ENTERPRISE IT ARCHITECTURE STRATEGY

PLYMOUTH UNIVERSITY

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ENTERPRISE ARCHITECTURE WITH PLYMOUTH UNIVERSITY

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INTRODUCTION

Plymouth University's 2020 Strategy articulates our vision for competing and thriving in a higher education market that is characterised by significant change and uncertainty; this presents both opportunities and challenges for the University's continued viability.

To achieve the University's ambitions we need to alter current practices and focus our investment of Information Technology (IT) resources where they matter most: on the delivery of business value and building the right structure for our enterprise that encompasses the University, its customers, partners, supplier relationships and the wider community.

Information Technology on its own delivers *no* value – rather, value comes from what we do with IT. We need to adapt our thinking and start with an understanding of what actually constitutes value to the University and *then* target our investments to build the structure that will enable us to deliver that value now and into the future.

When we have finished there will be *no* IT specific investment, only business investment enabled by IT innovation.

Our strategy is to work divergently from IT as it currently exists and ultimately remove the distinction between 'the business' and 'IT' by building capability in enterprise architecture, investment management, governance and IT service management.

Context and Background

Plymouth University is the UK's tenth largest university in terms of student numbers (approximately 31,000) with a global presence. Its reputation for teaching and learning excellence is in part driven through world class research, (for example 80% of Plymouth University's research was judged as being of international repute by HEFCE in 2008), and innovation on an international scale.

Drivers for Change

Plymouth University's vision is to remain "*the* Enterprise University" and to be the university of choice for students, staff and partners. There are a number of challenges to address:

- The commercialisation of the University, driven by changes in the funding model;
- Responding to the technological needs of students in the rapidly evolving technical landscape;
- Collaborating and exploiting information effectively balanced with protecting research and intellectual property;
- Impact of globalisation of education and successfully growing the academic footprint; and
- The utilisation of IT technology, information and process to aid in the transformation of teaching, learning and research at Plymouth University.

What is Enterprise Architecture

> **_Enterprise Architecture (EA)_**
>
> Embeds a way of thinking and working, in conjunction with an associated toolkit of techniques, focused on interweaving business and IT together, improving structural performance and delivering on commitments to stakeholders.
>
> Successful EA influences both investments in change _and_ decisions relating to how best to gain advantage from existing architecture.

Many people when describing the target position of Enterprise Architecture liken it to a house being designed before building begins, rather than organic growth of a structure, and site the famous Winchester House in San Jose, California (http://www.winchestermysteryhouse.com) as a good example of how not to do things. Perhaps a better analogy would be to compare Enterprise Architecture with the role of town planners. Not only must IT initiatives be aligned with the business and deliver on their requirements, but the design must allow for future changes to occur in a logical and cost-effective manner, just like when a new housing development is planned, all of the services (roads, power, water etc.) must reach the right places and allow for augmentation if and when another development happens in the vicinity or even in a completely new location but must share some of those services.

THE STRATEGY

Vision

> **"Our investments efficiently deliver our information and technology goals for value *and* align initiatives with the ambitions of the wider University."**

Value to the University comes from targeting our investments wisely to both realise value directly and to get the University into the right shape and structure for our immediate future and for our longer-term sustainability and viability.

This means identifying and investing in the right ideas to establish the *architecture of our enterprise*. In other words, the structural IT elements we need now and will need in the future and the inter-connections between them. This will include the right capabilities in terms of: people, organisational makeup, activities and partnerships underpinned by technology-enabled innovation.

At the enterprise architecture level we will consider the University, its students and staff and also the wider ecosystem of relationships and partnerships, which serve our goals best when considering IT requirements.

There is no distinction between business and IT investment. *All* investment, viewed across the University as a whole, will be appraised and its success measured based on its delivery of value: directly or through structural innovation of our enterprise architecture.

