



NUI Galway IT Strategy 2014 - 2020

Foreword

The creation and development of this document has presented the opportunity to reassess the role of IT across the University. This allows greater understanding of the challenges which IT service providers in the University faces in the day to day operations and an appreciation of the level of change and transformation the University has been through and will continue to engage in to allow it to achieve its overall Strategic goals.

It also allows us to view the University as a single organisation which depends on the effective use of resources such as IT to deliver its mission.

Within the process of development of this strategy we have used a prioritisation approach which ensures that we undertake IT change initiatives which are most beneficial to the University as a whole. These initiatives are those which provide the optimal balance of IT resources against the prioritised University strategic agenda and those which ensure the continued successful operation of all necessary elements of the current IT portfolio.

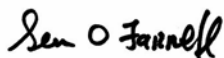
The development of this strategy was facilitated by ISS Head of Strategy John Lavelle supported by the ISS management team and customers.

The project was guided and supported by a strategic governance team consisting of:

- **Professor Gerard Lyons;** Dean College of Engineering and Informatics
- **Dr Kieran Loftus;** Executive Director of Operations
- **Mr Michael Kavanagh;** Academic Secretary

As with all strategies the success of this strategy will be in its execution which will require the adoption of a more robust governance process linked to the primary teaching and research goals of the University.

I look forward to working with the University community on the delivery of this strategy over the coming years.



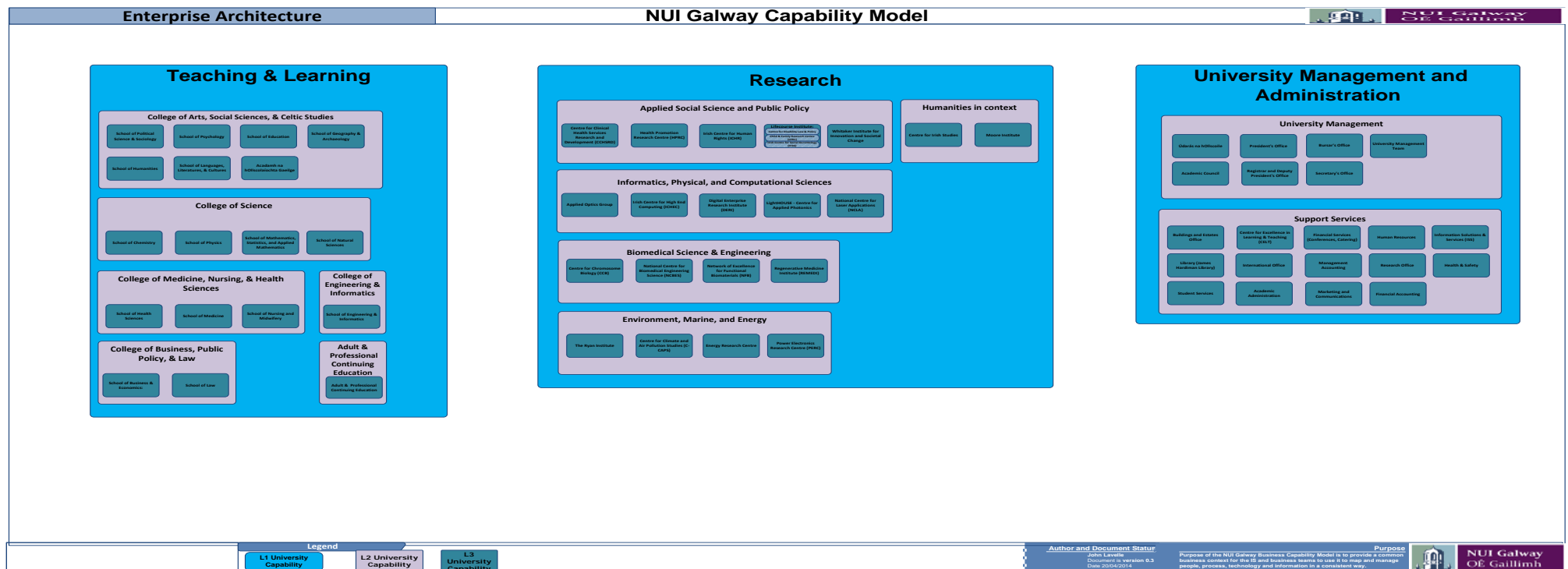
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Purpose of Document

