

Extensible Markup Language (XML) in Support of E-Government: Government of Ontario

Information Management Day

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Agenda

- The Challenges of E-Government
- Why XML?
- Ontario's Approach to Derive XML Standards
- Service Delivery Logical IM Model
- Next Steps
- Potential Areas to Collaborate

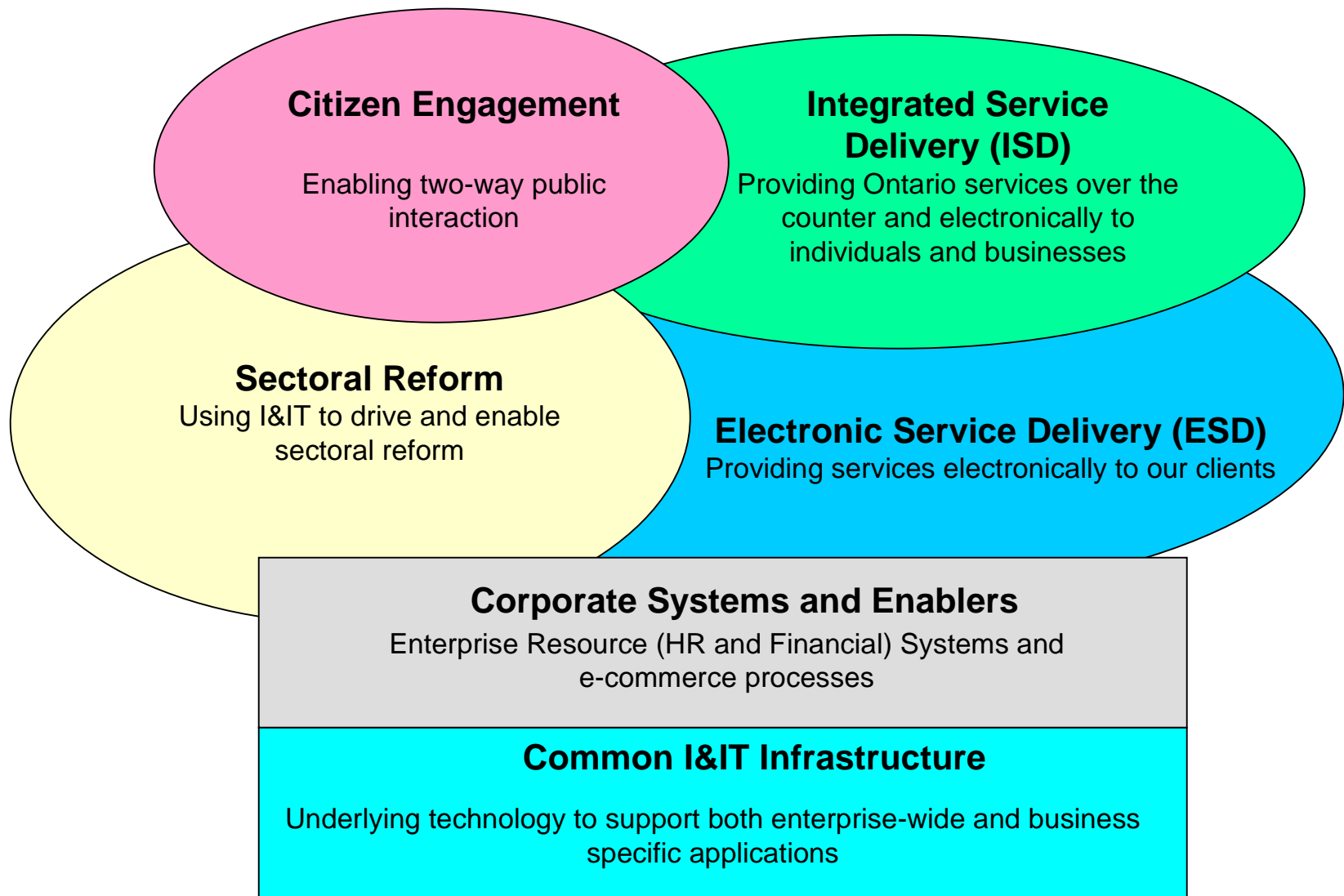
Strategic Direction: E-Government

- In March 2000, in approving its Digital Economy Strategy, the Ontario Government approved electronic government as a priority
- The plan is to demonstrate leadership by example in electronic government and more specifically, electronic service delivery

Why is E-Government a Priority?

