Enterprise Architecture and Cloud Computing Briefing

March 28, 2014

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

Agenda

- Why Enterprise architecture
  - EA @ CDC
  - EA Hot Topics
- Enterprise Architecture Solution Stories
  - Examples
- Shared Services briefing
- Open data initiatives
- Cloud Computing
  - How to access readiness
  - How to move to cloud

EA Value Proposition

ROLE OF THE EA TEAM	ACCOMPLISHMENTS
❖ Applying EA principles and practices to help align technology to Program goals and objectives. • Capturing business architecture components (e.g., strategy, operations, core capabilities) to form a basis for IT portfolio assessments • Identifying opportunities to leverage new technologies such as cloud and mobile • Developing target architectures and related transition plans ❖ Fostering collaborative discussion among Programs to facilitate adoption of common approaches, architectural components, and standards enabling greater integration or consolidation ❖ Providing advice and counsel to program owners and project teams on: Project reviews, at all points in the life-cycle, to help promote more efficient and less costly solutions • Opportunities to better leverage innovative technology practices • Potential solutions that can be considered for meeting existing business needs • Architectural modeling to reduce complexities of cross-organizational collaborative planning and development ❖ **Coordinating special CDC-wide initiatives such as Open Data, Shared Services, etc.**	✓ **Working with select Programs to map IT investments, gaps, and opportunities to required core capabilities** ✓ Rigorous IT portfolio reviews resulting in the retirement of numerous systems over the last several years ✓ **Development of the EA Critical Partner network and guidance to foster success for the EA discipline across CDC** ✓ **Supported successful IT project, program, & portfolio management across CDC earning the distinction of a leader for HHS** ✓ **Identified and cataloged ~70 shared services across CDC and ~13 offered as HHS-wide services through CDC Shared Services initiative** ✓ Completed successful CDC Grants Management systems review, contributing to CDC initiative to migrate from NIH's IMPAC II to ACF's Grant Solutions as a more comprehensive and integrated grants full life-cycle system ✓ Executed North American Public Health Alerting initiative (Mexico, Canada, U.S.) pilot, using the National Information Exchange Model (NIEM)

Highlights of Current Activities

CDC Programs

- Architecture review for NCHS
- Business Architecture with NCCDPHP
- Solution Architecture for NIOSH
- Architecture support for NEPHTN, NCEH/ATSDR
- S3P

CDC Wide

- Shared Services Initiative
- Open Data Initiative
- CIOs' EA Critical Partner training and Engagement
- CPIC Investment Review support
- Grants Management Systems Analysis
- Electronic Records (eRM) Management analysis
- Annual CDC PortfolioStat support
- Support to CIO EA CPs in EPLC StageGate reviews
- Laboratory Architecture

HHS Agency

- EA Maturity Assessments
- HHS Roadmap
- HHS eRM
- HHS Shared Services

Enterprise Architecture Solution Stories

Current State Assessment/Roadmap

OBJECTIVE

Improve the timeliness, accuracy, and consistency with collecting and processing the nation's official vital statistics - births, deaths, marriages, divorces, and fetal deaths. The process involves enormous amount of data, very different source systems and processes, formats, values, etc. Complicated further by fragmented flows of information and overly manual processing.

Program sought to assess current state capabilities relative to goals and objectives and to create a roadmap of strategic initiatives – technology and process – that address gaps and opportunities. A business focused, end-to-end consideration of improvement opportunities.

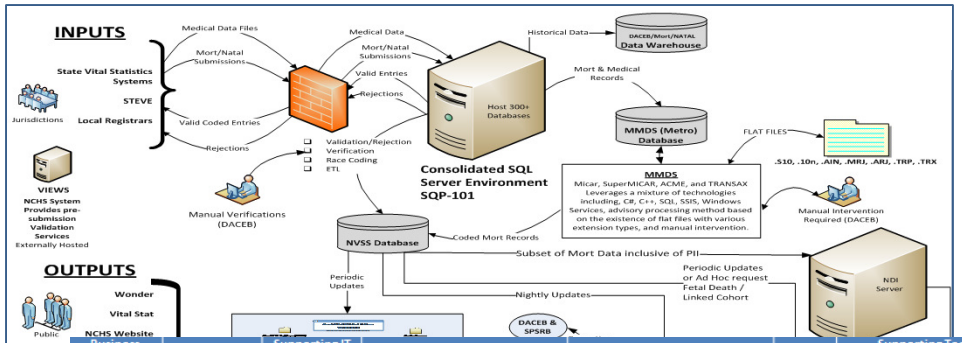
ACTION

The EA team worked closely with Informatics, the Division Lead, and the Integrated Project Team (IPT) to understand goals, objectives and key capabilities. For each capability, the team analyzed the supporting processes and enabling technologies, identifying issues, gaps, and opportunities for improvement.

