

Welsh Government ICT Strategy 2020

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Author	Anne Wesson

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1.0 Introduction

This Strategy explains the purpose of PSG-ICT: to provide digital services to 'Users' at Welsh Government, via secure, efficient and suitable technologies, development and support. A **User** is defined as either a permanent staff member, secondees, work placements, contractors, or those whose principal work area is for WG.

1.1 What do we want to achieve?

The Strategy describes how, through the provision of technology services, we will facilitate Welsh Government staff (directly) to work more productively. We want to be the Service Provider of choice for all WG technology challenges, which will enable WG to achieve value for money, maintain and increase knowledge and experience and re-use solutions for other services.

For Citizens (indirectly) the aim of the Strategy is to enable their interactions (either as individuals or through organisations) with Welsh Government to be as secure, efficient and as suitable for their needs as possible.

1.2 Alignment with other Strategies

The Strategy has been developed to support and contribute to the Welsh Government Corporate Strategies of Workplace, Workforce and Digital Transformation.

It also aligns with the OCDO internally facing digital strategy¹

Externally, This Strategy complements the 'Digital Transformation Strategy – A Framework for Action²'. This Strategy indirectly affects the Citizens, Businesses and other Organisations operating in Wales through lines of business applications and through alignment with the '*Digital Transformation Strategy for Wales – A Framework for Action*' and the Digital Strategy developed in OCDO WG.

1.3 Scope

The scope of this document is specifically the staff and services currently delivered by PSG-ICT Division within DDaT Directorate, which comprises 'Business as Usual', Project activity and some Professional Services capability e.g. Procurement, Technical Architecture and Enterprise Service Management³.

The scope of the Strategy may change in response to WG Board or ExCo decisions.

¹ See table in 3.0 'Organisational Context'

² See table in 3.0 'Organisational Context'

³ ITIL V4® reframes IT Service Management as 'Enterprise Service Management'.

1.4 Glossary of terms used within this document

Term	Explanation
BAU	Business as Usual
CCS	(UK) Crown Commercial Service
COTS	Commercial off the shelf (used to describe vanilla products that are implemented and then configured for business use, vs 'bespoke' solutions)
DaaS	Device as a Service
DAAS	Disability Awareness & Support Group (internal to WG)
DDaT	Digital Data and Technology (the name for the Profession)
DevOps	A combination of development and operations which develops services through four highly integrated areas, namely: Culture, automation, measurement and sharing ⁴
DSU	WG Departmental Security Unit
ESM	Enterprise Service Management: i.e the application of IT service management to other areas of an enterprise or organization where the aim is to improve performance, efficiency, and service delivery.
FGA	Wellbeing of Future Generations Act (2015)
GDS	(UK) Government Digital Service
IaaS	Infrastructure as a Service
IDE	Integrated Development Environment
ITIL®	Information Technology Information Library (The industry standard service management framework)
KPI	Key Performance Indicator
MFA	Multi Factor Authentication (an individual has many different pieces of unique data to them with which to verify their identity)
MSA	Managed Services Agreement (a procurement vehicle where third parties provide services to a client)
NAO	(UK) National Audit Office
NCSC	(UK) National Cyber Security Centre
OCDO	Office of the Chief Digital Officer (OCDO: WG)
PaaS	Platform as a Service
PMO	Programme/ Project Management Office
SaaS	Software as a Service
SDA	Solution Design Authority
WAO	Wales Audit Office

2.0 Background and Vision

In January 2020 a small group called the 'Visioning Forum' started to consider the following:

- ✓ Previous ICT Strategy; time for a review / refresh
- ✓ One year post-Merlin contract

⁴ ITIL® Practitioner Guidance, AXELOS, 2016

- ✓ A review of progress on the WG Board decision in 2017 to implement a hybrid resourcing model following conclusion of Merlin
- ✓ Assessing the appetite for implementing the WG Board decision in 2017 to operate a more centralised ICT model from the existing federated one
- ✓ Marketplace developments e.g.DevOps; Scrum® & Agile®
- ✓ Knowledge of changed / new business reqts e.g. Brexit.
- ✓ 'Evergreen IT' i.e. the realisation that investment in technology is not a single act but an ongoing commitment, in order to drive value.
- ✓ Looking at ICT in the current organisational context; what are the policy developments and approaches that will influence the type and nature of ICT (supporting and promoting the Welsh Language; social model of disability; use of 'place'; flexible working etc.)?
- ✓ Other emerging priorities / strategies / organisational drivers.

