

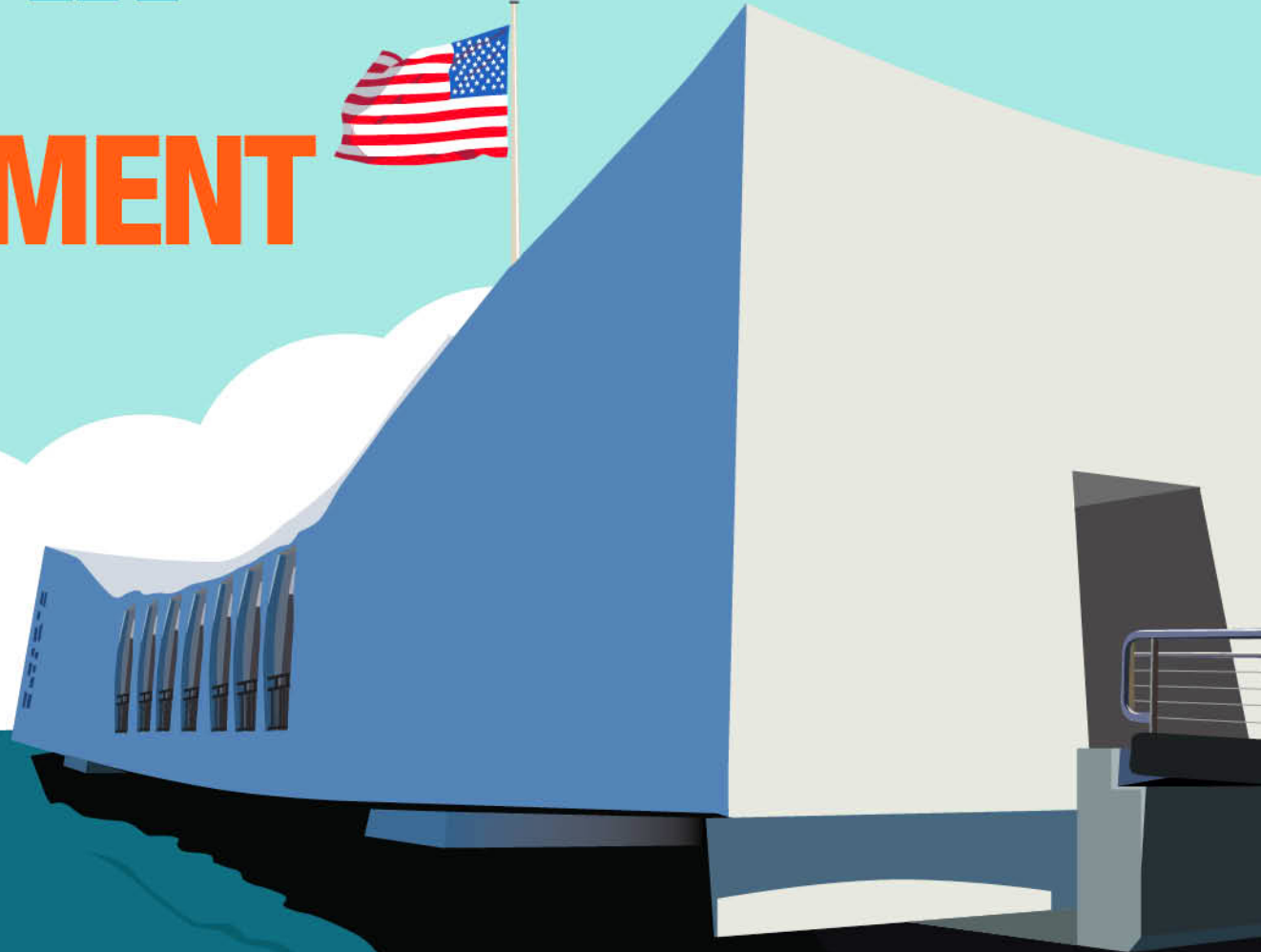
**GOVERNMENT TECHNOLOGY<sup>®</sup>**

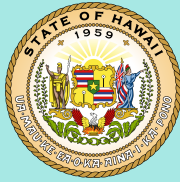
**HAWAII**

**DIGITAL  
GOVERNMENT  
SUMMIT**



**HONOLULU  
HAWAII  
NOVEMBER  
TWENTY-FIRST  
2013**





# T8: Leveraging Legacy Applications

## Technology Transformation

Establish a Reliable and Secure Infrastructure

Moderator:

**Keone Kali**

Deputy CIO, Operations

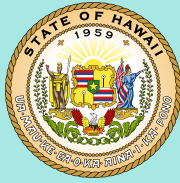
Office of Information Management & Technology



- **Session Focus**

- Given an uncertain financial outlook, IT shops will (again) be asked to do even more with even less. And a good place to start is with core enterprise applications and software platforms. There are multiple ways to approach the modernization process. This session focuses on trends, possibilities, tools, techniques, resources and alternatives for transforming legacy systems.

