

Accessibility in ePortfolio Towards Appropriate Architectures: Issues and Approaches

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Introduction

- ePortfolios are seen as potentially pervasive means of learners and others recording for themselves and representing to others their learning and achievements
- There is a growing interest in them across all educational levels
- This presentation looks at the issues of how to make ePortfolios accessible to disabled students and other ePortfolio users with disabilities
 - That is accessible to the authors and editors of evidence of learning to be included in an ePortfolio and those who need to use ePortfolios to review a student's learning for educational or employment reasons

Context / Significance of Issues

- In educational communities across the world the idea that a learner or anyone has an electronic portfolio is catching on
- IMS ePortfolio Specification has been released (in July 2005)
- Input to that specification comes from a very broad community of stakeholders and includes use cases from Australia, United Kingdom, United States and continental Europe

Current Status

- Implementation and use is expected to be widespread
- Typical examples include the Open Source Portfolio Initiative (OSPI)
- Work of the European Portfolio Initiatives Co-ordination Committee (EPICC)
- Work leading to the British Standard BS8788 UK Lifelong Learning Profile (UK LeaP)
 - In the UK ePortfolios are an integral component in the government's 5-year eLearning strategy
- There are many other examples

Key Principals

- With ePortfolios come two key principles:
 - 1. A shift in the focus of eLearning pedagogies from those where content is centrally distributed towards a systems having a greater level of learner participation and learner/user authoring of material
 - This includes collaborative document review and collaborative authoring
 - 2. A focus on inclusivity
 - ePortfolios are touted to be an important element in lifelong and life-wide learning programs

Implications for Accessibility

- Learners posting evidence and those reviewing that evidence may be people with disabilities
- Therefore the authoring of evidence needs to be accessible to all and the form in which that evidence is represented needs to be accessible to all
- **Note** – This many author to many reader scenario contrasts with most web accessibility situations

Why is accessibility important?

- By failing to address issues of accessibility you exclude/disadvantage significant numbers of people
 - Disabled people 10-15% general population
 - OU students: 5.5% declare a disability
 - Microsoft market research: 57% of working age computer users likely to benefit from accessible technology
- Good design for disabled people is good design for all
 - accessibility promotes usability
- Legal requirement
 - There is now legislation in place that leaves you open to legal challenge if you don't address the accessibility issues

What we all need to know about accessibility

- That not everyone interacts with the computer the same way
- That this makes demands on those producing software or content and hence ePortfolios
- The importance of objectives for accessibility
- How to include accessibility criteria in specifications for developers
- What standards/guidelines are available

When does accessibility become an issue?

- Throughout!
 - At concept stage
 - At different levels of granularity
 - In specification of media elements
 - Evaluation of early prototypes
 - Throughout the ePortfolios' life-cycle
- Considering the needs of disabled students invariable yields benefits for all students

Principles for Accessibility on Web or in software

1. **Allow for user customisation**
 - text size and style, background and foreground colours
2. **Provide equivalent visual and auditory content and interface elements**
 - text descriptions for images and video, transcription of auditory content, text labelling of interface elements, etc.
3. **Provide compatibility with assistive technologies**
 - screenreaders, screen magnifiers and voice recognition software
4. **Follow relevant established standards/conventions**
 - use operating system conventions, standard HTML, etc.
5. **Allow access to all functionality from keyboard alone**
 - i.e. do not require the use of a mouse
6. **Support efficient navigation by providing context and orientation information**
 - make this information available to assistive technologies

The accessibility challenge for ePortfolios

- All users (learners) need to be enabled to author their evidence in a way that is accessible to all who may potentially need to review it
- Accessibility for learners and end users is equally important
- So accessibility in authoring tools is as important as accessibility in the content delivery
- This is all do-able but to date no one in a research or a commercial product context has done it

Hand over to Andy

What's an Eportfolio

- Products of learning
- Reflections, Assertions
- Assessments

Making Learning Products or content Accessible – Matching Resources to Learners

- Universal Accessibility

 - WCAG

 - Coarse Granularity, classifies people, falls short of meeting diversity of need

