High-Performance Agility for Business Growth

Connecting Business Processes and Optimizing Your Application Infrastructure

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Agenda

How to leverage IBM's Business Process Management and Operational Decision Management solutions for greater agility on the zEnterprise platform.

- Why process & decision optimization?
- Improving operational decisions through modernization
- Improving business processes, operations and outcomes
- How the pieces fit together

Effective and Efficient Processes Deliver *Significant Results…*

Banco Estado *speeds up loan origination time by 93%,* increasing the average throughput of loans processed by *over 400%* return on investment

BancoEstado

IMMIGRATION & CHECKPOINTS AUTHORITY

Immigration & Checkpoint Authority *improves response to security threats* by *96%* using Operational Decision Management

Major Financial Services Firm *increases revenue* by *$4M* by improving time to market by *93%*

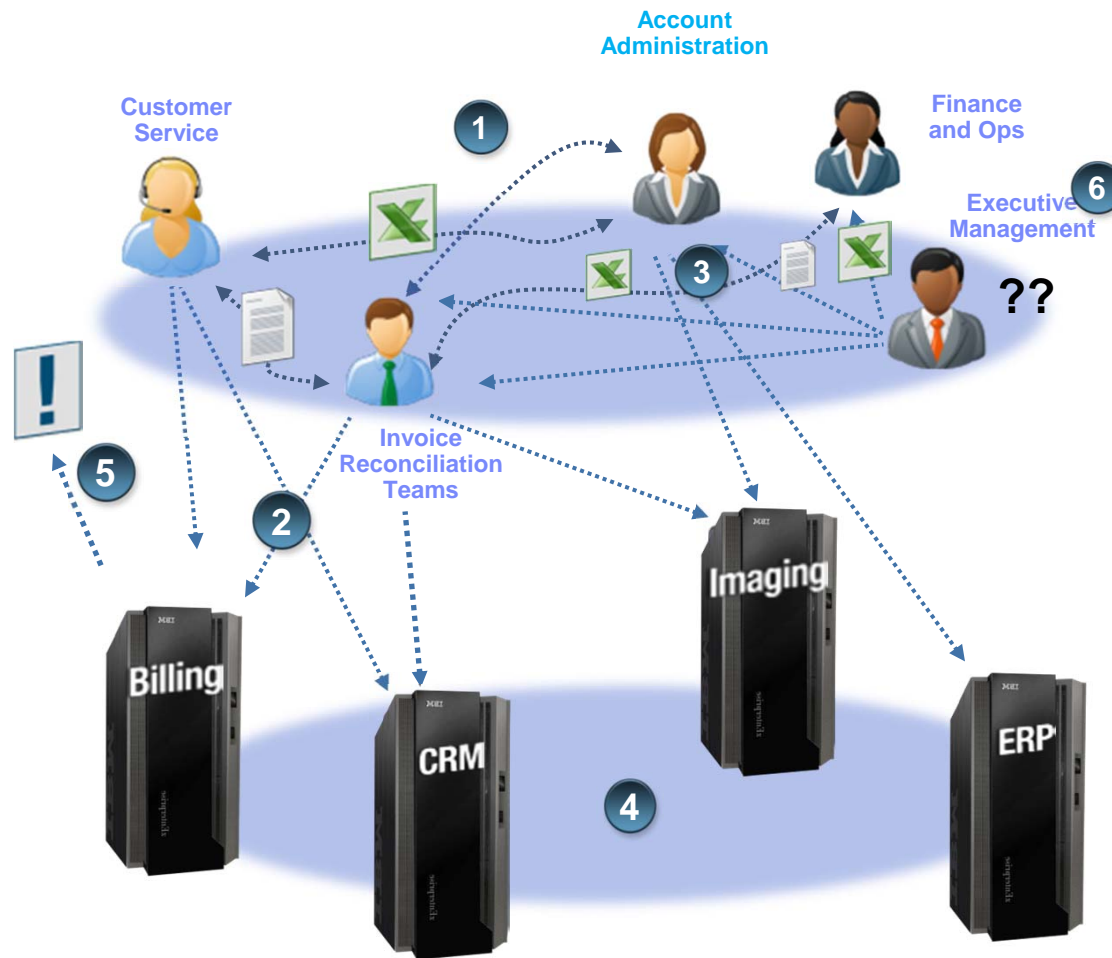# … *but* Process Defects can Topple Major Global Companies

"**Between** *now and year-end 2014*, **overlooked but easily detectable business process defects will** *topple* **10 Global 2000 companies**"

~ *Gartner*

Business Chaos Begs for Operational Improvement

Account Administration

Customer Service

Finance and Ops

Executive Management

??

Invoice Reconciliation Teams

Billing

CRM

Imaging

ERP

1. Unstructured tasks and communication (ex. paper or email)

2. Inefficient working environment spans systems

3. Inconsistent prioritization

4. Incomplete or inaccurate data flow between systems

5. Lack of control over system and business events (Exceptions)

6. Poor visibility into process performance
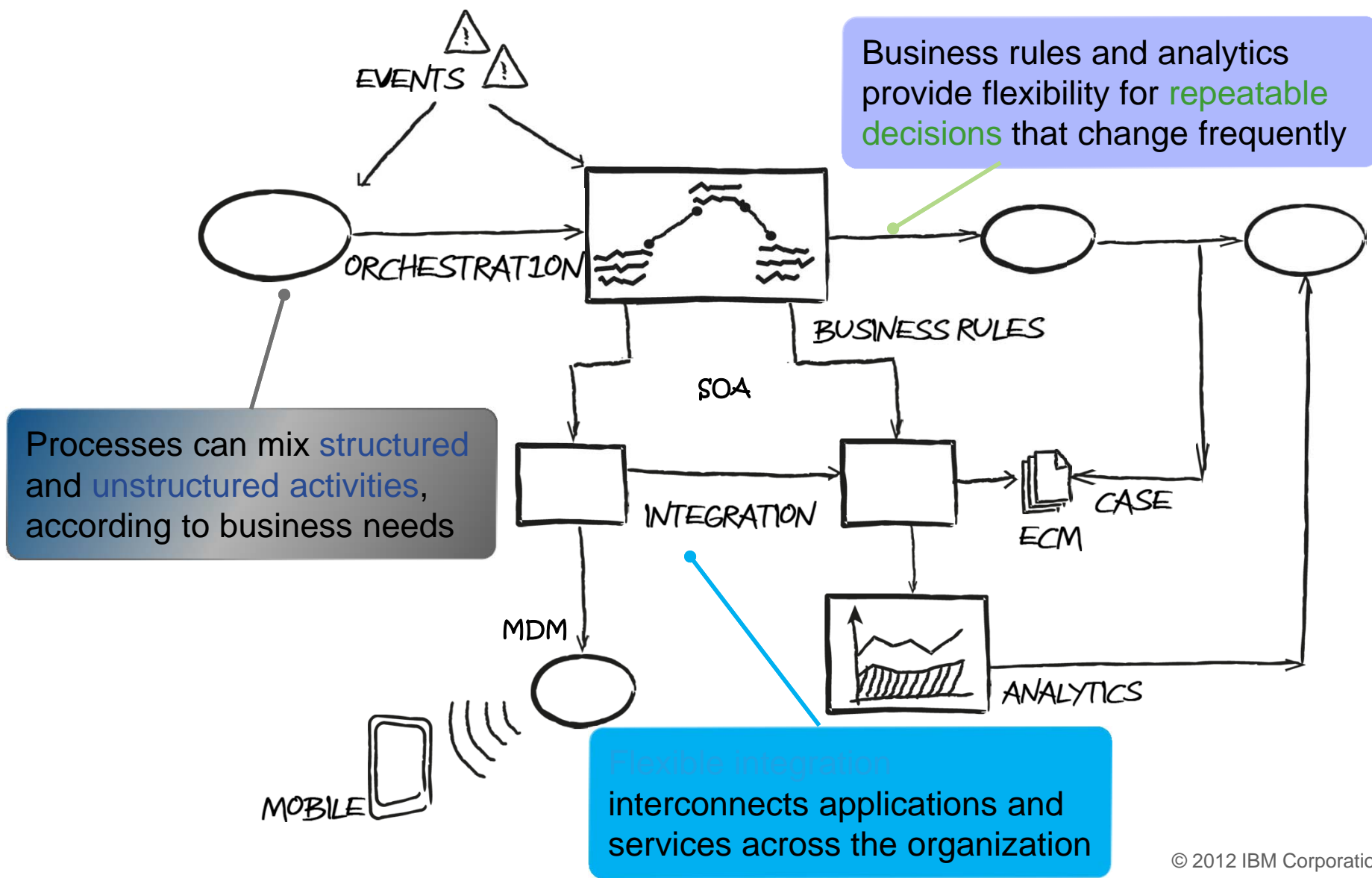
Process & Decision Management bring order to chaos
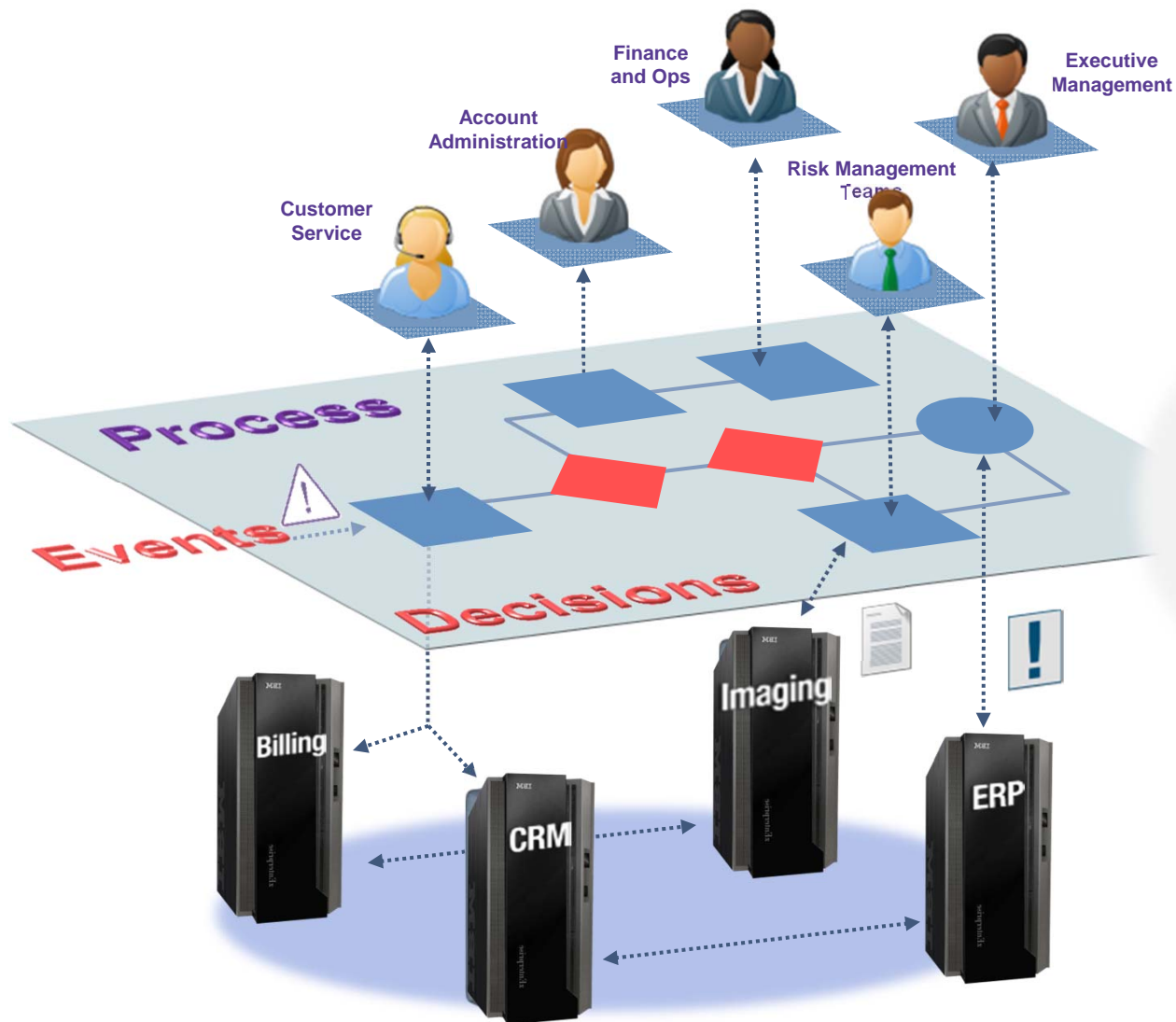
What to do.
How to do it.
When to do it.

