Designer Stream

Telling Canada's
story in numbers

CANADA 150

What are the challenges?

Robert McLellan
Chief Enterprise Architect

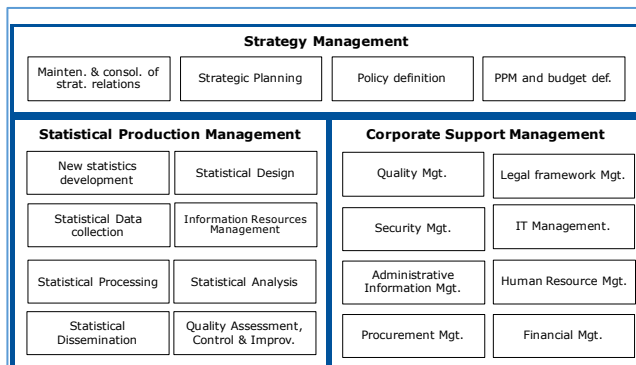July 3, 2017

Canada

Scenarios

- Investors have identified a new business capability to be created
- Investors have identified the need to modify an existing capability
- Subject Matter and/or Methodology has been at a conference and found an exciting new capability
- IT has found an opportunity to simplify and/or alternatively source some components in your statistical production environment
- Innovation and/or data science staff have identified some interesting new opportunities
- A new set of data sources has been identified – what can we do with them?
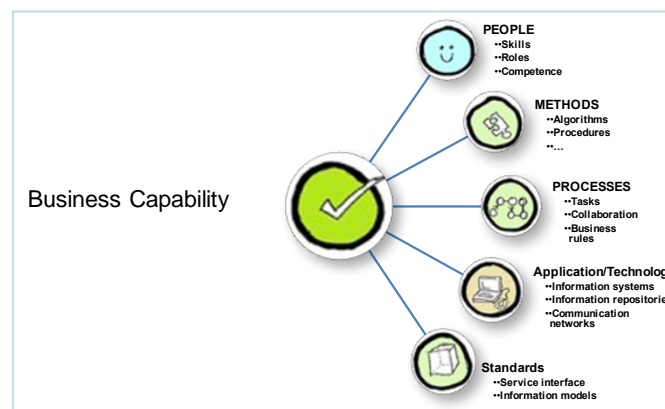- New partners have come in with exciting new needs for statistical insights
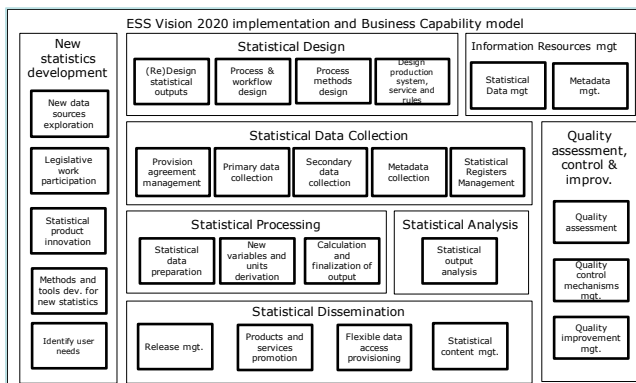
Now what do you do ? (1)

- What business functions are being affected?
- Is it a new one? An existing one?

Strategy Management			
Mainten. & consol. of strat. relations	Strategic Planning	Policy definition	PPM and budget def.

Statistical Production Management		Corporate Support Management	
New statistics development	Statistical Design	Quality Mgt.	Legal framework Mgt.
Statistical Data collection	Information Resources Management	Security Mgt.	IT Management.
Statistical Processing	Statistical Analysis	Administrative Information Mgt.	Human Resource Mgt.
Statistical Dissemination	Quality Assessment, Control & Improv.	Procurement Mgt.	Financial Mgt.

ESS Vision 2020 implementation and Business Capability model

New statistics development	Statistical Design				Information Resources mgt	
New data sources exploration	(Re)Design statistical outputs	Process & workflow design	Process methods design	Design production system, service and rules	Statistical Data mgt	Metadata mgt.

	Statistical Data Collection					Quality assessment, control & improv.
Legislative work participation	Provision agreement management	Primary data collection	Secondary data collection	Metadata collection	Statistical Registers Management	Quality assessment

	Statistical Processing			Statistical Analysis		
Statistical product innovation	Statistical data preparation	New variables and units derivation	Calculation and finalization of output	Statistical output analysis		Quality control mechanisms mgt.
Methods and tools dev. for new statistics						

