



ADVANCING
THE ICT
PROFESSION

NZCS Professional Knowledge Curriculum

Non-technical knowledge for all IT Professionals

Version 1.0

September 2009

Approach

The NZCS ITCP Certification Model describes Professional Knowledge as:

“Covering the non-technical aspects of being a professional which help define the fundamental difference between a professional and a practitioner. This includes an understanding of, and adherence to, Ethics and Professional Practice, knowledge of ICT Legal Issues, and Organisational context and awareness.”

Purpose of the curriculum

A detailed definition of the professional knowledge curriculum is required to:

- Define the professional knowledge required by ICT Professionals operating in New Zealand
- Provide guidance for ITCP candidates to assess their professional knowledge competency and identify areas requiring further development
- Assist in determining content for professional development courses offered in New Zealand
- Allow ICT Professionals and their managers to identify potential professional development options
- Assist in the assessment of the competency of ITCP applicants
- Provide guidance to tertiary providers in professional development requirements for inclusion in academic curricula

Contributors

The following individuals contributed to the creation of this Curriculum, based on requirements defined during the consultation process during the creation of ITCP in NZ.

- **Beverley Bunker** (Convenor) – Independent Consultant
- **Katrine Evans** – Privacy Commission
- **Rosie Byford** – Privacy Commission
- **Laurence Millar** – Independent Consultant
- **Paul McKittrick** – Centre for Critical Infrastructure Protection
- **Gavin Adlam** – ICT Lawyer
- **David Downs** – Corporate Services Director
- **Jim Whitman** – NZCS Member
- **Paul Heath** – ICT Recruiter
- **Alison Holt** – Standards Expert
- **Don Robertson** – NZCS President
- **Paul Matthews** – NZCS Chief Executive
- **Guy Burgess** – ICT Lawyer

Curriculum

Overview

The concept and scope of the Professional Knowledge Curriculum is set to *what non-technical knowledge (in the broadest sense) should ALL ICT professionals have?*

The Professional Knowledge Curriculum comprises part of the overall “package” an ICT Professional should possess. These essential components are defined within the *Information Technology Certified Professional (ITCP)* programme as follows:

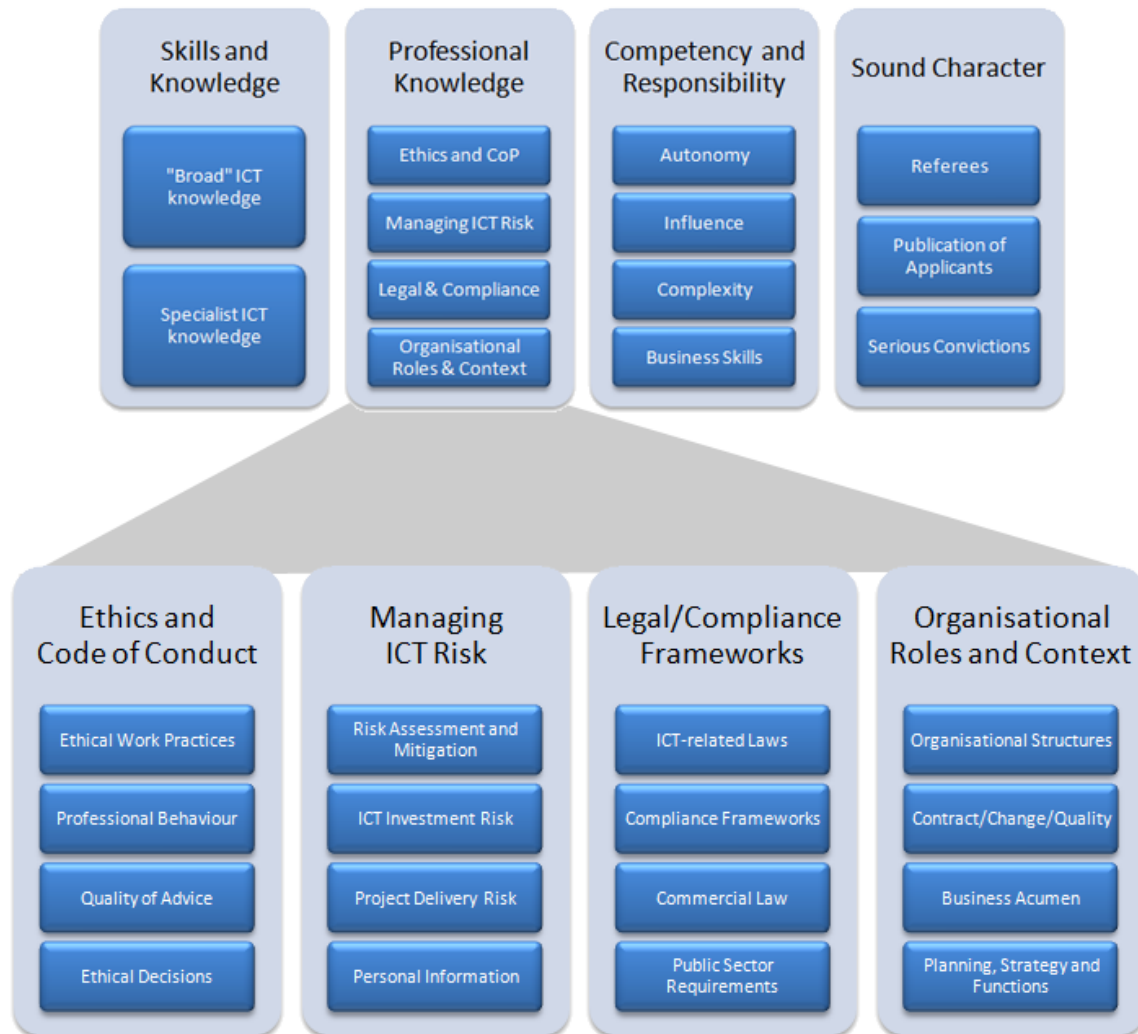


Figure 2: Outline of Professional Knowledge Curriculum

Note that the Professional Knowledge Curriculum is split into 4 sections: Ethics and Code of Conduct, Managing ICT Risk, Legal/Compliance Frameworks and Organisational Roles and Context.

This Curriculum outlines the base (or minimum acceptable) knowledge required in each of these 4 areas.

The Professional Knowledge Curriculum

1. Ethics and Code of Professional Conduct

This category includes an understanding of ethical issues and knowledge of topics to support NZCS's Code of Professional Conduct and Code of Practice.

Eth-001	Ethical work practices <i>Understanding the elements of ethical behaviour in dealing with clients and business colleagues</i> Includes an understanding of the following items: <ul style="list-style-type: none">○ The 8 tenets of the NZCS Code of Ethics/Conduct○ What Professional Misrepresentation is and how to avoid it○ The importance of managing Conflict of interest issues○ The concept of appropriate remuneration for services○ "Full disclosure" requirements with regard to ICT advice
Eth-002	Professional behaviour <i>Knowledge of what constitutes good professional behaviour</i> Includes an understanding of the following items: <ul style="list-style-type: none">○ Discretion in regard to client and employer affairs○ The importance of cultural respect in the workplace, including the principles of the Human Rights Act and Treaty of Waitangi○ What is meant by personal integrity in a professional sense○ The importance of not denigrating or damaging reputation of competitors, clients or colleagues
Eth-003	Quality of Advice <i>Knowledge of the importance of ensuring the work and advice you provide as a professional is of the highest standard</i> Includes an understanding of the following items: <ul style="list-style-type: none">○ Professional limitations and when to seek further expertise○ What is meant by "delivering on promise"○ "Expert advice", and managing conflicting opinions○ The importance of continuing professional development
Eth-004	Ethical Decisions <i>An understanding of what constitutes an ethical decision and resolving them</i> Includes an understanding of the following items: <ul style="list-style-type: none">○ The importance of ensuring a decision or advice is in the best interests of the client or employer○ Importance of consideration and informing one's clients or employers of the economic, social, environmental or legal consequences which may arise from decisions and actions

2. ICT Risk

This category includes an understanding of risk in relation to the management and delivery of ICT. It comprises knowledge of the topics identified below

IR-001	Information Risk Assessment <i>Understanding of the concepts of risk assessment of Information assets</i> Includes a general understanding of the following concepts: <ul style="list-style-type: none">○ Quantifying the business impact of information risks○ Risks to information confidentiality and mitigation concepts○ Risks to integrity of information and mitigation concepts○ Risks to information availability and mitigation concepts
IR-002	Risk Mitigation <i>Understanding the concept of risk mitigation in relation to Information assets</i> Includes a general understanding of the following concepts: <ul style="list-style-type: none">○ The types of strategies for dealing with risk, including avoidance, acceptance and mitigation○ The existence of security frameworks and when they apply○ The importance of security awareness in the use of ICT, including physical security of information assets○ The concepts of business continuity, disaster recovery and service continuity in relation to ICT○ The role ICT audit plays with regard to risk mitigation○ The role of ICT governance structures in risk mitigation
IR-003	Project Delivery Risk <i>Knowledge of the risks associated with the delivery of a project and appropriate mechanisms to manage them</i> Includes a general understanding of the following concepts: <ul style="list-style-type: none">○ The key risks associated with projects and the importance of assessing them○ The importance of project controls and governance structures to minimise project risk○ The role of project quality and testing processes in reducing delivery risk
IR-004	Managing Personal Information <i>Understanding the principles that apply to personal information including identification, collection, storage, use and disclosure of personal information</i> Includes a general understanding of the following concepts: <ul style="list-style-type: none">○ The principles of privacy○ Privacy Policies, and the important of adhering to them○ Ethical issues of using personal information○ How personal information can be identified & categorised○ The concept of “privacy by design”

