BUILD THE VISION

The Open Group Conference Toronto

23rd Enterprise Architecture Practitioners Conference

Toronto Marriott Downtown Eaton Centre
525 Bay Street, Toronto
Ontario, Canada
July 20-22, 2009

THE Open GROUP
Making standards work

FROM DATA TO KNOWLEDGE ARCHITECTURE - A STRATEGIC JOURNEY

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Agenda

- What is Driving Information Integration
  - What are the issues
- Emerging Concepts and Definitions of Knowledge / Information
- The Business Transformation
- Available and Emerging Standards
- Concluding Material

Information Architecture Factors

- Demographics of the Workforce
  - Baby Boom retiring
  - Soon chronic shortage of employees
- Higher Demands on Employees
  - Employees need to more with less
- Higher Client Expectations
- Higher Employee Expectations
  - Expect Information Access and Connectivity
  - Low Boredom Threshold – Legacy Maintenance
  - Increased Employee Mobility
- Technology no longer a limiting factor

Some Strategic Insights

- Globally $(US)1.5 Trillion spent/wasted on Extract, Transform and Load (HBS)
- A Knowledge-Based Enterprise
  - Without Knowledge Holdings ?
  - Business Value
  - Making the buzzword real
- Mergers, Acquisitions, Partnerships, Consortia, Supply Chain
  - Information Sharing

The Corporation and Information Holdings

Database Strategy

Document Management System Strategy

Content Management Strategy

Interoperability Strategy (Link the databases)

Knowledge Management Strategy

Business Line Data Strategies

Library Strategy

Some Basic Math

- Manage Information as a Corporate Asset
  - Be nimble, responsive, quick to respond
- Large Organization with 200+ Applications
- Data Element Needs
  - 5,000 – 20,000
- Data Element Holdings
  - 4-500,000
  - 40,000 ? documented
- Difference 1,500 % extra capacity
- Costs

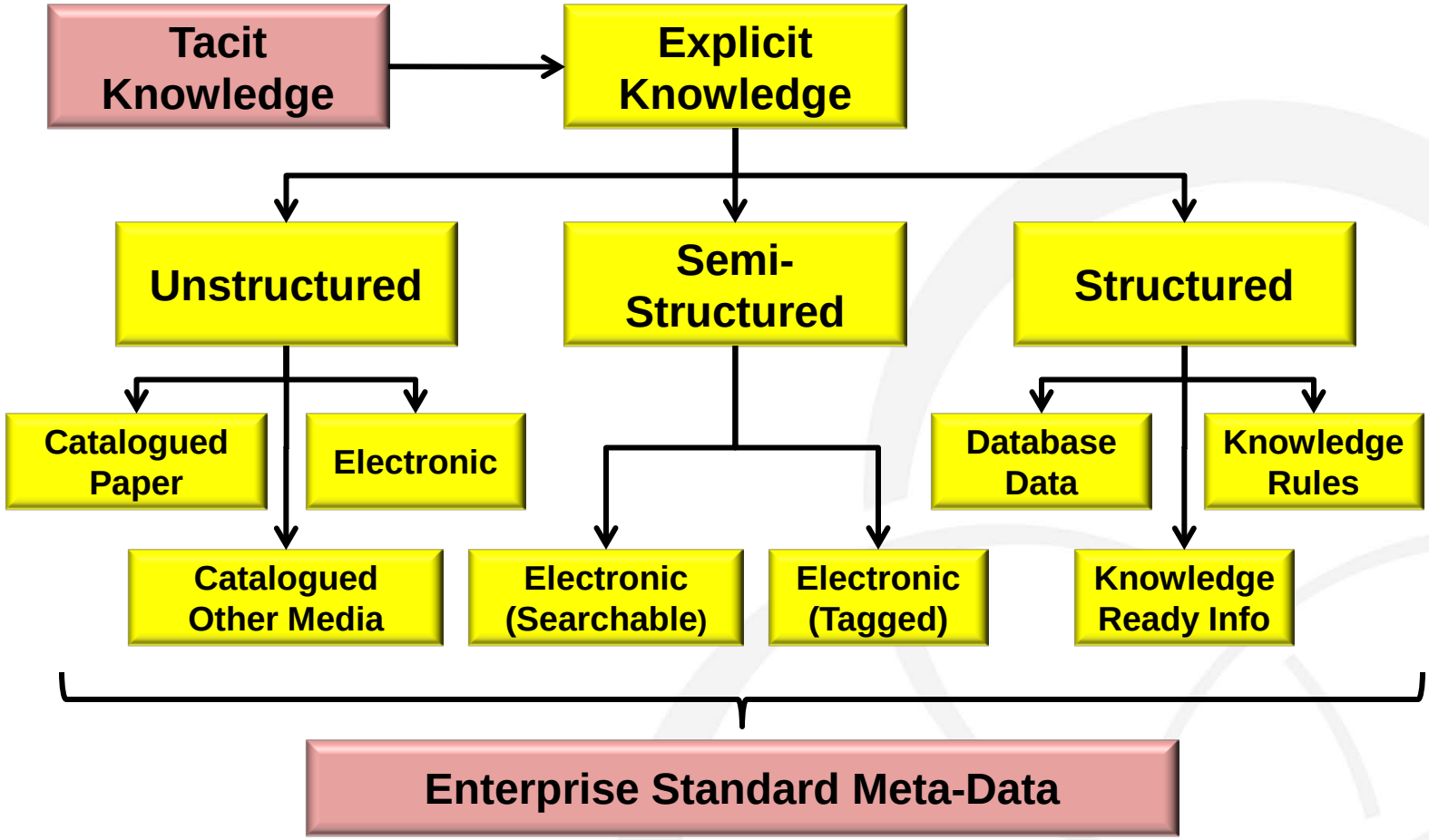
Costs of Optimal versus Typical

- Optimal Environment
  - 5,000 data elements
  - Build - $50M
  - Annual Maintenance - $2.5 M
- Typical Environment
  - 500,000 data elements
  - Build - $5B (Often over 20 years)
  - Annual Maintenance - $250M

Data Element Comments

- The costs are skewed – IT Budgets are not that high Why ?
  - Nobody really manages data holdings
  - Nobody really manages data interfaces
  - Therefore actual IT budgets are lower
- The Following Costs are not factored in:
  - Service Quality
  - Lost Opportunity

Classification of Knowledge and Information



e.g.
- Hardcopy Docs
- Electronic Images
- Imaged Documents

e.g.
- Word Processing Files
- Web Content

e.g.
- Spreadsheets, Databases
- Data Warehouses Marts
- Business Rules Services

Knowledge and Business Value

Human Expertise
Sometimes Difficult to Express

Tacit Knowledge

Captured By Knowledge Engineer (Tomorrow's Business Analyst ?)

Real Business Value

Human Expertise
Capable of Being Expressed

Explicit Knowledge

Expressed As

- **Books**
- **E-Docs (Content, Documents)**
- **Business Rules (Decision Trees)**

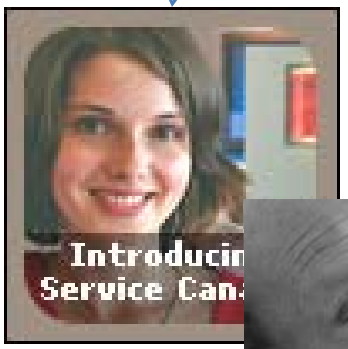
Advanced Analytics Focus Driving Tomorrows Information Architecture

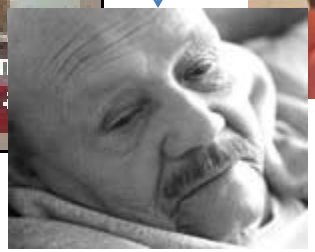
Analytics Focus

Current → **Business Intelligence**

Future → **Decision Support E-Collaboration**

Clients





Employees

Stewardship versus Ownership

- Stewardship
  - Custodianship on behalf of the enterprise, service to fellow employees
- Ownership
  - End-to-End possession of a service to enable the enterprise
- Data Stewardship enables Integrated Service Delivery