- AccessForAll

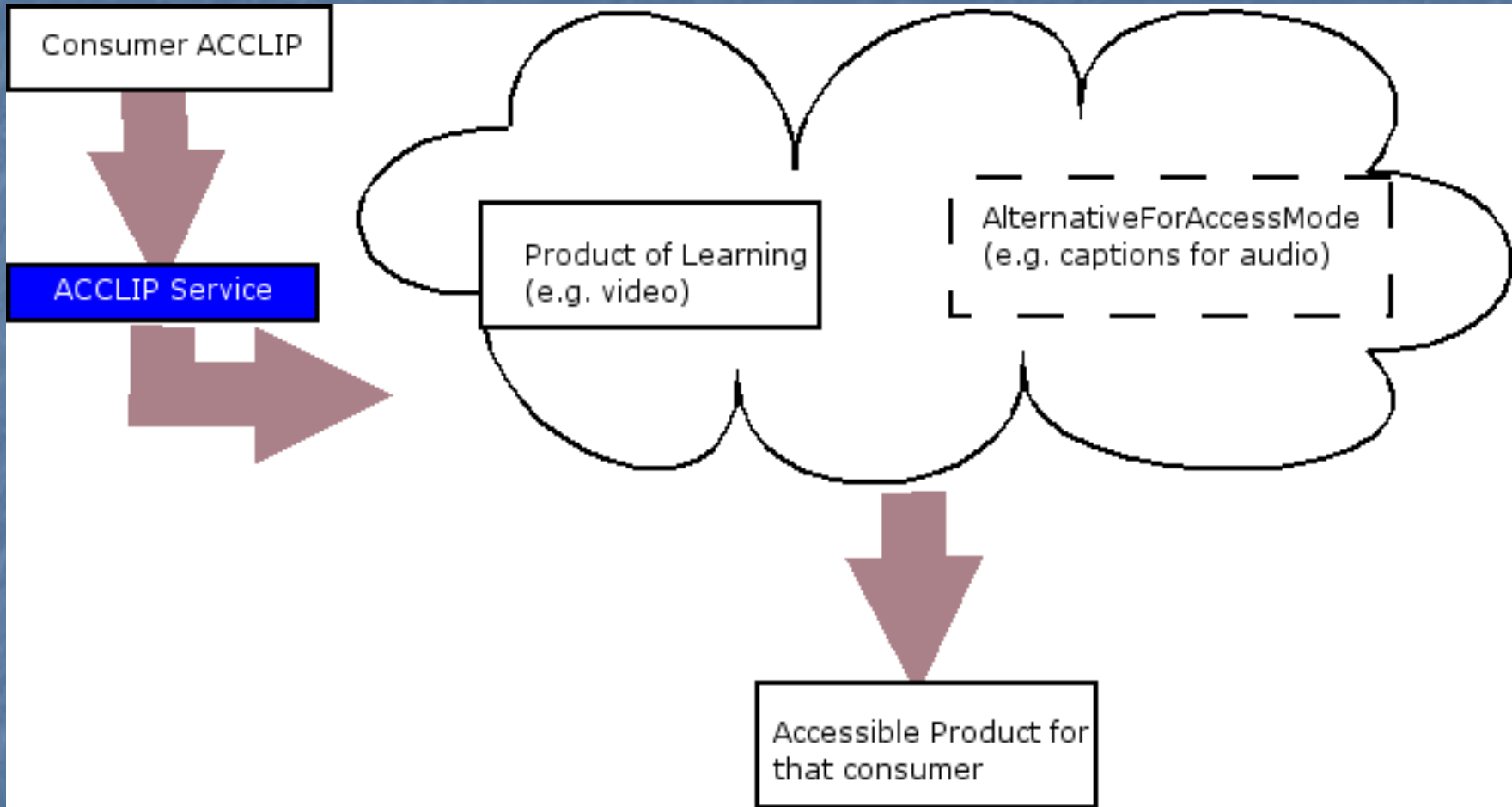
 - Assemble the pieces to make a resource accessible for an ACCLIP

