ICT Qualifications Mandatory Review

Draft Qualifications Landscape

Consultation on a draft Qualifications Landscape for Information and Communications Technology (ICT)

June/July 2013

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 co-led by NZQA's National Qualifications Service and the Institute of IT Professionals NZ (IITP). IITP is the independent professional body of the IT sector and is leading the Steering Group with NQS leading the project team.

The current nationwide review of all sub-degree ICT qualifications invites feedback on a proposed structure of ICT qualifications to replace current qualifications. If endorsed by this consultation these qualifications, or a revised set depending on the nature of feedback received, will be developed by working groups in July, and the draft qualifications will be available for further consultation which is proposed for August. Once approved, the new qualifications would replace all other IT-related qualifications currently on the Framework.

1.1 Draft Qualifications Landscape

The Draft Qualifications Landscape outlines the ICT Certificate and Diploma qualifications being proposed to be developed for the Qualifications Framework. Once approved, the new qualifications would replace all other IT-related qualifications currently on the Framework.

This Draft Landscape is a starting point for discussion and covers both qualifications leading to IT as a career (called "IT as a Profession" here) and those looking for core skills in the use of technology ("IT as a Tool") at home, work, in the community and elsewhere.

For ease of consideration, the landscape is presented in these two sections separately. The final Landscape will re-combine these two areas.

1.2 Review Scope

The following is a brief outline of the scope for this review. Please see the Terms of Reference of the Review and Steering Group for more information.

1.2.1 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), *Private Training Establishments* (PTEs) and Wānanga. Note that qualifications offered by Universities are specifically excluded.

1.2.2 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 (sometimes referred to as *Digital Literacy,* although this is not a term that will be used in these qualifications) 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, the requirements for each are quite different and need to be considered in their own right.

1.2.3 What isn't included

The following areas are excluded from this review as they are covered in alternative NZQA reviews. However there is a continuum between reviews and some aspects of these will be included in this review.

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. It will be important to work with the Creative Arts Review to ensure there is no duplication between the two areas.

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 during the Working Group phase to clearly differentiate and align the two.

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.

1.3 Principles

In making this proposal, the Steering Group suggests qualifications and a structure that as far as possible meet the needs of a wide range of learners, employers and other stakeholders. The approach is intended to be flexible for learner pathways and responds to:

- Issues identified in the analysis of current qualifications and their use
- Needs identified in the needs analysis
- The needs of specific groups of learners:
    - students wanting to gain a full ICT qualification prior to entering the workforce (domestic, international, secondary/tertiary, full time/part time, Maori, Pasifika);
    - employees wanting to gain a full ICT qualification i.e. those already in the workforce, who may be employer sponsored or part time self-funded learners;
    - people seeking employment who might need specific IT skills and/or to improve digital literacy, to enter an ICT or other business environment. May be second chance learners, upskilling or re-training adults;
    - employers and SME owners wishing to improve productivity and profitability of their business (may be upskilling themselves or employees, gap filling, mentored);
    - Communities wanting to reduce the technology literacy gap, providing opportunities to develop digital skills as a key aspect of life skills.
- Initial feedback from industry and provider surveys around roles and skill requirements
- Alignment and cohesion with the existing Digital Technologies NCEA Achievement Standards in schools
- Alignment with ongoing professional education in the industry
- Consideration of mapping IT professional qualifications to an international skills framework such as the Skills Framework for the Information Age - SFIA

The proposal includes qualifications that recognise generalist skills and knowledge relevant to many contexts, and also includes specialist areas to allow for separate credentialing in these areas. The proposal suggests two separate streams – 'IT as a tool' computing qualifications and 'IT as a Profession' information technology qualifications. There is also a proposal to develop a 'bridging' or transition qualification to enable people to gain skills to equip them for the more technical aspects required of the IT professional suite of qualifications.

