The Municipal Reference Model

Understanding the DNA of Government

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About Me

- CIO (Retired), Region of Peel (Ontario, Canada)

- Past President, Municipal Information Systems Association (MISA Ontario)

- Executive Director, MISA/ASIM Canada

- Board Member and Past President, Institute for Citizen Centred Service

- Project Director, Municipal Reference Model Program (MRM)

- Former Municipal Co-Chair, SMSC

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Municipal Reference Model Context

MRM Context
Government Service Reviews

- Within the past 2-3 years, Canadian municipalities have issued RFPs such as the following:
  - City of Toronto, Ontario – Core Services Review
  - City of Saint John, New Brunswick – Operational Review
  - City of Windsor, Ontario – Service Delivery Review
  - City of Vancouver, British Columbia – Review of the City's Businesses, Service Delivery Practices And General Operations
  - City of Ottawa, Ontario – Efficiency Savings Initiative
  - City of Calgary, Alberta –Core Service Review
  - City of Moncton, New Brunswick – Corporate Services Review
  - City of Hamilton, Ontario – Strategic Services Operational Review
  - City of Penticton, British Columbia – Review of the City's General Operations, Service Delivery And Organizational Review

- Similar requests are appearing at the provincial and federal levels
  - Commission for Reform of Ontario's Public Services (Path to Sustainability and Excellence) – Drummond Commission

- … and the list goes on, and on!

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Municipal, Provincial, State, Federal all have the same challenges…

- Common threads in almost every study:

    – ***Defining our Services –*** Do we know what services we provide? Are they core to our business? What value are they offering? Are we offering the right Services?

    – ***Improving our Services*** – What is the cost of our services? How do we compare with other governments? Can we improve our efficiency, effectiveness and quality?

    – ***Service Levels*** – What is our current Service Level? How was it determined? What are the cost and service implications if we raise or lower Service Levels?

    – ***Service Accountability*** – Who is accountable for which Services? Is the allocation correct or does it need to be adjusted?

    – ***Alternate Service Delivery*** – Can we outsource, in-source, privatize or contract out all or a portion of our Services?

    – ***Service Operations*** – How do we deliver a service? Are there better ways? What can we learn from others?

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What are Reference Models?

Definition (Wikipedia)

An abstract framework …consisting of an interlinked set of clearly defined concepts produced by an expert or body of experts in order to encourage clear communication.

Definition (OASIS)

An abstract framework for understanding significant relationships among the entities of some environment, and for the development of consistent standards or specifications supporting that environment.

"Essentially all models are wrong, but some are useful."
George E. P. Box

In short:
A reference model is a set of rules for how you describe things.

Coherent Government *by design*

If we really want:

- ❑ to move to a "whole of government" approach,
- ❑ seamless, citizen-centred services,
- ❑ legislation, regulations and policies designed rather than crafted,
- ❑ alignment, integration, interoperability, etc. in our business systems,
- ❑ to do more with less,
- ❑ etc.

We really need:

- ❑ a consistent and more formal business design capability based on a common language and set of rules for using it to create better descriptions of what we want (e.g. more coherent ones). A pan-Canadian standard along these lines will enable any conceivable government line-of-business (and inter-collaborations thereof) to better:

  - interpret and clarify their missions, strategies, outcomes, etc.
  - accurately depict or map how they work (and how they can work together),
  - discover opportunities for business improvements,
  - support their planning and successful implementation.

We really need:
a Governments Reference Model

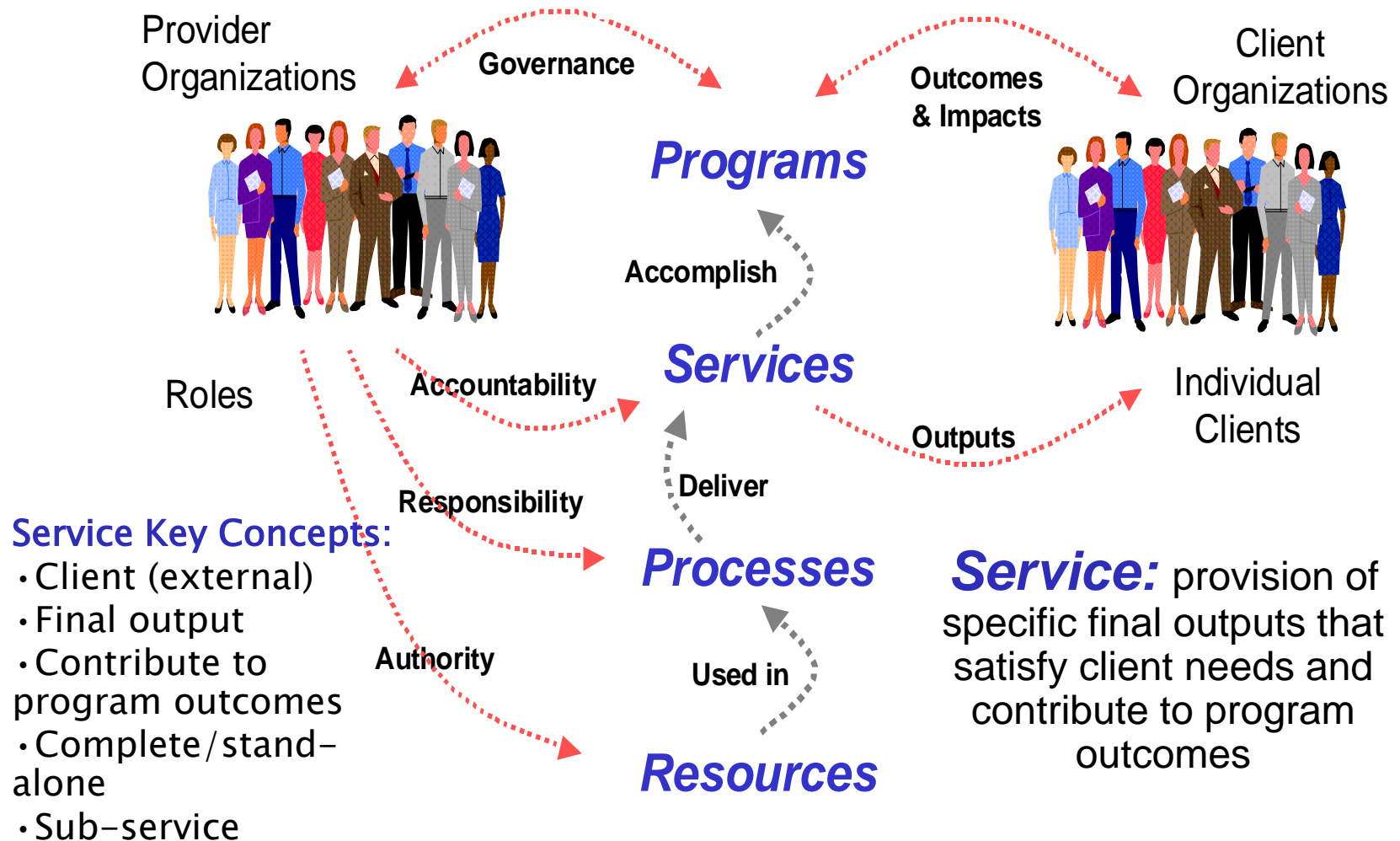# Municipal Reference Model Brief History

