16721: Decision Management: Making the Right Change, at the Right Time

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Abstract

Join us as we explore the benefits of Decision Management for mainframe applications. This approach helps get the rules that drive business decisions to where they can be seen and understood, enabling changes based on a real understanding of how decisions are made and the impact of the changes. Decision Management also enables a shared understanding between the business analysts who need changes and the IT teams responsible for delivering high-quality, seamless changes.

Topics:

- Making rules visible, understandable and adaptable to changes in market demands
- Using Decision Management to modernize existing mainframe applications
- Adopting a decision methodology incrementally with “market validated” decisions

Modernization with Decision Management

- Definition:
  - Applying technology and process to gain increased “decision making” agility for business applications
- Business need:
  - Business application “decision making” needs to adapt to changes in the marketplace, in time to make a difference
- Application Development cost & skills:
  - More effective application development & maintenance
  - Consolidation/Restructure of existing applications
  - Broaden the team making and maintaining the changes
  - Adapt to more agile lifecycle processes, without increasing business risk
- Goal:
  - Be able to make the changes needed by the Business
    - in hours or days, not months

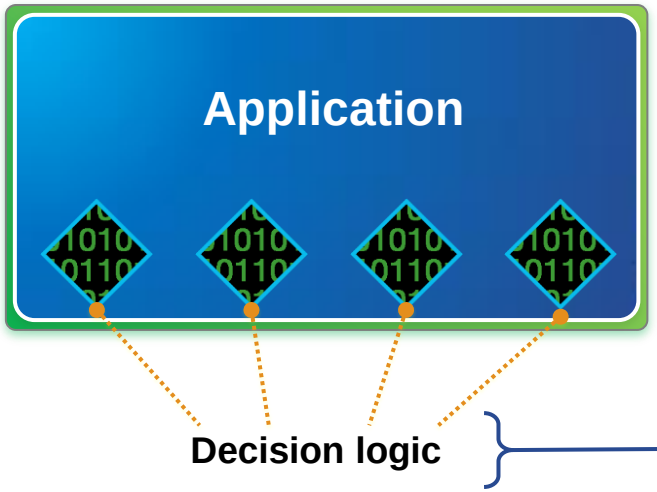
What we hear from customers

Decisions are not consistent across the organization	*Disparate system / personalities / skills / channels*
Decisions cannot be made at the right moment and on time	*To much manual tasks and data to handle to make decisions*
It is hard to keep decisions up to date	*Business is asking for more agility than IT can support*
It is hard to understand how decisions are made	*Business logic is in people's mind or application code*
Lack of decisions ownership for business stakeholders	*Development skills are required to update automated decisions*

Codify business policies, practices, & regulations

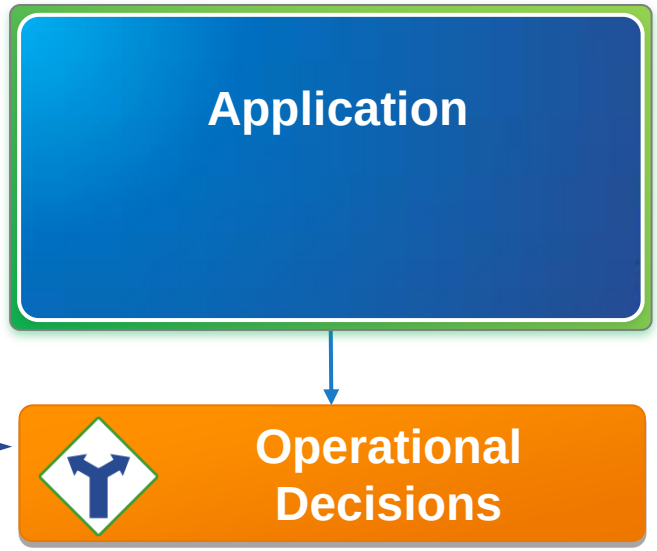
Manage decision logic independently from applications

Without ODM



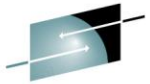
- Hard coded decisions are difficult to change
- Rules intertwined within applications cannot be reused by other systems

With ODM



- Externalized decisions are easy to change
- Centralized decisions enable reuse and consistency

Why Modernize with ODM on z/OS



Consolidation, Isolation, Extension or Extinction of the COBOL & PL/I application portfolio

Cost savings
- *Shorter change cycle*
- *Rule engine processing offload eligible*

Be able to react to increasing variety and volume of change requests

Improved Time to Market
- *Business decisions in natural language*
- *Decouple development and business decision change lifecycles*

