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## Metadata Interoperability in Educational & Training Settings

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# The Context

- **Learning**
- **Education**
- **Training**
- **Research**

# How to Model the Problem Space?

- **Processes & Functions**
- **Concepts**
- **Components**
- **Use Cases**
- **Services**
- **Frameworks**

# Some Natural Tensions for Metadata Interoperability

**Ambiguity**  **Precision**

**Generality**  **Specificity**

# Some Natural Tensions in e-learning

**Content**  **Process**

**Content**  **Context**

**Technology**  **Pedagogy**

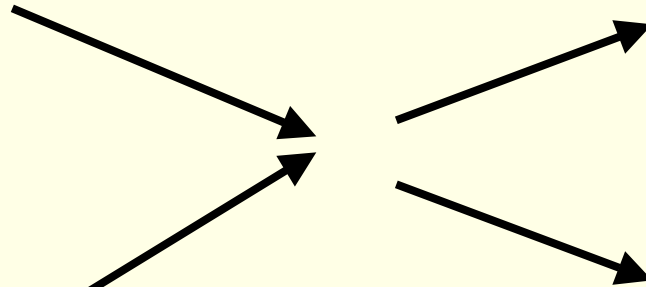
**Purpose-built  
e-learning standards**



**Standards harnessed  
through innovation in  
e-learning**

**e-learning**

**Standards**



# Some Key Questions

- **What is Metadata?**
- **What is Content?**
- **What is a Learning Resource?**
- **What is the Enterprise?**
- **What is an Enterprise Application?**
- **Where are the System Boundaries?**

# Metadata in Practice – DC-based Repositories

- **EdNA**  
<http://www.edna.edu.au/>
- **GEM**  
<http://www.thegateway.org/>
- **MERLOT**  
<http://www.merlot.org/>
- **RDN**  
<http://www.rdn.ac.uk/>



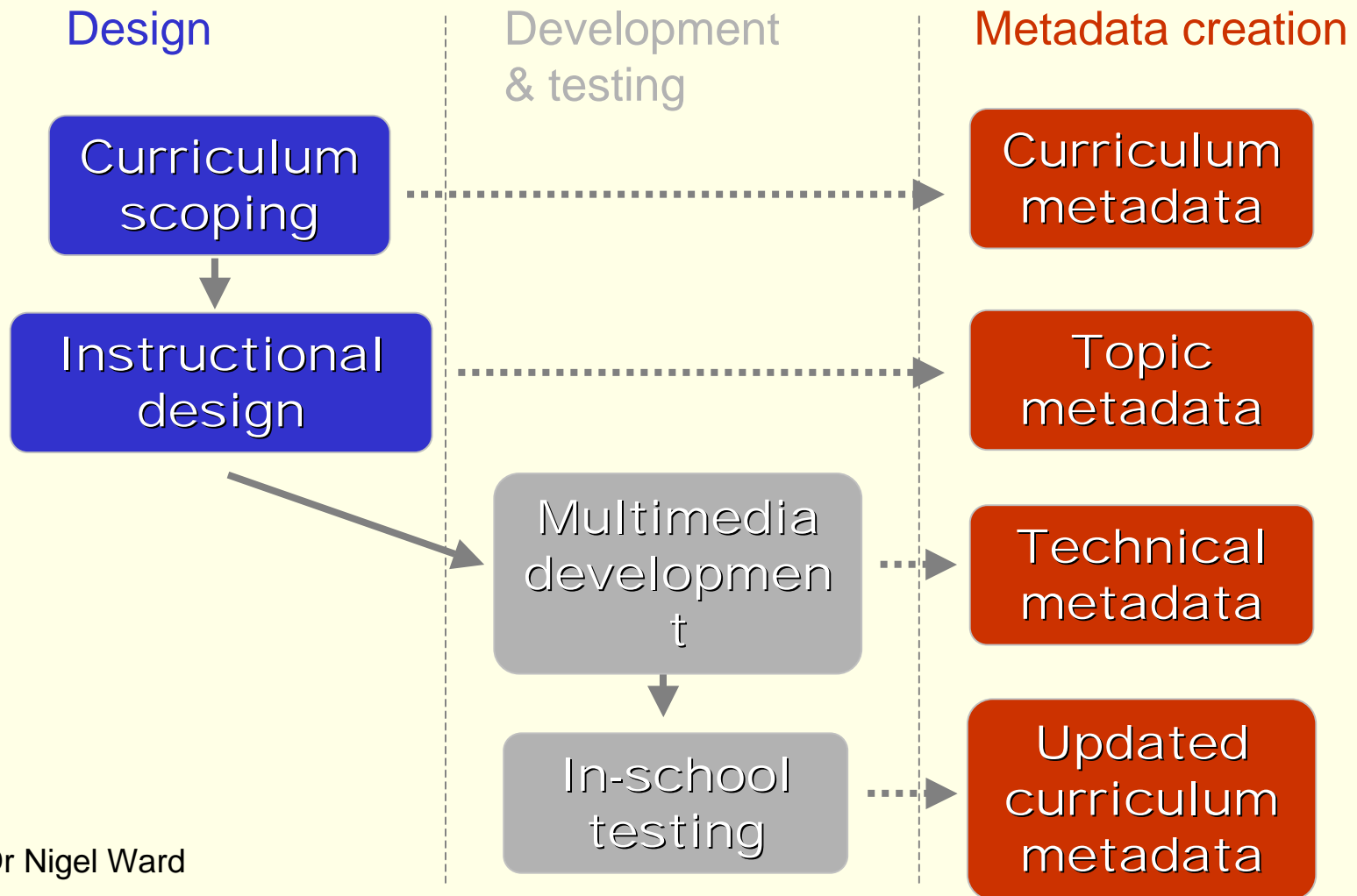
# Metadata in Practice – LOM-based Repositories

