ICT Qualifications Mandatory Review

Industry Consultation on the roles for graduates of IT-related Diplomas and Certificates in New Zealand

May/June 2013

This consultation closes at 5pm on Friday 7th June 2013.

On behalf of the Steering Group of the ICT Qualifications Review

NZQA
NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MATAURANGA O AOTEAROA

Institute of IT Professionals
NEW ZEALAND

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1. Introduction

The NZ Qualifications Authority (NZQA) is currently overseeing the *Mandatory Review of Qualifications*, a review of all qualifications on the New Zealand Qualifications Framework (NZQF) that meet specific criteria.

The criteria include the review of all qualifications at levels 1-6 on the NZQF (Certificates and Diplomas), excluding qualifications offered by the University sector. The review aims to reduce the duplication and proliferation of qualifications; to ensure the qualifications meet the overall needs of the particular sector and are useful, relevant and fit for purpose; and meet the new requirements for listing qualifications on the NZQF.

In the case of *Information and Communications Technology* (ICT, hereinafter called IT) and Computing, the review is being led by NZQA's National Qualifications Service (NQS) in partnership with the Institute of IT Professionals NZ (IITP). IITP is the independent professional body of the IT sector and is leading the Steering Group while NQS is leading the project team.

1.1 Consultation

The review is at an early stage and the Steering Group is currently seeking the input and guidance of the wider IT industry as to the industry needs around diploma and certificate qualifications in New Zealand.

In particular, the Steering Group is seeking input on the *roles needed for current and future IT Professionals* with Certificate or Diploma-level qualifications.

This document outlines the IT graduate roles the Steering Group currently considers are the most relevant for Certificate and Diploma-level qualifications now and into the future, as well as short plain-English definitions of the main skills these positions would require. These are defined using definitions from the *Skills Framework for the Information Age* (SFIA) competency and skills framework in Appendix B, the most widely used skills framework for IT.

1.2 Responding to the Consultation

After reading through this consultation document, we ask that you complete a very short (less than 5 minute) questionnaire on your views as to whether these roles, and others, are suitable.

Please visit http://www.iitp.org.nz/quals/ to provide your view. Note the consultation questions being asked are contained in Appendix A.

You can find more info about the review at http://tinyurl.com/ITQuals or contact ITquals.review@nzqa.govt.nz with any questions you might have.

Current consultation closes at **5pm on Friday 7th June 2013**.

Paul Matthews
Chair, IT Qualifications Steering Group

Diana Garrett
IT Qualifications Project Team Lead

2. Scope for Qualifications

2.1 NZ Qualifications Framework Levels 1-6

The review is limited to considering IT/ICT/Computing-related qualifications at levels 1 to 6 on the NZ Qualifications Framework (NZQF).

This includes **Certificates and Diplomas** offered by *Institutes of Technology and Polytechs* (ITPs) as well as *Private Training Establishments* (PTEs). Note that qualifications offered by Universities are specifically excluded.

The NZ Qualifications Framework levels being proposed to Diplomas and Certificates leading to the IT Industry are levels 3 to 6, with the characteristics in the following table:

LVL	KNOWLEDGE	SKILLS	APPLICATION
3	Some operational and theoretical knowledge in a field of work or study	Select and apply from a range of known solutions to familiar problems Apply a range of standard processes relevant to the field of work or study	Limited supervision Requiring major responsibility for own learning and performance Adapting own behaviour when interacting with others Contributing to group performance
4	Broad operational and theoretical knowledge in a field of work or study	Select and apply solutions to familiar and sometimes unfamiliar problems Select and apply a range of standard and non-standard processes relevant to the field of work or study	Self-management of learning and performance under broad guidance Some responsibility for performance of others
5	Broad operational or technical and theoretical knowledge within a specific field of work or study	Select and apply a range of solutions to familiar and sometimes unfamiliar problems Select and apply a range of standard and non-standard processes relevant to the field of work or study	Complete self-management of learning and performance within defined contexts Some responsibility for the management of learning and performance of others
6	Specialised technical or theoretical knowledge with depth in a field of work or study	Analyse and generate solutions to familiar and unfamiliar problems Select and apply a range of standard and non-standard processes relevant to the field of work or study	Complete self-management of learning and performance within dynamic contexts Responsibility for leadership within dynamic contexts

Table 1: NZ Qualifications Framework Level Descriptions

For reference, a standard Bachelors Degree is Level 7 and Honours is Level 8. Note that details for all levels are included in Appendix E.