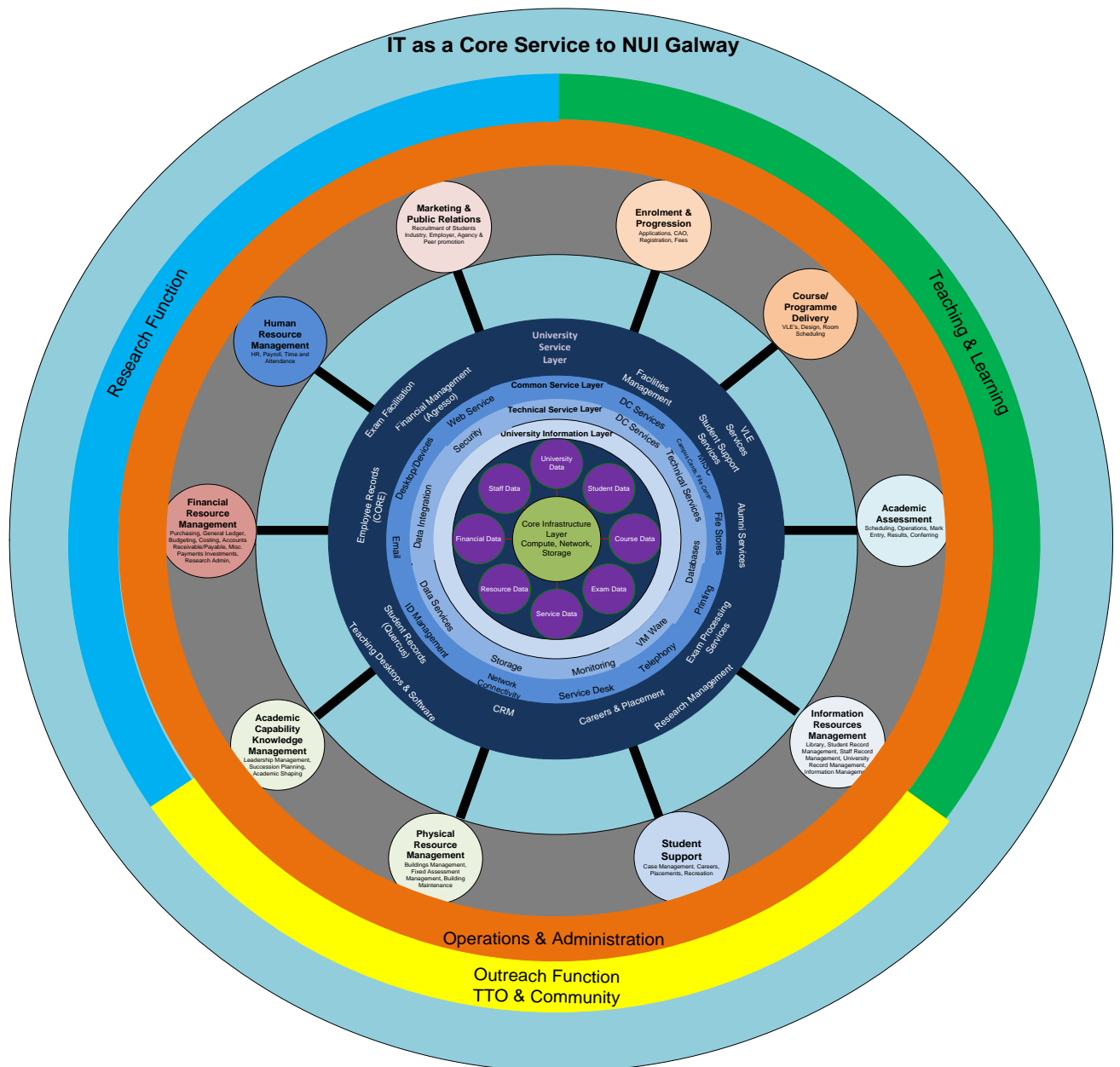
The purpose of this strategy is to provide a unifying vision and a comprehensive reference for all NUI Galway IT activity (Change and Operations). This is required to deliver the IT needed to support the delivery of the University's overall Strategic Objectives up to 2020.

The document sets the context for all IT development within NUI Galway during this period, lays down the vision for what success will look like in 2020 and describes the mission which lies ahead for IT and the context under which this shall be delivered. It specifies what the key strategic enablers and outcomes are and defines what the path to achieving these outcomes in terms of core values, priorities and sequence in the context of the whole University.

To understand the University against which this strategy has been developed the following diagram is used to represent NUI Galway structure and capability.



Within this document IT is viewed as one of the core services at NUI Galway, as it is one of the most fundamental and pervasive services within the University. It faces many challenges including how to continue Service Delivery in an efficient and effective manner whilst ensuring that the continual evolutionary steps of the IT landscape are worthwhile, planned effectively, run efficiently and deliver the real benefit value the University needs. To do this an IT-centric view of the University has been developed as below. When we start to view the University core capability areas through the core process and how IT serves them it is easier to draw a clear picture of the relative importance of IT.



The circle represents how IT is a core service to the University. It indicates the level of IT integration required to deliver core services to the University. It also demonstrates the impact of changes to services have across the various layers

Executive Summary

This section provides a high level comprehensive overview of the NUI Galway IT Strategy until 2020. In order to provide a clear view of the strategy and what will eventually determine its success the context under which it has been derived and established must be set.

The University's IT strategy is based on six key principles which dictate the overall approach to IT change and operations for the next 5 years.

1. The University will adopt a single University wide approach to IT change and operations.
2. IT Developments will be based on strong planning and prioritisation of all IT change and operations.
3. The delivery of the benefits of IT change will be owned and accounted for by the stakeholder.
4. The University will adopt a managed process for all IT change.
5. The University will adopt an Enterprise Architecture based approach to all IT change.
6. IT will require focused investment over the next three to five years.

External Context

The external backdrop to the delivery of the strategy has been a continuing global economic downturn, an acute national recession which has required deep public sector cuts directly impacting the University both from the overall funding side and reductions in staff numbers.

The Higher Education sector continues to influence and be influenced by the emergence of technologies with exponential growth in the repositories of information supporting the development of education. Key technologies including mobile, social and big data are likely to play a major role in shaping the activities of the sector in the coming years. The potential of technologies such as '*the internet of things*' will continue to challenge educators to change their approach to teaching, learning and research.

The increasing utilisation of MOOCs, the adoption of Common Learning Outcomes approach and other trending elements within the environment serve to underline the relative dynamic world of education on a global scale.

NUI Galway IT elements shall continue to expand into these areas as the developments and sector matures.

The approaches and methods by which IT Services are provisioned has changed quite fundamentally over the last 5 years: it is now more beneficial in certain cases to exploit commoditised services such as Microsoft Office 365 and some storage offerings ,allowing in-house IT service providers to focus on value-added service development/delivery. Other services will become more successfully provisioned through both internal and external collaborations and partnerships and at a sectoral level this is now gaining traction with a number of on-going initiatives in which NUI Galway is both leading and participating.

Internal Context

In 2009 NUI Galway embarked on an ambitious overall strategy which centred on targeted growth in the areas of Teaching, Learning and Research. In the main these objectives have been successfully achieved and in so doing there have been areas which have required significant transformation. In reality such transformations shall continue to be ongoing as the main areas adopt and transform to achieve optimal structure and processes in a continually changing environment. The overall strategic goals of the University shall be addressed under the University Strategy 2015 – 2020.

