CONNECTING THE SECTOR

Education Agencies'

# ICT INVESTMENT FRAMEWORK: STRATEGY

2011 – 2014

careersnz
mana rapuara aotearoa

NZQA
NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

Tertiary Education Commission
Te Amorangi Mātauranga Matua

New Zealand
Teachers Council

EDUCATION REVIEW OFFICE
TE TARI AROTAKE MATAURANGA

MINISTRY OF EDUCATION
Te Tāhuhu o te Mātauranga

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# 1. FOREWORD

In 2003 the Education Sector ICT Standing Committee was established to drive and oversee the collaborative development and use of ICT across the education sector. In 2011, the ICT Standing Committee comprises the chief executives of Careers New Zealand, Education Review Office, New Zealand Qualifications Authority, New Zealand Teachers Council, Tertiary Education Commission, and the National Library of New Zealand, with the Secretary for Education (and CEO of the Ministry of Education) as Chair, together with the broader participation of Te Aho o Te Kura Pounamu - The Correspondence School, the Ministry of Science and Innovation, and Learning Media Limited.

Since 2003, the CEOs have been supported by a group of agency Chief Information Officers (CIOs) and senior business managers to coordinate ICT investments across the education sector to enable the sector to raise educational outcomes through effective, efficient and transformative use of ICT for teaching, learning, research and administration. The focus has been on foundational infrastructure for messaging and security.

In a recent review, the Standing Committee concluded that the ICT Management Committee should now focus its efforts on *'Connecting the Sector to accelerate the free flow of quality information'*. This *Education Agencies' ICT Investment Framework* is designed to assist the education agencies individually and collectively to assess agency ICT-related initiatives across a number of consistent and transparent criteria to determine the value and priority of proposed sector ICT initiatives and therefore where investments should be made. As many of the education agencies have their own Boards, it is intended that this framework be integrated into agencies strategic and business planning processes to ensure that ICT investment across the education sector agencies is as effective as possible.

This *framework* builds on its predecessor, the *ICT Strategic Framework for Education* (2006 and 2008) that sought *'to improve learner achievement in an innovative education sector, fully connected and supported by the smart use of ICT'*. We have learnt and achieved a great deal since 2003. The Government's recent announcement to support investment in a Network for Learning will provide further infrastructure for considerable systemic advances in the application of technology to learning in and beyond every educational institution in New Zealand. This *Education Agencies' ICT Investment Framework* will provide the mechanism to guide and co-ordinate education agency ICT investment towards the government's vision of improved education outcomes through *'the free flow of quality information'*.

Lesley Longstone
Chair, Education Sector ICT Standing Committee
Secretary for Education

# 2. EXECUTIVE SUMMARY

This document sets out how the Education Sector ICT Investment Framework will be operated and maintained to ensure that any money spent on Sector ICT represents the best value for money. To do this, initiatives will be prioritised in order of their relative contribution to the vision of "Connecting the sector to accelerate the free flow of quality information".

The ICT Investment Framework will enable the Education Sector ICT Management Committee to consistently assess initiatives across a number of fair and transparent criteria, and to standardise these assessments by calculating the value per dollar spent. To do this, two key assessments have been developed and tested: The Value, and The Money.

The sector's vision forms the core of the "Value" assessment. To work out tangible criteria that individual initiatives could be assessed against, the vision was decomposed into three component pieces: "Connecting the sector", "Accelerate the free flow", and "Quality information". For each of these pieces, a number of criteria were selected. When an initiative is assessed against these criteria, a score between 1 and 10 must be assigned. To aid with this, a short description of what constitutes a 1, 5 and 10 is recorded, to ensure that initiatives are rated within the same limits.