Certificates are generally shorter courses (from 4 months of study) and Diplomas are usually either 12 months or 24 months.

2.2 The two streams of IT: Tool vs Profession

The *review* considers two distinct streams of IT, being usage of computers and computing devices by the general public (often referred to as *Digital Literacy*), and the qualifications for those intending to enter the IT profession.

For the purpose of this document and for clarity, these have been referred to as "IT as a Tool" and "IT as a Profession" respectively. While in reality there is generally a continuum from one to the other, it's important that both of these distinct streams are considered in their own right.

Please note that this consultation ONLY considers "IT as a Profession" areas. A separate consultation will occur around IT as a Tool.

2.3 IT as a Tool

The *IT as a Tool* component of the review considers qualifications for users of technology, such as basic digital literacy and the confident and competent use of computing technology and devices, the Internet, user applications, operating systems and other commonly used applications.

This important component is specifically excluded from this consultation. This consultation focuses on requirements of the IT industry (using a broad definition), not users of technology in business, communities, the home and elsewhere. This further consultation will occur separately soon.

2.4 What's not included

The following areas are specifically excluded from this review as they are covered in alternative NZQA reviews. Please note that rather than being black and white, most of this is a continuum; **aspects of these will be included.**

2.4.1 Graphics / Design

Graphics, graphic design and digital design are covered within the *Creative Arts Review* and are excluded from this review.

This does pose some difficulties given the continuum between IT and design. For example, web *design* might be technically out of scope while web *development* within scope, subject to the qualification levels, but work will need to be completed on where the crossover occurs.

2.4.2 Telecommunications

Telecommunications, including telecomms technicians and telecomms networking, have been included in the *Communications Review*. Note that networking from a strictly IT perspective may be included in this review and further work will be necessary to clearly differentiate and align the two.

2.4.3 Business-specific technology

The use of technology within business administration is covered in the *Business Review*. There is some cross-over within the "IT as a Tool", or Digital Literacy, components of this review and the Business Review.

3. Main Roles for Qualification Graduates: IT as a Profession

This section outlines the main graduate roles for those graduating from Certificates and Diplomas considered to focus on "IT as a Profession", ie those that are likely to continue on to a job within the IT industry.

Please note that there may be significant crossover between these roles in any particular qualification. A qualification might include more than one of these roles or even a "generalist" role, however these would be the proposed target roles for graduates.

It's also important to note that graduates may move on to other, more advanced, roles within industry over time, however this would be the target roles for graduates.

The roles covered in this section include:

3.1 Preparation for further study

3.2 Computing Technician

3.3 Helpdesk and Technical Support

3.4 Network/Systems Administrator

3.5 Implementation and Application Support

3.6 Software Development

These roles are defined in more detail using the SFIA Framework in Appendix C.

3.1 Preparation for further study

One pathway for graduates is further study.

In the case of Certificates, this is likely to be additional Certificates, a Diploma or a Degree. In the case of Diplomas, this is likely to be a Bachelors Degree.

3.2 Computing Technician

Computing Technicians diagnose, repair, install, assemble and maintain computers and other technology devices. This usually includes hardware, peripherals, software and other equipment.

A Computing Technician at this level would generally deal with computers and devices in a home or small office environment as well as basic networking and in some cases SME network/server support. A technician may also work under supervised conditions in a larger office or network environment. There is some crossover between a senior technician and a Systems Administrator.

3.3 Helpdesk and Technical Support

Helpdesk and technical support officers often provide the first line of support, usually be telephone and internet/email.

As well as providing basic technical support on software, installations, hardware or other relevant areas (depending on the organisation), helpdesk and technical support teams must document issues and resolutions.

Verbal and written communication skills are of paramount importance.

3.4 Network/Systems Administrator

Network and Systems Administrators maintain networks and operating systems, ensuring well functioning and secure information systems. In a Cloud Computing environment, network and system administrators are responsible for monitoring performance and conducting maintenance of a Cloud environment.

