Open Source And Open Standards: The Synergies

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About This Talk

Brian Kelly reviews the approaches which have been taken in the development of a model for the use of open standards in JISC's development programmes.

The application of the approaches to other areas, including open source software, is described and a description of the sustainability of the approach is described.

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Contents

- Background:
  - About Me
  - About This Talk
- Open Standards:
  - The Benefits
  - The Difficulties
- A Contextual Model
- Application Elsewhere
- Sustainability
- Conclusions

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About Me

Brian Kelly:

- UK Web Focus
- Adviser on best practices and innovative uses of Web
- Funded by JISC and MLA (Museums, Libraries and Archives Council)
- Supports Higher and Further Education and cultural heritage communities
- Based at UKOLN, University of Bath
- Member of OSS Watch Advisory Group

Related work:

- Providing advice on maximising access to networked resources
- Coordinating development of model for use of open standards in JISC's digital library programmes (and wider)

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About This Talk

This talk:

- Describes some of the difficulties of making use of open standards

- Outlines pragmatic approaches which has been developed to address such difficulties

- Explores how the approaches can be applied in the context of open source software

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Case For Open Standards

Open standards can provide several benefits:

- Application- and platform-independence

- Avoidance of vendor lock-in

- Avoid licensing costs which may be associated with patented formats

- Provide architectural integrity

- Flexibility

- Conformance with well thought-out architectural framework (cf XML family of standards)

- Maximise access to resources

- Help ensure long term access to resources (digital preservation)

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Get Real – Remember OSI!

But are open standards always a good thing?

- Some open standards don't take off (remember Coloured Books & OSI networks)
- Open standards may be complex and expensive to implement
- Users may be happy with existing solutions
- Migration to open standards may be expensive

Challenge:

- Recognise and exploit 'winners'
- Support the transition from closed to open standards
- Develop a model which recognises the diversity – and doesn't simply mandate an inappropriate, simplistic solution

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Real World Experiences

PowerPoint / S5 / PDF:

- MS PowerPoint – easy to use; ubiquitous at conferences; good for handouts; etc.

- S5 – open HTML/CSS alternative, but can lead to bullet point poisoning; handout quality poor; …

- PDF – sometimes used to present PPT files. (Why use another proprietary, less feature-rich format?)

Skype:

- Provides quality Internet telephony

- Easy to install & use

- Loved by many: overseas students, conference travellers, …

- But closed, proprietary, links with Kazaa links, …

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What Is An Open Standard?

Before we can promote open standards we need to define them! But agreeing a definition can be difficult.

Characteristics of open standards:

- Owned by acknowledged neutral body

- Specifications published openly (and freely?)

- Developments to specifications open to all

- Platform and application-neutral

- …

Note danger that 'open' term becomes abused by marketing departments (be wary of phrases such as "*user-driven standards*", "*market-place standards*", etc.   )

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Governance Issues: RSS Example

RSS 1.0:

- RDF Site Summary
- Extensible format for news feeds, syndication
- Specification written in 2000 by Aaron Schwartz ➡

RSS 2.0:

- Really Simple Syndication
- Simple formats for news feeds, syndication (and extended for Podcasting)
- Specification written in 2002 by Dave Winer ➡

RSS 3.0:

Which to choose? What are the governance issues? Where's the road map? Can we build sustainable services on flaky foundations?

- Aaron Schwartz "*is a teenage writer, hacker, and activist*" ➡
- Dave Winer "*.. polarizing figure in the blogging community*" ➡

Challenges

What approach to take:

- Hard line: must use the open standards (Old Labour)
- Surrender: you can do what you want (Thatcherite)

Our thinking:

- Recognise difficulties
- Encouragement of best practices

We have developed an alternative approach:

- An open standards culture
- Checklist for selection
- A contextual model

Approach described in "*Ideology Or Pragmatism? Open Standards And Cultural Heritage Web Sites*", Kelly, B., Dunning, A., Guy, M. and Phipps, L. ichim03 conference proceedings

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Checklist For Selection (1)

QA Focus project developed a checklist to help in the selection of open standards based on:

- **Ownership and openness of standard**: open, neutral body; proprietary but community process; community but spec publish; proprietary and reverse engineered; proprietary and closed

- **Availability of viewers**: multiple platforms; available for free; available as open source

- **Availability of authoring tools**: multiple platforms; available for free; available as open source

- **Architectural Integrity**: developed as part of broader framework – cf W3C specs

- **Fitness For Purpose**: is the standard designed for the purpose envisaged

Checklist For Selection (2)

- **Fitness For Purpose**: is the standard designed for the purpose envisaged)

- **Expertise**: does the organisation have the necessary expertise available in-house)

- **Maturity of Standard**: is the standard mature and well-proven)

- **Local Culture**: does the organisation seek to make use of emerging standards or prefer to use proven technologies)

- **Preservation Needs**: is the standard appropriate for long-term preservation

- **User Needs**: does the standard satisfy the requirements of the user (should be top priority?)

See the "*Matrix for Selection of Standards*" QA Focus briefing document no. 31

Parallels With OSS

This approach can be applied to selection of open source.

OSS Watch produced a QA Focus briefing document which addresses several issues which need to be considered:

- The Reputation
- Ongoing Effort
- Support for Standards and Interoperability
- Support from the User Community
- Availability of Commercial Support
- Versions (and Version 1.0)
- Documentation
- In-house skills and expertise
- Licence
- Functionality

See the "*Top Tips For Selecting Open Source Software*" QA Focus briefing document no. 60 ➡

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Contextual Approach

We have outlined am approach which recognises that it is not always be appropriate to mandate a single solution

However we still need:

- To address compliance (e.g. "what does **must** mean?", "Are there penalties for non-compliance")
- To address the variety of contexts for development
- A model which underpins the funder's approaches
- A description of how the model can be applied across a variety of contexts
- An outline of the project's view of this model

The following summary is described in more detail in "*A Standards Framework For Digital Library Programmes*", Kelly, Russell, Johnston, Dunning, Hollins and Phipps, ichim05 conference proceedings

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Compliance Issues

What does **must** mean?

- You **must** comply with HTML standards
  - What if I don't?
  - What if nobody does?
  - What if I use PDF?
- You **must** clear rights on all resources you digitise
- You **must** provide properly audited accounts
  - What if I don't?

There is a need to clarify the meaning of **must** and
for an understandable, realistic and reasonable compliance
regime

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The Context

There will be a context to use of standards:

- The intended use:
    - Innovative / research
    - Key middleware component
    - Mainstream
    - Small-scale deliverable

- Organisational culture:
    - HE vs FE
    - Service vs Development
    - Teaching vs Research
    - …

- Available Funding & Resources:
    - Significant funding & training to make use of important new standards
    - Minimal funding - current skills should be used

- …

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The Layered Standards Model

Owner

JISC

3rd Parties

JISC / project

Quality Assurance

External factors: institutional, cultural, legal, …

Context: Policies				
Prog. *n*	Funding	Research	Sector	…

Annotated Standards Catalogue				
Purpose	Governance	Maturity	Risks	…

Context: Compliance			
External	Self assessment	Learning	…

This 3-layered model has been recommended to JISC

The Project's Perspective

Selection		
Local factors	Standards	Deployment

Ratification		
Formal	Discussion	Notification

Quality Assurance		
Policies	Procedures	Reporting

Learning		
Case studies	Refinements	Sharing

Implementation by projects:

- Selection of appropriate standards (as described)
- Ratification of decisions: approval (or not) by funders; discussion with peers, advisory group, …; notification of decision
- Quality assurance regime
- Learning from experiences

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QA Infrastructure (1)

Will projects and services implement standards as required? How will we know?

