Driving Business Agility at Cardinal Health with SOA, BPM and MDM
Session Number IMD- 4092A

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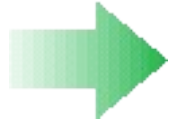   - **ibm.com**/champion

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- Enabling Business Agility with SOA, BPM and MDM
  - Integration Scenarios
- Introduction to Cardinal Health
- Cardinal Health – SOA Strategy and MDM/BPM Convergence
- IBM and Cardinal Health Innovation Engagement

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CEOs Recognize the Challenges and Opportunities as the Business Network Becomes More Dynamic
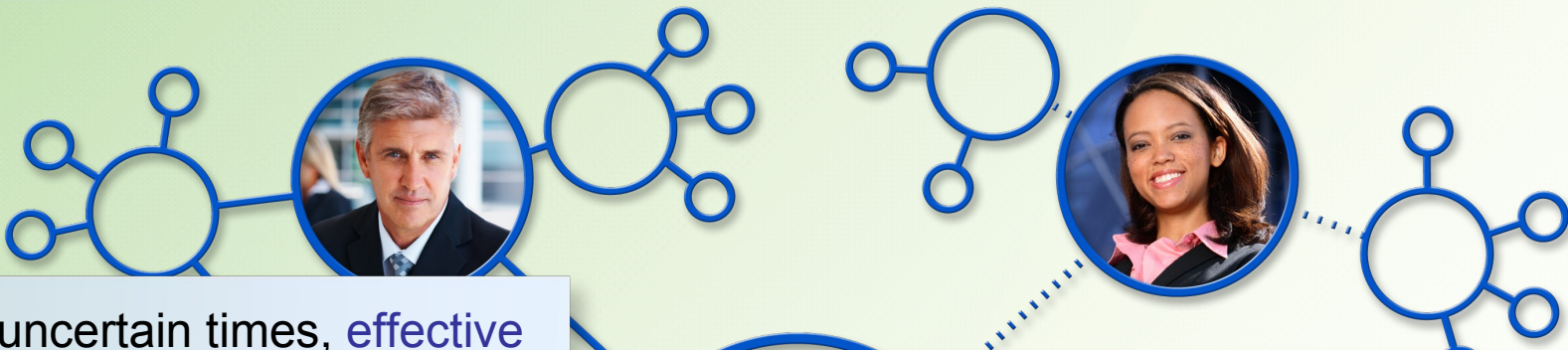
"In these uncertain times, effective and swift decision making is more important than ever."

Shuzo Sumi, President and CEO
Tokio Marine Holdings, Inc.

"Our products need to anticipate need, rather than respond to a request."

Michael D'Ascenzo, Commissioner of Taxation,
Australian Taxation Office

"The complexity over the next five years is off the charts – a 100 on your scale from 1 to 5"

Edward Lonergan, President and CEO
Diversey, Inc.

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IBM Global CEO Survey, Institute for Business Value, 2010

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What's Going to Make a Difference:

Through client transformations and market insight we have identified specific agility levers

[uh-jil-i-tee lev-erz] *noun:* combinations of technology capabilities that accelerate the path to agility with reduced cost and greater efficiency

When you are faced with planned and unexpected change?

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Business Lifecycle

Make better decisions driven by analytics and business rules

Accelerate application, service and information delivery and extend reach to cloud

Technologies

Decisions

Processes

Take a smarter approach to process and integration

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A Service

A **repeatable business task** – e.g., check customer credit; open new account

Agility Reuse

Service Orientation

A way of integrating your **business as linked services** and the outcomes that they bring

Service Oriented Architecture (SOA)

An IT **architectural style** that supports service orientation

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Take a Smarter Approach to Process and Integration

Processes Agility Levers

- Faster process change and integration
- Streamlined and automated deployment

- Enable business-led, collaborative transformation by directly linking execution to strategy

- Accelerate innovation with a collaborative, agile approach to software and service lifecycle management

- Gain insight from visibility across interconnected processes, applications, information and multi-platform systems

Technologies

Decisions

Processes

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Technologies Agility Levers

Technologies

- **Accelerated application delivery**
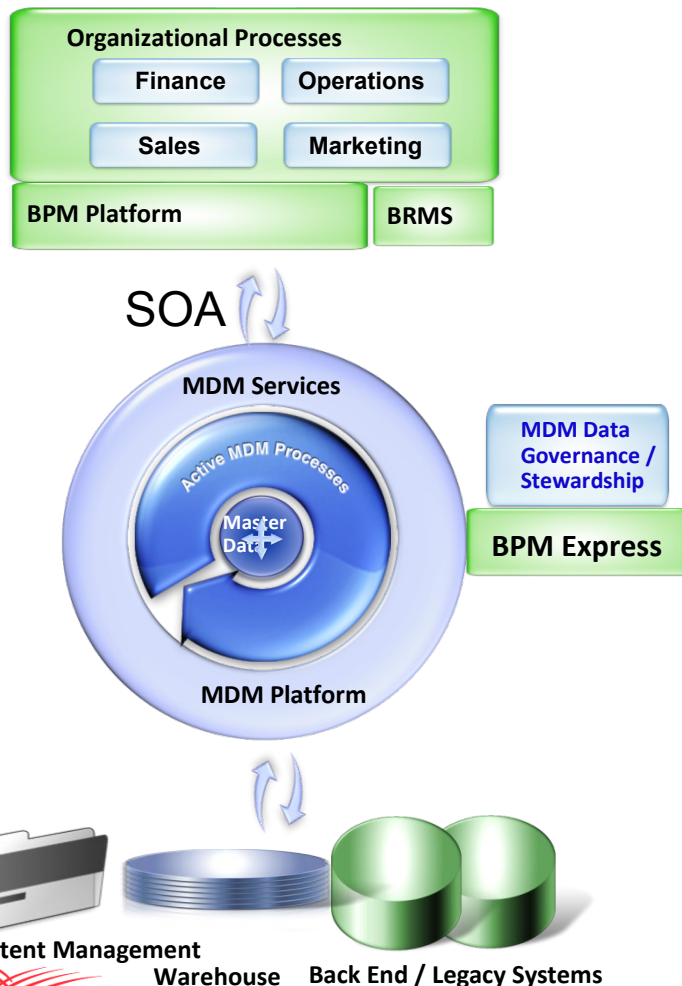- **Secure information delivery**

- Securely integrate information, applications and workloads between public and private clouds and traditional IT

- Automate service delivery to improve economics, reduce risk, and accelerate innovation

- Streamline multiplatform development, deployment, and information delivery for mobile, web, and cloud