Network Administrators generally deal with the functioning and security of networks whereas Systems Administrators are concerned with operating systems and other infrastructure.

3.5 Implementation and Application Support

An Implementation and Application Support role provides assistance during the installation or upgrade of systems or applications.

Implementation and Application Support roles will often conduct client-side or cloud-based installation, setup, training and early support for bespoke or other software and resolve any issues that might arise.

3.6 Software Development

The Steering Group believes there are software development pathways through the Diploma and Certificate level, however there is not yet consensus on what level of employment role this would lead to.

We are thus seeking views on the types of roles that an entry-level developer, having undertaken 1-2 years of study but not obtained a Bachelor-level Degree, would be appropriate and what these roles would entail.

Again, please note these are defined in more detail as an example, including expected levels, in Appendix C.

Appendix A: Consultation Questions

Please visit http://www.iitp.org.nz/quals/ to provide your response. Note that some questions may appear slightly differently.

1. What are your contact details? [Name/Email/Employer/Position]
2. Do you work within:
    a) The IT Industry (including IT-related roles in non-IT companies and non-technical management roles in IT companies)
    b) A Polytech or Institute of Technology (ITP)
    c) A Private Training Establishment (PTE)
    d) A Wananga
    e) A secondary school or other educational organisation
    f) None of the above
3. Are you involved in the employment of IT staff or do you have IT staff reporting to you?
4. A "Certificate" is generally a short (4-6 month) qualification with a narrow focus, although Certificates can be up to 12 months. How much value do you believe a Certificate qualification covering the following roles, as defined in the consultation document, would provide to the IT industry?
    a. The **Computer Technician** role?
    b. The **Helpdesk and Tech Support** role?
    c. The **Network/Systems Administrator** role?
    d. The **Implementation / Application Support** role?
    e. Some form of **Software Developer** role?
5. What type of software development activities, tasks and roles would you expect to be undertaken by someone with a 4-6 month Certificate in software development? *Please leave this blank if you are unfamiliar with software development roles and responsibilities*
6. A "Diploma" is a longer (usually 12 to 24 month) broader focused qualification. How much value do you believe a Diploma qualification covering the following roles, as defined in the consultation document, would provide to the IT industry?
    a. The **Computer Technician** role?
    b. The **Helpdesk and Tech Support** role?
    c. The **Network/Systems Administrator** role?
    d. The **Implementation / Application Support** role?
    e. Some form of **Software Developer** role?
7. What type of software development activities, tasks and roles would you expect to be undertaken by someone with a 12-24 month Diploma in

software development? *Please leave this blank if you are unfamiliar with software development roles and responsibilities*

8. Are there any areas of IT that have been missed which you believe Certificate or Diploma level qualifications may be appropriate for?
9. Some organisations provide third party "vendor certifications" in IT, such as CompTIA A+, Cisco and others. Should qualifications such as those being considered as part of this review be aligned with vendor certifications?
10. What other skills, attributes and aspects of cultural awareness do you believe someone with an IT qualification should possess?
11. Do you have any further comments related to this review?

Appendix B: Mapping Qualification Outcomes to SFIA

This Appendix outlines SFIA in brief and how qualification outcomes and roles will be mapped to SFIA to ensure standardisation of language between qualifications and industry.

B.1 Skills Framework for the Information Age (SFIA)

The internationally developed *Skills Framework for the Information Age* (SFIA) provides a broad competency and skills framework for those practicing in IT. SFIA provides standardised definitions of skills and levels.

SFIA is the most widely used IT skills competency framework in the world. Originally developed in the UK, SFIA is widely used in Australia and increasingly in New Zealand.

SFIA defines 96 professional IT skills, organised in six categories, each of which has several subcategories. It also defines seven levels of attainment, each of which is described in generic, non-technical terms.

Each skill has an overall definition, and an "at-level" definition for each of the levels at which it can be recognised.

B.2 General SFIA "Levels"

SFIA defines 7 general levels of competency and responsibility, ranging from "follow" to "set strategy, inspire, mobilise".