Building Blocks to Achieve Process Innovation

Empowering business and IT users to easily manage change

EVENTS

ORCHESTRATION

BUSINESS RULES

SOA

INTEGRATION

CASE

ECM

MDM

ANALYTICS

MOBILE

Business rules and analytics provide flexibility for repeatable decisions that change frequently

Processes can mix structured and unstructured activities, according to business needs

Flexible integration interconnects applications and services across the organization

The Consumerization of Change

Enabling regular business people to easily and safely make changes to their business operations

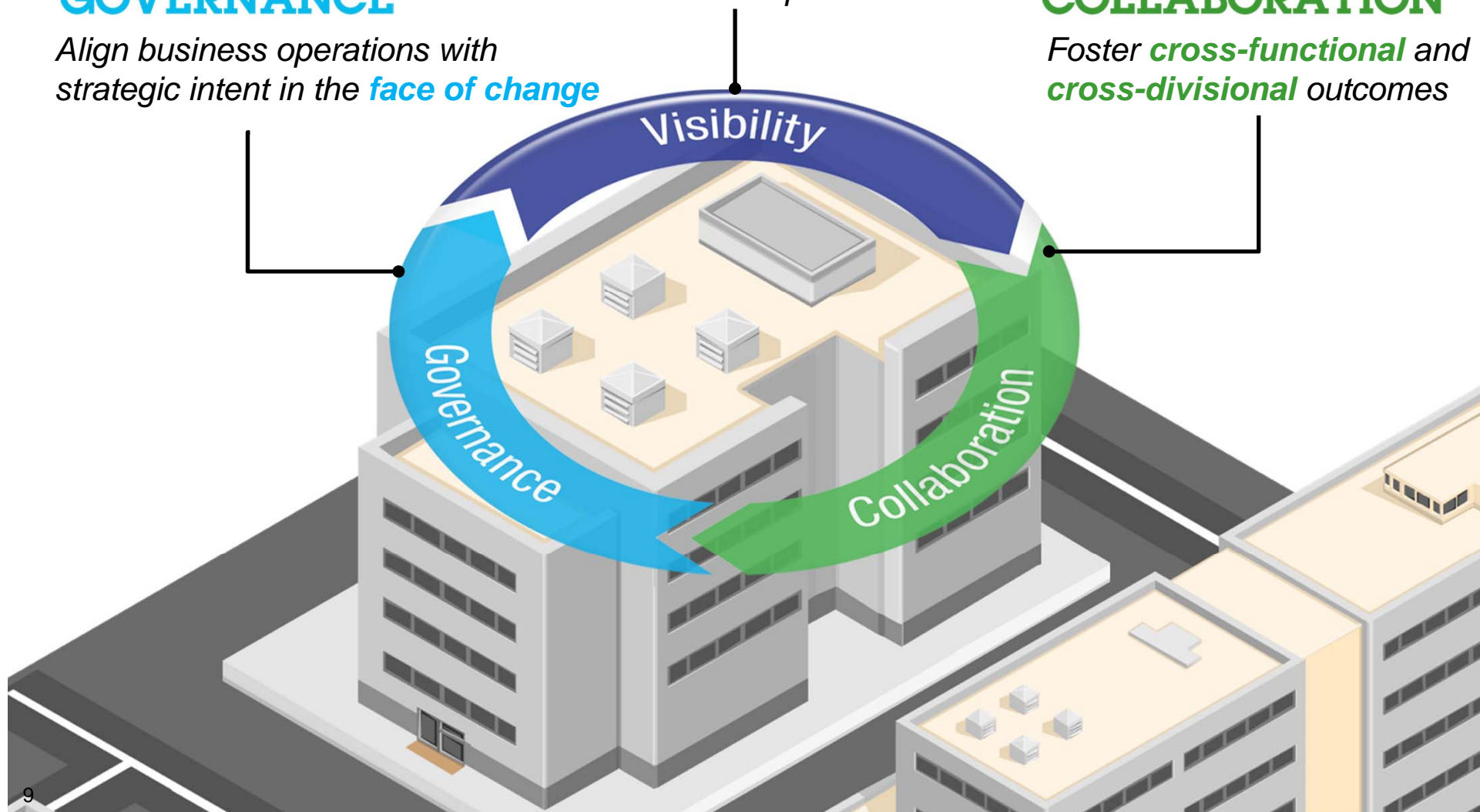# Visibility, Collaboration & Governance to Effectively Manage Change

VISIBILITY
Achieve **clearer line-of-sight** to business operations

GOVERNANCE
Align business operations with strategic intent in the **face of change**

COLLABORATION
Foster **cross-functional** and **cross-divisional** outcomes

The value of the System z environment is also realized by BPM and Operational Decision Management deployments

Transactional Strength
Robust applications demonstrate resilience and scalability in the face of workload challenges

Process Integrity
Reliable execution of distributed business activity

Co-location
Mission-critical applications and processes co-located for performance

Scalability
To billions of transactions per day with high utilization rates

Dependability
Through a robust and resilient infrastructure

Interconnected
Throughout enterprise with high speed cross-memory communications
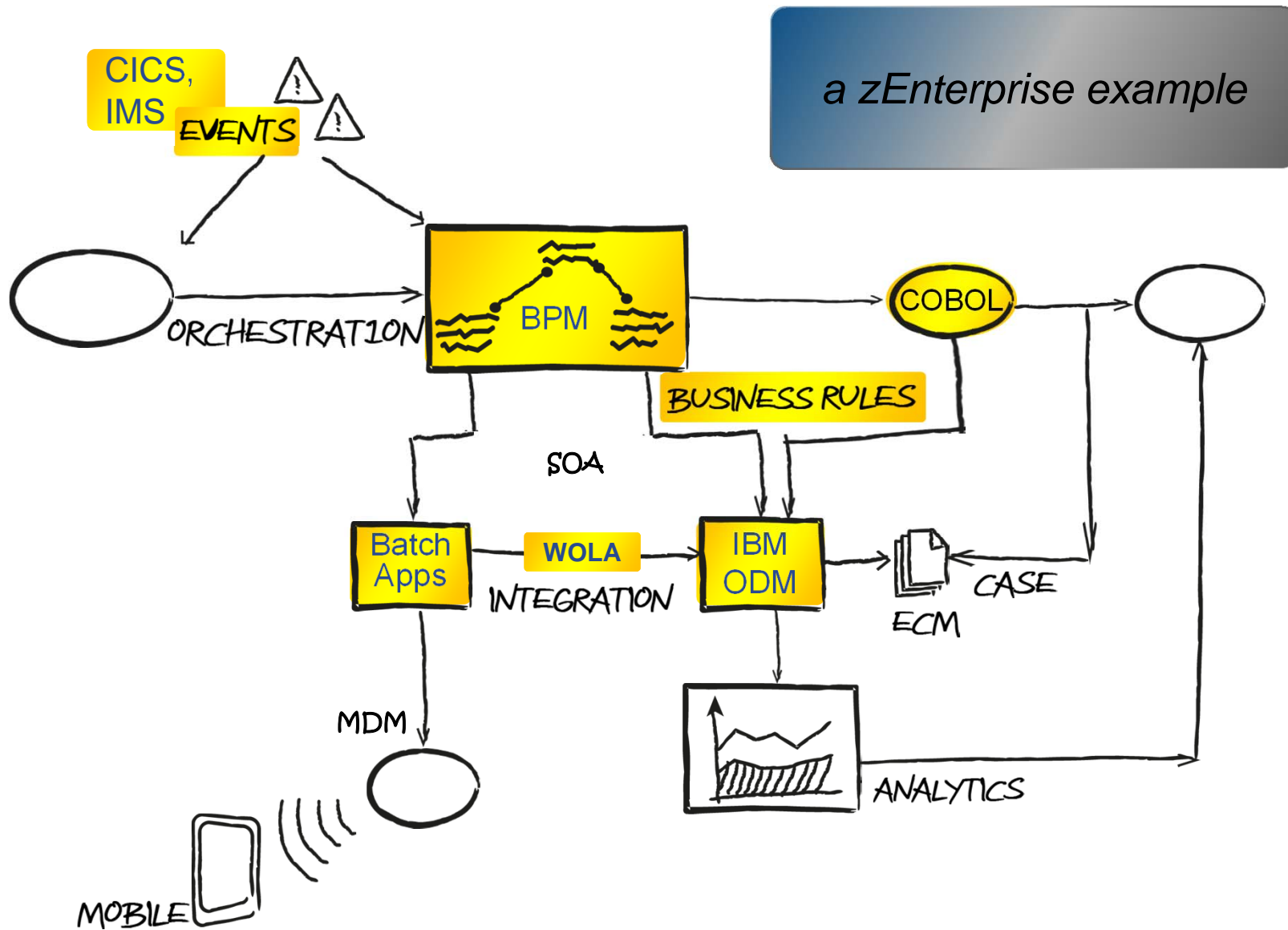
High Availability
99.999%