To deliver both value and structure two types of investment are required: those in *stability*, maintaining the performance of things we already have and will still need; and those in *change.* In order to deliver our goals for value in a transparent way, managed over the investment lifecycle, we must foster a shared understanding of the University's key measures of performance and what value means to the University now and in the future in terms of:

- Brand reputation
- Compliance with legal and regulatory requirements and for competitive differentiation.
- Sustainability: the long term viability of the University, fostering enterprising and aspirational local communities and considering the wider context
- Customer experience and satisfaction
- Student satisfaction loop
- Teaching innovation
- Employee satisfaction and empowerment
- Financial: revenue protection and growth, cost control and reduction, margin
- Productivity and efficiency: saving time and resources
- Risk mitigation
- Designing the right architecture structure and inter-relationships of component elements – to ensure continued viability in a rapidly evolving market-space

Enterprise Architecture follows and aligns with the strategies of the University as set out by the Vice-Chancellor and the executive team. Enterprise Architecture exists to inform, guide and steer based

on a sound understanding of potential value, associated cost and certainty of outcome. It creates the frames of reference and the environment, in which investment decisions relating to value creation and architecture can be made.

The Way Ahead

In order to deliver the benefits of utilising Enterprise Architecture as a strategic differentiator for Plymouth University we must now work to realise the following ambition

Develop, foster and embed an enterprise architecture culture in order to achieve IT maturity, stability and sustainability by:

- Developing a solid IT and enterprise architecture governance framework
- Create sound Enterprise architecture policies and procedures to support the governance framework
- Embed agreed architectural principles into all IT development activities going forward.
- Establish and recognise where we are today by providing baseline architectures for technology, application, data/information and business services and associated entities.
- Provide sound technical standards and policy to aid with future decision-making activities and guide future developments.
- Create an architectural repository to hold all architectural information
- Publish all material regarding our architecture in a way which is accessible and pertinent to interested parties
- Utilise suitable architectural tools to enable a responsive and agile architecture function and aid with analysis and decision-making processes throughout the University.
- Implement suitable, robust and efficient architectural change control mechanisms.

By embarking on Enterprise Architecture in this way we will be able to demonstrate that:

- We understand the enterprise environment and the contribution Enterprise Architecture can make.
- We will understand what IT looks like now and what the future will look like if the current plans remain unchanged.
- We can establish a service lifecycle.

Which in turn means that we can:

- Build relationships, shared understanding and an enterprise wide architecture capability network.
- Help understand the numbers. The University's key measures of performance and what *value* actually means.
- Govern investments as a portfolio. Start with the view from IT, identify and categorise all existing and planned investment based on contribution to value and / or architecture, cost and certainty (probability) and focus resources where IT can be exploited to make the highest contribution.

- Balance the short-term and the long-term with an emphasis on *building reusable capability* rather than simply fulfilling immediate need.
- Ensure the effective coordination of activities: identify the need, develop the right approach and support and develop over time.
- Balance variety and innovation with standardisation.
- Develop, refine and publish and evolving roadmap for IT, Information Management and Security.

An Enterprise Architecture capability cannot be gained overnight, clearly getting to a place where we fully understand where we are today will take some considerable effort, not just from the architecture practice, but from colleagues across Technology and Information Services and the University as a whole. It is important to understand that governance plays a huge part in providing the foundations for this initiative and is discussed in the following section.