Some examples:

Level 1 is generally the entry-level for IT, generally for someone with no qualifications and following a simple script for work.

Level 3 is regarded as a "Technologist" level; a junior IT professional who has an educational and experiential background to be responsible for their own work.

Level 5 is regarded as the "Professional" level, generally for a senior IT Professional with responsibility for providing advice that will impact a project or organisation, or overseeing a substantial project and the work of others.

As well as the general level definitions, SFIA provides plain-English skill definitions at each of the relevant levels for each skill. Most skills only cover a subset of levels as any one skill is generally not relevant to all levels.

The general definitions for SFIA Levels 1-4 are contained in Appendix D.

B.3 Certificates and Diplomas mapped to SFIA Skills

For consistency within the sector and to avoid reinventing the wheel, it is desirable to consider target graduate roles within the context of SFIA definitions.

It should be noted that SFIA defines skills, not roles. Generally particular employment roles will be made up of a number of SFIA skills at varying levels. These skills and levels will vary depending on the needs of the employing organisation, however SFIA provides a common framework to define these.

B.4 Target SFIA levels for Certificates and Diplomas

While there will be some variation and this should be considered a guide only, the following table outlines a possible mapping between NZQF levels, SFIA levels and target roles (outlined in the following sections). Note this is very DRAFT.

It should be noted that SFIA is a competency framework, meaning the qualification itself is not sufficient and a level of experience would also be required, however the qualification would satisfy the educational requirements of the relevant SFIA levels.

It should further be noted that this is just the target level for the qualification. It's highly likely and desirable that graduates would move beyond these levels during the course of their careers.

Note that **Certificates** are 40 credits or higher and **Diplomas** are usually 120 credits or higher. 120 credits is one year full-time.

NZQF Level	Target Roles	SFIA Levels
Level 1	-	N/A
Level 2 (Certificate)	4.2 Basic use of IT	L1: Follow
Levels 3-4 (Certificate)	4.1 Preparation for further study 4.3 Power user	L2: Assist
Levels 5-6 (Certificate)	5.1 Preparation for further study; + potentially a subset of below	L2: Assist L3: Apply
Levels 5-6 (Diploma)	5.2 Computer Technician 5.3 Helpdesk and Tech Support 5.4 Network/Systems Admin 5.5 Implementation/App Support 5.6 Associate Developer	L3: Apply
Level 7 (Degree) *Out of scope of this review*	Software Developer, Engineer, Business Analyst, etc	L4: Enable

More information on NZQF level descriptors is available in Appendix E or at http://www.nzqa.govt.nz/studying-in-new-zealand/nzqf/understand-nz-quals/

More information on SFIA is available at www.sfia-online.org

Appendix C: Sample SFIA Definitions for IT-specific roles

This Appendix includes sample SFIA skill definitions for the IT-specific roles defined as required by industry now and into the future. Please see Section 5 for a brief description of these roles.

C.1 Preparation for further study

There are no defined SFIA roles for this graduate outcome.

C.2 Computer Technician (Desktop focus)

Example SFIA Skills for a Computer Technician (see 5.2 for brief role description):

HSIN: Systems installation/decommissioning: Level 3

Installs or removes hardware and/or software, using supplied installation instructions and tools including, where appropriate, handover to the client. Conducts tests, corrects malfunctions, and documents results in accordance with agreed procedures. Reports details of all hardware/software items that have been installed and removed so that configuration management records can be updated. Provides assistance to users in a professional manner following agreed procedures for further help or escalation. Maintains accurate records of user requests, contact details and outcomes. Contributes to the development of installation procedures and standards.

Application support: Level 2

Assists in the investigation and resolution of issues relating to applications. Assists with specified maintenance procedures.

Sales support: Level 2

Communicates effectively with customers by telephone and in person. Assists in the provision of customer service, including technical advice and guidance on matters bearing on the successful use of products and services. Assists in devising solutions to customer requirements and solves straightforward problems.

Client services management: Level 3

Acts as the routine contact point. Assists with the development of and applies client services standards to resolve or escalate clients' service problems.

