This sub-discipline is part of overall service design. It concerns the design of, and planning for, resilient IT/technology infrastructure and environments.

**Level 2 competencies**

**Follow, under supervision, organisational strategy for IT/technology infrastructure design and planning activities 4082.01**

**Performance Criteria 4082.01C**

a) Correctly follow the processes, tools and techniques to use for IT/technology infrastructure design and planning activities

b) Fully comply with all organisational strategy policies and standards relating to infrastructure design and planning activities and their deliverables

c) Correctly reference all relevant design and configuration principles and standards that apply to IT/technology infrastructure supporting an organisation

d) Correctly gather and collate all relevant information contained within the service catalogue any service level agreements, service improvement and service quality plans that are required for IT/technology infrastructure design and planning activities

e) Accurately source all relevant information concerning problems or errors with any existing infrastructure product/service and/or items of equipment so that it may inform IT/technology infrastructure design and planning activities under direction

f) Accurately source all relevant information required to assess the suitability of IT/technology infrastructure components for any particular design assignment under direction

**Knowledge 4082.01K**

a) comply with
   - any relevant legislation, regulations and external standards relating to infrastructure design and planning activities
   - any relevant internal policies, approaches and standards relevant to infrastructure design and planning activities and their deliverables

b) use and apply the processes, tools and techniques for IT/technology infrastructure design and planning activities and their deliverables

c) source gather and collate information
   - contained within any service improvement and service quality plans that are required for IT/technology infrastructure design and planning
   - from service level agreements required for IT/technology infrastructure design and planning activities
   - required to assess the suitability of infrastructure components
   - relating to incidents, problems, changes, events and service availability in order to inform and guide IT/technology infrastructure design and planning activities
   - required from the service catalogue and the targets and levels contained within it during any IT/technology infrastructure design and planning activities
   - concerning problems or errors with any existing infrastructure product/service and/or items of equipment during IT/technology infrastructure design and planning activities
   - regarding any changes, repairs and replacements made to infrastructure products/services and/or equipment in the current configuration
   - about future infrastructure product/service and/or equipment releases and/or refreshes
   - customer demands for new and/or enhanced services from IT/technology infrastructure
   - required to design and plan an individual IT/technology infrastructure component

d) operate with reference to
   - IT/technology design and configuration principles and standards that apply to infrastructure supporting an organisation
   - confidentiality, integrity and security during IT/technology infrastructure design and planning activities
   - professional and ethical standards relating to infrastructure design and planning activities and their deliverables
organisational strategy policies and standards in infrastructure design and planning activities

Understanding 4082.01U

a) what is meant by IT/Technology infrastructure design and planning

b) what are the
   - types of activities undertaken during IT/technology infrastructure design and planning
   - processes tools and techniques to conduct IT/technology infrastructure design and planning
   - inputs to and required outputs from IT/technology infrastructure design and planning activities

c) the processes tools and techniques that can be used to conduct IT/technology infrastructure design and planning activities in a range of business and organisational contexts

d) the fact that
   - major organisation changes such as mergers and acquisitions can have a significant impact on IT/technology infrastructure and often results in the need for it to be redesigned
   - external providers of IT/technology infrastructure design and planning services exist
   - some external providers host infrastructure services or provide outsourcing capabilities whilst others purely supply and/or support products/services and/or equipment and that IT/Technology infrastructure design and planning may incorporate use of external providers
   - some organisations choose to design IT/Technology infrastructure that makes use of external/shared infrastructure products/services and/or equipment either wholly or partially
   - IT/technology infrastructure design and planning may occur as a result of problems occurring with existing infrastructure products/services and/or equipment changes to the business requirements or the availability of new or enhanced IT/technology infrastructure products services and/or assets
   - IT/Technology infrastructure design and planning activities need to be aligned with other design activities associated with the production of any IT/technology system service and/or assets
   - organisations rely on infrastructure products/services and/or equipment being available and accessible for their business operations
   - incidents problems and issues associated with infrastructure may result in the need for IT/technology infrastructure design and planning activities
   - customers of infrastructure products/services and/or equipment may be internal or external to the organisation

Carry out, under supervision, customer requirements for IT/technology infrastructure design and planning 4082.02

Performance Criteria 4082.02C

a) Critically interpret and accurately document customer demands for new and/or enhanced services from IT/technology infrastructure and the requirements for the design and planning of an individual IT/technology infrastructure component

b) Correctly identify who are the external providers of IT/technology infrastructure used by the organisation and which components can be sourced from them

c) Critically analyse all relevant information regarding the external providers of IT/technology infrastructure used by the organisation and the components that can be sourced from them

d) Correctly document all relevant naming conventions and standards used in infrastructure design and planning activities

e) Develop and accurately document effective and appropriate designs and plans for individual IT/technology infrastructure components

f) Assist others in identifying any potential implications of customer and service demands for new and/or enhanced services on IT/technology infrastructure design and planning activities

Knowledge 4082.02K

a) identify
   - who are the external providers of infrastructure products services and equipment used by the organisation
   - which infrastructure products services and equipment can be sourced from which external providers
   - the requirements for the design and planning of an individual IT/technology infrastructure component
Prepare, under supervision, for IT/Technology infrastructure design and planning activities

Performance Criteria 4083.01C

a) Correctly follow the systems development lifecycle service lifecycle and reference all relevant IT/technology architecture models as appropriate to infrastructure design and planning activities

b) Accurately source and collate any relevant information about the capabilities and availability of IT/technology products, services, and equipment in order to make well-reasoned decisions on whether they can be incorporated into designs for IT/technology infrastructure under direction

c) Correctly source any relevant internal and external sources of expertise in particular infrastructure products, services, and equipment as and when required during infrastructure design and planning activities

d) Correctly identify any potential implications of customer demands and service requirements using any information relating to them appropriately in relation to IT/technology infrastructure design and planning activities under direction