Decisions

Processes

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MDM, SOA and BPM can address Challenges in 2 Areas

Organizational Processes

Finance | Operations

Sales | Marketing

BPM Platform | BRMS

SOA

MDM Services

Active MDM Processes

Master Data

MDM Data Governance / Stewardship

BPM Express

MDM Platform

Content Management

Warehouse | Back End / Legacy Systems

**1. Enable more accurate & timely decision making to enhance business performance**

- BPM optimizes process with human tasks, automated tasks & improves visibility
- MDM provides trusted and timely data to business processes
- Combine enterprise process agility with BPM and trusted, timely data from MDM
- SOA based solution development delivers reuse, productivity gains leading to greater business agility

1. Ensuring master data is a trusted asset to the organization's processes

- Enforce appropriate Data Governance policies to support process consumption
- BPM Express helps implement and enforce policies and coordinate multi-step / multi-role workflow for data

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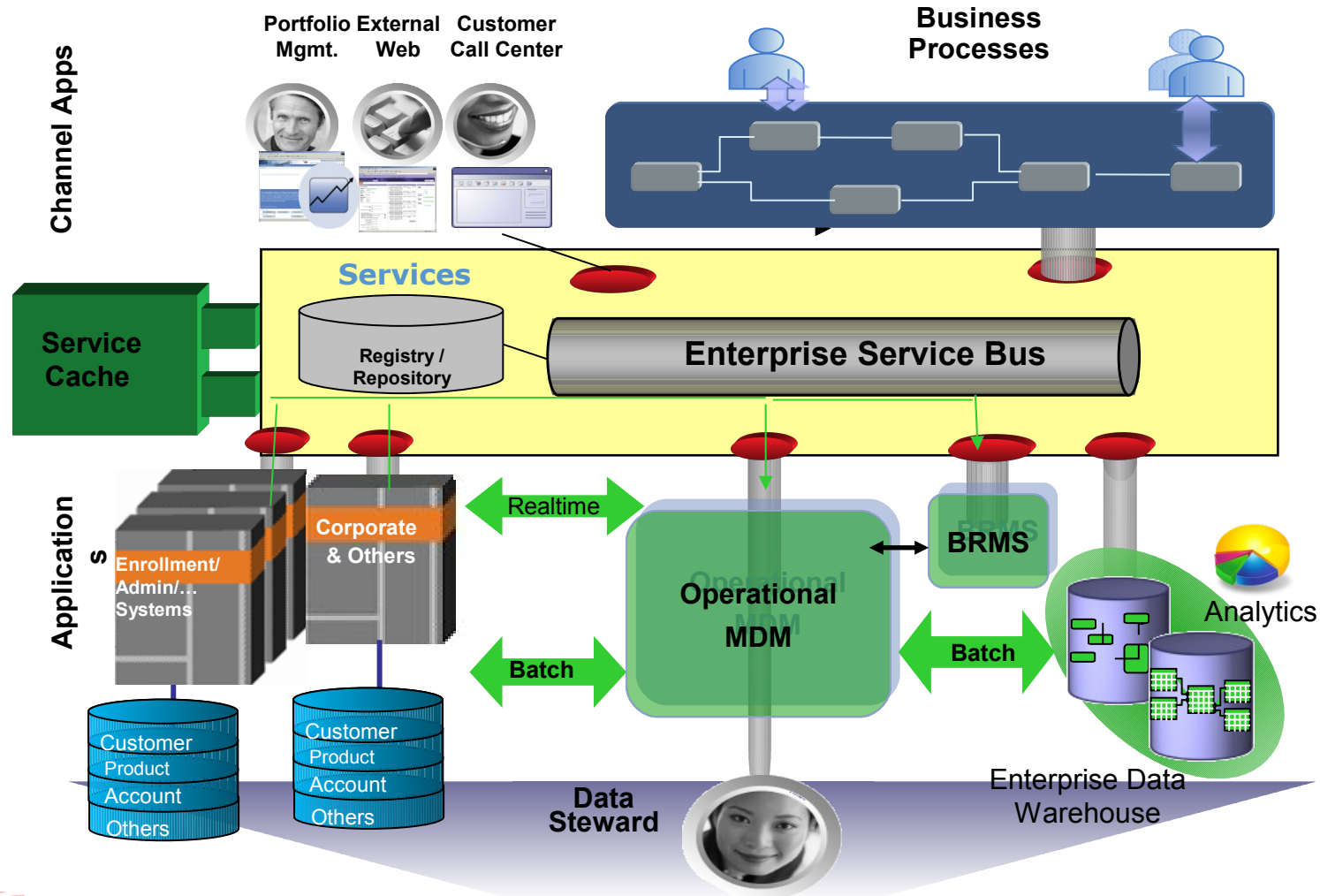
1. Trusted Information Delivery