C.3 Helpdesk and Technical Support

Example SFIA Skills for Helpdesk and Technical Support (see 5.3 for brief role description):

Service desk and incident management: Level 3

Receives and handles requests for support following agreed procedures. Responds to requests for support by providing information to enable incident resolution and promptly allocates unresolved calls as appropriate. Maintains records and advises relevant persons of actions taken.

Client services management: Level 3

Acts as the routine contact point. Assists with the development of and applies client services standards to resolve or escalate clients' service problems.

Application support: Level 2

Assists in the investigation and resolution of issues relating to applications. Assists with specified maintenance procedures.

C.4 Network/Systems Administrator

Example SFIA Skills for a Network or Systems Administrator (see 5.4 for brief role description):

Network support: Level 3

Identifies and resolves network problems following agreed procedures. Uses network management software and tools to collect agreed performance statistics. Carries out agreed network maintenance tasks.

IT Operations: Level 3

Carries out agreed operational procedures, including network configuration, installation and maintenance. Uses network management tools to collect and report on network load and performance statistics. Contributes to the implementation of maintenance and installation work. Uses standard procedures and tools to carry out defined system backups, restoring data where necessary. Identifies operational problems and contributes to their resolution.

Information security: Level 3

Applies and maintains specific security controls as required by organisational policy and local risk assessments to maintain confidentiality, integrity and availability of business information systems and to enhance resilience to unauthorised access. Contributes to vulnerability assessments. Recognises when an IT network/system has been attacked internally, by a remote host, or by malicious code, such as virus, worm or Trojan etc., or when a breach of security has occurred. Takes immediate action to limit damage, according to the organization's security policy, which may include escalation to next level,

and records the incident and action taken. Demonstrates effective communication of security issues to business managers and others. Performs basic risk assessments for small information systems.

Security administration: Level 3

Investigates minor security breaches in accordance with established procedures. Assists users in defining their access rights and privileges, and operates agreed logical access controls and security systems. Maintains agreed security records and documentation.

C.5 Implementation and Application Support

Example SFIA Skills for Implementation and Application Support (see 5.5 for brief role description):

Application support: Level 3

Identifies and resolves issues with applications, following agreed procedures. Uses application management software and tools to collect agreed performance statistics. Carries out agreed applications maintenance tasks.

Release and deployment: Level 3

Uses the tools and techniques for specific areas of release and deployment activities. Administers the recording of activities, logging of results and documents technical activity undertaken. May carry out early life support activities such as providing support advice to initial users.

Sales support: Level 2

Communicates effectively with customers by telephone and in person. Assists in the provision of customer service, including technical advice and guidance on matters bearing on the successful use of products and services. Assists in devising solutions to customer requirements and solves straightforward problems.

Information content publishing: Level 3

Specifies and creates content management processes to meet the needs of users. Uses agreed tools to make finished material available on appropriate platforms.

Testing: Level 1

Executes given test scripts under supervision. Records results and reports issues. Develops an understanding of the role of testing within system development, as a tool for design improvement as well as a validation process.

Configuration management: Level 2

Applies tools, techniques and processes for administering information (such as the tracking and logging of components and changes) related to configuration items.

C.6 Software Development

This outlines example SFIA Skills for a possible "Associate Developer" level. Note that additional work is required to ascertain whether this is suitable:

Programming/software development: Level 2

Designs, codes, tests, corrects, and documents simple programs, and assists in the implementation of software which forms part of a properly engineered information or communications system.

Data analysis: Level 2

Applies data analysis and data modelling techniques to establish, modify or maintain a data structure and its associated components (entity descriptions, relationship descriptions, attribute definitions).

Requirements definition and management: Level 2

Uses established techniques as directed to identify current problems and elicit, specify and document business functional, data and non-functional requirements for simple subject areas with clearly-defined boundaries. Assists in more complex requirements activities and with the processes for establishing agreed baselines for change and managing the assessment and application of requested changes to those requirements.

Testing: Level 1

Executes given test scripts under supervision. Records results and reports issues. Develops an understanding of the role of testing within system development, as a tool for design improvement as well as a validation process.

Database/repository design: Level 2

Translates and implements simple development project requirements into physical database structures. Assesses proposed changes to object and data structures and implements these changes in physical databases. Assists in database management system support activities for operational database systems.