MRM Brief History

- 1990: 20+ Ontario municipalities create Joint Venture to develop Municipal Reference Model and Engineering Database – initially as "data models"

- 1992: JV Awards RFP to Chartwell IRM (acquired by KPMG in 2009)

- 1995-2000: MRM evolves from data to business model and is successfully marketed by Chartwell to other Canadian, US and overseas municipalities

- 2000-2008: MRM adopted and adapted by Province of Ontario (PSRM) and Government of Canada (GSRM)

- 2007-2011: MRMv2 Project undertaken by MISA/ASIM Canada to update and re-establish MRM at municipal level and align with PSRM/GSRM

- 2007: Joint Councils create SMSC to integrate and standardize service mapping approaches across Canadian governments
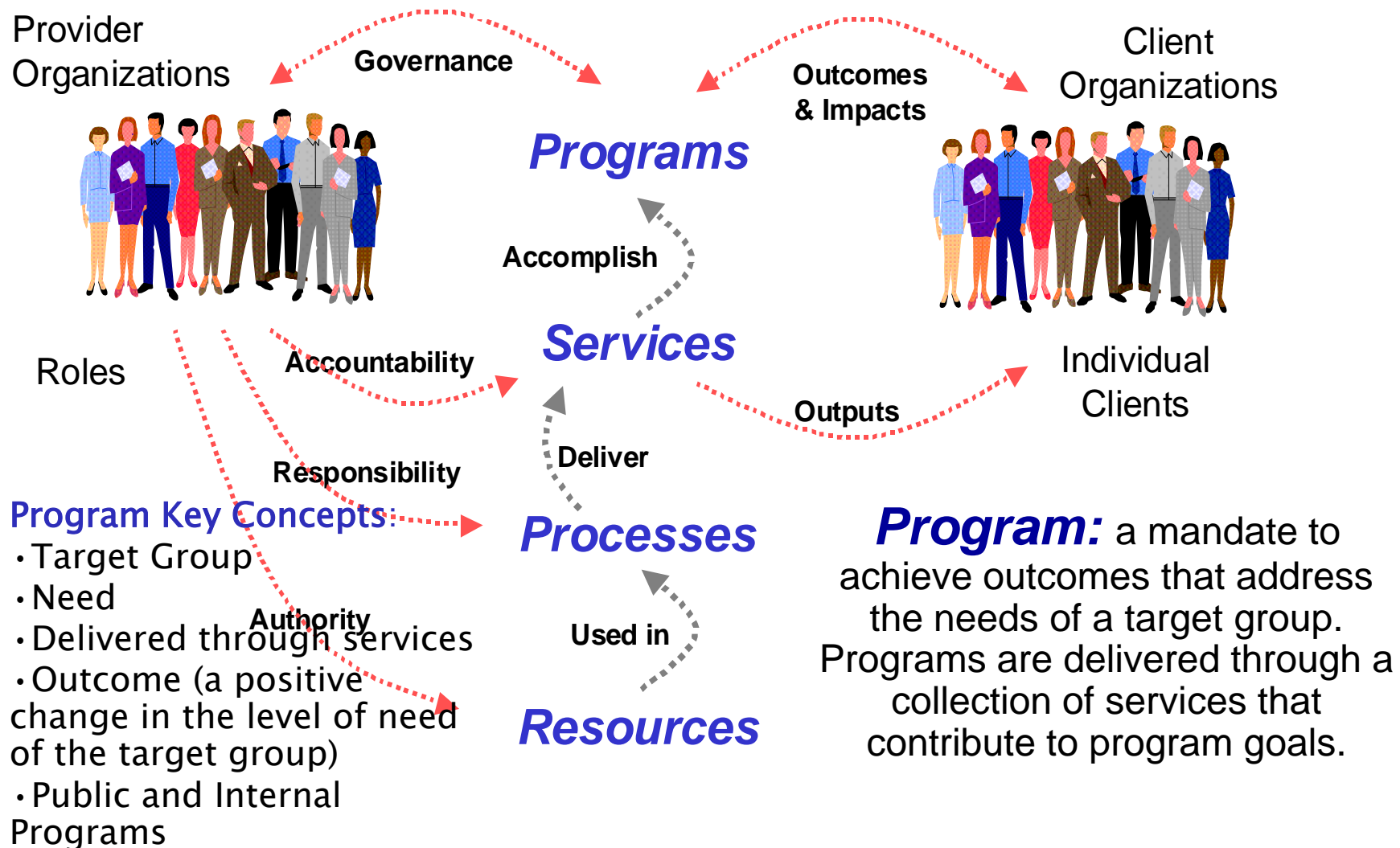
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MRM Municipal Users (c1998)
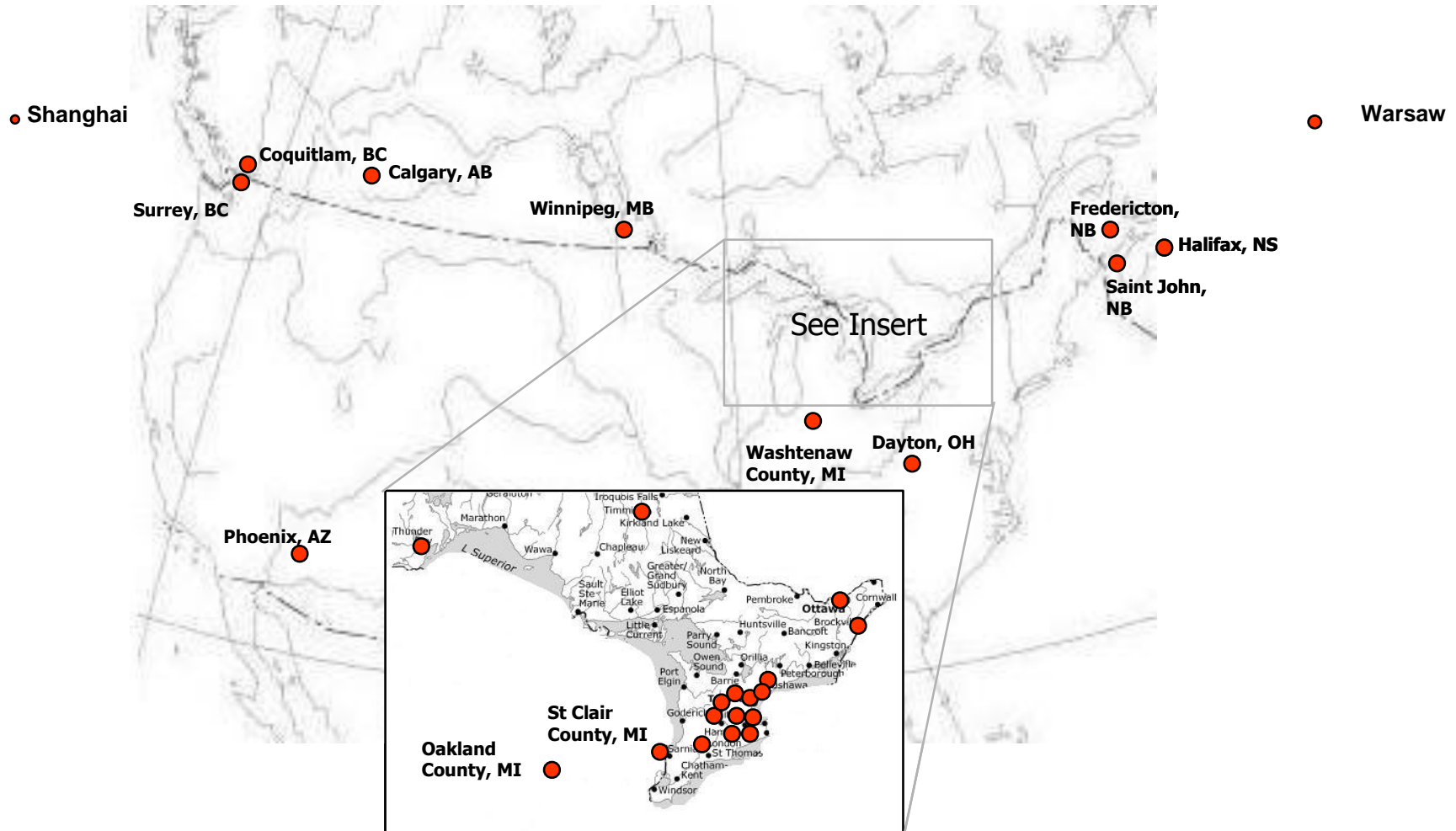
Municipal Reference Model Concepts

Your core business elements expressed in a standard language: SERVICE

Provider Organizations

Governance

Outcomes & Impacts

Client Organizations

Programs

Accomplish

Roles

Accountability

Services

Individual Clients

Outputs

Responsibility

Deliver

Service Key Concepts:
- Client (external)
- Final output
- Contribute to program outcomes
- Complete/stand-alone
- Sub-service