Stewardship

Service to fellows

Ownership

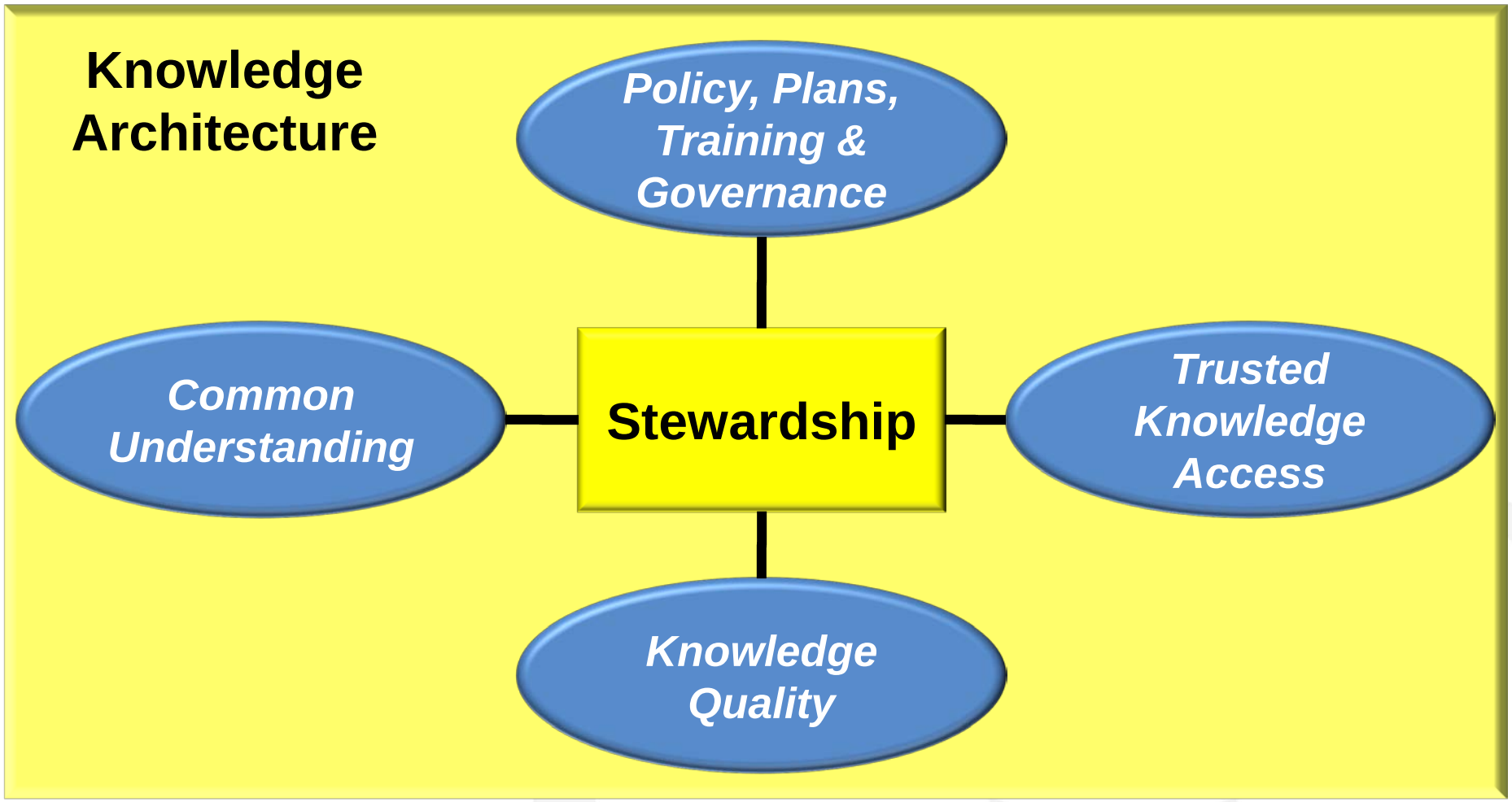
Often places fellows at odds

Data Stewardship
Emerging GoC Definition

"Data stewardship is defined as the act or process of ensuring that data is managed as a corporate asset through its lifecycle , according to accepted practices.

As a necessary component of Information and Data Management, data stewardship helps to ensure effective data governance by managing data issues; ensuring a horizontal or corporate view of data; and ensuring a consistent agency approach to data definition, quality, security, and information lifecycle management."

Context for Knowledge Architecture



Federated Query

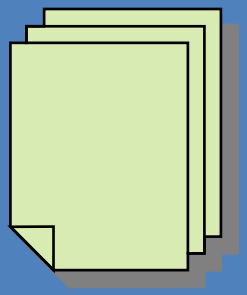
Benefits

Shared Information Environment

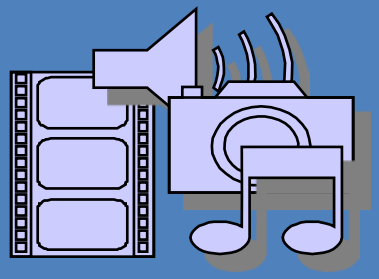
What are the Family Benefits for a New Baby ?