Knowledge 4083.01K
a) operate with
   - reference to the systems development lifecycle as appropriate to IT/technology infrastructure design and planning activities
   - reference to the service lifecycle as appropriate to IT/technology infrastructure design and planning activities
   - reference to IT/technology architecture models

b) source and collate
   - information about the capabilities and availability of IT/technology products services and equipment in order to make well reasoned decisions on whether they can be incorporated into designs for IT/technology infrastructure
   - information regarding external suppliers of IT/technology infrastructure design and planning services
   - internal and external sources of expertise in particular infrastructure products services and equipment as and when required

c) identify
   - potential implications of customer demands for new and/or enhanced services on IT/technology infrastructure design and planning activities
   - potential implications of service requirements in relation to IT/technology infrastructure design and planning activities
   - any documented problems or errors with any existing infrastructure product/service and/or items of equipment during IT/technology infrastructure design and planning activities
   - information required from the service catalogue and the targets and levels contained within it during any IT/technology infrastructure design and planning activities
   - information regarding any changes repairs and replacements made to infrastructure products/services and/or equipment

Understanding 4083.01U

f) what
   - is meant by a Service Improvement plan and a Service Quality plan
   - is the relevance of service levels in relation to IT/technology Infrastructure design and planning activities
   - information might need to be referenced and used during IT/Technology infrastructure design and planning activities
   - is the range of available IT/technology equipment/products and services that can be incorporated into IT/technology infrastructure designs and plans

g) what are the
   - different approaches that may apply to the design and planning of hardware software and network infrastructure products/services and/or equipment
   - implications of technology products/services and/or equipment provided by external service providers/hosts on IT/technology infrastructure design and planning activities
   - implications of customer demands for new and/or enhanced services on IT/technology infrastructure design and planning activities
   - implications of service requirements in relation to IT/technology infrastructure design and planning activities
   - internal and external standards that apply to IT/technology infrastructure supporting an organisation
   - IT/technology architecture design and configuration principles and standards that apply to infrastructure supporting an organisation
   - the potential implications of poor quality IT/technology infrastructure designs and plans on the operation of an organisation
   - potential implications of designing IT/technology infrastructure that makes use of externally provided and/or shared infrastructure products/services and/or equipment either wholly or partially
   - advantages and disadvantages of using any individual IT/Technology product service or item of equipment within IT/technology infrastructures

h) the fact that
   - changes to and/or replacements/refreshes of IT/technology infrastructure often need to be supported by clearly defined benefits and a business case
   - design and planning of IT/technology infrastructure frequently requires the application of specific expertise
   - large complex infrastructure design and planning assignments may require the involvement of a number of individuals and teams
   - external providers may be required to assist with IT/technology infrastructure design and planning
   - as infrastructure ages the cost and complexity of repairing faults with it may be prohibitive and result in the design and planning of new IT/technology infrastructure
   - structured processes and procedures are essential for effective IT/technology infrastructure design and planning activities
   - the loss of access to or availability of IT/technology infrastructure products/services and/or equipment can have a major impact on an organisation's
operational activities brand and reputation and designs must ensure continuity of service is possible

- the impact of any relevant legislation regulations and external standards needs to be reflected in IT/technology infrastructure design and planning activities and their deliverables

i) why

- IT/technology infrastructure needs to be designed and planned
- some organisations choose to design IT/technology infrastructures that make use of externally hosted/shared infrastructure products/services and/or equipment whilst others choose to provide them internally
- IT/technology design and planning activities should only include infrastructure products/services and/or equipment that has been approved for us within an organisation's configuration
- the alignment of IT/technology infrastructure design and planning activities and their deliverables with IT/technology architecture analysis and design activities needs to be monitored

j) the importance of

- referencing related design deliverables during IT/technology infrastructure design and planning activities
- IT/technology infrastructure design and planning activities being informed by future IT/technology service capacity and availability needs
- referencing any service improvement plans and service quality plans during any IT/technology infrastructure design and planning activities
- referencing the service catalogue and the service targets and levels contained within it during any IT/technology infrastructure design and planning activities
- communicating effectively with external providers of IT/technology infrastructure design and planning services
- making accurate assessment of the cost and complexity of new IT/technology infrastructure designs and plans
- and relevance of IT/technology infrastructure design and planning activities on the service lifecycle supporting an organisation
- IT/technology infrastructure design and planning activities being informed and directed by the business requirements and customer needs
- the interdependency and functionality of infrastructure products/services and/or equipment during IT/technology infrastructure design and planning activities
- referencing current architecture and configuration management deliverables for infrastructure products/services and/or equipment during IT/technology infrastructure design and planning activities
- applying version control where appropriate to infrastructure products/services and/or equipment during IT/technology infrastructure design and planning activities
- and relevance of IT/technology infrastructure design and planning activities on the full life cycle of information within an organisation
- verifying the accuracy currency completeness and relevance of information used during IT/technology infrastructure design and planning activities
- considering the total effort elapsed time risk complexity and cost that may be required to develop test and implement new designs for IT/technology infrastructure products/services and/or equipment
- having sufficient reliable information data and knowledge about the capabilities and availability of IT/technology products/services and equipment in order to make well reasoned decisions on whether they can be incorporated into designs for IT/technology infrastructure
- IT/technology infrastructure designs and plans supporting the business needs

k) The need for monitoring the quality and effectiveness of IT/technology infrastructure design and planning activities

l) how

- effective IT/technology infrastructure designs and plans can improve the efficiency and effectiveness of IT/technology systems services and assets
- IT/technology infrastructure designs and plans need to support new IT/technology services systems and assets