From an IT perspective the kernel of these fundamental transformations has a common theme which is the need for optimisations in the administration steps to certain processes, clear definition and automation of others and removal/replacement of certain redundant functionality. Such steps will allow staff and students to concentrate more on teaching and learning outcomes and the actual research part of research work. The provision of an enterprise class virtual learning environment has had a significant impact on the teaching and learning process at the University over the period of the last strategic plan.

It has been a base fact in all IT sectors for the last two decades that data analysis and storage demands grow rapidly and shall continue to do so for some time to come. This aspect of IT capability within the University shall require a significant transformation and development in the coming period as demand for efficiencies from core applications increases and the lack of adequate data to support decision making impacts on the overall development of the University. This shall also drive a greater appreciation of the need for a central data repository and the establishment of the analytical power this enables which in turn allows enterprise level efficiencies to be realised.

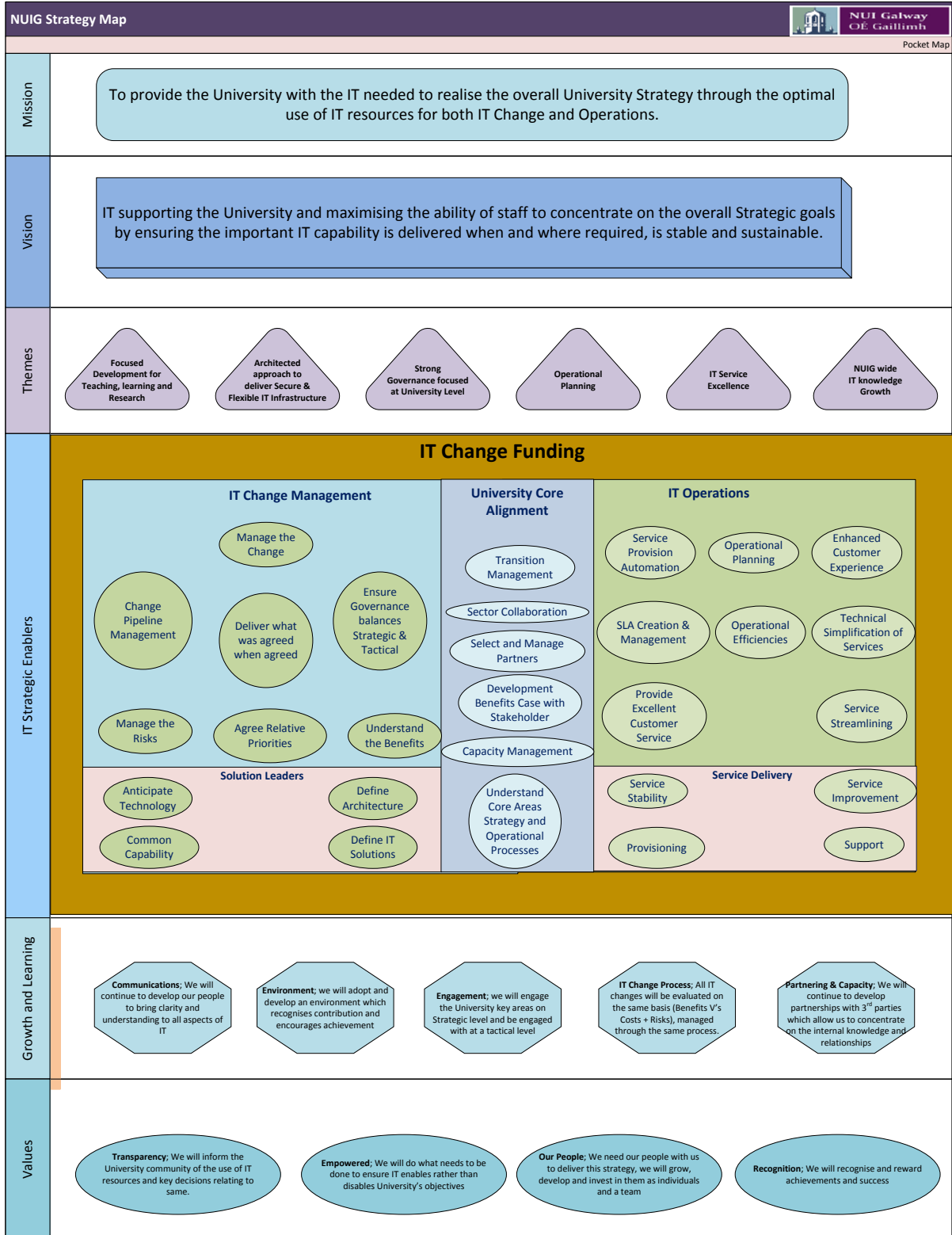
The users of NUI Galway IT capability are in general terms following the trends of the global IT user population and that trend is becoming far more demanding in terms of requiring access to everything, everywhere at all times. This places an implicit emphasis and demand on the Infrastructure itself as well as the security and integrity of the Infrastructure. The nature of the overall IT security approach within NUI Galway will adopt over the coming period to embrace the “*Bring Any Device*” approach and the plethora of platforms required to support this whilst ensuring the University network is protected through sufficient layering and abstraction to protect our core data, applications and Infrastructure.

Within the IT industry as a whole the use of “Accepted Best Practice “ in the context of Business As Usual (BAU) and IT Changes is the accepted norm due to the level of stability, control and cost efficiencies it provides to an organisation. In recognition of this NUI Galway ISS has already instigated utilisation of ITIL and is in the process of optimising service provision and continual improvement using this methodology. PRINCE 2 project methodology is the project change methodology approach and will be the standard under which all NUI Galway IT changes shall be managed; refinements within this method will also continue in the lifetime of this strategy. IT as a whole across NUI Galway will be put through a new and more robust change control process that leverages these standard “Accepted Best Practices” as they have been adapted for NUI Galway (Prince 2 V model), with the emphasis on a benefits realisation and ownership to ensure the best *value* return for the University as a whole. The new NUI Galway IT change control process shall be “governed” by a reformed ICT Governance committee and shall ensure an emphasis on change control standards, Total Cost of Ownership understanding and stakeholder responsibility for benefits realisation.