3. Legal & Compliance Frameworks

This category includes an understanding of the Legal and compliance frameworks that impact ICT within NZ. It comprises knowledge of the topics identified below

LF-001	ICT-related laws <i>Understanding of the various important (NZ) laws that affect ICT operations</i> Includes a general conceptual understanding of the following laws: <ul style="list-style-type: none">○ The Privacy Act and implications of breaches to the Act○ NZ laws relating to electronic commerce○ The Public Records Act & Archives Act and implications for ICT○ The legal requirements for managing Spam○ Legal issues of Intellectual Property, copyright and patents○ Legal liability, professional liability, third-party liability○ Legislation relating to electronic crime and its impact on ICT
LF-002	Compliance Frameworks <i>Understanding of what compliance frameworks are and the role of internal and external standards</i> Includes a conceptual understanding of the following items: <ul style="list-style-type: none">○ The difference between certification, guidelines, standards, frameworks and methodologies○ The concept of “good practice” rather than “best practice”○ How standards can be used to help with legislative compliance○ The role of good practice within ICT and an awareness of the existence of key frameworks (for example ITIL, CMM, Cobit)○ The use of policies & standards to influence behaviour within the organisation (e.g. acceptable use policies)○ The existence of mandatory requirements on Government departments and their suppliers (eg from SSC, OAG, MED)
LF-003	Commercial Law <i>Understanding of legislation relating to procurement of services and technology solutions</i> Includes a conceptual understanding of the following items: <ul style="list-style-type: none">○ That there are legal requirements on companies during the tendering process○ The existence and nature of legislation relating to contracts (e.g. Fair Trading Act, Commerce Act, Consumer Guarantees Act)○ The Commissioning Rule and concept of ownership of software○ Software licensing and third party software issues, such as those of combining code under different licensing models○ difference between commercial, public domain, permissive (e.g. BSD/Apache) and protective (e.g. LGP, GPL, AGPL) licenses○ Purpose of service contracts and SLAs○ The role of non-disclosure agreements in regards to contracts

4. Roles and Context of ICT within the Organisation

This category includes an understanding of the key ICT roles and their purpose within the organisation, as well as the application of ICT within an organisational context.

<p>Org-001</p>	<p>ICT organisation and structure <i>Knowledge of how ICT organisations are structured and the various roles and functions performed by ICT within the organisation</i> Includes a general understanding of the following concepts:</p> <ul style="list-style-type: none"> ○ The difference between Decentralised vs Centralised organisational models, and how they affect ICT ○ The key ICT roles in an organisation, and their purposes ○ That there are different models for ICT sourcing: Insourcing, outsourcing, co-sourcing and offshoring ○ That there are tendering models and requirements for each (eg including RFP, RFI processes)
<p>Org-002</p>	<p>Role of Business and Information Systems strategy <i>Understanding of the purpose served by an IS strategy and its components</i> Includes a general understanding of the following concepts:</p> <ul style="list-style-type: none"> ○ The purpose of the organisation’s strategic plan ○ That an IS strategy is aligned with the organisational goals ○ Different models for ICT selection e.g. Proprietary vs. Open source, custom vs. best of breed, lease vs. buy etc, and the general conceptual pros and cons of each approach ○ That risk profile impacts on approach to technology adoption (i.e. leading edge, proven or mature technologies)
<p>Org-003</p>	<p>Organisation Change and impact of ICT <i>An understanding of the role ICT plays in organisational change</i> Includes a general understanding of the following concepts:</p> <ul style="list-style-type: none"> ○ How programmes are established and managed to deliver business transformation ○ How projects are managed and deliverables achieved ○ The need to determine feasibility of potential solutions ○ That “stakeholders” exist, who and what they are, and that their expectations must be determined and managed
<p>Org-004</p>	<p>Business Acumen <i>An understanding of the commercial context in which organisations operate</i> Includes a general understanding of the following concepts:</p> <ul style="list-style-type: none"> ○ Governance e.g. role of board of directors, company structures and funding models ○ That there are various business models, and fundamental differences between public, private and not-for-profit sectors ○ The importance of global social, political, environmental and economic trends to an organisation