2. Data Stewardship Process

3. MDM Service Caching for High Performance

4. Developing MDM Service-Based SOA Solutions
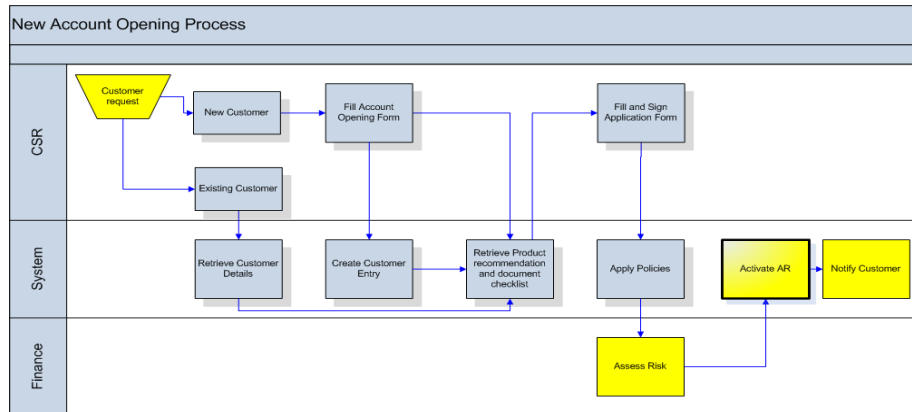
Processes

Enterprise processes

Using BPM

Its easy to Transform & Re-Model Enterprise processes to include MDM Services
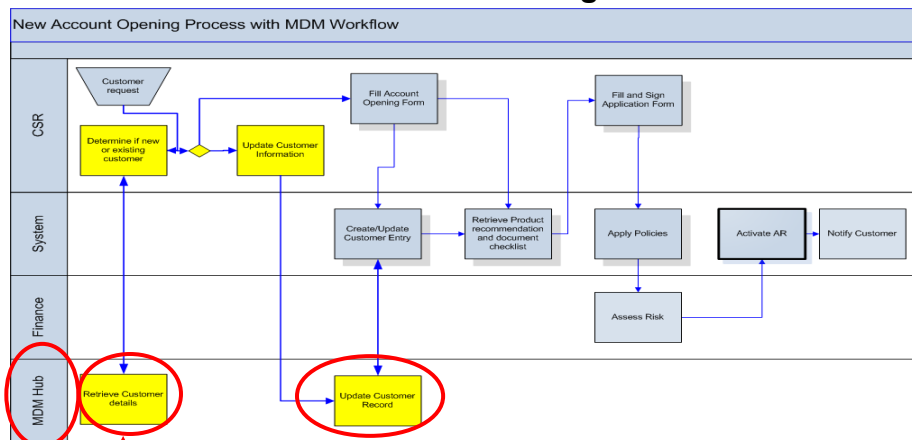
Adaptive Service Interface capability in MDM

can help simplify this

Assemble & Deploy process to use MDM Services

Initial Process without MDM

New Account Opening Process

CSR / System / Finance swimlane diagram: Customer request → New Customer / Existing Customer → Fill Account Opening Form → Fill and Sign Application Form; Retrieve Customer Details → Create Customer Entry → Retrieve Product recommendation and document checklist → Apply Policies → Activate AR → Notify Customer; Assess Risk

Process using MDM

New Account Opening Process with MDM Workflow

CSR / System / Finance / MDM Hub swimlane diagram: Customer request → Determine if new or existing customer → Update Customer Information → Fill Account Opening Form → Fill and Sign Application Form; Create/Update Customer Entry → Retrieve Product recommendation and document checklist → Apply Policies → Activate AR → Notify Customer; Assess Risk; Retrieve Customer details; Update Customer Record

**John Jones
Customer Value High
Risk Score Low
Do Not Call
jjones@abcCo.com**

MDM - CDI

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Ad hoc reporting attempts to identify updates that require review by MDM team, but its not clear how this is fully enforced reliably.

Manual procedures try to delegate responsibility to appropriate company functions. How is effectiveness audited? How do we improve and measure responsiveness?

Use MDM workflow to ensure correct roles validate the appropriate data, update where required, and escalate to other roles to make a final decision if necessary

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1. Model Enterprise processes wiring them into MDM Services and MDM Processes building a cohesive solution

2. Model MDM Centric processes in support of enterprise processes and applications

New Account Opening Process with MDM Workflow

MDM Workflow
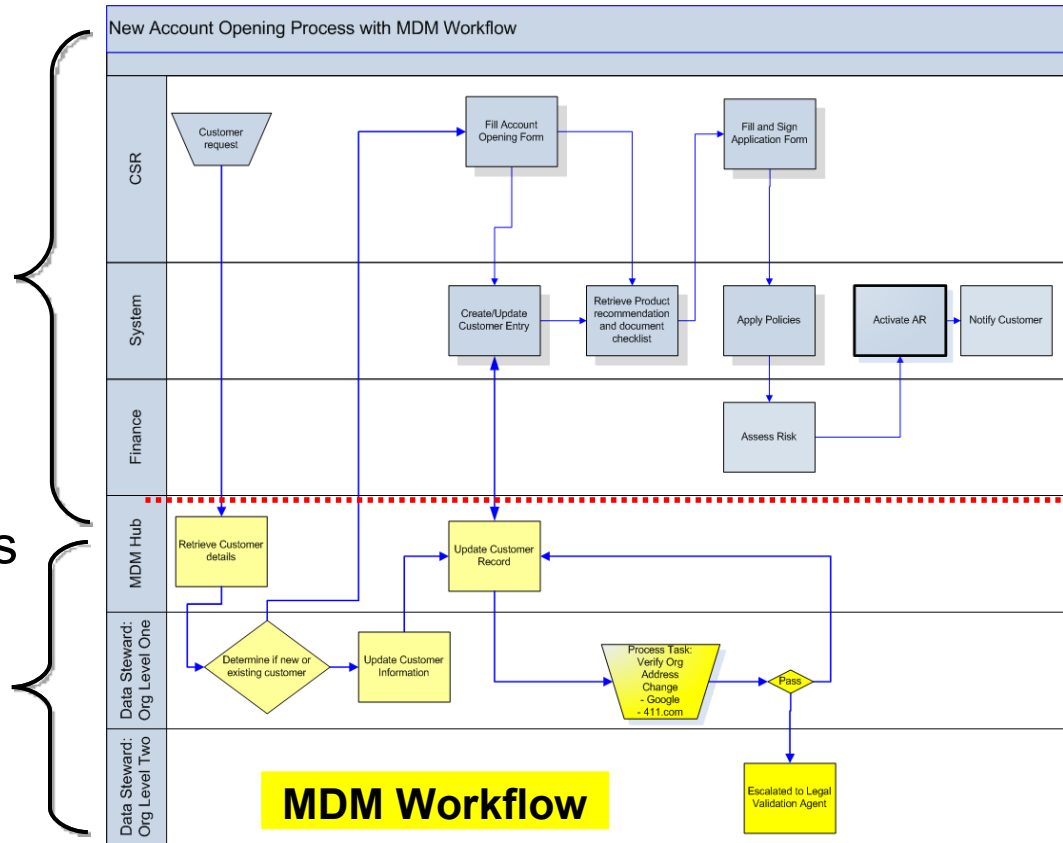
Example Policy: Address changes to key customer accounts must be validated to ensure their accuracy.

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Manage Governance Process End to End

:

Agile Platform to Support changing needs efficiently

Support different styles

Of Data Governance

Use business rules for Decisions within process

Controls order of tasks, condition
- Monitoring and Management (including dashboards, reports, alerts)

Procedures and systems change constantly requiring agile processes
- Use platform to efficiently
  - Reduce Complexity: Less skill is required to make changes
  - Increase Productivity: Less time is required to make changes
  - Improve Governance through change cycles of process
  - Increase Reuse of process components

Support Human Tasks and Integration/Straight-Through Processing

1. **Exception Processing - Data Stewards** have a specific task assigned them by the data governance process which cannot resolve this is an automated way.
2. **Policy requires all changes to be reviewed by Data Stewards**.
3. **Straight-Through Processing**: No Data Stewards are required. Data Governance process is fully automated. Example: Enrich Customer

Support Business Rules within Governance process
- Enables eligibility, routing, or validation automated decisions
- Example – ensure the right Data Steward is handling the task