All of these considerations came to an abrupt halt in March 2020 when Covid-19 was declared a world pandemic. This led to incredible and unprecedented demand from Users, not only for new ways of working but new systems to cater for the entirely different world around us.

This scenario presents opportunities to revolutionise the workplace, matched by the scale of the challenge, and requires a sea change in staff familiarity, confidence and competence with technologies, as well as influencing the type of technologies chosen.

Similarly, the challenges listed above have not gone away.

2.1 Vision Statement and Foundation Pillars

Using the following logical technique, the Vision is:

'ICT Services will provide secure, efficient and suitable technologies, development environments and support to enable WG to work digitally in delivering the Programme for Government'.

Vision – develop from 'desired future state' and the pillars of activity through which this is achieved

List and define the inputs required, which are combined with capabilities to lead to outputs

Devise and operate a Plan, using levers available and securing new levers as required

Fig 1: logical flow of plan from vision

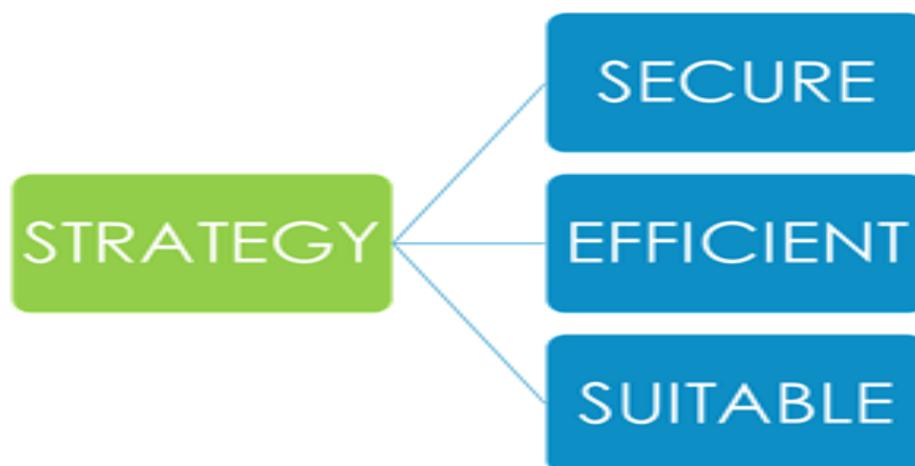


Fig 2. Strategy foundation pillars

No activity should be undertaken unless there is **a tangible deliverable** which satisfies at least one of the pillars.

2.2 'Secure'

The desired future state for this pillar includes, but is not limited to:

- ✓ Systems designed to 'failsafe'
- ✓ Secure and fully managed and optimized Cloud environments
- ✓ Secure and fully managed identity management
- ✓ Secure and fully managed operations centre
- ✓ Secure and fully managed customer tenants
- ✓ Zero trust models across all the foundation pillars.

2.3 'Efficient'

The desired future state for this pillar includes, but is not limited to:

- ✓ A Service Portfolio which is the single source of truth and the directory of **all** services (pipeline, live and retired)
- ✓ Automation (Business) to embrace consistency and determine the most suitable solution for business requirements. This may be similar across departments and has potential to deliver improved value for money
- ✓ Automation (ICT) is the default to remove error, speed up repeatable tasks and minimise duplication
- ✓ An Integrated Development Environment IDE including DevOps
- ✓ Services developed using Agile⁵ methodology and the Scrum⁶ framework
- ✓ Support models are in place for all services to enable efficient and responsive management
- ✓ Supporting WG's aspiration to be carbon neutral by 2030

⁵ PRINCE2 Agile -a manifesto for Software Development based around: Individuals & Interactions, Working software, Customer collaboration and Responding to Change

⁶ <https://www.scrum.org/>

2.4 'Suitable'

The desired future state for this pillar includes, but is not limited to:

- ✓ Services meeting business requirements most closely and appropriately, with a minimum level of competence amongst staff
- ✓ Suitable tooling for monitoring & performance, management information
- ✓ The right procurement vehicles to match business requirements so we can deliver fit for purpose and fit for the future services
- ✓ A shift to conscious rather than unconscious decision making regarding choices to products / solutions
- ✓ Decisions aligned with WG policies: e.g. Social Model of Disability; Locations and flexible working (inc. suitable telephony)
- ✓ Resolution of any potential / perceived conflict between ICT & business decisions

2.5 Services not Products

The complexity, integration and flexibility required for business applications mean that simply implementing products is no longer viable. We aim to adopt 'Agile' software development (using frameworks such as Scrum®⁷) so that business users (requirements generators) contribute towards iterative service development, retaining ownership for ongoing business development of their services.

During Service development a complex layer of supporting technologies is required which facilitate communication with other services, data exchange, security, business intelligence and sophisticated data manipulation. Together with comprehensive transition tasks and sign off of Service Design, Support Model and Roadmaps from business owners⁸, these combine with capabilities which combine to create value⁹ for customers and can then truly be called end to end **Services**.

The Organisation's ongoing digital transformation programme will also be an influence on this, which is where close collaboration between business owners and DDaT will ensure the services created have the best chance of matching business requirements, both at the time of initial development and for the future.

⁷ <https://www.scrum.org/>

⁸ <https://documents.hf.wales.gov.uk/id:A31279821/document/versions/published>

⁹ 'The value of a service comes from what it enables someone to do' ITIL® Practitioner, AXELOS, 2016