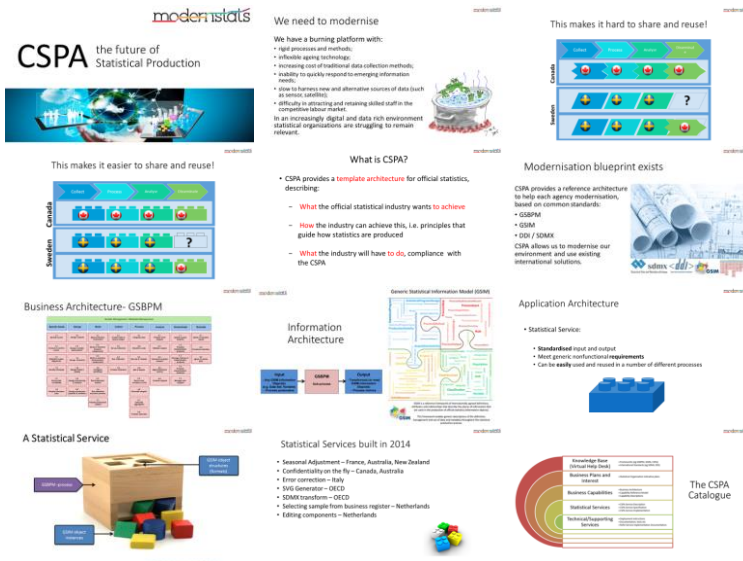|	Statistical Dissemination					
Identify user needs	Release mgt.	Products and services promotion	Flexible data access provisioning	Statistical content mgt.		Quality improvement mgt.

- Will there be people changes?
- New or different methods?
- New or different processes?
- New applications or technologies?
- What standards do I need to follow or take advantage of? (e.g. SDMX, DDI, …)

Business Capability

PEOPLE
··Skills
··Roles
··Competence

METHODS
··Algorithms
··Procedures
··…

PROCESSES
··Tasks
··Collaboration
··Business rules

Application/Technology
··Information systems
··Information repositories
··Communication networks

Standards
··Service interface
··Information models

Now what do you do ? (2)

- I've identified that I need a new business capability
  - New roles, processes
  - New components
- Is there something in the CSPA catalogue that I can use?
- If I create something new, can I co-create it with others?
- Is this something that others in the broader statistical community can use?
  - Other government departments in my country
  - Private sector and/or citizens
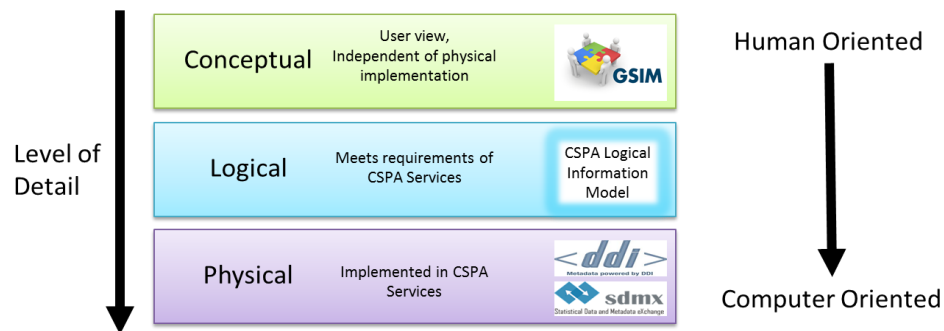 - Other statistical agencies
  - Global community, Academic community
  - Cloud community

I need a statistical component

- What is the service definition?
  - What conceptually does it do?
  - What logically does it do?
  - What information flows in, out?
- What is the service implementation?
  - What do it's interfaces need to look like?
  - How is it integrated (orchestrated) into my production processes?
- Resources:
  - ESSnet BCM
  - GAMSO
  - GSBPM
  - GSIM
  - CSPA LIM
  - Methodology Architecture
  - CSPA Catalogue
  - Other catalogues
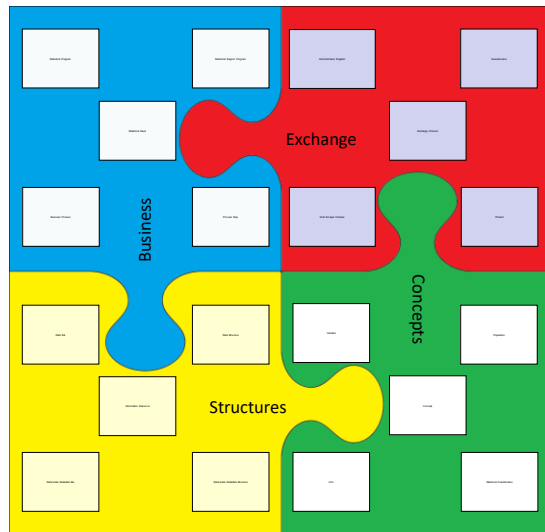 - Agency references
  - Other disciplines, domains
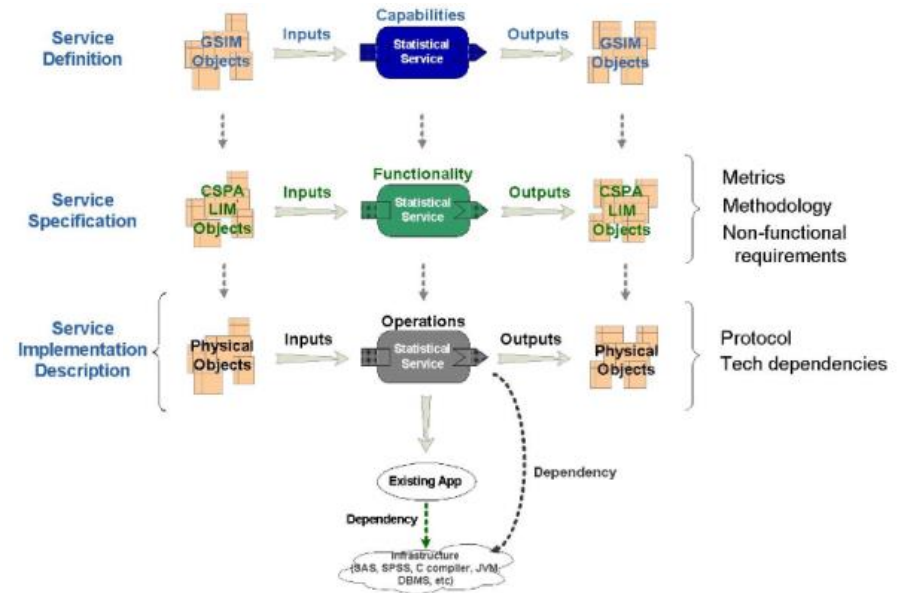
Levels of the Conversation