Dynamic Infrastructure
IT must adapt to changing infrastructure cost pressures, contention for limited resources, and changing business priorities

Building Blocks to Achieve Process Innovation

a zEnterprise example

CICS, IMS

EVENTS

ORCHESTRATION

BPM

COBOL

BUSINESS RULES

SOA

Batch Apps

WOLA

INTEGRATION

IBM ODM

CASE

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MOBILE

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How to leverage IBM's Business Process Management and Operational Decision Management solutions for greater agility on the zEnterprise platform.

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- **Improving operational decisions through modernization**
- Improving business processes, operations and outcomes
- How the pieces fit together

What is an operational decision?

Business Rules

Primarily implements a decision model – given a snapshot view of data, determines best course of action at a specific point in a process or application

Main purpose is to automate a decision based on a combination of factors (business policies, regs, best practices)

If the Passenger is a gold frequent traveler and flight distance is more than 4000 miles and the flight destination is in Europe or Asia Then Add 10,000 points to the fidelity card of the Passenger

Business Events

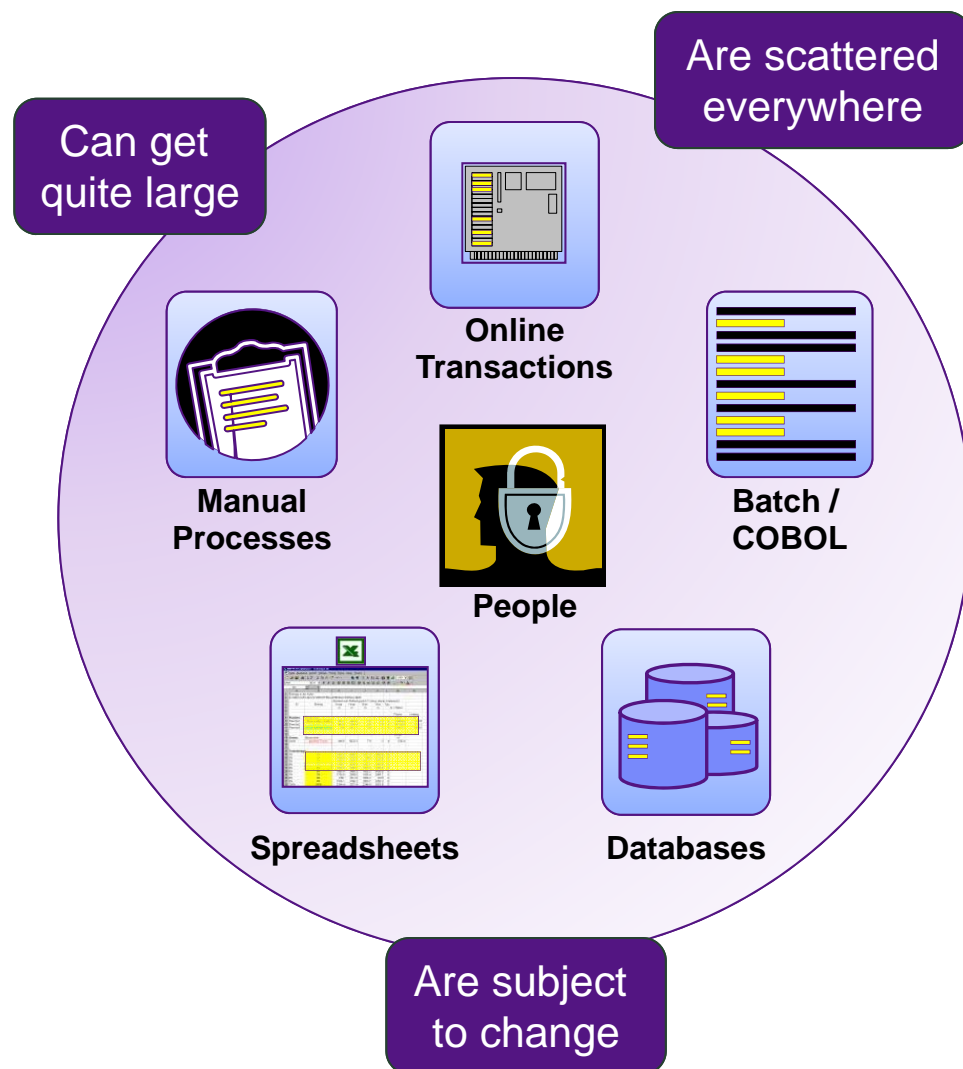Primarily implements a time-based pattern detection model – correlating events as data is in motion

Main purpose is to determine what of interest is transpiring and coordinate one or more responses by other systems or generate alerts to people

If more than 2 customer withdraws in an ATM are done in the same day and the 2 ATMs are from 2 foreign countries Then Investigate possible fraud and Reduce cash redraw max amount to 100$

Gartner characterizes Rules and Complex Event systems as complementary notions. The combination being required to implement intelligent decision management programs.
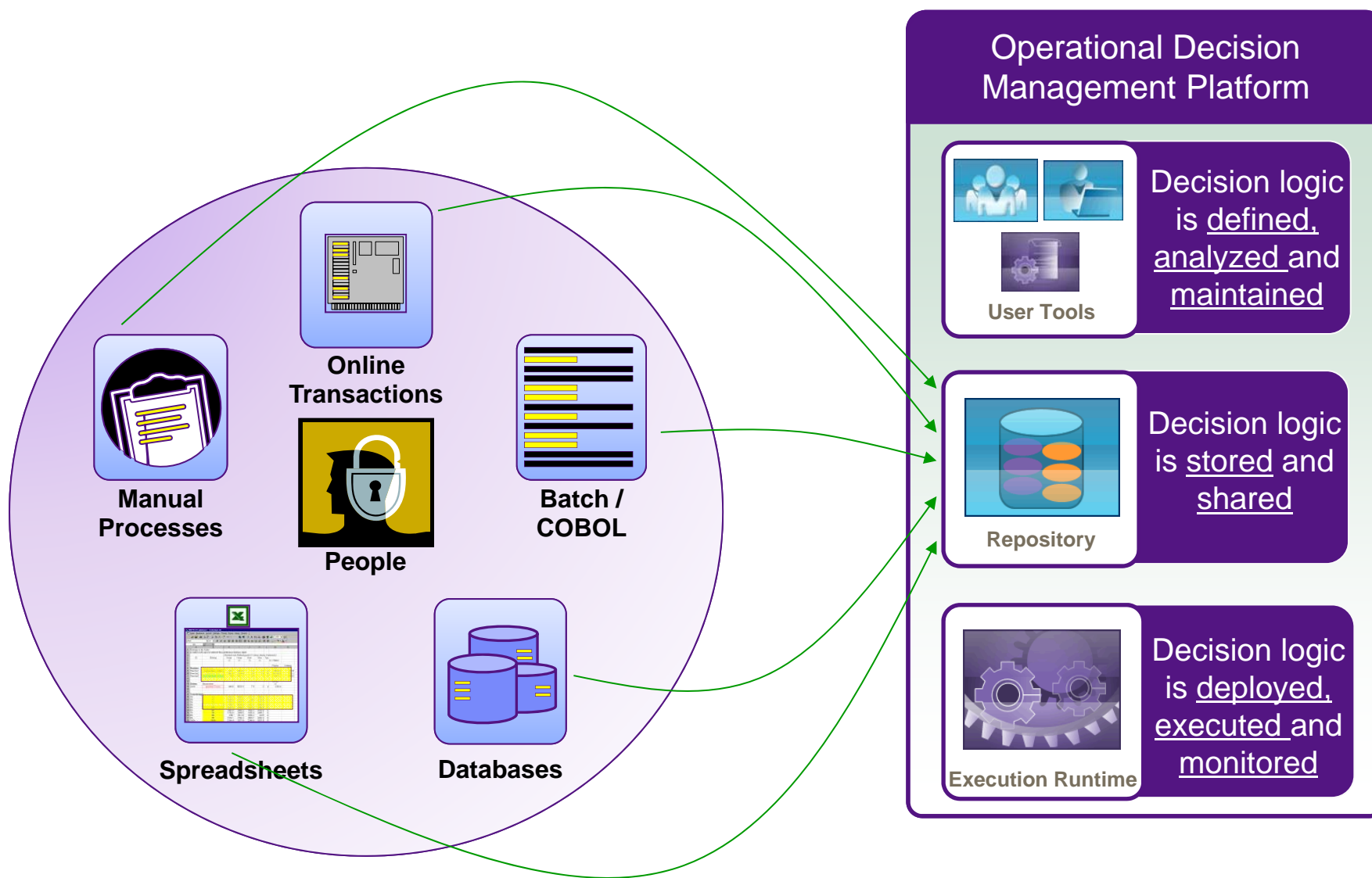
Decisions and Business Rules on System z platforms

Can get quite large

Are scattered everywhere

Online Transactions

Manual Processes

People

Batch / COBOL

Spreadsheets

Databases

Are subject to change

Challenges for a Change Request

- Changes are costly, resource & time-intensive
  - Rules are hidden in COBOL code
  - Most changes have to be programmed – costly

- Lack of consistency
  - No central management
  - No reuse of decision logic

- Gap between business analysts & IT administrators
  - Knowledge fades over time