World of Accessible and Discoverable Knowledge

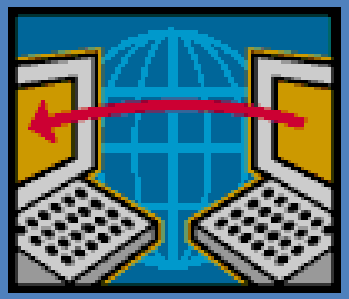
Unstructured Books



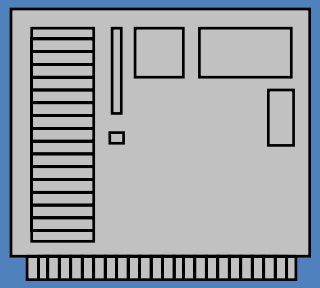
Semi-Structured E-Docs



Unstructured / Semi-Structured Multi-Media

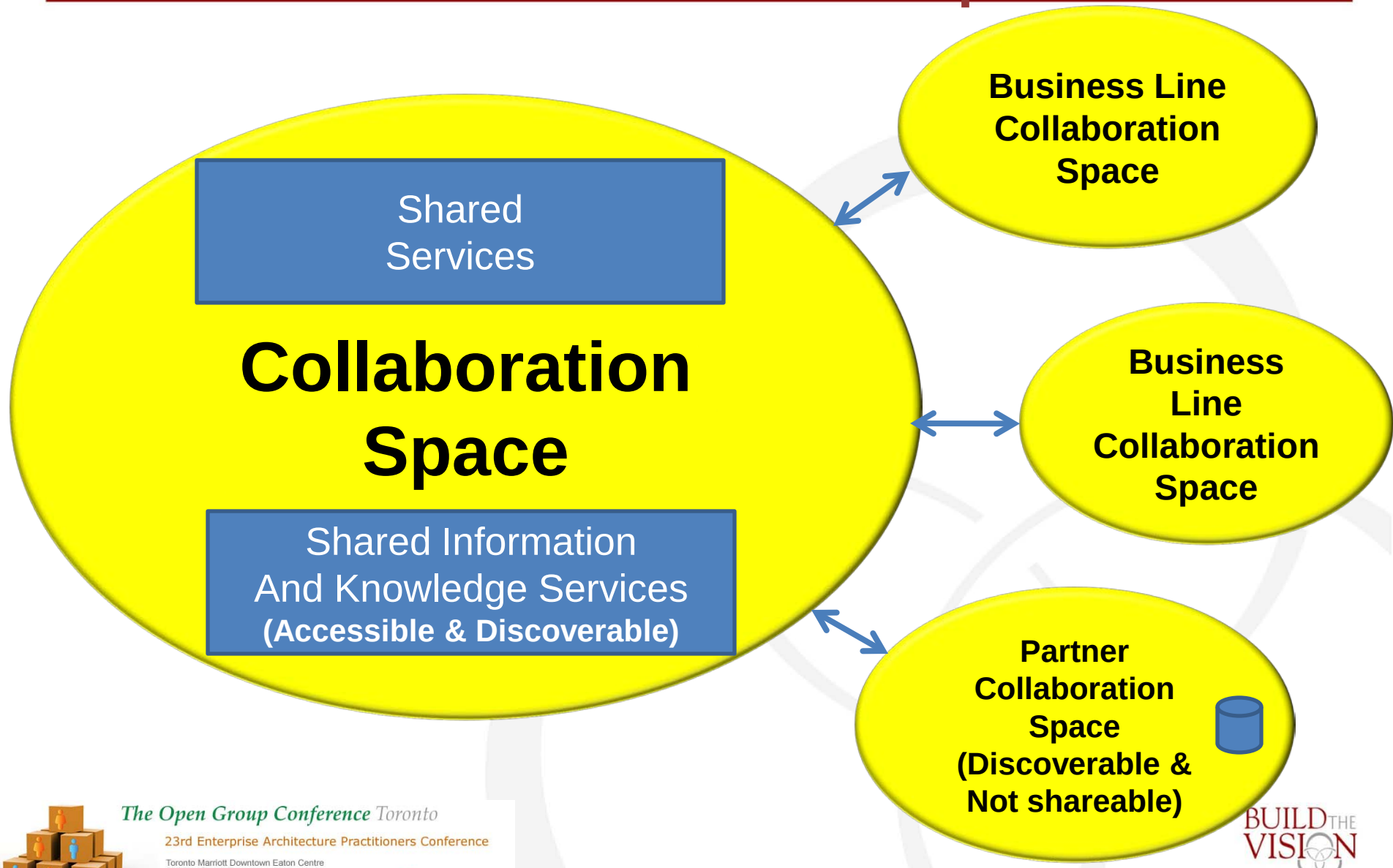


Unstructured, Semi-Structured & Structured from Web

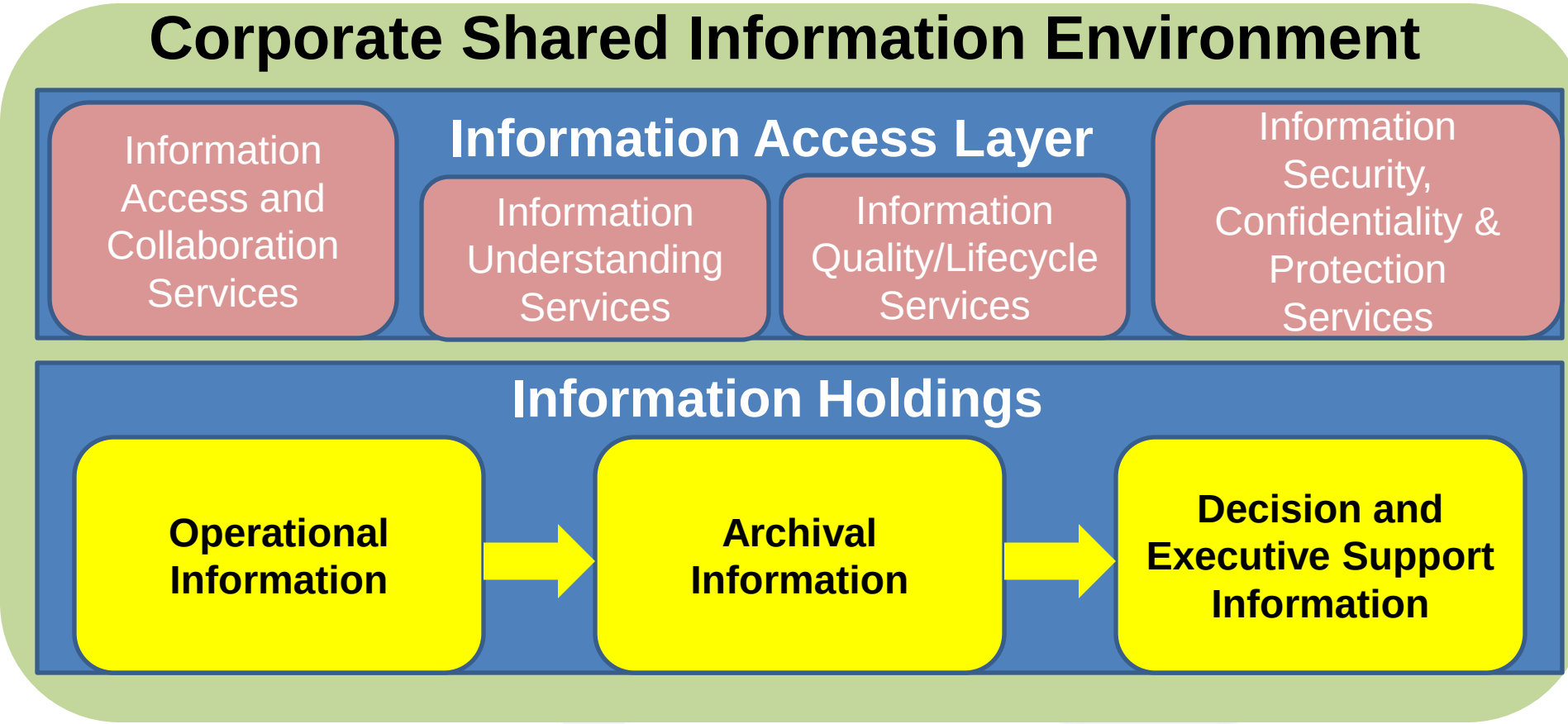


Structured Databases

The Emerging Concept of Collaboration Spaces/ Clouds



Shared Information Environment



Meta-Data

- Data about the data
  - E.g. When was the information updated
- Often “ad hoc”
- Key for sharing information

Dublin Core Metadata Element Set

- Think of a Library Card Index (If you can remember that !!!)
  - Title
  - Creator
  - **Subject – The Key Field for Searching**
  - Description
  - Publisher
  - Contributor
  - Date
  - Type
  - Format
  - Identifier
  - Source
  - Language
  - Relation
  - Coverage
  - Rights

A Common Language Linking Information

Standard Set of Tags
Using a Taxonomy (UDEF ?)

Line of Business (Domain)	Line of Business (Domain)	Line of Business (Domain)	Line of Business (Domain)	Line of Business (Domain)

Enterprise Decision-Making

The Business View

Decision Quality !!!!!

The IT Reality

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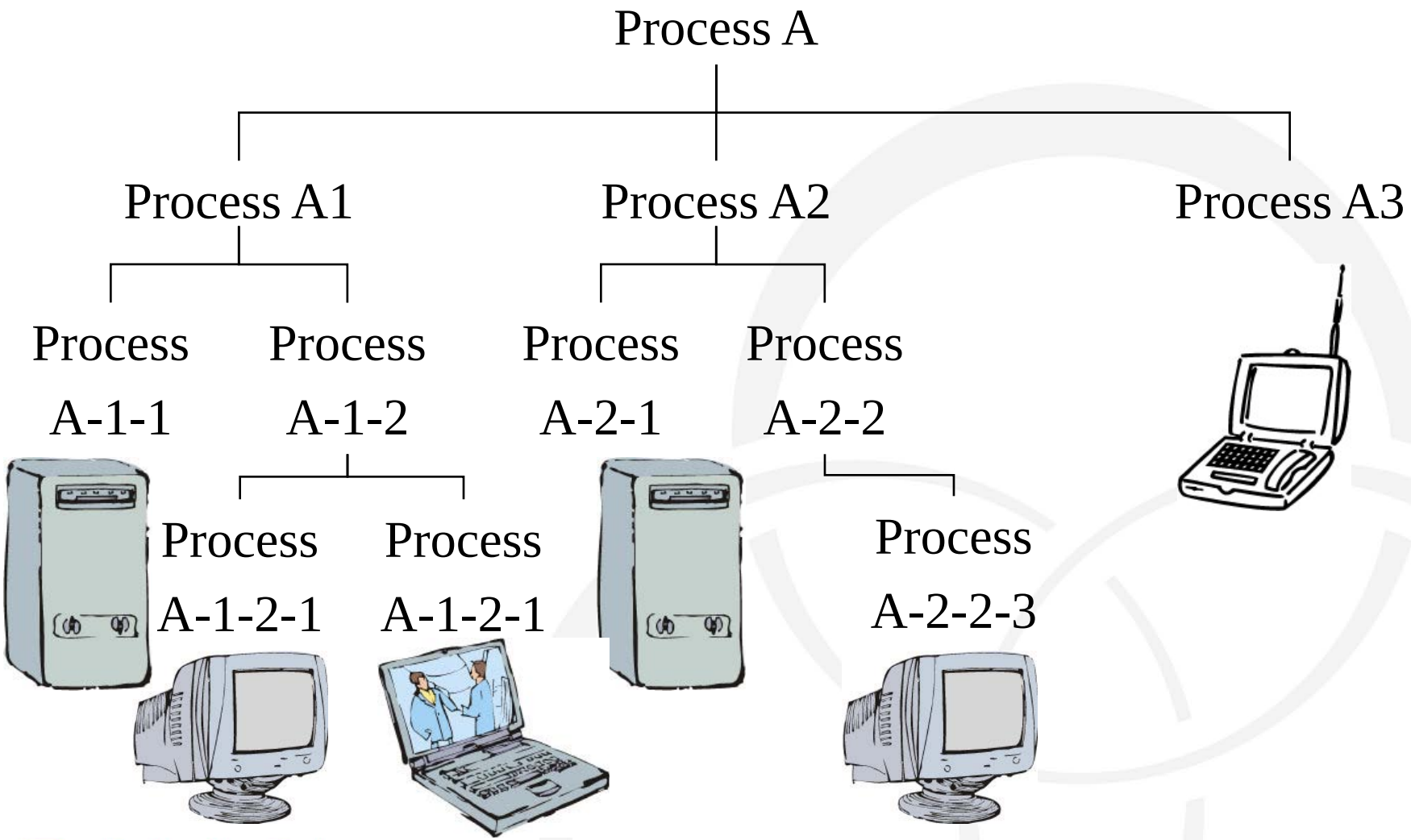
Data Quality

- **Accurate**
- **Complete**
- **Reliable**
- **Understandable**
- **Relevant**
- **Current**
- **Accessible**
- **Timely**