- Enhanced service
- Enhanced accountability
- Reduced cost /increased effectiveness
- Transformed public sector systems
- Increased economic growth
- Enhanced relevance

The E-Government Context



Strategic Vision and 2003 Target for Electronic Service Delivery (ESD)

VISION

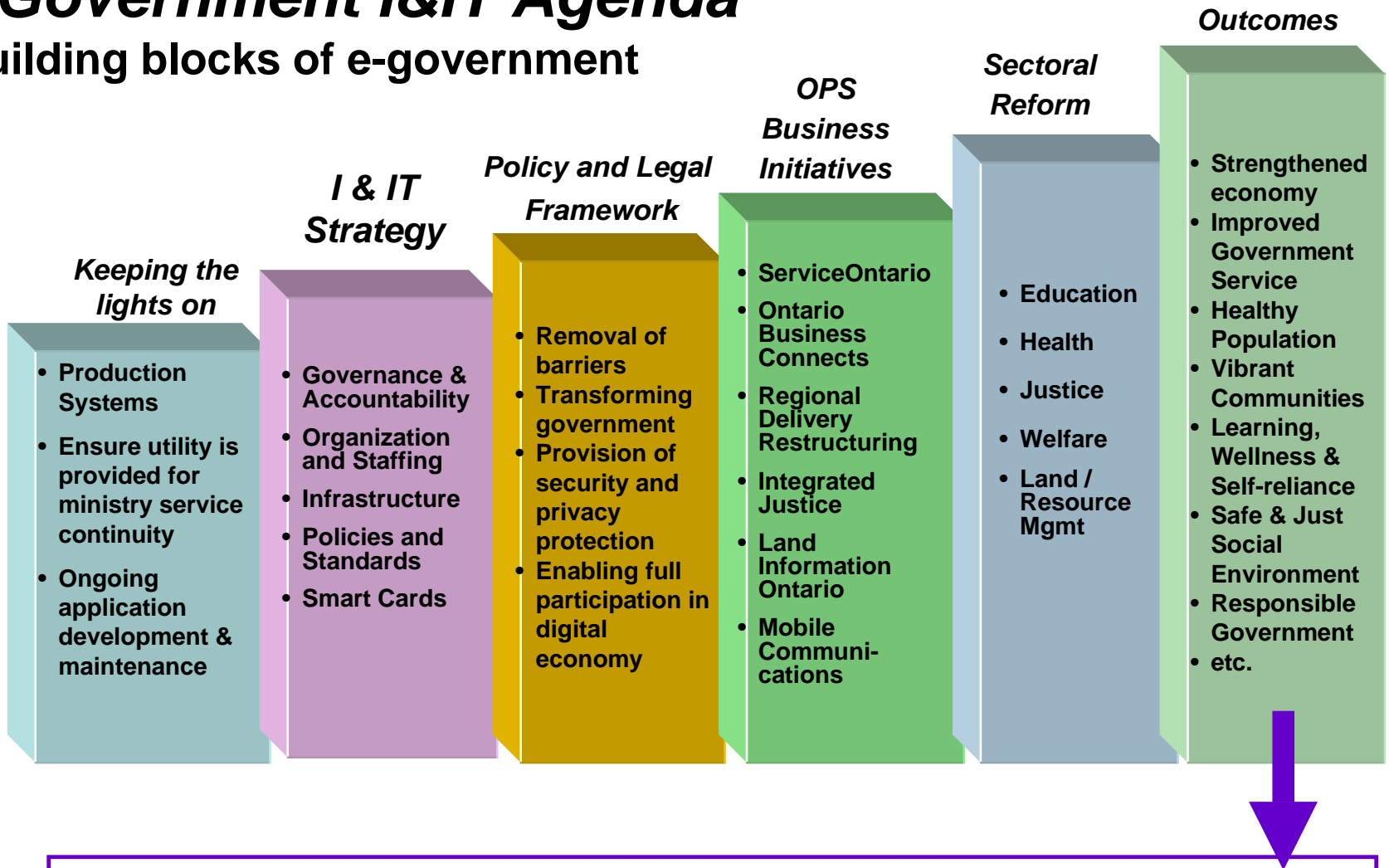
- Improve service quality to Ontario's people and businesses by implementing client-focused, integrated, accessible and cost-effective electronic services by the OPS

2003 TARGET

- Increase Ontarians' satisfaction with government services by becoming a world leader in delivering services on-line (for purposes of ESD target, on-line includes all electronic channels)

