

CONNECTING THE SECTOR

Education Sector ICT An Overview

eFest
September 2006

Context

- Education Sector ICT: *Who, What, Why*
- Strategic Context: *ICT Strategic Framework for Education*
- Foundation Shared Services: *Education Sector Architecture Framework*
- Other Key Initiatives
- Target State: *Establishing a target state for New Zealand*

Education Sector ICT Standing Committee

- Formed in September 2003
- To drive and oversee the collaborative development and use of ICT across the Education Sector
- Comprises CEOs from:
 - Career Services
 - Education Review Office
 - Ministry of Education [Chair]
 - National Library of New Zealand [Deputy Chair]
 - New Zealand Qualifications Authority
 - New Zealand Teachers Council
 - Tertiary Education Commission

Education Sector ICT Governance & Management Framework

ICT Strategic Framework The Context

ICT Strategic Framework The Vision

To improve learner achievement in an innovative education sector, fully connected and supported by the smart use of ICT

- Learner-centred
- More informed decision-making by all in sector
- Ease of access, reduced compliance costs
- Increased confidence, capability & capacity to utilise ICT
- Support knowledge creation & innovation
- Value-on-investment

ICT Strategic Framework Key Focus Areas



Connectivity	Access to a robust national open standards-driven ICT infrastructure for education.
Content	Digital content from a variety of sources, and repositories for many purposes and users to support teaching, learning, research and administration, including support for lifelong learners and preserving New Zealand's digital heritage for future generations of learners.
Confidence & Capability	All New Zealanders have or are developing/acquiring the skills and confidence needed to turn the information into knowledge; collaborative working practices are utilised to deliver education outcomes for all.

The ICT Strategic Framework for Education aims to deliver across the above National Digital Strategy components.

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ICT Strategic Framework Key Focus Areas



		Learning & Teaching	Research	Administration & Support
Connectivity	What		Improved access Shared resources	
	How		Connected networks Appropriate security Access & interoperability standards Shared services	
Content	What		Discoverable content in digital repositories	
	How		Open standards-based digital repositories Discovery tools	
	What		Information & knowledge management Lifelong learning	
	How		Information & knowledge management practices Continuity ePortfolios	
Confidence & Capability	What		Information literacy skills and competencies Effective, efficient systems	
	How		Coordinated change management Monitoring & compliance Learning, teaching, research and administration systems	
	What		Learners, teachers, researchers, administrators working together & sharing resources Agencies delivering value-for-money	
	How		Online learning communities Sharing effective research & practice Shared planning & monitoring	

ICT Strategic Framework 2010 Targets



	Outcomes	By 2010
Connectivity	Improved access	Every education organisation has access to a reliable high-speed internet connection
	Shared resources	Every education organisation has the ability to share ideas and resources electronically
Content	Discoverable content in digital repositories	Communities of interest are able to easily locate, access and share relevant content hosted in disparate national and international repositories
	Information & knowledge management	All education organisations will be able to utilise information and knowledge held across the sector
	Lifelong learning	All learners can acquire and update their abilities, interests, knowledge and qualifications from pre-school years to post-retirement
Confidence & Capability	Information literacy skills and competencies	All learners, teachers, researchers, administrators and support staff can utilise their ICT tools and services effectively and efficiently
	Effective, efficient systems	Learners, teachers, researchers, administrators and support staff have access to effective, efficient systems
	Learners, teachers, researchers, administrators working together & sharing resources	Learners, teachers, researchers and administrators use a range of collaborative tools to work together effectively
	Agencies delivering value-for-money	All annual ICT investment is measured against agreed standards for value-for-money

ICT Strategic Framework Annual Workplans



The ICT Strategic Framework is supported by annual workplans which feature:

- key cross-agency ICT projects and initiatives that support the 2010 targets of the Framework
- developments relating to the establishment of shared services for the education sector (including the Education Sector Architecture Framework suite of projects)
- Work around standards development for national and international connectivity

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Education Sector Architecture Framework (ESAF)



Aims to deliver inter-operability across the Education Sector through the ability to ...

- share a common understanding of data and information
- transfer information based on business rules
- identify yourself
- authorise access to services and information
- locate services and information within the sector

Projects to deliver foundation layer of standards and services

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The ESAF Projects



- **Education Sector Data Model (ESDM)**
 - Defines a common framework for shared sector data as the basis for data collection and exchange.
- **Education Sector Metadata Schema (ESMS)**
 - Enables a common understanding of education related electronic information.
- **Education Sector Integration Services (ESIS)**
 - Provides a set of common services to support interoperability between New Zealand education sector organisations and systems.
- **Education Sector Authentication & Authorisation (ESAA)**
 - Provides a single sign-on service to access all relevant education sector services and systems.
- **Education Sector Federated Search (ESFS)**
 - Provides a search brokerage service which connects to key NZ & international electronic catalogues; a single point of access to education related information.