Strategic Map

The following strategic map demonstrates the strategic elements in context.

We will grow and develop based on the values identified. We will build on this base to implement the strategic enablers which find traction through our thematic areas which in turn are designed to materialise our vision for IT and give rise to the ultimate objective for this strategy which is to deliver on accomplishing the mission for IT with NUI Galway.



NUI Galway IT Mission

To provide the University with the IT needed to realise the overall University Strategy through the optimal use of IT resources for both IT Change and Operations.

The mission is simple, we need to ensure IT delivers for the University, which it needs to do in both IT Change and Operations and do it in the most efficient manner possible.

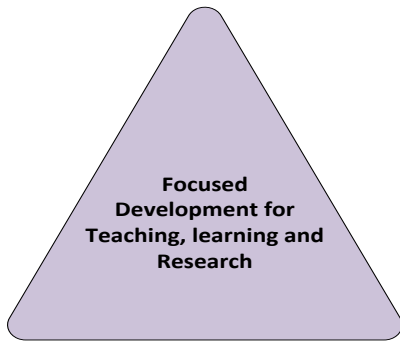
To realise this mission it is important to understand the context, i.e. a relative contraction of the available resources and a set of “customers” who have ever increasing expectations from IT. Mission success demands that we maximise the efficiencies within Operational areas and concentrate our available IT change capability against the most important programmes of work which deliver the highest relative benefit value. Certain Strategic enablers will be utilised to transform our approach to IT at the University level and the way we think about it day by day. This approach will, in and of itself, require change within the ISS Dept. and the IT services providers distributed around the University. All require alignment with this Mission statement and the implications it has.

NUI Galway IT Vision

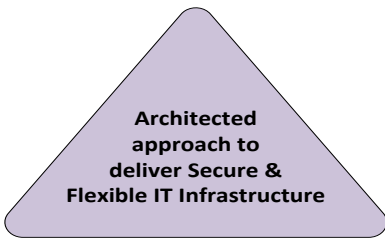
IT supporting the University and maximising the ability of staff to concentrate on the overall Strategic goals by ensuring the important IT capability is delivered when and where required, is stable and sustainable.

IT is a service; as such the Vision is to provide it as a complete set of changes and services which allow the University to concentrate on Teaching, Learning and Research; the purpose of the University. We will partner with these core functions to deliver the technology needed at the right time and in the right manner; securely, flexibly and sustainably.

Strategic Themes



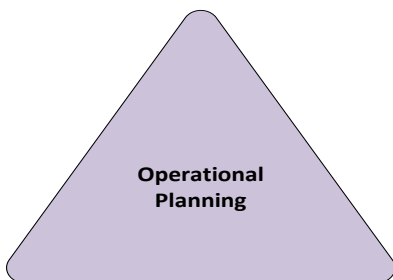
Teaching and Learning
Academic Simplification Programme
Teaching & Learning Optimisation
Research
Research Support Enhancement
Research Application Enhancements
Research Collaboration Tools



Infrastructure Renewal Programme
Core System Platform Resilience
Infrastructure Provisioning Programme
Infrastructure Expansion Provisioning
Security Optimisation Programme



NUIG IT Governance Process
NUIG IT Change Process
NUIG IT Document Template Set



Operational Projects
Procure to Pay
Core Examination
Agresso Upgrade
Service/Product Evaluation
Telephony Optimisation



Partner Frameworks
Continual Service Improvement



Change Management Training/Rollout
Information Management Enablement
Information Management Provisioning

NUI Galway IT Strategic Enablers

The Strategic enablers are a series of specific actions, processes or activities which shall be progressed as part of this strategy to ensure IT is appropriate at the University level for the University. They are designed in order to ensure that at all points in the IT lifecycle we ask ourselves what is best for the University as a whole. They are best addressed as a series of questions against which we should assess IT changes, be they under the auspices of programmes, projects or Operations.

University Core Alignment

Transition Management	The transition of IT from a test environment to a production environment, and vice versa, shall be closely managed and controlled to ensure minimal disruption to University work and maximum delivery benefit.
Sector Collaboration	We will continue to engage and instigate sectoral level collaborations against common areas where best benefits are found NUI Galway
Select and Manage Partners	We will carefully select partners who are best suited to the specific activities. We will take a more proactive approach to partner management with Success/Outcome orientated partnerships where the risk and reward are shared.
Development Benefits case with Stakeholder	In order to ensure benefits are understood for complex programmes and projects of work it is important to jointly develop the benefits, IT cannot deliver benefits in and of itself, the way the organisation uses IT is where the benefits are.
Capacity Management	As with any planning activity there are limits to resources, capacity management shall allow us to measure the resource commitments IT requires as a whole within the University and against individual IT changes. This shall allow appropriate prioritisation and planning.
Understand Core Areas Strategy and operational Processes	It is essential that the IT is aligned across the University both in terms of Change and Operations. We exist to provide IT as a service and it is therefore essential we understand the strategy for the core areas.