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Challenge - High Performance Deployment of MDM Services

- Business Problem - Organizations need to use MDM services in main-line business transactions and processes with low latency and scalability,

- Example – Use of MDM Services in mainline processes – POS for Cross sell

- Solution

MDM Service Caching at ESB level provides the capabilities necessary to look up MDM data in mainline transactions very quickly
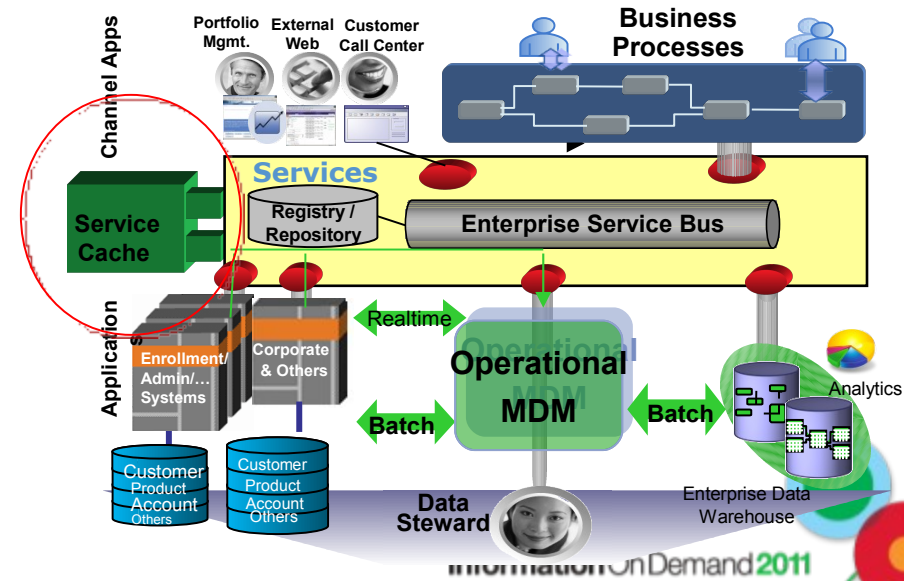
Challenge - Improved Consummability of MDM Services in BPM/SOA Solution Development

- Business Problem - Organizations need to develop SOA based solutions leveraging MDM services in transactions, processes. Organizations need

  - support for ease-of SOA solution development including publishing and looking up MDM services in registry

  - adopting MDM services to pre-defined interfaces (external or internally defined)

- Example – Provide an Industry focussed Get_Patient_Info() by

  adapting standard MDM Get_Party_Info()

- Solution

Adaptive Service Interface (ASI) allows support for pre-defined interfaces, and easy publishing and look up of MDM services via service registry
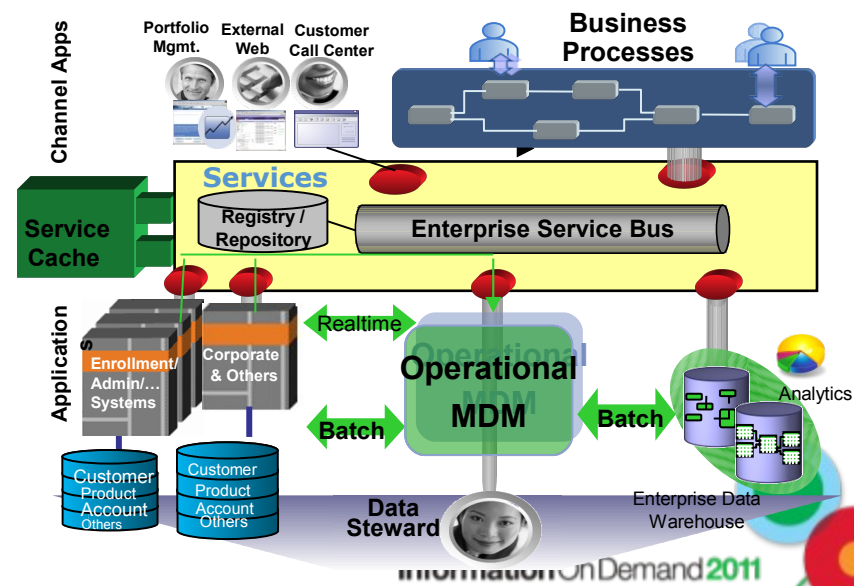
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Agenda

- Enabling Business Agility with SOA, BPM and MDM

  - Integration Scenarios

- Introduction to Cardinal Health

- Cardinal Health – SOA Strategy and MDM/BPM Convergence

- IBM and Cardinal Health Innovation Engagement

- **Cardinal Health is a Fortune 19 healthcare services company that improves the cost-effectiveness of the Healthcare.**

  - Leading provider of products and services across the healthcare supply chain
  - Extensive footprint across multiple channels
  - Serving >40,000 customers with renewed focus
  - Approximately 30,000 employees with direct operations in 10 countries
  - >$103B FY11 pro forma revenue*

Broadest view of the healthcare supply chain

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- Distributes approximately 1/3 of all medicine prescribed in the U.S.

- Manages many hospital pharmacies

- Manufacture or distribute products used in 50% of all surgeries

- Products used by 90% of hospitals

- Manufacture or package 100 billion doses of medicine every year

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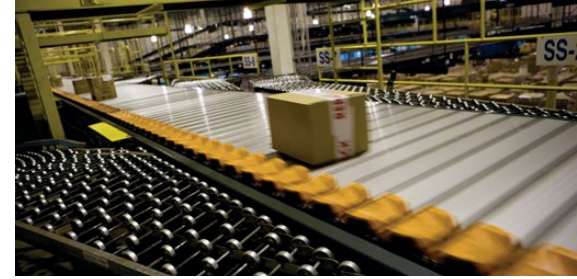
From a distribution company…

To a portfolio of market leaders…

To a global healthcare leader

PYXIS

eon

Cardinal Health National PharmPak

Cardinal Health MediQual

RP Scherer

Allegiance

PCI Services

Cardinal Health National Specialty Services

SP Pharmaceuticals — Zydis

Cardinal Distribution

IPC INTERNATIONAL PROCESSING CORP.