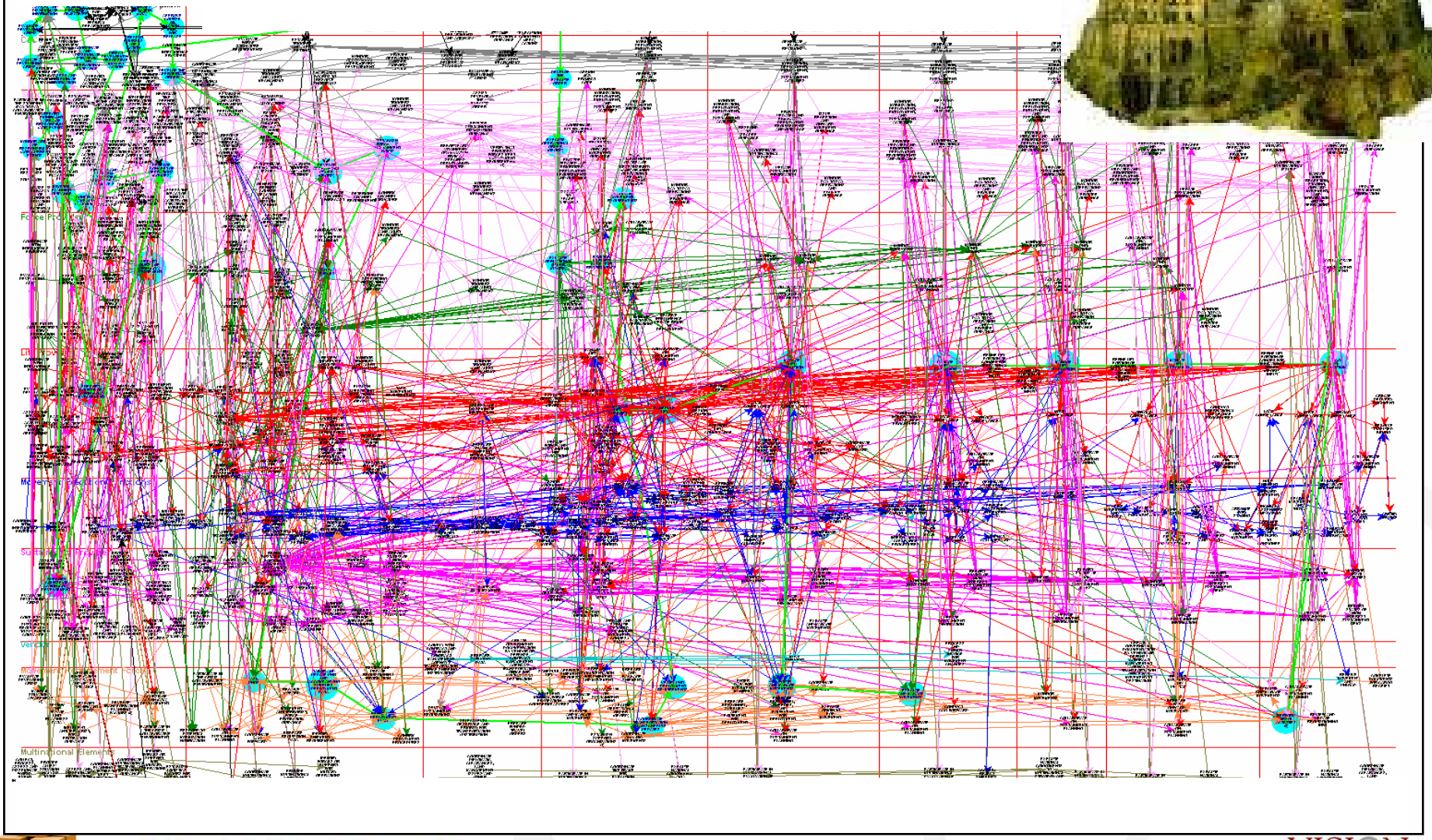
The Need for Audit Compliance

THE BUSINESS TRANSFORMATION

The Way that Systems Evolved: A Process Centric View of the World

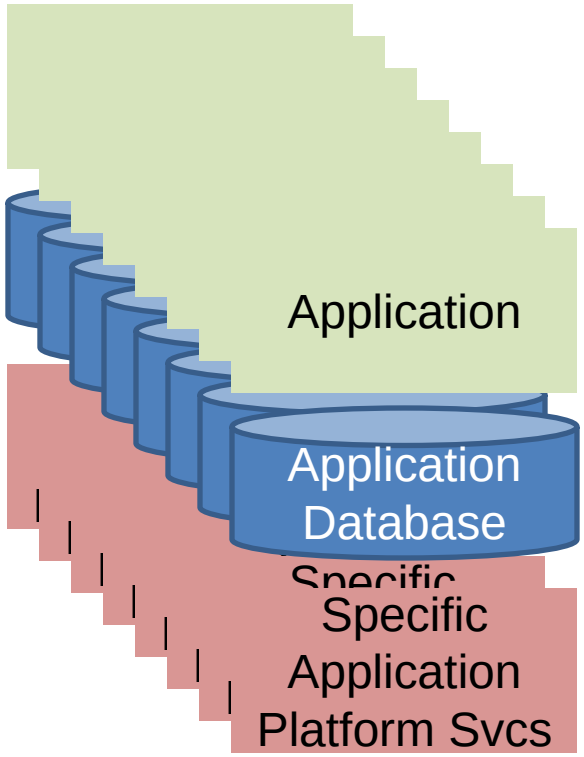


The Daunting Reality



VISION

The Transformation in CIO Shops



Corporate Application Platform Services

Network / Infrastructure Services

Business and Shared Application Services

Information Services

Corporate Application Platform Services

Network / Infrastructure Services

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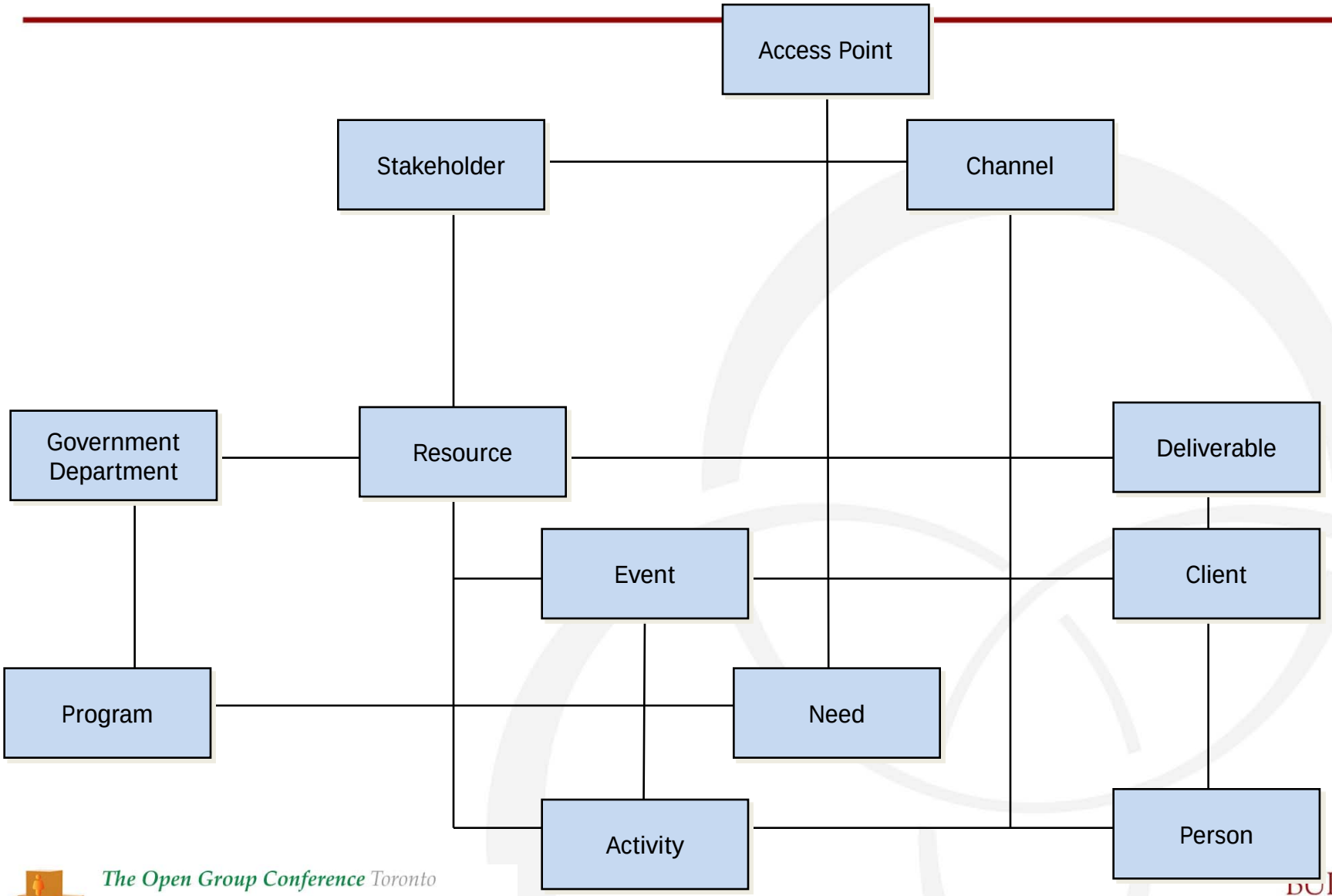
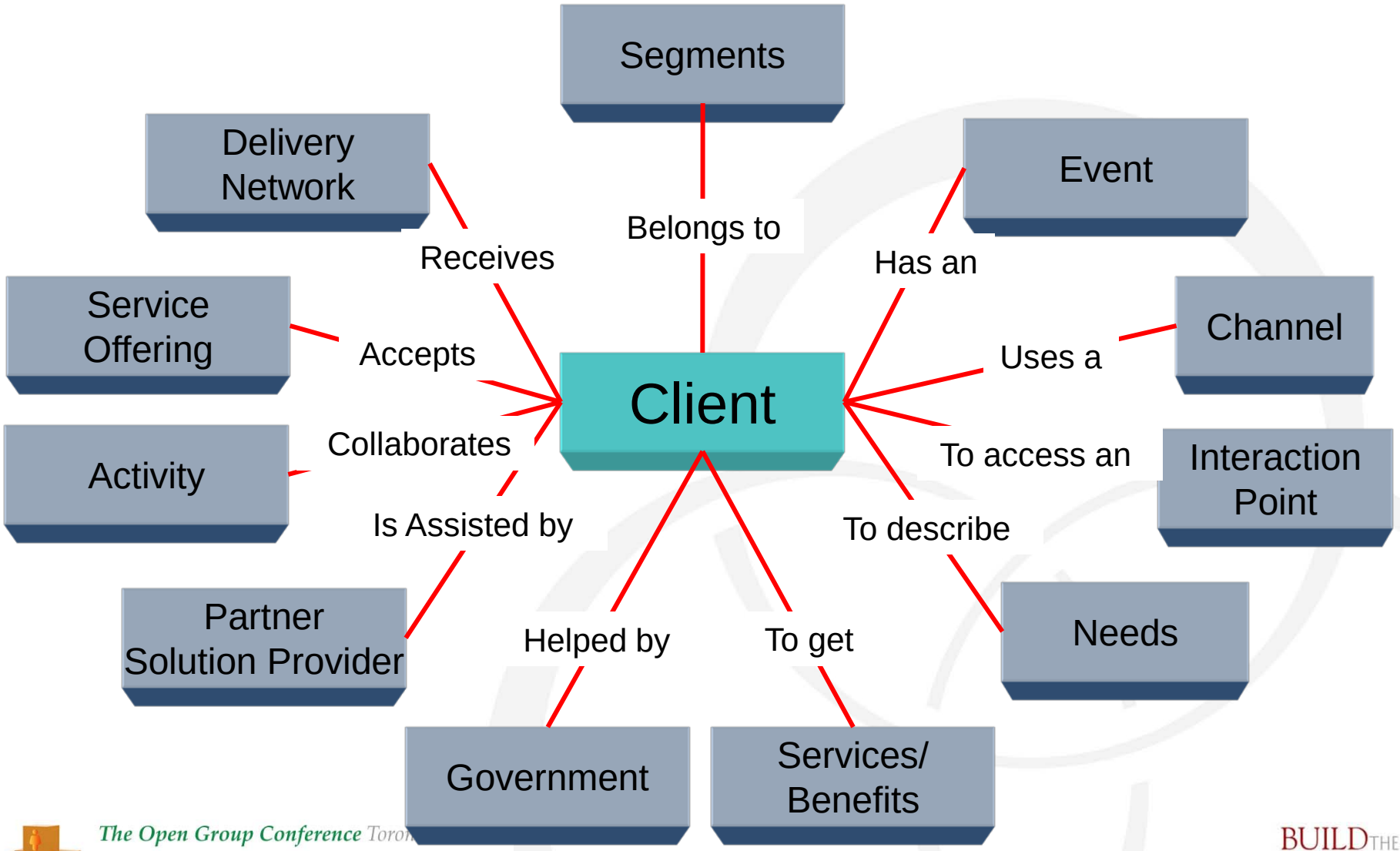
Paradigm Shift