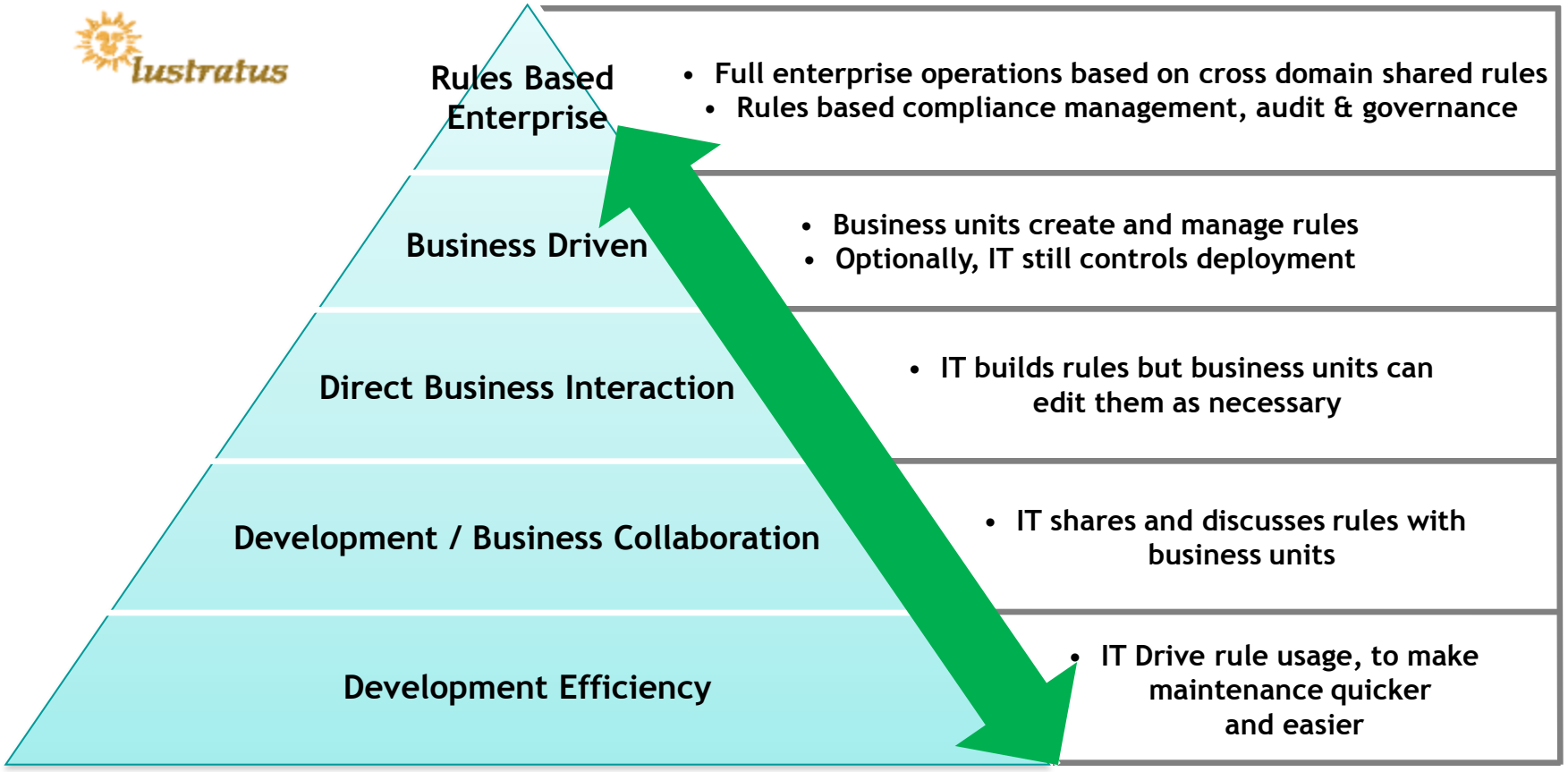
Sharing business rules across platforms & channels

Single version of the Truth
- *Shared expression of business policy*
- *Maintain with Center of Competency*

Ensuring seamless business experience in migration / application evolution

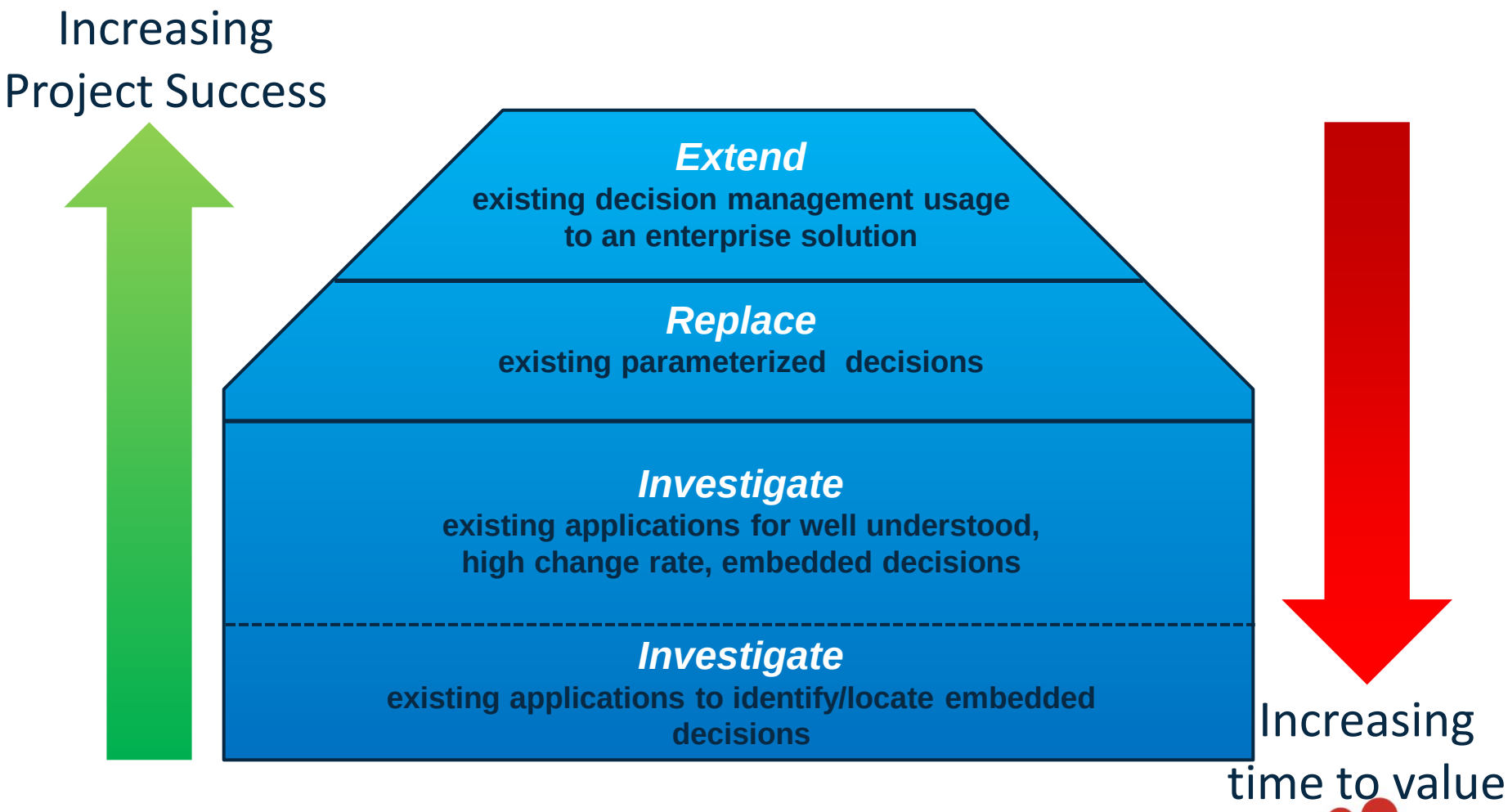
Incremental Adoption
- *Deploy one decision at a time*
- *Focus on decisions that are complex or need to change often & quickly*