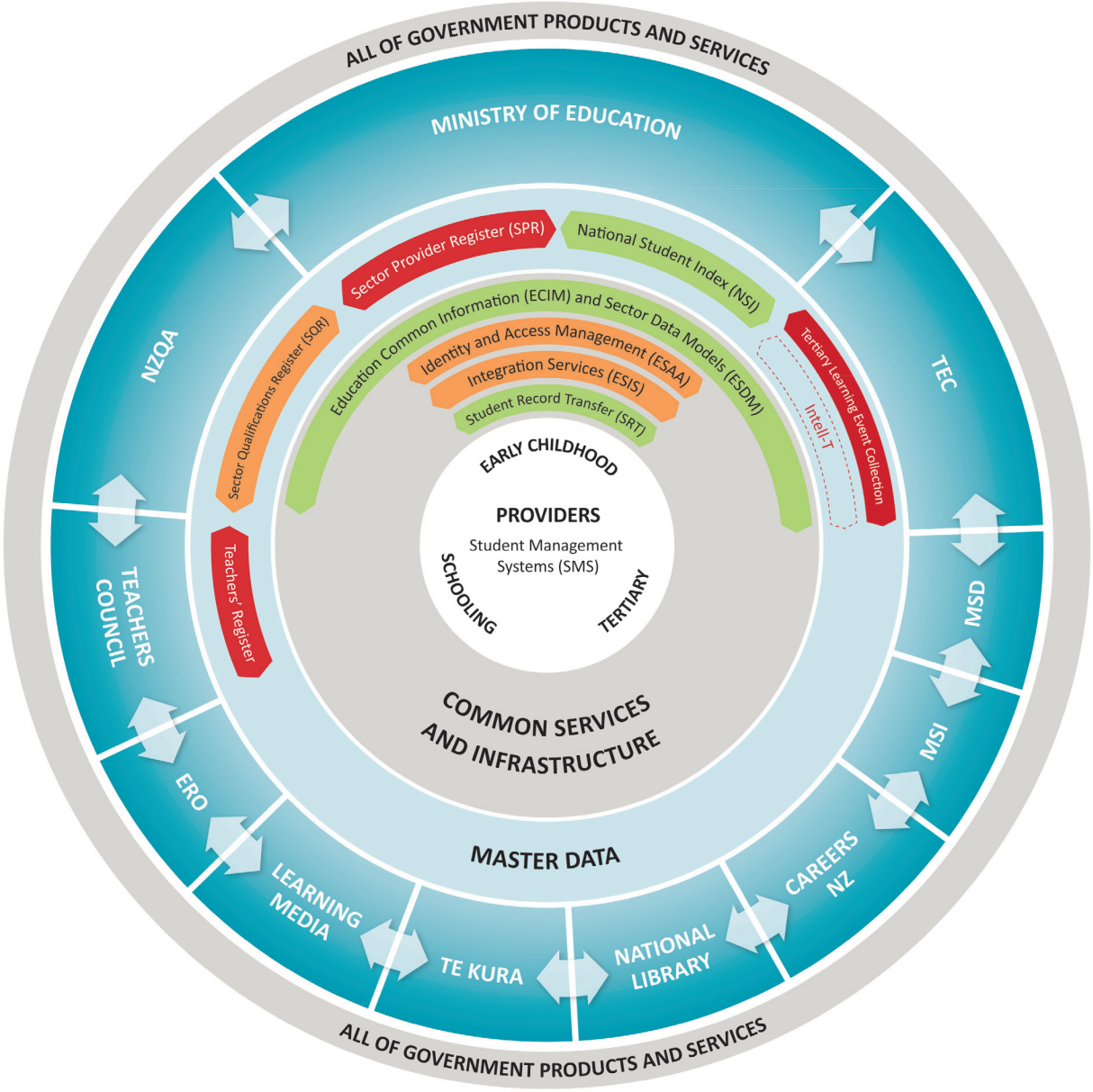
To ensure that the "Money" assessment has sufficient rigor, this framework utilises an existing approach used within the sector. This assessment consists of nine questions which represent the drivers of cost in ICT investments, how these questions are answered identifies an estimated cost range for an initiative. To determine the final cost of an initiative, a level of judgment is still required to pinpoint the exact cost within the identified range, although this is intended as a ballpark figure.