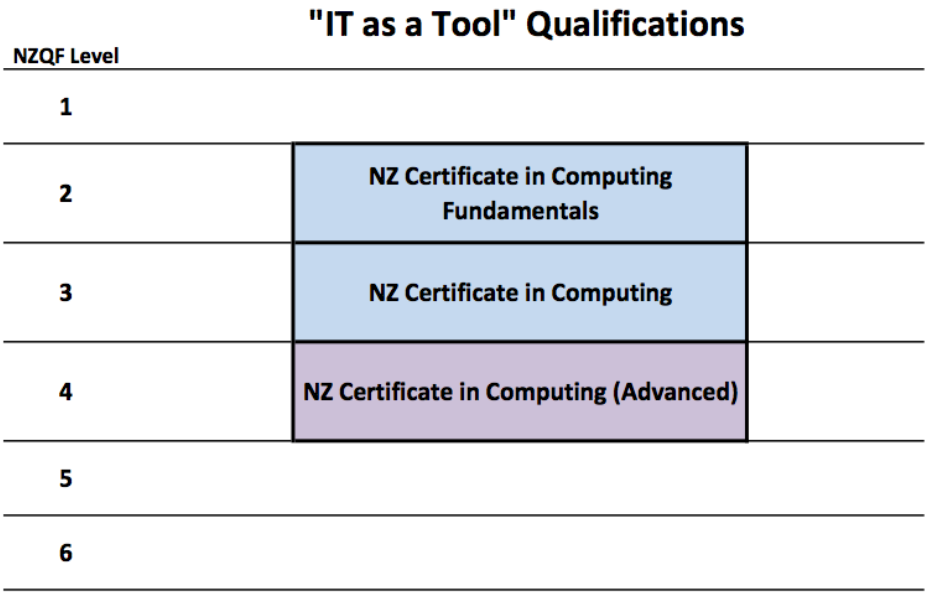
A range of possible roles for graduates of 'IT as a Profession' qualifications is covered in appendix B.

2. Suggested Landscape for "IT as a Tool" Qualifications

The "IT as a Tool" computing Qualifications are designed to cover the usage of computers and other technology in a home, work or community setting.

The draft framework has been designed to provide Certificates in Computing, with progression from fundamentals through to advanced user. These Certificates are expected to provide a good grounding in the use of computers, the Internet and other technology and devices.

Consideration can be given to whether these can align in some way with existing international certifications in this space, such as the *International Computer Driving Licence* (ICDL) run globally by the not-for-profit ECDL Foundation and Certiport *Internet and Computing Core Certification* IC^3 programmes.



2.1.1 NZ Certificate in Computing (Fundamentals) (Level 2)

This Certificate is intended to cover the fundamentals of computing, and may include concepts such as essentials tools to be a digital citizen and operate computers and other devices, including essential basics in productivity software and online activity.

2.1.2 NZ Certificate in Computing (Level 3)

This Certificate is intended to cover the effective use of productivity software essentials such as word, spreadsheets and presentation, and possibly the use of other applications such as web or image editing, database, and project or financial management software tools.

2.1.3 NZ Certificate in Computing (Advanced) (Level 4)

This Certificate is intended to look at more advanced use of productivity software and other tools and technical devices. It may provide opportunities for specializing in particular areas, and may consider including some aspects of 'IT as profession' preparation.

The landscape for IT as a Tool is fairly general, with considerable work to be completed during the Working Group process and following consultation.