Ensuring all the Stake Holders have a stake in the outcome



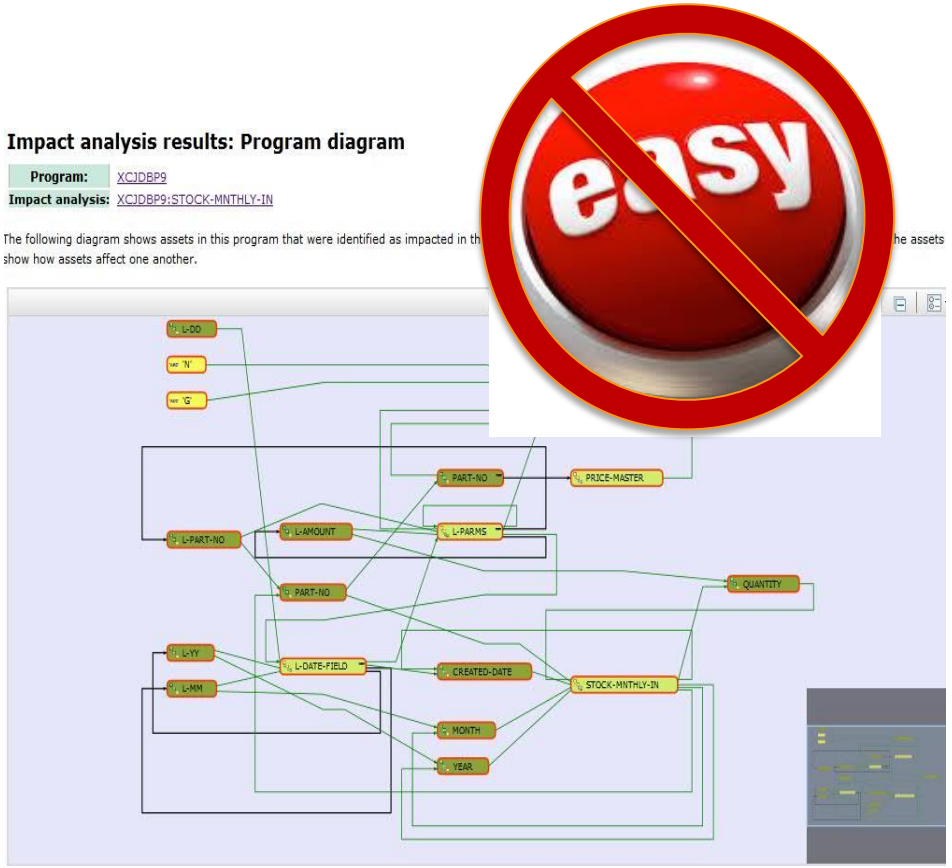
http://www.lustratusresearch.com/store/product/Using-business-rules-with-CICS-for-greater-flexibi,215,0.aspx

Opportunity Space: Extend, Replace, Investigate



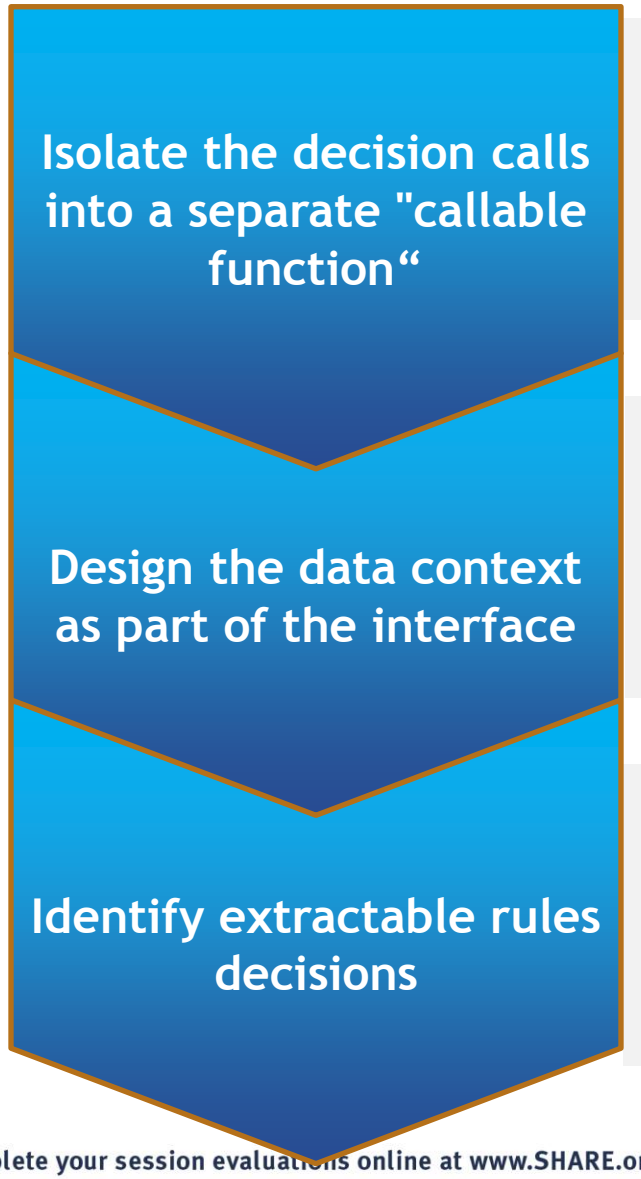
Rule Identification: Follow the Data

- Business policy (rules) were
  - Programmed in increments
  - Dispersed across the program
  - Without unifying commentary
- Skills required
  - Application understanding
  - Programming expertise
  - Tools to assist
- Follow the data
  - Identify the “decision output”
  - Backtrack - identify how & where it is set
  - Capture the code fragments touching the variable
  - Analyze to reconstitute the original business policy



IBM Rational Asset Analyzer

Adopting an ODM Approach - Design/Architecture



- *Minimizes the impact of application change on the data context/API*
- *Allows the decision call to be shareable by other parts of the application*

- *Recommend a custom copybook/include as the decision context*
- *Allows the data context to be a tailored subset of the application data*