With the "value" and the "money" quantified, this framework contains an approach for calculating the "Value for money index". This index will allow multiple initiatives to be compared and ranked according to the greatest value for money. Additionally, this framework contains limited guidance about what a "good" score is, and what a "bad" score is, to aid in the evaluation of an individual initiative in isolation.

The logic behind the framework is contained in detail within this document, but to ensure that the sector can actually apply the framework in practice an easy to use tool has been created. It is envisaged that the tool will be used by each sector agency to evaluate their own ideas for sector initiatives, before submitting their proposals to the ICT Management Committee. This approach ensures maximum engagement from sector participants, while enabling the Management Committee to maintain control over the process through a peer review of assessments, and having the final decision around what initiatives appear on the Sector ICT Roadmap.

When this framework is consistently applied within the Sector, we will be able to give all participants assurance that Sector ICT initiatives represent true value for money, have been selected through a fair and transparent process, and are "Connecting the sector to accelerate the free flow of quality information".

# EDUCATION AGENCIES' TARGET STATE CONNECTING THE SECTOR




The diagram above illustrates current and planned education sector shared assets and services which underpin our vision to support the free flow of quality information to improve education outcomes. Note: the diagram does not include all projects currently being scoped. As projects gain maturity they will be assessed using the *Education Agencies' ICT Investment Framework Prioritisation Tool*.

KEY TO STATE OF ASSETS

- Red = Planned
- Orange = In progress
- Green = Existing

# 3. STRATEGIC CONTEXT OF THE ICT INVESTMENT FRAMEWORK

## 3.1. Vision

The Education Sector ICT Management Committee with assistance from wider representatives from Education Sector agencies, have developed a unifying concept for the ICT Management Committee. Figure 1 below displays the Unifying Concept, which includes a Vision for the Education Sector ICT Management Committee's role in education sector ICT.

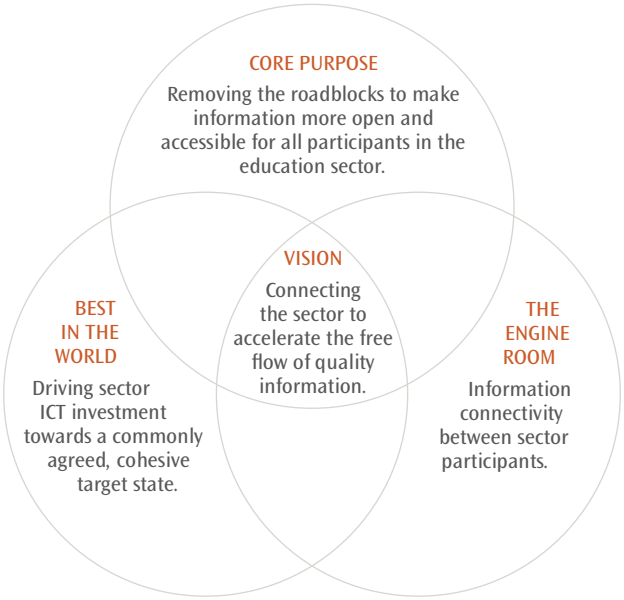



Figure 1: Education Sector ICT Management Committee Unifying Concept

## 3.2. Goals

The Management Committee's Education Sector ICT Vision will be achieved through delivery of three goals:

» Direction – Everyone working to a clearly articulated road map towards a sector endorsed target state

» Execution – Ensuring every sector agency who directly benefits from the ICT initiatives contribute to the delivery of shared outcomes as planned

» Evaluation – Providing the Education Sector's ICT Standing Committee with quality information so that they can have a focussed discussion around the key strategic issues

## 3.3. Stream 1 – Direction

The first challenge in bringing the Education Sector agencies together to achieve a common vision is ensuring that everyone is working to a clearly articulated road map towards a sector endorsed target state. To achieve this, the ICT Management Committee will define and communicate the target state, define initiatives consistent with the target state, and maintain the Sector ICT Roadmap.