Assist with IT/technology infrastructure design and planning activities 4083.02

Understanding 4083.01U

a) Negotiate effectively and empathetically with customers who demand new improved IT/technology infrastructure components as directed

a) who

- are the customers of IT/technology infrastructure design and planning activities
- internally or externally has the expertise to produce designs and plans for new enhanced IT/technology infrastructure
- needs to be contacted internally and externally to provide information and expertise for IT/technology infrastructure design and planning activities
are external providers of IT/technology infrastructure design and planning services

b) Correctly use relevant information contained within any service improvement and service quality plans in order to inform IT/technology infrastructure design and planning activities under direction

c) Correctly apply any relevant information regarding particular individual infrastructure components and the technical standards that may apply to them during IT/technology infrastructure design and planning activities as directed

d) Correctly identify and objectively analyse relevant documented problems or errors with any existing IT/technology infrastructure product service and items of equipment together with information regarding any changes repairs and replacements made to IT/technology infrastructure products services and equipment in order to inform IT/technology infrastructure design and planning activities under direction

e) Critically interpret and use any relevant information from the service catalogue and the targets and levels contained within it in order to inform an IT/technology infrastructure design and planning assignment

Knowledge 4083.02K

a) negotiate with customers who demand new/improved IT/technology infrastructure components

b) use and apply
   - the requirements for the design and planning of individual IT/technology infrastructure components
   - the technical standards required for any individual infrastructure product or item of equipment
   - customer demands for new and/or enhanced services from IT/technology infrastructure
   - the service lifecycle as appropriate to IT/technology infrastructure design and planning activities
   - the systems lifecycle as appropriate to IT/technology infrastructure design and planning activities
   - information contained within any service improvement and service quality plans that is required for IT/technology infrastructure design and planning
   - information from service level agreements required for IT/technology infrastructure design and planning activities
   - information regarding particular individual infrastructure components
   - operational information relating to incidents problems changes events and service availability in order to inform and guide IT/technology infrastructure design and planning activities
   - information required from the service catalogue and the targets and levels contained within it during any IT/technology infrastructure design and planning activities
   - information concerning problems or errors with any existing infrastructure product/service and/or items of equipment during IT/technology infrastructure design and planning activities
   - information regarding any changes repairs and replacements made to infrastructure products/services and/or equipment

c) document
   - the processes tools and techniques applicable to IT/technology infrastructure design and planning activities and their deliverables
   - any further business requirements that are identified so that they can be reflected in IT/technology infrastructure design and planning activities
   - the processes tools and techniques to monitor the effectiveness of IT/technology infrastructure design and planning activities and their deliverables

d) analyse
   - any documented problems or errors with any existing IT/technology infrastructure product service and items of equipment during IT/technology infrastructure design and planning activities
   - information from the service catalogue and the targets and levels contained within it IT/technology infrastructure design and planning assignment
   - information regarding any changes repairs and replacements made to infrastructure products/services and/or equipment

Assist others with relevant information concerning IT/technology infrastructure design and planning assignments 4083.03

Performance Criteria 4083.03C

a) Provide clear and timely information concerning IT/technology infrastructure design and planning to sponsors stakeholders and other relevant internal individuals and groups as directed by superiors
b) Assist others in applying information about the capabilities and availability of IT/technology products services and equipment in order to make well reasoned decisions on whether they can be incorporated into designs for IT/technology infrastructure.

c) Be fully accountable for the quality and effectiveness of the designs and plans for any individual IT/technology infrastructure component.

**Knowledge 4083.03K**

a) Provide information concerning IT/technology infrastructure design and planning to
   - sponsors and stakeholders
   - internal individuals as requested

b) Be accountable for the quality and effectiveness of the designs and plans for any individual IT/technology infrastructure component.

**Level 4 competencies**

**Contribute to preparing for IT/technology infrastructure design and planning activities 4084.01**

**Performance Criteria 4084.01C**

a) Correctly implement and maintain the processes tools and techniques to use for IT/technology infrastructure design and planning activities.

b) Accurately source any relevant IT/technology architecture design and configuration principles and standards that apply to IT/technology infrastructure supporting an organisation so that it may be used to inform any IT/technology infrastructure design and planning assignment conducted by self or others.

c) Accurately source all relevant information in order to estimate the effort cost complexity risk and elapsed time for any IT/technology infrastructure decommissioning replacement option(s) and prepare a business case under direction.

d) Correctly identify what are the available IT/technology equipment products and services that can be considered when designing and planning IT/technology infrastructure under direction.

**Knowledge 4084.01K**

a) **source**

   - information regarding the progress of the design and planning of individual IT/technology infrastructure components
   - IT/technology architecture design and configuration principles and standards that apply to infrastructure supporting an organisation
   - future service capacity and availability needs that the IT/technology infrastructure needs to provide
   - current architecture design and configuration management deliverables for infrastructure products services and equipment during IT/technology infrastructure design and planning activities
   - information in order to estimate the effort cost complexity risk and elapsed time for any IT/technology infrastructure decommissioning/replacement option(s)
   - information to support the reporting of the performance of IT/technology infrastructure design and planning activities against its targets and/or metrics
   - information to prepare clearly defined benefits and a business case for any changes to and/or replacements refreshes of IT/technology infrastructure that are required
   - best practice in IT/technology infrastructure design and planning activities
   - lessons learned from prior IT/technology infrastructure design and planning activities