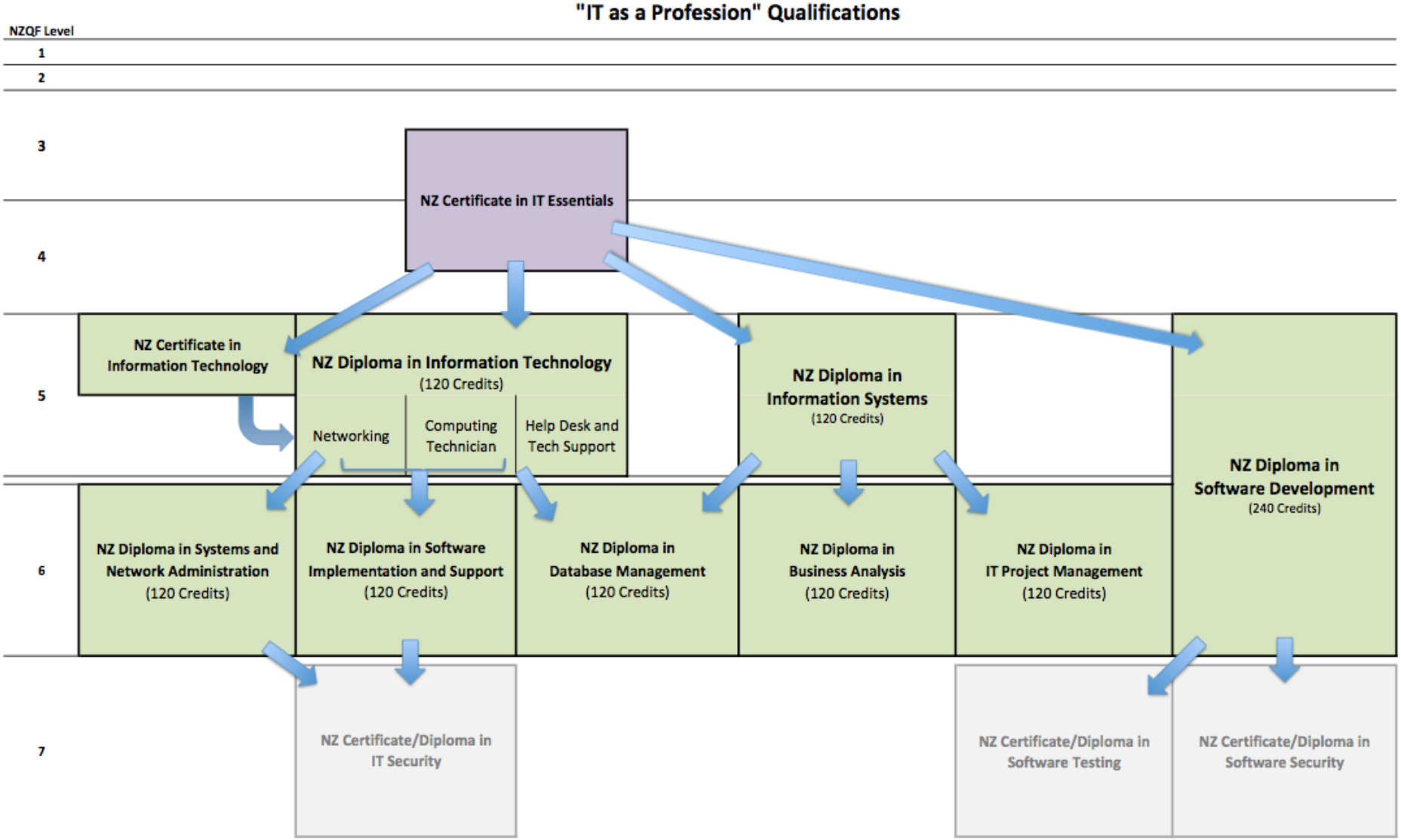
A core assumption during the development of these qualifications is that the audience is those who need core computing skills for use at home, work and in the community. For this reason, it is being suggested that the focus be on the technical skills for using computers and other technology rather than non-technical skills.

The sum of the three Certificates is likely to cover:

- Computers and Devices;
- Operating Systems, Printing, File management, Networks, IT Security;
- Web Browsing, Search, Communication, Email, Cloud Computing, Social Media, online Collaboration tools and Mobile;
- Base productivity software such as Word Processors, Spreadsheets, Presentation software and the use of Databases (all at basic then advanced levels);
- Concepts, practice and tools around editing online content including basic web design, text and images, as well as Computer-Aided Design (CAD) and how to plan for a design-related project.

3. Suggested Landscape for “IT as a Profession” Qualifications

A suggested landscape to be considered during this consultation is as follows:



The “IT as a Profession” Qualifications need to provide a solid grounding and introduction to the IT Profession.

The suggested qualifications landscape has three broad pathways:

- **Information Technology**, covering the more technical aspects of the industry such as networking, technicians, and tech support including helpdesk functions.
- **Information Systems**, covering the more process-oriented side of the profession and leading into careers in Business Analysis, IT Project Management, UX and potentially Database Management.
- **Software Development**, implemented in various contexts and including later specialisation in Software Testing and Software Security.

The suggested landscape includes a bridging qualification to prepare learners for further IT study, an entry-level Certificate with an expectation of providing a common core and a taste of the range of IT options, and a suite of qualifications in the identified broad pathways.