- **ARIADNE**  
<http://memling.cs.kuleuven.ac.be/silo/>
- **CAREO**  
<http://careo.ucalgary.ca/>
- **CELEBRATE**  
<http://celebrate.eun.org/>
- **The Learning Federation**  
<http://www.thelearningfederation.edu.au/>

# Metadata in Practice – Peer-to-Peer Projects

- **EduTella**  
<http://edutella.jxta.org/servlets/ProjectHome>  
(RDF)
- **LionShare**  
<http://lionshare.its.psu.edu/>  
(LOM – XML)

# Learning Object Metadata Creation

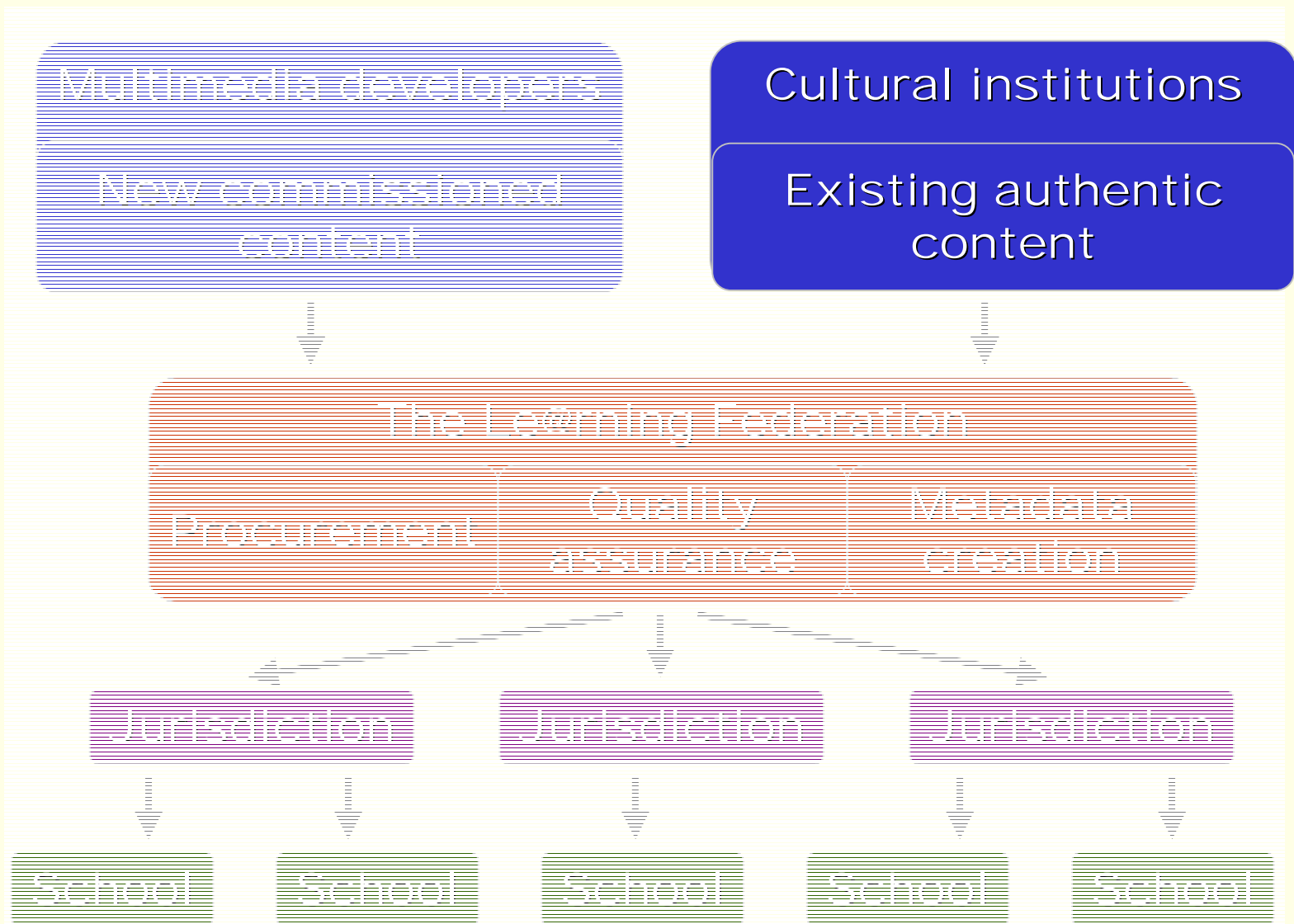


Source: Dr Nigel Ward

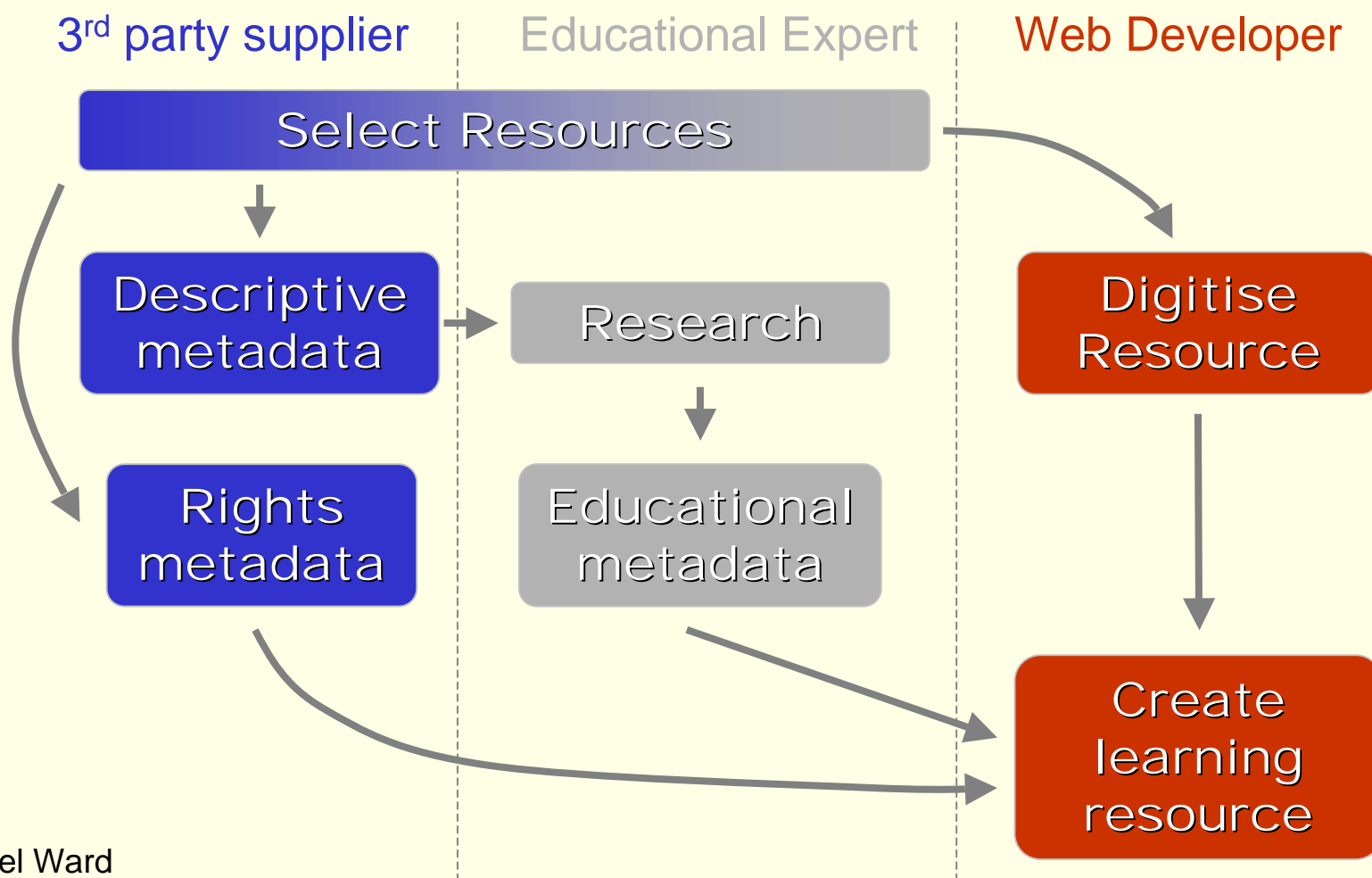
The Learning Federation, 2004

Jon Mason, DC2004, Shanghai October 10<sup>th</sup>

# 3rd party learning resources



# Learning Resource Metadata Creation



Source: Dr Nigel Ward

The Learning Federation, 2004

Jon Mason, DC2004, Shanghai October 10<sup>th</sup>

# Metadata in Practice – Commentary

- **Adoption of standards doesn't guarantee interoperability**
- **Need to develop Application Profiles**
- **Automated tools not yet ubiquitous**
- **Less is more**
- **Too much concern with Elements, not enough with Terminology**
- **Controlled vocabularies not always compatible across domains or CoPs**