Cardinal Health Consulting Services

ALP

VIASYS HEALTHCARE Excellence For Life

CPSI

Magellan LABORATORIES

Enhanced Derm Technologies INC

Cardinal Health Provider Pharmacy Services

Syncor

OWEN

BLP Group Companies

ALARIS MEDICAL SYSTEMS

The Medicine Shoppe

Gala BIOTECH

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Our Mission
We make healthcare more cost-effective so our customers can focus on their patients

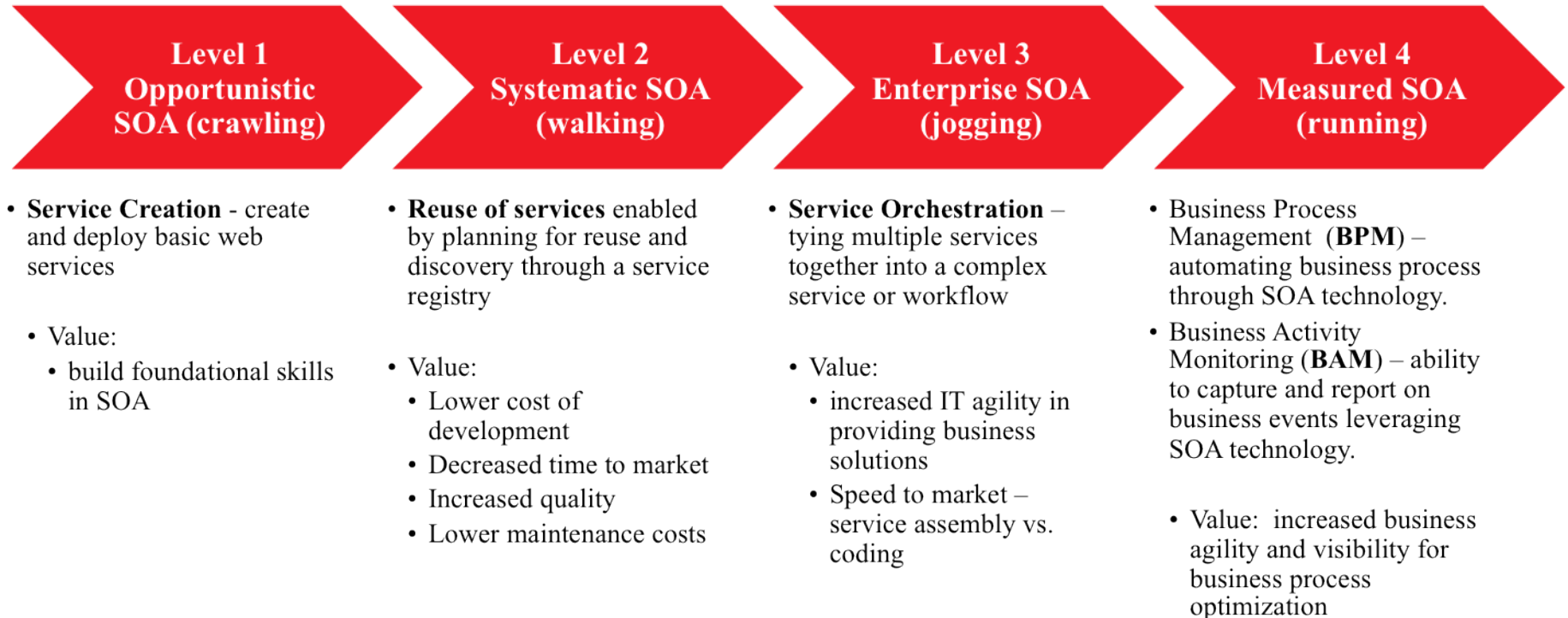CardinalHealth
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- Enabling Business Agility with SOA, BPM and MDM

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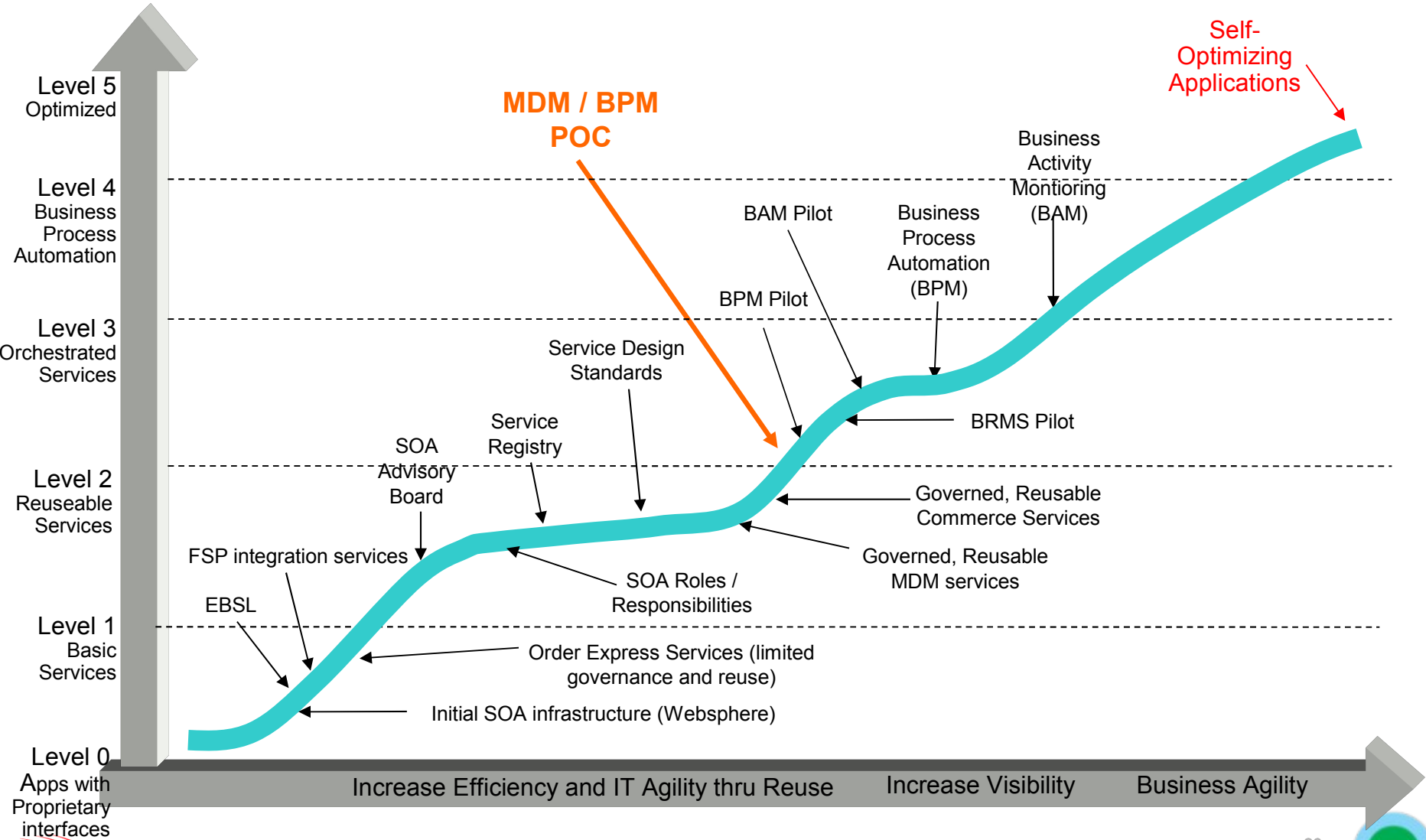- IBM and Cardinal Health Innovation Engagement
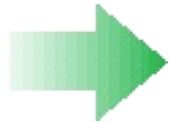
SOA Value Proposition – REUSE & AGILITY

