digital Services.

A University wide Cyber capability review is needed, with the outcomes used to develop remedial plans for priority areas and the development of business cases to mitigate risk. In this regard Digital Services will work towards attaining Cyber Essentials and Cyber Essentials Plus accreditation. This is a Government backed, industry supported scheme to help organisations protect against common online threats.

This is an important first step as vulnerabilities to simple attacks could mark Ulster out as target for more in-depth attention from cyber criminals. Cyber Essentials will provide peace of mind that our defenses will protect against most of common cyber-attacks, simply because these attacks are looking for targets which do not have the Cyber Essentials technical controls in place.

Upon achieving Cyber Essentials, we will move towards the more rigorous certification level known as Cyber Essentials Plus.

As the Higher Education sector is becoming is direct target of Cyber Criminals, and high-profile attacks are occurring across the sector, it is recommended that Ulster University that make both tactical and strategic plans to mitigate against Cyber threats. This will require the use of dedicated, experienced subject matter experts, and external support. Discussions with sector partners validate the critically of this approach and support the need for the recruitment of a Chief Information Security Officer (CISO), and Senior Security Technical Engineer. This should be considered.

In progressing our Cyber plans Digital Service will follow the advice, guidance, and resources available through the National Cyber Security Center (NCSC), The Joint Information Security Committee (JISC), and the Information Commissioner Office (ISO)

A model proposed by the NCSC which is a core requirement of Cyber Essentials Plus is known as the "10 Steps to Cyber Security'; which is outlined below. This is, and will continue to be, used to measure our Cyber maturity, and develop our longer-term Cyber plan.

Application Review & Strategy

Digital Services will review all applications and develop roadmap through consultation to identify those that could be tolerated, eliminated, invested in, or migrated, for example to the Cloud or as part of a Managed Service. This approach will also be used for Infrastructure and services.

Assessment is based upon the Gartner PACE Layered application methodology that governs software applications through their entire life cycle in support of evolving business requirements.
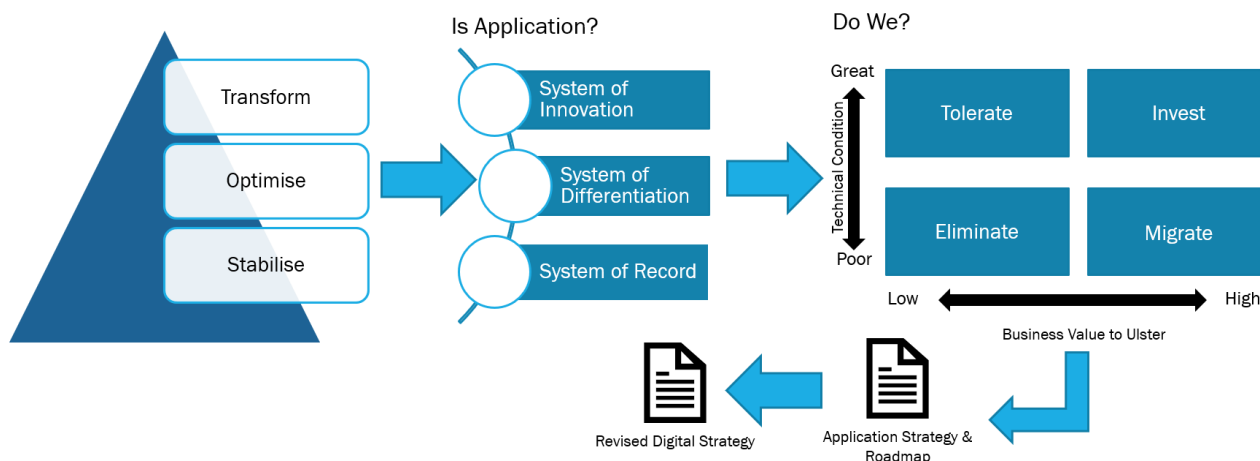
A detailed application strategy and roadmap will be provided as the output from the application review.

Detailed below is a high-level view of the existing tier-1 application estate which demonstrates that elements of the 2018 Digital Strategy are progressing, with some applications already migrated into the Cloud and delivered as 'Software as a Services", otherwise known as SaaS.

