



eHealth architecture principles

Australian interoperability context

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Background

- First developed – NEHTA Interoperability Framework – 2007
- Subsequently updated - NEHTA managed specifications – 2012
 - eHealth architecture principles
 - <https://www.nehta.gov.au/implementation-resources/ehealth-foundations/ehealth-architecture-principles>
 - eHealth interoperability framework
 - <https://www.nehta.gov.au/implementation-resources/ehealth-foundations/ehealth-interoperability-framework>
 - basis for this presentation

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E-health Interoperability Framework

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Purpose

- Guide architecture developments and solution implementations
 - in the Australian eHealth environment
- Support delivery of systems that are interoperable, flexible and fit for purpose
 - while supporting established rules and processes for communication and use of information in the health sector

Development Approach

- Involved many stakeholder consultations
 - Reflect their consensus
- Inspired by TOGAF guidelines
 - Definition
 - general rules or guidelines, intended to be enduring and seldom amended, that inform and support the way in which an organisation sets about fulfilling its mission
 - Each principle
 - Statement
 - Rationale
 - Implications
- Reflect eHealth interoperability requirements

Two broad related groups

- *General principles* – informed by
 - National eHealth Strategy
 - External constraints
 - e.g. legal and regulatory requirements
 - technological maturity of healthcare organisations
 - Accepted architectural practices in the information technology industry
 - Existing principles of good health information management and governance
- *Interoperability principles*
 - Specific to eHealth interoperability
 - Amplifying the general principles

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Support Service Based Approach

- **Statement**

- A service-oriented approach with an emphasis on business services should be applied to the development of specifications and services.

- **Rationale**

- A business service is a unit of functionality that clearly defines the value to a business rather than mere focus on technology improvement. Business services are the fundamental mechanism for sharing information and are key building blocks for building interoperable eHealth applications and solutions. One business service can be supported through one or more technical services. A technical service can be an application specific or an infrastructure related.

Implications

- The business-level service definition brings together the various required components of business, information and technical perspectives.
- The business-level relevance and benefit associated with services must be identified.
- The business-level responsibilities of both service providers and service consumers must be identified in a business process.
- In the eHealth architecture, business services are the fundamental mechanism for sharing information. They control the accessibility, protection and privacy of information exchanged and used.
- (13 implications altogether)

Interoperability principles

- **Universal participation**
 - All health stakeholders should be able to exchange health information, irrespective of the level of their technical capability.
- **Enabling interoperability**
 - eHealth stakeholders shall define and publish the levels of capability they can support
- **Policy compliance**
 - Interoperability solutions are to comply with applicable policies in all jurisdictions and organisations within which they operate.

Interoperability principles (cont)

- Observance of standards
- Agreement on common semantics
- Conformance and compliance
- Governance of change
 - Those providing interoperable solutions should institute collaborative processes for governing, managing and communicating changes affecting eHealth interoperability, including changes to exchanged information, exposed service interfaces and / or business rules.

Agreement on common semantics

- Effective, safe eHealth interoperability requires the interoperating parties to have a common understanding of concepts embodied in policies, business services, terminologies and data definitions.
- NOTE: For more detail see the following architecture principle [EHAP]:
 - Use common terminologies and data definitions

Use common terminologies and data definitions

- **Statement**

- A common understanding of concepts embodied in terminologies and data definitions is key to interoperability.

- **Rationale**

- Interoperability is fundamentally enabled by the ability to communicate. Terminologies and data definitions capture the meaning and structure of shared information and thus must be shared and accepted in the community where they are used.

Implications

- All services must identify or specify the terminology and/or data definitions associated with the information provided or received through the service.
- Terminologies and data definitions must be openly published using standard identification schemes.
- The likely users of a service should be consulted in establishing terminologies and data definitions for a service. Or alternatively, an open standard that is widely recognised by the community should be used.

Contribution to HSPC

- Consultative approach to development and agreement
- The developed principled can provide a good starting point for HSPC principles
- Analysis of whether new technologies and developments require extensions
 - Mobile, Cloud, Analytics ...
- ...

References

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