The Government I&IT Agenda

The building blocks of e-government



THE BEST PLACE TO LIVE, WORK AND DO BUSINESS

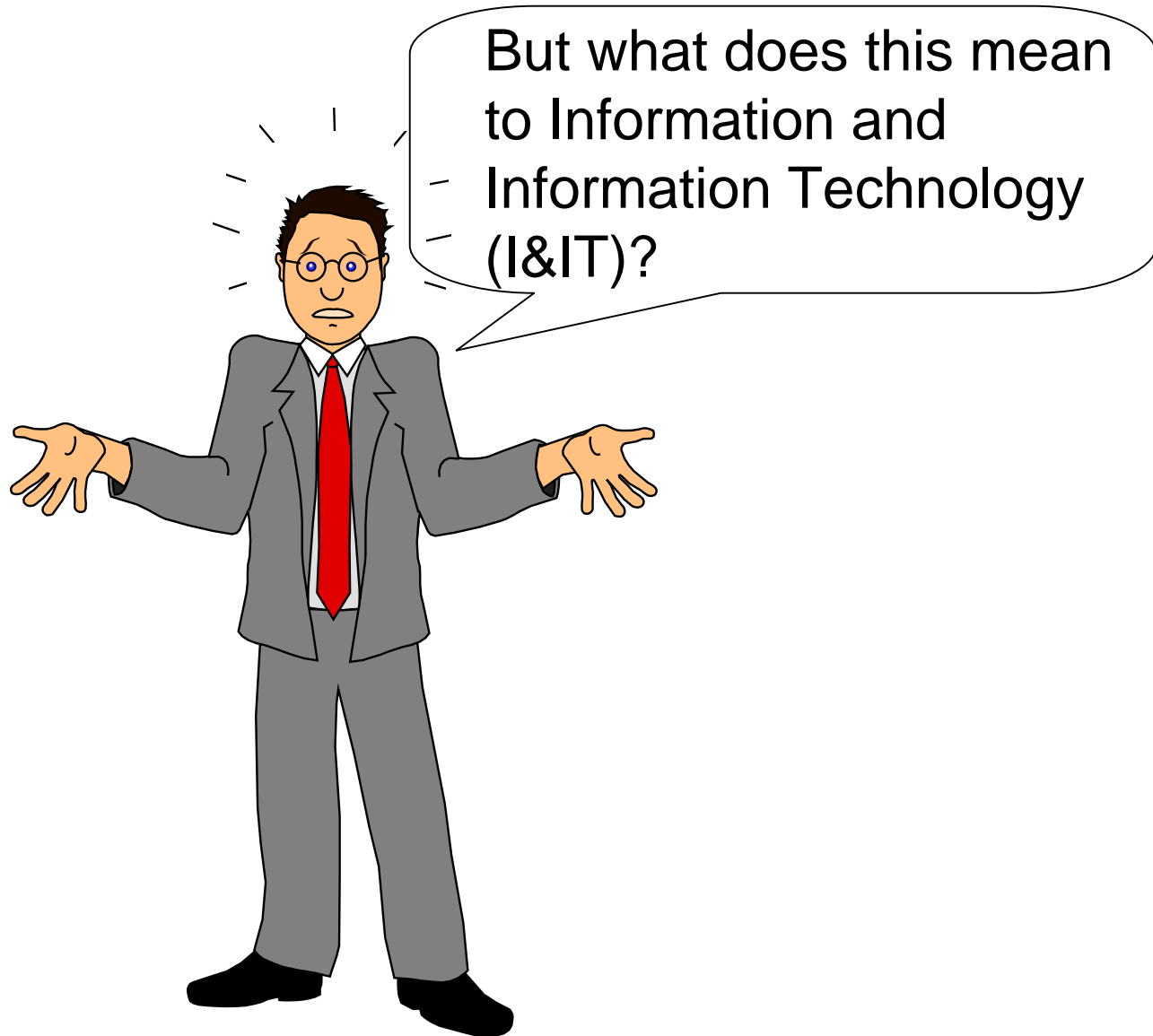
Implications in Ontario



- We know we have much to do to provide leadership for Ontario's success in the global Digital Economy
 - E-Business (e.g. removal of barriers/supportive environment)
 - E-Government (e.g. sectoral transformation, ESD, internal admin., digital democracy)
 - individual, business, sector, institutional readiness
 - high technology sectors/R&D
 - information infrastructure

Bottom-line....

- All levels of government are working hard on using I&IT to improve the services they provide to their clients
- We all must work together to that common goal
- We also need to share experiences and learn from each other about best practices in e-government and ESD



Going “E” By 2003 means...

- Business transformation projects must be delivered
- Time to Market is critical
- Collaboration and commitment are key success factors
- Quality, effective results are essential to meet the government’s vision for 2003...



But Not With Just Technology

- E-Government and ESD cannot succeed without a “common language”
- Ontario’s strategy is dependent on Information Management (IM) as the basis of interchanges with our clients - the public, other governments and with private industry
- These interchanges will be based on eXtensible Markup Language (XML)

XML - A Definition

- XML is a set of rules, guidelines and conventions for designing text formats for such data, in a way that produces files that are easy to generate and read (by a computer)
- XML text formats are unambiguous, avoiding common pitfalls such as lack of extensibility, lack of support for internationalization/localization, and platform-dependency

According to Patricia Seybold XML is...

- XML is the engine of E-Business transformation
- XML enables:
 - Application-to-application integration
 - Database-to-database synchronization
 - Cross-organizational workflows & e-processes
 - Industry Transformations!



Leading Edge IM is Counting on XML

- W3C XML schema Standards (<http://www.w3.org/XML/>)
- US, UK and EU have developed or are developing IM based interoperability frameworks for E-Government
- Private Sector Standards nearing maturing for:
 - Business to Consumers (Customer Profile, name & addressing, etc...)
 - Business to Business (Invoices, Purchase Orders, Contracts, etc...)
- Next generation interoperability standards emerging; for example, ebxml is setting standard for seamless electronic business through XML

But Why XML?