Governance
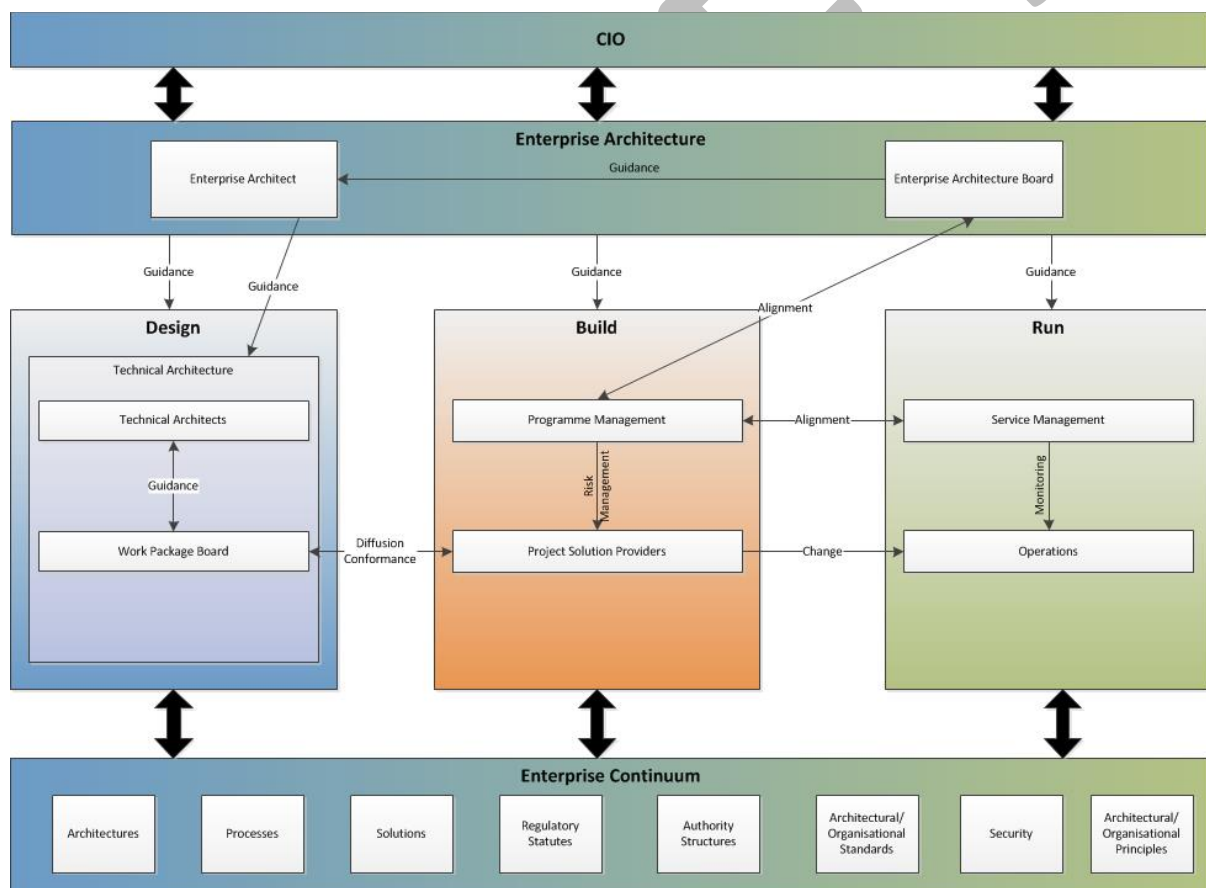
At the heart of a successful governance framework is sound leadership. Goals set by the University will be realised through IT using the framework above. The CIO and their management teams set the direction for future initiatives based the goals and ambitions of the wider University. Information provided by Enterprise Architecture can help navigate the most appropriate route for implementation based on current capabilities and standards always with a watchful eye to the future. Similarly, Enterprise Architecture, will be able to offer advice as the future trends in IT and

Information Management which the CIO may use to help steer the direction of the Universities future ambitions.