The ICT Management Committee will know they have been successful if they achieve in three years:

» 90 % of relevant agency tier 1, 2 and 3 executives who endorse the target state

» 100% alignment between agency ISSPs and the Sector ICT roadmap

### 3.3.1. PROCESS 1 – DEFINE AND COMMUNICATE THE TARGET STATE

The challenge in this process is to engage all the sector agencies and gain agreement on what the target state for Education Sector ICT is, and what that means for agencies, providers, teachers and learners.

To build the capability required to achieve our goals in this area, the ICT Management Committee will be developing an initial sector target state that shows the connection to the education sector strategies, goals and priorities. The target state will be tested and refined throughout the year.

### 3.3.2. PROCESS 2 – DEFINE INITIATIVES CONSISTENT WITH THE TARGET STATE

This process is the conduit agencies will use to get their sector initiatives on the roadmap. When an agency has an idea for a new initiative, they will use the commonly agreed process to determine whether it should proceed as an individual agency, sector, or All-of-Government initiative. Sector initiatives will then proceed through the prioritisation framework (outlined later in this document) where they will be measured for their contribution to the target state and slotted into the roadmap.

To build the capability required to achieve our goals in this area, the ICT Management Committee will develop a common investment framework to identify, screen and prioritise initiatives. This document represents the first piece of work in this change initiative.

### 3.3.3. PROCESS 3 – MAINTAIN SECTOR ICT ROADMAP

The Sector ICT roadmap must be a living document that is regularly updated with the status of initiatives, and adds or removes initiatives as priorities change.

To build the capability required to achieve our goals in this area, the ICT Management Committee will develop a clear consolidated sector roadmap with achievable milestones based on the best view currently available of the sector initiatives that are required in the coming years.

## 3.4. Stream 2 – Execution

With a roadmap developed, the ICT Management Committee will be overseeing the delivery of sector initiatives. The biggest challenge will be ensuring every sector agency that directly benefits from an ICT initiative contributes to the delivery of shared outcomes as planned.

The ICT Management Committee will know they have been successful if they achieve in three years:

» Key sector projects delivered within scope, on time and to budget – NSI, TLEC, ESAA, INTEL, ESIS

» 95% compliance with service level agreements when delivering initiatives

### 3.4.1. PROCESS 4 – DEVELOP ANNUAL SECTOR ICT WORK PROGRAMME

The annual Sector ICT Work Programme will be created by taking a one year view of the Sector roadmap. The difference between the two documents is that the work programme will contain a higher level of detail including resources assigned to initiatives, budgets, funding arrangements, and detailed milestones.

To build the capability required to achieve our goals in this area, the ICT Management Committee will implement a protocol that ensures the people who benefit from an initiative are contributing to the development, and that services are scalable and sustainable.

### 3.4.2. PROCESS 5 – ENDORSE PROJECT PLANS, INCL. KEY CROSS-AGENCY STAKEHOLDERS

In this process, the project teams for each initiative will put together a project plan according to the commonly agreed guidelines, and present it to the ICT Management Committee for endorsement. The purpose of endorsement is to ensure that the project is being delivered in line with expectations, and that all key cross-agency stakeholders are actively involved and have been consulted.

To build the capability required to achieve our goals in this area, the ICT Management Committee will expand project plans to include descriptions of the respective cross-agency responsibilities.

### 3.4.3. PROCESS 6 – IMPLEMENT AND OPERATE SECTOR ICT INFRASTRUCTURE AND SERVICES

With an endorsed project plan, the project teams can proceed with implementing and operating the Sector ICT initiatives. This process will require adequate sign-off points at key milestones with key cross-agency stakeholders, and the ICT Management Committee.

To build the capability required to achieve our goals in this area, the ICT Management Committee will modify the design principles to ensure services are future-proofed for every sector participant.