Education Sector Data Model - Objectives



- Defines a logical model of shared sector data
 - to facilitate management of and access to shared sector data
- Defines sector agencies data custodianship responsibilities
 - identifies the "master" copy of data and who is responsible for its upkeep

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Metadata Schema - Objectives



- Improved functionality and accuracy of sector searches
- More efficient metadata management within the sector
- Greater interoperability in sector metadata management

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Integration Services - Defined



- Integration services are:
The set of services to support information technology interoperability between organisations and systems
- To the participants this means:
 - Access to and management of shared sector data
 - Data synchronisation between multiple sets of data
 - Information systems support for business processes that span one or more organisations
- Technically achieved through provision of:
 - Data integration Primarily concerns the synchronisation, transformation and translation of data
 - Application integration The linking of two applications and the passing of information between them
 - Business process integration Managing the movement of data
 - Communications middleware Foundation messaging services that support the various types of integration

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Authentication & Authorisation - Objectives



- This project will deliver an open standards based solution that provides:
 - A common account for sector users
 - A single authentication system
 - A single schema interface
 - Sector wide tracking
 - Common role based authorisation model
 - Authorisation & Authentication policies, standards, processes

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Federated Search - Objectives



- More effective/efficient sector searching
- Greater satisfaction with sector portals
- Better decisions through better information
- Participation in global resource-sharing
- Available at www.elearn.govt.nz or www.esfs.govt.nz

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The ESAF Projects - Status



- Education Sector Data Model (ESDM)
 - Implementing
- Education Sector Metadata Schema (ESMS)
 - Developing; For learning objects and to support Agency EDRMS
- Education Sector Integration Services (ESIS)
 - Completed RFP; Confirming scope of schools & tertiary implementations
- Education Sector Authentication & Authorisation (ESAA)
 - Completed tender & contracting; First deliverables 4th Qtr 2006
- Education Sector Federated Search (ESFS)
 - Initial NZ repositories integrated (NatLib, Te Ara); Phase 1 in production
- Education Sector ICT Shared Services
 - Cross-agency operating procedures; Establishing Unit within MoE

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ICT Strategic Framework - other Education Sector ICT Initiatives



- National Digital Heritage Archive**
A National Digital Heritage Archive (NDHA) is being created that will preserve New Zealand's digital memory and is a significant building block in New Zealand's National Content Strategy.
- Digital Repositories**
Three projects are underway that are developing and implementing a resource discovery function for New Zealand's tertiary sector. New Zealand is also actively participating in an Australian digital research repository project (RUBRIC) to share learnings with the New Zealand education sector.
- Connecting Learning Information and Knowledge (CLiK)**
A web platform for New Zealand education sector websites, integrating three pieces of software: FileNet content management system; BEA web logic server; and Verity searching tool. Online communities of practice will also utilise this platform.

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ICT Strategic Framework - International Connectivity



New Zealand is establishing international partnerships to further the development of international connectivity through open standards based ICT.

- IMS Global**
Participating in the IMS international specification projects, including a focus on service orientated architecture/approaches (SOA).
- ISO SC36**
Participating in the international standards body for IT standards for learning, education and training.
- DEST/JISC/SURF**
Developing the e-Framework for Education and Research to produce an open standards based service oriented technical framework to support the education and research communities.

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International e-Framework for Education and Research



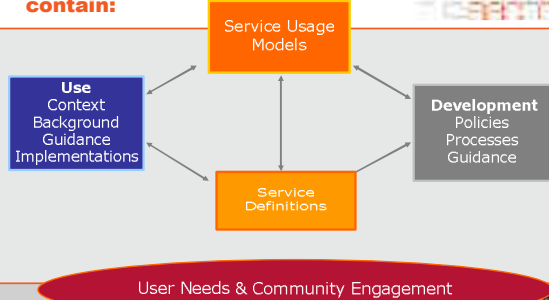
The **primary goal** of the e-Framework Partnership is to produce an evolving and sustainable, open standards based service oriented technical framework to support the education and research communities.

Purpose of the e-Framework:

- Expanding the e-Learning Framework (ELF) to include e-research, information environments etc.
- Defining vocabularies, notations and methodologies.
- Coordination with funding programs of partners.
- Developing relationships with other interested bodies- e.g IMS, DLF.

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The e-Framework will contain:



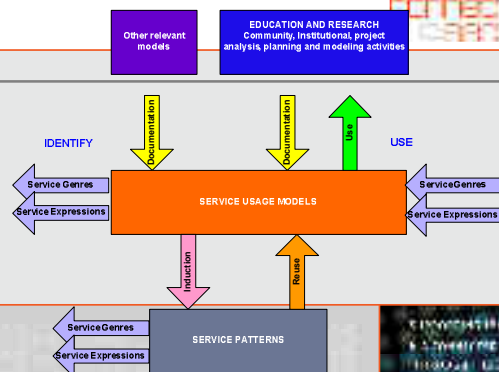
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Service Usage Models



- Aimed at a particular business process or workflow
- Defined by services that they combine
- Joins services with requirements
- Different levels of granularity, some high level and abstract, some detailed and targeted at implementation
- No limit on the number of reference models in the framework
- Can overlap with other reference models
- May be used to design implementations

Why do SUMs matter?