RESULT

A formal report and roadmap with detailed, prioritized findings, and associated recommendations

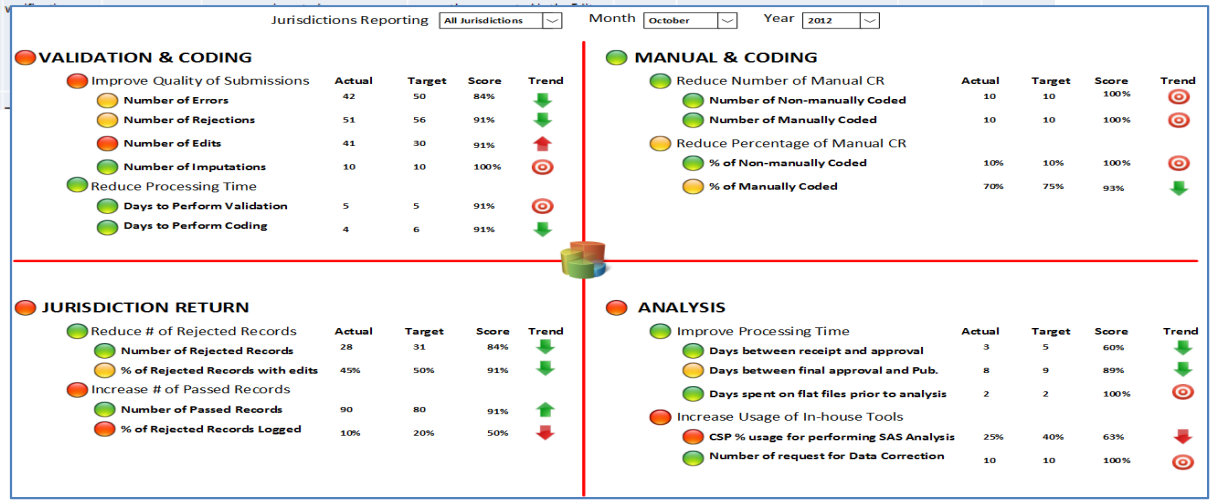
Current State Assessment/Roadmap



Documented Information Flows

Business Capabilities	Target	Supporting IT Systems	Learned Discoveries	Opportunities	Priority	Supporting Technologies (Current & Future)	DVS Process Branch	Customer
Submissions	Consistent timeliness and uniform quality of submissions from the jurisdictions.	Views SAM SDN STEVE PHIN-MS NVSS DB	Inconsistent submission formats Inconsistent timing of submission from the jurisdictions "STEVE" system being used by two jurisdictions	Expand adoption of standardize formats by the jurisdictions Expand adoption the automated submissions (STEVE) Employ an incentive payment scheme policy to jurisdictions based on timeliness and data quality	High	"STEVE" system "Views" Conversion to standardized transmission formats i.e. XML Environment Virtualization Leveraging Secure Cloud infrastructures	DACEB	DACEB, SPSRB
Validation	Minimal requirement for manual intervention for performing field	RVEIR NVSS DB	Manually handled data verification processes still being employed for some submissions Errant field data is tracked and in	Ability to implement a standardized rules validation engine with built in workflow notification Statistics for errors and corrections	Med	MS SQL SSIS Environment Virtualization	DACEB	DACEB, SPSRB RSB

Opportunity Assessments



Recommendations – e.g., Performance Score-carding

Business Architecture

OBJECTIVE

Strengthen alignment between Program strategy and Information Technology (IT). As a first step, assess how IT resources are aligned to the core business capabilities that are key to achieving strategy. Management wanted a business focused way to quickly identify redundancies, weaknesses, and gaps with IT alignment.