	Existing	Future
Info Sharing Vision	"Information is Power" – The legacy of sharing corporate information sparingly through bottlenecks by "owner" approval.	"Responsibility to Share" – A new Mindset to share corporate information unless restricted by privacy legislation.
Enterprise Scope	"Silo Centric" – Developed to support a particular organizational entity's needs.	"Enterprise Centric" – Collaboration / Services Marketplace stretches across groups, agencies, and partners.
Collaboration Type	"Static" – Developed in accordance with policies and regulations for specific reports and information requirements.	"Agile / Dynamic" – Rapidly adapts to changing market and legislative needs and conditions.
Security Model	"Network-Centric" – Security designed around each network (e.g. DMZ, Firewalls)	"Information Centric" – Security built into information/data and environment (i.e. "Security in Depth" [data tags/XML])
Access Model	"System-Centric" – Security based primarily on security access controls and regulations.	"Attribute-Based" – Access based on attributes beyond security classification (e.g. Environmental, affiliation, focus)
Information Usage	"Information / Data Owner" – Cultural mind-set of data/information owned by the providing group with strict controls on access, distribution and sharing mechanisms.	"Information / Data Stewardship" – Cultural shift to information stewardship to facilitate multi-dimensional analysis and usage with appropriate security protocols.

Communication to Executives



Selling the Information Model
A Business Driven Approach – Client Centric



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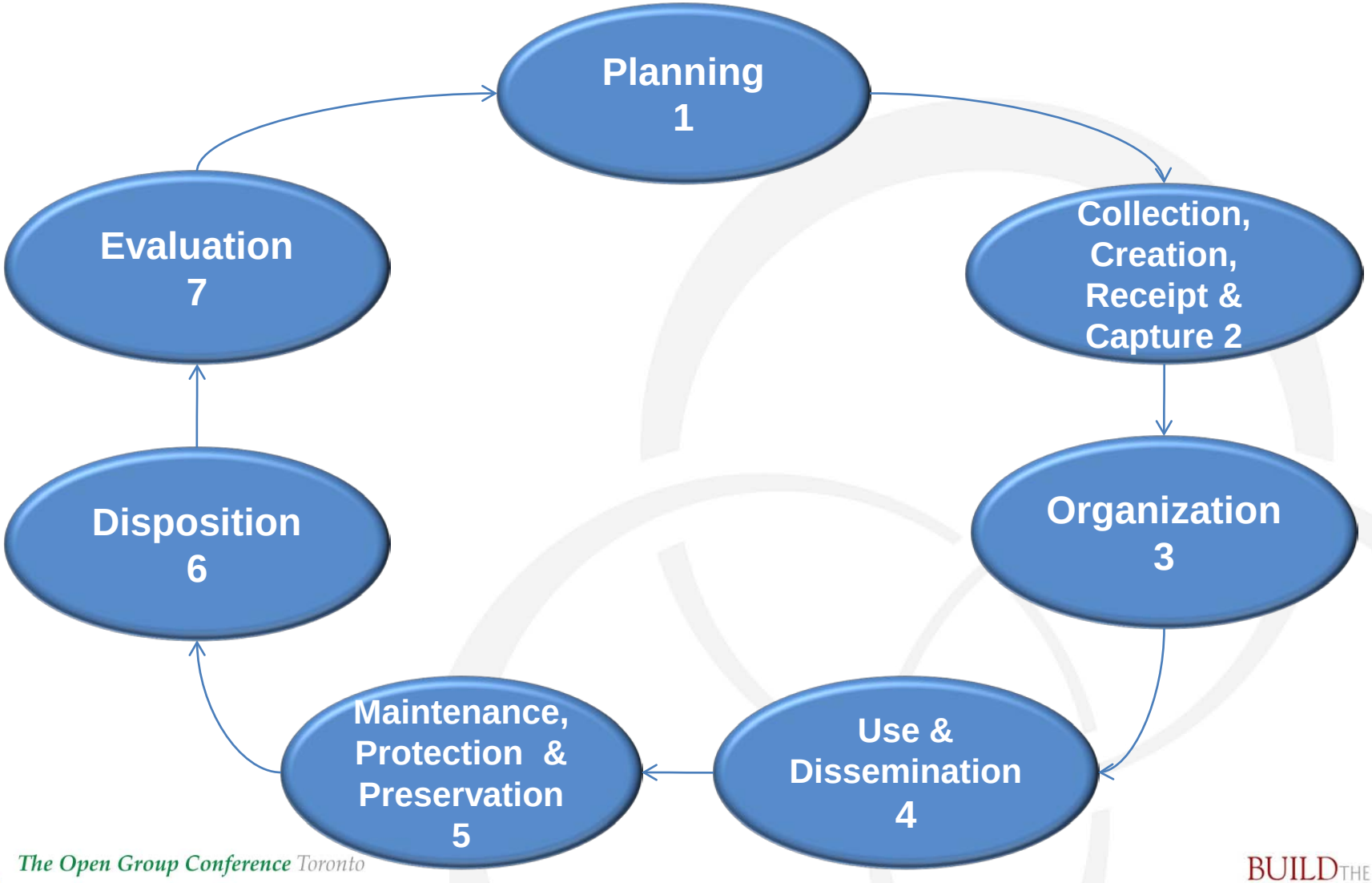
Knowledge Lifecycle