A Service Oriented Architecture approach provides both tactical project level value (quality) as well as strategic value with increased agility

Level 1 Opportunistic SOA (crawling)

- **Service Creation** - create and deploy basic web services

- Value:
  - build foundational skills in SOA

Level 2 Systematic SOA (walking)

- **Reuse of services** enabled by planning for reuse and discovery through a service registry

- Value:
  - Lower cost of development
  - Decreased time to market
  - Increased quality
  - Lower maintenance costs

Level 3 Enterprise SOA (jogging)

- **Service Orchestration** – tying multiple services together into a complex service or workflow

- Value:
  - increased IT agility in providing business solutions
  - Speed to market – service assembly vs. coding

Level 4 Measured SOA (running)

- Business Process Management (**BPM**) – automating business process through SOA technology.
- Business Activity Monitoring (**BAM**) – ability to capture and report on business events leveraging SOA technology.

  - Value: increased business agility and visibility for business process optimization

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Cardinal Health SOA Roadmap

MDM Data Creation and Delivery in SOA Architecture

- MDM Data Creation

  - Transactional Hub Architecture Pattern

  - MDM CRUD Services used by Authoring UI for core/functional attributes for Customer, Material and Supplier

  - Authoring spans across MDM Server (core/functional attributes) and consuming applications (local attributes)

- MDM Data Delivery

  - Publish / Subscribe Pattern used on ESB to subscribe master data consumers to the MDM system

  - Example: SAP Netweaver Systems receives master data from MDM Server through WebSphere MQ (Enterprise ESB) and WebSphere Adapters for SAP (Enterprise Application Connectors)

  - Canonical, versioned data model for master data objects on ESB decoupling data model changes in MDM and consuming systems

  - Local MDM attributes are authored within consuming applications

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Combining MDM and BPM

- Introducing BPM is a key item to transition from current to future state MDM

- Observation made:
  - Current processes on authoring as well as data stewardship have many manual steps on different technologies which are only partially automated

- 2 choices have been considered:
  - Pure automation on enterprise BPM platform of current processes or
  - Business process optimization of current MDM processes on enterprise BPM platform

- Cardinal decided to take the 2nd choice

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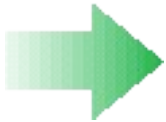
- IBM and Cardinal Health Innovation Engagement

The Innovation Engagement was focused on applying IBM MDM and BPM technologies to build a Solution landscape for managing Master Data and to demonstrate technology feasibility and its benefits.

Scope: Build a POC to leverage IBM MDM Server, User Interface Generator and WebSphere Process Server to enable Customer Master creation (on-boarding processes), with specific focus on Enterprise Data Stewardship Processes.

Objectives:

● Illustrate how this framework can help simplify IT Landscape, enable business agility and contribute to efficiencies in Master Data processes

● Illustrate how this framework can be reused and extended to other Master Data processes

● Illustrate a collaborative approach to realize "single version of truth", while addressing separation of concerns and by decoupling data and processes

Deliverables:

● Understanding of Technology Feasibility

● Lessons learned and Best Practices

● Proof Of Concept and a demonstration of Enterprise Data Stewardship Processes.

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Approach:

• CardinalHealth and IBM teamed to apply a Business Process Optimisation approach to the jointly executed Innovation Engagement

• CardinalHealth provided the

- business objectives for refining MDM authoring and data stewardship processes

- in-depth insight on current state of them

- MDM implementation skills

• IBM provided Business Process and Tooling Expertise to

- capture the optimised process models

- help deploy them on WebSphere Process Server

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Customer on-boarding processes are elaborate and requires a collaborative approach with multiple Business Groups to complete the on-boarding. These processes change based on certain Business requirements and regulations.
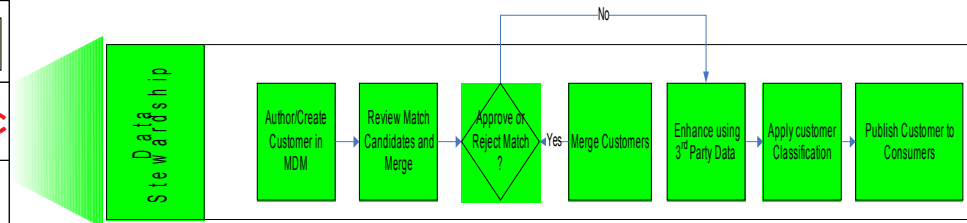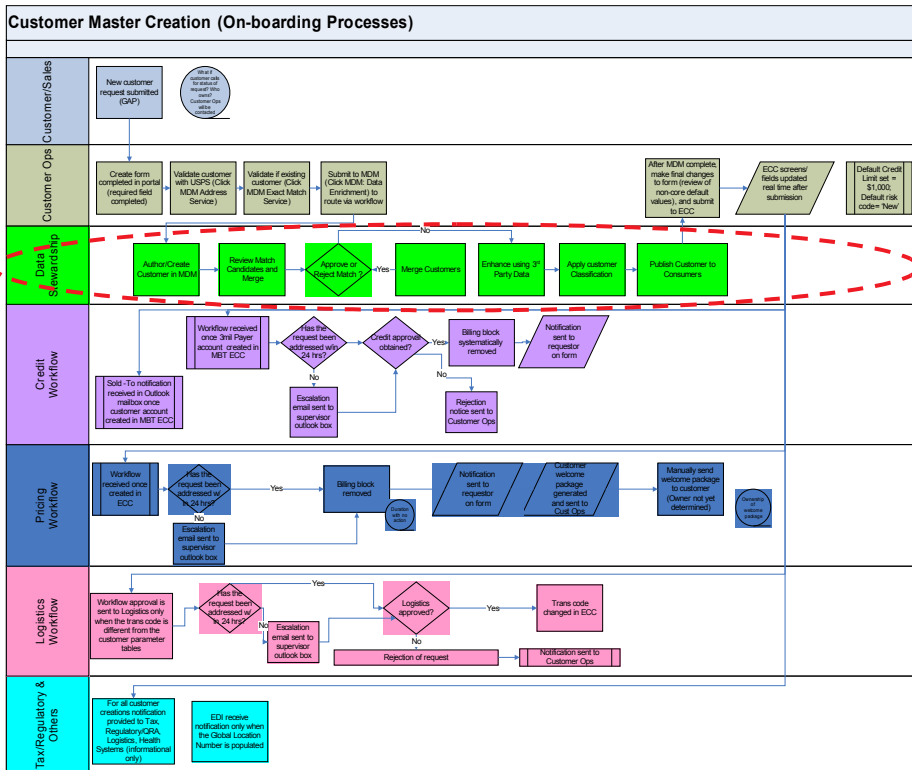
- Enterprise Data Stewardship Process focuses on Customer Data quality and consistency
  - Enables creation of Customer Master (System of Record)
  - Enables clean and consistent data (by applying matching, merging and enterprise standards and classification)
  - Enriches with 3rd party data and relationships for accurate analysis
  - Enables consumption of Customer data from a single source