2.6 Diagram: Value Creation

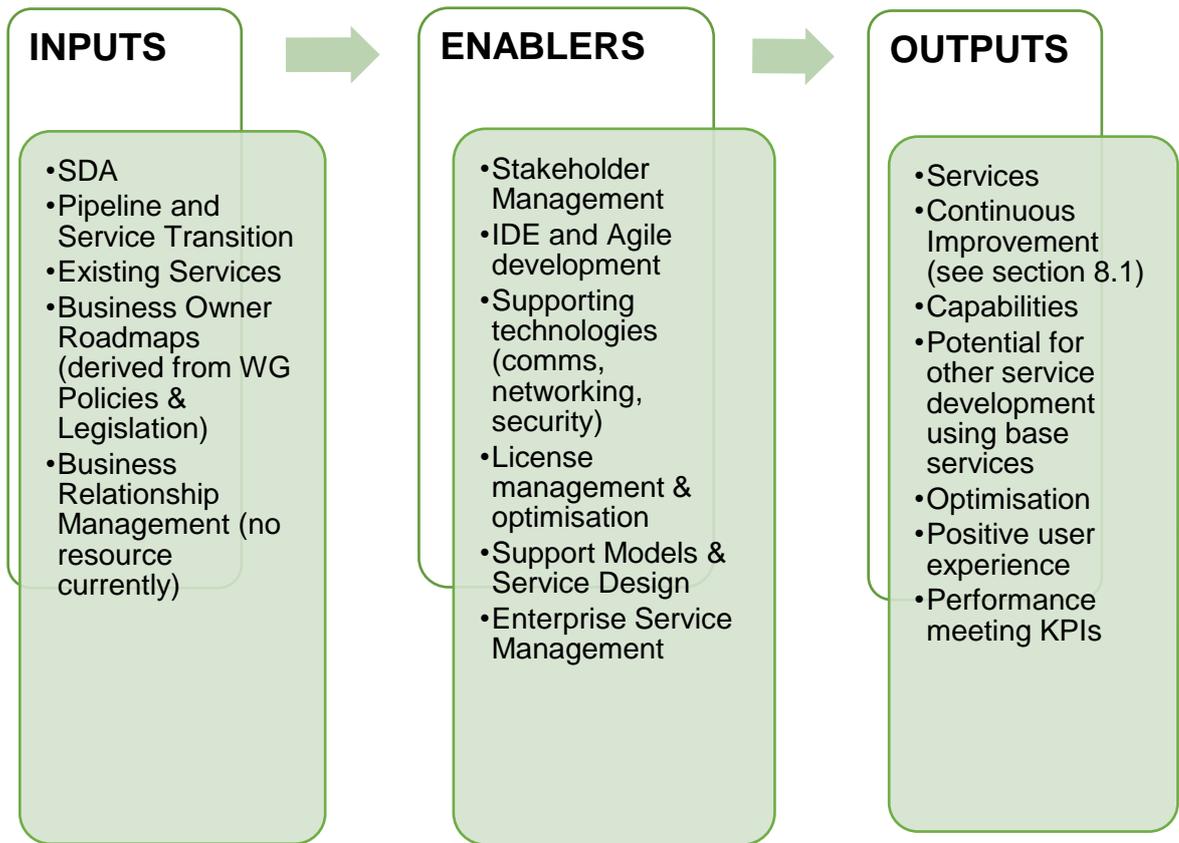


Fig 3: Value Creation

3.0 Organisational Context

3.1 This Strategy underpins the corporate aspirations and supporting policies of Welsh Government. We understand WG's wish to lead the digital agenda in Wales, to facilitate service delivery to and engagement with citizens, to help businesses thrive and compete, to enable learners to gain new skills for the future, to improve health and wellbeing outcomes and to help Welsh language and culture flourish.

This ICT Strategy concentrates on the internal staff users at Welsh Government, but it supports the external digital Agenda and also the wider 'Future Generations' Agenda first espoused in the Wellbeing of Future Generations (Wales) Act 2015¹⁰.

We want ICT to be the key enabler for successful Welsh Government day to day business operations and the twin challenges of Wales' Covid Recovery and Brexit.

¹⁰ <https://wales365uk.sharepoint.com/sites/Intranet-About-Us/SitePages/The-Well-being-of-Future-Generations-Wales-Act.aspx>

The Operational Plans that will be derived as a result of the Strategy will support the following Organisational imperatives:

<ul style="list-style-type: none"> ▪ Welsh Government priorities and policies: Workplace, Workforce and Digital Transformation Strategies
<ul style="list-style-type: none"> ▪ Programme for Government
<ul style="list-style-type: none"> ▪ WG adoption of the Social Model of Disability
<ul style="list-style-type: none"> ▪ Central Government / Government Digital Service (GDS) and Crown Commercial Service (CCS) advice / rules
<ul style="list-style-type: none"> ▪ Organisational appetite for change
<ul style="list-style-type: none"> ▪ Making a positive contribution to the circular economy where possible
<ul style="list-style-type: none"> ▪ Benefitting third / not for profit sector during disposals
<ul style="list-style-type: none"> ▪ WG's aspiration of being Carbon Neutral by 2030. This will also involve placing and monitoring obligations on our third party suppliers.
<ul style="list-style-type: none"> ▪ Investigate possible contributions via the Green Recovery Taskforce being led by NRW¹¹
<ul style="list-style-type: none"> ▪ WG's Draft 'Digital Transformation Strategy – a Framework for Action'¹² (external)
<ul style="list-style-type: none"> ▪

3.2 ICT Levers

The Strategy will seek to maximise the following to pursue WG's Organisational aims by following these principles in its approach:

<ul style="list-style-type: none"> ▪ A shift from delivering and implementing systems to delivering and implementing Services (see above)
<ul style="list-style-type: none"> ▪ 'Right premising' for Infrastructure
<ul style="list-style-type: none"> ▪ Creating and developing a true Development and Support capability, supporting an IDE
<ul style="list-style-type: none"> ▪ 'Evergreen' investment in ICT, exploiting investment made already but recognising continual investment is necessary
<ul style="list-style-type: none"> ▪ Governance
<ul style="list-style-type: none"> ▪ Relevant User Surveys and intelligence
<ul style="list-style-type: none"> ▪ Opportunities and imperatives to retire legacy systems
<ul style="list-style-type: none"> ▪ Knowledge of existing and pipeline of business requirements (underpinned by a comprehensive Service Catalogue, including retired services)
<ul style="list-style-type: none"> ▪ Organisational appetite for change

¹¹ <https://naturalresources.wales/about-us/news-and-events/news/nrw-led-taskforce-set-to-accelerate-a-green-recovery-in-wales/?lang=en>

¹² Draft Digital Strategy circulated to DDaT staff 22 Sep 2020, commissioned by Deputy Minister for Economy & Transport

- Making a positive contribution to the circular economy where possible and using third / not for profit sector during disposals
- Learning Lessons where we can, such as the Audit Wales report on the Merlin exit programme

4.0 Developing the ICT & Digital Profession

4.1 Current situation

In early 2020, Welsh Government was operating from circa 30 locations, concentrated on large office presences. For the last year and for the foreseeable future this is now in the order of 6000 locations, marking a paradigm shift in the type of support required.