## 3.5. Stream 3 – Evaluation

For Sector ICT to truly prove its value to the sector, we must accurately monitor and report on our progress, and evaluate the benefits of our initiatives in order to provide the Standing Committee with quality information so that they can have a focused discussion around the key strategic issues.

The ICT Management Committee will know they have been successful if they achieve in three years:

» 95% of initiatives realise the benefits in the planned timeframes

» 95% of desired benefits are realised

» 20% increase from today in $ value of annual efficiency savings from connecting sector ICT

### 3.5.1. PROCESS 7 – MONITOR AND REPORT ON RISKS TO WORK PLAN AND ROADMAP MILESTONES

Project teams will have the responsibility of proactively reporting on risks to their projects in terms of the work plan, and the milestones they have promised to deliver. This information will be given to the ICT Management Committee who will reprioritise work, or re-allocate resources to ensure critical milestones can still be achieved.

To build the capability required to achieve our goals in this area, the ICT Management Committee will embed a process to obtain proactive quality information from project teams to mitigate the risks.

### 3.5.2. PROCESS 8 – REPORT ON PERFORMANCE AGAINST WORK PLAN AND ROADMAP

Periodically, project teams will be required to submit status reports aligned to stage reviews to the ICT Management Committee. These reports will outline what work has been achieved to date, any project issues, budget status, and

expected progress before the next update. The Management Committee will use these reports as their primary means of evaluating the progress of the roadmap, and gaining confidence that all projects are on track.

To build the capability required to achieve our goals in this area, the ICT Management Committee will refocus reporting around delivering on the work plan and roadmap in the context of the target state.

### 3.5.3. PROCESS 9 – CONDUCT POST IMPLEMENTATION AND BENEFIT REALISATION REVIEW

Following the successful implementation of a project, the ICT Management Committee will work with the project team to conduct a staged post implementation and benefit realisation review. This work is fundamental in order to prove that Sector ICT is worth the money being invested in it, and is achieving the benefits that were promised. If benefits have not been achieved, a decision must be made as to whether another initiative is required, or the initiative needs more time and/or revision to begin delivering results.

The ICT Management Committee currently has all the capability required to achieve our goals in this area.