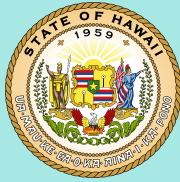
**T8: Leveraging Legacy  
Applications**



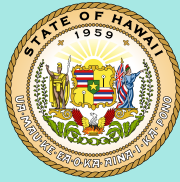
David K. Keane

CIO

Department of Human Resources Development

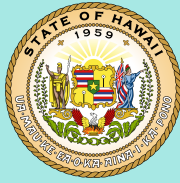


- **ERP Implementations – PeopleSoft Human Resources Management System (HRMS)**
  - 2000 v6.0
  - 2004 v8.3
- **Support/Maintenance Mode from 2004 – Present Day**



## Challenges

- Aging hardware and software (many no longer supported)
- Insufficient operating funds
- Reductions in staffing due to RIF, outside promotions, reallocation of resources



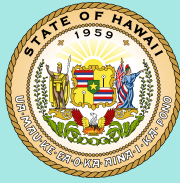
## Solutions

- We are getting out of the Hardware/Sys Admin Business
- We plan to fully participate in OIMT's Shared Services Catalog Initiative
- Refocus our efforts and resources on our core business – Human Resources



Mahalo!





Allan Stone  
Director, Information Systems  
Department of Education



## Session T8: Leveraging Legacy Applications

- **Background**
  - DOE's Budget System and Financial Management Systems:
    - ~ 25 years old
    - on different legacy platforms
    - very limited integration between them
- **Problem:**
  - How to make useful data available to a wide range of users from 25 year old legacy, but mission critical financial systems?

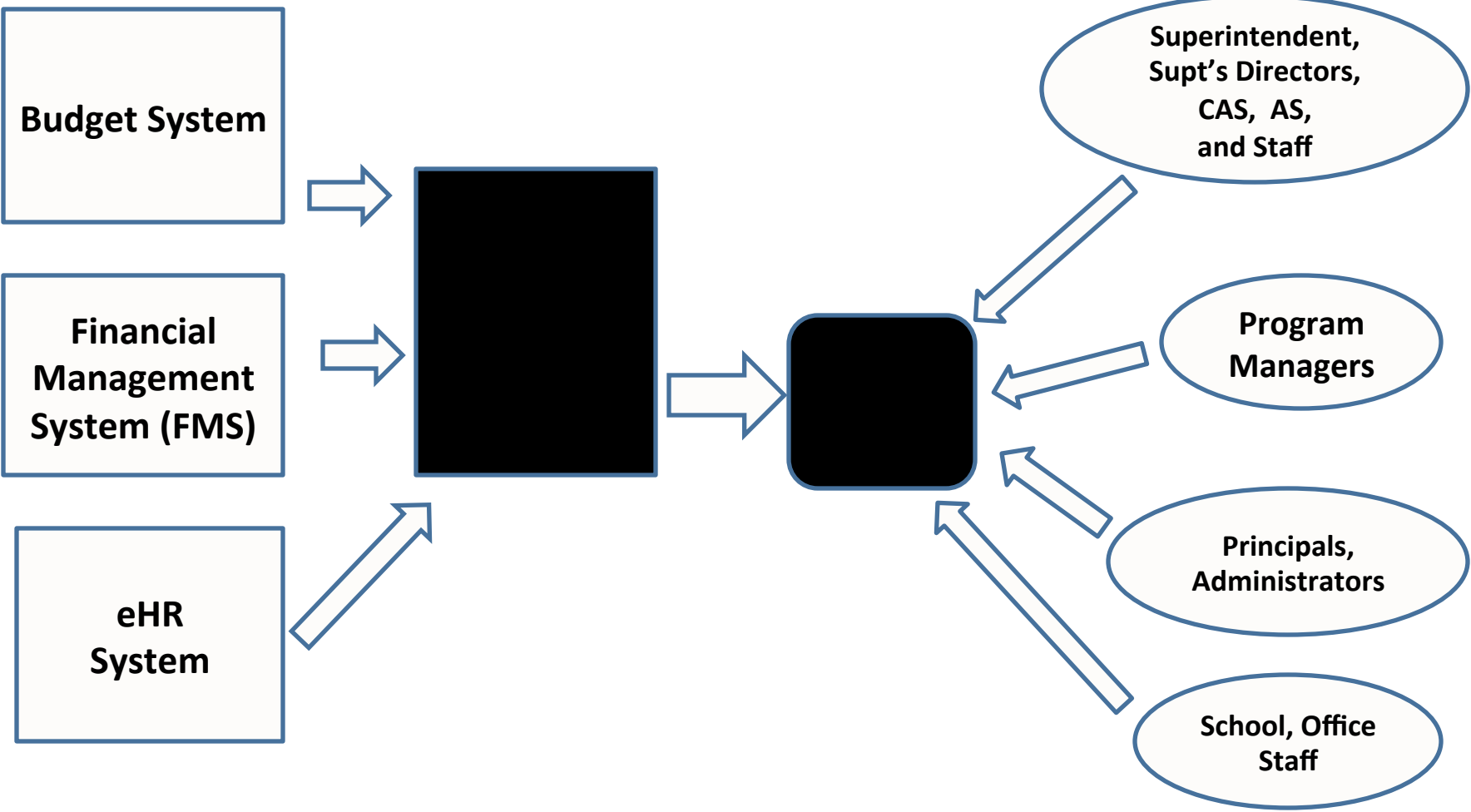


- **Solution**

- Build a modern Financial Reporting System (FRS) on top of the older systems which:

- integrates disparate data
- provides selectable financial reporting capabilities
- supports all levels of the organization
- provides granularity from aggregate to drill down
- provides timely and complete information
- is adjustable to specific audiences

# Web-Based Financial Reporting System (FRS) Simplified Diagram





- **FRS Data Sources:**
  - Financial Management System
    - (IBM Mainframe w/DB2 database)
  - Budget System
    - (Digital VAX/Alpha w/RDB database)
  - Human Resources System
    - (HP Intel Xeon servers w/Oracle database)
- **FRS Technology:**
  - SQL Server 2008
  - SQL Server Integration Services (SSIS)
  - SQL Server Reporting Services (SSRS)
  - FRS served to users through a SharePoint portal



- **Reports are Dynamically Generated (not “canned”)**
  - Based on filters selected by user
  - Can be exported to Excel or PDF
- **Report Filters Selectable by Users**
  - “As Of” Date
  - Means of Finance (MOF)
  - Organization Level
    - School or Branch
    - Complex Area / Office
    - DOE State
  - Organization ID
  - Program ID



## Examples of Reports

- Monthly Financial Report

- Based on user-selected options
- Provides a cumulative graphical depiction of the progress through the fiscal year of budget and expenditures.
- Provides current-month, and year-to-date budget and expenditures.



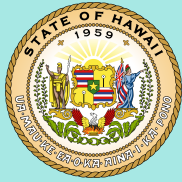
- **Summary of Key Accomplishments**
- **Among many other features, FRS makes it easy for users to determine:**
  - How have budgets been allocated?
  - How much has been spent, compared to budget?
  - What were the funds spent on?
  - What are the current balances?
- **FRS has been available and providing services to users for the past three years.**

*T8 Leveraging Legacy  
Applications*

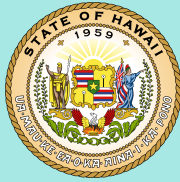




- **Current/Future Development Areas**
  - Building Phase III Reports
  - Mapping data to Dimension and Fact tables of our Longitudinal Data System
  - Upgrade to SQL Server 2012 and SharePoint 2013



Mahalo!



Ryan Shimamura

CIO

Department of Human Services



## Extending the Life of a Legacy Application System

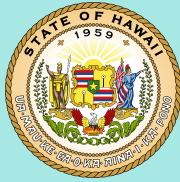
- **Conditions**

- ✓ Can the current System continue to do the Job?
- ✓ Do your users like the current System?

- **Planning to extend the life for in two mission critical Application Systems:**

Child Protective Services System

Hawaii Automated Network for Assistance

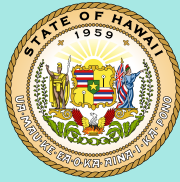


## Child Protective Services System (CPSS)

- Mainframe Based, Software AG: Natural, ADABAS
- Currently the System of Record (Captures all necessary data)
- Interfaces with Federal Partners
- Users find it hard to enter data/information
- Users find it hard to retrieve specific data/information as needed

### Solution:

- Replace Application System over time, to provide updated functionality at accelerated pace
- Plan to start with:
  - Create new front end for Data Input (Browser Based, Web Services)
  - Create new back end for Data Reporting (Data Warehousing/Extracting)
- Overtime replacing functions and eventually the database until everything is replaced

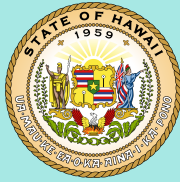


## Hawaii Automated Network for Assistance (HANA) System

- Server based application: JAVA, Database Software AG: ADABAS
- Currently the system of record (Captures all necessary data)
- User interface recently modernized
- Current users like the system

### Solution:

- Replace database with a relational database
- This will allow easier access to the data/information



Mahalo!