Added to that, ICT and Digital skills have not previously been recognised as Professions at Welsh Government, and DDaT has not been incorporated into the Organisation. On conclusion of the Merlin agreement the WG Board expressed a preference to deliver future services through in-house expertise, augmented for specific purposes by contract staff. As has been noted already, this Target Operating Model was not completed, however development of the Strategy is a timely opportunity to reconsider the Model given technological advances, changes in business requirements and different working practices.

4.2 What does the future look like: career paths?

We want to develop and integrate a roadmap for staff entering the Profession to not only increase skills levels and therefore achieve value for money targets, but to afford staff the ability to develop themselves and meet their ambitions to move up the organisations. This may be using DDaT or other externally recognised professional framework.

An exciting career route for staff will not only bring new opportunities for staff but also increase motivation and innovation through the adoption of new ideas, new energy and new approaches to service development.

5.0 Strategy

5.1 Diagram – Strategy.

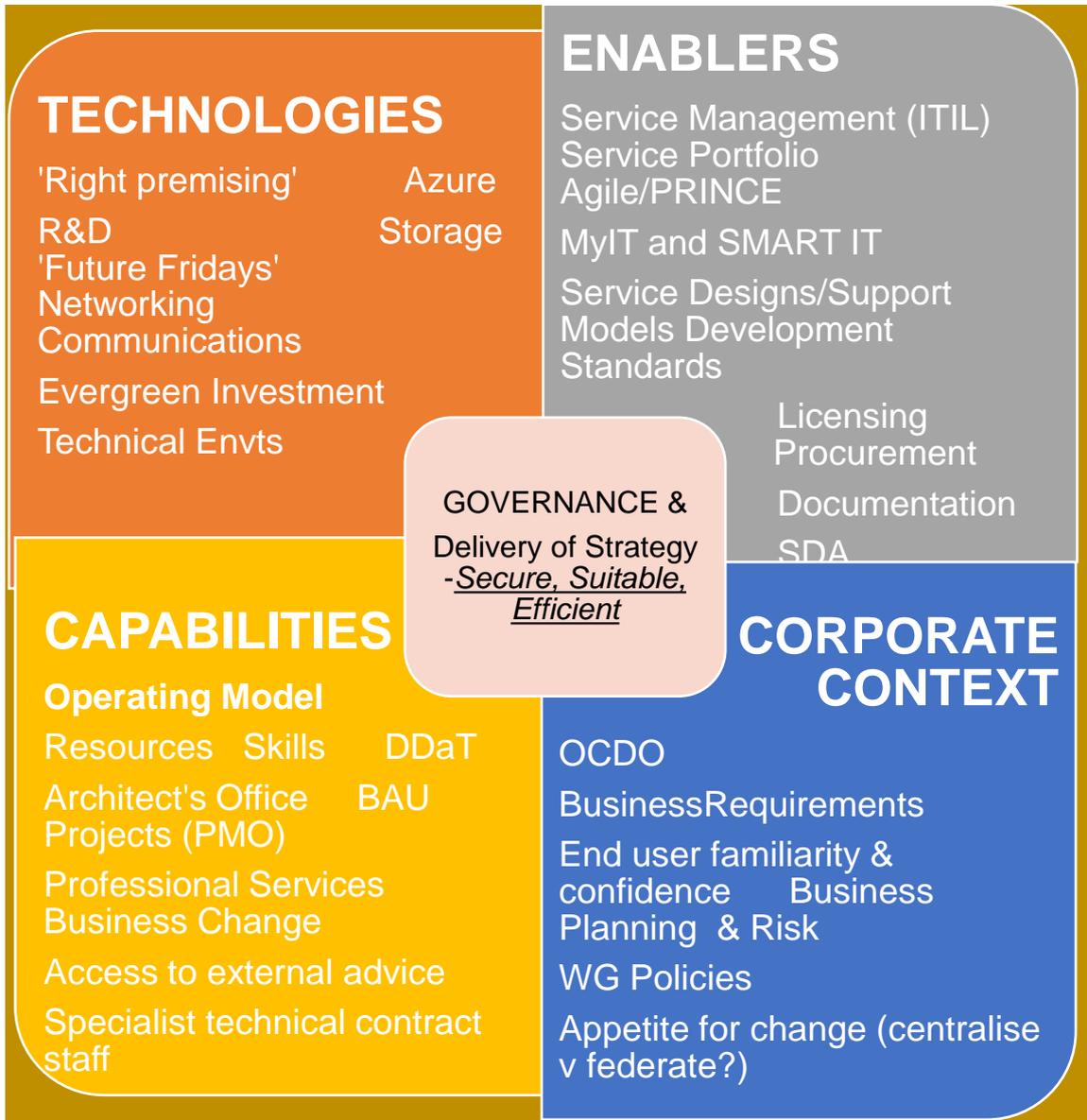


Fig 6. Strategy

5.2 Technologies

Welsh Government wants to use the most efficient, secure and suitable technologies for the business scenarios for which it provides services.

In order to do this we will adopt a blended approach in terms of Infrastructure and 'right premising' means a blend of virtual and physical infrastructure to provide the most flexible, cost effective and fit for purpose technical foundations on which to build services.

We understand that investing in ICT is not a single event but an ongoing commitment, explaining the notion of 'Evergreen' i.e. in order for the technology to remain being suitable, secure and efficient and rolling programme of investment is necessary.

We believe using Cloud as the primary hosting infrastructure still provides the best general fit for most business applications, and is backed by arguably the most resilient and best-in-class vendor in the world. However, we know that we need to dedicate time, effort and staff resources to maintain and expand our knowledge base in this area, tap in to market developments, new products and leverage specialised technical expertise where prudent.

In order to develop new technology, improve and change the existing services we offer in line with new or changed business requirements, we will aim to provide an Integrated Development Environment.

