



Let's build a smarter planet.

IBM

Business Events and Business Rules



Smarter Banking Showcase Team
WW Banking Centre of Excellence, IBM Montpellier



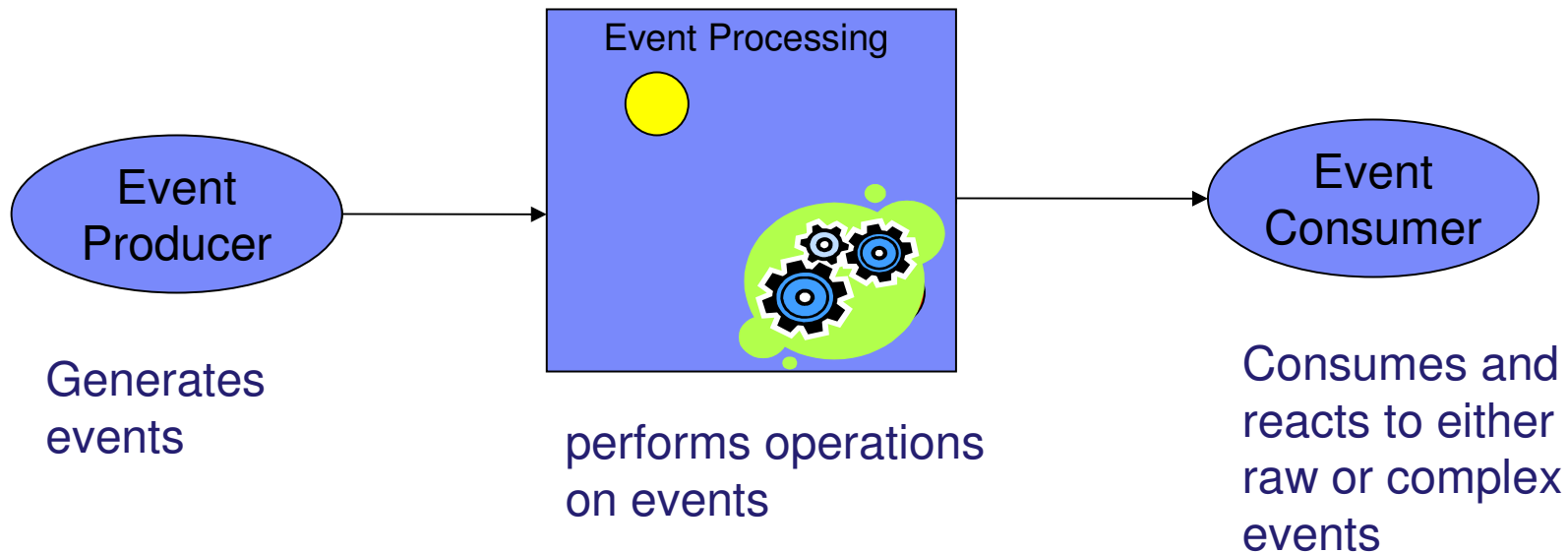
business event examples





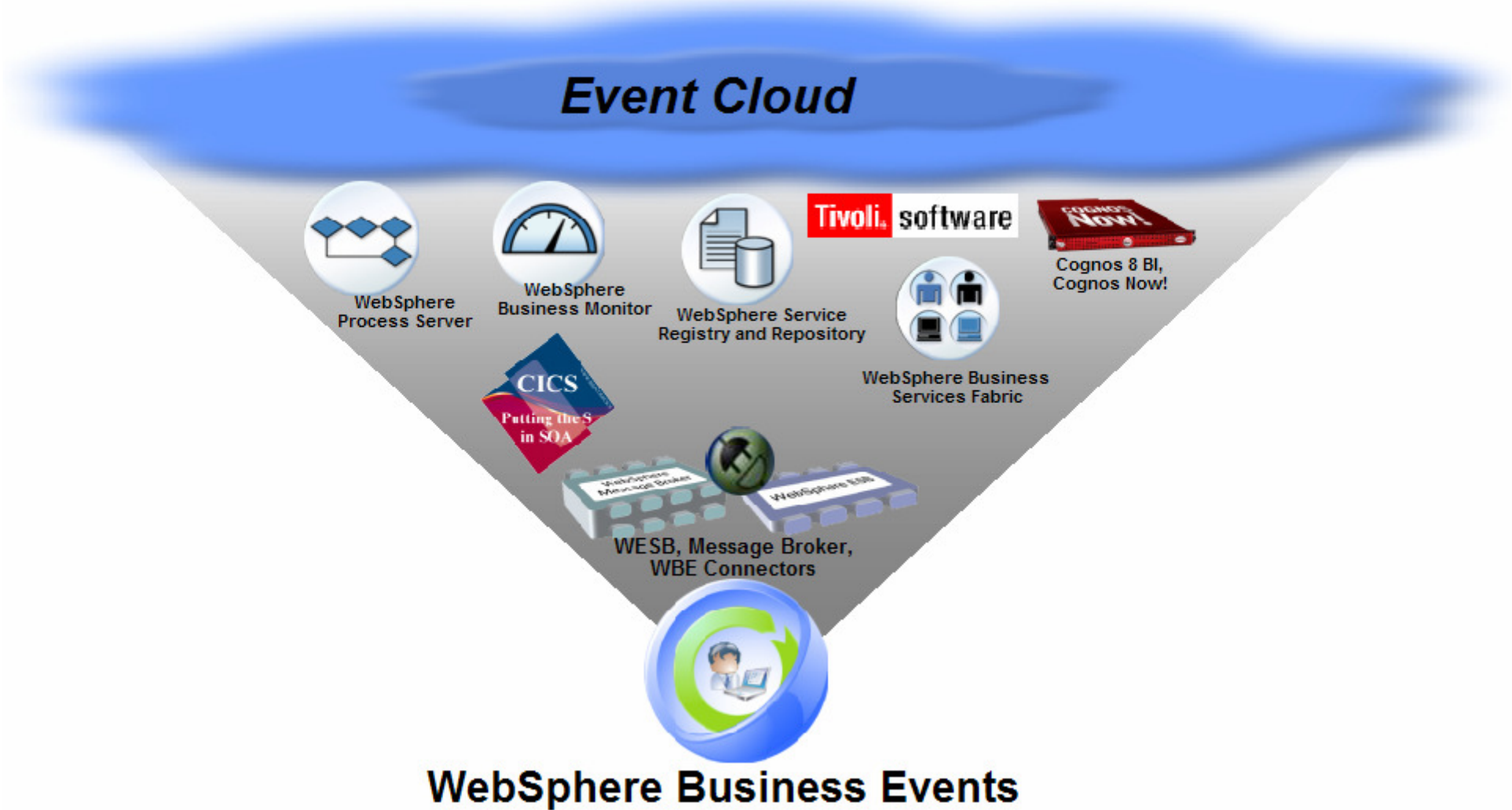
What is Business Event Processing?

- An event is something that happens
 - A **business event** is something that happens that is relevant to the business
 - “**simple**” event: meaningful in itself
Order placement, stock trade
 - “**complex** event processing”: detect & respond to patterns of events over time
3 orders from a customer in 2 days, suspicious pattern of ATM activity
 - “**Business Event Processing**” extends event processing capabilities to business users