- XML provides the “language” for the Common “I” in Common Information & Information Technology (I&IT)
- Setting standards for common data elements and common meta data now will:
 - enable enterprise wide integration and navigation in the future
 - Prevent time consuming and costly efforts of retrofitting existing applications to comply to corporate standards
 - Enable both Microsoft and JAVA based components to interoperate and thereby reduce technology risks
 - Lay the foundation for future service delivery and program specific extensions to the provinces IM framework
- XML is ready for prime time

Why XML (continued)

- The province has several lines of business. Health, Education, Transportation...
- Each of these “communities of interest” has significant XML standards development initiatives underway.
- If the province is to:
 - Retain the capacity to have an enterprise view of its information and transaction offerings,
 - Establish a scalable foundation upon which individual ministries can “build out” the standards to meet their specific needs,
 - Implement a standards based interface between programs & “Service Providers”
- The Province must:
 - Set a bare minimum set of corporate content and context management standards
 - Set standards for common data elements that are used across the OPS
 - Set standards for inter-system messaging
 - Move beyond standardized elements to standardized documents

Benefits of XML

- Short Term
 - Define data messaging standards for the province's Common I & IT gateway
- Medium Term
 - Provide an standards based means for capturing, classifying and transforming data
 - Establish application independent data
 - Establish device and platform independent solutions
 - Provide a standards based transformation engine for re-engineering
- Long Term
 - Enable 'plug and play' where government transactions and information delivery can be dynamically assembled to meet the context of the client
 - Provide Customers choice in how, when and where they interact with government

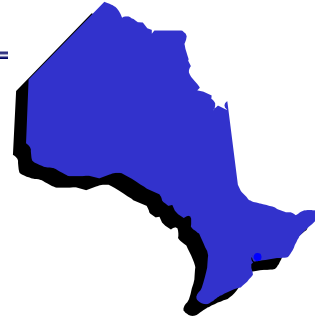
Basic Assumptions for Using XML

- Transformations from standardized messaging language to program-ready data is the responsibility of the program owner
- XML must support multiple service providers
- XML solution must delivers complete transactions
- Online presentation is not part of the transaction definition schema
- XML Services must comply with W3C

Messaging Mark-up

- Govtalk in the UK and EBXML in the private sector are establishing interoperability frameworks for the B2B and public sector environment by establishing transformation solutions between existing standards and hoping that common data standards will emerge through the development of on-line service delivery applications
- These interoperability efforts are enabled by moving to one level of abstraction in the document type definitions (establishing generic schemas) and conducting XSLT transformations between systems
- Ontario has different approach - using ***Common Data Elements*** (CDE) across the systems of the provincial government, which will allow common data to be re-purposed across transactions as well as profile driven proactive information and transactions services