We want to mainstream Scrum® and Agile® to aid rapid developments, developing MVP (minimum viable product), maintaining continuous user engagement and adopting an iterative approach. This will require a considerable amount of initial user engagement and education but remains the most likely way to develop services that are flexible enough to be changed as the nature of the business requirements flexes also.

Integrating these products to facilitate a seamless user experience using communications products will be important in providing continuity of service, as well as helping to bolster the security regime.

5.3 Tooling & Methodologies

We will use a blend of industry standard and best practice methodologies for Programme and Project Management, DevOps, and Service Management. This will include, but is not limited to Agile, Scrum, Prince, MSP and ITIL as well as confirming to vendor standards to guarantee access to vendor support. We will secure the integrity of our development service through reserved time periods called 'future Fridays' to dedicate to product development and exploitation.

We will build a comprehensive Service Portfolio as our end to end library of services, through pipeline, live services and retired services. We will provide appropriate integrated tooling for this to enable optimum support conditions for our user community.

We will leverage our licensing models and continue to build relationships with suppliers to optimise these assets. We will become the locus for license development, management and negotiations for ICT & Digital for the whole of Welsh Government in order to improve the current situation where license agreements are often negotiated separately for the same products from different WG departments (NB the vendors are unlikely to question this with us as it remains an opportunity for them to secure more revenue). This may include taking part in 'early adopters' 'pilot' or other groups that may allow us

early access to tools, innovative licensing structures and other value for money options.

We recognise the importance of suitable procurement vehicles through which we can maximise value for money criteria to deliver all types of hardware, software, physical, virtual and service based buying solutions. We will work closely with colleagues in the Professional Procurement sphere and look to augment our knowledge and familiarity with the options available to us.

5.4 Capabilities

Delivering the strategy will require considerable inputs in the form of resources, human and financial. We will need to secure appropriate financial resources (and manage expectations and stop activities that we cannot fund), but thereafter success will be facilitated through the combination of departmental and wider organisational human resources, skills and the prioritisation and exploitation of these. We will need to regularly scan the external marketplace, engage in training and research and development to ensure we have the right mix of skills and capabilities.