Establishing a Target State for New Zealand



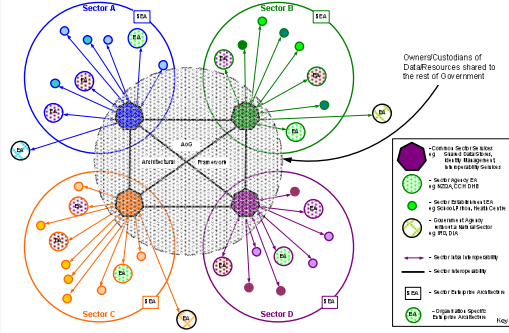
- Education sector agencies now actively taking a leadership role in planning the co-ordinated use of ICT
- Building on the work to date of the ESAF programme and the collaborative work being undertaken nationally and internationally
- Established key working and governance groups for e-Learning and Connectivity
- Taking an architectural approach that is focused on modelling the New Zealand education sector as a whole
- Will develop a target state for early childhood, schools, tertiary and government agencies and a roadmap to achieve it
- This approach will focus on the services and components and their relationship to each other (administration, assessment, learning and infrastructure)

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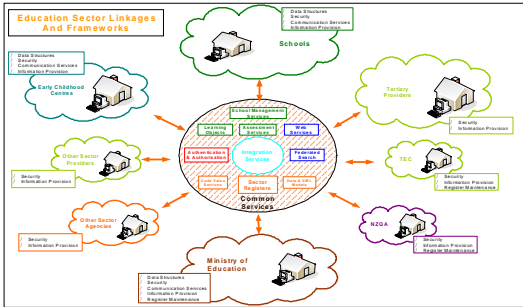
A proposed All of Government Approach to Interoperability



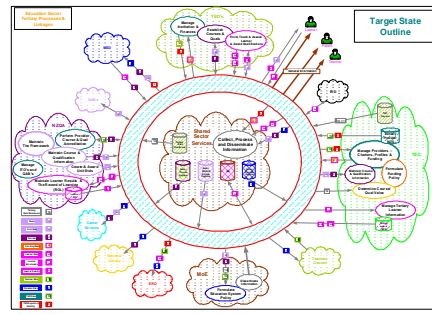
All of Government Sector Approach to Interoperability



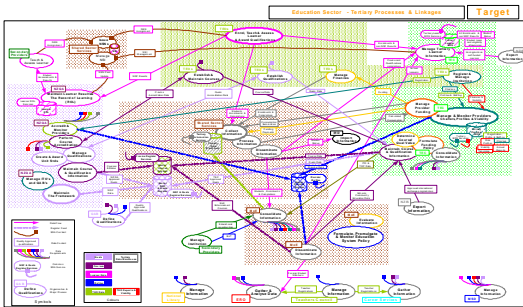
Establishing a Target State for New Zealand



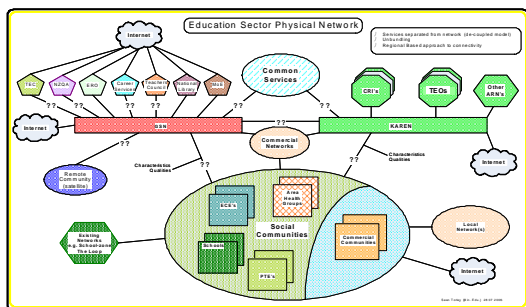
Establishing a Target State for New Zealand



Establishing a Target State for New Zealand



Establishing a Target State for New Zealand



Establishing a Target State for New Zealand



Outcomes of this approach will create a key planning tool that will:

- Deliver a view of the sector, that through the governance process, will enable the co-ordinated planning of ICT initiatives
- Clearly show who is responsible for what
- Allow all ICT initiatives to be able to be assessed against building towards the target state

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Summary



2006 and beyond will see work continuing around:

- ICT Strategic Framework components of Connectivity, Content and Confidence & Capability
- Implementation of the Education Sector Architecture Framework suite of services for the education sector
- Continued development of CLiK platform, research repositories, the National Digital Heritage Archive and the international e-Framework and ICT standards
- Further development in innovation, collaboration and research with both New Zealand and international partners

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Conclusion



- A copy of the ICT Strategic Framework for Education has been included in your conference bags for your review and comment.

Please provide any feedback to Katherine Davey at ICT.Sector@minedu.govt.nz by December 31 2006.

- A seminar to further discuss the e-Framework initiative and its application to New Zealand is being held on Tuesday 24 October. The seminar will involve representatives from the Joint Information Systems Committee (JISC) in the U.K, agencies and the sector.

If you are interested in attending this event please email Katherine Davey at ICT.Sector@minedu.govt.nz by Friday 06 October.

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