Repository

An architecture repository holds information concerning the enterprise architecture and associated components or artefacts. An enterprise repository will also contain links to other repositories, both internal and external to the organisation, a representation of the anticipated architectural repository for Plymouth University is illustrated in the following image:
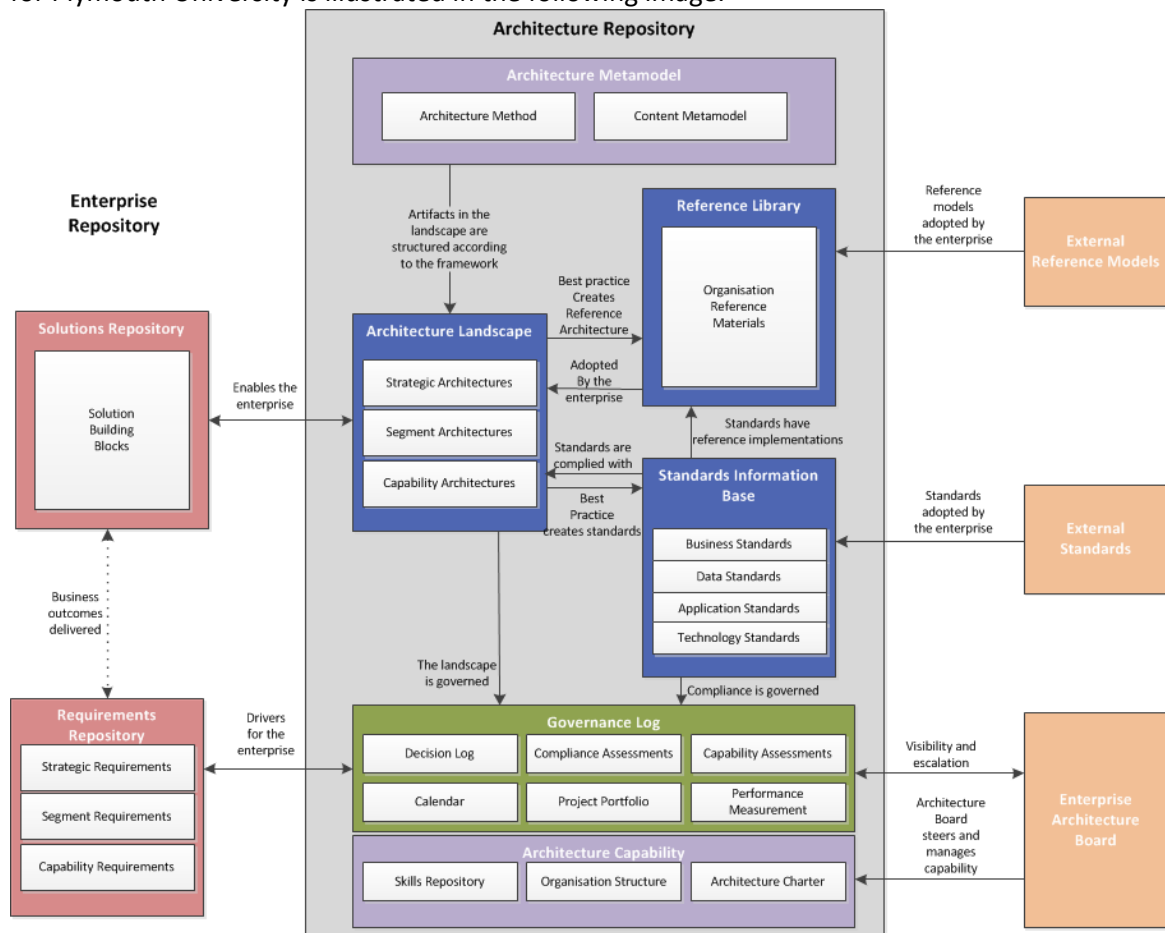
Typically there are six high level classes of information within a repository[1] and they are related as shown above:

- The **Architecture Meta-model** describes the organizationally tailored application of an architecture framework, including a method for architecture development and a meta-model for architecture content.
- The **Architecture Capability** defines the parameters, structures, and processes that support governance of the Architecture Repository.
- The **Architecture Landscape** presents an architectural representation of assets in use, or planned, by the enterprise at particular points in time.

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[1] The Open Group Architectural Framework (TOGAF) http://pubs.opengroup.org/architecture/togaf9-doc/arch/chap41.html

- The **Standards Information Base** captures the standards with which new architectures must comply, which may include industry standards, selected products and services from suppliers, or shared services already deployed within the organization.
- The **Reference Library** provides guidelines, templates, patterns, and other forms of reference material that can be leveraged in order to accelerate the creation of new architectures for the enterprise.
- The **Governance Log** provides a record of governance activity across the enterprise.