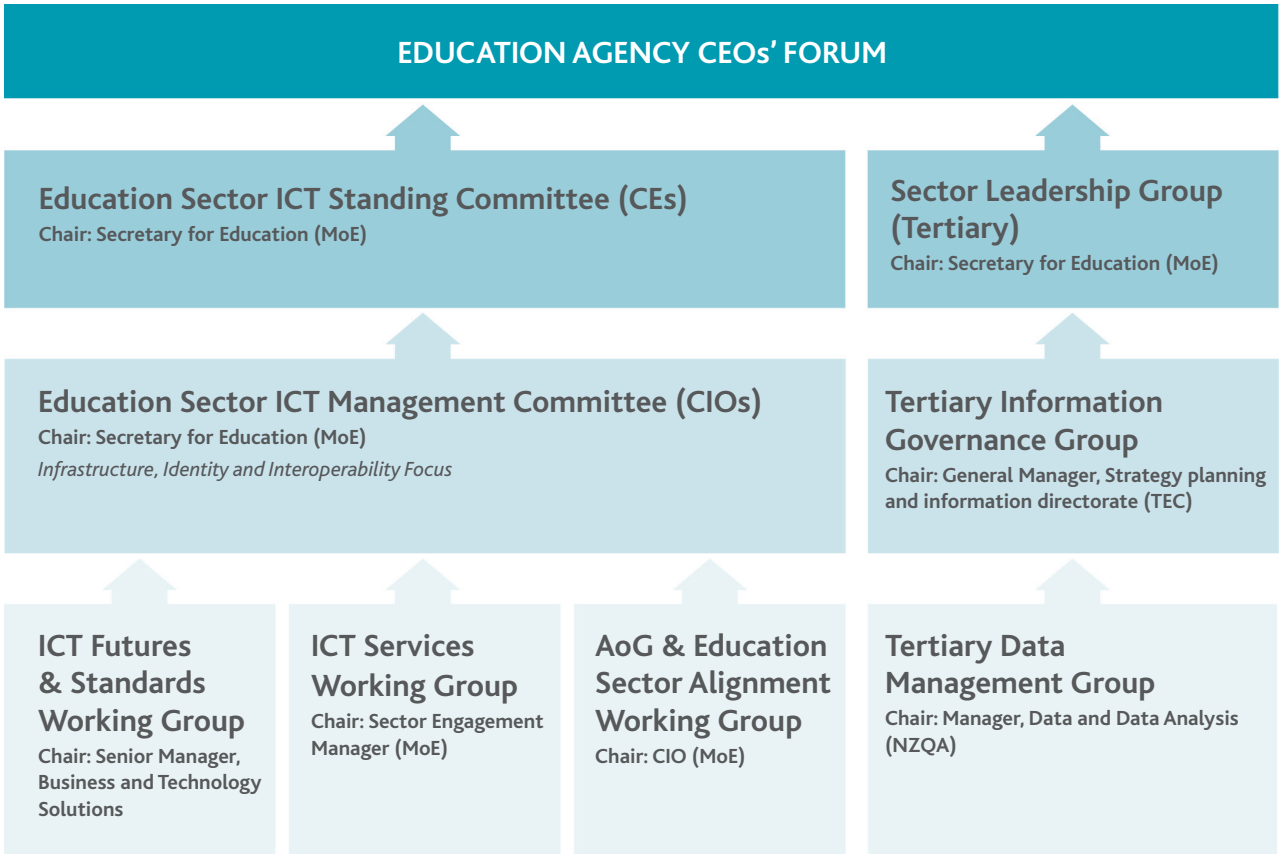
## 3.6. Governance System

The ICT Investment Framework is owned by the E*ducation Sector ICT Management Committee*. They are responsible for updating the three elements of this document: the process, the framework and the roadmap.

The ICT Management Committee has been tasked with this role by the *Education Sector ICT Standing Committee*. The Management Committee will report to the Standing Committee periodically, and take guidance regarding the target state of the Education Sector and the strategic direction.

Individual initiatives will be delivered by P*roject Teams* from within the *Lead Agency* identified for each initiative. These Project Teams will maintain their accountability within their agency, but will be required to comply with this framework when working on Sector ICT initiatives.

The ICT Management Committee will monitor and report on overall risks and associated mitigation actions to achieving the work programme and target state.



