


e-Learning: No Standards; No Coalitions - No Boom


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7 December 2000



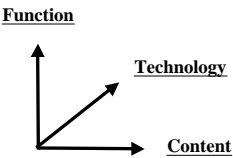
e-Learning Technology is Promising but Delivery is Complex

- Multi-media content
- Internet connectivity
- Local delivery
- Individualized capabilities
- Multiple metrics of value


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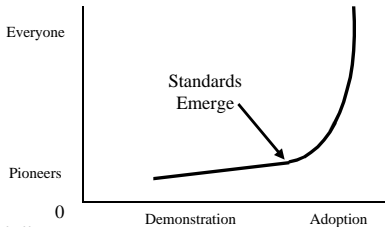
**Everything is Connected ...
Everything is Changing ...
Together**




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Delivery Depends on Interoperability




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Standards Eventually Will Enable More ...

- Open Access/Distribution of Content, Interoperable Components, and Tools
- Spontaneous, Dynamic Webs of Suppliers and Users
- Extensive Exploitation/Evolution of Technology
- Economies of scale


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Standard Benefits

- Better Infrastructure
- Bigger Learning Markets
- Higher Quality Education and Training

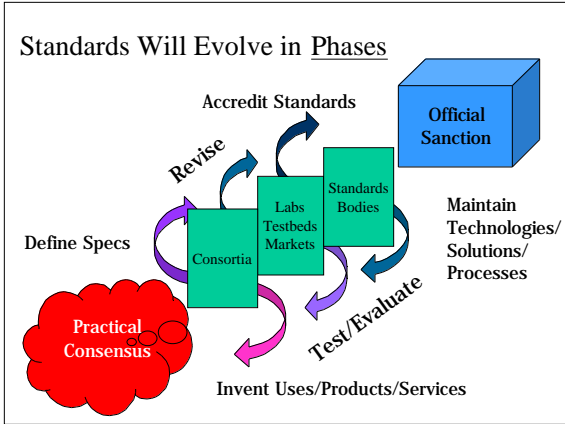

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Executive Summary of SOA

- Agreed (more or less)
 - Collective will and resources to cooperate exist
 - Cooperation depends on practical division of effort and coordination of activities
- Who can/will do what when? (and with whom?)
 - IMS
 - IEEE
 - ADL Co-Lab
 - ? AICC, Dublin Core, W3C, OpenGIS, ...
 - ? CNI


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Specifications are not Standards

Specifications	Standards
• Capture rough consensus	• Capture general acceptance
• Evolve rapidly	• Evolve slowly
• Are enabling	• Are regulatory
• Manage short term risks	• Manage long term risks
• Are experimental	• Are conclusive


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Specifications Provide ...

- Shared vocabulary and constructs
- Knowledge capture
- Targets for R & D agendas
- Context for evaluation
- Program objectives, product definition, and dissemination plans
- Community learning


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Cooperation Requires Coordinated Activities

- Gathering and consolidating functional and deployment requirements from users, vendors, purchasers, and managers of learning resources
- Promoting open conversation about definition, implementation and adoption
- Conducting producer and adopter trials and experiments to evaluate effectiveness and usability
- Executing disciplined, open cycles of specification, test, and revision
- Sustaining cooperation to integrate and consolidate results, encourage adoption, and manage compliance


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What Does IMS Do?

1. Develop and manage specifications
2. Deliver them to early implementers and users
3. Collaborate to promote their evaluation and accrediting

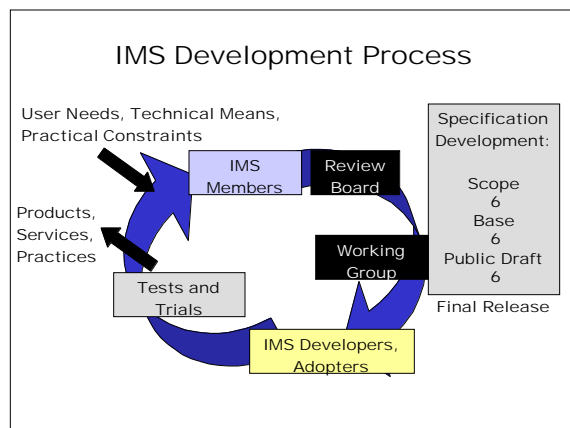
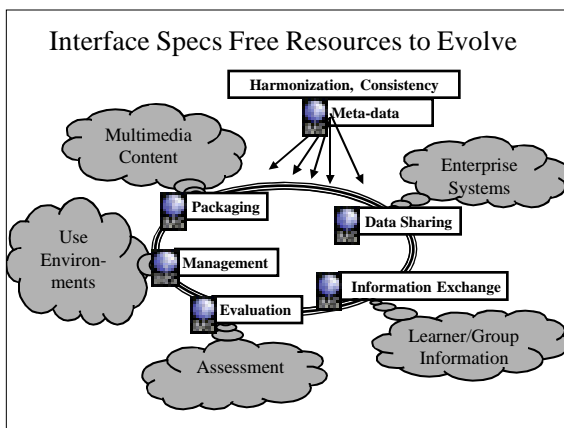
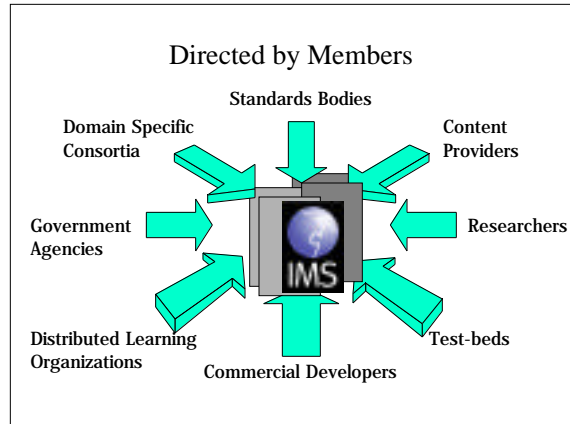

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How IMS Operates

- Directed by member representatives
- Focused on specific technical problems
- Uses a standard development process
- Schedules releases
- Cooperates to scope and deliver specs to developers, evaluators, and users


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Releases

- Meta-data v1.0 (8/99)
- Enterprise v1.0 (10/99)
- Content Packaging v1.0 (5/00)
- Question and Test Interoperability v1.0 (5/00)
- Metadata v1.1 (5/00)
- Learner Information Public Draft (11/00)
- Content Management Base (11/00)
- Competency Scope (11/00)
- Question and Test Update Scope (11/00)
- Content Packaging Update Public Draft (12/00?)
- Instructional Design (TBD)
- Accessibility (TBD)


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Collaboration Activities

- IEEE LOM
- DoD SCORM
- JISC Evaluation projects
- UK Further Education MLE Program
- Commercial offers: Microsoft, Blackboard, MindLever, Eduprise, SmartForce, NETg, ...


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Delivery Activities

- Regional Bodies and Centres
- Tutorial Workshops
- Application Consulting
- DoEd LAAP: Indiana University project
- NCAM/IMS Accessibility project
- Content Repository Prototype


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How Can IMS Cooperate with CNI?


- Connectivity
 - Web forums
 - Presentations, Up-date sessions
 - Publications
 - Tutorial workshops
 - Trials, projects
 - On-line Learning(!)
- Communication
 - Design consensus
 - Division of labor
 - Pooled resources
 - Joint trials, projects
 - Migration plan
 - Metrics/Compliance
 - Critical mass
 - Web culture

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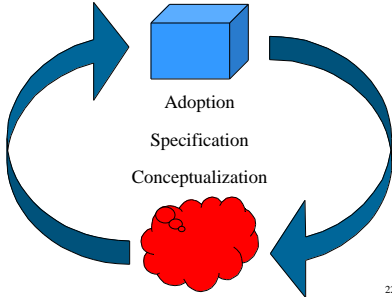


Stop


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But: Standards Are Evolving




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Benefit 1: Better Infrastructure

- Efficient access and exchange of content, networked resources, and learning services.
- Readily integrated content, services, and delivery mechanisms and procedures.
- Reduced overhead for assembly, maintenance, and operation overhead for system components, data resources, and business processes.
- Extended life time for investments in organization, resources and business processes.
- Easier re-purposing and re-use of content and programs for new applications.

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Benefit 2: Expanded Learning Markets

- Internet Content Distribution
- Interoperable Learning Plug-Ins
- Just In Time Access and Delivery
- Anywhere, Anytime Interaction

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Benefit 3: Innovation

- Personalized learning episodes
- Flexible pedagogical scenarios
- New contexts for learning
- Dynamic content, configurable services
- Novel use and payment policies

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