Compliance checking:

External checkers: Approach used in some sectors. But:

- Concerns over big brother
- Does big brother have expertise?
- Alien to HE culture
- Standards not *embedded* into working practices (done because funders want it)

Self-assessment:

- Approach recommended by QA Focus (and should be done even if external checking)
- Need for projects/services to define their QA processes

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QA Infrastructure (2)

Lightweight QA infrastructure felt to be appropriate:

- Simple technical policies

- Procedures for ensuring policies are implemented

Policy example

Policy: Web Standards
Standard: XHTML 1.0 and CSS 2.0
Architecture: Use of SSIs and text editor
Exceptions: Automatically-derived files
Checking: Use `,validate` after update
Audit Trail: Use `,rvalidate` monthly and document findings

See "*Summary of the QA Focus Methodology*", "*Top 10 Quality Assurance Tips*" and "*Implementing Your Own QA*" QA Focus briefing documents (nos. 30, 37 and 58)

Core Principles

We have described the contextual model and how it can be implemented by projects

But we still need to define the core principles which underpin the approach:

- To identify how tensions can be resolved

- To avoid inconsistencies (cf UK Government guidelines which lists openness and market driven solutions as equivalent key principles)

Proposed core principles:
We are committed to (believe in/support) use of open standards to provide richly functional, interoperable and widely accessible services in order to support the needs of our user community

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Using The Principles

If agreement on the core principles is achieved we can:

- Help to move discussions / arguments away from personality clashes, power struggles, etc.

- Agree that open standards (and other areas of best practices) aren't necessarily always the prime driving factor but are there to support the needs of the user

- Extend this approach to other areas of best practice

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Beware The IT Fundamentalists

We need to avoid simplistic solutions to the complexities:

- **Open Standards Fundamentalist:** we just need XML
- **Vendor Fundamentalist:** we must need next version of our enterprise system (and you must fit in with this)
- **Open Source Fundamentalist:** we just need Linux
- **Accessibility Fundamentalist:** we must do WAI WCAG
- **User Fundamentalist:** we must do whatever users want
- **Legal Fundamentalist:** it breaches copyright, …
- **Ownership Fundamentalist:** must own everything we use
- **Perfectionist**: It doesn't do everything, so we'll do nothing - I don't care if it doesn't run in the real world

Rather than arguing solely on these fundamentals, we should explore how they relate to users' needs

Extending The Approach

The pragmatic, user-centric approach to open standards can be extended to other areas of best practices:

- Accessibility

- Open source software

- …

Benefits of a consistent underling model:

- Shared understanding across funder organisation

- Shared understanding across projects

- Consistent way of addressing difficulties and inconsistencies

- …

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User-centric Approach To Accessibility

Holistic approach to e-learning accessibility published in CJLT (2004): ➡

- Focuses on the user

and recognises importance of:

- External pressures e.g. funders, QAA, …
- Technical infrastructure
- Resource implications
- Learning & teaching *outcomes*
- Blended accessibility
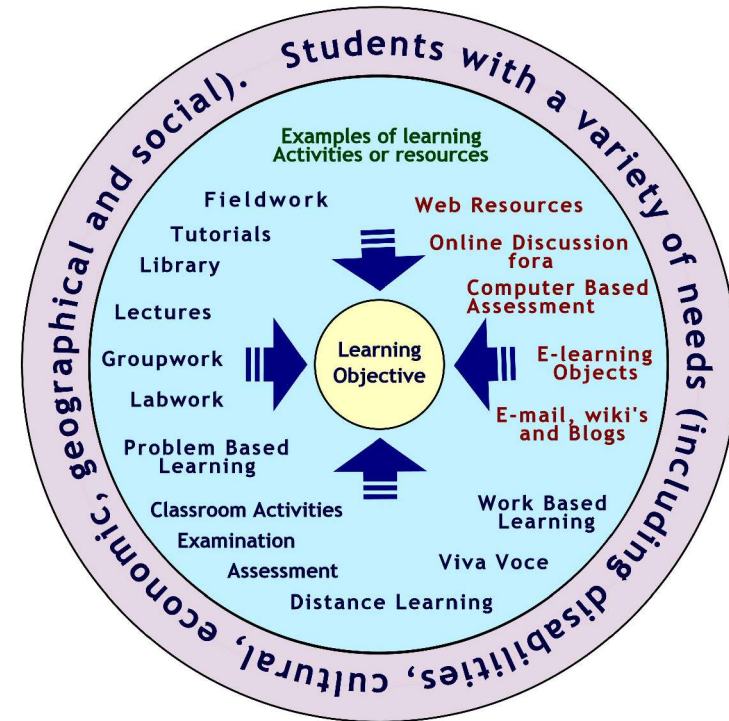
Follow-up work awarded prize for Best Research Paper at ALT-C 2005 E-learning conference ➡