b) **identify**

   - who has been allocated which individual IT/technology infrastructure components/groups of components to design and plan
   - who are potential external providers of IT/technology infrastructure design and planning activities used by the organisation
   - information contained within any service improvement and service quality plans that is relevant to IT/technology infrastructure design and planning
   - what information is required to assess the suitability of infrastructure components
   - which infrastructure products/services and/or equipment will be provided externally and which internally
   - any issues involved in the external hosting of infrastructure services
   - what are the available IT/technology equipment/products and services that can be considered when designing and planning IT/technology infrastructure
   - information from other design activities that may affect IT/technology infrastructure design and planning activities.
potential implications of business change organisational design and/or business process design/redesign activities on IT/technology infrastructure design and planning activities
potential implications of projects and programmes on IT/technology infrastructure design and planning activities
potential implications of IT/technology infrastructure design and planning activities and their deliverables being incorrect incomplete inadequate and/or inappropriate
the objectives of IT/technology infrastructure design and planning
operational information relating to incidents problems changes events and service availability in order to inform and guide IT/technology infrastructure design and planning activities
information data and knowledge about the capabilities and availability of IT/technology products/services and equipment in order to make well reasoned decisions on whether they can be incorporated into designs for IT/technology infrastructure
how effective IT/technology infrastructure designs and plans can improve the efficiency and effectiveness of IT/technology services systems and assets
who needs to be contacted internally and externally to provide information to be used for IT/technology infrastructure design and planning activities
who needs to authorise designs and plans for new/enhanced IT/technology infrastructure

c) verify where appropriate the accuracy currency completeness and relevance of any information relating to known errors or problems with existing IT/technology infrastructure components

Understanding [4084.01U]
a) the role of IT/technology infrastructure design and planning in supporting business operations and the service strategy
b) the relationship between IT/Technology infrastructure design and planning and their deliverables and all other architecture analysis and design activities
c) the processes tools and techniques that can be used to monitor the
   - alignment of IT/technology infrastructure designs and plans with business needs service operation objectives and service strategy
   - quality and effectiveness of IT/technology infrastructure design and planning activities and their deliverables
   - alignment of IT/technology infrastructure design and planning activities and their deliverables with any relevant legislation regulations and external standards
d) what
   - is the range of issues associated with IT/technology infrastructure design and planning activities and their deliverables
   - is best practice in IT/technology infrastructure design and planning activities
   - is the range of internal and external factors that could result in issues arising with the current/existing infrastructure
e) the importance of
   - ensuring confidentiality integrity and security during IT/technology infrastructure design and planning activities
   - ensuring that sensitive business information is not disclosed inappropriately during IT/technology infrastructure design and planning activities
   - metrics to measure the performance of IT/technology infrastructure design and planning activities
   - proactive IT/infrastructure design and planning in trying to improve the availability of systems services and assets to support service objectives and the service strategy

Manage and implement, under supervision, IT/technology infrastructure design planning activities [4084.02]

Performance Criteria [4084.02C]
a) Correctly identify any potential implications of business change projects programmes organisational design and/or business process design redesign activities on IT/technology infrastructure design and planning activities
b) Correctly identify what information is required to assess the suitability of infrastructure components that is used in IT/technology infrastructure design and planning activities
c) Correctly use current IT/technology architecture design and configuration management deliverables in order to inform and guide IT/technology infrastructure design and planning activities
d) Critically analyse all relevant information from service improvement and service quality plans and other related design activities that may affect IT/technology
e) Consider the available and suitable IT/technology equipment products and services when designing and planning IT/technology infrastructure

Knowledge 4084.02K

a) use
- future service capacity and availability needs that the IT/technology infrastructure needs to provide
- current IT/technology architecture design and configuration management deliverables for infrastructure products/services and/or equipment during IT/technology infrastructure design and planning activities
- version control where appropriate during IT/technology infrastructure design and planning activities
- information data and knowledge about the capabilities and availability of IT/technology products/services and equipment in order to make well reasoned decisions on whether they can be incorporated into designs for IT/technology infrastructure
- standards relating to IT/technology infrastructure design and planning activities
- best practice in IT/technology infrastructure design and planning activities
- lessons learned from prior IT/technology infrastructure design and planning activities

b) document
- clearly defined benefits and a business case for any changes to and/or replacements/refreshes of IT/technology infrastructure
- designs and plans for infrastructure products/services and/or equipment
- the processes procedures methods tools and techniques to monitor the alignment of IT/technology infrastructure design and planning activities and their deliverables with business needs service delivery/operation objectives and the service strategy
- strategy and policies to ensure the alignment of IT/technology infrastructure design and planning activities and their deliverables with all relevant legislation regulations and external standards
- standards relating to infrastructure design and planning activities and their deliverables
- best practice in infrastructure design and planning assignments
- lessons learned from infrastructure design and planning assignments

c) analyse
- future service capacity and availability needs that the IT/technology infrastructure needs to provide
- information contained within any service improvement and service quality plans that is relevant to IT/technology infrastructure design and planning
- information from other design activities that may affect IT/technology infrastructure design and planning activities
- operational information relating to incidents problems changes events and service availability in order to inform and guide IT/technology infrastructure design and planning activities
- information data and knowledge about the capabilities and availability of IT/technology products/services and equipment in order to make well reasoned decisions on whether they can be incorporated into designs for IT/technology infrastructure

d) present
- clearly defined benefits and a business case for any changes to and/or replacements refreshes of IT/technology infrastructure
- IT/technology infrastructure designs and plans
- the total effort elapsed time risk complexity and cost that may be required to develop test and implement new designs for infrastructure products services and equipment
- how effective IT/technology infrastructure designs and plans can improve the efficiency and effectiveness of IT/technology services systems and assets

Understanding 4084.02U

a) what are the
- objectives of IT/technology infrastructure design and planning
- potential implications of business change organisational design and/or business process design/redesign activities on IT/technology infrastructure design and planning activities
- potential implications of projects and programmes on IT/technology infrastructure design and planning activities
Manage, under supervision, progression of the IT/technology infrastructure designs

Performance Criteria 4084.03C

a) Effectively manage the progress of any IT/technology infrastructure design and planning assignment reporting progress to sponsors, stakeholders, and superiors as required.
b) Effectively manage individuals and teams producing individual IT/technology infrastructure components or groups of components under direction.
c) Ensure that all changes to replacements or refreshes of IT/technology infrastructure are supported by clearly defined benefits and a viable business case that contains accurately assessed costs and complexity.
d) Ensure that IT/technology infrastructure designs support the business needs.
e) Clearly present to sponsors, stakeholders, and superiors the designs and plans and a clearly defined benefits and business case which incorporates the total effort elapsed time, risk, complexity, and cost for any IT/technology infrastructure design and planning assignment.