IT Change Management

Manage the Change	For IT Change to be successful, all the other elements associated with the project must be well managed also. This includes ensuring all contributors to the change understanding the objectives, the benefits, the costs and the timescales. The delivery of this change to the University is vital and must be well managed in order to ensure the maximum return on investment against scarce resources.
Change Pipeline Management	This is the process under which all IT activity is planned, prioritised, scheduled and assessed. It shall determine the relative order of priority for all change and schedule, postpone or cancel accordingly.
Deliver what was agreed when agreed	when a commitment to IT change is made for a given scope, in a given budget on a specific timescale it is in essence an agreement between the IT providers and the University area stakeholder. It is important that both sides understand their commitment to deliver what is promised in this agreement and underlines why sign-off is required
Ensure Governance balances Strategic & Tactical	It is very important the University understand there is a balance required between Strategic work and Tactical, the pivot point must be determined by the IT Governance committee which has the oversight of the entire IT change portfolio.
Manage the Risks	The true risks associated with IT Change must be exposed and understood before they can be mitigated. IT risks are not confined to the technology as often the greatest risk develop into issues from the business transformation and acceptance of process change by the affected parties.
Agree Relative Priorities	Priorities have to be agreed between the IT providers and the University as a whole. This is important as impacts at the organisational level as well as the IT resource commitment may be the main issues for timing projects
Understand the Benefits	A key element to any project is that the benefits are clearly understood and communicated to all people involved in the project. Once understood and believed in by a project team it can be one of the key contributors to success. It is important that these are clear and measurable.

Solution Leaders

Within the IT Change management process it is important that all future solutions are appropriately developed and designed in order to ensure the maximum return on Investment. It is the responsibility of all solution leaders across all IT service providers to demonstrate the following to IT governance;

Anticipate Technology	It is the job of the solution provider areas to ensure that the technology choices made are appropriate and have an acceptable lifespan, this approach is to ensure a reduction in early obsolescence and highlight the difference between "Write Down" and "Write Off".
Define Architecture	All IT changes shall conform to the overall Enterprise Architecture, the 4 shared Roadmaps, the architecture principles and the NUIG IT Change process in order to ensure Strategic delivery is not undermined.
Common Capability	; In order to ensure an enterprise approach to IT it is necessary that common capability is understood and utilised where viable, bespoke one off solutions are not sustainable in current environment and restrict the essential requirements of security and flexibility.
Define IT Solutions	All changes shall have a solution architecture signed off and approved by the ICT Governance which specifies what the Functional and Technical solutions are and how they address the change requirements.

Operations

Service Provision Automation

It is operations intention to automate specific provision tasks, Service enablement, in order to ensure the same standard of delivery and reduce the resource demands

Operational Planning

We will continue to refine and develop the methods used for operational planning so that we can optimise resource uses within IT as a whole.

Enhanced Customer Experience

In order to achieve operational excellence we will recognise that the focus needs to be on the Customer and the delivery of the Service to the Customer, our customers are Students, Academics and Staff.

SLA Creation & Management

We will commit to service levels for all services and manage to these commitments. We will also continue creation and revision of SLA's with 3rd parties where appropriate.

Operational Efficiencies

We will continue to refine and develop the methods used for operational planning so that we can optimise resource uses within IT as a whole.

Technical Simplification of Services

There are a number of current services which are overly complex for evolutionary reasons, in line with the planned Infrastructure renewal and change initiatives here we shall seek to remove all unnecessary complexity and improve stability.

Provide excellent Customer Service

customer service needs to be foremost in our thoughts as ultimately we are here to provide a service. We need to better understand the customers and the nature of these customers in order to improve in this area.

Service Streamlining

We will work on the services which are available and ensure that they become slicker to operate and more automated where appropriate.

Service Delivery

Service Stability

It is key to our entire University that we can continue to provide stable service in order to ensure the University continues to build on IT services to achieve its goals

Service Improvement

We will follow the continual improvement process recommended under ITIL and will ensure such changes are impacted and understood on the change side of IT

Provisioning

We will provide, manage and maintain all aspects of IT devices and contribute to these activities throughout the University as required.

Support

We will provide the support necessary to ensure they are used, available and understood by our customers

Growth and Learning

Communications; We will continue to develop our people to bring clarity and understanding to all aspects of IT

Effective Communication is vital to success of any project, with IT it is even more important, an IT project that delivers every outcome under it's requirements will still be regarded as a failure if it causes excessive organisational disruption or the business fail to accept and adapt the working process/practices to take full advantage, the benefits are not reaped. The proposed IT change plan goes some way to ensuring a level of communication at a University level in terms of Quality gate reporting, stakeholder ownership and benefits realisation. It remains just as important that the individual IT changes are owned and understood by the relevant area of the University. The communication strategy for each IT change must be appropriate to the likely impact of the change, it must be simple enough to understand without undue use of techno babble, we will communicate early and often and we will hold the hands of the affected customers to ensure a smooth delivery and minimal disruption.

Environment; we will adopt and develop an environment which recognises contribution and encourages achievement

The IT environment is not just about the infrastructure which is available in a Data Centre, an office or a PC Suite. It is about the working environment for all people in IT. It is important as it allows people, practices and approaches to be changed over time and will improve the general environment. Parallel to the new IT Change process we will start to develop and roll out a positive feedback loop appropriate to IT changes, templates used within it, organisational elements and general working practices such that we improve and continue to improve the general working environment around IT change. Our target is fully engaged employees who understand and are recognised for their contribution.

Engagement; we will engage the University key areas on Strategic level and be engaged with at a tactical level

A fully functional Business IT engagement model is vital to the effective delivery of IT change both at an organisational level and more refined department level. This will require a more robust governance process with greater clarity and focus on priorities. The proposed IT change process links to this well and ensures the necessary oversight to more localised initiatives is achieved effectively whilst also ensuring delivery of the IT Strategy. In line with this it is recognised as a vital element of the strategy that the IT Process is adapted in it's entirety for all IT changes throughout the University such that the IT pipeline and the relative prioritisation of the proposed IT changes are discussed, agreed and planned in a transparent manner. The importance of this element of the strategy for the University as a whole cannot be overstated as the overall IT Governance of an organisation often determines the level of success associated with the Strategic IT Initiatives.

IT Change Process; All IT changes will be evaluated on the same basis (Benefits V's Costs + Risks), managed through the same process.