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Tangram Model (1)

Generic model:

- W3C model has limitations

- Jigsaw model implies single solution

- Tangram model encourages diversity of solutions
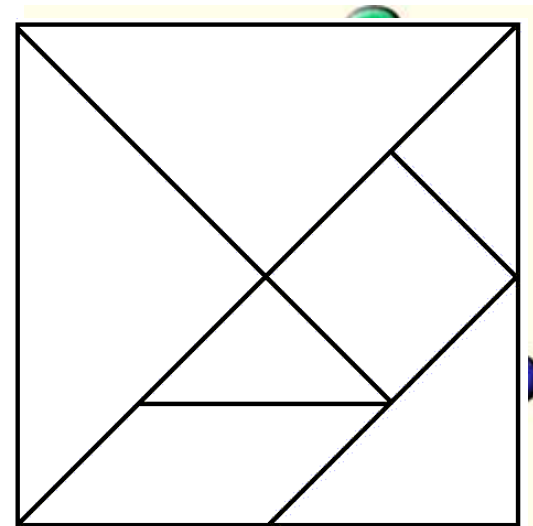
This approach:
- Encourages diversity of solutions
- Focus on 'pleasure' it provides to user

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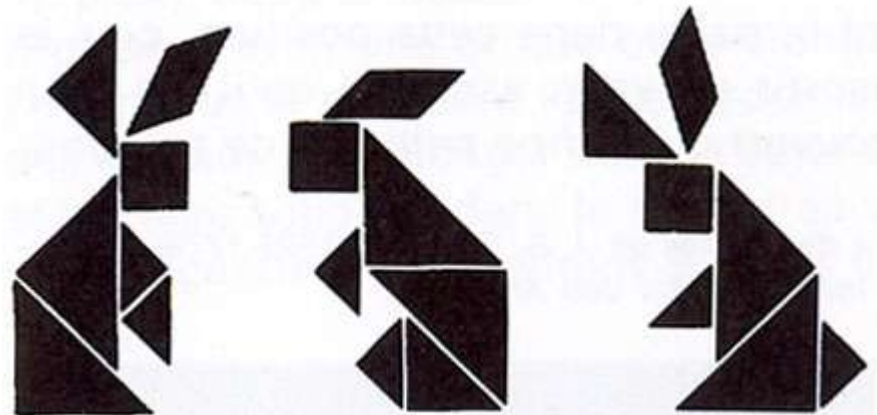
Tangram Model (2)

Model allows us to:

- Focuses on end solution rather than individual components
- Provided solutions tailored for end user
- Doesn't limit scope (can you do better than WAI AAA?)
- Make use of automated checking – but ensures emphasis is on user satisfaction
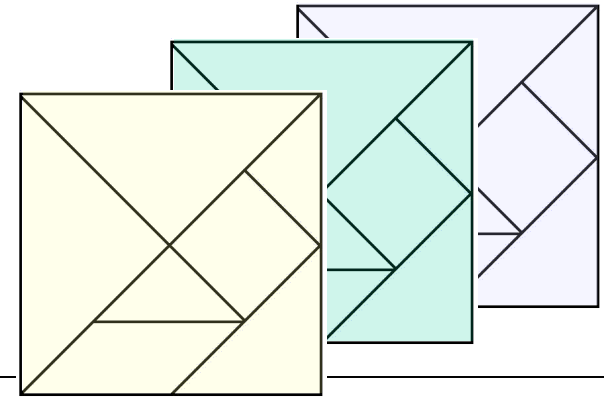
Guidelines/standards for/from:

- WAI
- Usability
- Organisational
- Learning difficulties
- Legal
- Management (resources, …)
- Interoperability
- Real world solutions (blended accessibility)

