

Description

These Architecture Principles are a fundamental part of the Enterprise Architecture Framework (EAF). They are derived from the University’s IT Architecture and industry best practice.

The principles constitute a basic reference for every IT project and initiative and are used as drivers for architecture governance. Each new project will be expected to explain how they will conform to the principles and justify any exceptions.

Projects are required to complete an Architecture and Security Review to obtain sign-off prior to go-live. The reviews are based on an Architecture Compliance Form (ACF) whose purpose is to ensure alignment with the IT Strategy using the principles, requirements and standards.

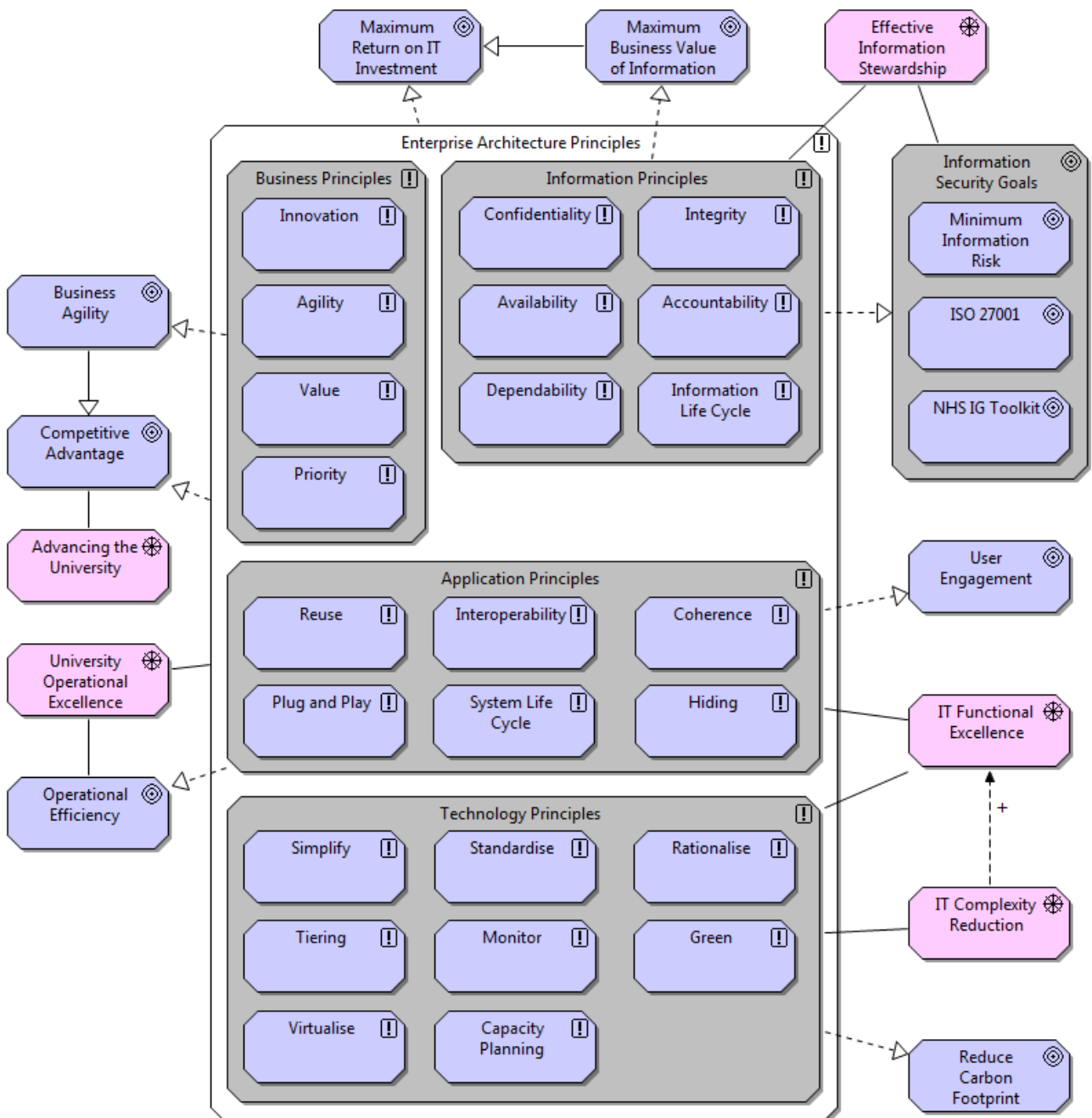


Figure 1 Enterprise Architecture Principles

Principles

The table describes the principles and maps them to the IT Strategy themes shown as ‘drivers’ in the diagram.

Enterprise Architecture Principles		IT Strategy Themes	Advancing the University	Effective Information Stewardship	University Operational Excellence	IT Functional Excellence	IT Complexity Reduction
Principle	Rationale						
Business							
BUS1	Innovation Innovate for competitive advantage through differentiation and productivity	Helps realise competitive advantage and drives improvements in efficiency and productivity.	✓				
BUS2	Priority Prioritize satisfying business needs over all other considerations.	Architecture gives most benefit when closely aligned with business strategy and goals	✓		✓		
BUS3	Agility Promote business agility and adaptability.	Empowers the business to adapt to changing business environment.	✓		✓		
BUS4	Value Maximize the value of information assets and optimize their return on investment (ROI).	Organizing and managing the key information assets of the University drives the business processes needed to run the enterprise	✓		✓		
Information							
INF1	Accountability Ensure that all information assets have an identified business owner who is accountable to the University and track and record all actions and events that lead to access or changes in information.	Those with the most knowledge of the data are best placed to make rational and coherent decisions. It is imperative to track all changes and access in order to enforce non-repudiation of actions.		✓	✓		
INF2	Availability Deliver information where and when needed, via multiple channels, to maximize its value as an asset, while ensuring that Confidentiality is enforced.	University business should not be limited or constrained by lack of available information wherever and whenever needed..		✓	✓		
INF3	Confidentiality Prevent unwanted access to information, limiting Availability to those with legitimate rights. Protect it in transit, at rest and in storage.	The University must respect the law, fulfill contractual obligations and protect the value of its information assets.		✓	✓		
INF4	Dependability Ensure consistency and predictability using appropriate constraints and controls.	Consistency and predictability reduce risks, lower costs and help increase the value of information assets.		✓	✓		