Appendix D: SFIA Levels of Responsibility (Levels 1-4)

This section includes the first 4 of 7 level definitions as provided by the Skills Framework for the Information Age (SFIA). See www.sfia-online.org for more.

Levels of responsibility: Level 1 (Follow)

Autonomy

Works under supervision. Uses little discretion. Is expected to seek guidance in unexpected situations.

Influence

Interacts with immediate colleagues.

Complexity

Performs routine activities in a structured environment. Requires assistance in resolving unexpected problems.

Business skills

Uses basic information systems and technology functions, applications, and processes. Demonstrates an organised approach to work. Learns new skills and applies newly acquired knowledge. Follows code of conduct and organisational standards. Has sufficient communication skills for effective dialogue with colleagues. Contributes to identifying own development opportunities.

Levels of responsibility: Level 2 (Assist)

Autonomy

Works under routine direction. Uses minor discretion in resolving problems or enquiries. Works without frequent reference to others.

Influence

Interacts with and may influence immediate colleagues. May have some external contact with customers, suppliers and partners. May have more influence in own domain.

Complexity

Performs a range of varied work activities in a variety of structured environments. Contributes to routine problem resolution.

Business skills

Understands and uses appropriate methods, tools and applications. Demonstrates a rational and organised approach to work. Is aware of health and safety issues. Identifies and negotiates own development opportunities. Has sufficient communication skills for effective dialogue with customers, suppliers and partners. Is able to work in a team. Is able to plan, schedule and monitor own work within short time horizons. Absorbs technical information when it is presented systematically and applies it effectively.

Levels of responsibility: Level 3 (Apply)

Autonomy

Works under general direction. Uses discretion in identifying and resolving complex problems and assignments. Usually receives specific instructions and has work reviewed at frequent milestones. Determines when issues should be escalated to a higher level.

Influence

Interacts with and influences department/project team members. Has working level contact with customers and suppliers. In predITable and structured areas may supervise others. Makes decisions which may impact on the work assigned to individuals or phases of projects.

Complexity

Performs a broad range of work, sometimes complex and non routine, in a variety of environments. Applies methodical approach to problem definition and resolution.

Business skills

Understands and uses appropriate methods, tools and applications. Demonstrates an analytical and systematic approach to problem solving. Takes the initiative in identifying and negotiating appropriate personal development opportunities. Demonstrates effective communication skills. Contributes fully to the work of teams. Plans, schedules and monitors own work (and that of others where applicable) competently within limited deadlines and according to relevant legislation and procedures. Absorbs and applies technical information. Works to required standards. Appreciates the wider field of information systems, and how own role relates to other roles and to the business of the employer or client.

Levels of responsibility: Level 4 (Enable)

Autonomy

Works under general direction within a clear framework of accountability. Exercises substantial personal responsibility and autonomy. Plans own work to meet given objectives and processes.

Influence

Influences team and specialist peers internally. Influences customers at account level and suppliers. Has some responsibility for the work of others and for the allocation of resources. Participates in external activities related to own specialism. Makes decisions which influence the success of projects and team objectives.

Complexity

Performs a broad range of complex technical or professional work activities, in a variety of contexts. Investigates, defines and resolves complex problems.

Business skills

Selects appropriately from applicable standards, methods, tools and applications. Demonstrates an analytical and systematic approach to problem solving. Communicates fluently orally and in writing, and can present complex technical information to both technical and non-technical audiences. Facilitates collaboration between stakeholders who share common objectives. Plans, schedules and monitors work to meet time and quality targets and in accordance with relevant legislation and procedures. Rapidly absorbs new technical information and applies it effectively. Has a good appreciation of the wider field of information systems, their use in relevant employment areas and how they relate to the business activities of the employer or client. Maintains an awareness of developing technologies and their application and takes some responsibility for personal development.

Appendix E: NZQF Level Descriptor Table

The table below provides a detailed description of each level in terms of learning outcomes, using common domains and dimensions of progression. Knowledge, skills and application describe what a graduate at a particular level is expected to know, do and be. The term application encompasses responsibility, behaviours, attitudes, attributes and competence.