3.1 NZ Certificate in IT Essentials (Level 3 or 4)

The *Certificate in IT Essentials* is proposed as a bridging qualification for those with no or very little preparatory education such as the digital technologies achievement standards at school, limited or no practical experience in IT, or as a pathway from the “IT as a Tool” Qualifications to the “IT as a Profession” Qualifications.

This Certificate is proposed to cover the very core concepts of IT and serve as an introductory course prior to the Level 5 qualifications. Under this model, those intending to continue on to the Level 5 Certificate or Diplomas but with no IT experience or background skills might complete this Certificate.

3.2 “Information Technology” Pathway

The Information Technology pathway would contain more of the technical aspects of the profession such as networking, technician work and database administration.

3.2.1 NZ Certificate in Information Technology (Level 5)

The *Certificate in Information Technology* is intended to provide the foundational content for those wishing to practice within the field of IT, giving learners a taste of each area plus core.

This might include the fundamentals of computing concepts and practice including basics such as installation and configuring PCs, Laptops and other devices, basic networking, configuring operating systems, email, and mobile devices, as well as introductory concepts of software development, communications and help desk and tech support.

A programme of study for this Certificate might align with CompTIA A+ Certification, but with additional content around ethics, professional practice and organisational structure matters (such as that found in the Institute of IT Professionals’ *Professional Knowledge Curriculum*), communication essentials, and an introduction to software development.

Those completing this Certificate under this model would have a clearer idea about which IT educational pathway to continue with, having been introduced to a range of areas to help determine a suitable IT specialization to progress to.

3.2.2 NZ Diploma in Information Technology (Level 5)

The NZ Diploma in Information Technology is intended to provide options for the more technical aspects of the industry. Those who have started out on a Certificate pathway could potentially upgrade to the full Diploma and begin specializing in one of several areas.

It is suggested that the Diploma would contain one of three strands (*or more if consultation feedback provides evidence of need*):

- *Networking*, which might (for example) align to the Network+ vendor certification;
- *Computing Technician*, more advanced concepts and practices around servicing computers and other technology;
- *Help Desk and Tech Support*, exploring communication and work flow concepts around help desks and providing tech support.

The *NZ Diploma in Information Technology* would have some crossover with the Certificate in Information Technology core content and outcomes. Core outcomes would be expected to have a focus on soft skills such as communication, teamwork and problem solving, along with other soft skills and an understanding of ethics and professional practice.

From a pathway perspective, learners might exit to industry as a computing technician, help desk or other support role having completed this Diploma or carry on to the more specialized Level 6 Diplomas.

3.2.3 NZ Diplomas in Systems and Network Administration, Software Implementation and Support, and Database Management (Level 6)

It is suggested that Level 6 Diplomas would have the NZ Diploma of Information Technology as a pre-requisite and focus on extending the knowledge from the Level 5 Diploma in Information Technology into one of these three areas.

It is suggested that the Diplomas could also include a common core extending the core from the Level 5 Diplomas and Certificate with a particular focus on **Project Management** and **Security** (as related to these areas), being two areas identified as important from industry consultation. The core would also revisit ethics and professionalism in IT.

3.3 "Information Systems" Pathway

The Information Systems pathway is being suggested as a less technical pathway focusing primarily on process-related areas such as Business Analysis, Project Management and User Experience (UX). This would likely be a more attractive pathway for less technically minded individuals who still wanted to enter the IT industry. There is evidence of a strong need for this in IT.

3.3.1 NZ Diploma in Information Systems (Level 5)

As well as sharing a similar core to the Diploma in Information Technology, this Diploma is proposed to branch into the less technical and more process-focused areas of the profession. A pathway similar to this would lead to areas of the profession in most demand such as Business Analysis.

Three example areas that may be included would be Business Analysis, Project Management and User Experience (UX).

3.3.2 NZ Diploma in Business Analysis (Level 6)

Following on from the Diploma in Information Systems, the needs analysis and industry analysis identifies a need for the qualifications framework to lead to more specialized Business Analysis outcomes. The proposed Diploma in Business Analysis is intended to meet that need.