Knowledge 4084.03K

a) manage
   - the progress of any IT/technology infrastructure design and planning assignment
   - changes to business requirements through change control mechanisms during IT/technology infrastructure design and planning assignments
   - individuals and/or teams producing individual IT/technology infrastructure components or groups of components
b) take action
   - to align IT/technology infrastructure design and planning deliverables with other design deliverables
   - to ensure that there is sufficient reliable information data and knowledge about the capabilities and availability of IT/technology products/services and equipment in order to make well-reasoned decisions on whether they can be incorporated into designs for IT/technology infrastructure
   - that IT/technology infrastructure designs support the business needs
   - all changes to and/or replacements/refreshes of IT/technology infrastructure are supported by clearly defined benefits and a business case
   - that accurate assessment of the cost and complexity of new IT/technology infrastructure designs takes place.
c) report the progress of the design and planning of individual IT/technology infrastructure components

d) provide information concerning IT/technology infrastructure design and planning to external individuals and bodies as requested.
e) communicate with
   - external providers of IT/technology infrastructure design and planning services
   - a range of individuals both internally and externally during IT/technology infrastructure design and planning activities

Understanding 4084.03U

a) why
   - the quality and effectiveness of IT/technology infrastructure design and planning activities and their deliverables need to be monitored
   - the alignment of IT/technology infrastructure design and planning activities and their deliverables with any relevant legislation, regulations, and external standards

- potential implications of IT/technology infrastructure design and planning activities and their deliverables being incorrect, incomplete, inadequate and/or inappropriate.
- benefits and disadvantages of using external providers of IT/technology infrastructure design and planning services.
- implications of internal and external factors on IT/technology infrastructure design and planning activities and their deliverables.
- issues involved in the outsourcing of IT/technology infrastructure design and planning and external hosting of infrastructure.
- potential implications of failings in integrity, confidentiality, and information security during IT/technology infrastructure design and planning activities.
- implications of any legislation regulations and external standards on IT/technology infrastructure design and planning activities and their deliverables.
- implications for an organisation's operational effectiveness, brand, and reputation that may result from IT/technology infrastructure design and planning activities.
standards needs to be monitored

- the quality and effectiveness of any externally hosted/shared IT/technology infrastructure products/services and/or equipment services needs to be monitored

b) who

- needs to authorise designs and plans for new/enhanced IT/technology infrastructure
- are the sponsors of and stakeholders for IT/technology infrastructure design and planning activities

c) the need for monitoring

- the alignment of IT/technology infrastructure design and planning activities and their deliverables with business needs service operation objectives and service strategy
- the alignment of IT/technology infrastructure design and planning activities and their deliverables with any relevant legislation regulations and external standards
- the alignment of IT/technology infrastructure design and planning activities and their deliverables with other related design activities
- the alignment of IT/technology infrastructure design and planning activities and their deliverables with IT/technology architecture and configuration requirements

**Level 5 competencies**

**Prepare for IT/technology infrastructure design and planning activities** 4085.01

**Performance Criteria 4085.01C**

a) Correctly identify the implications of current and future business and customer needs on IT/technology infrastructure design and planning activities

b) Correctly identify any potential implications of designing IT/technology infrastructure that makes use of external infrastructure products services and equipment either wholly or partially

c) Correctly identify where design work associated with IT/technology infrastructure design and planning activities for individual components or groups of components can be allocated to appropriate individuals/teams

d) Verify the accuracy currency completeness and relevance of all information used during IT/technology infrastructure design and planning activities

e) Verify the reliability of information about the capabilities and availability of IT/technology products services and items of equipment

**Knowledge 4085.01K**

a) identify

- where design work associated with IT/technology infrastructure design and planning activities for individual components/groups of components can be allocated to appropriate individuals/teams
- the strategy policies processes tools and techniques to use for IT/technology infrastructure design and planning activities and their deliverables
- the processes tools and techniques to monitor the alignment of IT/technology infrastructure design and planning activities and their deliverables with all relevant legislation regulations and external standards
- the processes tools and techniques to monitor the quality and effectiveness of IT/technology infrastructure design and planning activities and their deliverables
- lessons learned from previous IT/technology infrastructure design and planning activities and experiences
- when and how to source use and apply best practice in IT/technology infrastructure design and planning
- internal and external factors that could impact on IT/technology infrastructure design and planning activities and their deliverables
- who are the sponsors of and stakeholders for IT/technology infrastructure design and planning activities
- any legislation regulations and external standards that may apply to IT/technology infrastructure design and planning activities
- the implications of business and customer needs on IT/technology infrastructure design and planning activities
- any issues that may impact on IT/technology design and planning activities and their deliverables
- clearly defined benefits and a business case for any changes to and/or replacements/refreshes of IT/technology infrastructure that are required
- internal and external factors affecting IT/technology design and planning activities and their deliverables
future service capacity and availability needs that the IT/technology infrastructure needs to provide

technical standards for infrastructure products/services and/or equipment during IT/technology infrastructure design and planning activities

the interdependency and functionality of any infrastructure products/services and/or equipment during IT/technology infrastructure design and planning activities