IM is Critical to Meeting the Challenges of ESD

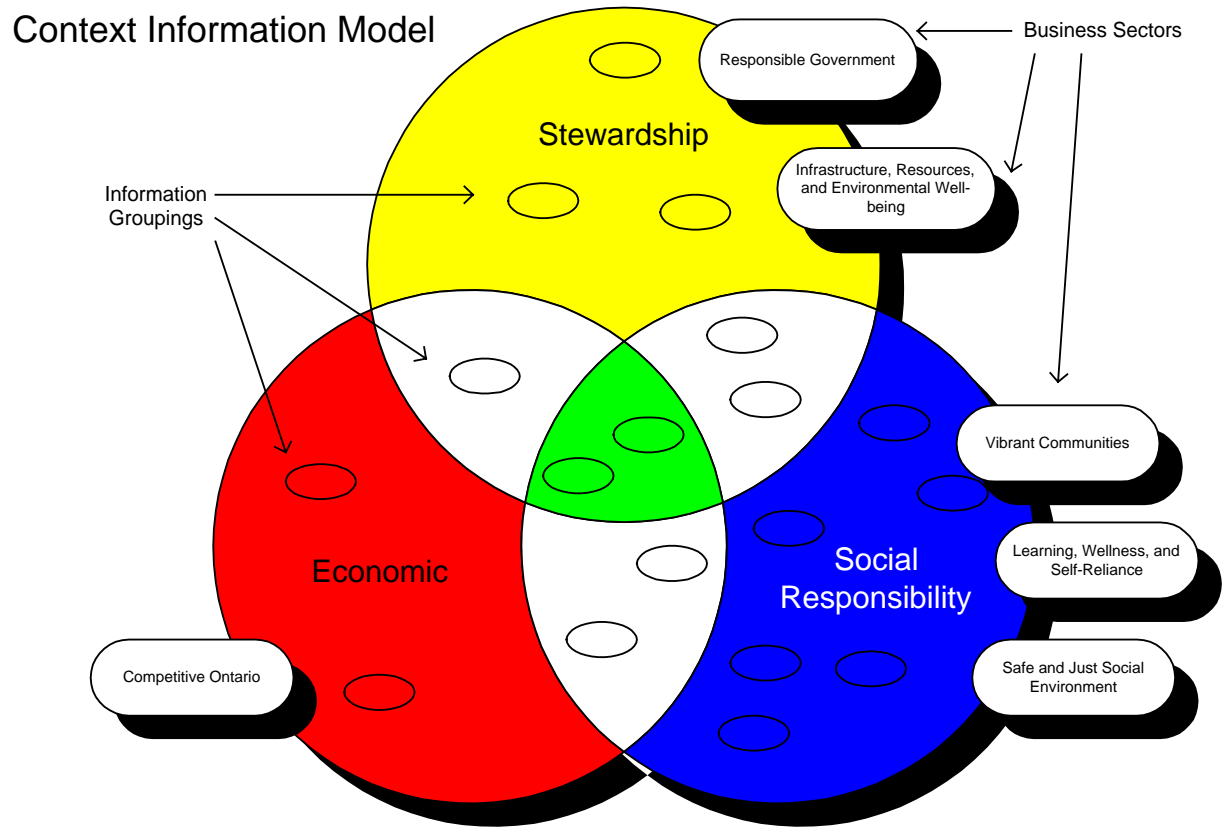


- Data and information are seen as corporate assets in the Ontario Government, with custodianship in program areas
- Ontario's Enterprise Architecture has standardized definitions of common data elements (CDE) have been developed to foster sharing and re-use when appropriate
- XML is the basis for CDE and as such, is key to Ontario's ESD strategy

Approach for Developing Common Data Elements

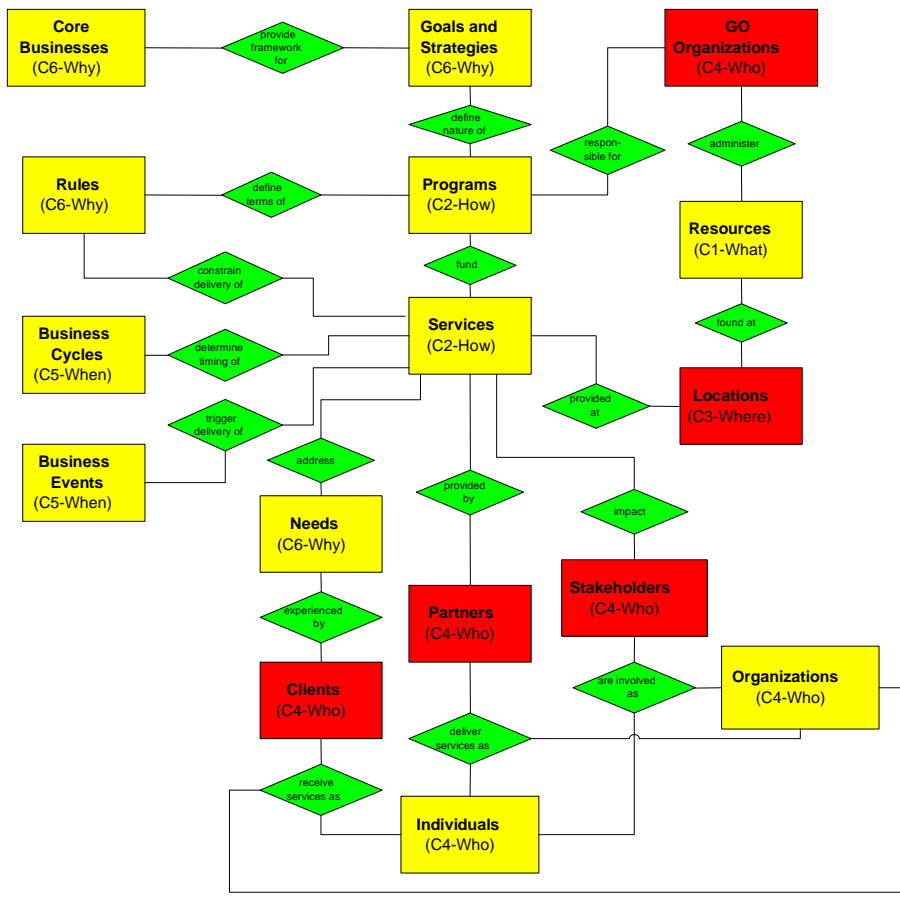
- A government oriented contextual enterprise information model has been created that has:
 - a generic conceptual data model that is applicable to all government computer applications;
 - subject areas that are common;
 - a formal information taxonomy;
 - core common data elements.

