
Overview

This sub-discipline is concerned with the competencies required to create, maintain and manage IT architecture models representing the operating model for an organisation and their lower level components. It also includes those competencies required to interpret, use and apply information contained within an IT architecture to inform a range of business improvement activities, particularly those involved in the design, development, enhancement and maintenance of information technology systems supporting an organisation.

The Enterprise Architecture is typically underpinned by other diagrammatic representations of the organisation which map it at increasingly lower levels of granularity – for some large organisations, more detailed representation of the Enterprise will be represented at individual business unit level within a *Segment Architecture*. Some of the models represent the organisation with specific emphasis on one aspect of its operation e.g. a *Data Architecture* represents the organisation's information assets, their relationship with each other, and the definition of information types used and a *Process Architecture* concentrates on the process flows and how information may be processed within the organisation.

A *Systems or Solutions Architecture* provides a detailed representation of elements of the organisation that need to be supported by current or new/enhanced information technology systems. It articulates, at a low level of detail, how individual technology components need to support the process, processing and information flows required in one or several areas of the organisation. Frequently, a logical Systems or Solutions Architecture is created and used as the blueprint upon which physical design work of individual system components, or assessment of purchased components against requirements is based. The resulting physical Solutions or Systems Architecture is primarily concerned with the definition of internal interfaces among the system's components or subsystems, and the interface between the system and its external environment, especially the user.

For the purposes of these standards, all variations and types of IT architecture work are covered within this sub-discipline.

Performance criteria

Carry out IT/technology architecture activities

You must be able to:

- P1 Correctly identify all relevant relationships between information held within or processed by the organisation and current IT/technology systems, services and assets
- P2 Correctly identify the relationships between all relevant processes, functions and organisational entities within the organisation and current IT/technology systems, services and assets, communicating this information to sponsors, stakeholders and other internal and external bodies, as required
- P3 Correctly implement architecture models and/or roadmaps, under direction
- P4 Correctly use all relevant information relating to the business strategy, business rules and operating model, under direction
- P5 Use IT/technology models and roadmaps appropriately and in a timely manner in order to influence operational IT/technology decision making

Contribute to information activities relating to IT/technology architecture models

You must be able to:

- P6 Accurately populate IT/technology architecture models and roadmaps with relevant and accurate information
- P7 Clearly and precisely document information from sponsors, stakeholders and other individuals that will clarify what IT/technology architecture models and roadmaps need to support, under direction
- P8 Critically analyse and fully document the impact of any legislation, regulation and external standards relevant to the organisation on IT/technology architecture models and roadmaps
- P9 Correctly use and document appropriate naming conventions and standards in IT/technology architecture work
- P10 Accurately document information relating to the timescales and other relevant criteria that should apply to IT/technology architecture work and its deliverables, under direction
- P11 Accurately source and clearly document all necessary information relating to the business strategy, business rules and operating model, so that it may be used to inform IT/technology architecture work, under direction

Assist others by providing information relating to IT/technology architecture models

You must be able to:

- P12 Provide accurate, current and complete information from existing IT/technology architecture models to other external individuals, groups

and bodies

- P13 Assist others in the design of IT/technology architecture models and/or roadmaps relevant to any particular IT/technology assignment
- P14 Assist others in the documentation of roadmaps to support the move from the current state to the target state

Knowledge and understanding

You need to know and understand:

Carry out IT/technology architecture activities

- K1 Identify
 - K1.1 who needs to use/access any particular IT/technology architecture models and roadmaps
 - K1.2 the relationship between information held within or processed by the organisation and current IT/technology systems, services and assets
 - K1.3 the relationship between processes, functions and organisational entities within the organisation and current IT/technology systems, services and assets
 - K1.4 the potential implications to an organisation of IT/technology architecture deliverables being incorrect, incomplete and/or inadequate
 - K1.5 the potential implications of failings of integrity, confidentiality and information
- K2 Use
 - K2.1 information relating to the business strategy, business rules and operating model
 - K2.2 naming conventions and standards in IT/technology architecture work
 - K2.3 IT/technology models and roadmaps to influence operational IT/technology decision making
 - K2.4 the range of organisational and IT/technology elements that should be included in any particular architecture model and/or roadmap
 - K2.5 any business rules that apply to any particular IT/technology architecture assignment
- K3 Implement
 - K3.1 architecture models and/or roadmaps
 - K3.2 plans associated with any particular IT/technology assignment
- K4 Report any issues arising from IT/technology architecture work
- K5 Take action to populate IT/technology architecture models and roadmaps
- K6 What is
 - K6.1 meant by business, enterprise, data, process and service architecture
 - K6.2 meant by network and infrastructure architecture
 - K6.3 meant by the operating model of the organisation and its relationship to architecture work
 - K6.4 the relationship between IT/technology strategy and IT/technology architecture work