User Interface

Business Processes

| Get Customer | Enrich Customer **(Straight Through)** | Standardize Customer | Add Customer **(Human Task)** | Analyze Customer **(Screen Flow)** | | Persist Customer | Publish Customer |

Classify

Hierarchy **(Business Rule)**

Business or Technical Services, e.g., MDM Services

Mediation Service

3rd Party Service

Data Cleansing Service

Matching & Duplicate Service

Master Data Service

Master Data Service

Mediation Service

Applications and Systems

Inbound Queue

Quality Stage

MDM Server

Outbound Queue

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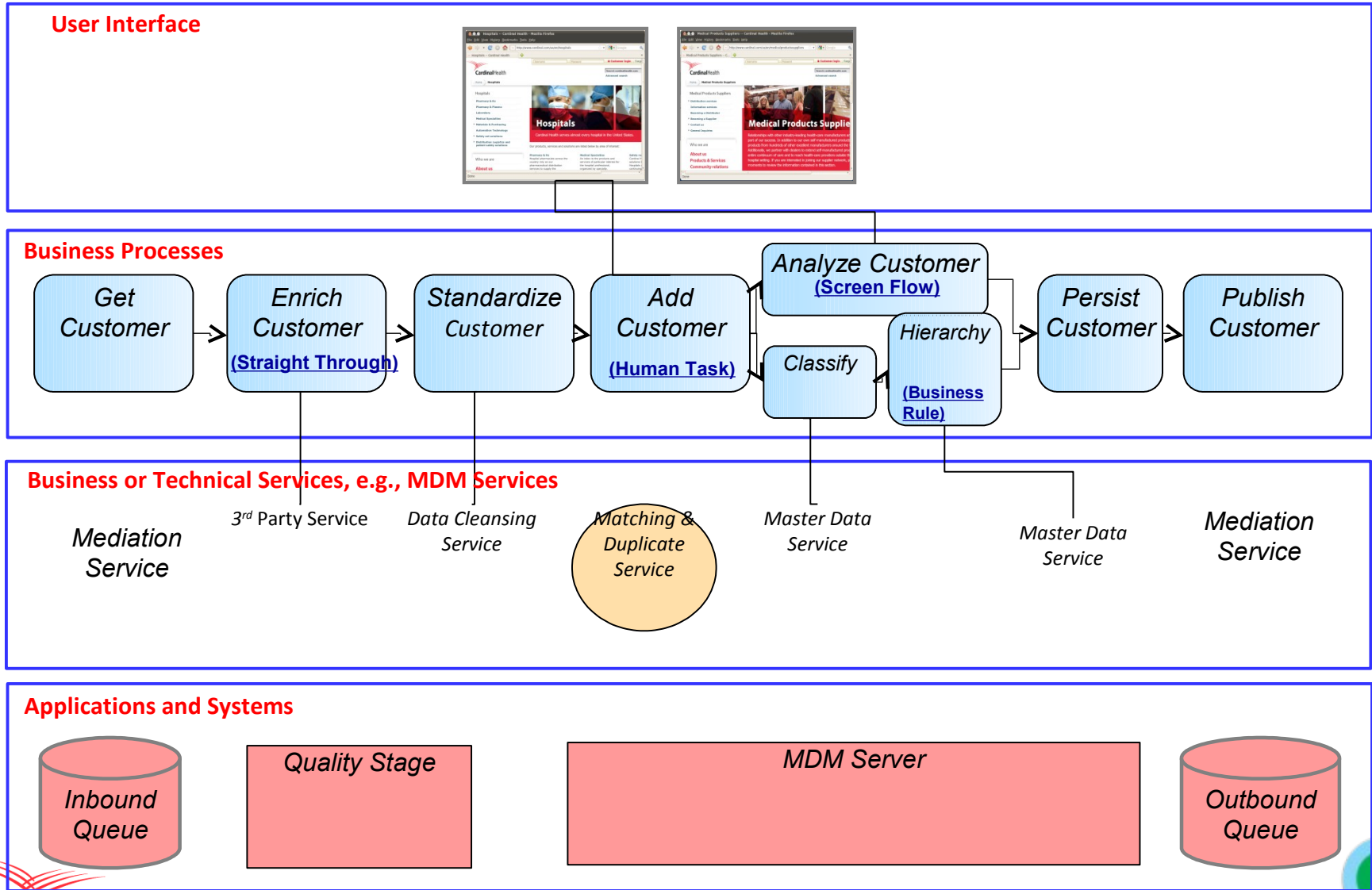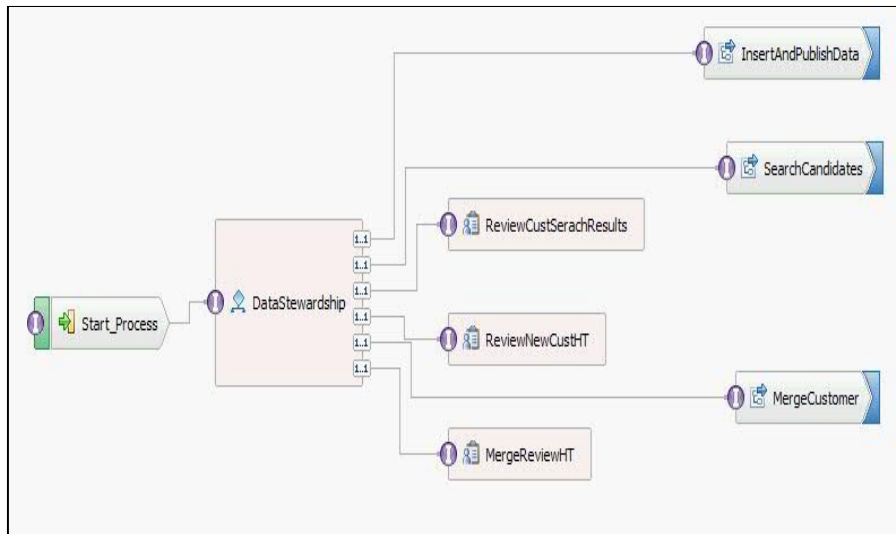
- IBM WebSphere Process Server, WID and Process Choreographer
  - Used for Data Stewardship Process Orchestration.
  - Used for providing Workflow and Task management capabilities
  - Supports both manual and automated tasks.
  - Consumes Data Services and functionality from MDM Server
  - Maintains Process and Customer lifecycle state
  - Exposes Web Services for User Interface