This document contains a draft high level IT Change process, please note the emphasis is on "Change" as opposed to programme or project, which is proposed for adoption University wide from the point of acceptance of this strategy. The process is designed to cater for the current context of IT within NUI Galway and also to ensure effective local and University wide Governance. What the Process ensures are all the basic factors which contribute to successful IT projects are covered, Business Case, planning, Analysis Design etc., and also that they are addressed in a manner which allows relative comparisons to be made in terms of Business Case, Risks, Tactical/Strategic etc. It does this through a relatively standard IT industry approach of Quality gate check, built in use of Templates for key steps, "timeboxing", and acceptance that all projects are not the same in detail but can follow a "good practice" path. Utilisation of such a process helps to ensure that multiple streams of change can be managed and governed in a fair manner.

Partnering & Capacity; We will continue to develop partnerships with 3rd parties which allow us to concentrate on the internal knowledge and relationships

Throughout the development of this strategy, as well as the more detailed planning of the strategic initiatives which shall be delivered, it has become apparent that there will be periods which shall require the utilisation of external agencies either due to the sheer bulk of work required or the relative expertise required for a specific period. In order to ensure successful delivery within the relatively aggressive timescales a "partnership" with 3rd parties shall be taken where possible. The utilisation of the IT change process in conjunction with a partnering approach shall allow strategic decisions to be made consciously by NUIG around where we wish to build and maintain IPR, where we perceive short term needs only and do not want to invest internal capacity, ensure such partnerships are Outcome based with specific success criteria stipulating the payments model. It shall also allow us to utilise multiple vendor relationships within a single programme or across multiple projects whilst still retaining overall control. Under the current procurement process specific Framework agreement shall be set-up to accommodate this approach.

Values

Transparency; We will inform the University community of use of all IT resources and key decisions relating to same

IT Change requires people to make decisions as individuals or as groups about various things over the life of the change, Start, stop, change direction. When an organisation undertakes a significant level of change it is often difficult to make many such decision in a timely fashion and ensure they are the right decisions. A key enabler which helps in such scenarios is that information on which the decision is based is clear. By utilising a common Governance process, a common change process and ensuring complete transparency across them the level of trust around the deliverability of IT Change can be increased. Delivering this value requires a level of maturity in the organisation as it often involves delivering a difficult message, "We cannot meet your deadline because..." is often a necessary message which allows re-planning and mitigation, if it is difficult to receive such a message impartially and move on especially for an invested stakeholder. By telling the often difficult truth and being completely transparent with all IT Change the environment is created which allows understanding and trust throughout the organisation to continue.

Empowered; We will do what needs to be done to ensure IT enables rather than disables University's objectives

The point of the strategy is to ensure the IT addresses the University level requirements both implicit and explicit in the overall University strategy. In order to ensure that this is possible it is important that the linkage between both strategies are communicated and understood widely. At this point we are invested in the strategy for the betterment of the University as a whole and must trust in governance and controls in place to monitor the progress on objectives. Whilst these controls are functional they operate on a macro level and as with any strategy it will only be delivered when the people who are delivering it believe in it, understand it and see the benefits to the university and themselves in it. On the assumption this shall be achieved the individuals and groups involved in IT are empowered and trusted to deliver against it and make the most appropriate local level decisions which keep their local areas moving forward whilst also delivering on the agreed strategy.

Our People; We need our people with us to deliver this strategy, we will grow, develop and invest in them as individuals and a team

The implementation of this strategy shall will require changes for staff engaged in IT related activities throughout the University. It will require a change in the way IT and the business engage, the way we develop change ideas, the way we manage change, the way we view IT Change, the way we engage with 3rd parties. This shall require investment in our people, their skills and their career choices. Elements of this investment are already underway in some areas and some will have to be brought online. The change process shall have to be understood either through on the job experience or specialised training course. The templates which underlie it shall also need similar training.

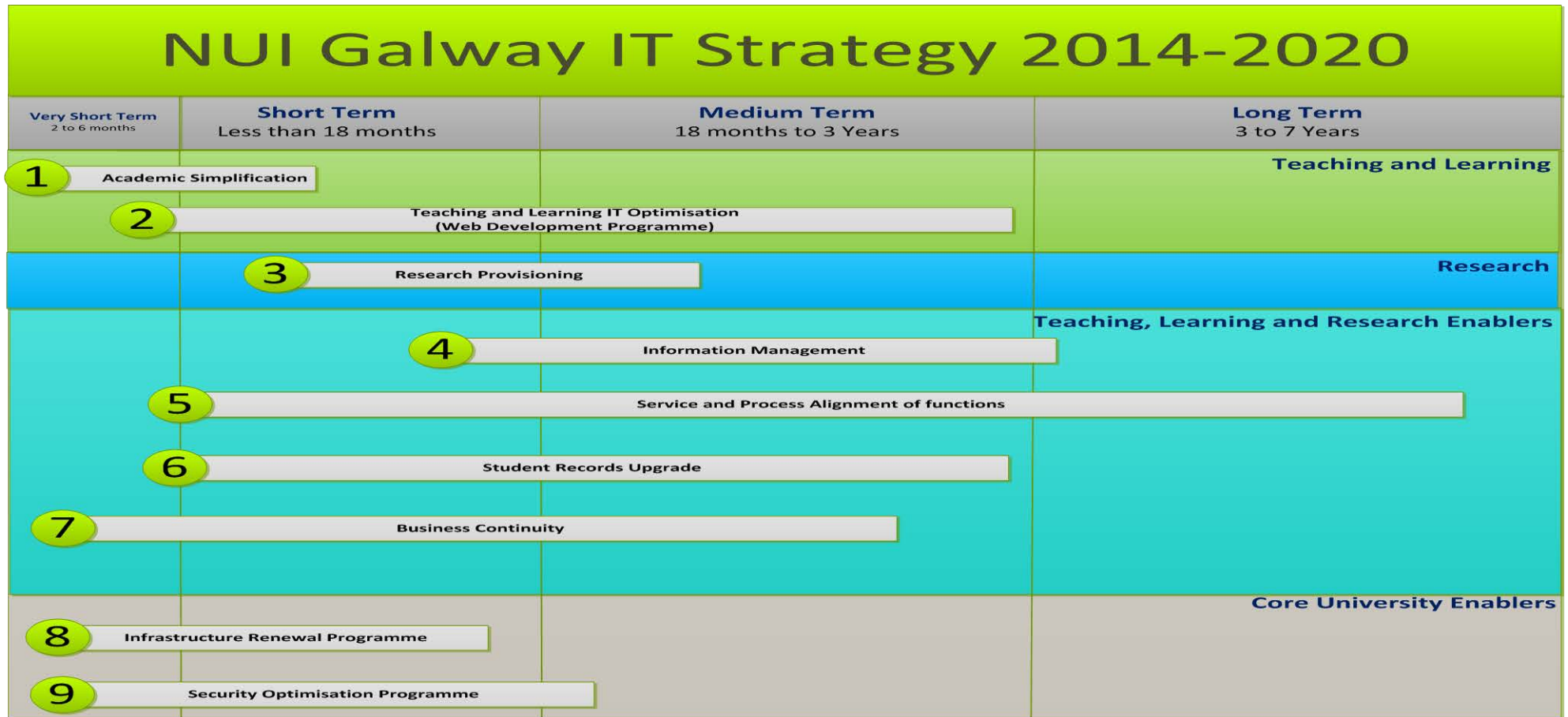
Recognition; We will recognise and reward achievements and success