Authority

Processes

Service: provision of specific final outputs that satisfy client needs and contribute to program outcomes
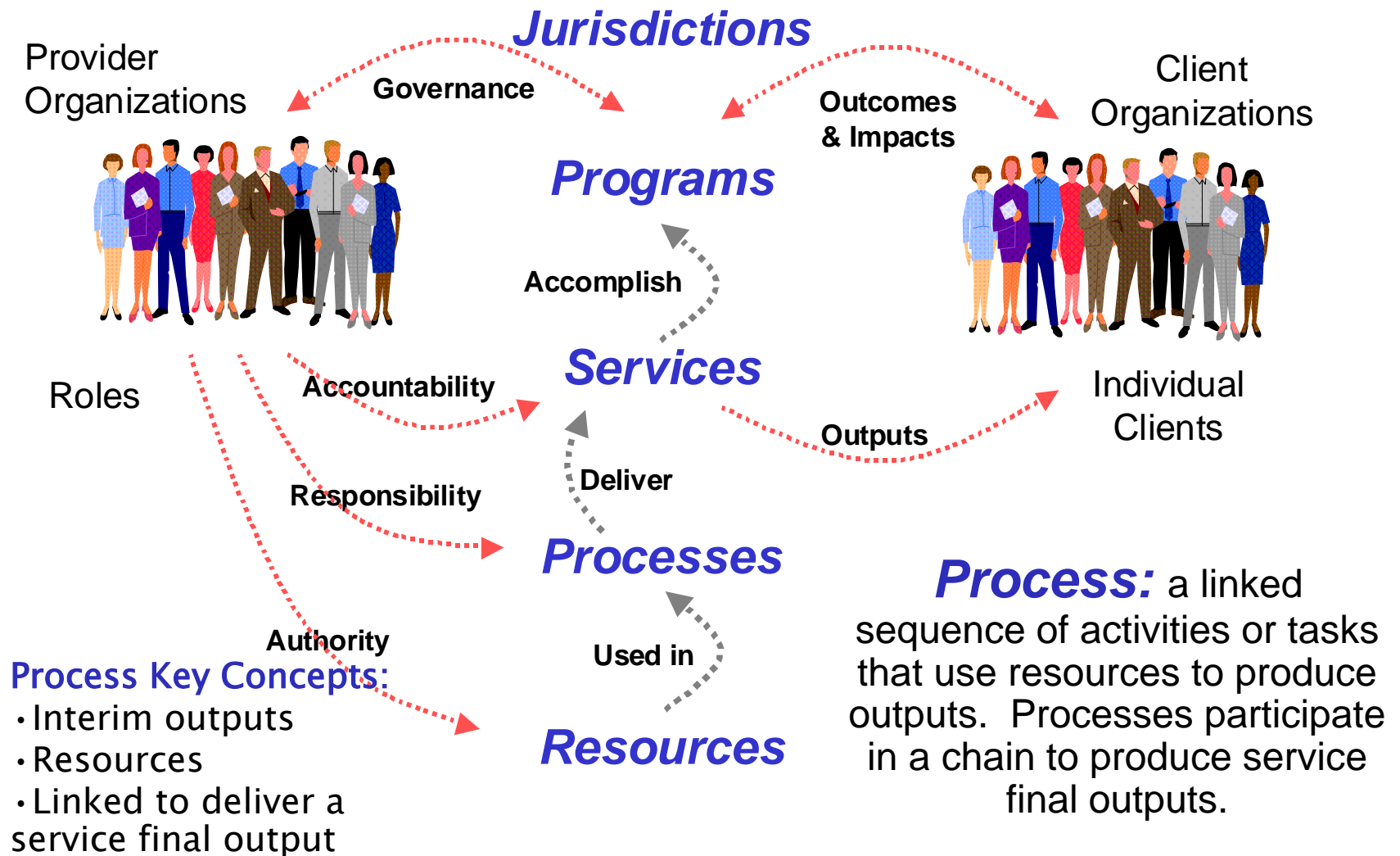
Used in

Resources

The MRM Provides a Common Language and Structure for describing the business of Government from the outside-in, as our citizens see us.

Your core business elements expressed in a standard language: PROGRAM

Provider Organizations

Governance

Client Organizations

Outcomes & Impacts

Programs

Accomplish

Roles

Accountability

Services

Individual Clients

Outputs

Responsibility

Deliver

Program Key Concepts:
- Target Group
- Need
- Delivered through services
- Outcome (a positive change in the level of need of the target group)
- Public and Internal Programs

Authority

Processes

Used in

Resources

Program: a mandate to achieve outcomes that address the needs of a target group. Programs are delivered through a collection of services that contribute to program goals.

The MRM Provides a Common Language and Structure for describing the business of Government from the outside-in, as our citizens see us.

Your core business elements expressed in a standard language: PROCESS

Jurisdictions

Provider Organizations

Governance

Client Organizations

Outcomes & Impacts

Programs

Accomplish

Services

Roles

Accountability

Individual Clients

Outputs

Deliver

Responsibility

Processes

Process: a linked sequence of activities or tasks that use resources to produce outputs. Processes participate in a chain to produce service final outputs.

Authority

Used in

Process Key Concepts:
- Interim outputs
- Resources
- Linked to deliver a service final output

Resources

The MRM Provides a Common Language and Structure for describing the business of Government from the outside-in, as our citizens see us.

MRM Concepts Illustrated: Public Health

Program	Public Health	
Target Group	Municipal Residents and visitors	
Need	Health	
Outcome	Improved Health (Can we define this more precisely?)	
	Service 1	**Service 2**
Service	Food Premise Inspection	Flu Immunization
Service Output	Inspection Report (permission to continue operation)	Immunization
Direct Client	Food premise owner / operator	Resident (at-risk) receiving immunization
Indirect Client	Food premise patron	Others in the community (residents and visitors)
Service Value	Reduced illness resulting from improper food preparation	Reduced illness resulting from fewer residents contracting H1N1
Process	Schedule inspection, conduct inspection, produce report, schedule follow-up	Establish clinic, prepare public communication, operate clinic, decommission clinic

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MRM Concepts, Performance Measurement: Public Health

	Program	Service	Process
	Public Health	H1N1 Immunization	Clinic Operation
Effectiveness (relates to outcome)	Change in level of public health	Reduction in incidence of Flu	Set up on time, design effectiveness
Efficiency	Public Health cost/capita	Cost per delivered immunization (cost/output)	Operating cost/day
Quality (cf. to standard)	n/a	Immunizations to standard	# of operating issues – e.g. out of stock
Customer Satisfaction	Customer Satisfaction (reputation)	Service Satisfaction (Specific experience)	n/a

Classification of Reference Model Services based on need & output types


Source: GSRM Top Model

Municipal Reference Model Components

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Key Components of the MRM

- <u>Metamodel</u> - specifies the contents of your business model, e.g. what information should you record about each service

- <u>Reference Model</u> - repository of business model content to get you started, e.g. well-defined examples of services

- <u>Toolkit</u> - applications for business users and business analysts to create, analyze and share business model content within the municipality, and with other municipalities

- <u>Use Cases</u> - instructions for using the MRM to support common management practices, e.g. strategic planning

- <u>Support</u> – an MRM community offering training and support, and a governance structure so you can influence continuing development and direction of the MRM

The complete Meta-model

Don't Try to Read!
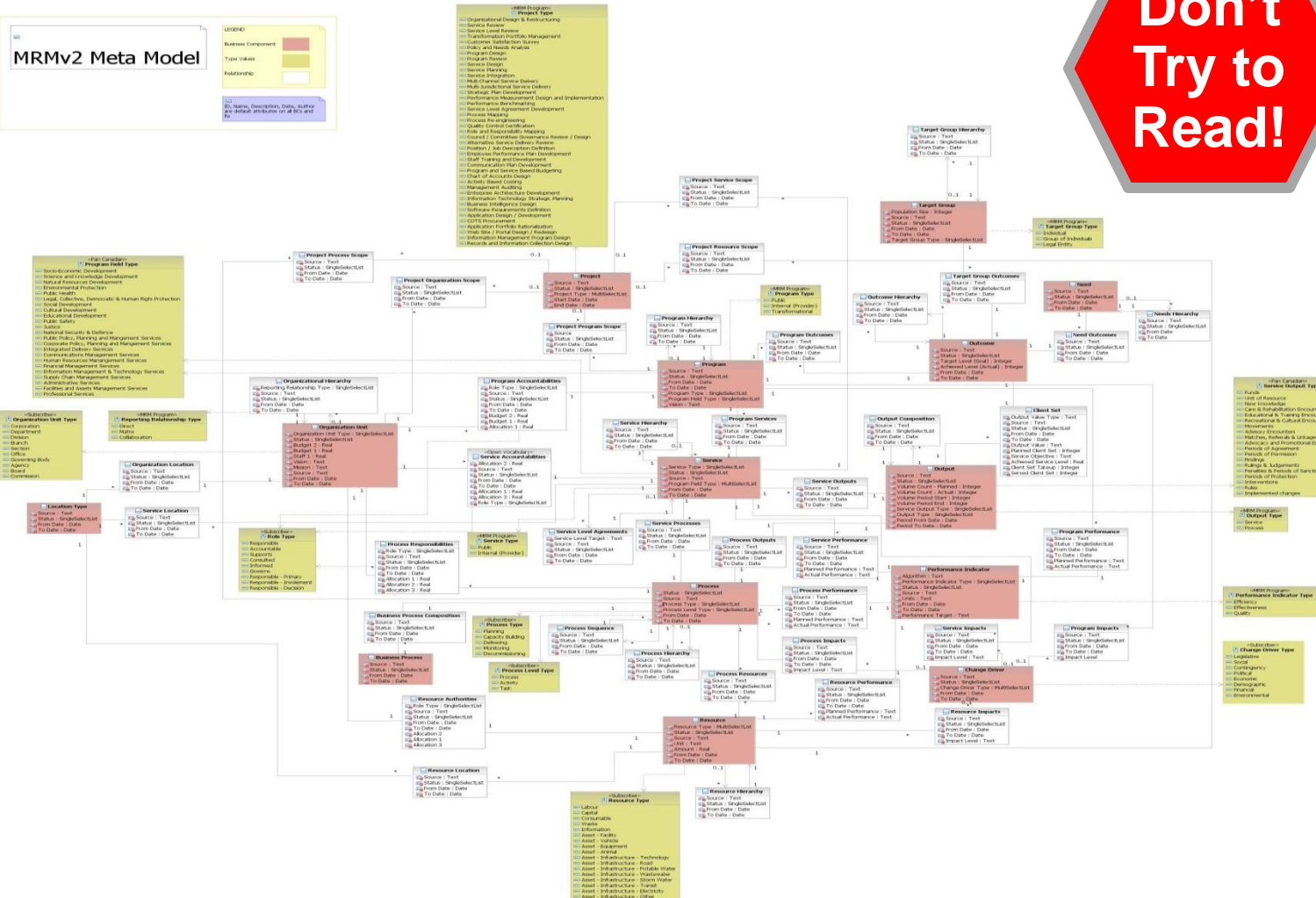
MRM Metamodel
Implemented Subset
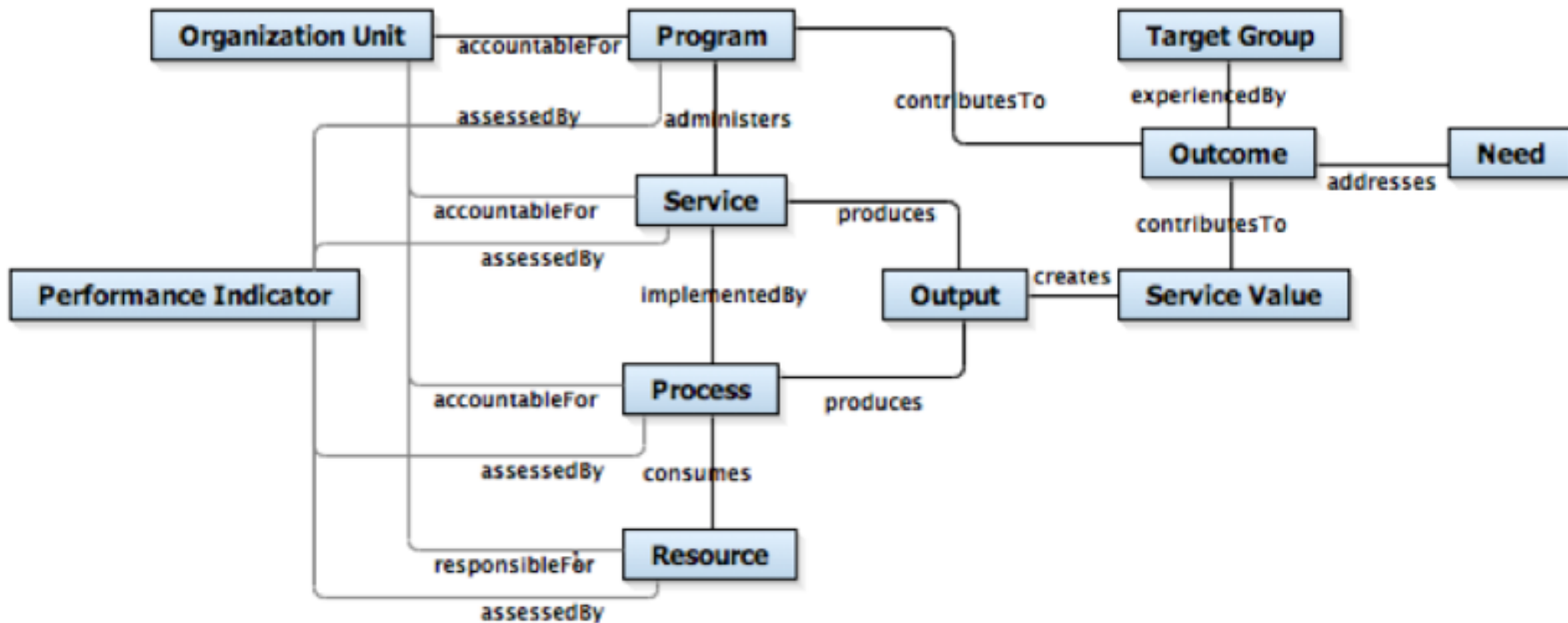
Modeling Principles and Rules - Extract