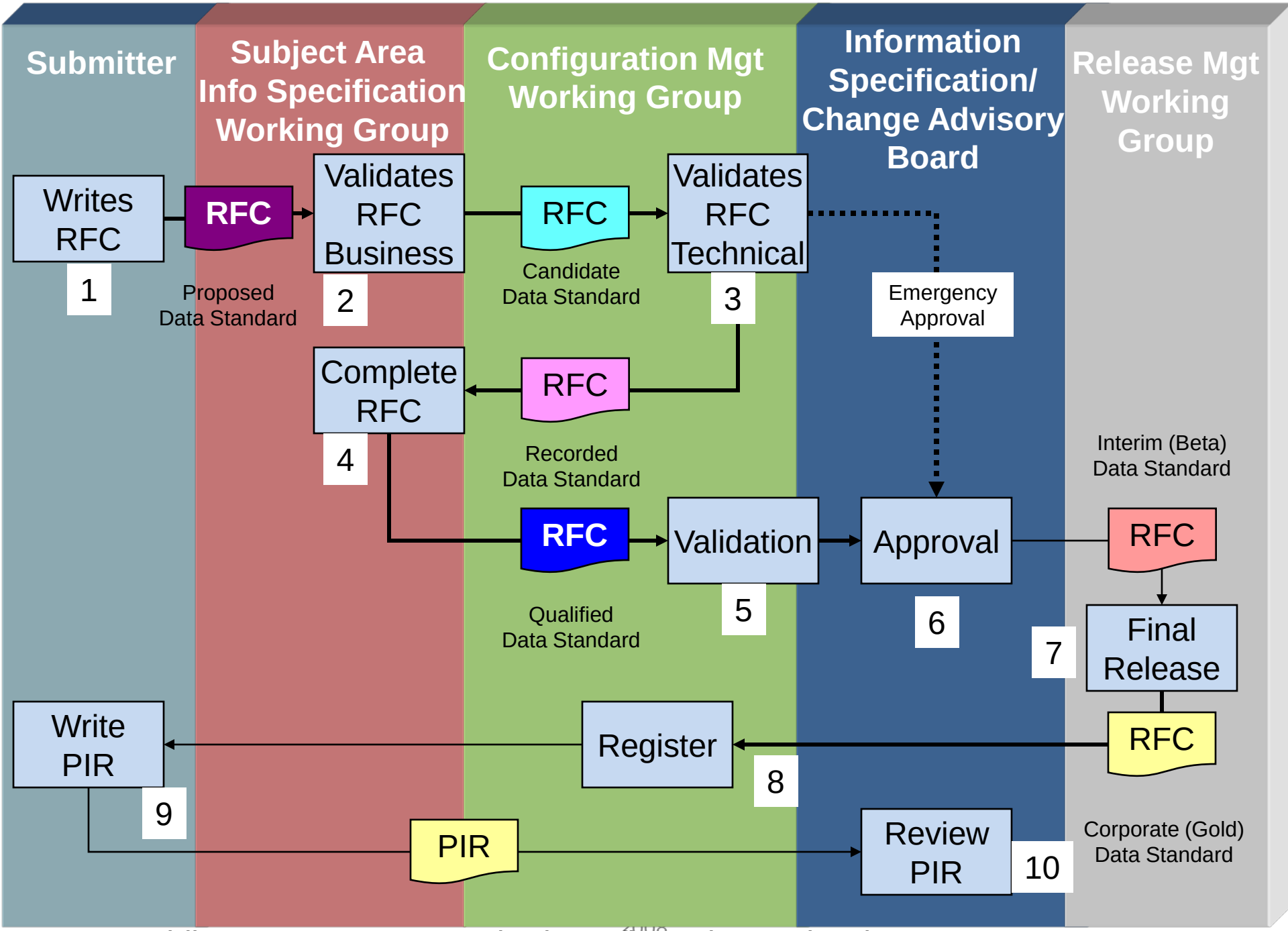


Each Data Element has a Standard

Domain Name	action-task-status-progress-code			
Definition	The specific value that represents the perceived appraisal of the progress of a specific ACTION-TASK.			
Definition Source	ATCCIS			
DOMAIN VALUES				
Value	**Definition**	**Source**	**Physical value**	**Identifier**
Aborted	The specified ACTION-TASK has been abandoned subsequent to its initiation.	ATCCIS	ABO	1000001
Cancelled	The specified ACTION-TASK was cancelled prior to its initiation.	ATCCIS	CANCLD	1000002
Complete	The specified ACTION-TASK has been carried out and is complete.	ATCCIS	COM	1000003
In progress	The specified ACTION-TASK is in the process of being carried out at the time of the report.	ATCCIS	IPR	1000004
Not started	The specified ACTION-TASK has not yet begun at the time of the report.	ATCCIS	NST	1000005
Paused	The specified ACTION-TASK has been temporarily halted for an unspecified period of time.	ATCCIS	PAU	1000006
Not known	It is not possible to determine which value is most applicable.	ATCCIS	NKN	1000007
USAGE				
Entity	**Attribute**			**Optionality**
ACTION-TASK-STATUS	action-task-status-progress-code			OP

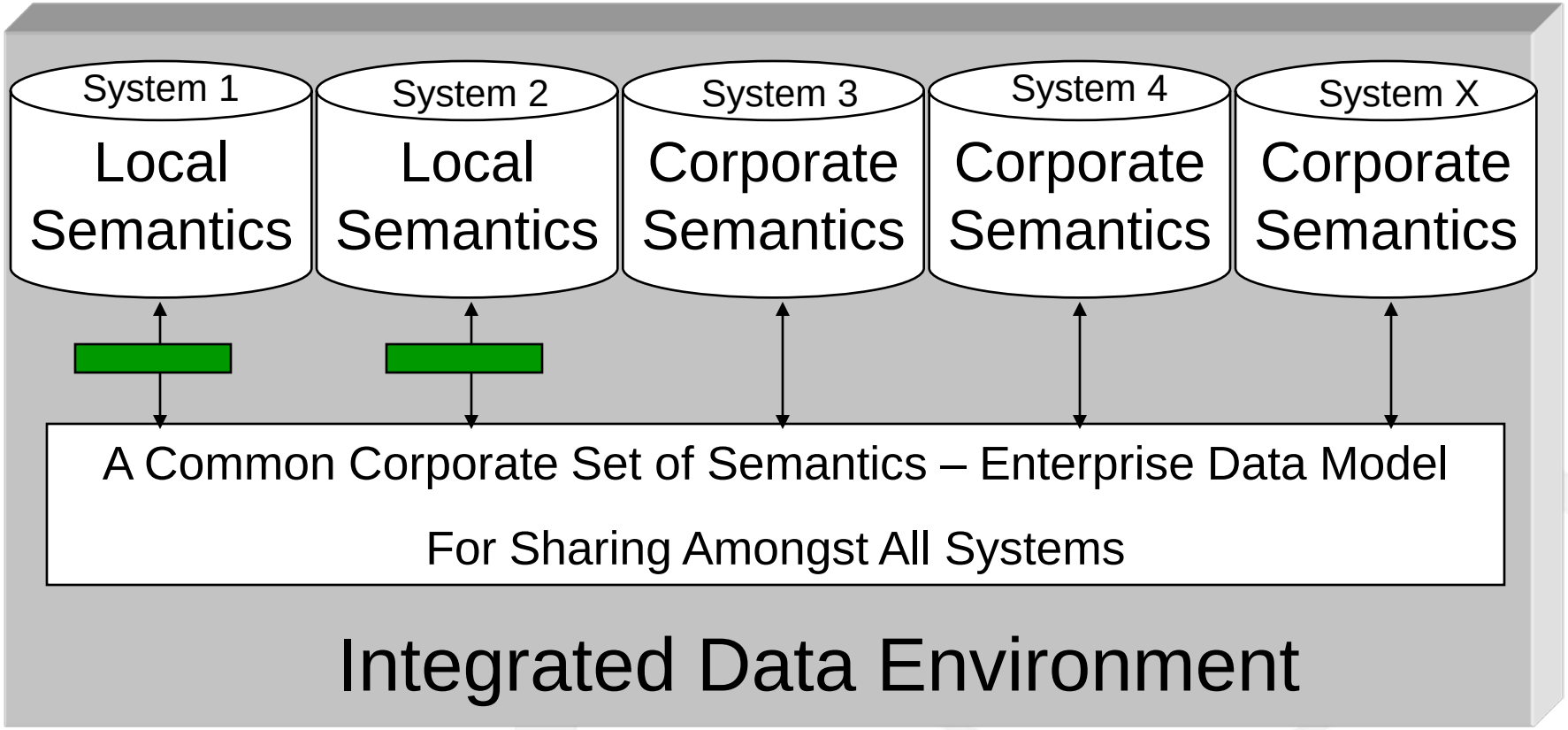
Data Standards Process (An Example)

- Standards Management Framework
- Integrated with Governance
- Standards Cost Money – Approve Carefully
- Levels of Standards
  - ***Proposed***
  - ***Candidate***
  - ***Recorded***
  - ***Qualified***
  - ***(Alpha)***
  - ***Interim***
  - ***Standard***
  - ***(Beta)***
  - ***Corporate***
  - ***Standard***
  - ***(Gold)***
  - ***Waiver***
  - ***Application***
  - ***Retired***
  - ***Super-seded***
  - ***Historical***