Achievement at the Governance level on key programmes, at the department level on key projects and within the department on smaller local change or fix on fail shall be rewarded both to the team and the individual. We must continue to develop reward/recognition system through the University's PMDS process. Recognition can take many forms and may vary through a simple thank you, an email to the line manager or formal feedback to the director level. What is most important is that such successes are acknowledged in a manner that staff can see. The benefits are obvious.

NUI Galway IT Strategic Plan 2014 - 2020

The previous sections of this document define the context and direction for the University's IT over the coming 5-year period. This section describes the swim lanes, programmes and projects which will be used to realise this strategy in terms of time, cost, scope and sequence priority.

It is the intention to deliver all elements of the strategy, including the Business Transformations which shall accompany them, under the revised NUI Galway IT Change Management process which shall be the de-facto approach for all IT change within the University to ensure the relevant impacts are understood, governed and successful delivery becomes a standard outcome.

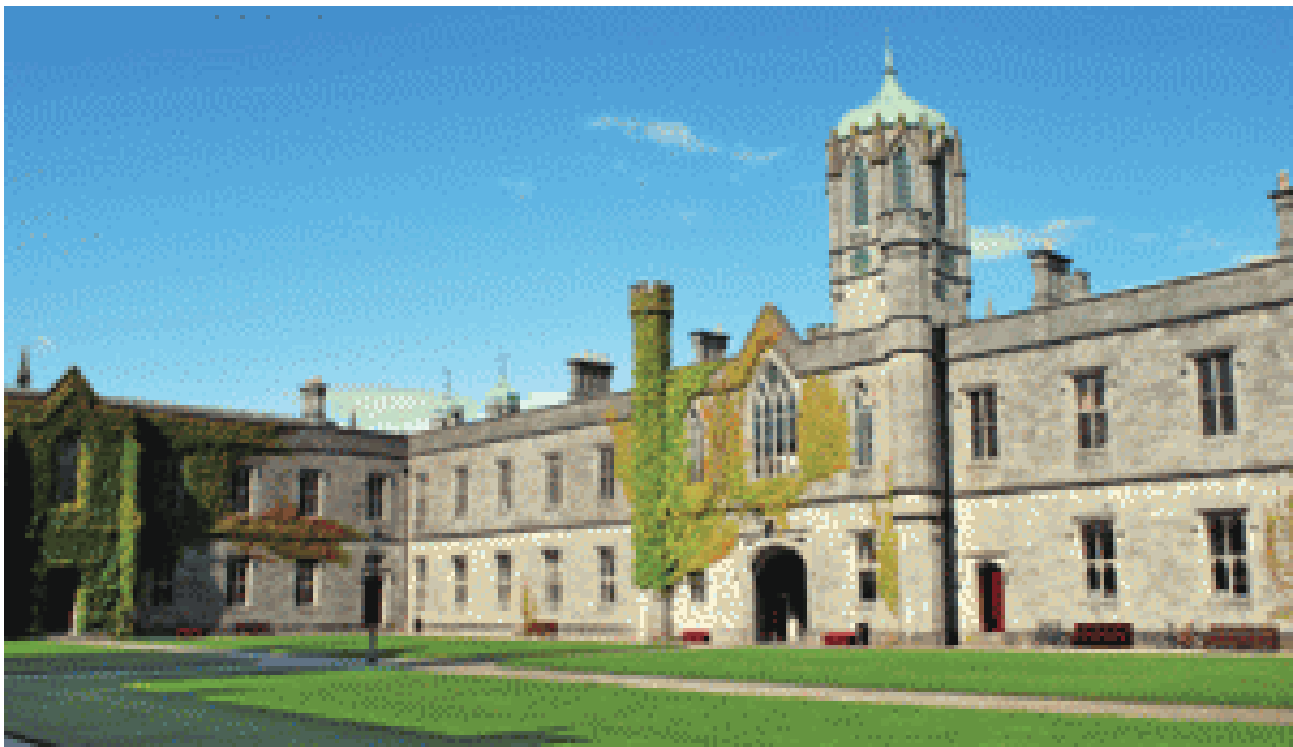


Strategic Prioritisation Classifications

The IT change process should be guided by the following priority classifications or an equivalent set of classifications which emerge from the overall University strategy;

1 Enhance Student Experience
1. Enable Research /Removing Barriers
2. Student Retention
3. Student Growth(Numbers)
4. Headcount saving
5. Cost Saving
6. Operational Risk
7. Legal or sector Compliance
8. Advancement of Strategy

As with all organisations the values aligned to these areas and the areas themselves shall be subject to change. This shall be accounted for within the NUI Galway IT Strategy by means of reassessment of the Strategic Plan. The standard approach to this shall be to schedule an annual review and refreshment of the document. This shall serve to ensure the IT accounts and keeps pace with the dynamic environment of the University



NUI Galway IT Design Principles

In order to ensure successful delivery of the strategic aims outlined here - as well as being good practice for any IT changes - this strategy presents the following key principles which shall be applied to all NUI Galway IT changes.