# Metadata in Practice – Commentary

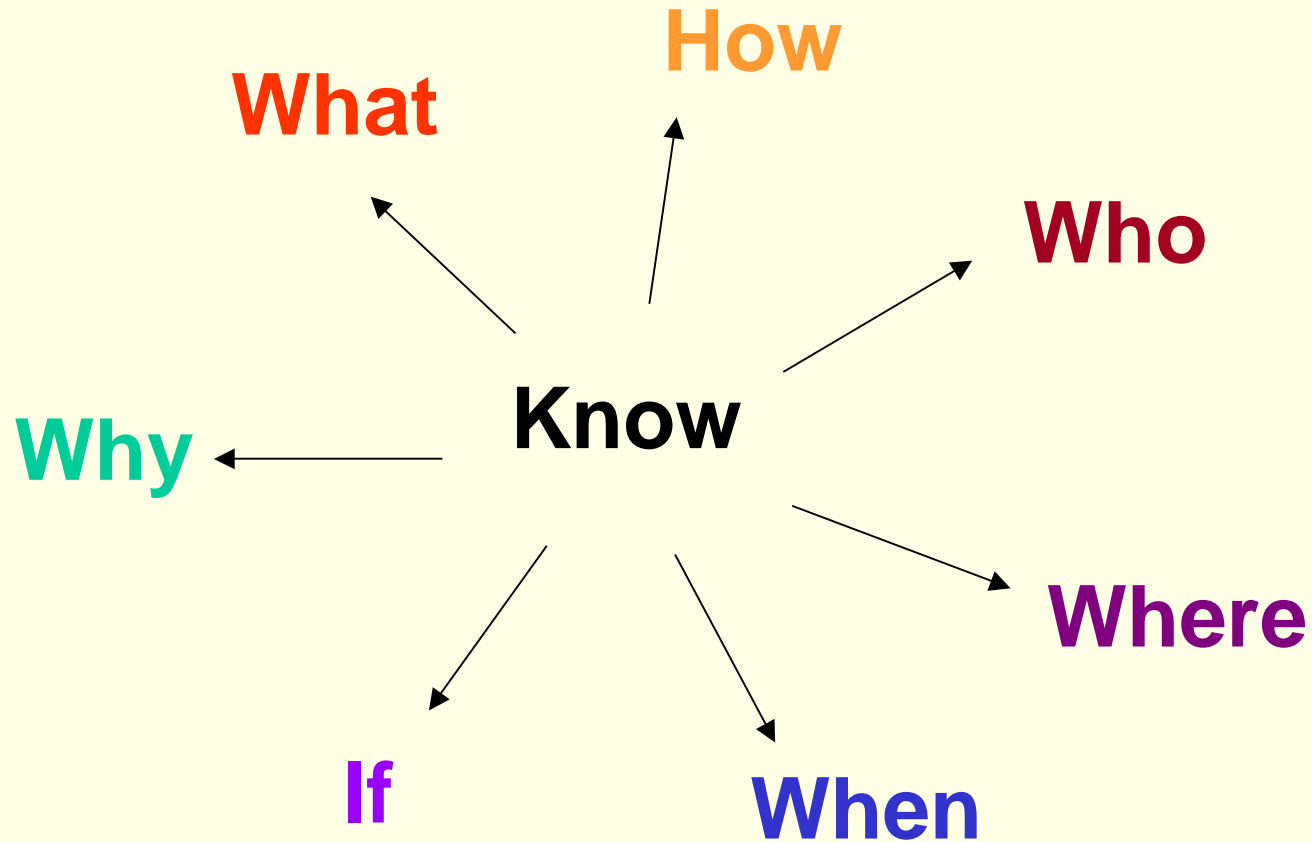
- **Boundaries in ‘learning environments’ are porous**
  - Intersecting domains
  - performance support, HRD, lifelong learning
- **KM perspectives increasingly important**
  - data -> information -> knowledge -> ...
  - knowledge -> information -> data
- **One person’s metadata :: another’s content**
- **Interoperability is not just machine-to-machine**
- **Managing collections**

# Metadata in Practice – Commentary

- **Many facets to interoperability**
- **Assigning metadata is seen as laborious**
- **Some elements not understood**
- **Many practitioners can't see the point when search engines like Google deliver most of their needs**
- **Unstable URLs – persistence not yet appreciated**
- **ROI – good metadata creation requires resourcing**



# Modeling Knowledge



# Questions?