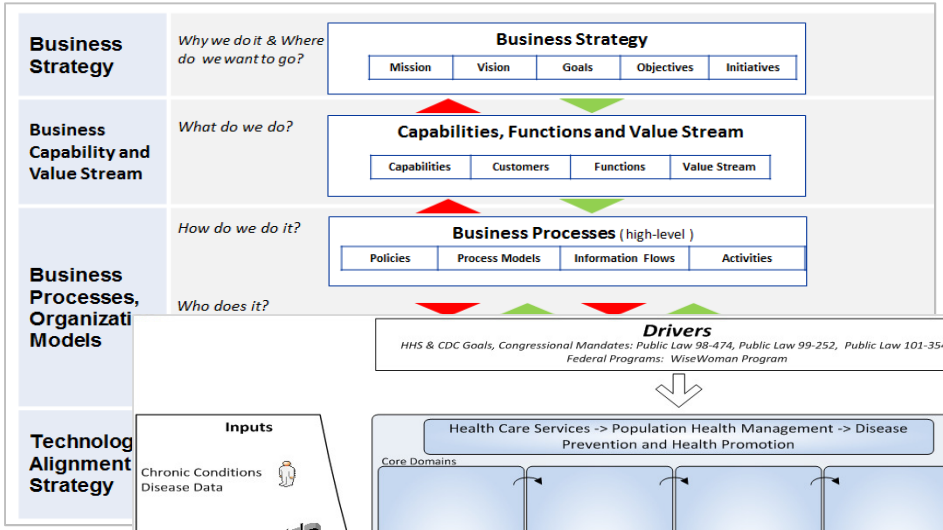
ACTION

EA met with the Informatics team. Value chain analysis and capability mapping were performed. Capability maps provided a graphical way of showing the relationship between business strategy, core capabilities, and the deployment of resources – current state and envisioned future state. A well constructed map makes evident redundancies, weaknesses, gaps and becomes an "anchor" diagram for business and IT management to formulate a common vision and drive to well aligned investments.

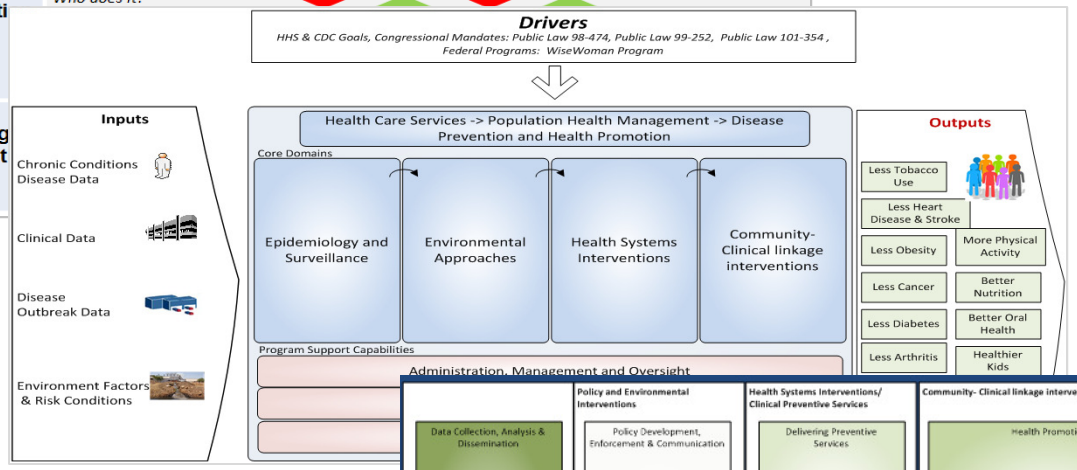
RESULT

Business architecture deliverables have provided an effective IT and business planning tool.

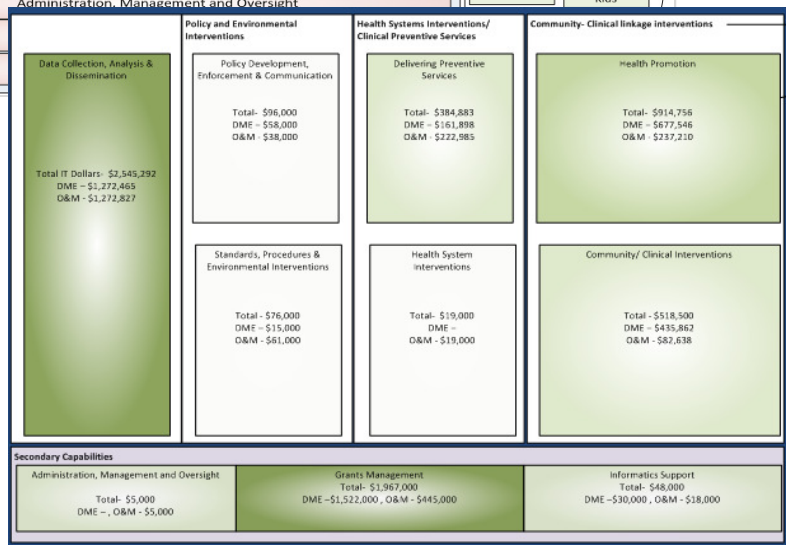
Current State Assessment/Roadmap



Business Architecture Framework



Value Chain Analysis



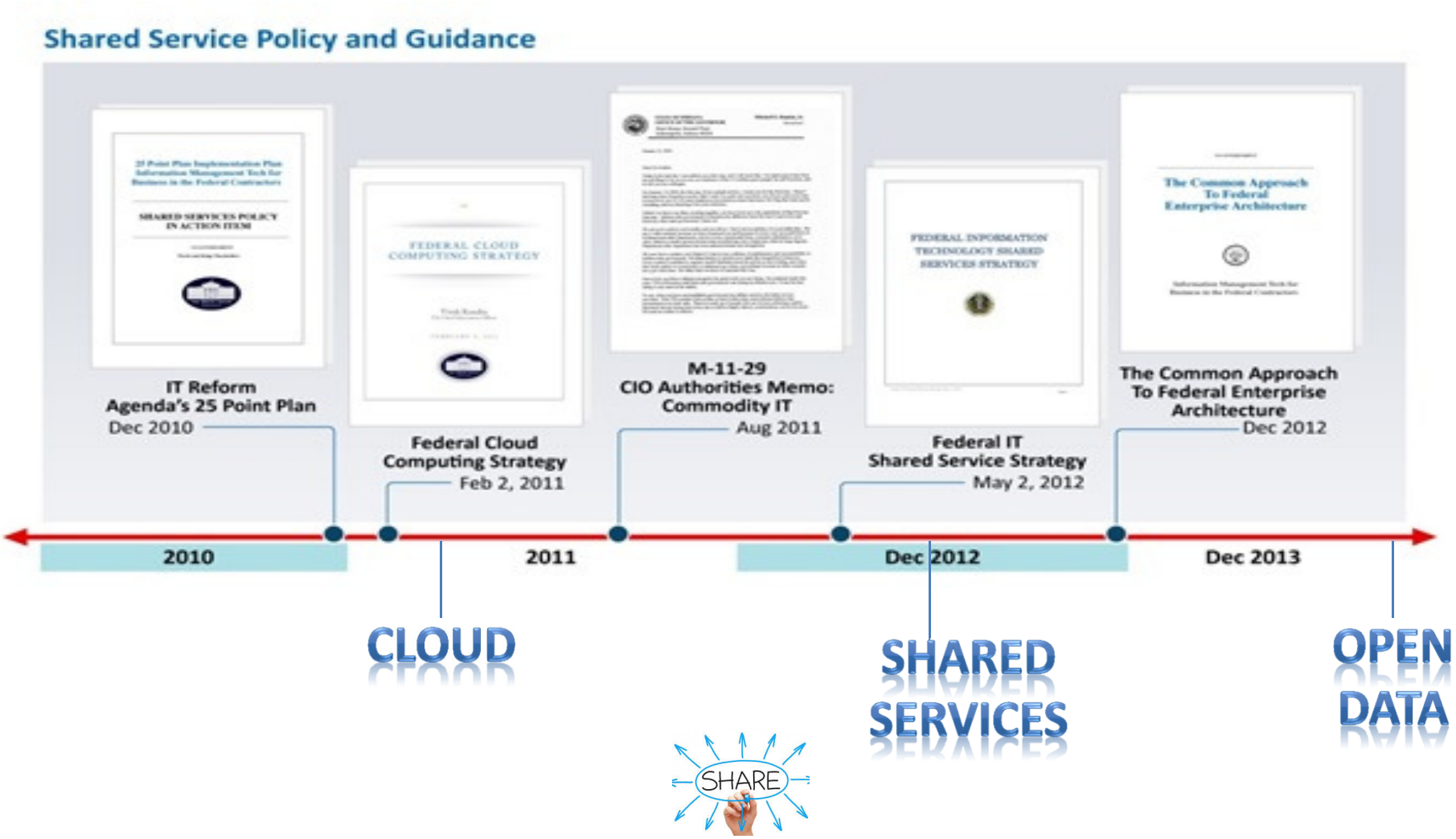
Capability Mapping

Share Services + Open Data

Enterprise Architecture
5- minutes briefing

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

“Increasing Shared Approaches to Information Technology Services”



CDC Shared Services

Strategy

- Concept of Operations
- What should we share?
- How should we share?

IRGC's Shared Services Subcommittee

Shared Services Portal + CATALOG

- Currently, over 80 services

EPLC

- How to find and leverage shared services in my projects?
- How to engage service providers?

Communication

- How to communicate the concept?
- How to be a shared services provider?
- What should rather be a shared service?

Shared Services Portal + Catalog

CDC SHARED SERVICES PORTAL

Frequently Asked Questions

What is a Shared Service?
A shared service is an asset that is provided by one organization and consumed by multiple organizations (Internal or External) with the objective of leveraging existing services to "*Innovate with Less*".

What is NOT shared service?
Services provided by an organization and not available to be used by other organizations should not be considered as shared services.

What are the different types of shared services?
There are two main types of shared services: User services and System services. User services are provided directly to an organization or user(s) whereas the System services are provided by an IT system/Service to another IT system/Service.

Reference Links:
- Shared Services Fact Sheet
- M – 12-10 Shared First
- Executive Order
- Open Data Mandates....

Shared Services Success Stories

CDC Wonder has been used by 12 programs to publish large surveillance data sets for accessibility to public

With **CDC WONDER** you can: - Access statistical research data published by CDC, Query numeric data sets, publish Public-use data sets about mortality (deaths), cancer incidence, HIV and AIDS, tuberculosis, vaccinations, natality (births), census data and many other topics are available for query, and the requested data are readily summarized and analyzed, with dynamically calculated statistics, charts and maps.

Download 1-Page Profile →

Shared Services Catalog

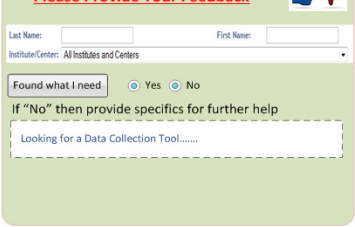
Tagged Services

For illustration

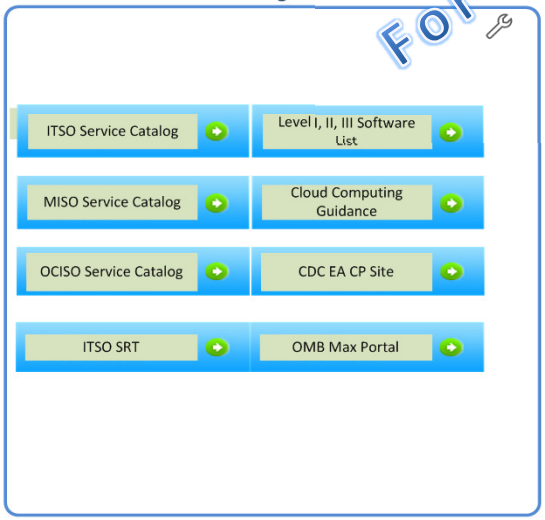
Upcoming Shared Services Events:

- Shared Services Governance Meeting – Feb 25, 2014
- EA CP training – March 31, 2014
- ...
- .....
- .....

Please Provide Your Feedback



Service Catalog References



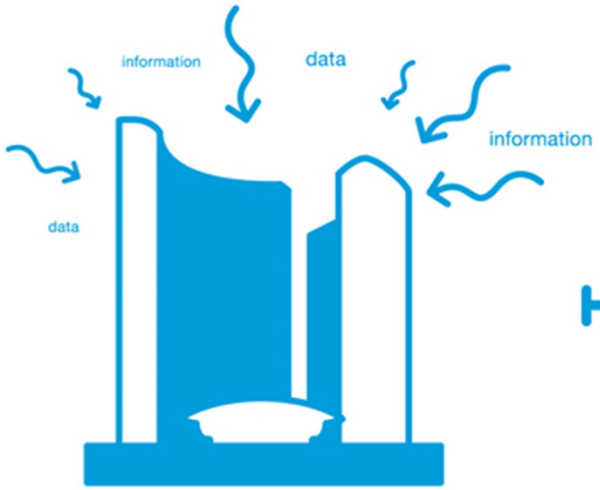
Reusable Components

Reusable Component	Description	Download	Point of Contact
SurveyProject	This is open source Survey tool based on .Net framework. This is used at NIOSH and other CJ/OIs for web based survey needs	surveyproject.org	TBD
IAM Authentication Service	This component provides a two point authentication through XII for systems at CDC	TBD	TBD

Refer a New Reusable Components

Reusable Component	
Description	
Where to Download	
Point of Contact	

Open Data – Concept
In a nutshell



CDC Shares Data Online

Citizens benefit from app

Citizen translates data into app