- Lack of audit ability

- No easy way to test/simulate changes

Operational Decision Management approach

Operational Decision Management Platform

User Tools — Decision logic is <u>defined,</u> <u>analyzed</u> and <u>maintained</u>

Repository — Decision logic is <u>stored</u> and <u>shared</u>

Execution Runtime — Decision logic is <u>deployed,</u> <u>executed</u> and <u>monitored</u>

Online Transactions

Manual Processes

People

Batch / COBOL

Spreadsheets

Databases

Transformation and modernization of z/OS applications

With IBM Operational Decision Management, incremental rule modernization becomes possible

- *Gradually pull out rules from existing applications – does not require a "big bang" change*

- *Rewrite business rules in natural language so Business Users can participate in definition, change, and/or verification of rules*

- *Recognize an immediate return on investment*

- *Employ Rational Asset Analyzer rule mining functionality to identify potential rules embedded in your code*
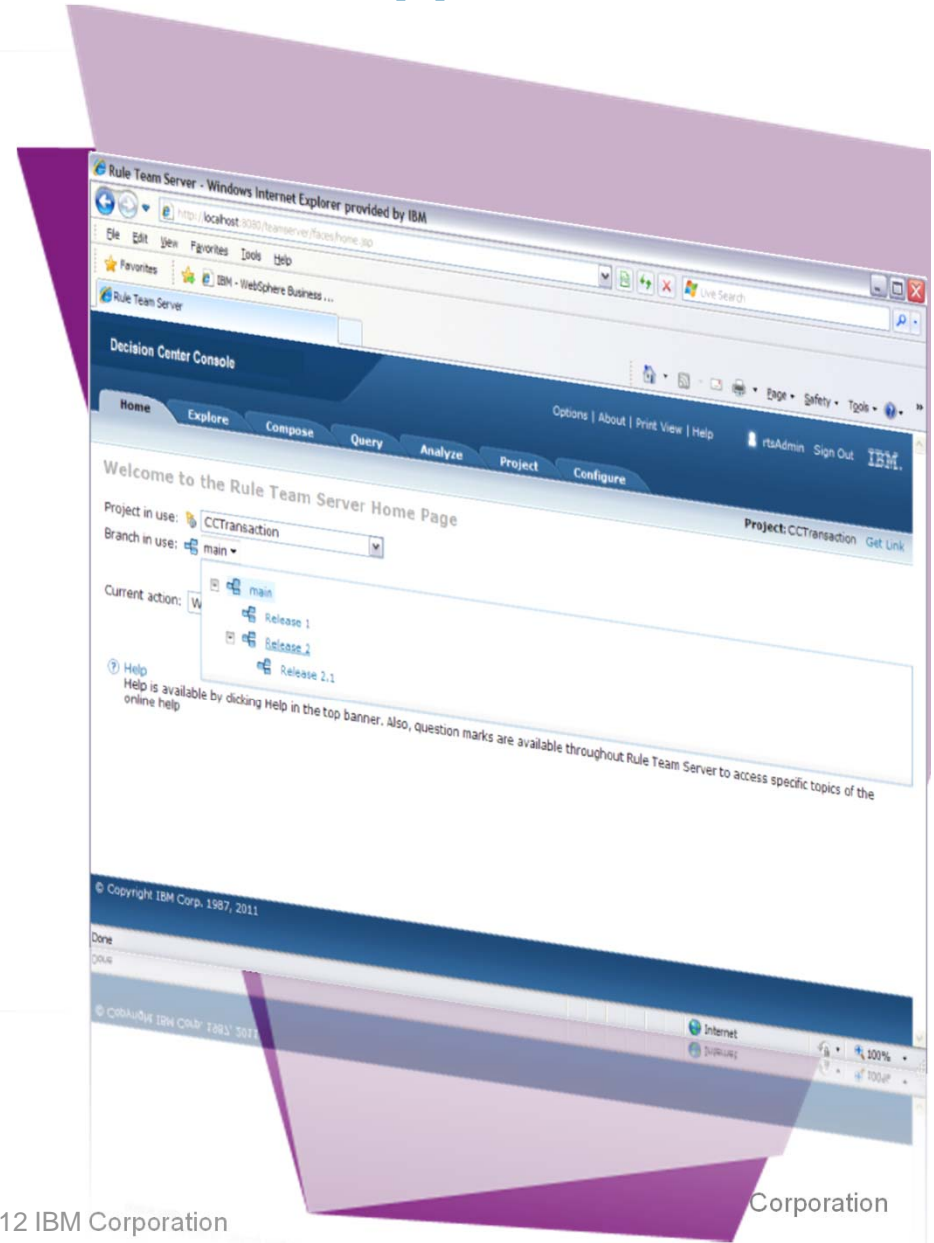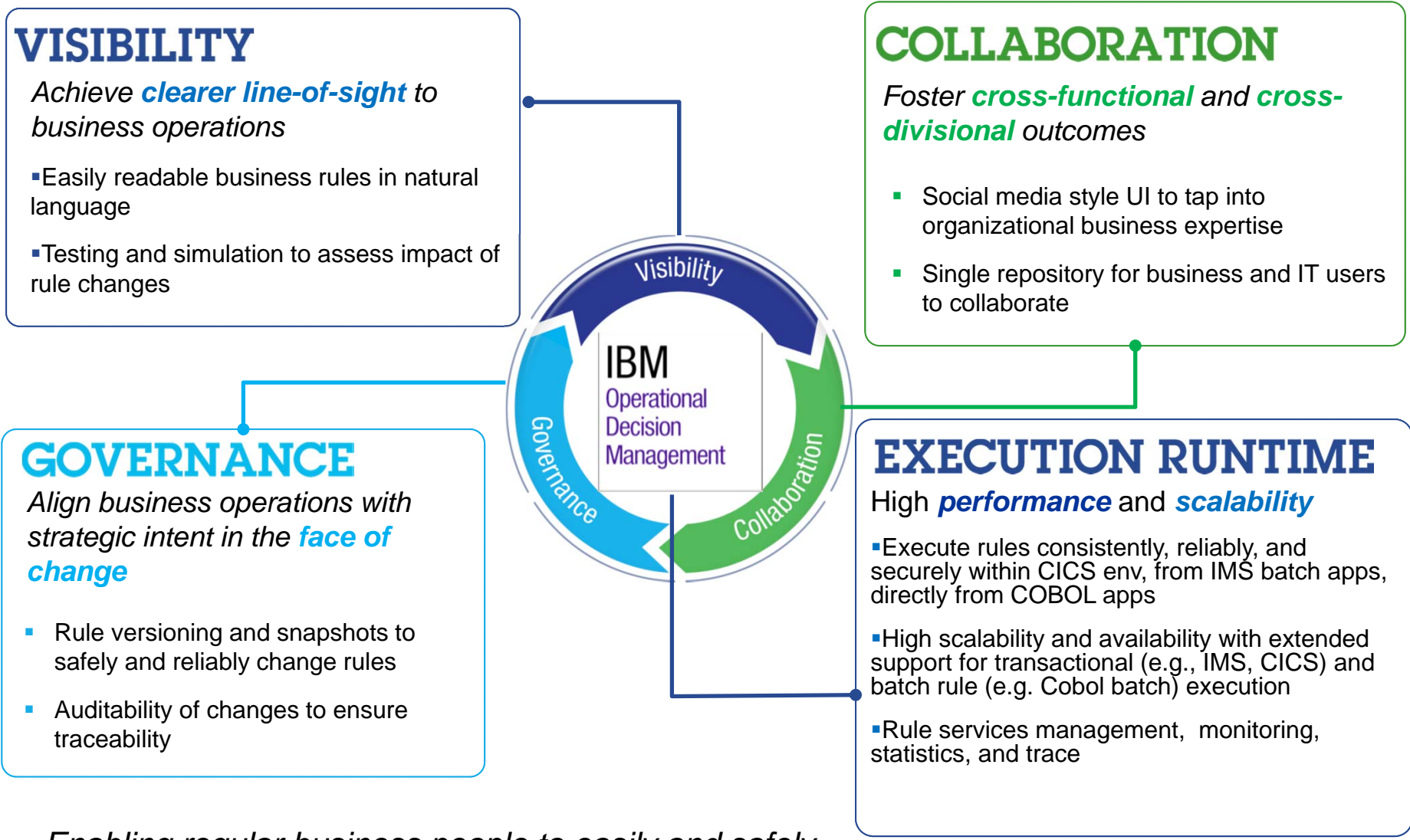
Next Generation Business Rules

- Manage business policies at scale

- Operationalize enterprise intelligence

- Enable social collaboration to manage business change

Apply Operational Decision Management…

- To flexibly and reliably manage repeatable, automated decisions

- When decisions change frequently

- To increase straight-through-processing

- When decision services must be shared across systems

- To manage and govern large numbers of rules

- When real-time events require immediate actions

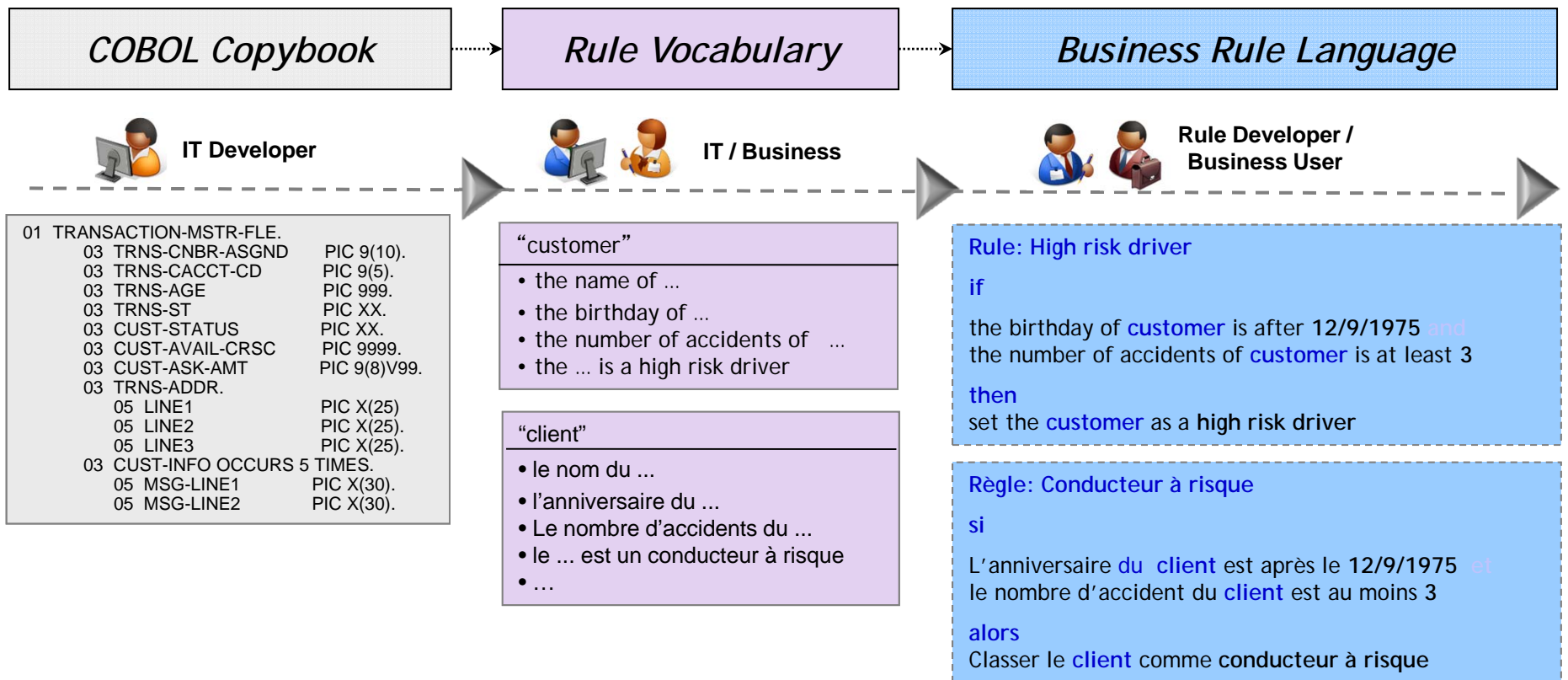# Visibility, Governance, Collaboration in Operational Decision Manager
Business Policies Built for Change vs. Built to Last

VISIBILITY

*Achieve **clearer line-of-sight** to business operations*

- Easily readable business rules in natural language

- Testing and simulation to assess impact of rule changes

COLLABORATION

*Foster **cross-functional** and **cross-divisional** outcomes*

- Social media style UI to tap into organizational business expertise

- Single repository for business and IT users to collaborate

GOVERNANCE

*Align business operations with strategic intent in the **face of change***

- Rule versioning and snapshots to safely and reliably change rules

- Auditability of changes to ensure traceability

EXECUTION RUNTIME

High ***performance*** and ***scalability***

- Execute rules consistently, reliably, and securely within CICS env, from IMS batch apps, directly from COBOL apps

- High scalability and availability with extended support for transactional (e.g., IMS, CICS) and batch rule (e.g. Cobol batch) execution

- Rule services management, monitoring, statistics, and trace

IBM Operational Decision Management

Visibility • Governance • Collaboration

Enabling regular business people to easily and safely make changes to their business operations

Business decisions stated in business language
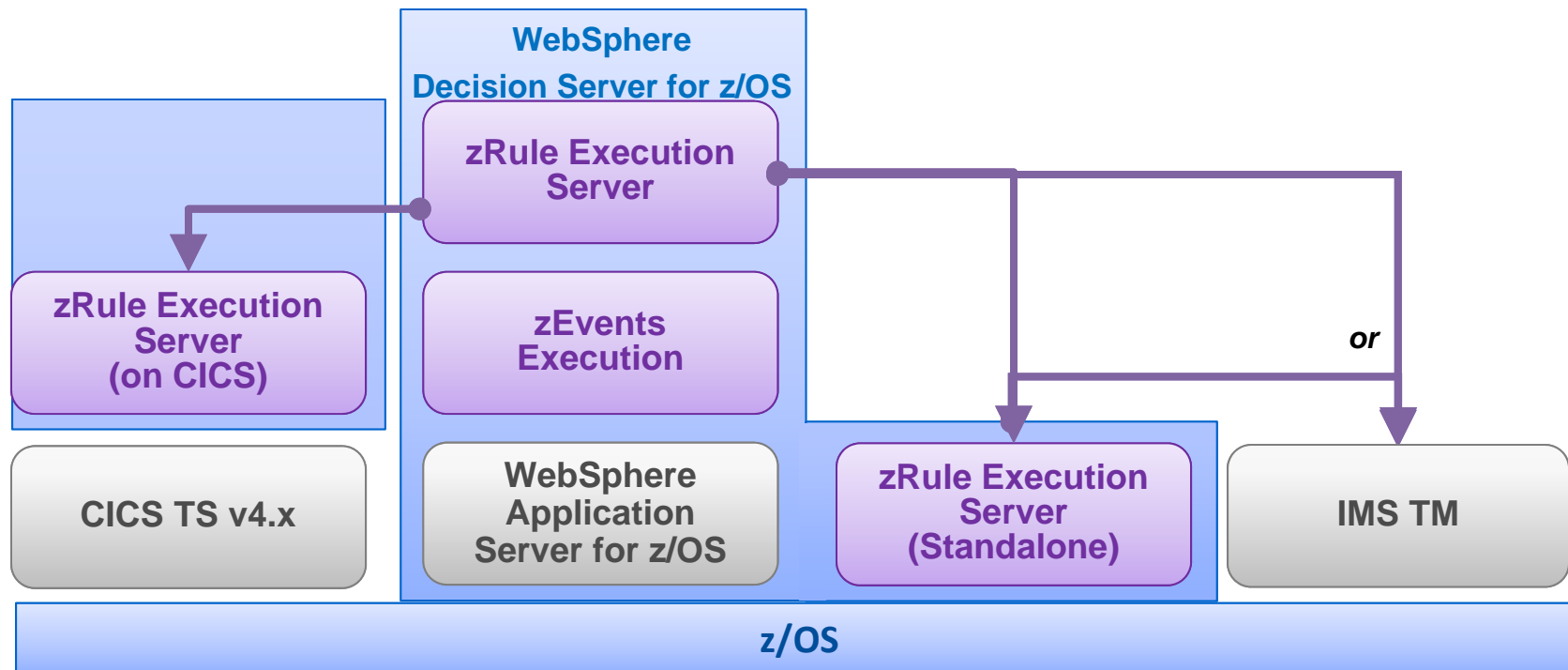*Customizable vocabulary*

COBOL Copybook	Rule Vocabulary	Business Rule Language

IT Developer   **IT / Business**   **Rule Developer / Business User**

```
01  TRANSACTION-MSTR-FLE.
    03  TRNS-CNBR-ASGND      PIC 9(10).
    03  TRNS-CACCT-CD        PIC 9(5).
    03  TRNS-AGE             PIC 999.
    03  TRNS-ST              PIC XX.
    03  CUST-STATUS          PIC XX.
    03  CUST-AVAIL-CRSC      PIC 9999.
    03  CUST-ASK-AMT         PIC 9(8)V99.
    03  TRNS-ADDR.
        05  LINE1            PIC X(25)
        05  LINE2            PIC X(25).
        05  LINE3            PIC X(25).
    03  CUST-INFO OCCURS 5 TIMES.
        05  MSG-LINE1        PIC X(30).
        05  MSG-LINE2        PIC X(30).
```

"customer"

- the name of …
- the birthday of …
- the number of accidents of   …
- the … is a high risk driver

"client"

- le nom du …
- l'anniversaire du …
- Le nombre d'accidents du …
- le … est un conducteur à risque
- …

Rule: High risk driver

if

the birthday of **customer** is after **12/9/1975** and
the number of accidents of **customer** is at least **3**

then
set the **customer** as a **high risk driver**

Règle: Conducteur à risque

si

L'anniversaire du **client** est après le **12/9/1975** et
le nombre d'accident du **client** est au moins **3**

alors
Classer le **client** comme **conducteur à risque**

Empower business experts to manage and validate decision logic, eliminating delays in business

Operational Decision Management for z/OS
Runtime options

- Decisions can be invoked from existing IMS, CICS and Batch TSO applications

- Runtime support for COBOL data types

- Flexible runtime deployment to fit any System z environment:
  - Deployed standalone to z/OS *(for batch applications including IMS)*
  - Deployed on WebSphere Application Server for z/OS *(for CICS, IMS and batch)*
  - Deployed in CICS TS 4.x JVMServer environment *(for CICS applications)*

WebSphere Decision Server for z/OS

| zRule Execution Server |
| zEvents Execution |

zRule Execution Server (on CICS)

CICS TS v4.x

WebSphere Application Server for z/OS

zRule Execution Server (Standalone)

or

IMS TM

z/OS

IBM Operational Decision Management
Faster decisions on more transactions

Major Financial Institution

- Improved client acceptance of offers from 3% to 20-30%

- Increased revenue $14M in bookings in 2.5 months

Accovia Inc.

- Travel & Transportation booking engine

- Business rules deployed to production within hours rather than weeks, increasing competitive and pricing agility

Immigration & Checkpoints Authority

- Each year more than 140 million people evaluated in under 30 seconds

- Modification of risk assessment criteria time reduced by more than 96%

Execute mission critical decision-making at the speed of business

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- Why process & decision optimization?
- Improving operational decisions through modernization
- **Improving business processes, operations and outcomes**
- How the pieces fit together

What is *Business Process Management?*

Through robust and flexible software capabilities and industry expertise,
BPM enables customers to discover, model, execute, rapidly change, govern,
and gain end-to-end visibility on their business processes

Software

Expertise

Discover
Model
Optimize
Execute/Deploy
Monitor
Governance

Continuous Process Improvement

Visibility & Collaboration

Business User Engagement

Efficiency & Productivity
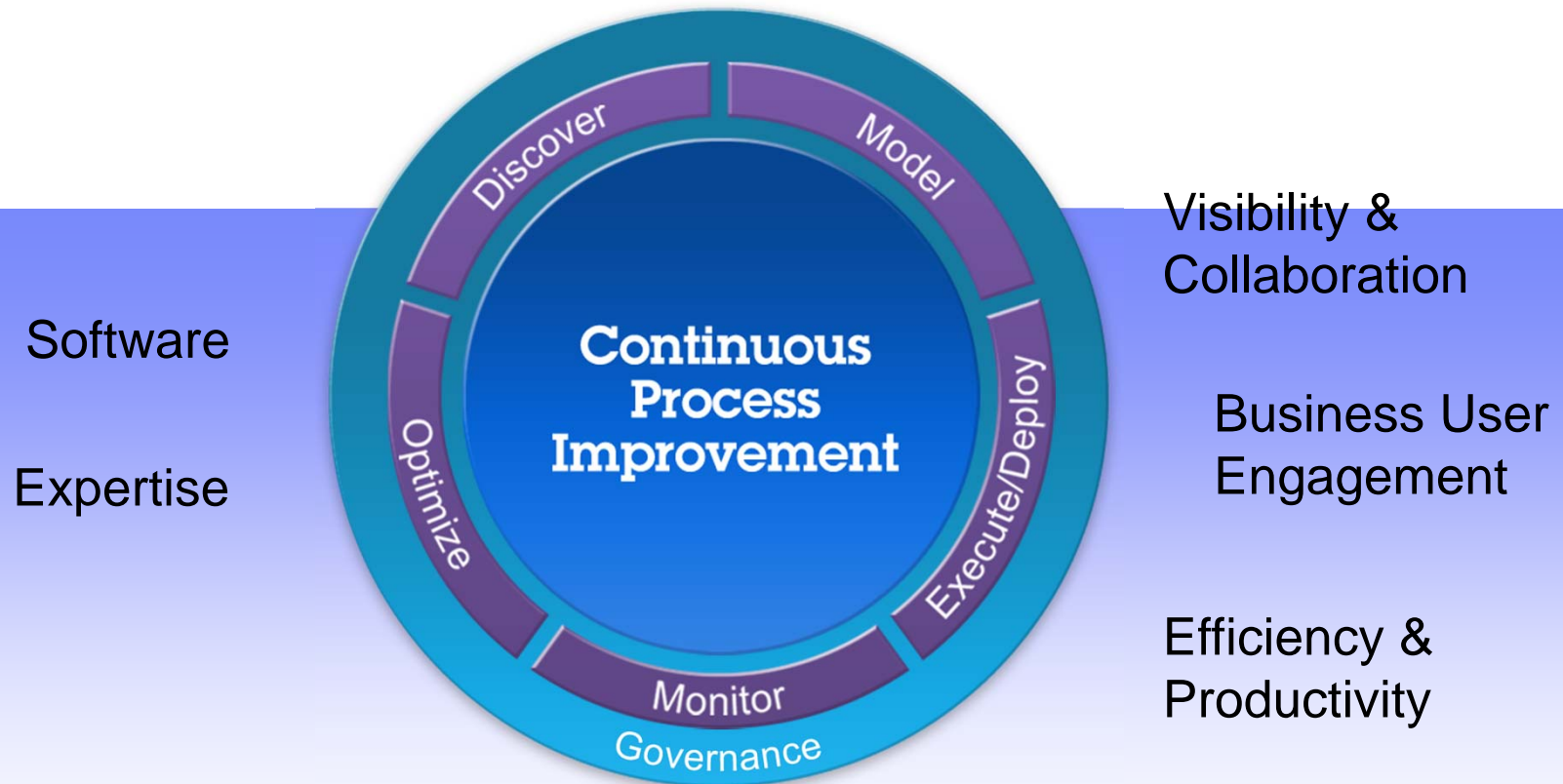
Achieve better business outcomes with IBM BPM

Visibility, Collaboration and Governance for BPM

VISIBILITY

Providing Complete visibility into business operations

- Intelligent Process Monitoring and Analytics provide insights into work in progress

- Heat Map Overlays detects bottlenecks and performance thresholds and displays them visually

- Real-time scoreboards to quickly see what corrective actions are needed

COLLABORATION

Work isn't done in silos. Collaborate for better business outcomes.

- Easily access and connect with participants and experts

- Dynamic activity notifications facilitate real-time collaboration and responsiveness

- Collaborate directly on work with participants and experts for simpler task completion

GOVERNANCE

Managing change confidently

- Centralized process deployment visibility and control *across environments*

- Install and track deployed versions of *multiple processes* across *various* runtime server environments

EXECUTION RUNTIME

- Execute processes *consistently, reliably, securely,* and with *transactional integrity on IMS, CICS, Batch, COBOL*

- High *scalability and availability* with extended support for *high-volume* process automation and *high quality-of-service best realized on System z*

Dramatically Improve the Way Work Gets Done

- Manage mission-critical business processes at scale

- Ensure transactional integrity

- Enable social collaboration to manage business change

Maximize Agility in zEnterprise Business Applications…

- *Resiliency* through workload management & co-location

- *Simplicity* of process complexity through high-performance process automation

- *Modernization* of existing applications with shared and reusable enterprise process services

Get real-time visibility with built-in performance data
Performance Data Warehouse

- Empowers business users to optimize business processes with *process monitoring and analytics*

- *Automatically gathers* and *correlates* performance events and business data

- *Real-time scoreboards* provide visibility into work-in-progress and the ability to take corrective action when necessary

Easily manage multiple process versions
Toolkits, Snapshots, Back-in-time versioning

- Toolkits manage independent versions of process artifact libraries, **reused across multiple process applications running on System z** or distributed

  - Snapshots capture the state of all process artifacts at a specific point to *reduce version management complexity* with a single click

- Back-in-time versioning *restores any historical snapshot* of a process with just one click

Centralized tools to install and track deployed versions of multiple processes across various runtime
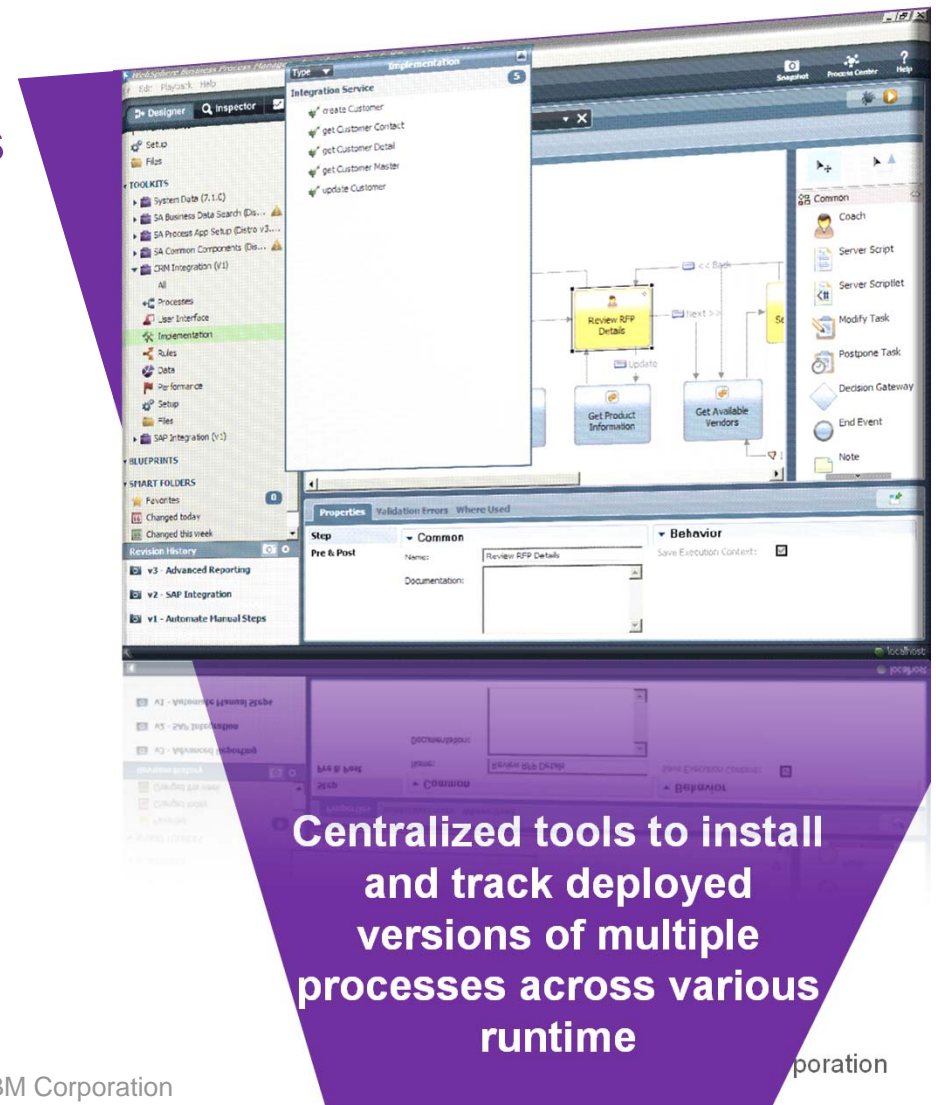
Collaboration Breeds Better Results
Easily access and connect with participants and experts

Connect to other Experts and Participants to get help with this task – via:

Coach Toolbar

or

Process Diagram
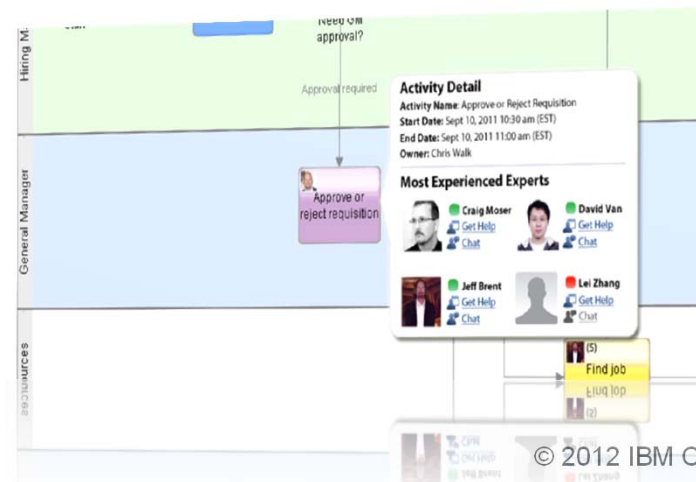
Interact with other Participants via Stream of comments and attachments for process instance

Why IBM BPM on System z?
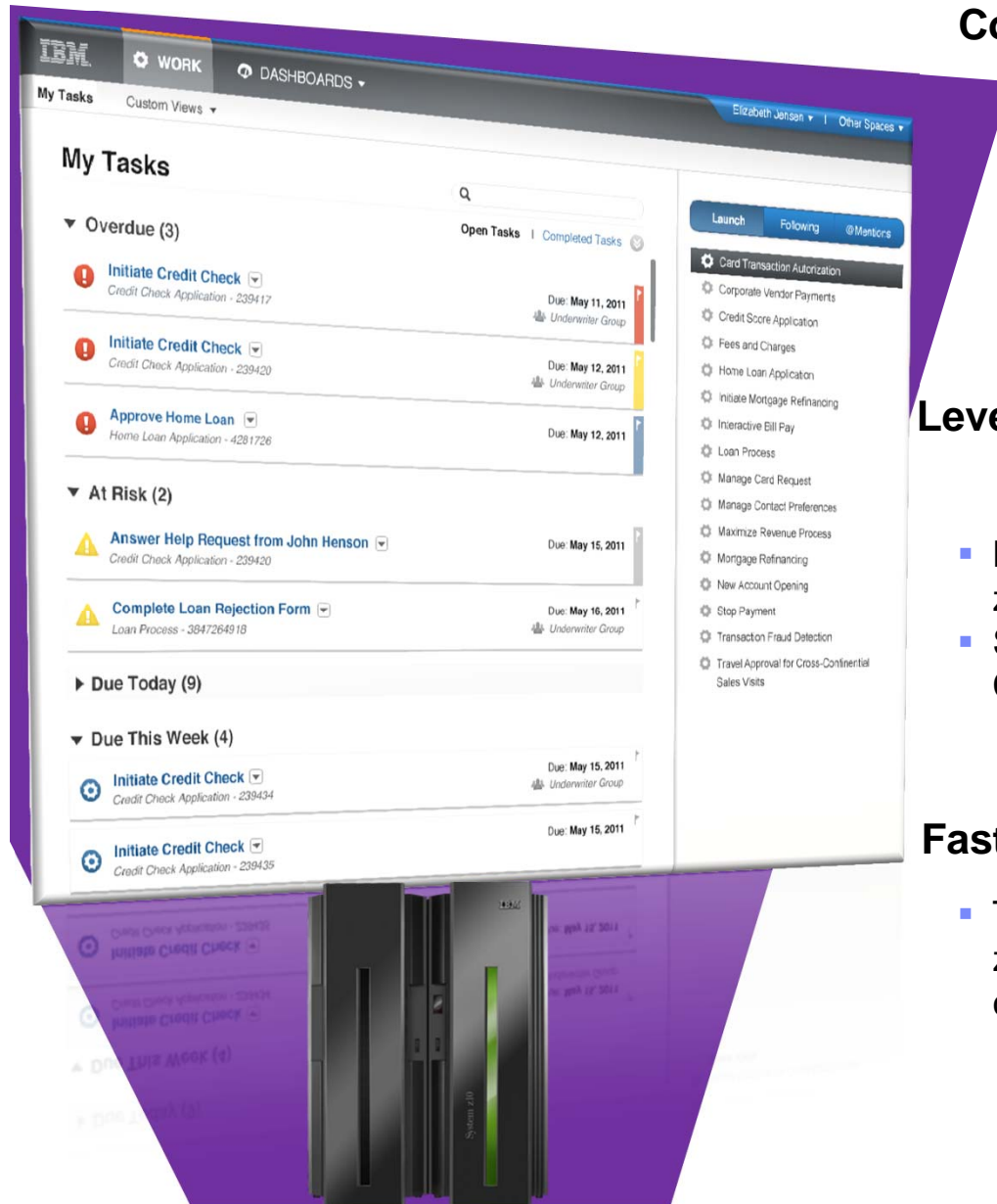
Connect to CICS and IMS z/OS services

- Designers interact with applications on z/OS using familiar COBOL data structures

- Leverage native z/OS data structures

Leverage co-location on z/OS of processes that interact with CICS, IMS, or DB2

- Long-running work workflow processes with DB2 z/OS
- Straight-thru (integration-centric) processes with CICS, IMS, DB2

Fast communication with z applications

- Tight integration with CICS, IMS, SAP – leveraging z/OS resource recovery services and two-phase commit for transaction coordination on z/OS

IBM Business Process Manager for z/OS
Faster Change, Safer Transactions

Citigroup

- zEnterprise allows multi-tier application integration

- Unmatched scalability and 85-100% utilization

Informatika, d.d.

- Consolidate and standardize hundreds of processes as part of ongoing effort to improve efficiency and compliance

EXECUTE MISSION-CRITICAL PROCESSES AT SCALE

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IBM products for Business Process and Decision Management

Blueworks Live

Business Process Manager

Operational Decision Management

Business Monitor
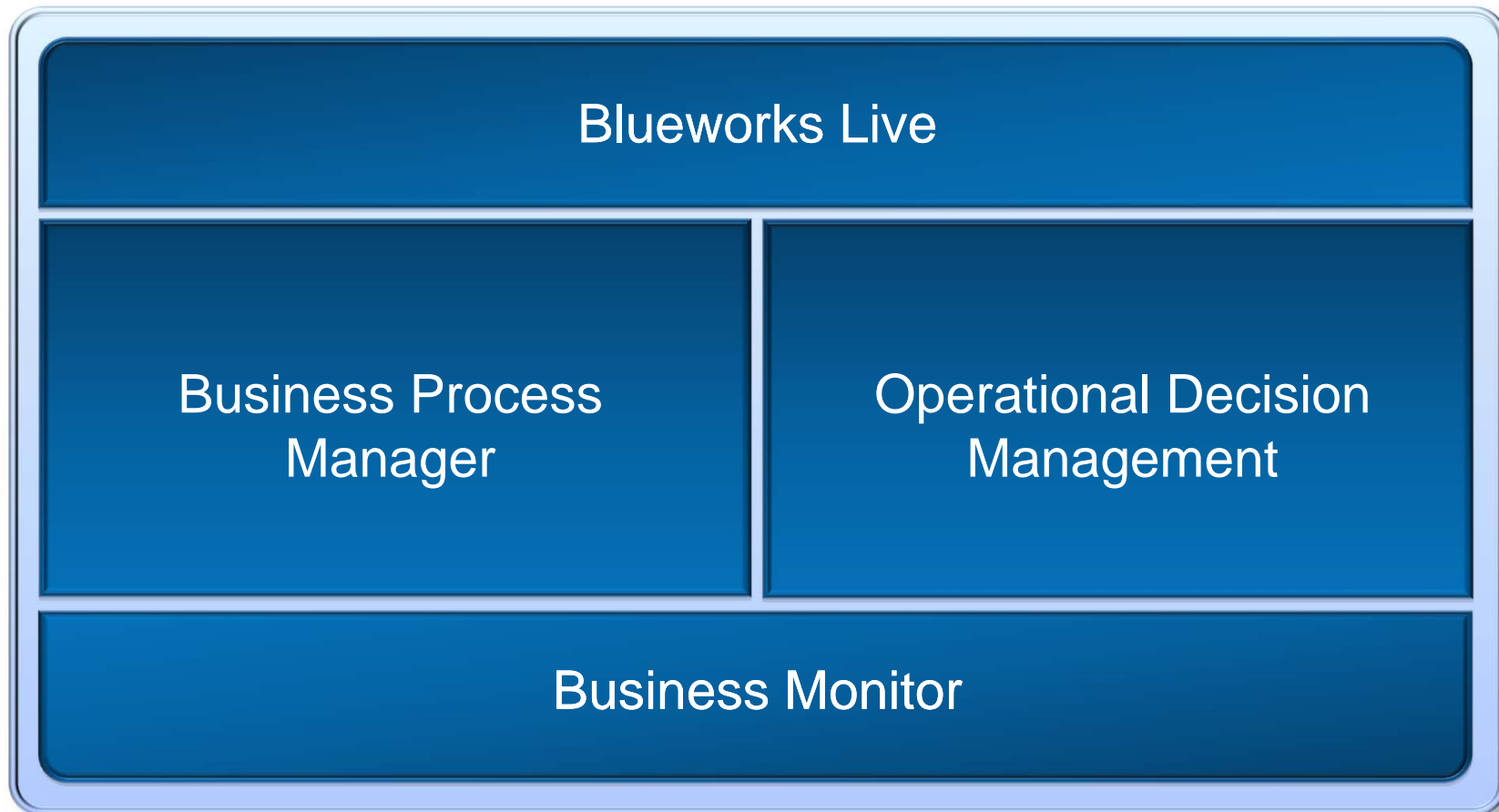
Work together to deliver effective solutions for business operation improvement

Business events enhance BPM

- **Complex patterns of events can trigger process execution**

  - Nature of the events (Sensors, applications, customer behaviors…)

  - Decisioning horizon (from seconds to months)

  - Volume (potentially thousands of signals to analyze per second)

  - Correlation between different source of signals or events

- **Examples include detecting varied situations like fraud patterns to instantiate fraud investigation processes automatically**

- **W**···**l**··**·**··**i**·····**·**les to refine decisions on which process to initiate once **·**···**d**