Outliers requiring further assessment include the Banner Student Record System, E5 Financials and Cognos Business Intelligence. These must be addressed.

Skype for Business is becoming end-of-life and will be migrated across to Microsoft Teams, which is also delivered as a SaaS service.

	2020	2021+			2020	2021+
Banner Student Record System	🏛️	☁️	Cognos BI	🏛️	☁️
E5 Financials	🏛️	☁️	My Day	☁️	☁️
Core HR	☁️	☁️	Pure		
Share Point	☁️	☁️			
Skype For Business	🏛️	❌			
Microsoft Teams	☁️	☁️			

Migrate Skype to Teams

Key

🏛️ Locally Hosted

☁️ Cloud / SaaS
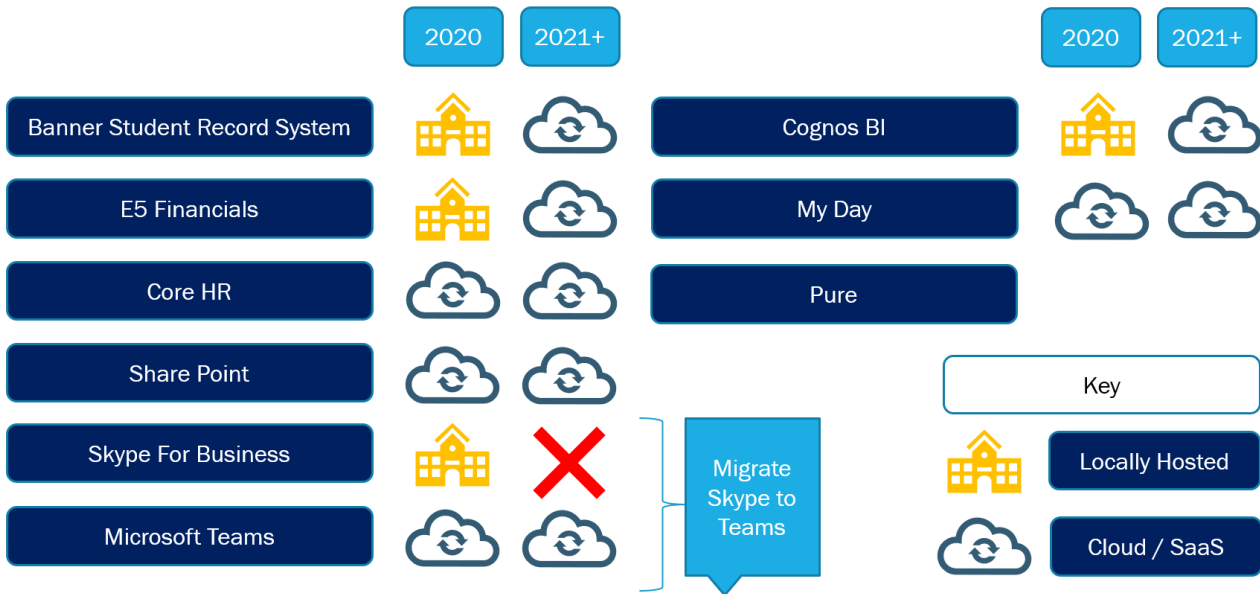
In relation to the Banner Student Record System Digital Services are renewing the existing license for a further 2 years, to 2022. This period will be used to consider the long-term future need of this application, including potential renewal and delivery as a Managed Service whereby hosting is provided in the cloud as part of a Software as a Service (SaaS) approach. Exploratory work for which has commenced.

Service Model

The approach to service modeling is represented below and based around the SIAM model (Service Integration & Management).

SIAM is recognised as a 'best practice' approach to delivery of technology and digital services. In the case of Digital Services this includes a mix of business and digital information technology solutions that integrate into a single business-facing organisation.