- The business (subject matter, methodology) conversation occurs usually at the conceptual level

- Business and Architecture discuss at the logical level to ensure that what is imagined conceptually is clearly map-able to the digital domain

- Architecture and service implementation / assembly will have to agree at the physical level how the digital pieces go together to meet the business intent
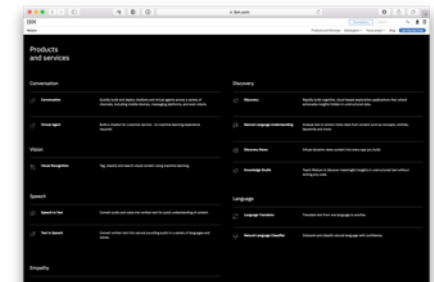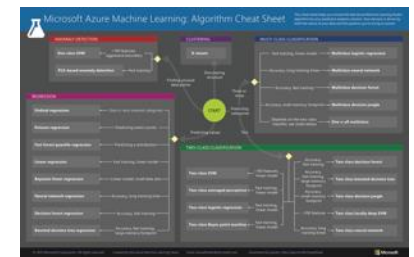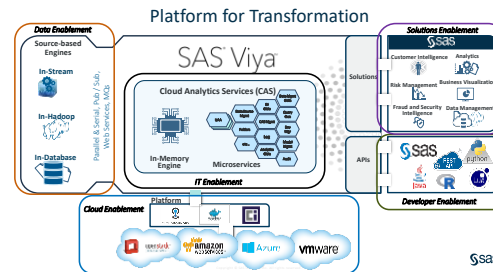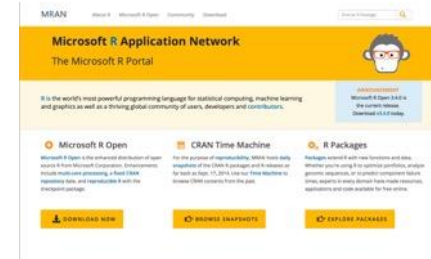
Component identification

Alternate Path

- I've found some cool CRAN modules…or SciKit…
- How do I incorporate them in my environment?
  - Or MLK…
  - Or SAS…
  - Or Watson…
  - Or MS / AWS platform services…
- How do I integrate it?

- Does CSPA play here?

Conceptual Component Architecture

Source Types
- Business Data
- Geo/Imagery
- Scientific Data
- Multimedia Data
- Data Streams
- Crowdsourced Data
- Big Data

Integrated Data Logistics
- Data Streaming
- Data Acquisition
- Data Ingestion
- Data Cleansing
- Data Movement

Data Consumption and Value Extraction

| Data Mining | Data Prospecting | Data Visualization | Communities of Practice |
| High Performance Processing | Data Analysis | Machine Learning | Data and Software Collaboration |

Data Management and Provisioning

Data Exploration	Search / Discovery	Governance	Auditing / Reporting
Data Transforming	Data Delivery / Subscriptions	Data Security	Privacy Management
Indexing / Cataloguing	Data Integration	Data Linkage	Data Supplier Management
Metadata Management	Data Enrichment	Data Management	Identity & Authorization

Data Lake (heterogeneous data formats and types)

Hybrid Cloud / Enterprise Data Centre Infrastructure

Data Users

Data Platform