Service

Definition: A Service is a commitment to deliver <u>Outputs</u> that contribute to <u>Outcomes</u>

Naming:
- The name of a Service should be defined as a combination of "modifier" (optional), "noun" (mandatory) and "gerund" (mandatory). For example, a Service should be named 'Solid Waste Collection' rather than 'Solid Waste'. Modifiers are not always required, e.g. Business Licensing. The Service's name should make sense with and without the word "Service" following the name when required by context.

Valid Instances:
- The Service's existence should not depend essentially on the existence of another Service; if that is the case, the activity is typically a feature or configuration of that other Service. (*Independence Rule*)
  - Example: traffic control and signage are not Services because they depend on the existence of the 'Roads Service'. Traffic control and signage are features that increase the quality and effectiveness of the 'Roads Service' because they enable more, safer, and more convenient trips.
- Delivery of the Output defined for the Service should fully satisfy the Need(s) addressed by the Service, commensurate with the intentions of the government and the legitimate expectations of the client. (*Closure Rule*)
  - Example: fixing a pothole does not by itself satisfy a driver's expectation of a trip, nor the government's intent to enable it, and is therefore not a Service but a Process forming part of the 'Roads Service'.
  - Example: processing an application form for a building permit does not by itself satisfy a client's need for permission to build, nor the government's intent to grant compliant requests, and is therefore not a Service but a Process forming part of the 'Building Permit Service'.
- The Service's Output cannot be mandatory for all members of its Target Group; otherwise the Service is an Enterprise Management Process or Program Management Process. (*Non-Mandatory Rule*)
  - Example: developing a strategic plan is not a service if each department must participate in it. If, on the other hand, an Organization Unit offers assistance with the preparation of individual strategic plans, e.g. departmental or program plans, then an Enabling Service is formed.
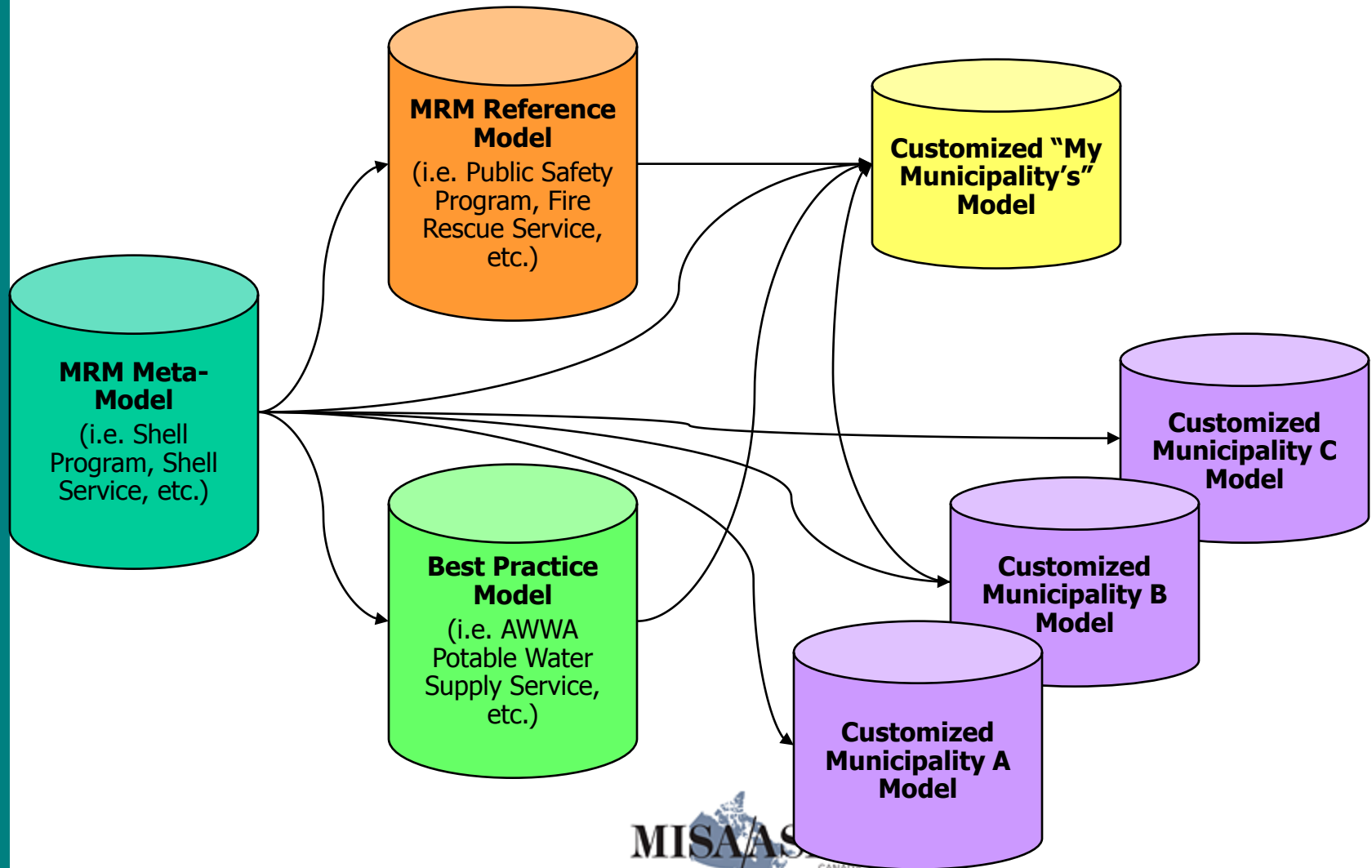
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Authoritative Reference Model
of Municipal Programs and Services