- *Focus on LoB driven changes with any regularity/urgency*
- *Define the decision from actual business policy rather than current application behavior*
- *Application refactoring by targeting decisions*

Decision Calling Service

Appl Copybook or Include

- Subset the application data context for the decision call
- Choose the method to make the decision call
- Map response to application data context

Decision Copybook or Include

Appl Copybook or Include

Create and Call Web Service

Invoke ODM API

zRES via PC

RES via WOLA

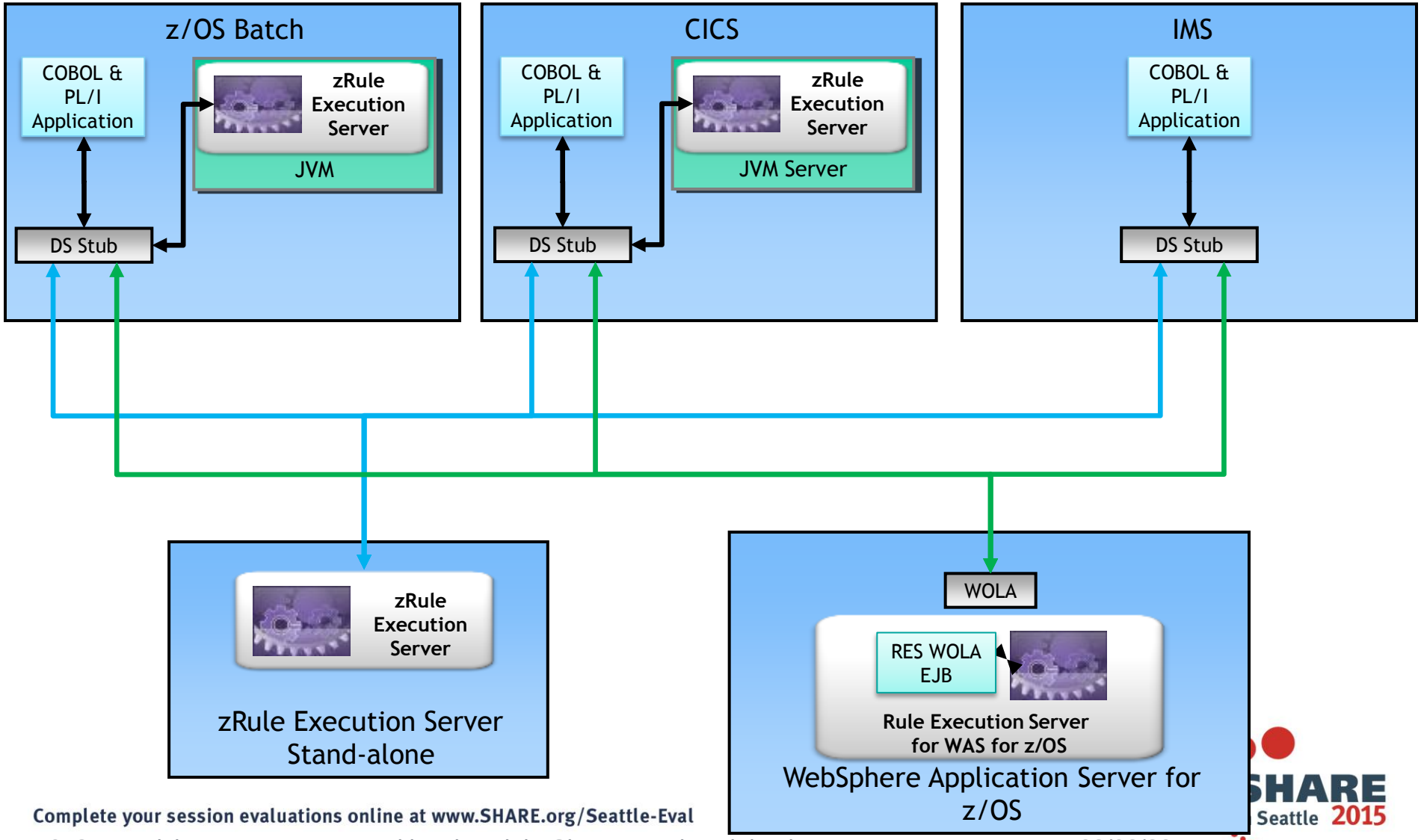
Call generated COBOL Rules

zRES Programming API

- **HBRCONN**
  - Establish the necessary linkage to the zRES
  - For CICS and IMS persistent connection environments, this call is focused on thread initialization
- **HBRRULE**
  - Call the Execution Server for a Decision
  - Assemble the data context
  - Call the zRES with the data
  - Get the decision result
- **HBRDISC**
  - Remove the linkage to zRES
  - For CICS and IMS persistent connection environments, this call is for thread cleanup