Government Information Context Model



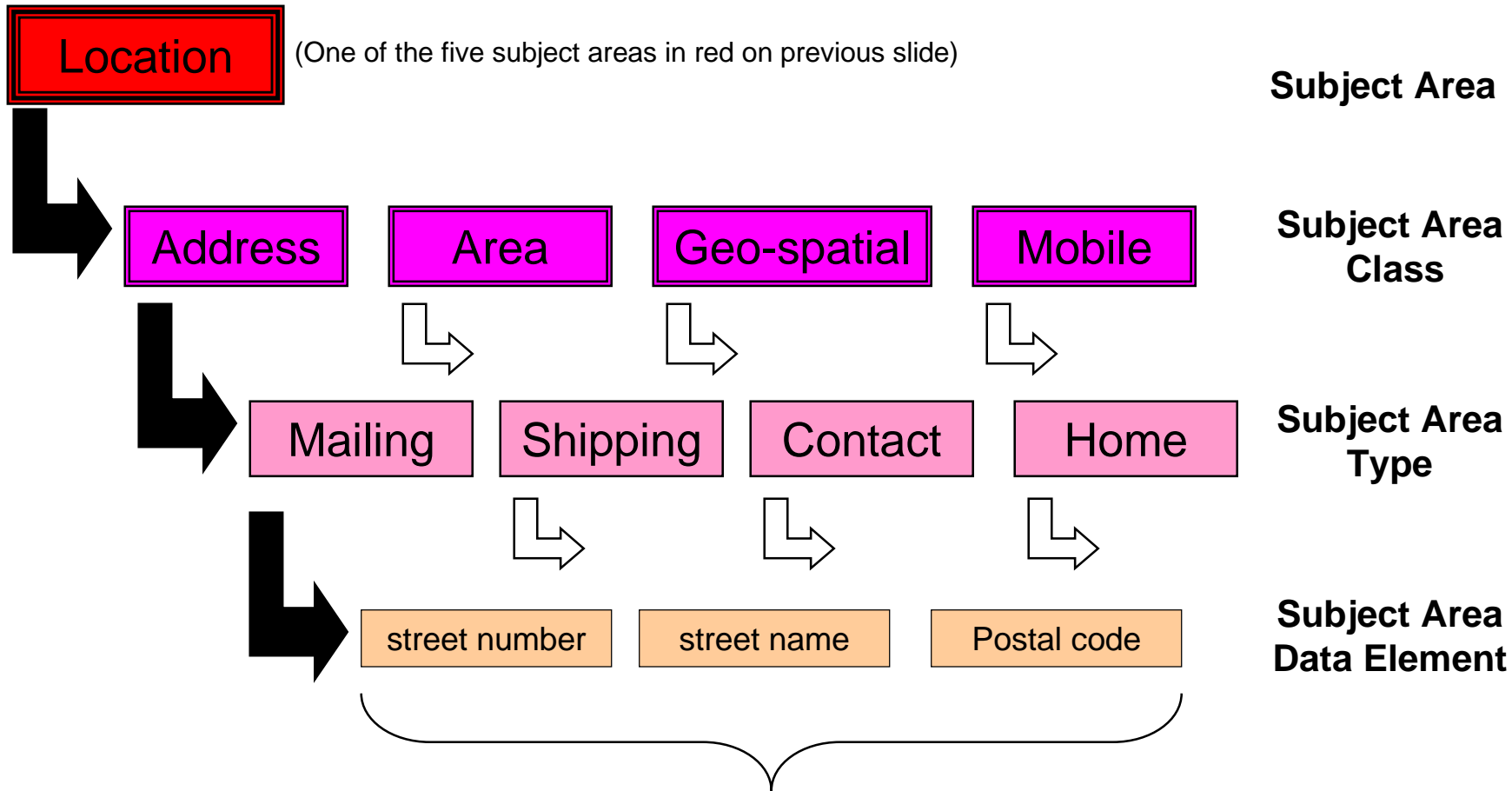
All the information and data used by a government can be classified into one of three context areas and then further classified into specific information groupings.

Identification of Common Elements



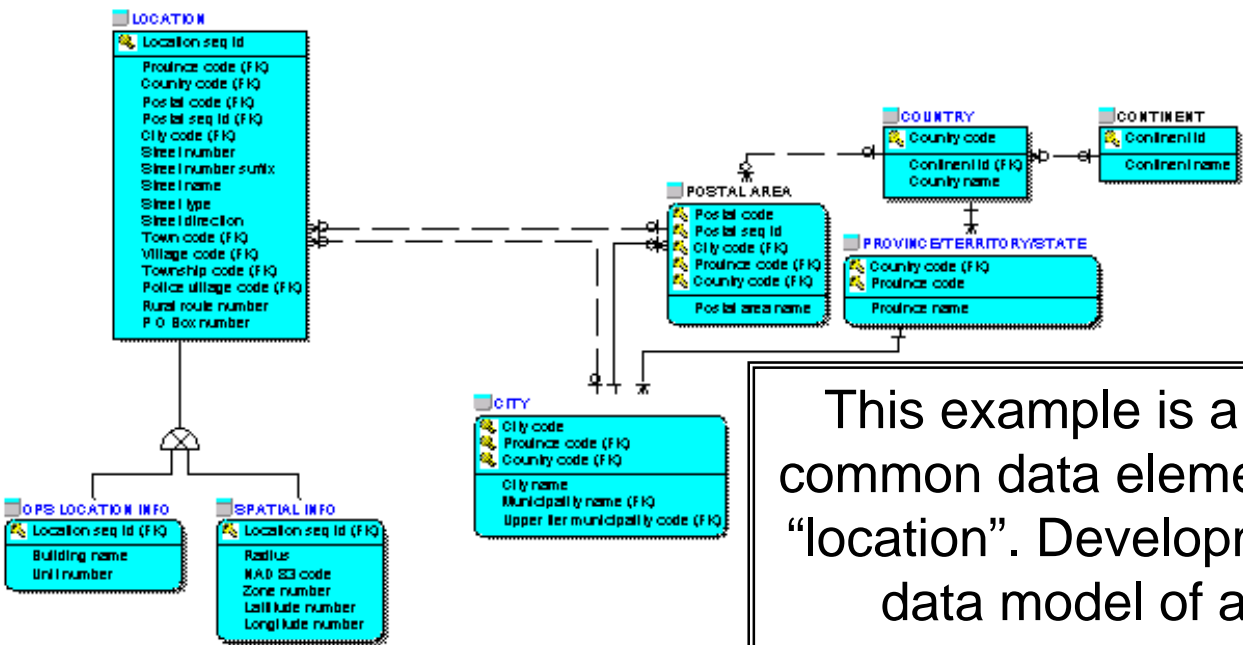
A conceptual data model defines the high level subject areas and the type of relationships between them. Any public sector computer application can use this model to begin design and development. Subject areas hi-lighted in red are common and thus form the basis for defining common data elements.