benefits and disadvantages of using external providers of IT/technology infrastructure design and planning services

implications of internal and external factors on IT/technology infrastructure design and planning activities and their deliverables

architecture design and configuration principles and standards that apply to infrastructure supporting an organisation

implications of failings in integrity confidentiality and information security during IT/technology infrastructure design and planning activities

implications of any legislation regulations and external standards on IT/technology infrastructure design and planning activities and their deliverables

the potential implications of poor quality IT/technology infrastructure designs and plans on the operation of an organisation

potential implications of designing IT/technology infrastructure that makes use of external infrastructure products/services and/or equipment either wholly or partially

advantages and disadvantages of using particular individual IT/technology components and brands within IT/technology infrastructures

current IT/technology architecture design and configuration management deliverables for infrastructure products/services and/or equipment during IT/technology infrastructure design and planning activities

any further business requirements that are identified so that they can be reflected in infrastructure design and planning activities

issues involved in the external hosting of infrastructure

b) verify

the accuracy currency completeness and relevance of information used during IT/technology infrastructure design and planning activities

the reliability of information data and knowledge about the capabilities and availability of IT/technology products/services and/or items equipment

the total effort elapsed time risk complexity and cost that may be required to develop test and implement new designs for infrastructure products/services and/or equipment

Understanding 4085.01U

a) what

legislation regulations and external standards may apply to IT/technology infrastructure design and planning activities and their deliverables

is best practice in IT/Technology Infrastructure design and planning activities

is the range of internal and external factors that could result in issues arising with infrastructure design and planning activities

Implement IT/technology infrastructure design and planning activities 4085.02

Knowledge 4085.01K

c) source appropriate technical expertise during IT/technology infrastructure design and planning activities

d) design business cases and proposals for any changes to or replacements refreshes of IT/technology infrastructure

e) analyse

lessons learned from previous IT/technology infrastructure design and planning activities and experiences

business and customer needs

future service capacity and availability needs that the IT/technology infrastructure needs to provide

technical standards for IT/technology infrastructure products/services and equipment during IT/technology infrastructure design and planning activities

the interdependency and functionality of any IT/technology infrastructure products/services and equipment during IT/technology infrastructure design and planning activities

current IT/technology architecture design and configuration management deliverables for IT/technology infrastructure products/services and equipment during IT/technology infrastructure design and planning activities

any further business requirements that are identified so that they can be reflected in IT/technology infrastructure design and planning activities
f) apply
- the processes tools and techniques to monitor the alignment of IT/technology infrastructure design and planning activities and their deliverables with all relevant legislation regulations and external standards
- the processes tools and techniques to monitor the quality and effectiveness of IT/technology infrastructure design and planning activities and their deliverables
- the processes tools techniques and plans to monitor the alignment of IT/technology infrastructure design and planning activities and their deliverables with any relevant legislation regulations and external standards
- strategy and policies to ensure the alignment of IT/technology infrastructure design and planning activities and their deliverables with all relevant legislation regulations and external standards
- the processes tools and techniques to monitor the alignment of IT/technology infrastructure design and planning activities and their deliverables with business needs service delivery operation objectives and the service strategy
- information to support reporting of the performance of IT/technology infrastructure design and planning activities against targets/metrics
- the most appropriate approaches that may be taken to IT/technology infrastructure design and planning activities in a range of business and organisational contexts
- information relating to the capabilities and performance of existing or potential external providers of IT/technology infrastructure design and planning services

g) document
- all of the deliverables from infrastructure design and planning activities
- recommendations as a result of infrastructure design and planning assignments

h) implement and maintain
- metrics to measure the performance of IT/technology infrastructure design and planning activities
- standards relating to IT/technology infrastructure design and planning activities
- the processes tools and techniques to use for IT/technology infrastructure design and planning activities and their deliverables
- the processes tools and techniques to monitor the quality and effectiveness of IT/technology infrastructure design and planning activities and their deliverables
- strategy and policies to ensure the alignment of IT/technology infrastructure design and planning activities and their deliverables with all relevant legislation regulations and external standards
- the processes tools and techniques to monitor the alignment of IT/technology infrastructure design and planning activities and their deliverables with business needs service delivery operation objectives and the service strategy
- the processes tools and techniques to monitor the alignment of IT/technology infrastructure design and planning activities and their deliverables with IT/technology architecture analysis and design activities
- the processes tools and techniques to monitor the alignment of IT/technology infrastructure design and planning activities and their deliverables with any relevant legislation regulations and external standards
- the processes tools and techniques to monitor the quality and effectiveness of external providers of IT/technology infrastructure design and planning services

Performance Criteria 4085.02C

a) Effectively manage the alignment of IT/technology infrastructure design and planning deliverables with the business requirements IT/technology architecture and other analysis deliverables and any relevant legislation regulations and external standards in line with organisational strategy policies and standards
b) Correctly identify and effectively implement strategy policies processes tools and techniques to use for IT/technology infrastructure design and planning activities
c) Source any appropriate technical expertise required to inform and guide IT/technology infrastructure design and planning activities
d) Critically analyse all relevant business and customer needs so that they can direct and inform any IT/technology infrastructure design and planning activities
e) Critically analyse current IT/technology architecture design and configuration management deliverables for infrastructure products services and equipment so that they may direct and guide IT/technology infrastructure design and planning activities
f) Effectively allocate the design of individual IT/technology infrastructure components or groups of components to appropriate individuals or teams and coordinate and manage their design efforts as directed

Maintain effective IT/technology infrastructure design and planning deliverables 4085.03
**Performance Criteria 4085.03C**

a) Routinely monitor the cost and complexity of new IT/technology infrastructure designs and the quality and effectiveness of all IT/technology infrastructure design and planning activities reporting any issues and findings to superiors.

b) Provide effective and timely advice and guidance to other individuals on the total effort elapsed time risk complexity and cost that may be required to develop test and implement new designs for IT/technology infrastructure products/services and equipment.

c) Develop accurate and viable business cases and proposals for any changes to replacements or refreshes of IT/technology infrastructure ensuring that the designs and plans fall within approved cost guidelines under direction.

d) Critically review the designs plans and any benefits and business case including the total effort elapsed time risk complexity and cost for any IT/technology infrastructure design and planning assignment managed by other individuals.

e) Act decisively and promptly in the event of the deliverables of IT/technology infrastructure design and planning activities not supporting the business needs and IT/technology architecture and analysis deliverables and/or being inadequate inaccurate insufficient and/or inappropriate.