3.3.3 NZ Diploma in IT Project Management (Level 6)

Following on from the more generalist Diploma in Information Systems, the Diploma in IT Project Management is intended to address the need for more formal qualifications around Project Management from a clearly IT focus.

It is clear from industry analysis that the needs of Project Management from the IT project context are significantly different from "general" project management and that this is an area of need for the IT industry.

3.4 "Software Development" Pathway

The Software Development pathway would pursue core concepts and practice around the development of software in multiple contexts. It is clear from industry consultation that a longer Diploma is required to prepare learners for a software development pathway.

3.4.1 NZ Diploma in Software Development (Level 6)

The Diploma in Software Development is intended to include the core content common across all IT qualifications, then fork into more in-depth software development theory and practice.

The Diploma is intended to be generalised sufficiently in outcomes to enable a course to focus on one of several contexts such as (for example) general Application Development, Web Development, Games Development, Mobile Apps Development, or other areas that may emerge in future.

A streamed qualification is not being suggested – rather, the outcomes, skills and attributes might be identical for these contexts, just applied in a different manner. Industry consultation makes it clear that a graduate at this level should still be considered a generalist or "associate" developer.

3.5 Level 7 Diplomas or Certificates

While out of scope, the Steering Group for the review felt it was necessary to consider Level 7 Certificate/Diploma qualifications that align with these new qualifications.

Level 7 qualifications might include:

- **NZ Certificate or Diploma in Software Testing** with the Level 6 *Diploma in Software Development* (or equivalent) as a prerequisite, to provide a pathway for those wanting to become software testers.
- **NZ Certificate or Diploma in Software Security** with the Level 6 *Diploma in Software Development* (or equivalent) as a prerequisite possibly focusing on ethical

hacking and penetration testing including (for example) the application of the OWASP Top Ten. A programme for this Certificate might align with the CSTA and/or CSTP Certifications for someone looking for a pathway into the software security industry.

- **NZ Certificate or Diploma in IT Security**, with any of the Level 6 Diplomas (or equivalent) as a prerequisite, covering more advanced but generalist IT security concepts as another pathway into the IT security industry (but with a greater focus on Operating Systems and networking).

3.6 Further Considerations

The Steering Group is still considering the issue of up-skilling and currency of vendor certifications within the context of the Qualifications Framework. Working groups will be expected to consider qualification outcomes and whether there are any appropriate links..

We are seeking stakeholder feedback on this as part of this consultation, and all feedback will contribute to the development of the landscape.

Further information on possible education and employment pathways is covered in appendix B. It outlines how the suggested qualifications framework might align with the main graduate roles identified for those graduating from 'IT as Profession' Certificates and Diplomas. These roles were developed following significant industry consultation.

The Steering Group for the ICT qualifications review invites feedback on the proposed structure of ICT qualifications to replace current qualifications. Please complete the survey (*link*) to provide feedback by Friday 12 July.

Appendix A: Consultation Questions

Please visit http://www.iitp.org.nz/quals/ to provide your response.

General

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) Community group
    g) Other (please specify)

"IT as a Tool" Landscape

3. How strongly do you agree or disagree that the proposed "IT as a Tool" (Digital Literacy) landscape and approach adequately addresses the needs of those looking to gain skills in the use of technology at home, work and in the community?
4. What could be done to improve the "IT as a Tool" landscape to better meet the needs of those looking to gain skills in the use of technology?
5. In regards to the "IT as a Tool" (Digital Literacy) qualifications, do you agree or disagree with an assumption that these qualifications should focus on technical user skills and tools primarily (as opposed to other related "soft" skills)?
6. Do you have any further comments about the proposed "IT as a Tool" landscape?

"IT as a Profession" Landscape

7. How strongly do you agree or disagree that the proposed "IT as a Profession" landscape and approach adequately addresses the needs of the IT industry?
8. What could be done to improve the "IT as a Profession" landscape to better meet the needs of the IT Industry?
9. As currently proposed, qualifications are broad pathways loosely aligned with, but separate from, technical vendor certifications and including things like soft skills and related material.

    Should the qualifications landscape also offer short one-off qualifications with content made up of vendor certification material only, without additional soft skills or related material? This would provide qualifications nearly identical to technical vendor certifications but without the broader focus of the current proposed landscape.
10. Do you have any further comments about the proposed "IT as a Profession" landscape?