SIAM aims to seamlessly integrate services from various sources into a single end-to-end service offer, and in the context of Ulster this includes three elements, namely customers (staff and students), the internal Digital Services function, and external parties such as suppliers and other sectoral partners, for example JISC.
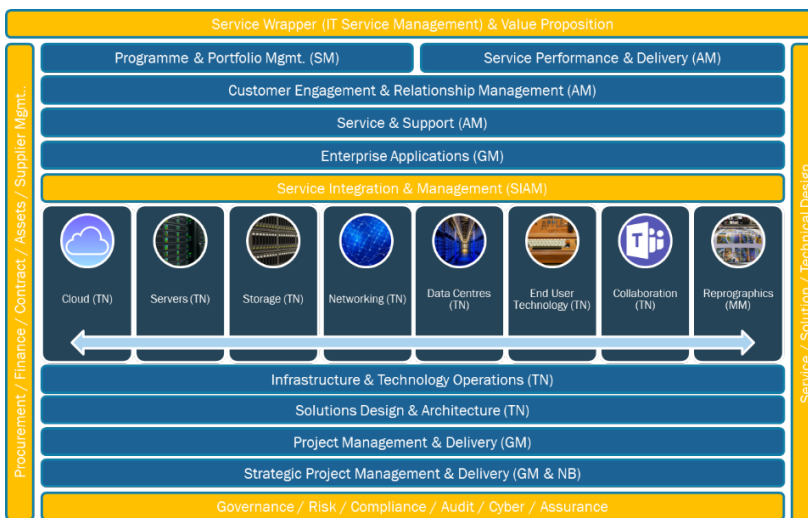
In practice this will ensure improved portfolio management and delivery, enhanced customer experience and access to a dedicated relationship management function.

Digital Services and our customers will benefit from improved controls around portfolio, demand management and reporting.

Delivery will also require the development of a new set of charters and delivery principles for each function of Digital Services. These will outline the values, the behaviors and approach provided by the newly formed service model.
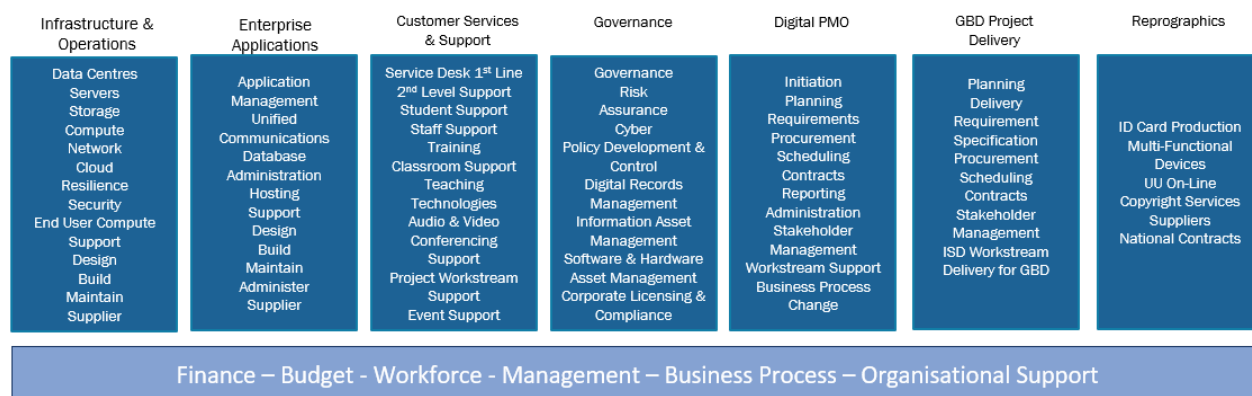
Service Offer

Digital Services will operate as a Digital Transformation Partner towards all functions of the University, working in alignment and partnership with staff, students and sectoral partners to develop solutions that are fit for purpose, effective, efficient, and ensure value for money,

We will be instrumental in the standardisation and integration of infrastructure and technology, and with partners will establish new models of service and deliver foundation and transformation services.

Solutions

These are the key pillars and building blocks of the current solution offer, and Digital Services will further develop and implement formalised Service Level Agreements to improve overall service quality.