**Knowledge 4085.03K**

a) manage
   - the design efforts of groups and individuals to enable the production of holistic designs for IT/technology infrastructure products/services and/or equipment
   - relationships with external providers of IT/technology infrastructure design and planning services
   - issues arising as a result of internal or external factors in IT/technology infrastructure design and planning activities
   - actions in the event of the deliverables from IT/technology infrastructure design and planning activities being inadequate incomplete inaccurate and/or inappropriate
   - any issues arising from a particular IT/technology infrastructure design and planning assignment
   - the impact of any internal and external factors on a particular IT/technology infrastructure design and planning assignment
   - the accuracy currency and completeness of any IT/technology infrastructure design and planning deliverables
   - the alignment of IT/technology infrastructure design and planning deliverables with the business requirements
   - the alignment of IT/technology infrastructure design and planning activities with IT/technology architecture and other analysis deliverables
   - the alignment of IT/technology infrastructure design and planning activities and their deliverables with any relevant legislation regulations and external standards in line with organisational strategy policies and standards
   - relationships with external providers of IT/technology infrastructure design and planning services
   - relationships with sponsors of and stakeholders for IT/technology infrastructure design and planning activities

b) monitor
   - the cost and complexity of new IT/technology infrastructure designs
   - the quality and effectiveness of IT/technology infrastructure design and planning activities
   - the alignment of IT/technology infrastructure design and planning activities and their deliverables with any relevant legislation regulations and external standards
   - the alignment of IT/technology infrastructure design and planning activities and their deliverables with IT/technology architecture analysis and design activities

c) review
   - clearly defined benefits and a business case for any changes to and/or replacements/refreshes of IT/technology infrastructure
   - IT/technology infrastructure designs and plans
   - the total effort elapsed time risk complexity and cost that may be required to develop test and implement new designs for infrastructure products/services and/or equipment
   - how effective IT/technology infrastructure designs and plans can improve the efficiency and effectiveness of IT/technology services systems and assets

d) **TAKE ACTION/MEASURES**
   - to allocate the design or individual IT/technology infrastructure components or groups of components to appropriate individuals/teams
   - to co-ordinate the design efforts of groups and individuals to produce holistic designs for IT/technology infrastructure products/services and/or equipment
   - to minimise the total effort elapsed time risk complexity and cost that may be required to develop test and implement new designs for infrastructure products/services and equipment
to integrate IT/technology infrastructure design and planning activities and their deliverables where appropriate into projects and programmes where appropriate

- to establish effective relationships with external providers of IT/technology infrastructure design and planning services

- in the event of the deliverables of IT/technology infrastructure design and planning activities being inadequate inaccurate insufficient and/or inappropriate

- to take account of any internal or external factors affecting IT/technology infrastructure design and planning activities or their deliverables

- in the event of IT/technology infrastructure design and planning activities not supporting the business needs and IT/technology architecture and analysis deliverables

- in the event of external providers not providing the appropriate quality of IT/technology infrastructure design and planning service

- to ensure IT/technology infrastructure designs and plans fall within approved cost guidelines

- that sensitive business information is not disclosed inappropriately during IT/technology infrastructure design and planning activities

- IT/technology infrastructure designs enable other design work to be fulfilled

e) report

- the results from monitoring the alignment of IT/technology infrastructure design and planning activities and their deliverables with any relevant legislation regulations and external standards

- the results from monitoring the alignment of IT/technology infrastructure design and planning activities and their deliverables with IT/technology architecture analysis and design activities

- any issues arising from IT/technology infrastructure design and planning activities

- findings from monitoring the quality and effectiveness of IT/technology infrastructure design and planning activities and their deliverables

f) advise and guide others on the total effort elapsed time risk complexity and cost that may be required to develop test and implement new designs for IT/technology infrastructure products services and equipment

Understanding 4085.03U

a) the need for monitoring the quality and effectiveness of external providers of IT/technology infrastructure design and planning services

b) the processes tools and techniques that can be used to monitor the quality and effectiveness of external providers of IT/technology infrastructure design and planning services

Level 6 competencies

Develop the strategy and policies for IT/technology infrastructure design and planning activities 4086.01

Performance Criteria 4086.01C

a) Design effective strategy and policies relating to all aspects of IT/technology infrastructure design and planning activities

b) Design specific and meaningful metrics to assess the performance of IT/technology infrastructure design and planning activities

c) Correctly identify anticipate and respond effectively to business strategy changes to the operating model and other strategic issues that may impact on the IT/technology infrastructure supporting an organisation

d) Correctly identify the implications of the service strategy and service delivery operation objectives on IT/technology infrastructure design and planning activities

e) Correctly identify any implications for an organisation's operational effectiveness brand and reputation that may result from IT/technology infrastructure design and planning activities

Knowledge 4086.01K

a) design

- metrics to measure the performance of IT/technology infrastructure design and planning activities

- the processes tools and techniques that can be used to conduct IT/technology infrastructure design and planning activities in a range of business and organisational contexts