Service Level	Service Name	Alias Service Name(s)	Service Description	Output	Output Type	Direct Client	Direct Client Service Value	Direct Client Need Category	Beneficial Client	Beneficial Client Service Value	Beneficial Client Need
1	Garbage Disposal		Disposal of garbage (residual solid waste) at transfer stations and/or landfill sites.	Garbage Disposed (tonne)	Unit of Resource	Waste Hauler	Convenient, affordable disposal of garbage				
2	Composting		Composting of yard and organic waste for resale or reuse.	Compost (tonne)	Unit of Resource	Compost User	Convenient, affordable composting of yard and organic waste				
1	Building Permission and Enforcement	Building Permission	Approval to construct, demolish and/or alter a building in compliance with Building Code standards	Building Permit Issued	Period of Permission	Property Owner Developer / Agent	Compliance with Building Code Regulations		Building Occupant / User	Safe building to use / occupy	
2	Building Construction Permission and Enforcement	Building Construction Permission	Approval to construct a building in compliance with Building Code standards and regulations.	Building Construction Permit Issued	Period of Permission	Property Owner Developer / Agent	Compliance with Building Code Regulations		Building Occupant / User	Safe building to use / occupy	
2	Building Demolition Permission and Enforcement	Building Demolition Permission	Approval to demolish a building in compliance with Building Code standards and regulations.	Building Demolition Permit Issued	Period of Permission	Property Owner Developer / Agent	Compliance with Building Code Regulations		Adjacent Property Owner	Safe site for demolition	
2	Building Alteration Permission and Enforcement	Building Alteration Permission	Approval to alter a building in compliance with Building Code standards and regulations.	Building Alteration Permit Issued	Period of Permission	Property Owner Developer / Agent	Compliance with Building Code Regulations		Building Occupant / User	Safe building to use / occupy	
2	Sign Permission and Enforcement	Sign Permission	Approval to install / maintain a sign in compliance with Building Code standards and regulations.	Sign Permit Issued	Period of Permission	Property Owner Developer / Agent	Compliance with Building Code Regulations		Adjacent Property Owner	Safe sign	
1	Property Standards By-Law Enforcement	By-Law Enforcement	Compliance with applicable property standards by-laws and/or regulations.	Property Standards By-Law Enforced (Compliance)	Penalty & Period of Sanction	Property Owner	Compliance with Property Standards By-Law / Regulations		Building Occupant / User Adjacent Property Owner	Safe building to use / occupy	
2	Noise By-Law Enforcement		Compliance with the Noise By-Law.	Noise By-Law Enforced (Compliance)	Penalty & Period of Sanction	Property Owner	Compliance with Noise By-Law		Adjacent Property Owner	Quieter neighbourhood	
2	Fence By-Law Enforcement		Compliance with the Fence By-Law.	Fence By-Law Enforced (Compliance)	Penalty & Period of Sanction	Property Owner	Compliance with Fence By-Law		Adjacent Property Owner	Impartial intervention in disputes about the boundary of property	
2	Pest Control By-Law Enforcement		Compliance with the Pest Control By-Law.	Pest Control By-Law Enforced (Compliance)	Penalty & Period of Sanction	Property Owner	Compliance with Pest Control By-Law		Adjacent Property Owner	Healthier neighbourhood free from pests	
1	Development Approval	Land Development Approval	Approval of proposed development applications prior to submission of a building permit application.	Development Approved	Period of Permission	Property Owner Agent of Property Owner (i.e. Developer)	Compliance with applicable development regulations		Adjacent Property Owner	Community Development	
2	Site Plan Approval	Site Plan Application Approval	Approval of proposed site plan applications prior to submission of a building permit application.	Site Plan Approved	Period of Permission	Property Owner Agent of Property Owner (i.e. Developer)	Compliance with applicable site plan approval regulations		Adjacent Property Owner	Community Development	
2	Rezoning Plan Approval	Rezoning Application Approval	Approval of proposed rezoning applications prior to submission of a building permit application.	Rezoning Approved	Period of Permission	Property Owner Agent of Property Owner (i.e. Developer)	Compliance with applicable zoning by-law regulations		Adjacent Property Owner	Community Development	
2	Official Plan Amendment Plan Approval		Approval of proposed official plan amendment applications prior to submission of a building permit	Official Plan Amendment Approved	Period of Permission	Property Owner Agent of Property Owner (i.e. Developer)	Compliance with applicable official plan policies		Adjacent Property Owner	Community Development	
2	Subdivision Plan Approval	Subdivision Application Approval	Approval of proposed official plan amendment applications prior to submission of a building permit	Subdivision Approved	Period of Permission	Property Owner Agent of Property Owner (i.e. Developer)	Compliance with applicable subdivision regulations		Adjacent Property Owner	Community Development	

Landing Page / Organization Units / Programs / **Public Services** / Enabling Services

Standard Set of Program & Service Profiles

"MyTown" Emergency Care and Preventative Care Service Profile			
Service Type	• Public		
Accountable Unit	• EMS		
Purpose Statement	• Provide emergency and preventative care services to the people of MyTown through activities such as pre-hospital emergency care, community medicine and inter-facility patient transport services		
Customer	• EMS Patient • EMS Patient Family / Relatives		
Service Types	• Primary /Advanced • Critical		• Stand By special event • Stand By Emergency
Output	• EMS Emergency Care, Preventative Care, Facility Transport		
Delivery Method	• Upon Request		
Service Level	• 24/7/365		
Efficiency	•$ / Emergency Care & Preventative Care by type		
Value Statement	• improved health • reduction in mortality		• reduced pain • reduced health care cost
Effectiveness	• Response Time to Incident (Road Response Time + Process Time) • Correct Resource response time according to Call priority (90% of the time) • Percentage of Unit Hour Utilization		• Cost of Unit Hour Production • Mean Hospital Wait Time (Total Wait Time / # of Hospital Visit) •# of Public Access Defibrillators
Service Objective	• Improve the response time to life threatening calls (delta & echo) from 70% to 90% within 8:59 minutes and stated targets for alpha, bravo and charlie category type calls. • Reduce the in hospital time from 60 minutes to 45 minutes by 20012		
Community Impact	•Health Care •Public Safety		

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MRMv2 Putting it all Together

What does the MRM mean to you today?

- You can create a standard **business model** of your municipality and apply it to produce better business *plans* and *results*!
  - Based on a proven common language, usable by all stakeholders
  - Can be tailored to your needs and capabilities
  - Backed by a community of your peers providing governance, support, comparisons and best practices
  - Includes tools, training and support

Municipal Reference Model Software Implementation

Municipal Reference Model Future Directions

MISA/ASIM Canada
Guiding Principles for the Future of the MRM

1. *Enable MRM to become a widely adopted standard for municipal (government) services modeling*
2. *Ownership to remain with MISA/Canadian Public Sector (could be Joint Councils/ICCS in the future)*
3. *Core concepts to be freely available through Creative Commons type of licensing*
4. *Maintain alignment with other orders of government in Canada;*
5. *Not-for-profit. Any revenues would be applied to cover costs for support, further development*
6. *Admit and encourage private sector participation to develop complementary tools and services.*
7. *Vendor/technology neutral – MISA will partner with any vendors to provide technology implementations, training or support, based on mutually beneficial terms*

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MRM Next Steps

1. *Finalize and publish MRM materials*

2. *Create MRM web/collaboration site*

3. *Promote and support collaboration among existing and future MRM users*

4. *Further develop MRM content, through expert working groups*

5. *Promote and integrate MRM concepts into national and international standards – e.g.*
   - *ICCS Service Management and Certification*
   - *TOGAF and BMM*

6. *Foster and promote private sector participation and related services (software implementations, consulting, training)*

QUESTIONS