Infrastructure & Operations	Enterprise Applications	Customer Services & Support	Governance	Digital PMO	GBD Project Delivery	Reprographics
Data Centres Servers Storage Compute Network Cloud Resilience Security End User Compute Support Design Build Maintain Supplier	Application Management Unified Communications Database Administration Hosting Support Design Build Maintain Administer Supplier	Service Desk 1st Line 2nd Level Support Student Support Staff Support Training Classroom Support Teaching Technologies Audio & Video Conferencing Support Project Workstream Support Event Support	Governance Risk Assurance Cyber Policy Development & Control Digital Records Management Information Asset Management Software & Hardware Asset Management Corporate Licensing & Compliance	Initiation Planning Requirements Procurement Scheduling Contracts Reporting Administration Stakeholder Management Workstream Support Business Process Change	Planning Delivery Requirement Specification Procurement Scheduling Contracts Stakeholder Management ISD Workstream Delivery for GBD	ID Card Production Multi-Functional Devices UU On-Line Copyright Services Suppliers National Contracts

Finance – Budget - Workforce - Management – Business Process – Organisational Support

The Plan (Stabilise, Optimise & Transform)

2020 to 2021 will represent a period of stabilisation, with 2021 to 2022 focusing on optimisation and transformation.

We will also work towards this plan whilst maintaining business as usual operations and supporting the delivery of transformation projects, such as Greater Belfast Development. Timetabling, Digitisation and CRM Recruit.

Note: Some elements may run in parallel and some may change, but in delivery Digital Services will develop a formal time delimited roadmap and requirement specification.

Stabilise (2020-2021)	Optimise (2021-2022)	Transform (2022-2023)
Rebrand ISD – Digital Service	Estate Rationalisation	Real Time & Dynamic Reporting
Service Review & Remodeling	Cloud Strategy	Automation / BOTs / AI / Machine Learning
Application & Information Review & Strategy	Business Intelligence	Full enablement of mobile workforce.
New Solution Offer	Performance Reporting	Security Operations Centre
Best Practice (IT Service Management) – Inc. Service Level Agreements (SLAs)	Information Asset Management	Network Operations Centre
*Cyber (Plans, Training, Tooling & Accreditation)	Web Services	On-demand Service Provisioning
Communications Strategy	Standardisation & Centralisation	Managed Services
24x7 Service		Application & Information Strategic Delivery.
Monitoring & Tooling		Virtualisation and Cloud migrations.
Technical Debt (legacy & refresh and replace)		Integration Services
Digital PMO		Mobile Apps
Standardisation		

Risk Management		
Information Asset Management		
Governance		
Assurance		
Funding		
Disaster Recovery & Business Continuity Planning		
Continual Service Improvement		

*Note: Additional funding is anticipated in the areas of Cyber Security and tooling.