Data/Information Taxonomy



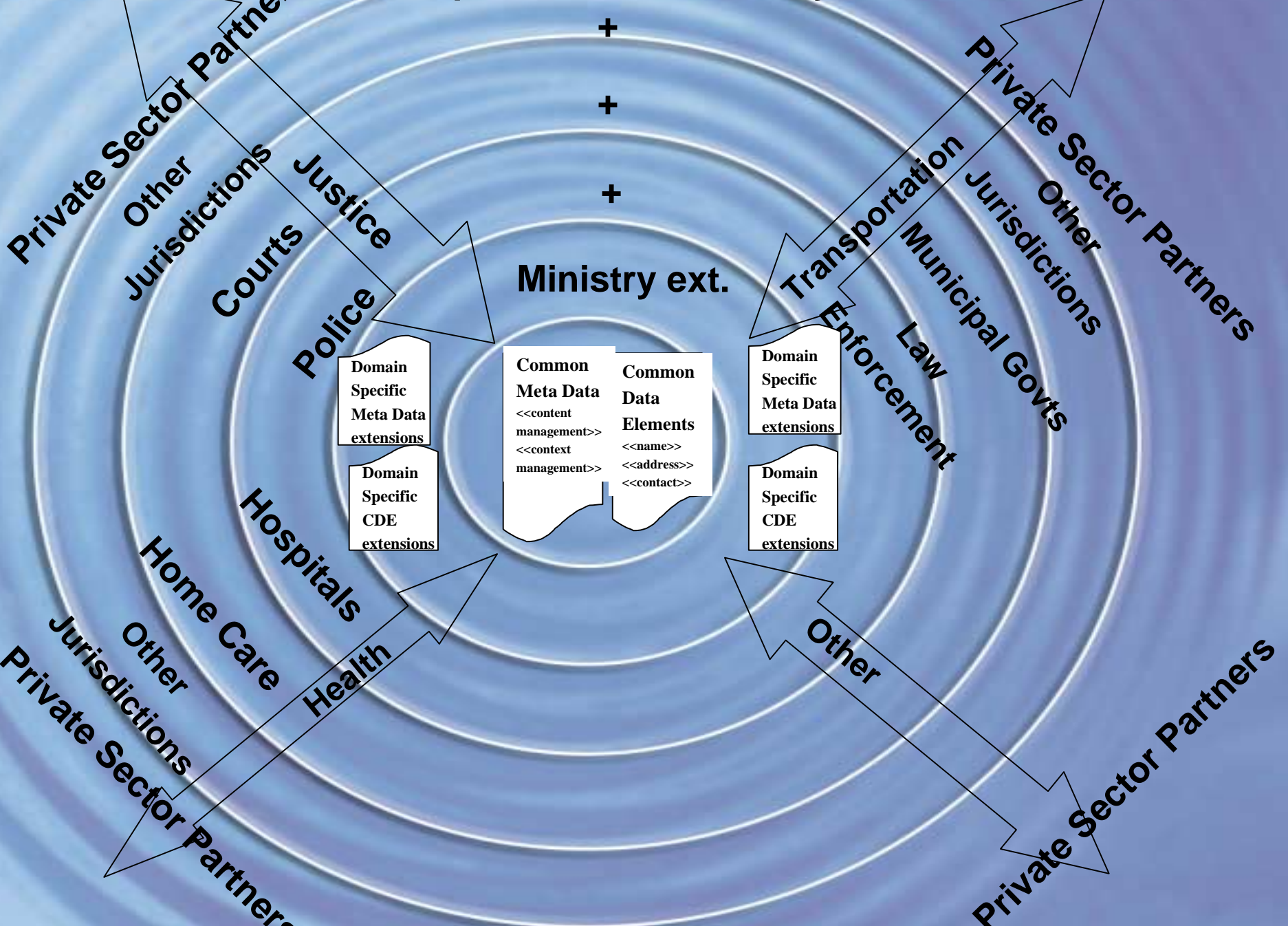
Over 150 Common Data Elements from 5 Subject Areas

Logical Data Model of Common Data Elements



This example is a data model of the common data elements associated with “location”. Development of a full logical data model of all common data elements produces the standardized definitions and relationships needed to facilitate effective sharing and integration of common data.