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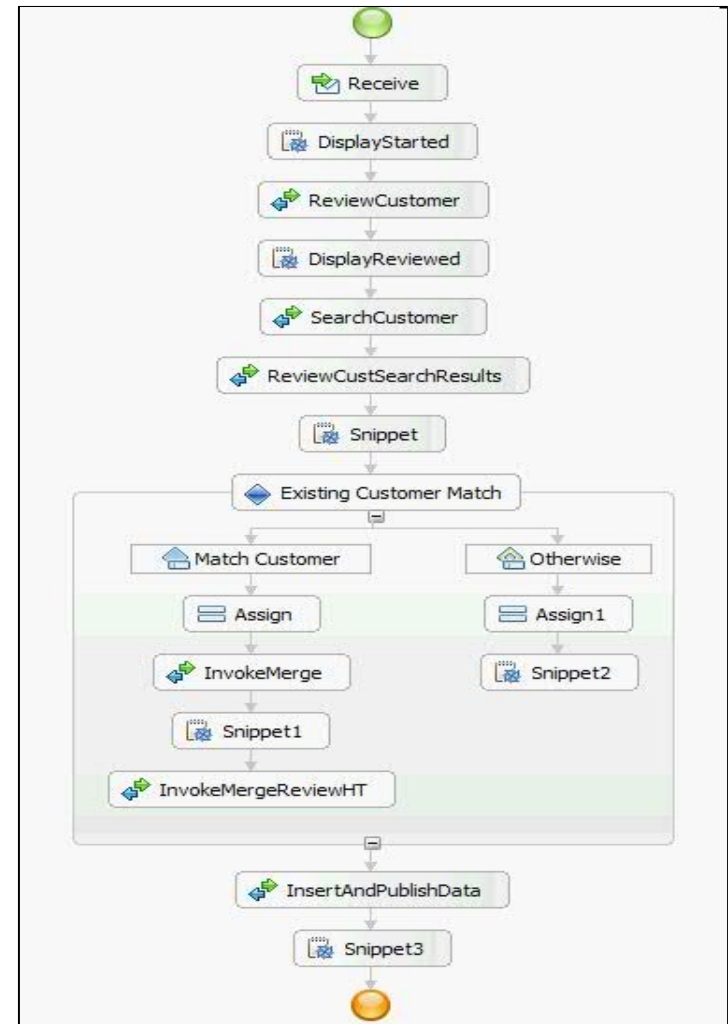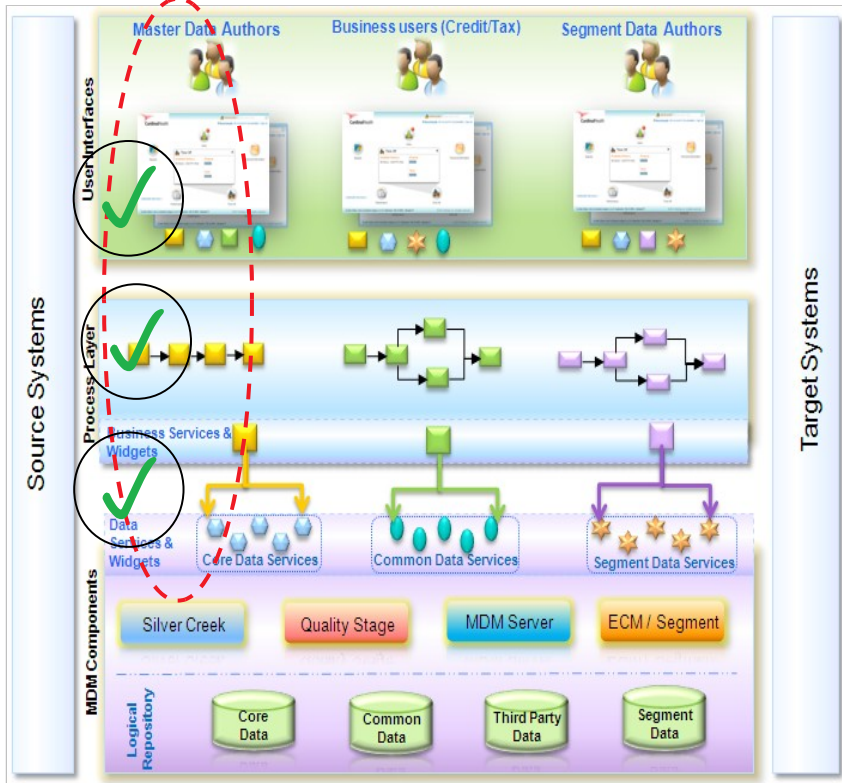
- Integration of MDM Server and Process Server

- Separation of Processes and Data and have multiple users collaborate on Master Data

- Multiple User Interface and Security options

- Abstraction/Consumption of MDM Data Services in Process Server requires work

- IBM Product Roadmap alignment

- IT Landscape simplification and optimization

- Accelerate Business Value

  - High quality data improves the value of Business Processes

  - An agile SOA, BPM and MDM based platform to help with faster time to market

- Realize MDM Vision

  - Makes MDM implementations Business focused

  - Provides tangible benefits for MDM implementations

  - Reduces the complexity and helps with the success of implementation

- Process Optimization

  - Reduces the need for disjointed apps/process supporting Master Data

  - Helps drive efficiency by reducing duplication of processes.

- Integration Patterns leveraging SOA, BPM and MDM

  - Trusted Information Delivery to business processes

  - Data Stewardship Process for managing master data

  - MDM Service Caching for High Performance

  - Developing MDM Service-Based SOA Solutions

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