More information at:
http://www.nzqa.govt.nz/studying-in-new-zealand/nzqf/understand-nz-quals/

LVL	KNOWLEDGE	SKILLS	APPLICATION
1	Basic general and/or foundation knowledge	Apply basic solutions to simple problems Apply basic skills required to carry out simple tasks	Highly structured contexts Requiring some responsibility for own learning Interacting with others
2	Basic factual and/or operational knowledge of a field of work or study	Apply known solutions to familiar problems Apply standard processes relevant to the field of work or study	General supervision Requiring some responsibility for own learning and performance Collaborating with others
3	Some operational and theoretical knowledge in a field of work or study	Select and apply from a range of known solutions to familiar problems Apply a range of standard processes relevant to the field of work or study	Limited supervision Requiring major responsibility for own learning and performance Adapting own behaviour when interacting with others Contributing to group performance
4	Broad operational and theoretical knowledge in a field of work or study	Select and apply solutions to familiar and sometimes unfamiliar problems Select and apply a range of standard and non-standard processes relevant to the field of work or study	Self-management of learning and performance under broad guidance Some responsibility for performance of others

5	Broad operational or technical and theoretical knowledge within a specific field of work or study	Select and apply a range of solutions to familiar and sometimes unfamiliar problems Select and apply a range of standard and non-standard processes relevant to the field of work or study	Complete self-management of learning and performance within defined contexts Some responsibility for the management of learning and performance of others
6	Specialised technical or theoretical knowledge with depth in a field of work or study	Analyse and generate solutions to familiar and unfamiliar problems Select and apply a range of standard and non-standard processes relevant to the field of work or study	Complete self-management of learning and performance within dynamic contexts Responsibility for leadership within dynamic contexts
7	Specialised technical or theoretical knowledge with depth in one or more fields of work or study	Analyse, generate solutions to unfamiliar and sometimes complex problems Select, adapt and apply a range of processes relevant to the field of work or study	Advanced generic skills and/or specialist knowledge and skills in a professional context or field of study
8	Advanced technical and/or theoretical knowledge in a discipline or practice, involving a critical understanding of the underpinning key principles	Analyse, generate solutions to complex and sometimes unpredictable problems Evaluate and apply a range of processes relevant to the field of work or study	Developing identification with a profession and/or discipline through application of advanced generic skills and/or specialist knowledge and skills Some responsibility for integrity of profession or discipline
9	Highly specialised knowledge, some of which is at the forefront of knowledge, and a critical awareness of issues in a field of study or practice	Develop and apply new skills and techniques to existing or emerging problems Mastery of the field of study or practice to an advanced level	Independent application of highly specialised knowledge and skills within a discipline or professional practice Some responsibility for leadership within the profession or discipline
10	Knowledge at the most advanced frontier of a field of study or professional practice	Critical reflection on existing knowledge or practice and the creation of new knowledge	Sustained commitment to the professional integrity and to the development of new ideas or practices at the forefront of discipline or professional practice

Appendix F: IT Qualifications Review Steering Group

The following make up the Steering Group for the IT Qualifications Review:

Name and organisation	**Nominating Organisation**
Paul Matthews, IITP (Chair)	Institute of IT Professionals (IITP)
<u>Industry Nominees</u>	
Gareth Cronin, Orion Health	Software New Zealand
Mindi Clews, Equinox Ltd	NZRise
John Ascroft, Jade Software Corporation	CITRENZ
Jacob Samuel, Concerto Networks	NZAPEP
<u>Tertiary Provider Nominees</u>	
Samuel Mann, Otago Polytechnic	CITRENZ
Margie Sorensen, IT Training Institute, ITTI	NZAPEP
Damian Adamski, TWOA	Te Wānanga o Aotearoa
<u>Other Nominees</u>	
John Creighton, Burnside High School	NZACDITT (IT Teacher Nominee)
Rod Bentham, NZQA – NQS	NZQA National Qualifications Service

The following also attend Steering Group meetings in a non-voting capacity:

Diana Garrett, NZQA – NQS	Project Team Lead
Ken Simpson, Unitec	Professional Advisor (by NZQA)

You can find more info about the review at http://tinyurl.com/ITQuals