An Operating Model, fully populated and combining a mix of technical, operational, professional services and corporate skills will need to work in harmony to deliver on the actions specified in Plans that are developed from this Strategy.

An optimum organisational structure will need to be delivered involving Business as Usual, Programmes/ Projects (with PMO) and supporting Professional Services will work together within the corporate mechanisms and processes, augmented through Governance.

We will need to access and deploy Technical Architecture, Cyber Security, Service Management, Service Strategy, Service Design and Business Change expertise to support and optimise the BAU and Programme / Project activities.

This will be supplemented only where necessary by specialist technical expertise, ideally through Welsh SMEs for discrete periods only, using approved procurement routes. We want to support professional development and maintain intellectual property over the services developed, and the knowledge to deploy these same solutions to future service requirements.

5.5. Corporate Context

We understand continuous engagement with our customers is the best way to understand their requirements for new or changed services. We will look to review existing mechanisms (e.g. SDA) to determine the most optimum method for engaging in early and meaningful dialogue regarding service requirements, and to ensure a continuous feedback loop.

We will try to use COTS products where possible to create services that can be **configured** for business use but supported in a generic way that avoids bespoke systems which require inordinate support capability, cost and effort.

We will look for opportunities to create, develop and maintain services that bring to life the aspirations and policy objectives of Welsh Government as a whole. For instance, if we are developing a new service we will look to build in the most up to date accessibility standards, and test the service against the Social Model of disability. Another example may be to look for ways to recycle our expired hardware (once security considerations have been satisfied) by donating to the third sector, or recycling using the circular economy.

5.6 Bringing the Strategy to life

As we move from Vision > Strategy > Operational Plans we will need to remain cognizant of both the original intention of the Strategy and the constant pace of change around us. So whilst the overall vision should not change, the Plans that bring these to life may well do. For instance, who could have successfully predicted the global pandemic and its implications on all aspects of our working lives (and therefore the technology, processes, ways of working and tools we would need)?

We also need Roadmaps from Business Applications Owners to understand their roadmaps. Examples of this would be Records Management Policy, Financial Systems, HR systems etc. as ICT is not generally consulted in the development of these in the current federal mode of operation. These should be focussed on business requirements rather than product choices.

The Strategy will need to be interpreted and incorporated into individual, team and divisional plans to deliver actions that will contribute to overall implementation of the Strategy. Moreover, once published it should be linked to each individual's performance plan. An annual review of the Strategy is also suggested to monitor delivery and to reframe in the context of both organisational and external influences.