OnLineBanking

AccountMgt

Event

Event

TransactionMgt

Event

Branch App

Events

Business Events

Correlate Business Events and detect Business Situations

Starts

Business Rules

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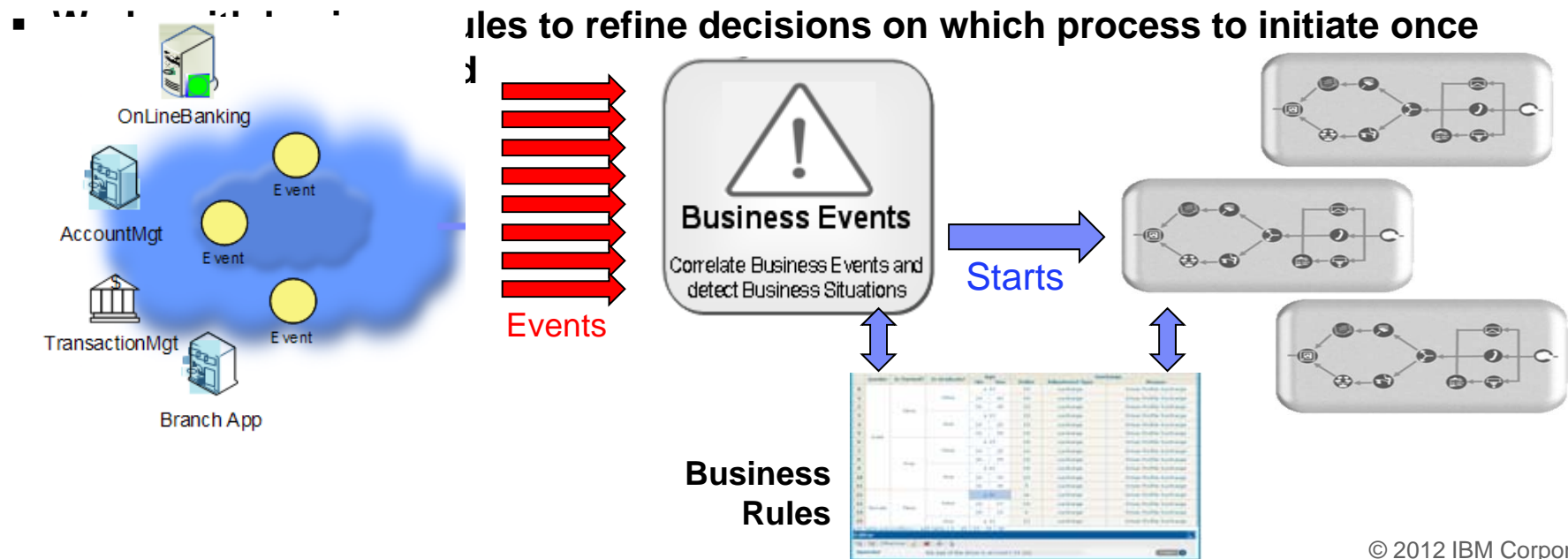
Decisions are often locked within processes

Without Decision Management
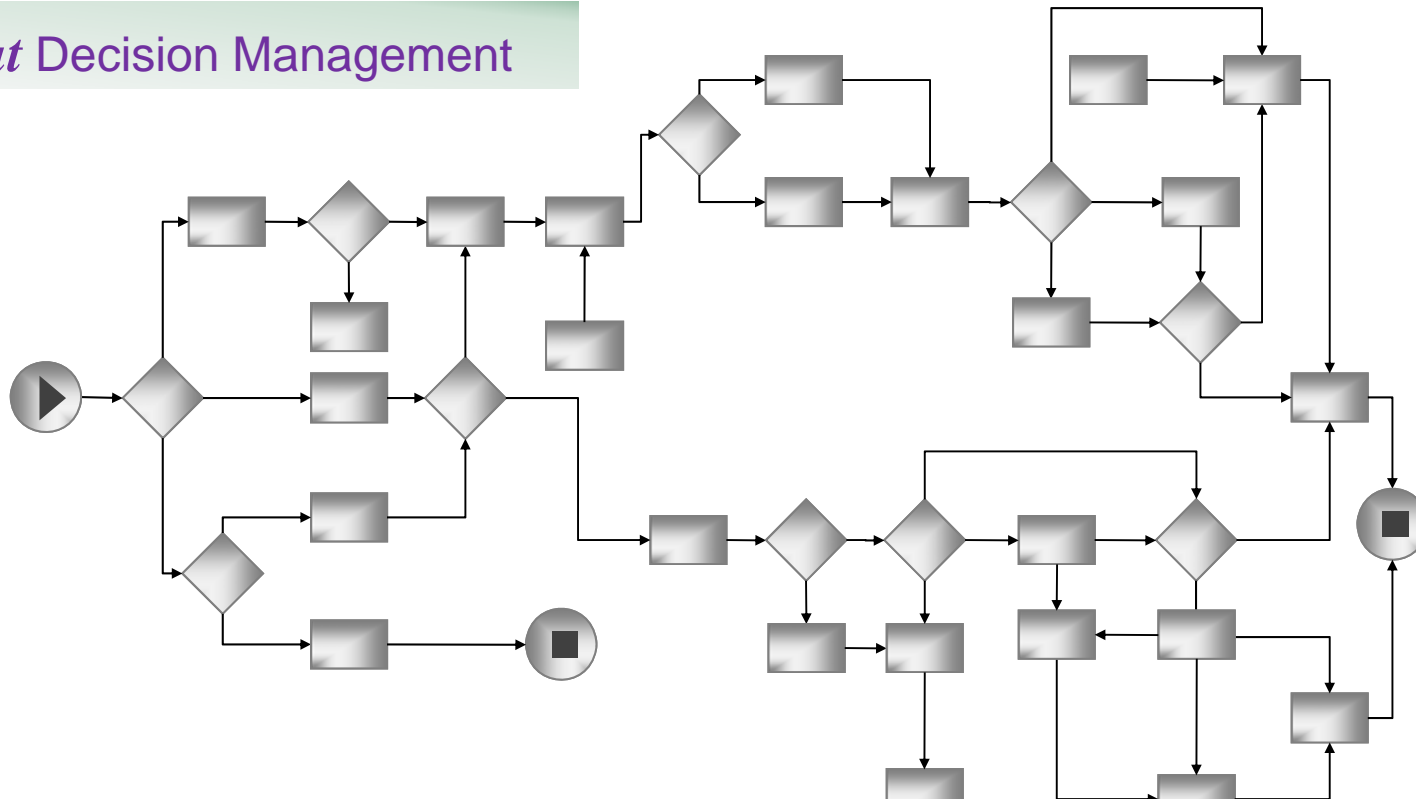
- Decisions are locked in processes and applications
- Programming skills are needed to create & modify decision logic
- Speed of business change is limited by IT bandwidth
- Manual intervention increases costs & reduces customer satisfaction

Decision Management enables reuse across processes

With Decision Management

Decision Service:
Eligibility

Decision Service:
Risk Scoring

Decision Service:
Offers & Promotions
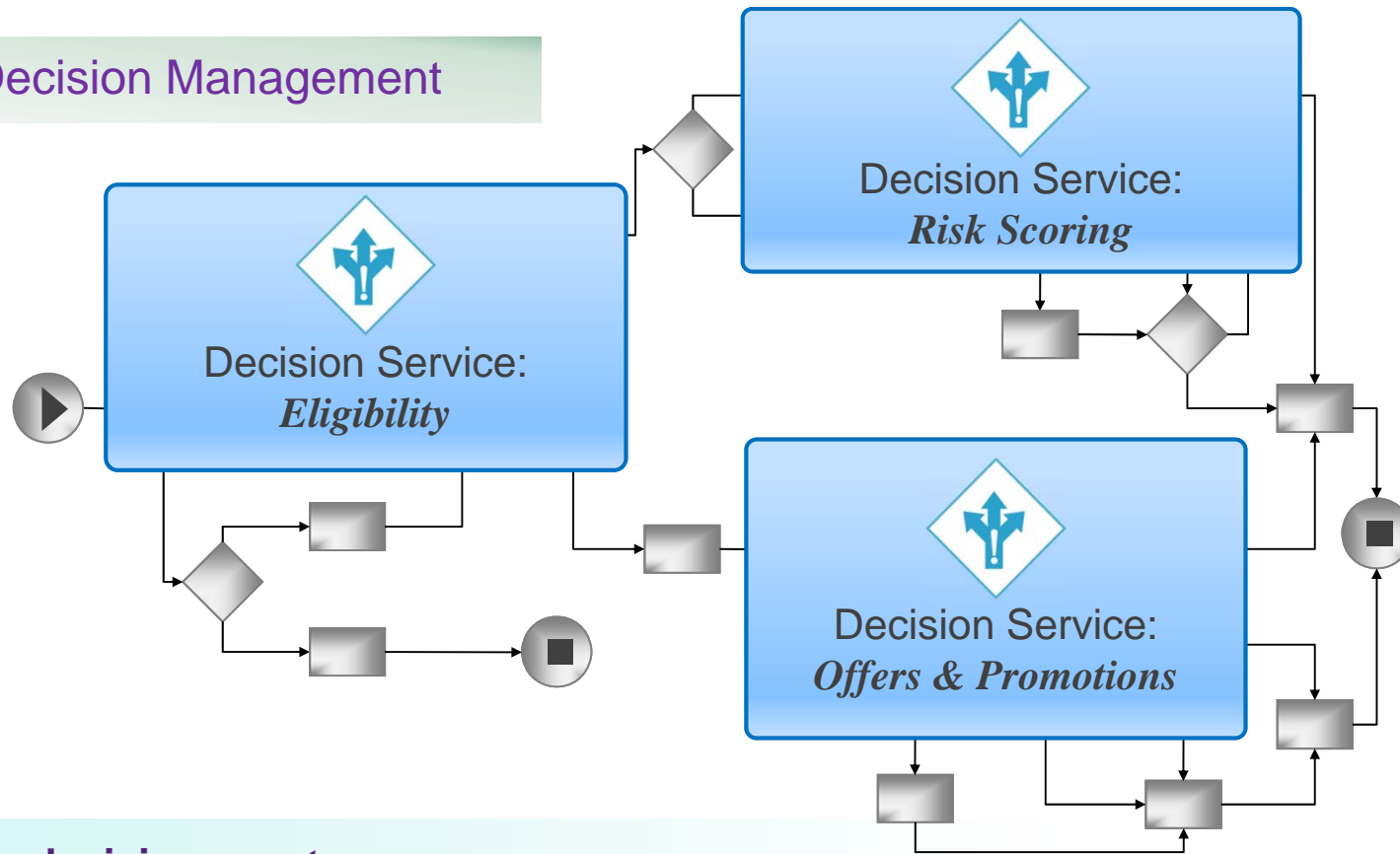
- **Reuse decision assets** across processes
- **Empower business people** to own, author and update decision services
- **Respond quickly** to changing market conditions
- **Maximize automation** and straight-through processing

Building Blocks to Achieve Process Innovation

a zEnterprise example

CICS, IMS

EVENTS

ORCHESTRATION

BPM

COBOL

BUSINESS RULES

SOA

Batch Apps

WOLA

INTEGRATION

IBM ODM

CASE

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ANALYTICS

MOBILE

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