Two Problems

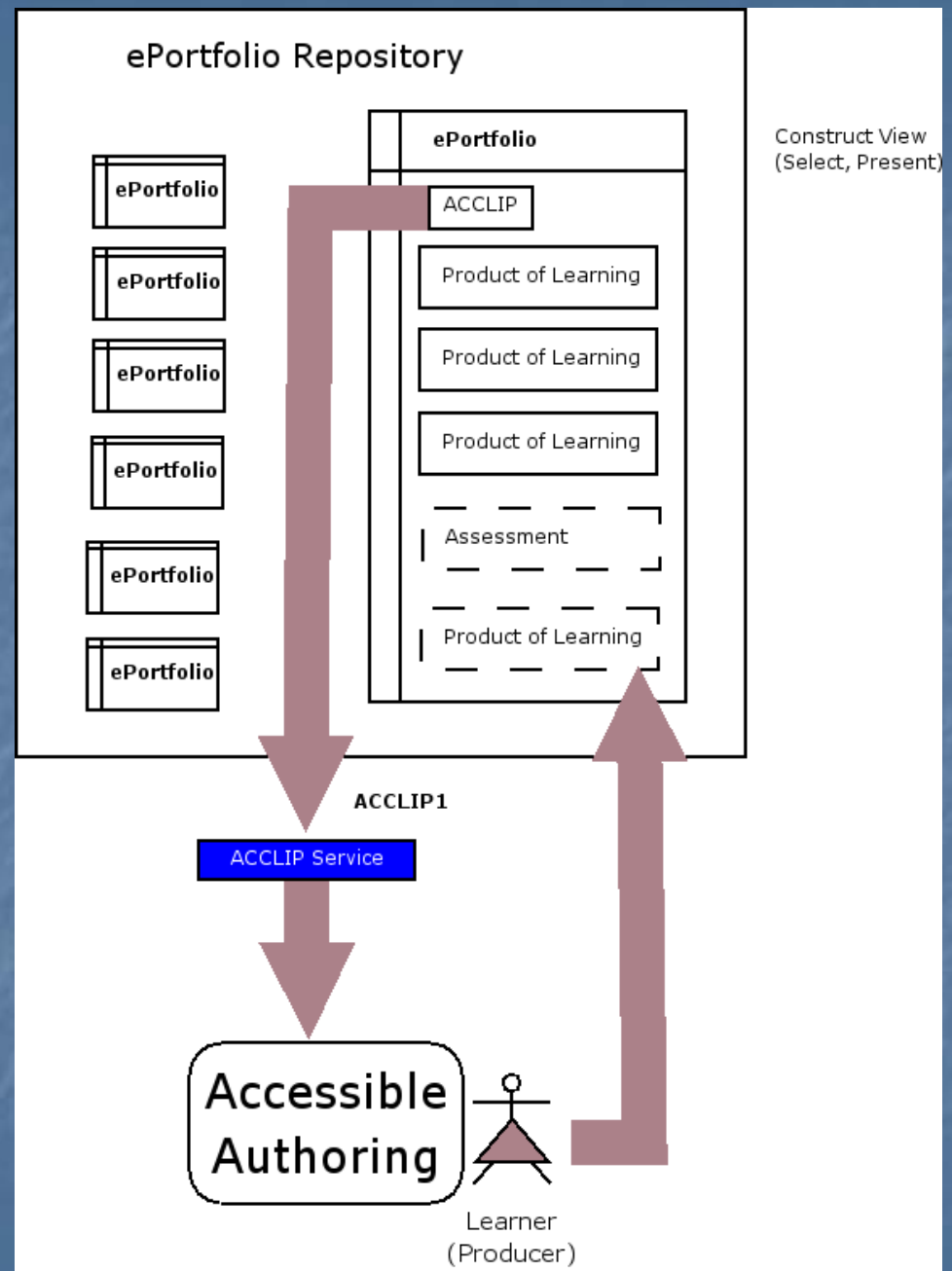
- Shift towards authoring
 - No central point to attack the problem
 - Media issues – round tripping
 - Accessible Authoring Practices and Tools
 - W3/WAI/ATAG has started – needs completing
- Architectural conflicts
 - Service granularity may solve

An Accessible Learning Product

- Assembling Resources
 - Bring together a learning product and the alternatives and services that make that product accessible in a context
- Do some delivery transformations at run-time (e.g. scalable fonts)

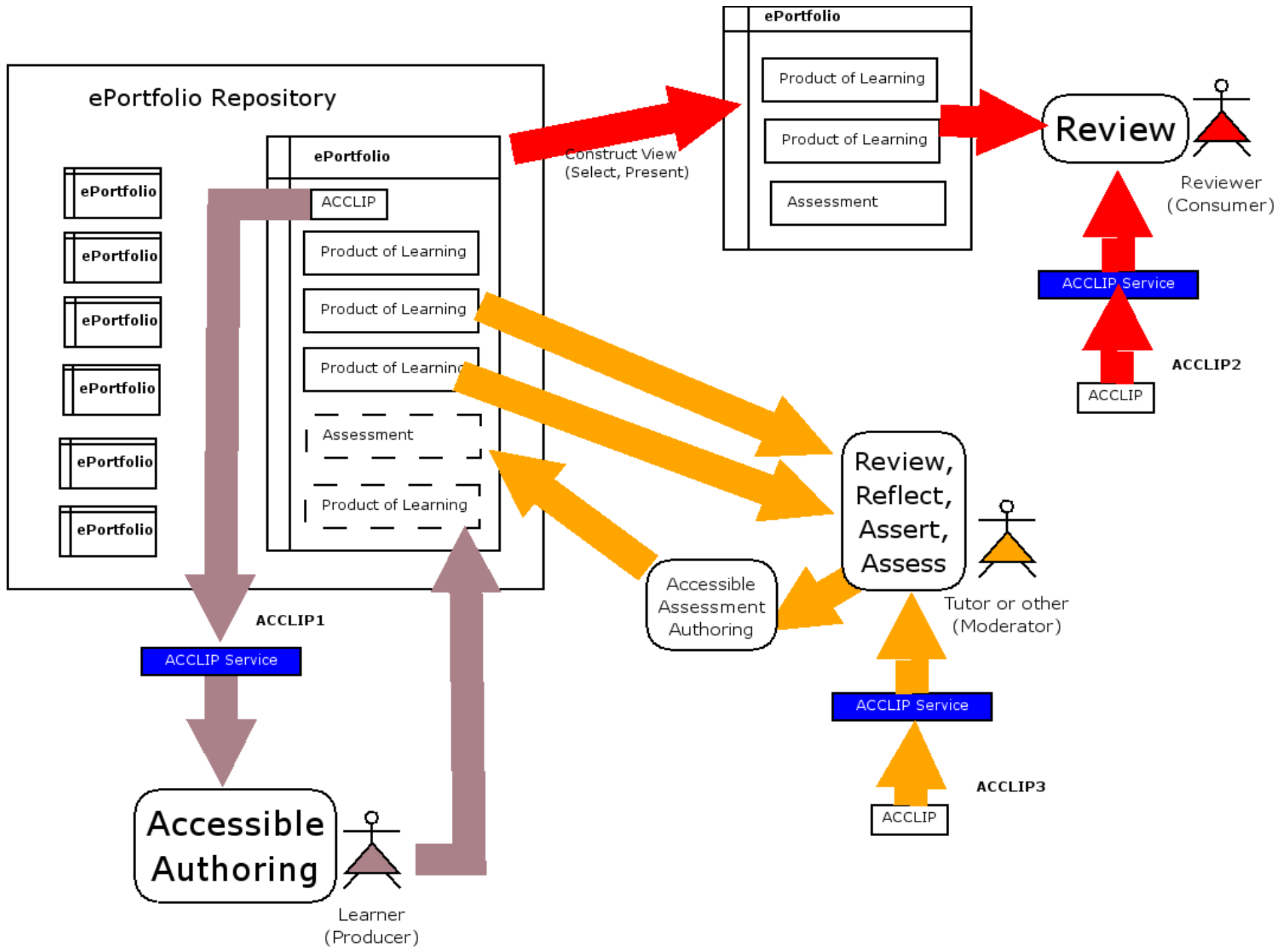


ACCLIP and EP



Using ePortfolios in Contexts

- See fullDiagram.dia



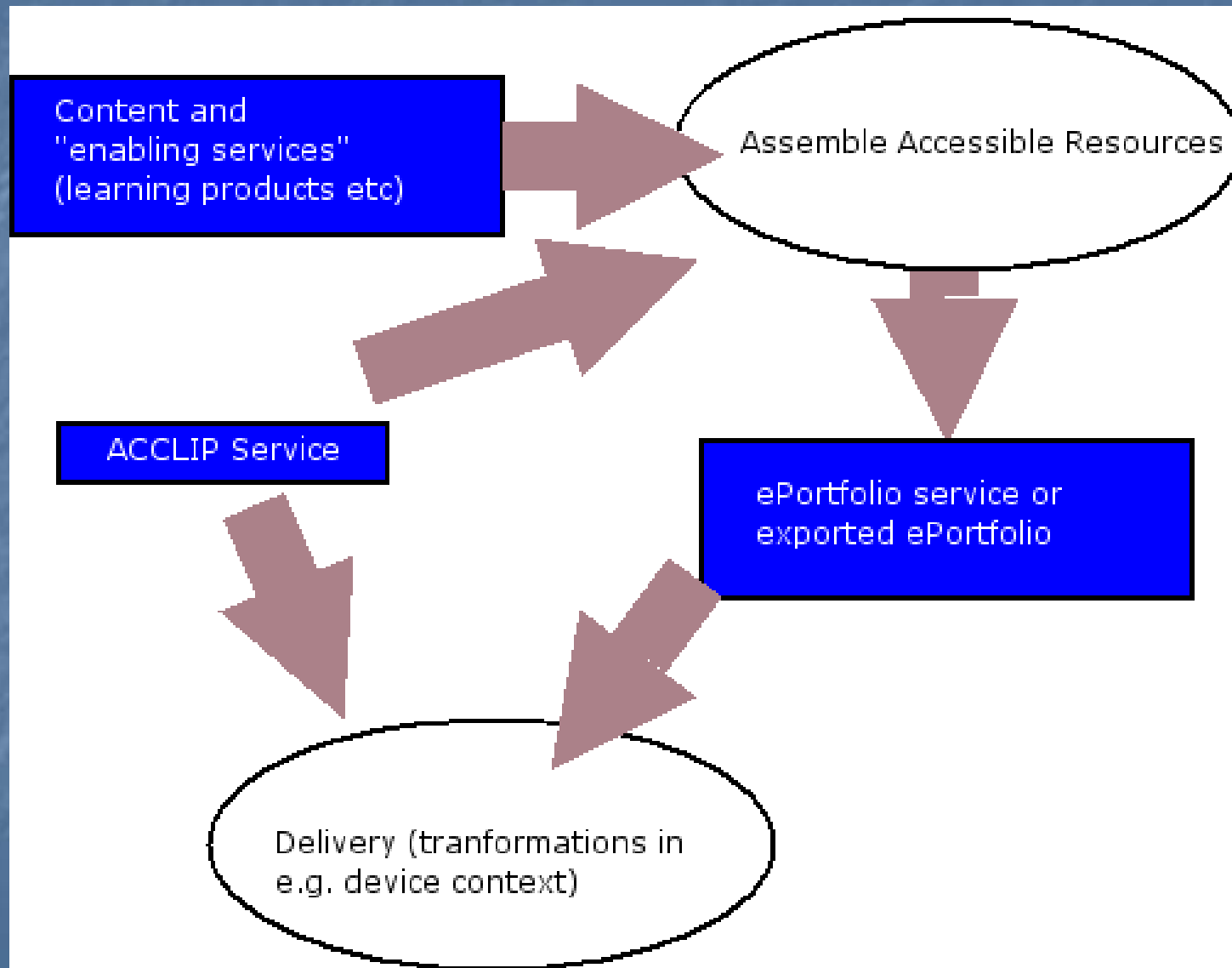
Making ePortfolio Contents Accessible

- Either
 - Universal Accessibility of each object
 - Doesn't work
- Or
 -

Making ePortfolio Contents Accessible

- Resource Assembly Must be able to get at the products
 - ePortfolio is a concept
 - But Access must be finer
- Presentation must be loosely coupled
- Authoring (including collaboratively) must be accessible for the wide variety of media and systems

Towards a Service Architecture



Other Considerations

- Privacy
 - Disability may be inferred from an ACCLIP
 - Hide behind service
- What would be needed for a national ePortfolio

Almost Conclusions (don't miss next slide)

- Need for guidelines on media and practices supporting accessible authoring and round-trip
 - What works, what doesn't, what works if you use particular practices
- Service architecture finer granularity than an ePortfolio
- continue to the (non-violent) punch lines

Future Directions – Inversion of ePortfolio

- Repositories of re-purposeable/re-versionable content
 - Learning objects and components
 - Learner authored objects (Learning Products)
 - Aggregations (learning content objects, ePortfolios) built on the fly
 - What is the author and other Meta-data to make an object an ePortfolio learning product