Project & Portfolio Management

Outlined below is the current delivery road for ISD projects and programs required to support transformation.
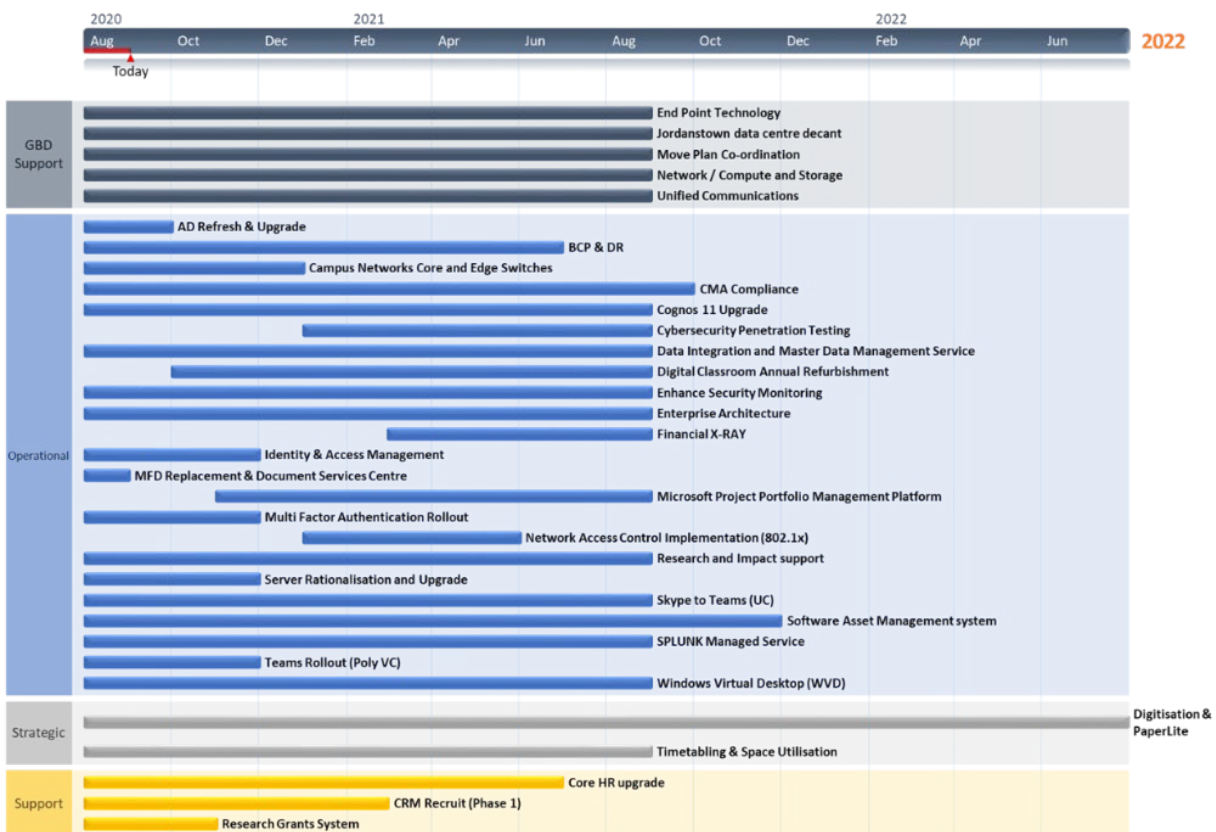
Conclusion

This Digital Strategy is ambitious and represents the beginning of transformational journey in challenging times, and requires the development and agreement of associated strategies, roadmaps, plans, business cases and projects.

These will be formulated as outputs from the reviews and assessments outlined within this, and the 2018 Digital Strategy, and through y continual stakeholder engagement.

The direction of travel for the first year will be to focus on stabilisation, moreover the:

- Rebranding and re-modelling of ISD.
- Development of a new Vision for digital.

- Completion of 2019 ISD re-restructure.
- Development and priority implementation of Cyber Strategy and plans.
- Building the case and seeking agreement on and benefits available from the centralisation and standardisation of Information Technology procurement.
- Production and agreement of long-term Enterprise Application strategy, incorporating elements of Business Intelligence, Management Information, Integration, and possibly Data Warehousing.
- Introduction of formalised Service approach to delivery based upon best practice, and formalised approach to 'continual service improvement'
- Delivery against existing commitments.

It aims to incrementally improve service whilst at the same time remodeling the ISD function, developing and seeking agreement on future strategies. Moving towards the centralisation and standardisation of the technical estate, and overall improvements in service quality for staff and students.

If endorsed ISD will develop a formal programme of work for delivery, which will include a prioritisation matrix, delivery roadmap and business cases where appropriate.

The ask for SPG/SLT is:

- Recognise:
    - Detail contained within are based upon initial observations of the newly appointment CDIO and will develop over time.
    - The ambition, vision, intent, aims, and objectives are aligned with the longer-term University strategy, and its vision and values.
    - The objectives outlined for Year 1 (stabilisation) will be delivered in a challenging environment, and in parallel to existing operational, transformation and project commitments.
    - This Digital Strategy does not make the case for additional financial commitment, in part due to the inability to fully develop longer term and specific strategic plans without further due-diligence and planning, but business cases will be forthcoming as appropriate.
    - That a review of the funding model for ISD is required.
- Endorse:
    - The need for a re-branded and remodeled ISD department and formalised service offer.
    - Introduction of best practice frameworks, standards, and approach to service delivery.
    - Prioritisation of Cyber Security planning and preparedness.
    - Benefits available from the centralisation of procurement and support for Information Technology assets, and the need to commence stakeholder engagement to agree a way forward.
    - Review of existing enterprise application estate and stakeholder engagement to formulate longer term application strategy and roadmaps, including information and business intelligence.

Mark Taglietti – Chief Digital Information Officer – September 2020