## 3.7. Strategy Map

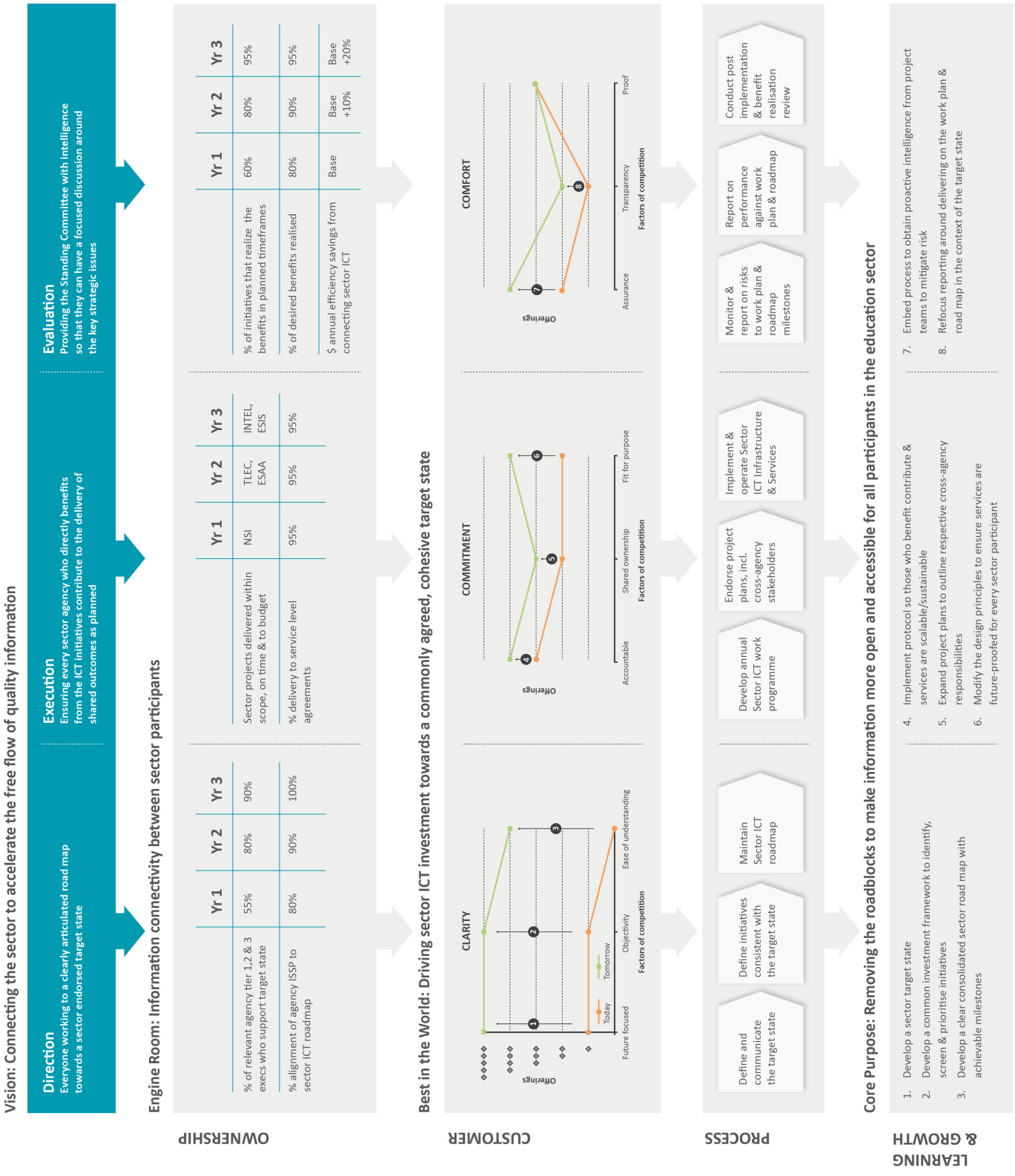



Figure 2: ICT Management Committee Strategy Map

# 4. OVERVIEW OF THE ICT INVESTMENT FRAMEWORK

## 4.1. Purpose of the Framework

The Education Sector ICT Management Committee is responsible for ensuring Sector agencies are defining sector ICT initiatives consistent with the target state. The framework enables the ICT Management Committee to assess whether an ICT initiative is a sector initiative and then prioritise the sector initiatives based on their "value for money". The *Education Agencies' ICT Investment Framework Prioritisation Tool* which describes the assessment process for sector initiatives is a companion document to this strategy. The process is briefly outlined below.

## 4.2. What is a Sector Initiative?

An ICT initiative will fall into one of three categories: individual agency, sector or all of government.

For the purpose of the ICT Investment Framework, an initiative is defined as a sector initiative if:

» More than one sector participant will use the product/ service created by the initiative in their own rights

OR

» An agency has specific requirements regarding data that must be collected by another agency

OR

» There is not an obvious agency to take ownership of the initiative

However, an initiative is determined to not be a sector initiative if:

» Another agency receives the output/information from an initiative but does not have other unique requirements.

## 4.3. Initiative Prioritisation

Once an initiative is identified as a sector initiative it should be prioritised based on its relative value for money against all other Sector initiatives.