- K6.5 the relationship between IT/technology architecture, business change and projects and programmes
- K6.6 meant by business rules and their relationship to IT/technology architecture work
- K6.7 the range of organisational and IT/technology elements that may be included in any particular architecture deliverables
- K6.8 the relationship between IT/technology architecture and the design/development of IT/technology systems, services and assets
- K6.9 range of approaches that can be taken to undertake architecture and their appropriateness in a range of business contexts
- K7 What are the
 - K7.1 roles and functions of business, enterprise, data, process, service, network and/or infrastructure architectures
 - K7.2 range and types of IT/technology architecture models and roadmaps that can be used to represent an organisation, its IT/ technology and the appropriateness of each to meet specific business needs
 - K7.3 potential implications to an organisation of IT/technology architecture deliverables being incorrect, incomplete and/or inadequate
 - K7.4 potential implications of failings of integrity, confidentiality and information security during IT/technology architecture activities
 - K7.5 professional and ethical standards relating to IT/technology architecture work within an organisation
- K8 The fact that
 - K8.1 IT/technology architecture models and roadmaps may be effective tools in business and IT/technology scenario planning and impact ('what if') analysis
 - K8.2 IT/technology architecture models and roadmaps have an important role in informing, influencing and guiding decision making relating to business change and projects and programmes deployed within an organisation
 - K8.3 the implications of IT/technology architecture work and its deliverables as they represent the organisation's needs should be reflected in systems/solutions and service design work
 - K8.4 there are external providers of IT/technology architecture services available and that there are disadvantages and benefits of using them
 - K8.5 there are disadvantages and benefits of using external providers of IT/technology architecture services
- K9 Why
 - K9.1 IT/technology architecture work and its deliverables are important to, and valued by, organisations
 - K9.2 IT/technology architecture models and roadmaps need to be kept current, complete and accurate
 - K9.3 the quality and effectiveness of IT/technology architecture work and its deliverables needs to be monitored

- K10 Who
 - K10.1 are the customers of any particular IT/technology architecture assignment
 - K10.2 are the sponsors of and stakeholders for any particular IT/technology architecture assignment
- K11 The processes, tools and techniques that can be used to
 - K11.1 design, develop and maintain IT/technology architecture models, roadmaps and other deliverables
 - K11.2 monitor the quality and effectiveness of IT/technology architecture activities
 - K11.3 monitor the alignment of IT/technology architecture models and roadmaps with the business strategy and operating model(s)
 - K11.4 monitor compliance with any legislation, regulations and standards relating to IT/technology architecture activities

Contribute to information activities relating to IT/technology architecture models

You need to know and understand:

- K12 Source information
 - K12.1 relating to the business strategy, business rules and operating model so that it may be used by IT/technology architecture activities
 - K12.2 relating to the priorities for and scope of any IT/technology architecture assignment
 - K12.3 relating to the business expectations of IT/technology architecture deliverables
- K13 Document information
 - K13.1 relating to the business strategy, business rules and operating model
 - K13.2 relating to the priorities for and scope of any IT/technology architecture assignment
 - K13.3 from sponsors, stakeholders and other individuals that will clarify what IT/technology architecture models and roadmaps need to support
 - K13.4 relating to the timescales and other relevant criteria that should apply to IT/technology architecture work and its deliverables
 - K13.5 relating to the external factors and their implications for IT/technology architecture work
 - K13.6 the range of organisational and IT/technology elements that may be included in any particular architecture model and/or roadmap, and their relevance in any particular IT/technology or business context
 - K13.7 any business rules that apply to any particular IT/technology architecture assignment
 - K13.8 the impact of any legislation, regulation and external standards relevant to the organisation on IT/technology architecture models and roadmaps

- K14 Analyse the impact of any legislation, regulation and external standards relevant to the organisation on IT/technology architecture models and roadmaps
- K15 The need for monitoring
 - K15.1 the progress of any particular IT/technology architecture assignment
 - K15.2 the accuracy, currency and completeness of any IT/technology architecture models and roadmaps
 - K15.3 the alignment of IT/technology architecture models and roadmaps with the business strategy and operating model(s)
 - K15.4 the alignment of IT/technology architecture activities with all relevant legislation, regulations and external standards
 - K15.5 the alignment of IT/technology architecture models and roadmaps with business change and projects and programmes
 - K15.6 the quality and effectiveness of IT/technology architecture activities
- K16 The importance of
 - K16.1 IT/technology architecture work on the full life cycle of information within an organisation
 - K16.2 IT/technology architecture work to IT/technology strategic planning activities
 - K16.3 IT/technology architecture work and its deliverables to the operating models, business processes, IT/technology systems, services and assets that are deployed to support an organisation
 - K16.4 undertaking IT/technology architecture work in line with organisational strategy, policies, procedures and standards
 - K16.5 addressing the needs of sponsors and other internal or external stakeholders as part of IT/technology architecture work
 - K16.6 maintaining the integrity and confidentiality of information during IT/technology architecture work
 - K16.7 ensuring that sensitive information is not disclosed inappropriately during IT/technology architecture activities
 - K16.8 representing the organisation and the systems, services and assets used within it accurately within IT/technology architecture models and roadmaps
 - K16.9 updating IT/technology architecture models and systems roadmaps as a result of business change, projects, programmes and systems/technology design, development and implementation activities, where appropriate
 - K16.10 securing sign off to any IT/technology architecture models and/or roadmaps from appropriately empowered individuals within IT/technology and/or business functions

Assist others by providing information relating to IT/technology architecture models

You need to know and understand:

- K1 P Provide information from current IT/technology architecture models to other external individuals, groups and bodies
- K2 Manage relationships with internal and external individuals and groups involved in IT/technology assignments
- K3 Communicate and liaise
 - K3.1 what information and data is held within, processed and used by the organisation
 - K3.2 what processes, data, operations, functions and organisational entities currently exist within the organisation
- K4 The importance of
 - K4.1 communicating in a clear, unambiguous and consistent manner with sponsors, stakeholders and external bodies during IT/technology architecture activities
 - K4.2 having IT/technology architecture models representing how an organisation currently operates, may operate in the future, and how it may operate in any transitional states, in line with business strategy and the business operating model(s)

ESKITP4014

Systems Architecture Level 4 Role

Developed by	e-skills UK
Version number	1
Date approved	September 2009
Indicative review date	March 2014
Validity	Current
Status	Original
Originating organisation	e-skills UK
Original URN	4014
Relevant occupations	Business Analyst; Information and Communication Technology; Software Development
Suite	IT and Telecoms
Key words	IT architecture model; IT system design; IT system development