INF5	Information Life Cycle Take full account of the time dimension of information based on the standard Information Management Life Cycle.	Information must be actively managed throughout its life cycle and securely and efficiently disposed of at end of life.		✓	✓		
INF6	Integrity Prevent or detect and repair unwanted changes to information.	Data quality is a major factor in preserving and enhancing the business value of information assets.		✓	✓		

Enterprise Architecture Principles

Enterprise Architecture Principles		IT Strategy Themes	Advancing the University	Effective Information Stewardship	University Operational Excellence	IT Functional Excellence	IT Complexity Reduction
Principle	Rationale						
Application							
APP1	Coherence Ensure services are coherent and comprehensible in their own right. Restrict the scope of a service to a distinct and well-defined function or problem.	Easy to understand services are easy to combine, use and get value from.				✓	✓
APP2	Hiding Hide the internal details of services from consumers to avoid creating dependencies on internal structures and logic that may change. Handle errors and exceptions where they occur to prevent 'cascading errors syndrome'.	Keeping the internal structures and logic of services private from consumers of the services frees them to use and combined services in the way that best suits the business of the University.				✓	
APP3	Interoperability Maximize interoperability by using common standards and mechanisms for the exposure and use of services.	Enables systems and services to communicate and work together for greater synergy and efficiency.				✓	✓
APP4	Plug and Play Implement new services by assembling available services, components and resources in preference to writing new code.	Next generation application development is based on assembling building block components and services rather than bespoke software development. This increases speed of delivery, flexibility and reliability.				✓	✓
APP5	System Life Cycle Plan and manage application services throughout their entire life-cycle, including the 'end of life' phase.	Applications and services should be actively managed throughout their life cycle to extract maximum benefit for lowest cost.				✓	
APP6	Reuse Maximize reuse by designing services that are useful to the largest possible number of consumers.	Reusing existing services and systems reduces the work required to implement new ones.				✓	✓
Technology							
TEC1	Capacity Planning Use capacity planning to optimize the sizing of infrastructure and ensure there is enough headroom for planned growth.	Oversized infrastructure wastes money and increases energy consumption.				✓	✓
TEC2	Green Reduce power consumption, heat and carbon footprint where possible. Get carbon accounts from suppliers and work to reduce.	Reduces immediate and consequential costs.				✓	
TEC3	Monitor Deploy automatic monitoring tools that cover application and data services as well as the underlying infrastructure.	Real-time monitoring allows immediate action to resolve failures and incidents with minimal cost and disruption to the business.				✓	
TEC4	Rationalize Minimize redundancy and reduce duplication.	Helps reduce complexity and promotes greater efficiency.				✓	✓

Enterprise Architecture Principles		IT Strategy Themes	Advancing the University	Effective Information Stewardship	University Operational Excellence	IT Functional Excellence	IT Complexity Reduction
Principle	Rationale						
TEC5	Simplify Reduce complexity for greater flexibility and lower cost.	Lowers costs through economies of scale and reduces overhead of managing complexity.				✓	✓
TEC6	Standardize Adopt and enforce standards to improve operability and achieve economies of scale.	Standardization helps achieve economies of scale, reduces complexity and improves flexibility				✓	✓
TEC7	Tiering Adopt a tiered infrastructure for greater security, resilience and efficiency.	Separation of concerns between infrastructure tiers improves security and allows greater efficiency and flexibility.				✓	
TEC8	Virtualize Reduce dependency on hardware and promote flexibility, agility and sharing of resources through virtualization.	Virtualization promotes flexibility, allows more efficient use of hardware resources and reduces energy consumption				✓	✓

IT Strategy Drivers

These are the strategic themes from the IT Strategy, modelled as ‘drivers’ in the diagram.

- Advancing the University** Deliver game-changing advances in technology support for academic research, learning and teaching, and providing a distinctive student experience.
- Effective Information Stewardship** Focus on capturing, storing and providing effective and secure access to a wide range of information sets.
- IT Complexity Reduction** Reduce complexity across the University including business, application and technology layers.
- IT Functional Excellence** Strive for excellence in all IT capabilities including service management, staff skills base, development and networking, effective IT procurement, diverse funding sourcing, and selective introduction of internal charging.
- University Operational Excellence** Improve how departments and functions operate across the University, including as facilitators to Sustainable Excellence improvements. This driver focuses on underlying step-change enhancements, carbon reduction initiatives and staff skills developments

Goals

There are a number of specific goals that arise from the strategy drivers.

- Business Agility** Maximise business agility including the ability to work from almost anywhere and have information and functionality delivered where and when needed.
- Competitive Advantage** Achieve competitive advantage through optimal application services implemented using optimal technology investment.
- Information Security Goals** Specific Goals for Information Security.
- ISO 27001** Formal ISO certification for defined units, combined with general compliance for the University as a whole.

Enterprise Architecture Principles

Maximum Business Value of Information	Seek to maximise the business value of the University's information.
Maximum Return on IT Investment	Achieve the highest possible ROI on investment in information assets subject to security and good information management constraints.
Minimum Information Risk	Minimum information risk consistent with achieving the University's other objectives.
NHS IG Toolkit	Compliance and certification under NHS Information Governance.
Operational Efficiency	High operational efficiency and productivity through optimal automation with services perfectly suited to business needs.
Reduce Carbon Footprint	Reduce the carbon account of the University and suppliers.
User Engagement	Engage the users through social networking, gmaification etc.

Glossary

ROI	Return on Investment.
ISO	International Standards Organisation.

References

- [1]. Enterprise Architecture Framework
- [2]. IT Strategy