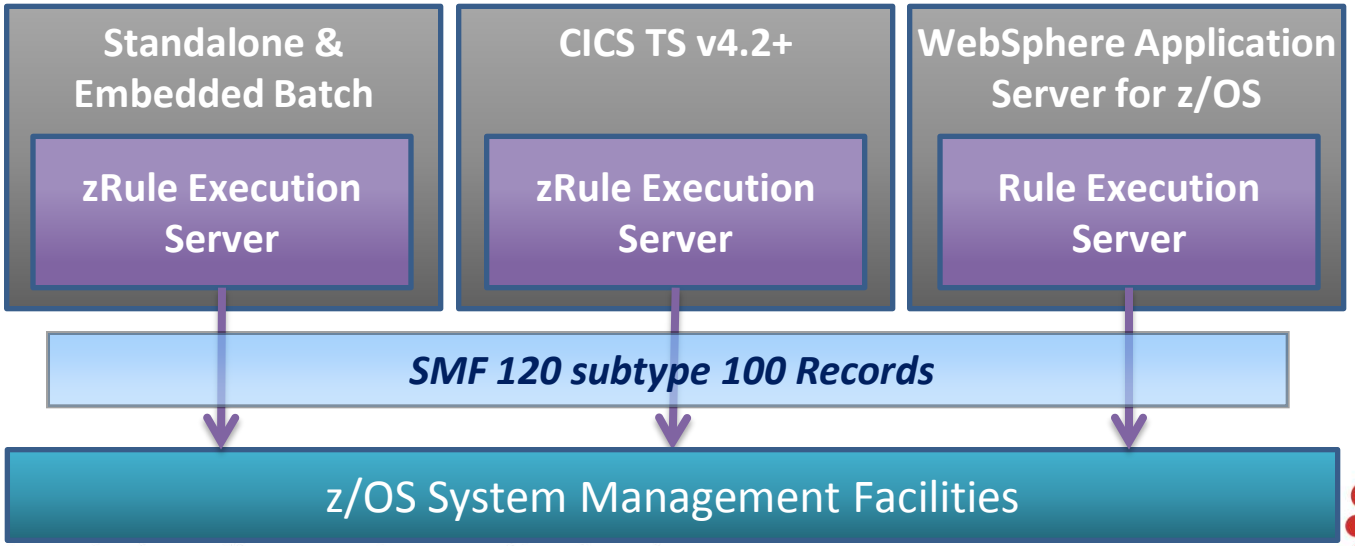
```
01 HBRA-CONN-AREA.
   10 HBRA-CONN-EYE              PIC X(4)  VALUE 'HBRC'.
   10 HBRA-CONN-LENTH            PIC S9(8) COMP.
   10 HBRA-CONN-VERSION          PIC S9(8) COMP  VALUE +2.
   10 HBRA-CONN-RETURN-CODES.
      15 HBRA-CONN-COMPLETION-CODE PIC S9(8) COMP.
      15 HBRA-CONN-REASON-CODE     PIC S9(8) COMP.
   10 HBRA-CONN-FLAGS            PIC S9(8) COMP  VALUE +1.
   10 HBRA-CONN-INSTANCE         PIC X(24).
   10 HBRA-CONN-RULE-COUNT       PIC S9(8) COMP.
   10 HBRA-CONN-RULE-MAJOR-VERSION PIC S9(8) COMP.
   10 HBRA-CONN-RULE-MINOR-VERSION PIC S9(8) COMP.
   10 HBRA-CONN-RULEAPP-NAME     PIC X(256).
   10 HBRA-RESPONSE-AREA.
      15 HBRA-RESPONSE-MESSAGE   PIC X(512).
   10 HBRA-RA-PARMETERS.
      15 HBRA-RA-PARMS  OCCURS 32.
         20 HBRA-RA-PARAMETER-NAME  PIC X(48).
         20 HBRA-RA-DATA-ADDRESS    USAGE POINTER.
         20 HBRA-RA-DATA-LENGTH     PIC 9(8) BINARY.
   10 HBRA-RESERVED.
      15 HBRA-RESERVED02         PIC X(12).
      15 HBRA-RESERVED03         PIC X(64).
      15 HBRA-RESERVED04         PIC X(64).
      15 HBRA-RESERVED05         PIC X(128).
      15 HBRA-RESERVED06         PIC X(128).
```

Decision Invocation Options on z/OS



Monitoring Decision Execution

- Decisions monitoring can be enabled all z/OS environments including:
  - zRule Execution Server stand alone and embedded batch deployments
  - zRule Execution Servers deployed in a CICS TS Environment
  - Rule Execution Servers deployed in a WebSphere Application Server for z/OS
- Usage records written as standard z/OS SMF 120 subtype 100 records
- Can be used to track
  - Number of times a particular decision is invoked
  - Total number of rules fired for a particular decision
  - Wall Clock time
  - CPU Time



Execution data : SMF 120 Subtype 100 structure

- Each record contains
  - Standard SMF Header
  - ODM Header
  - Zero to many Execution Segments Records
- Execution segment record contains data collected for each decision defined by a unique ruleset path
  - E.g. /MiniLoanDemoRuleApp/1.0/MiniLoanDemo/2.0/

- Data Collected contains
  - Number of times decision is invoked
  - Number of times decision invocation failed
  - Sum of all rules 'fired' for this decision
  - Total 'wall clock' time of executions for this decision
  - Max and Min 'wall clock' times
  - Total CPU time spent in JVM
  - Max and Min CPU time spent in JVM

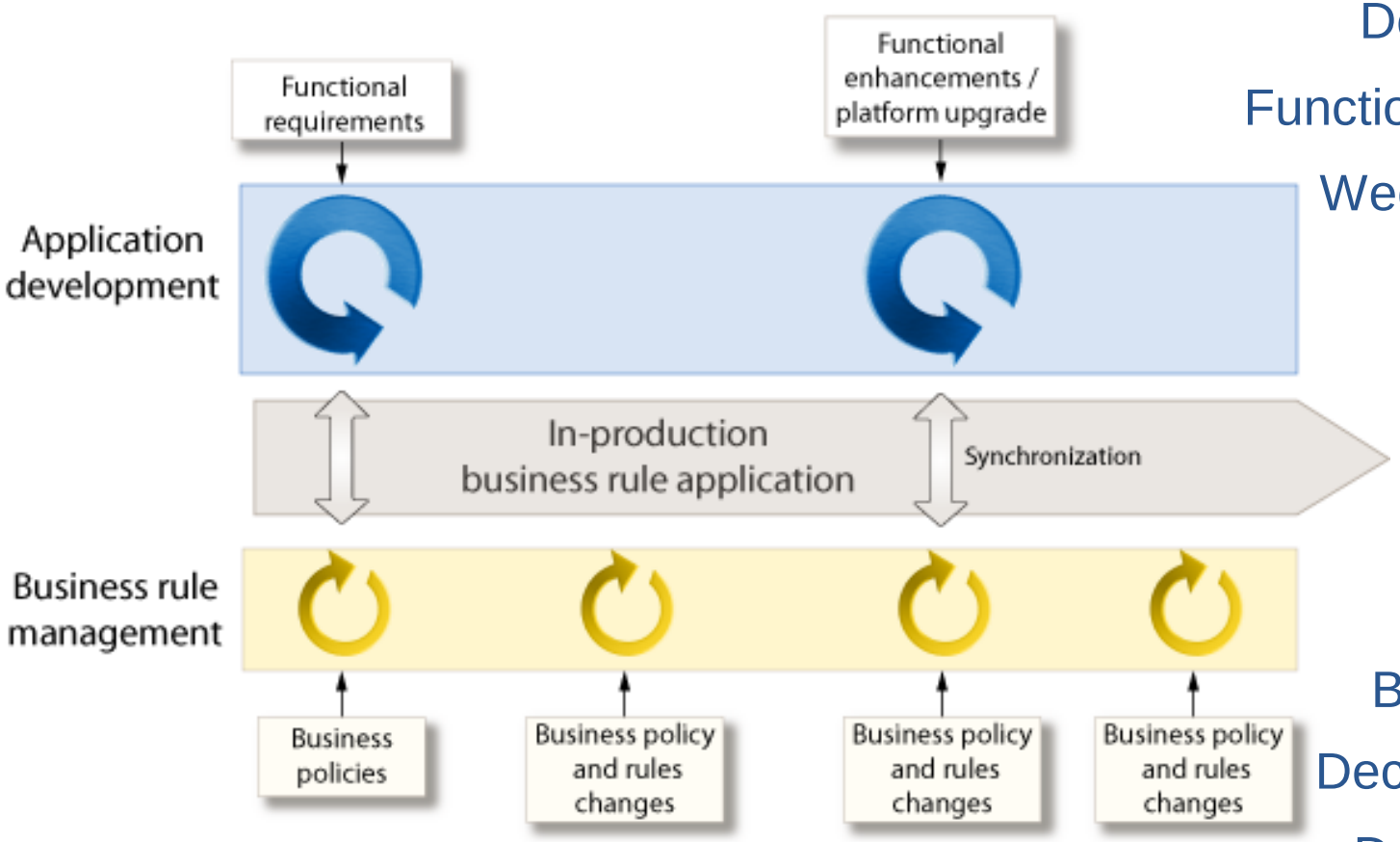
New in 8.7

Adopting an ODM Approach - Adapting Processes

- *Establish decision vocabulary with LoB analysts*
- *Establish the requirement working language based on the decision vocabulary*
- *Expect the "requirement is the design is the program" efficiencies*

- *Establish a "decision change cycle" distinct from the "application change cycle"*
- *Data context changes may fall into either or both*
- *Align QA testing to the changes*
  - *Decision testing handled within Decision Center*
  - *Decision only changes QA may only need application interface validation*
  - *Data context changes need to verify both the application and the decisions*

Redefined Application Change Cycle



Developer

Functions /Tasks / Flow

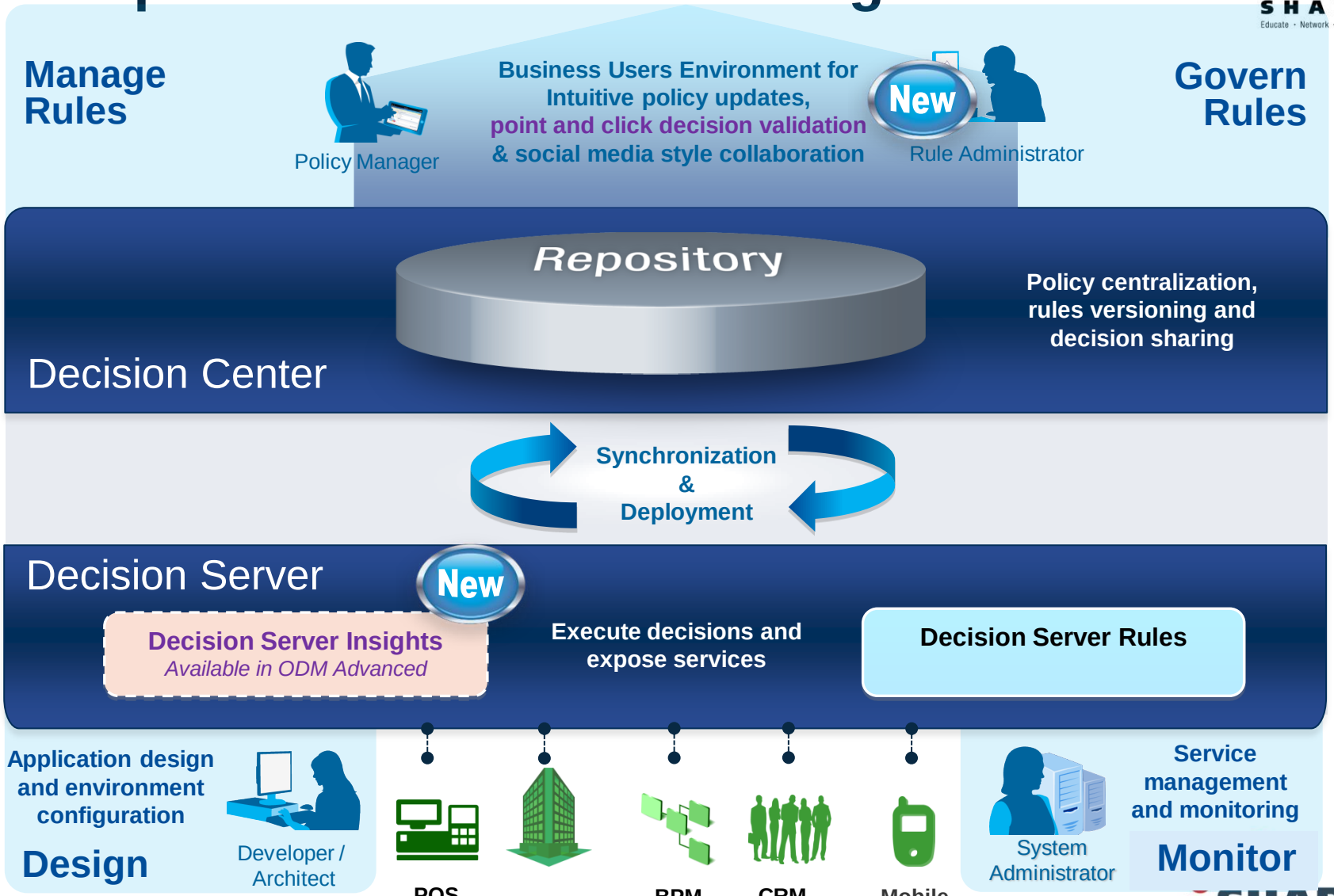
Weeks / Months

Business - IT

Decisions / Policies

Days / Weeks

IBM Operational Decision Manager V8.7



IBM ODM for z/OS Roadmap

ODM 8.7

- New simulation capabilities within the Business Console
- Expanded, decision tracking information
- Improved, embedded batch zRES support
- Ability to utilize a WebSphere Application Server Liberty profile for Rule Execution Servers (RES) on z/OS
- Effective Decision Simulation services for the z/OS applications
- Assisted Application lifecycle integration