Adding a New Data Standard Configuration and Release Management

Enterprise Data Model :A Common Language Using a Common Data Sharing Service



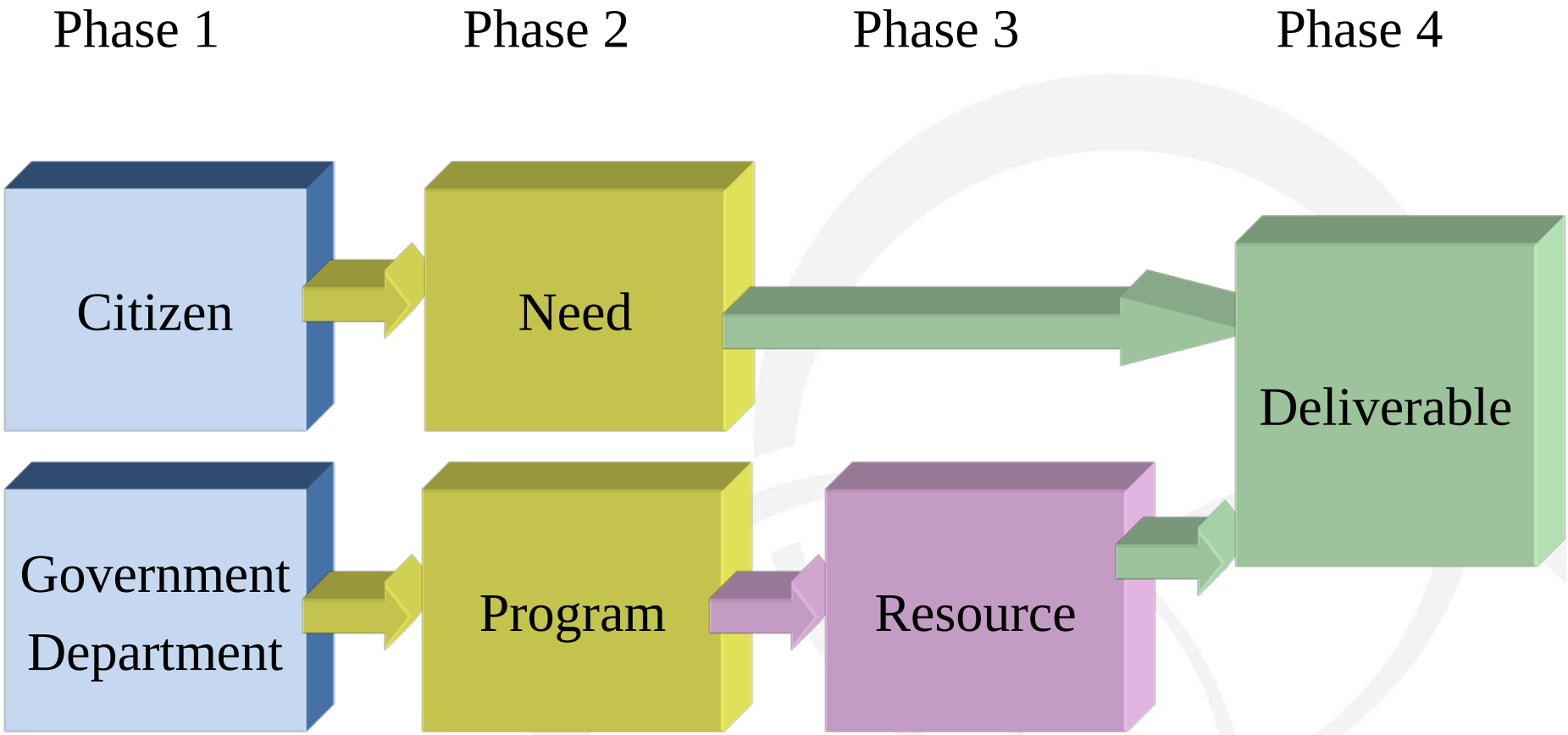
Managing Data as a Corporate Resource

Data Element Park

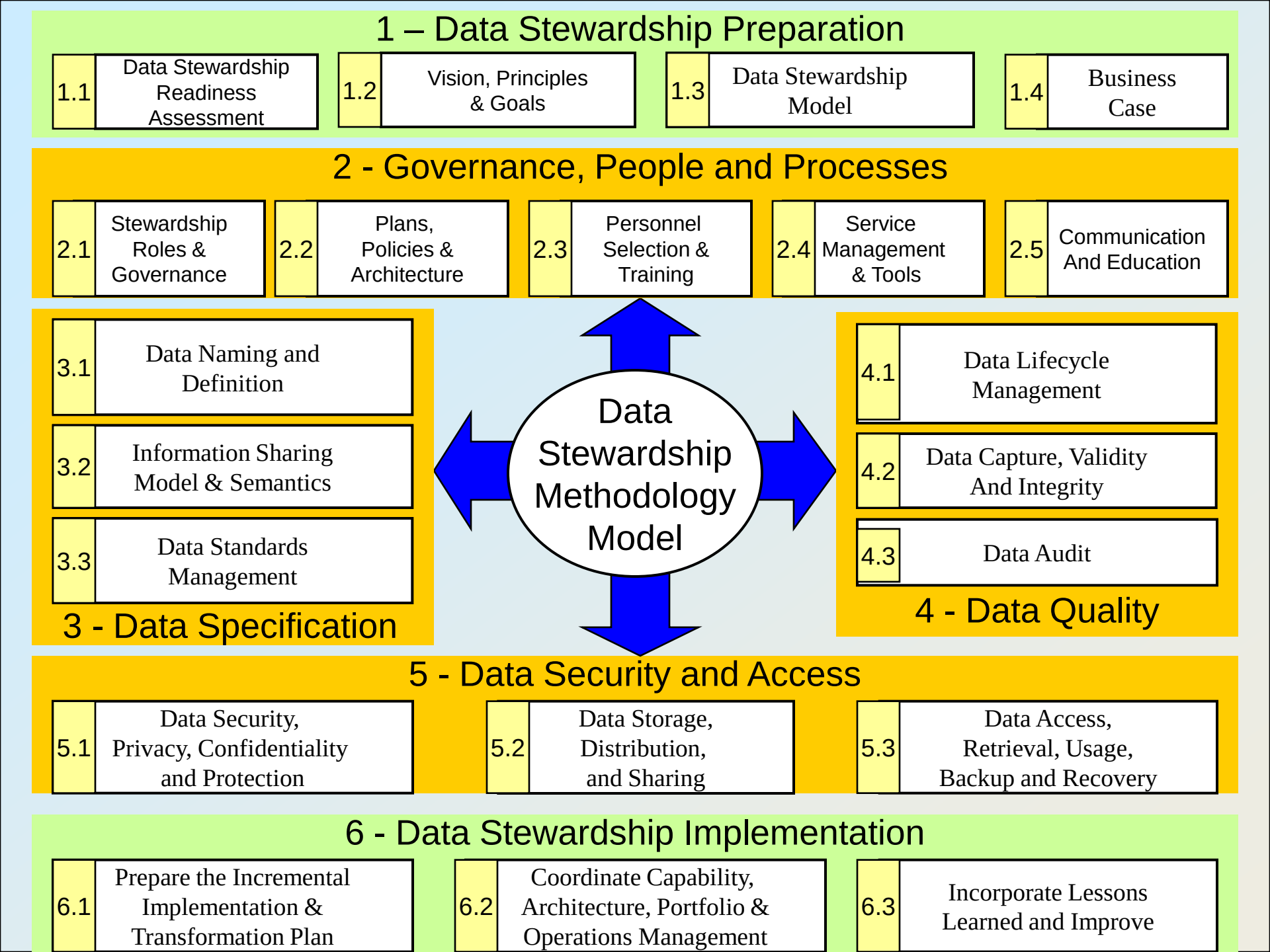
Standard Trucks & Fuel

Data Interface Fuels

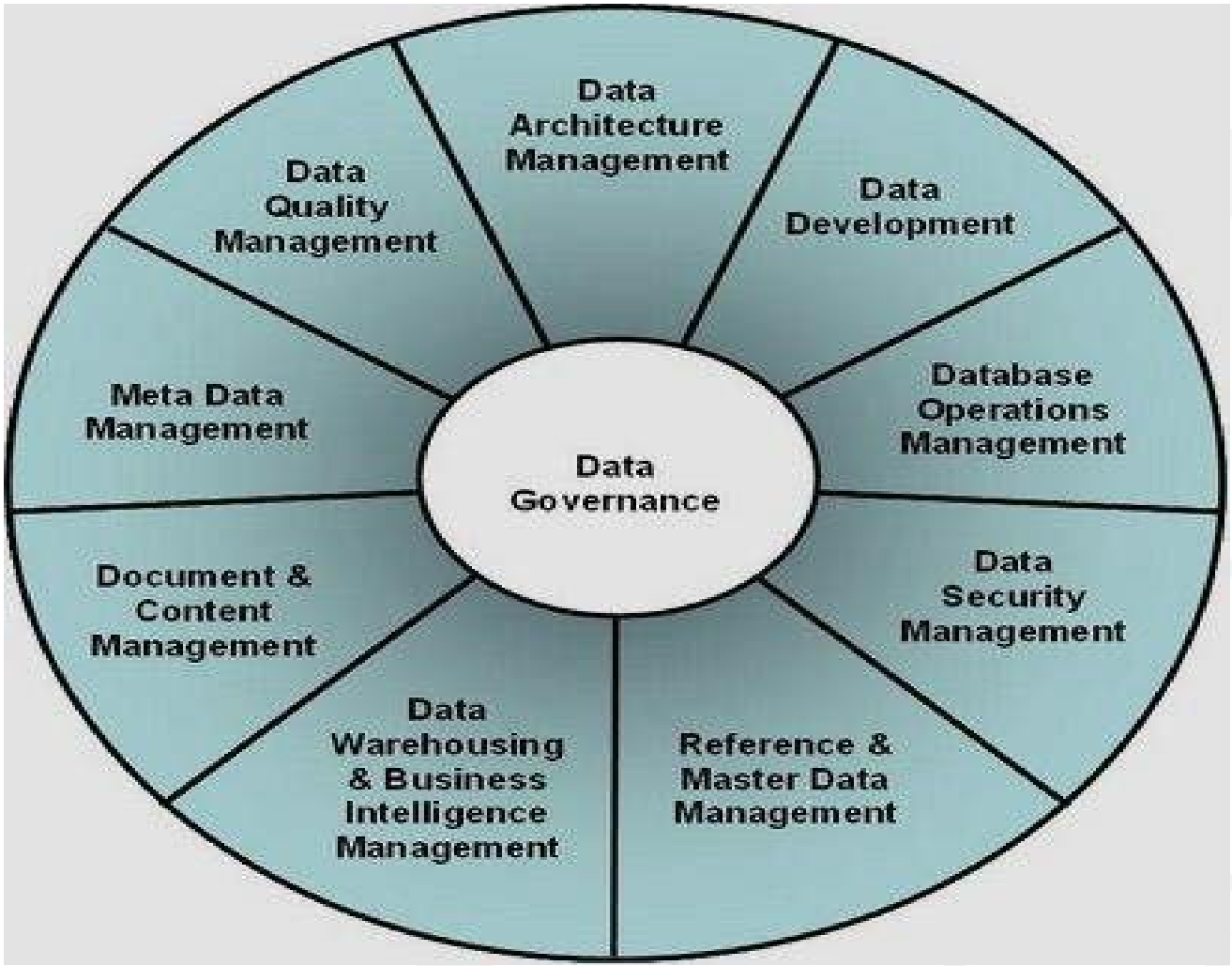
Information Dependencies for Planning



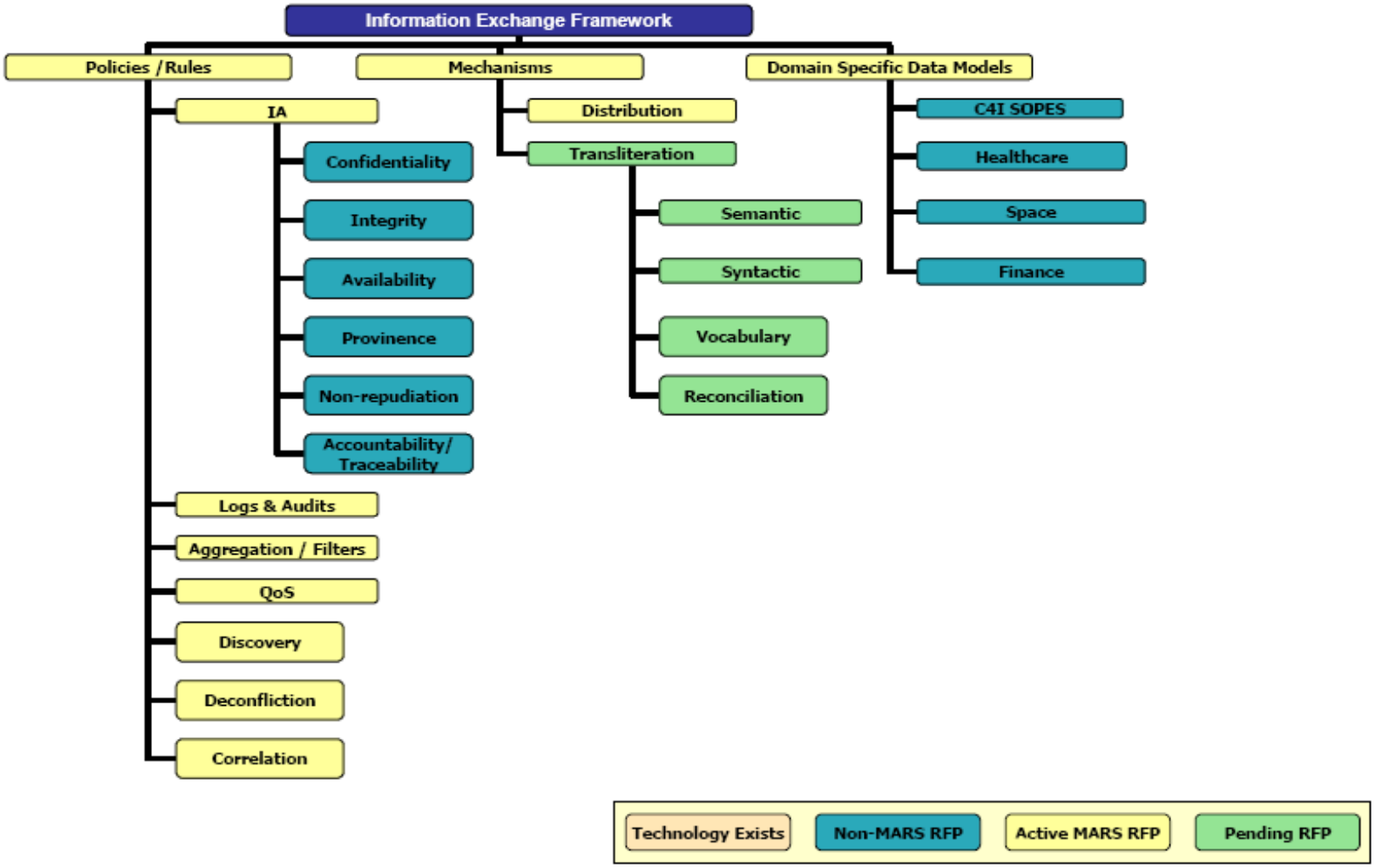
AVAILABLE AND EMERGING METHODOLOGIES & BEST PRACTICES


1 – Data Stewardship Preparation
1.1 Data Stewardship Readiness Assessment
1.2 Vision, Principles & Goals
1.3 Data Stewardship Model
1.4 Business Case
2 - Governance, People and Processes
2.1 Stewardship Roles & Governance
2.2 Plans, Policies & Architecture
2.3 Personnel Selection & Training
2.4 Service Management & Tools
2.5 Communication And Education
3.1 Data Naming and Definition
3.2 Information Sharing Model & Semantics
3.3 Data Standards Management
3 - Data Specification
Data Stewardship Methodology Model
4.1 Data Lifecycle Management
4.2 Data Capture, Validity And Integrity
4.3 Data Audit
4 - Data Quality