Information/Data/Integration Principles

1. Information/data is treated as an asset
2. The adopted IT policies and procedures shall be followed in all instances
3. The master/slave principles shall be adopted for all common data entities
4. Users shall never be asked to key the same data more than once
5. All data will be integrated to the data warehouse through “common” interfaces
6. Common integration approach will be adopted on all IT change
7. All integration points documented and subject to change control.

Product/Application Principles

1. Re-use before buy
2. Buy before build
3. Products must “fit” the University requirements without substantial change (no more than 10% cost of product change on initial instantiation, no greater than 20% predicted through life of product)
4. The common data model (UDM) must be used at all integration points
5. Product suppliers must be regularly assessed as “fit”
6. Products must have a roadmap, be robust, simple, flexible re-usable and converge with the Enterprise Architecture
7. Products must be appropriately modularised/componentised such that functional cross-over can be avoided
8. Products must supply a minimum set of standard integration points, API’s
9. Products must comply with Security and the Universities data related policies.

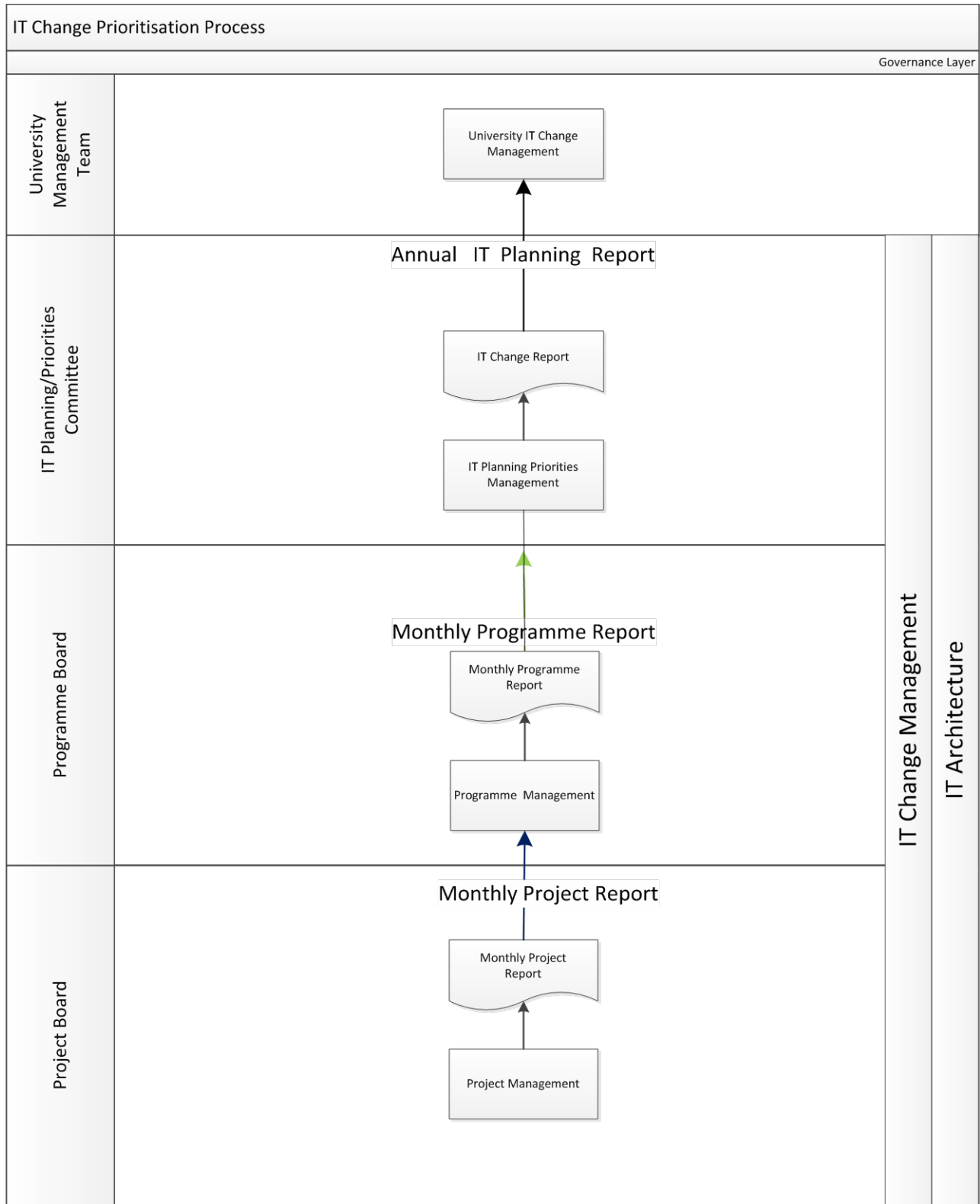
Technology Principles

1. All technology changes must serve a business need and therefore deliver benefits
2. Technology changes must consider lifetime costs of additional complexity - technical simplification drives down costs
3. Technology must be interoperable and stable, plug and play, rather than buy and build
4. Technology should not be “bleeding edge” for core business applications.

General Principles

1. All NUI Galway IT projects have benefits and governance in place prior to commencement. Benefits must be realised
2. Business continuity, standards and policies shall be accounted for within the change
3. All IT changes shall be compliant with the NUI Galway IT Change process.

IT Planning/Priorities Process



The above diagram outlines the Planning and Priorities process which shall be followed for all NUI Galway IT changes. The process, committee's and associated boards which are involved are detailed in the supporting documents: