



Australian Government

Department of Education, Employment and Workplace Relations

ICAICT707A Direct research and business response to new ICT technology

Release: 1

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Modification History

Release	Comments
Release 1	This Unit first released with <i>ICA11 Information and Communications Technology Training Package version 1.0</i>

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to direct the research, and plan the business response, to new and emerging technologies in the information and communications technology (ICT) sector. It includes the directing of research, vendor evaluation, feasibility study and proof of concept of these new and emerging ICT technologies.

Application of the Unit

Chief information officers in medium to large organisations apply the skills and knowledge in this unit to direct the investigation and future business direction of new ICT technology in their organisation.

Their job roles combine high-level management and business skills combined with technical experience to perform investigations into the business direction for new and emerging ICT technologies in their organisation.

Licensing/Regulatory Information

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement but users should confirm requirements with the relevant federal, state or territory authority.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Element	Performance Criteria
<i>Elements describe the essential outcomes of a unit of competency.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.</i>

Elements and Performance Criteria

<p>1. Direct initial research into new ICT technologies</p>	<p>1.1 Establish and implement procedures to identify <i>new ICT technology</i> that may support <i>business innovation</i></p> <p>1.2 Confirm <i>research purpose</i> for the evaluation of new ICT technology as it relates to possible <i>business opportunities</i></p> <p>1.3 Ensure a <i>structured research plan</i> is prepared in line with the defined research purpose</p> <p>1.4 Monitor the implementation of the structured research plan to ensure its outcomes meets the identified research purpose</p> <p>1.5 Formulate <i>business case</i> relating to new ICT technology, including consideration of <i>organisational environment</i></p> <p>1.6 Present business case to the <i>business stakeholders</i> so that the future business direction is established and agreed</p>
<p>2. Direct evaluation of new ICT technology</p>	<p>2.1 Establish <i>evaluation criteria</i> and methods of measurement</p> <p>2.2 Ensure suitable <i>suppliers and vendors</i> are appropriately evaluated to provide credibility, quality and support for implementation</p> <p>2.3 Oversee the preparation of <i>feasibility study</i> report into new ICT technology ensuring critical <i>risks</i> are identified</p> <p>2.4 Ensure feasibility study of new ICT technology is accurately presented to business stakeholders so that the future business direction is established and agreed</p>
<p>3. Direct the proof of concept evaluation of new ICT technology</p>	<p>3.1 Ensure vendor's new ICT technology is legally acquired for <i>proof of concept</i> (POC) evaluation of new ICT technology</p> <p>3.2 Establish <i>project requirements</i>, including <i>deliverables</i>, for POC evaluation</p> <p>3.3 Endorse <i>project plan</i> for POC evaluation</p> <p>3.4 Monitor implementation of POC evaluation project to ensure project deliverables are met</p>
<p>4. Determine future business response to new ICT technology</p>	<p>4.1 Oversee preparation of report on evaluation of new ICT technology, including the consequences of not implementing it</p> <p>4.2 Ensure results of new ICT technology evaluation are accurately presented to stakeholders so that the future <i>business response</i> is established and agreed</p>

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

- analytical skills to evaluate and synthesise information from diverse range of sources
- communication skills to:
 - convey complex and abstract concepts and information in plain English
 - liaise with internal and external personnel on technical, operational and business-related matters
- group facilitation and presentation skills to:
 - gain consensus on concepts and new proposals
 - transfer and collect information
- literacy skills to:
 - interpret manuals
 - process and present written and verbal information to a diverse range of people
 - write reports, design solutions, summarise findings and recommendations in required formats in plain English
- numeracy skills to assess costs, benefits and business options
- planning skills to:
 - estimate scope, time, cost and quality
 - plan communications and risk management
- problem-solving skills to:
 - resolve unpredictable problems, with reference to the new ICT technology
 - solve unknown problems in a range of contexts, particularly in developing new approaches with new ICT technology
- research skills to:
 - determine requirements
 - source information from a diverse range of resources
- safety awareness skills to:
 - apply precautions and required action to minimise, control or eliminate hazards that may exist during work activities
 - ensure required level of attention to detail to work without injury to self or others, or damage to goods or equipment
 - foresee the possible OHS implications of the new ICT technology
- teamwork skills to contribute to investigating new ICT technology for new roles in the workplace.

Required knowledge

- business knowledge in:
 - client business domain, business function, processes and organisation

- components of the business planning process relevant to the investigation of the particular new ICT technology
- current business practices related to conducting investigation into new ICT technology
- customer and business liaison
- information gathering and presentation techniques
- quality assurance practices, to promote reliable investigation processes
- client business needs, with a view to expanding into new possibilities, as presented by new ICT technology
- ICT knowledge in:
 - broad knowledge of vendor product directions
 - current ICT industry-accepted technologies, including broad knowledge of general features and capabilities, with particular reference to emerging ICT trends
 - current industry and technology information sources
 - industry networks, key individuals and organisations within the ICT industry
 - evaluating new ICT technology.

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	<p>Evidence of the ability to:</p> <ul style="list-style-type: none"> • research and evaluate appropriate new ICT technology for an organisational need • convey and access conceptual information regarding new ICT technology in relation to organisational needs.
Context of and specific resources for assessment	<p>Assessment must ensure access to:</p> <ul style="list-style-type: none"> • relevant documentation, feasibility studies and equipment manuals • other site-related documentation. <p>Where applicable, physical resources should include equipment modified for people with special needs.</p>
Method of assessment	<p>A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:</p> <ul style="list-style-type: none"> • the preferred assessment method is through a workplace project or through a simulated medium to large enterprise workplace project • direct observation of the candidate carrying out project work • review of reports and plans completed by the candidate • verbal or written questioning to assess knowledge of organisational procedures • review of a portfolio of the project work undertaken.
Guidance information for assessment	<p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, where appropriate.</p> <p>Assessment processes and techniques must be culturally appropriate, and suitable to the communication skill level, language, literacy and numeracy capacity of the candidate and the work being performed.</p> <p>Indigenous people and other people from a non-English speaking background may need additional support.</p> <p>In cases where practical assessment is used it should be combined with targeted questioning to assess required knowledge.</p>

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

<p><i>New ICT technology</i> may include:</p>	<ul style="list-style-type: none"> • hardware technologies: <ul style="list-style-type: none"> • cloud computing appliances such IBM Cloudburst • hardware enterprise service bus (ESB) • multi-core or multi-threading processors • service-oriented architecture (SOA) appliances • mobile technologies: <ul style="list-style-type: none"> • third generation cellular radio for mobile technology (3G) • digital signature technology for mobile phone users • global system for mobile (GSM) communications • location-based services for mobiles • networking technologies: <ul style="list-style-type: none"> • access gateways • Bluetooth chips for wireless connections over short distances • computer telephony integration • enhanced data rates for GSM evolution (EDGE) to increase GSM network capacity and data rates • fax gateways • general packet radio services (GPRS) • internet telephony • universal mobile telephony system (UMTS) • wireless application protocol (WAP) • xDSL technologies, such as asymmetric digital subscriber line (ADSL) • software technologies: <ul style="list-style-type: none"> • virtualisation • voice verification technology • web technologies: <ul style="list-style-type: none"> • cloud computing • business to business electronic data transfer: <ul style="list-style-type: none"> • United Nations Electronic Data Interchange for Administration Commerce and Transport
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	<p>(UN/EDIFACT)</p> <ul style="list-style-type: none"> • web browsers • XML via internet.
<i>Business innovation</i> may relate to:	<ul style="list-style-type: none"> • adaptation or change to a process, procedure, product, service or system • new initiatives to the organisation.
<i>Research purpose</i> may be contained in documents:	<ul style="list-style-type: none"> • agreements • business strategy documents • ICT strategy documents • project brief • research brief.
<i>Business opportunities</i> may relate to:	<ul style="list-style-type: none"> • ideas for the general development or advancement of an organisation and its programs, services and products through business process re-engineering • ideas to create profits or assets for an organisation.
<i>Structured research plan</i> may relate to:	<ul style="list-style-type: none"> • planning document, outlining the methods and proposed areas of research into the new ICT technology • information on new ICT technology sourced from a wide range: <ul style="list-style-type: none"> • archives • community organisations • computer data, including internet • discussions with current industry practitioners • discussions with industry personnel, manufacturers, and technical and sales personnel • government departments • industry associations and organisations • industry journals • libraries (such as text, film, video, sound, graphic) • media (such as film, television, radio, newspapers, multimedia) • media archives • museums and galleries • organisational policies, procedures and journals • personal observations and experience • professional organisations • reference books • technical publications and manuals.
<i>Business case</i> may relate to:	<ul style="list-style-type: none"> • analysis of potential impact of research on organisational environment • initial costing and return on investment for the adoption of

	<p>the technology</p> <ul style="list-style-type: none"> report identifying the suitability and potential application of new ICT technology based on the research findings.
<p>Organisational environment may relate to:</p>	<ul style="list-style-type: none"> legislative, social and environmental: <ul style="list-style-type: none"> award and enterprise agreements copyright laws defamation laws industry codes of practice intellectual property and confidentiality requirements International Organization for Standardization (ISO), International Electrotechnical Commission (IEC), Institute of Electrical and Electronics Engineers (IEEE), Internet Engineering Task Force (IETF) and Australian Standards (AS) standards legal and regulatory policies affecting ICT national, state and territory legislative requirements OECD Guidelines for Consumer Protection in the Context of Electronic Commerce privacy legislation relevant environmental and sustainability legislation, regulations and codes of practice applicable to industry and organisation organisational policy and procedures: <ul style="list-style-type: none"> business ethics confidentiality electronic communication fraud prevention and detection human resource management information management intellectual property privacy risk management security.
<p>Business stakeholders may include:</p>	<ul style="list-style-type: none"> customers departments within organisation federal government local government management non-government organisations shareholders staff

	<ul style="list-style-type: none"> • state government • suppliers.
Evaluation criteria may relate to:	<ul style="list-style-type: none"> • measures for monitoring and evaluating the efficiency and effectiveness of new ICT technology.
Suppliers and vendors may include:	<ul style="list-style-type: none"> • businesses, organisations or bodies providing new ICT technology to the organisation • commercial or open-source technologies • profit or not-for-profit • local, national or international businesses.
Feasibility study may relate to:	<ul style="list-style-type: none"> • study conducted to determine whether feasible solutions exist to a business problem, prior to the commitment of substantial resources.
Risks may include:	<ul style="list-style-type: none"> • damage to property or equipment • environmental • equipment or system failures • financial, such as economic loss or failure • industrial disputation • natural disasters • OHS, including disease • political events • product failure • professional incompetence • security failure, including criminal or terrorist activities.
Proof of concept refers to:	<ul style="list-style-type: none"> • gathering evidence to demonstrate that new ICT technology is viable in the organisation's business environment • partially or fully-developed prototype of the application of the new ICT technology.
Project requirements may include:	<ul style="list-style-type: none"> • budget • outage requirements • preferred vendor and vendor product • project plan • SLAs • specific customer requirements • timelines • urgency.
Deliverables may refer to:	<ul style="list-style-type: none"> • unique and verifiable product, result or task that is produced to complete a particular project • measurable, tangible, verifiable item produced as part of a project • agreed upon set of evaluation criteria.
Project plan refers to:	<ul style="list-style-type: none"> • broad project description

	<ul style="list-style-type: none">• cost-benefit studies as a guide to the decision-making process• costing estimates and operating budget• preferred equipment and vendors• proposed project timing• resources.
<i>Business response</i> refers to:	<ul style="list-style-type: none">• agreed future direction for the business operations of an organisation with respect to the use or implementation of a specific new ICT technology• direction for further research or development.

Unit Sector(s)

General ICT