In order to do this the ICT Investment Framework evaluates two factors:

» The initiative's contribution to the achievement of the education sector vision of "Connecting the sector to accelerate the free-flow of quality information" (the "value")

» The estimated cost of each initiative (the "money")

# 5. ICT INVESTMENT FRAMEWORK GUIDELINES

## 5.1. The Value

In order to meaningfully compare initiatives, the framework must produce standardised scores for each initiative based on a common set of criteria that reflect the value of each initiative.

### 5.1.1. DEVELOPMENT OF CRITERIA

To demonstrate that a sector ICT initiative is making a contribution to the vision, criteria have been developed and grouped under the 3 distinct parts of the vision as outlined in Figure 3 below:

| **Connecting** the sector to ... | ... accelerate the **Free-Flow ...** | ... of **Quality Information** |
|---|---|---|
| INTEROPERABILITY<br>1. Applications "talk to one another" using common standards<br>2. Solutions are platform independent<br>INTEGRATED NETWORKS<br>3. Strengthens or further connects the infrastructure of the sector<br>4. Rationalises ICT infrastructure and software<br>ACCESSIBILITY<br>5. Data is discoverable<br>6. Data is available when and where it is needed<br>7. Compatibility with existing personal and digital devices | SECURITY<br>8. Security level is aligned to sensitivity of information<br>9. Data is freely available to only those who are authorised to use it<br>EASE OF USE<br>10. Consistent user-experience across the sector<br>11. Application is intuitive<br>12. Enables collaboration between sector participants<br>SCALABILITY<br>13. Uses virtualisation or "the cloud" to ensure timely, scalable and supportable services<br>14. Alignment with agreed sector architecture | COMPLETENESS<br>15. Data is only collected once<br>16. Enables a single view of data<br>17. Enables continuous availability of data<br>RELEVANCE<br>18. Data is available in a form users can use<br>19. Data presented is the data user requires at the time<br>ACCURACY<br>20. Customers can trust the authority and integrity of the data they receive<br>21. Changes to data are auditable and transparent<br>22. Clear ownership of, and accountability for, data<br>TIMELINESS<br>23. Data is up-to-date |

Figure 3: Criteria Aligned to the Vision

#### 5.1.2. TYPES OF INITIATIVES

The initiatives that will be required to use the framework will fall into one or more of four categories:

» Initiatives on developing or updating software (Software)

» Initiatives on developing or improving infrastructure connecting sector participants (Infrastructure)

» Initiatives relating to business processes around the use of Sector ICT (Operations)

» Initiatives concerning the collection, storage and accuracy or use of data (Data)

The categories an initiative falls into will define the specific criteria an initiative will be rated against.

#### 5.1.3. CRITERIA RATINGS

For each of the criteria, sector initiatives will be given a rating from one to ten based on to what degree the sector ICT initiative aligns to the specific criteria. To aid this, the accompanying document Education Agencies' Investment Framework: Prioritisation Tool contains guidelines of what constitutes a rating of 1, 5 and 10.

Using these guidelines, a weighted value score is calculated from the individual criteria ratings for each proposed initiative.

Where appropriate, ratings of 1 have been designed to go beyond simply saying an initiative does not align to the criteria but instead indicates that it actually has a negative impact on the intended benefit of the criteria.

## 5.2. Framework Tool

The Education Agencies' ICT Investment Framework Prioritisation Tool is supported by an Excel-based tool to take initiatives through the framework via 3 steps:

» Step 1: Verify what sort of initiative is being processed

» Step 2: Assess initiative against relevant criteria

» Step 3: Estimate a cost range for the initiative.

Each step guides the user through the questions and criteria outlined in Figure 3 to assess the value for money of a proposed sector ICT initiative. It has been designed to allow easy and quick assessment. It is envisaged that the assessment will be completed by the people who generate the idea of the proposed initiative with the assistance of an ICT expert. Once the assessment is completed, the tool will generate a standardised report on the proposed initiative for inclusion in the project proposal that will be presented to the ICT Management Committee for consideration.

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New Zealand Government