11. Do you have any other comments you would like to make about the IT Qualifications Review?

Appendix B: Education and Employment Pathways in Brief

This section outlines how the suggested qualifications framework might align with the main graduate roles for those graduating from Certificates and Diplomas. These roles were developed following significant industry consultation.

Note that these roles relate to the "IT as a Profession" group only.

The roles covered in this section include:

B.1 Computing Technician

B.2 Helpdesk and Technical Support Officers

B.3 Network/Systems Administrators

B.4 Implementation and Application Support Officers

B.5 Database Administrator

B.6 Software Developer (Associate level)

B.7 Business Analyst

B.8 IT Project Manager

B.9 Software Testing Professional

B.10 IT Security Professional

The Review Team has considered these example roles in more detail, defined using the SFIA Framework, and this detail is included in the needs analysis. However the following roles are provided here to provide examples of educational and employment pathways.

B.1 Computing Technician

Technicians diagnose, repair, install, assemble and maintain computers and technology devices. This might include 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.

Under the suggested model, a Computing Technician would complete the Level 5 Diploma in Information Technology (Computing Technician).

B.2 Helpdesk and Technical Support Officers

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

As well as providing basic technical support on software, installations, hardware or other relevant areas, helpdesk and technical support teams must document issues and resolutions. Verbal and written communication skills are of paramount importance.

Under the suggested model, this role might require the level 5 Diploma in Information Technology (Help Desk and Tech Support).

B.3 Network/Systems Administrators

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.

Someone pursuing this role might start with the proposed Level 5 Diploma of Information Technology (Networking) then also complete the Level 6 Diploma in Systems and Network Administration.

B.4 Implementation and Application Support Officers

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.

Someone pursuing this role might start with the proposed Level 5 Diploma of Information Technology (Networking or Computer Technican) then also complete the proposed Level 6 Diploma in Software Implementation and Support.

B.5 Database Administrator

A database administrator (or DBA) is a person responsible for the installation, configuration, upgrade, administration, monitoring and maintenance of databases in an organisation.

The role includes the development and design of database strategies, system monitoring and improving database performance and capacity, and planning for future expansion requirements. They may also plan, co-ordinate and implement security measures to safeguard the database.[1]

Someone wanting to pursue this career path might complete the proposed Level 6 Diploma in Database Administration, following either the proposed Level 5 Diploma in Information Technology or Diploma in Information Systems.

[1] Source: http://en.wikipedia.org/wiki/Database_administrator

B.6 Software Developer (Associate Level)

A Software Developer at the Diploma level 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.

It should be noted that there is likely to be a differential between someone completing this Diploma, versus a Bachelor level qualification in Software Development or Engineering.

Based on industry feedback, it is proposed that a software developer would complete a minimum two-year Diploma in Software Development, and the proposed Level 6 Diploma in Software Development is intended to meet this need.

B.7 Business Analyst

A Business Analyst (BA) is an internal consultancy role that has responsibility for investigating business systems, identifying options for improving business systems and bridging the needs of the business with the use of IT.

Under the suggested model, an aspiring Business Analyst would complete the proposed Level 6 Diploma in Business Analysis following the Level 5 Diploma in Information Systems.

B.8 IT Project Manager

A Project Manager has responsibility for the planning and execution of a project, in this case specifically within the context of IT Projects.

Industry consultation has shown a clear need for a focus on Project Management, especially within the IT context.

Under this suggested model, a specialist IT Project Manager would complete the proposed Diploma in IT Project Management at Level 6, following completion of the Diploma in Information Systems.

B.9 Software Testing Professional

Testing Professionals conduct detailed and systematic testing of software to ensure it meets requirements, works as expected, can be implemented consistently and satisfies the needs of stakeholders.

It is suggested that a Testing Professional would complete the Diploma in Software Testing, following on from the Level 6 Software Development diploma.

B.10 IT Security Professional

Depending on the type of security role, a security professional might come through a software or hardware/IT pathway in the proposed model, going on to complete either the IT Security or Software Security Level 7 qualifications.

Note that security considerations would also be a key factor in all other IT-related qualifications.

Appendix C: 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 D: 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