ODM 8.5

- PL/I support for zRES
- Improved config process
- CICS rule-owning regions
- Stand alone console
- Decision Engine available on WAS on z/OS
- IMS performance improvements

ODM 8.0

- Expand COBOL Batch to IMS applications
- Expand ODM on z/OS for testing and simulation
- Expand ODM for data warehouse

Fall 2014

Spring 2014

Fall 2013

Spring 2013

Fall 2012

Spring 2012

Fall 2011

ODM 8.6

- Decision reuse spanning languages
- Expands zRES batch deployment options
- Delivers a new unit of rule management, the decision service
- Allows business users to verify and validate rule changes with Business Console.
- Support for: DB2 V11 & Eclipse 4.2.2

ODM 8.0.1

- New high performance Decision Engine for z/OS
- Extend IMS to transactional usage
- High Value Batch Processing

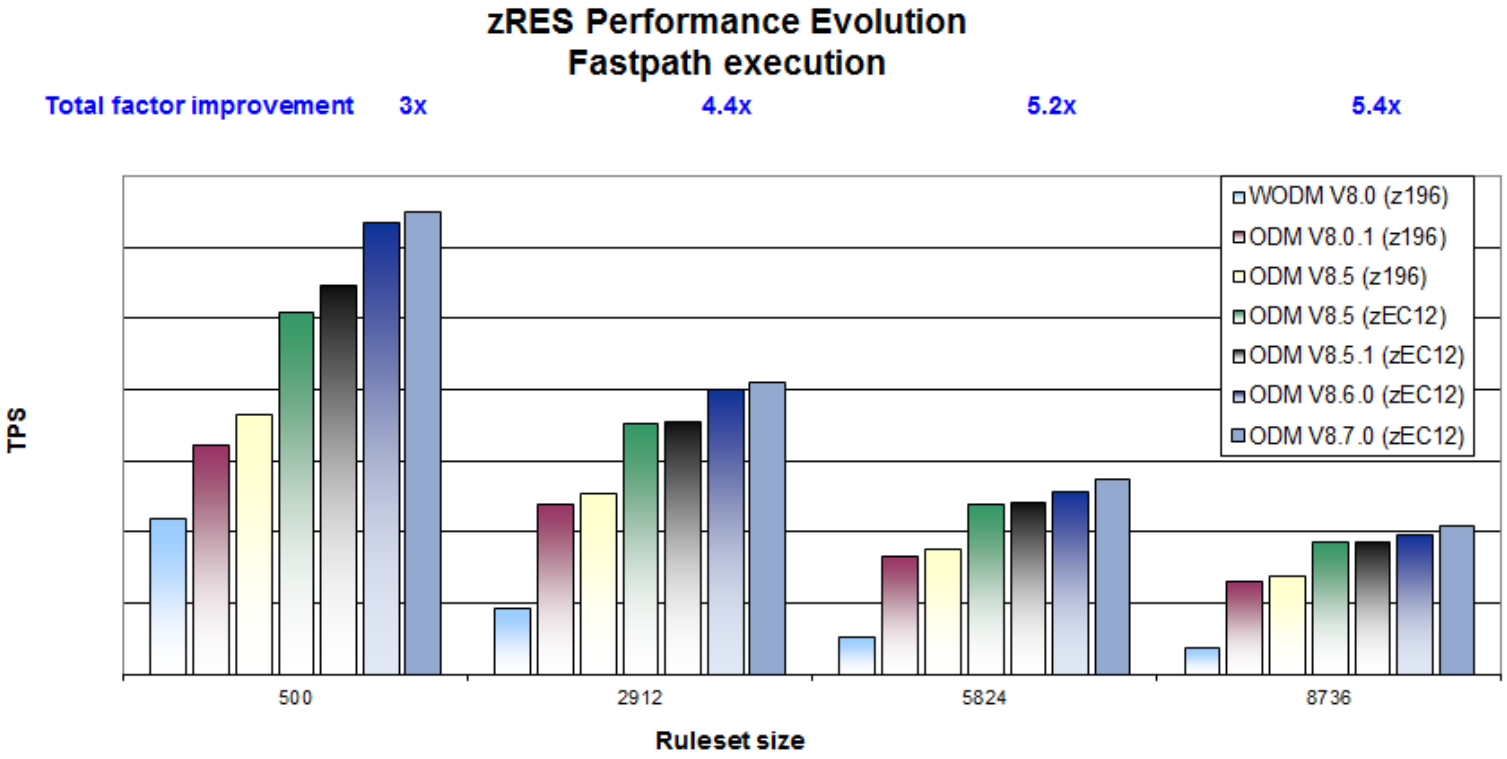
ODM 8.5.1

- Provides a better visibility to track the number of decisions
- Improved Decision Engine on WAS for z/OS including access to the decision warehouse & testing
- Broaden the decision data structure supported for PL/I applications