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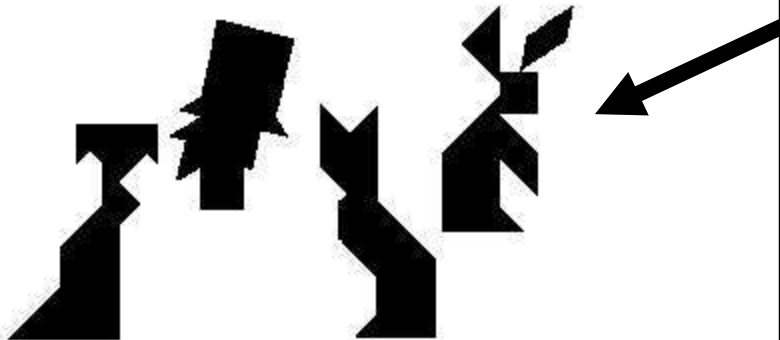
Implications For Open Source

What is the relevant of:

- A contextual approach to selection and use of open standards

- User-centred principles governing an organisation's policies on open standards

- A holistic / blended approach to Web / e-learning accessibility

to use of open source software?

Further information will be available in "*A Contextual Framework For Standards*", Kelly, B., Dunning, A., Rahtz, S., Hollins, P. and Phipps, L. E-Government: Barriers and Opportunities workshop proceedings, Edinburgh, May 2006

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Application To Open Source

Many parallels should be clear:

- Selection of open source software (and licensed software)

- Importance of a user-centric approach

- Importance of avoiding dogma

Other issues are relevance to both areas will be addressed shortly:

- Support infrastructure

- Sustainability of model

- Sustainability of support infrastructure

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Generic Model

Context: Policies				
Sector	Funding	Culture	Resources	…
Annotated Catalogues				
Standards		Software	Accessibility	…
Context: Compliance				
External	Self assessment		Learning	…

The model can be generalised to several areas of best practice

Summary:

- We can produce 'catalogues' of best practices
- Funders can apply these best practices in a variety of contexts
- A consistent model can be applied across a range of areas (e.g. extended to include open data)
- Support resources can be used (and possibly modified) by others
- The model can be used by others (*subsidiarity* principle   )
  e.g. Common Information Environment (CIE)   & strategic partners

OSS & The Real World

Open questions:

- Can / should the OSS community take on board real world issues?
- Can the tangram model be of use?
- Are their links between policies on OSS and policies on, say, blended learning, blended accessibility (importance of paper, mobile phones, etc.)?

Blended Scenario?

"I've found a great open source VLE. It does XML, IMS, … I'm telling all the academics about it"

"Grrr. It has an embedded pedagogical approach which doesn't reflect our views!"

And we want a blended approach with Blogs and SMS txt and paper!
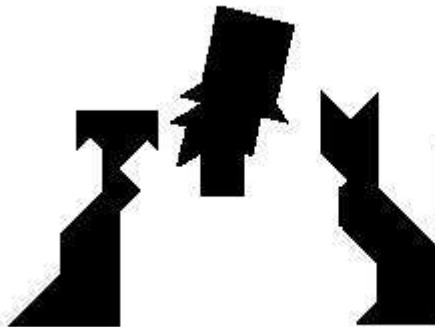
Sustainability

How do we

- Sustain, maintain and grow the standards catalogue?

- Develop a sustainable support infrastructure?

- Ensure that JISC supports learning organisations (and that JISC is a learning organisation)

Options:

- More funding for support infrastructure

- Exploit learning gained by projects, reuse experiences, encourage sharing, etc.

- Wide use by others (e.g. CIE partners such as the BBC, MLA, Becta, …)

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Standards Catalogue Process

There's a need for developing and enhancing the standards catalogue in order to:

- Update with new standards
- Learn from feedback and experiences
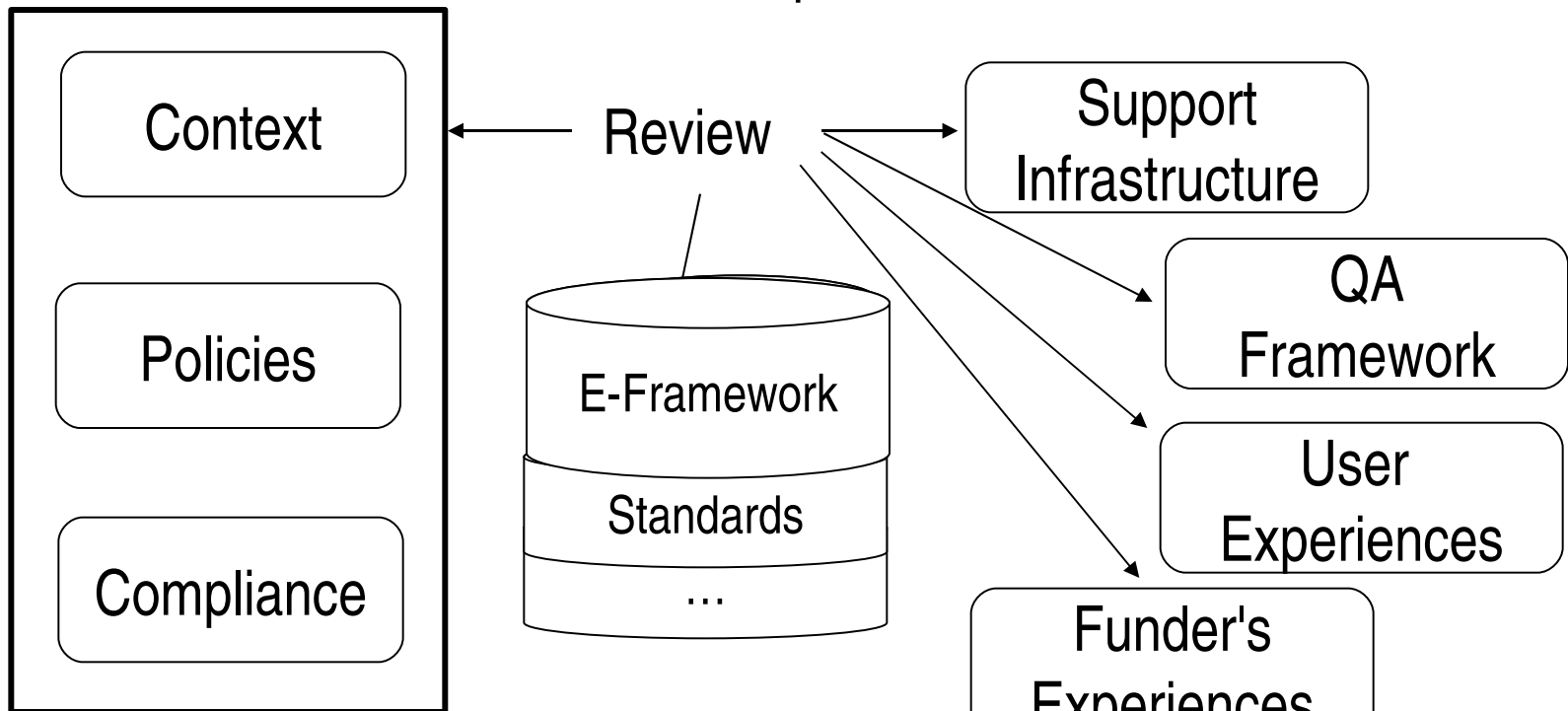
The Standards Catalogue can be integrated with the JISC's E-Framework

Support Infrastructure

Experiences of QA Focus:

- 90+ briefing documents & 30+ case studies
- Licensed (if possible) under Creative Commons
- UKOLN are continuing to publish new documents (e.g. on Folksonomies, AJAX, Podcasting, Wikis, etc.)

Case Study Template
- About the Project
- Area covered
- Approach taken
- Lessons Learnt / Things We'd Do Differently
- …

Case studies:

- Opportunity to describe experiences in specific areas
- Standard template to ensure consistency & provide focus
- Allows UKOLN to promote projects' work ☺
- Project get better Google rating ☺

Conclusions

To conclude:

- Open standards can help development of interoperable & widely accessible services
- But open standards don't always work (and dogma can be counter-productive)
- The contextual model can address these tensions
- The model can be applied to other areas, providing consistency for funders and users
- Approaches can be used by others
- The pragmatic & realistic approach can help adoption & use by possible sceptics
- An open support infrastructure can help with the sustainability

Your questions and comments are welcome

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