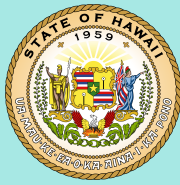


# **SOA – Services Oriented Architecture**

## **Shared Services Model**

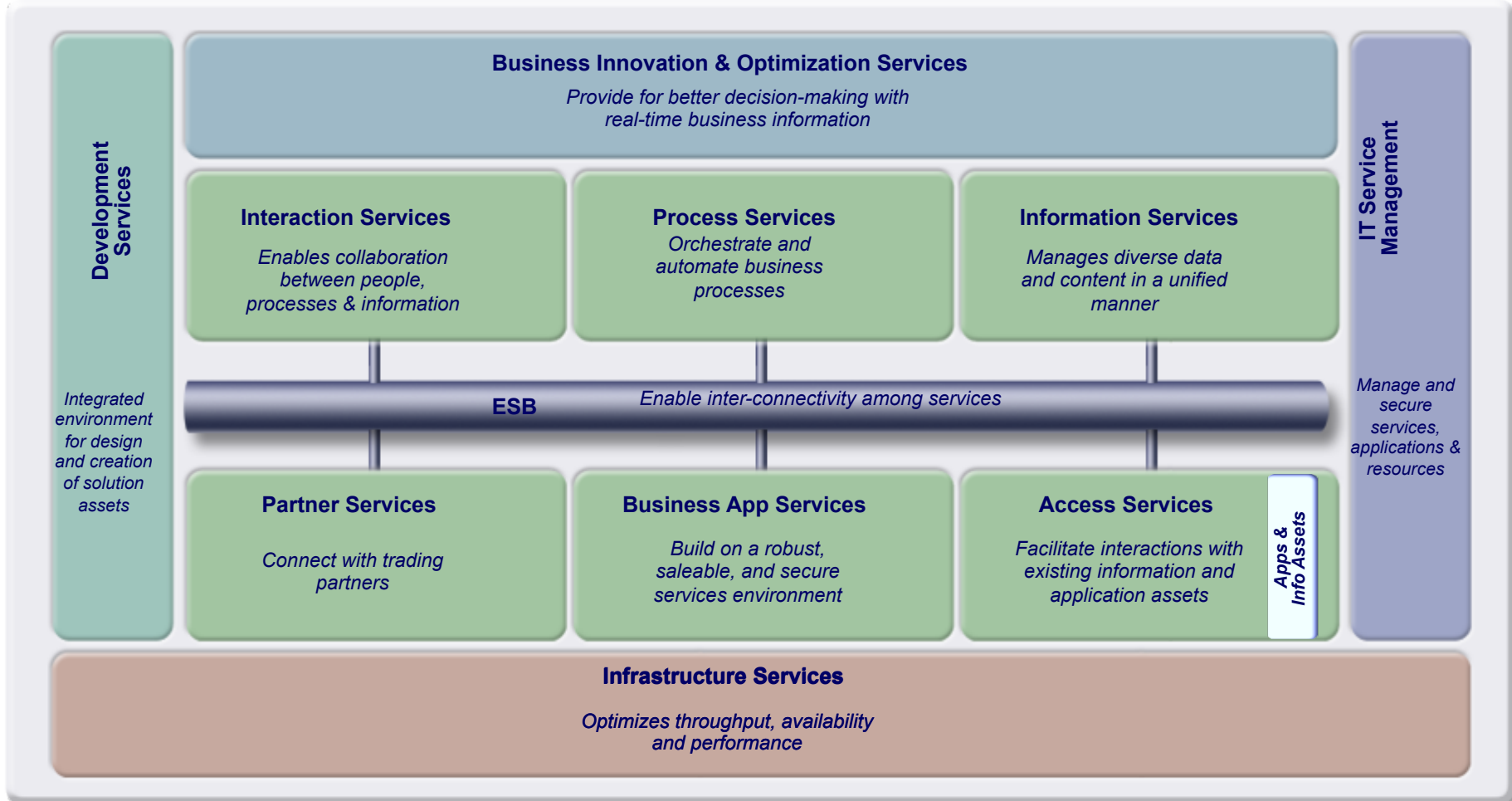
Robert Hoyt  
Healthcare Solutions Executive  
IBM Corporation