- the processes tools and techniques that can be used to monitor the alignment of IT/technology infrastructure designs and plans with business needs service operation objectives and service strategy
the processes tools and techniques that can be used to monitor the quality and effectiveness of IT/technology infrastructure design and planning activities and their deliverables

the processes tools and techniques that can be used to monitor the alignment of IT/technology infrastructure design and planning activities and their deliverables with any relevant legislation regulations and external standards

the processes tools and techniques that can be used to monitor the quality and effectiveness of external providers of IT/technology infrastructure design and planning services

the processes tools and techniques to monitor the alignment of IT/technology infrastructure design and planning activities and their deliverables with business needs service delivery/operation objectives and the service strategy

strategy and policies to conduct IT/technology infrastructure design and planning activities

strategy and policies to ensure the alignment of IT/technology infrastructure design and planning activities and their deliverables with all relevant legislation regulations and external standards

b) identify

• the implications of the service strategy and service delivery/operation objectives on IT/technology infrastructure design and planning activities

• the range of approaches that may be taken to IT/technology infrastructure design and planning and their appropriateness in a range of business and organisational contexts

• what metrics are to be used to measure the performance of IT/technology infrastructure design and planning activities

• what actions may be taken in the event of IT/technology infrastructure design and planning not supporting the business needs service delivery/operation objectives and/or the service strategy

• when and how to use external providers for IT/technology infrastructure design and planning activities

• any issues involved in the outsourcing of IT/technology infrastructure design and planning

• appropriate internal and/or external technical expertise to use during IT/technology infrastructure design and planning activities

• implications for an organisation's operational effectiveness brand and reputation that may result from IT/technology infrastructure design and planning activities

• the implications of business strategy changes to the operating model and other strategic issues on the IT/technology infrastructure supporting an organisation

c) authorise agree and contract

• actions

• approaches

• strategy policies plans procedures standards methods tools and techniques

• contractual arrangements with external providers of IT/technology infrastructure design and planning activities services

• decisions

Understanding 4086.01U

a) what is the range of approaches that may be used to conduct IT/technology Infrastructure design and planning activities and their appropriateness in a range of business and organisational contexts

Direct the management of IT/technology infrastructure design and planning 4086.02

Performance Criteria 4086.02C

a) Take proactive action in IT/technology infrastructure design and planning in order to try to improve the availability of systems services and assets to support service objectives

b) Verify any proposed designs and plans developed by others for any changes to existing IT/technology infrastructure

c) Make clear and timely decisions to improve the quality and effectiveness of IT/technology infrastructure design and planning activities and their deliverables within an organisation

d) Correctly identify what actions may be taken in the event of IT/technology infrastructure design and planning activities not supporting the business needs service delivery/operation objectives and/or the service strategy

e) Make well reasoned decisions on when and how to use external providers of IT/technology infrastructure design and planning services selecting the preferred
organisations and negotiating/contracting with them accordingly on behalf of the organisation

Knowledge 4086.02K

a) verify
   - the proposed designs and plans for any changes to existing IT/technology infrastructure
b) make decisions
   - on the total effort elapsed time risk complexity and cost that may be required to develop test and implement new designs for infrastructure products services and equipment
   - on the actions to be taken in the event of IT/technology infrastructure design and planning activities being incomplete inaccurate inadequate or inappropriate
   - to improve the quality and effectiveness of IT/technology infrastructure design and planning activities and their deliverables within an organisation
   - on when and how to use external providers of IT/technology infrastructure design and planning services
   - on which external providers of IT/technology infrastructure design and planning services to use
   - on the results provided by monitoring IT/technology infrastructure design and planning activities and their deliverables
   - on the actions that may be taken in the event of IT/technology infrastructure design and planning activities and their deliverables not meeting the business needs
   - on the actions that may be taken in the event of IT/technology infrastructure design and planning activities and their deliverables not aligning with other design and planning activities
   - on the actions that may be taken in the event of external providers of IT/technology infrastructure design and planning services failing to provide an efficient or quality service
c) apply the metrics to measure the performance of IT/technology infrastructure design and planning activities
d) interpret the benefits and business case for any changes to replacements or refreshes of IT/technology infrastructure that are required
e) advise and guide others on best practice in IT/technology infrastructure design and planning activities
f) negotiate with external providers of IT/technology infrastructure design and planning services

Take effective control of IT/technology infrastructure design and planning activities and their deliverables 4086.03

Performance Criteria 4086.03C

a) Routinely monitor the alignment of IT/technology infrastructure design and planning activities and their deliverables with business needs service operation objectives and the service strategy taking action where appropriate
b) Regularly monitor the quality and effectiveness of external providers of IT/technology infrastructure design and planning services identifying and recommending action where appropriate
c) Clearly and precisely report the results from monitoring the alignment of IT/technology infrastructure design and planning activities and their deliverables with business needs service operation objectives and service strategy

Knowledge 4086.03K

a) monitor
   - the quality and effectiveness of external providers of IT/technology infrastructure design and planning services
   - the alignment of IT/technology infrastructure design and planning activities and their deliverables with business needs service operation objectives and the service strategy
b) report
   - findings from monitoring the quality and effectiveness of external providers of IT/technology infrastructure design and planning services
   - the results from monitoring the alignment of IT/technology infrastructure design and planning activities and their deliverables with business needs service operation objectives and service strategy
c) present the overall cost and complexity of designs for new IT/technology infrastructure to support systems/solutions/services
d) take measures
   - to be proactive in IT/technology infrastructure design and planning in order to try to improve the availability of systems services and assets to support service objectives
   - to anticipate and respond to business strategy changes to the operating model and other strategic issues that may impact on the IT/technology infrastructure supporting an organisation