5 - Data Security and Access
5.1 Data Security, Privacy, Confidentiality and Protection
5.2 Data Storage, Distribution, and Sharing
5.3 Data Access, Retrieval, Usage, Backup and Recovery
6 - Data Stewardship Implementation
6.1 Prepare the Incremental Implementation & Transformation Plan
6.2 Coordinate Capability, Architecture, Portfolio & Operations Management
6.3 Incorporate Lessons Learned and Improve

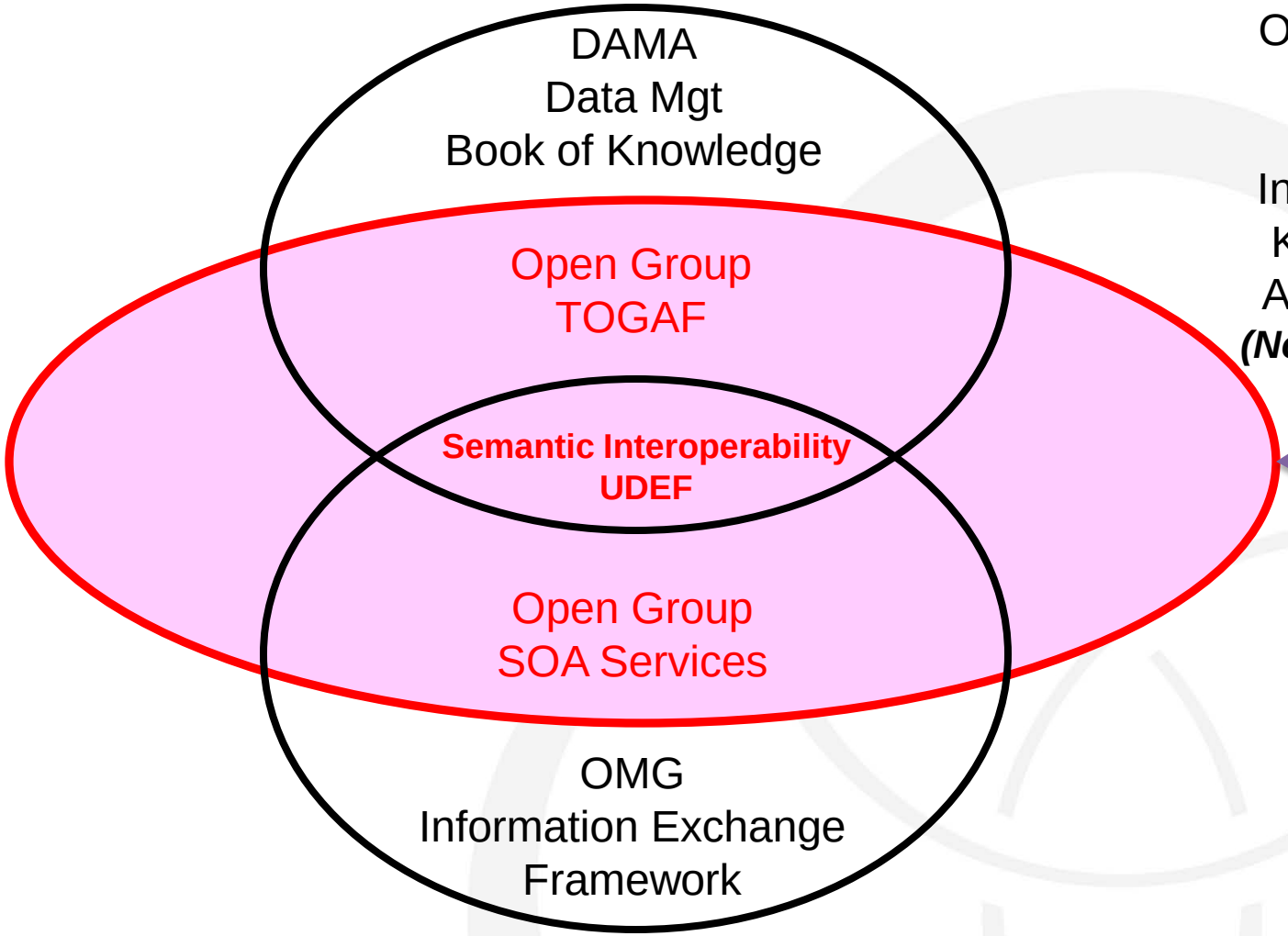
DAMA – Data Management Book of Knowledge



OMG – Information Exchange Framework



Considerable Overlap



Summary

- The future is information-centric
  - Always has been really
  - TOGAF 9 – IT
    - Lifecycle management of information and related technology within an enterprise
- Major Gulfs between “IM” experts
  - Based upon a lack of understanding
  - Very costly
- Definition of Knowledge / Information
  - Basis for profession and skill sets
  - Prevent information holding silos
- Open Group part of a group of organizations working to address knowledge architecture
  - Partnerships and coordination

QUESTIONS ?

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