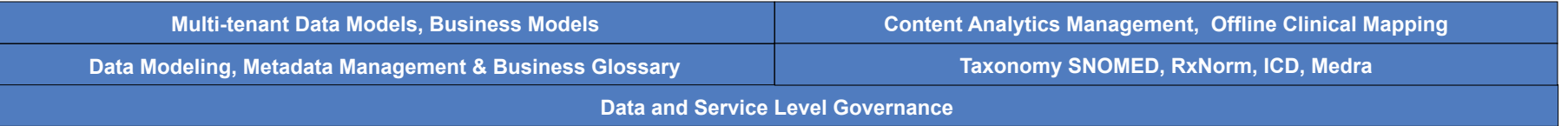
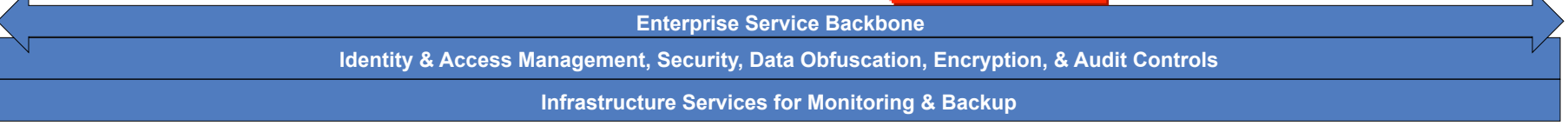
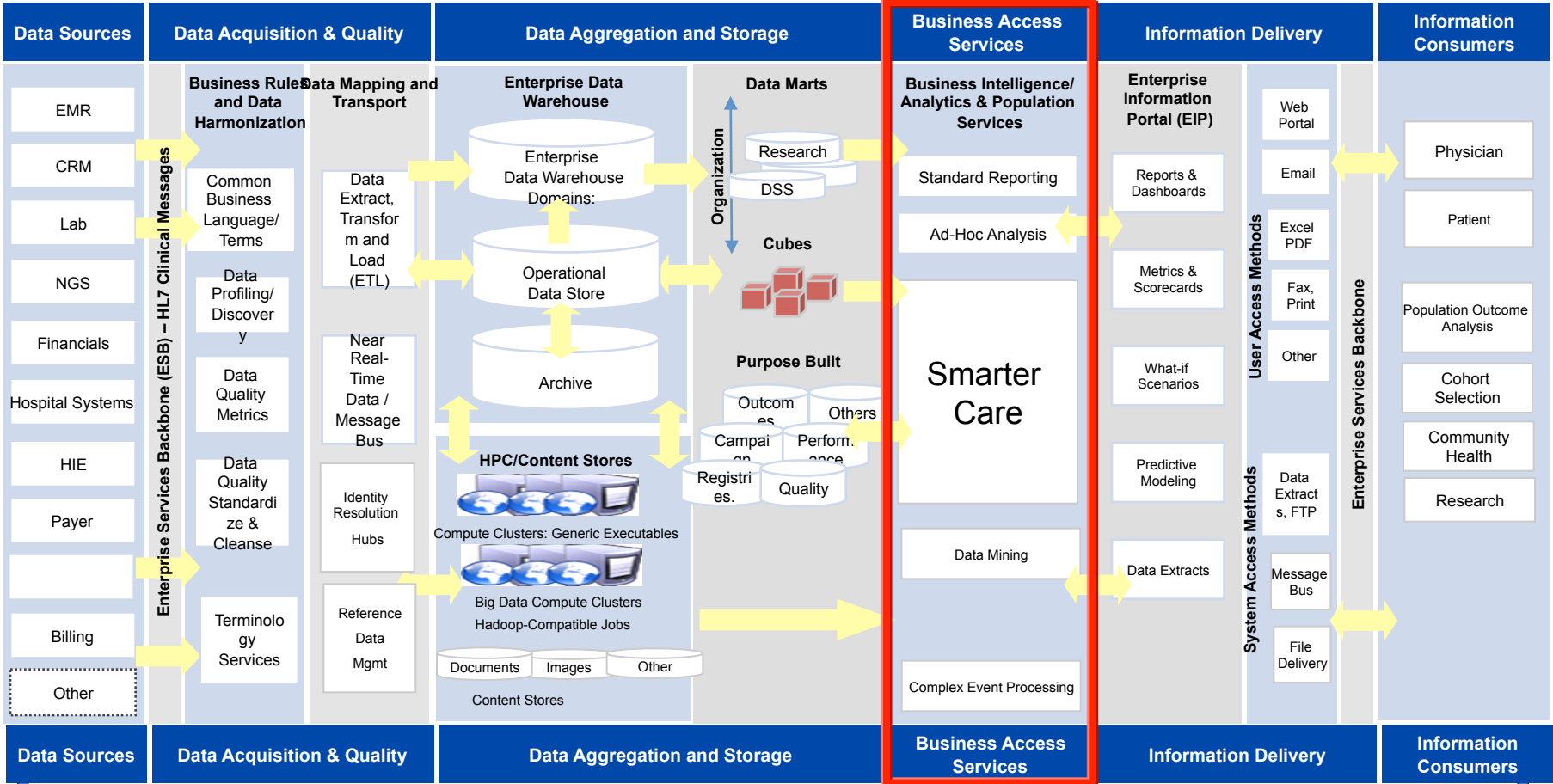


### SOA Reference Architecture

*Comprehensive services in support of your SOA*



# Healthcare Information Management Reference Architecture

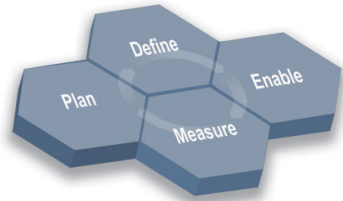


Non-Run time

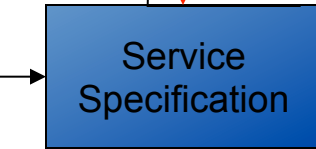




# Enterprise SOA Work Stream Summary

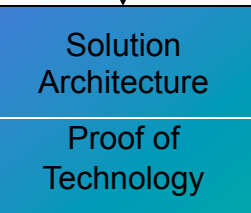


Component Model  
Business Services definitions



Business Services Implementation Roadmap

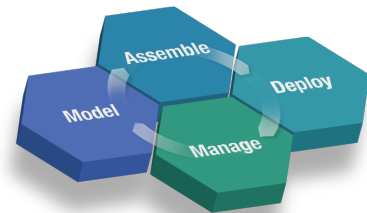
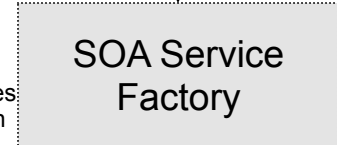
Service Design Patterns