ODM 7.5

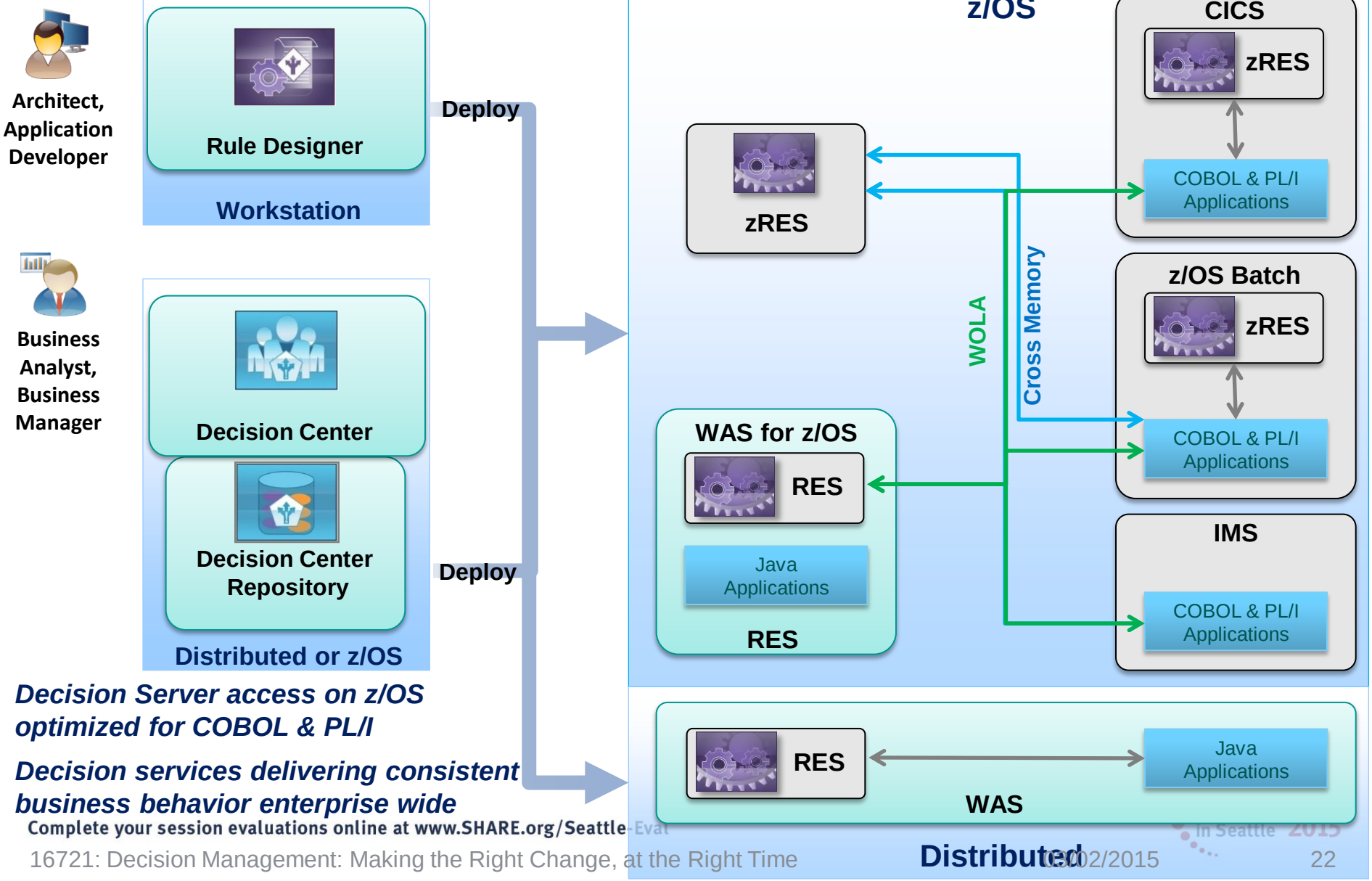
- Focus of rule sharing of z/OS rule projects and distributed rule projects
- Delivery of new zRES option for standalone and within CICS
- Updated COBOL Management experience
- Management on z/OS (combining business rules with business events)
- Delivery of Support Pac with Analytics

ODM for z/OS Performance Evolution



- The large improvement in V8.0.1 was mainly attributable to Decision Engine.
- The move from z196 to zEC12 hardware gave significant improvements.
- There have also been many other improvements in both the ODM codebase and the JVM.
- There is a continual performance gain on fastpath on small and medium rulesets

Decision Management: Comprehensive Flexibility



Decision Server access on z/OS optimized for COBOL & PL/I

Decision services delivering consistent business behavior enterprise wide

ODM for z/OS enables smart organizations to capitalize on modernization and innovation

- Faster Time to Market:
  - Ability to react to changes in a fast pace competitive marketplace though Business events and rules
- Lower cost of maintenance
  - Leading to improvement operational efficiency and total cost of ownership
- Better visibility and control
  - Leading to improvement to better corporate governance
- Ability to implement the best rules for the best outcome
  - Business users can see, understand and have the appropriate tools to support the needs of the organization by maximizing their IT investment
- Ability to manage and document business decisions executed in System z applications
  - Authoring rules for COBOL & PL/I applications in business terminology
  - Ability to share business rules with Java and other COBOL & PL/I applications
  - Integrate seamlessly with existing COBOL & PL/I applications

Other sessions this week on ODM

- ✓ Tues at 10:00 AM:
  - 17147: Operational Decision Manager User Experience by Brian Peterson, Optum Technology, UnitedHealth Group
- ✓ Tues at 12:30 Metropolitan A:
  - 17181: Lunch and Learn: Decisions Rule CICS Applications by Ian Mitchell, Chris Backhouse and Richard Szulewski, IBM
- ➢ Wed at 10:00 in Virginia:
  - 16721: Decision Management: Making the Right Change, at the Right Time by Richard Szulewski, IBM
- Thurs. at 1:45 in Willow A:
  - 16569: Dynamic Business Rules and Other Things You Didn't Think CICS could do by Chris Backhouse, IBM

Where can I find out more?

- http://www.ibm.com/operational-decision-management
  - Shortcut: http://ibm.com/ibmodm
  - IBM Operational Decision Manager for z/OS
- White papers & tech docs
  - WebSphere z/OS – The Value of Co-Location
  - Brief introduction to WebSphere Optimized Local Adapters
  - WebSphere for System z Prescriptive Use Cases (Oct. 28, 2011 Addendum)
- Redbooks
  - Flexible Decision Automation for Your zEnterprise with Business Rules and Events
  - Batch Modernization on z/OS
  - Patterns: Integrating WebSphere ILOG JRules with IBM Software
- Operational Decision Management eBook: Enabling Faster, More Consistent Business Decisions in Enterprise Applications (April 2014)
- Optimizing Decision Management with IBM WebSphere and System z (YouTube)
- IBM Operational Decision Management YouTube demo
- Top 10 Business Use Cases for Operational Decision Management
- Good Decision! Decision Management blog

धन्यवाद
Hindi

多謝
Traditional Chinese

Grazie
Italian

ขอบคุณ
Thai

Gracias
Spanish

Merci
French

Спасибо
Russian

شكرا
Arabic

Obrigado
Brazilian Portuguese

Danke
German

多谢
Simplified Chinese

நன்றி
Tamil

ありがとうございました
Japanese

감사합니다
Korean

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