5.7 Timeline – proposed roadmap (sample draft only)

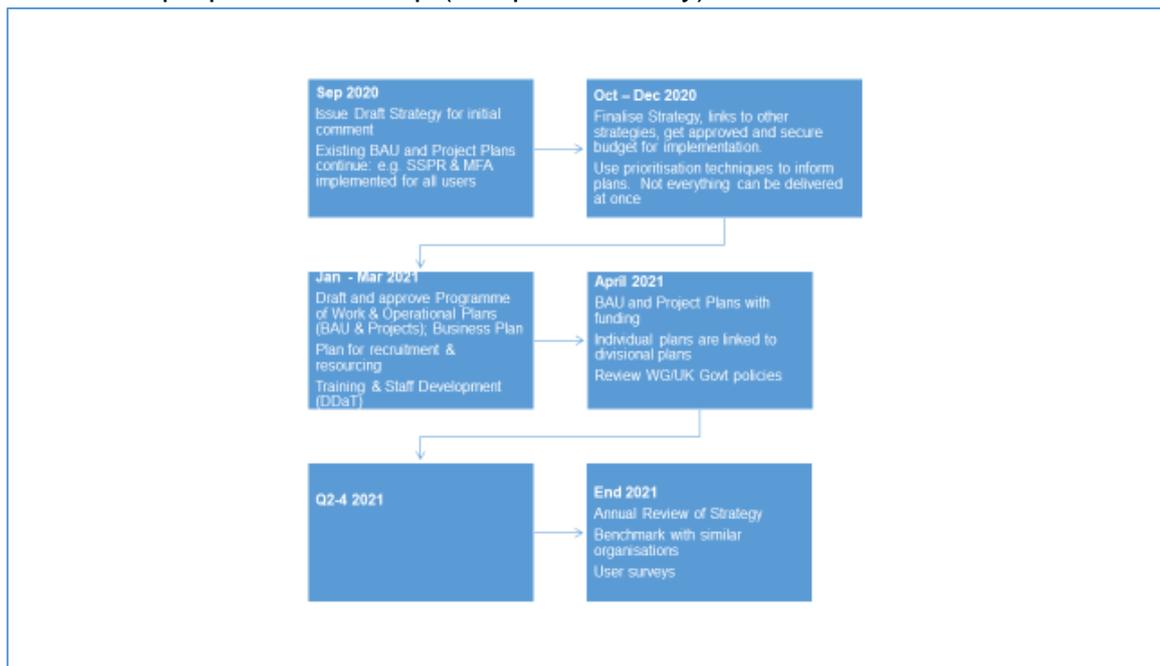


Fig 7. Initial draft forward roadmap

6.0 Architectural Principles

6.1 In order to remain 'Secure, Efficient and Suitable' WG will set the architectural standards through its professional ICT Architect capability. The Solution Design Authority SDA is the current mechanism for ensuring all new business requirements and proposals for their implementation confirm to WG standards.

However, it is known that not all new developments are always submitted for approval, a weakness that needs to be addressed and guaranteed in future Strategy implementation. Sometimes items presented are not what actually ends up as being available to users, or sometimes timescales are not correctly envisaged meaning the time and space for scrutiny by SDA is not what it should be.



Fig 8. Architectural Principles

7.0 External Market and Vendor Climate

- The Power of Microsoft
- New & disruptive technologies
- The cyber threat
- Challenges to implementation
- Success of the new strategy is predicated on being able to access all the necessary levers

8.0 How will we know if we have successfully delivered the Strategy?

We will need to periodically review implementation of the Strategy against its stated aims, so we will need to set KPIs at the outset with agreed periodic review.

Service component data from the Service Portfolio and Service Management reports will be the source for this data, as well as wider analysis of how this sits within the wider corporate sphere. Other sources will be Business Plan performance and risk management activity.

This will in turn help all members of ICT staff to understand how their contribution counts to the overall picture and will form the evidence base for governance activity (internal and with bodies such as WAO).

A climate of continuous improvement is the best way to inculcate this in the daily activities of all members of staff, alongside measurement to prove where the action(s) have been effective. The cyclical nature of this activity (see below) facilitates a swift 'restart' if there is a shift in focus at Organisational level.

8.1 Diagram: continuous improvement



Fig 9. Cyclical approach to measurement & metrics (continuous improvement)

8.2 Develop & Publish Strategy

The Strategy should be able to be interpreted by every member of staff who has an input into delivering it and the links with individual and team plans should be explicit. The Strategy will be socialised with all internal stakeholder groups and external stakeholders where appropriate.

8.3 Benchmark & Create Plans

Once understood, the high level targets will be incorporated into Plans by leaders and communicated throughout team and stakeholder groups. This is an important part of managing expectations, assists the prioritisation process and acts as an early warning for risk identification.

8.4 Develop Plans through Operational Activity

Plans will need to contain enough detail to be understood and acted upon by all relevant staff members. Regular monitoring will be important to flag and manage risks and issues and note achievements against milestones.

8.5 Annual Review (including critical friend / peer / Gateway?)

This will be done in a systematic way using existing processes, procedures and governance structures to assess success against targets. Use of the critical friend idea can help to build up a network of stakeholders / ambassadors. Some assessment of scale or magnitude can guide whether a formal Gateway Review is useful at this stage for relevant pieces of work.

8.6 Reconfirm ownership of Strategy

A useful time to review and reconfirm who is leading delivery. It is suggested Board / ExCo is provided with a light touch 'Annual Report' to highlight achievements and manage forward expectations, but also to horizon scan for new, especially external factors which may influence next year's delivery. This should also contain some market assessment or evidence of R&D work.

This is also the stage at which Organisational touchpoints should be reviewed.

The cycle then recommences.