Service Design Patterns

Services Design

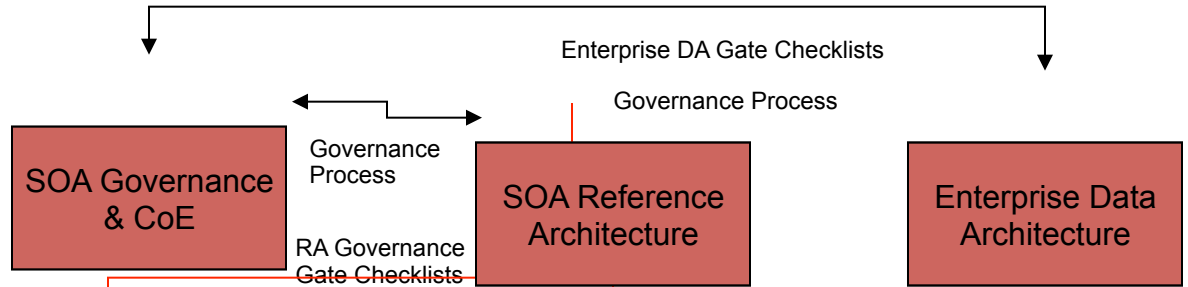
Services design



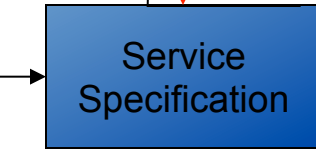
Enterprise Service Portfolio Management

Enterprise Architecture Compliance

Enterprise Data Architecture Compliance

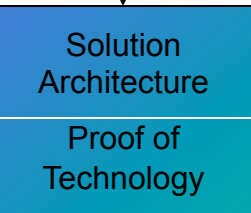


Component Model  
Business Services definitions



Business Services Implementation Roadmap

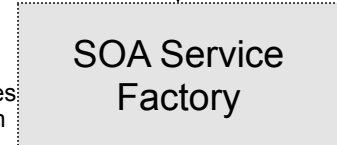
Service Design Patterns



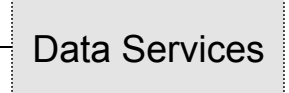
Service Design Patterns

Services Design

Services design

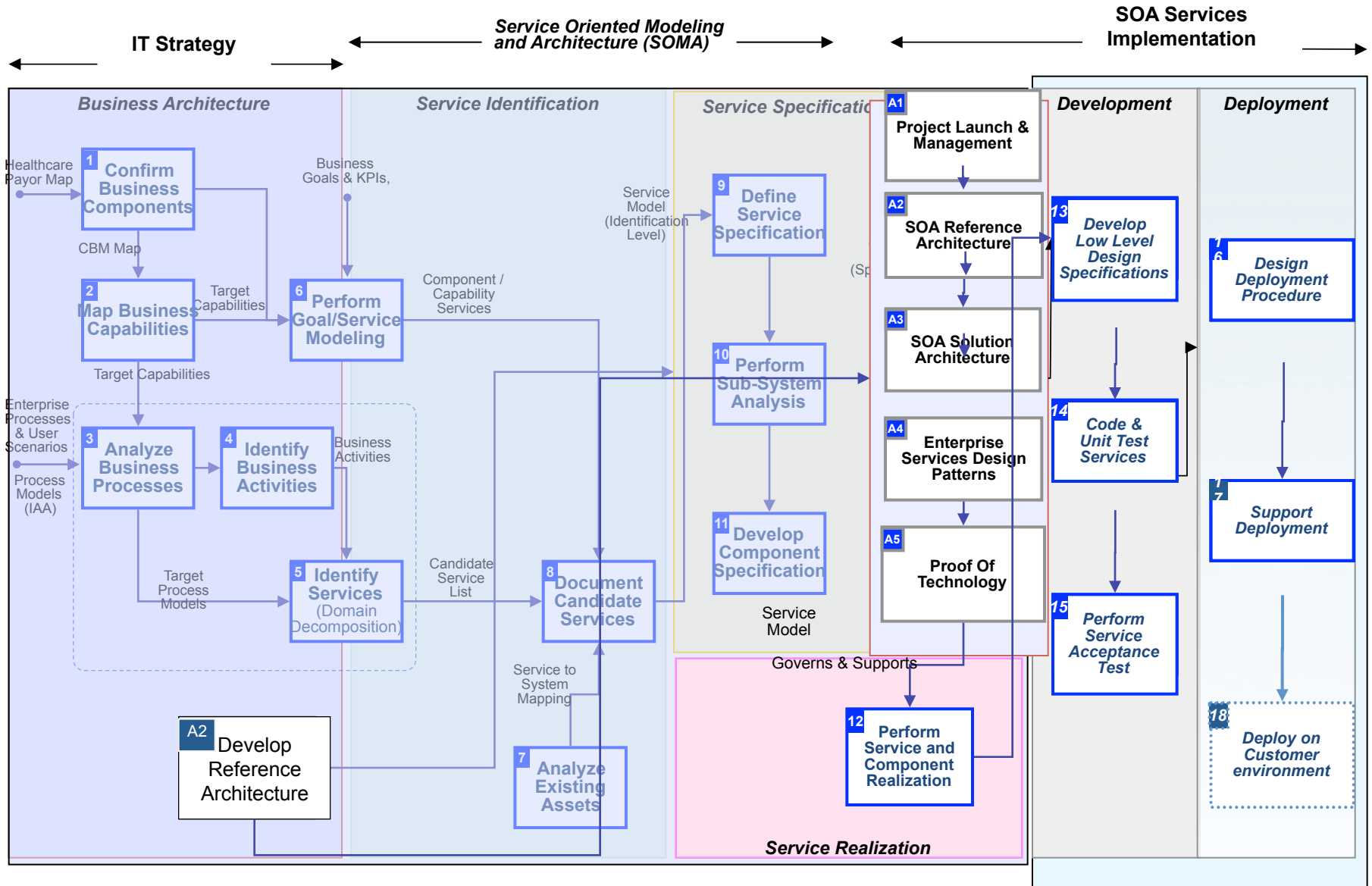


Enterprise Data Architecture

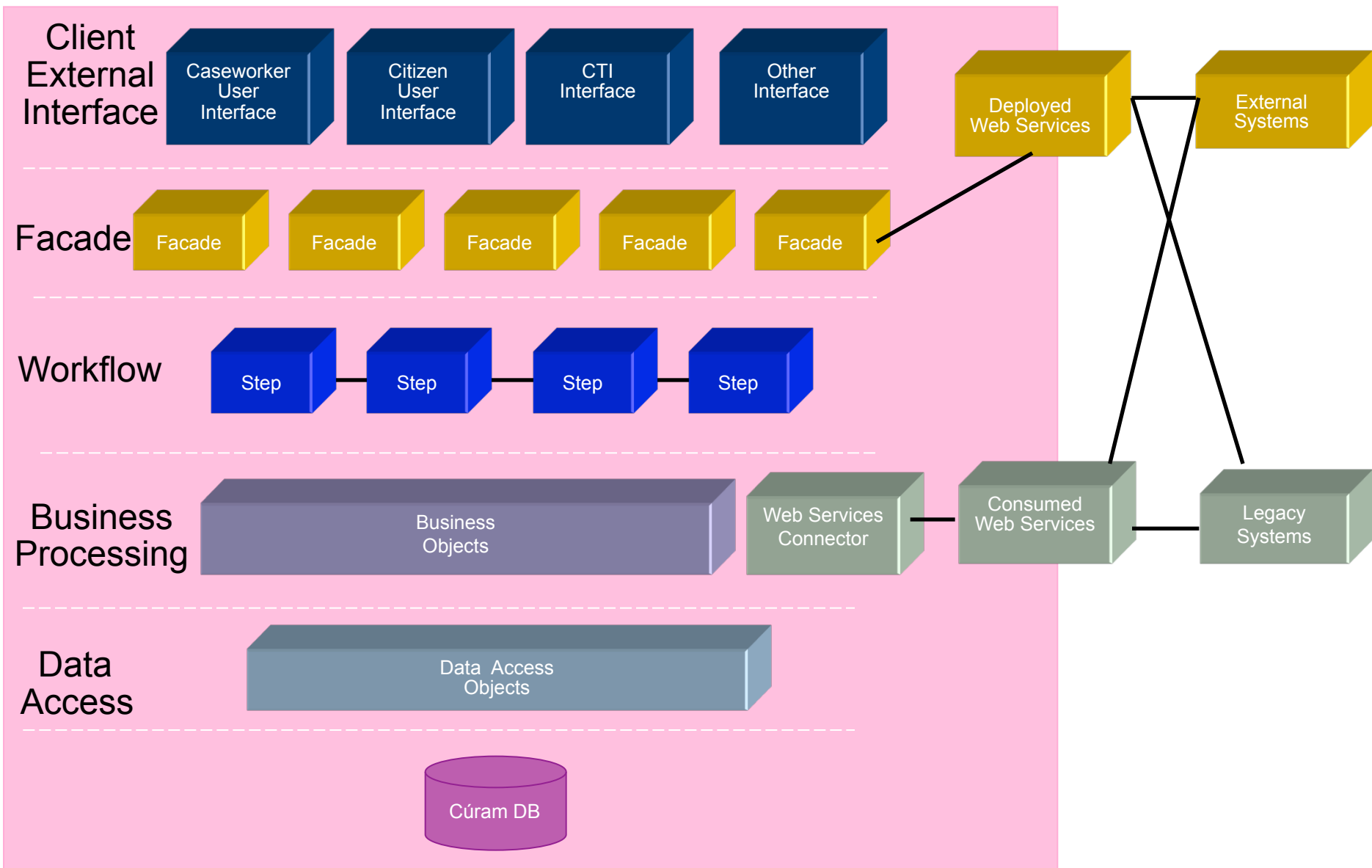


Data Services