Conceptual Service Delivery Model



Service Delivery Infrastructure Management Logical Model

- CDE and common components will form the foundation of the ESD infrastructure for the Ontario Government
- CDE will be the basis for service delivery markup
- The service delivery information management logical model is the blue print for the project

Service Delivery Mark-up

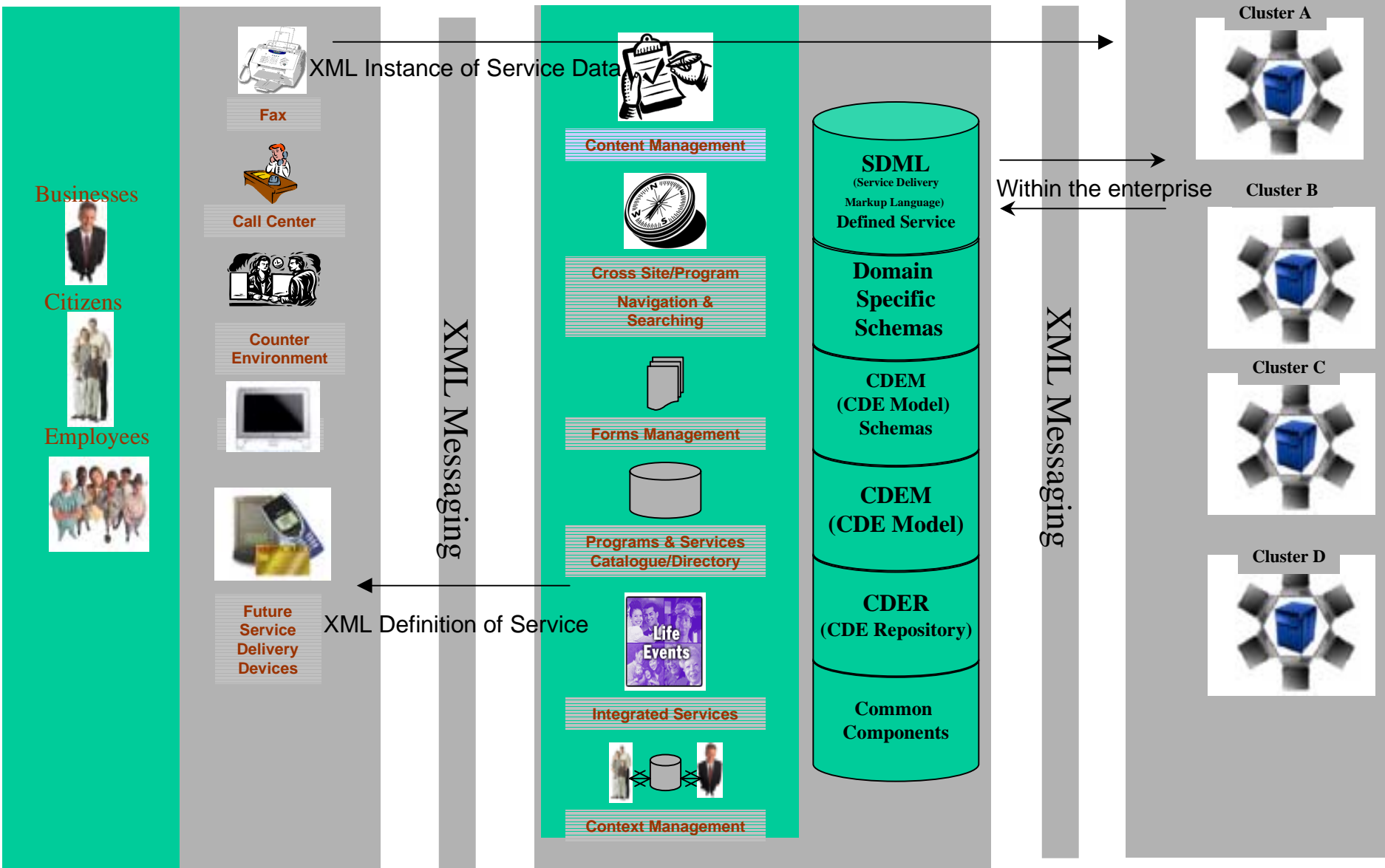
- In order to build channel independent services ESD will need standardized service delivery components driven by XML
- These components will define:
 - Prompts for questions asked
 - Service and field specific help
 - Links to related decision support materials and enabling legislation
 - Contact information for alternative channels
 - Service level expectations
 - Context to which the service is relevant
 - Connections to existing business rules and validations
 - Customer interaction logic
 - Links to or interoperability with related transactions from other programs/jurisdictions

Office of the Corporate Chief Strategist

Presentation Layer

XML Services Layer

OPS Programs



Next Steps

- In order to implement the services delivery logical model in a timely fashion, concurrent streams will be done
- The development plan calls for coordinated:
 - Communications
 - Proof of concept development
 - Schema development
 - Transformations development
 - Registry/repository development
 - Training

Potential Areas to Collaborate

- CDE and its basis for XML standard schemas
- Service Delivery Markup and processes
- Common Components for processing ESD
- Service delivery infrastructure

Thank You

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