# SOA Services Factory Approach - Enterprise SOA covers from step 1 through step 13.



# Cúram and SOA – A State-Wide Healthcare/Social Services Solution



## Linux on System z – take back control of your IT

### *A data center in a box – not a server farm*

- **Potentially lower cost of operations**
  - Less servers
  - Fewer software licenses
  - Fewer resources to manage
  - Less energy, cooling and space
- **Central point of management**
- **Increased resource utilization**
  - Shared everything architecture
- **Fewer intrusion points**
  - Tighter security
- **Fewer points of failure**
  - Greater availability

## It's simple

System z® and Linux provide a better, faster solution to IT complexity

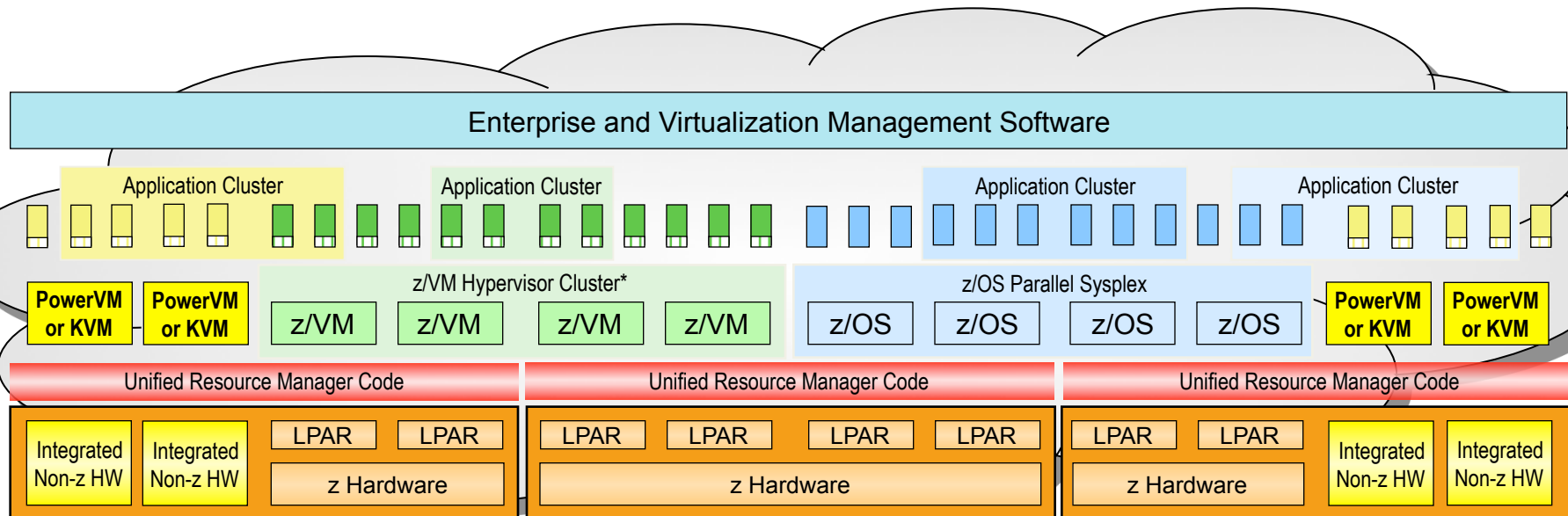


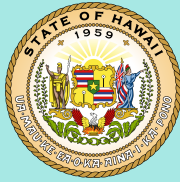


# IBM Multi-Architecture Virtualization – “Fit for Purpose”

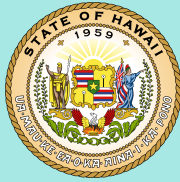
## System z Multi-System, Federated Hypervisor Configuration

- zEnterprise offers a federation of platform management functions, including:
  - Resource monitoring
  - Workload management
  - Availability management
  - Image management
  - Energy management
- Integrates with hardware management and virtualization functions
- Controls hypervisors and management agents on blades
- Open integration to enterprise-level management software





Mahalo!



- **Summary**

- Key Lesson(s) Learned and Best Practice(s)
- Next Steps
- How can you help?
- Who do you contact?

**Don M. Hongo / ICSD**