Business Event Processing – the big picture

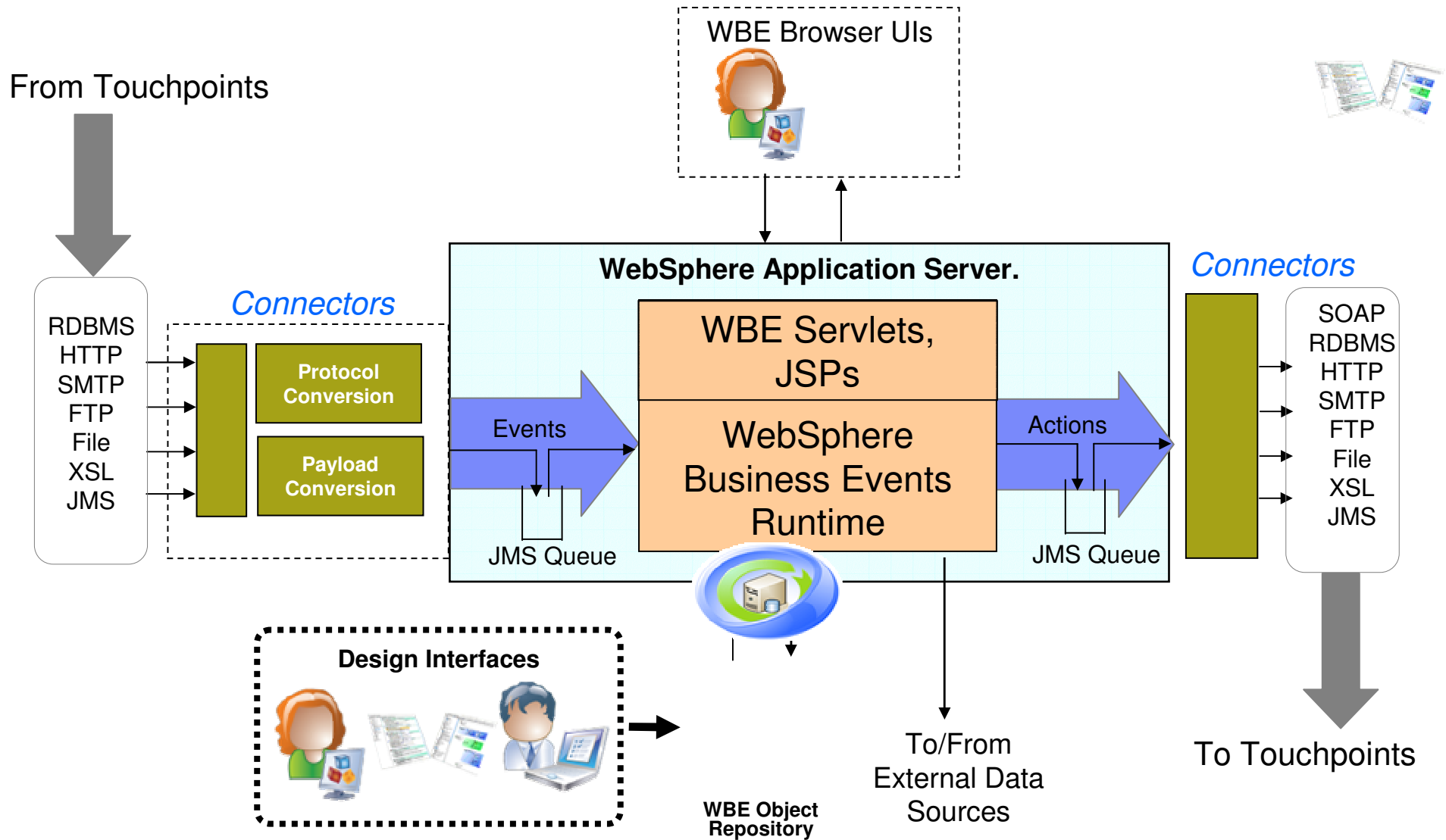




WebSphere Business Events

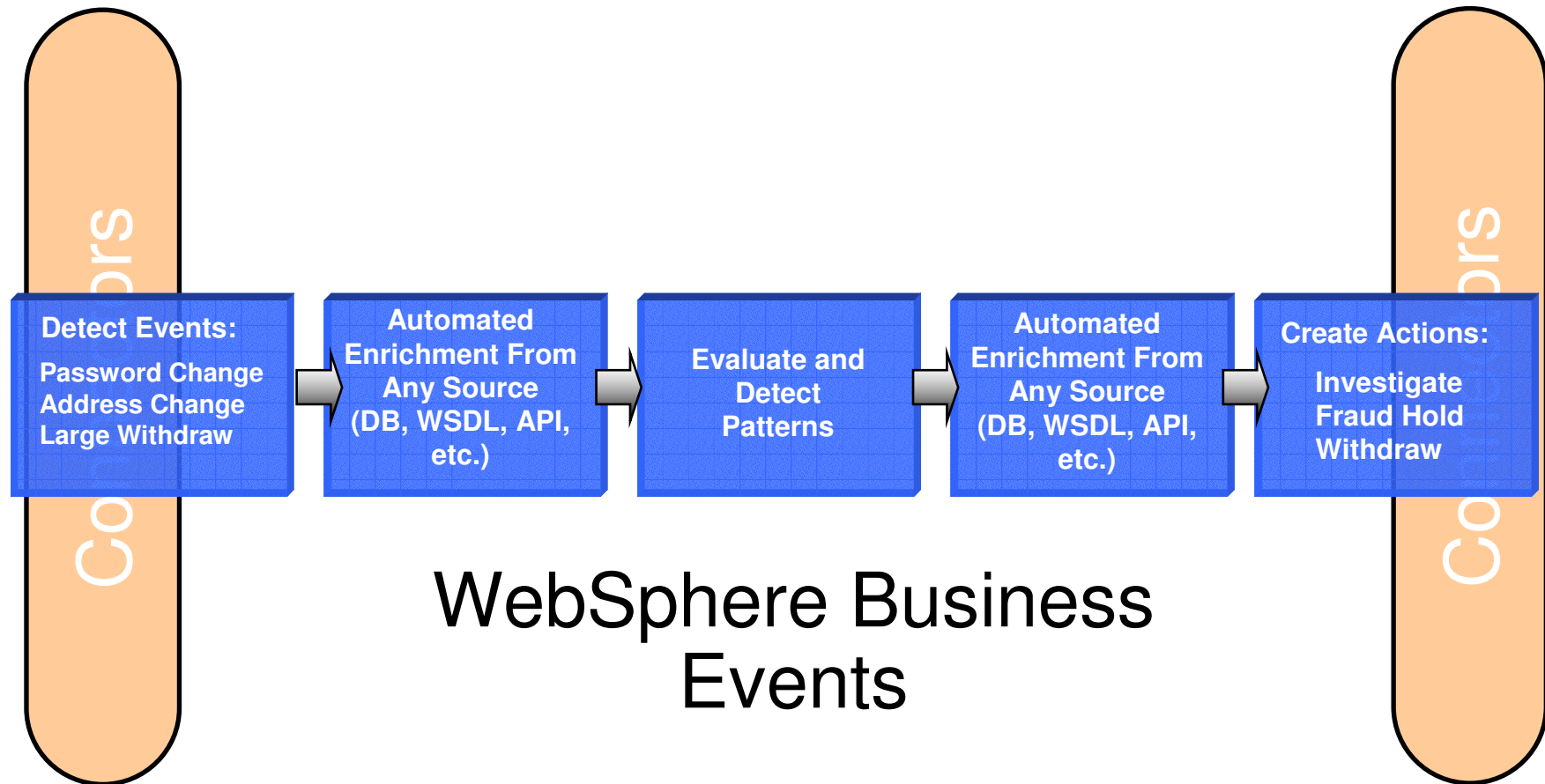


WebSphere Business Events Architecture



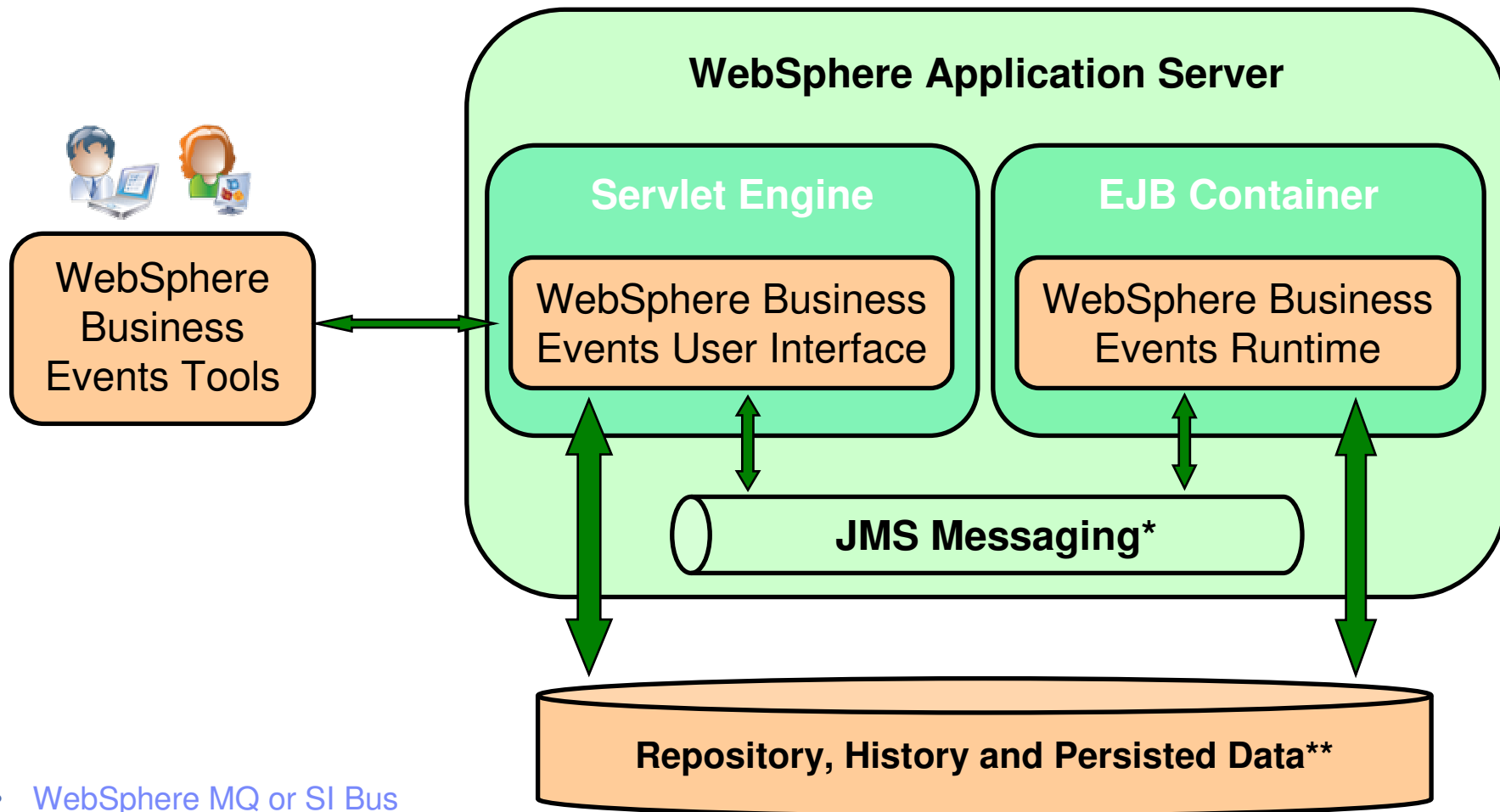


WebSphere Business Events – Processing Flow





Deployment



- WebSphere MQ or SI Bus
- on z/OS you must use the WAS default messaging
- DB2, Oracle, SQL Server or Derby

Define Business Interactions - in Design

Event processing logic using drop-down

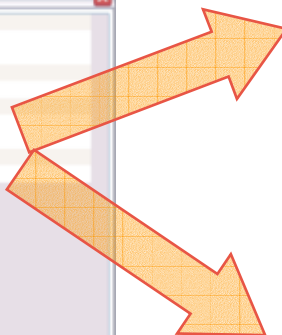
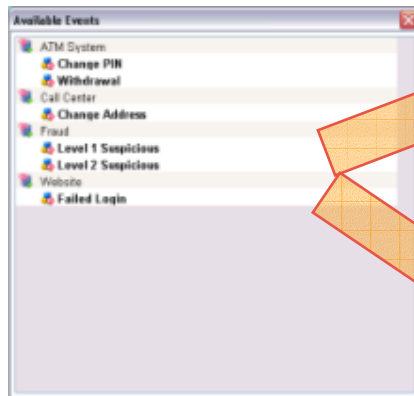


Business User



Business Analyst

Building Blocks



Condition - Filters

Large Transaction Checks if
 Transaction.Amount **Is Greater Than or Equal To** 1000

Recent PIN Change Checks if
 Occurrences Of Change PIN Within 1 day **Is Greater Than** 0

Data Value

Event Pattern

Interaction - event processing logic

Event
Conditions
Actions

Watch for Suspicious Activity Related by Customer.Customer ID

In response to **Withdrawal** from ATM When

Where **Large Transaction**
and **Recent PIN Change**

Then **Deny Transaction** on Transaction Server
Then **Investigate Activity** on Investigations

Filters and other information from the Building Blocks are then used for constructing Interactions



Format of event and action data

- The format of event and action data is XML
 - XML data is described by XML schema supplied by the product or generated for you
 - Data that is not in this format can be transformed using:
 - ✓ XSLT transform **Inside** WBE connectors
- or before arriving at:**
- ✓ WebSphere Enterprise Service Bus
 - ✓ WebSphere Message Broker
 - ✓ WebSphere Transformation Extender
 - ✓ Others

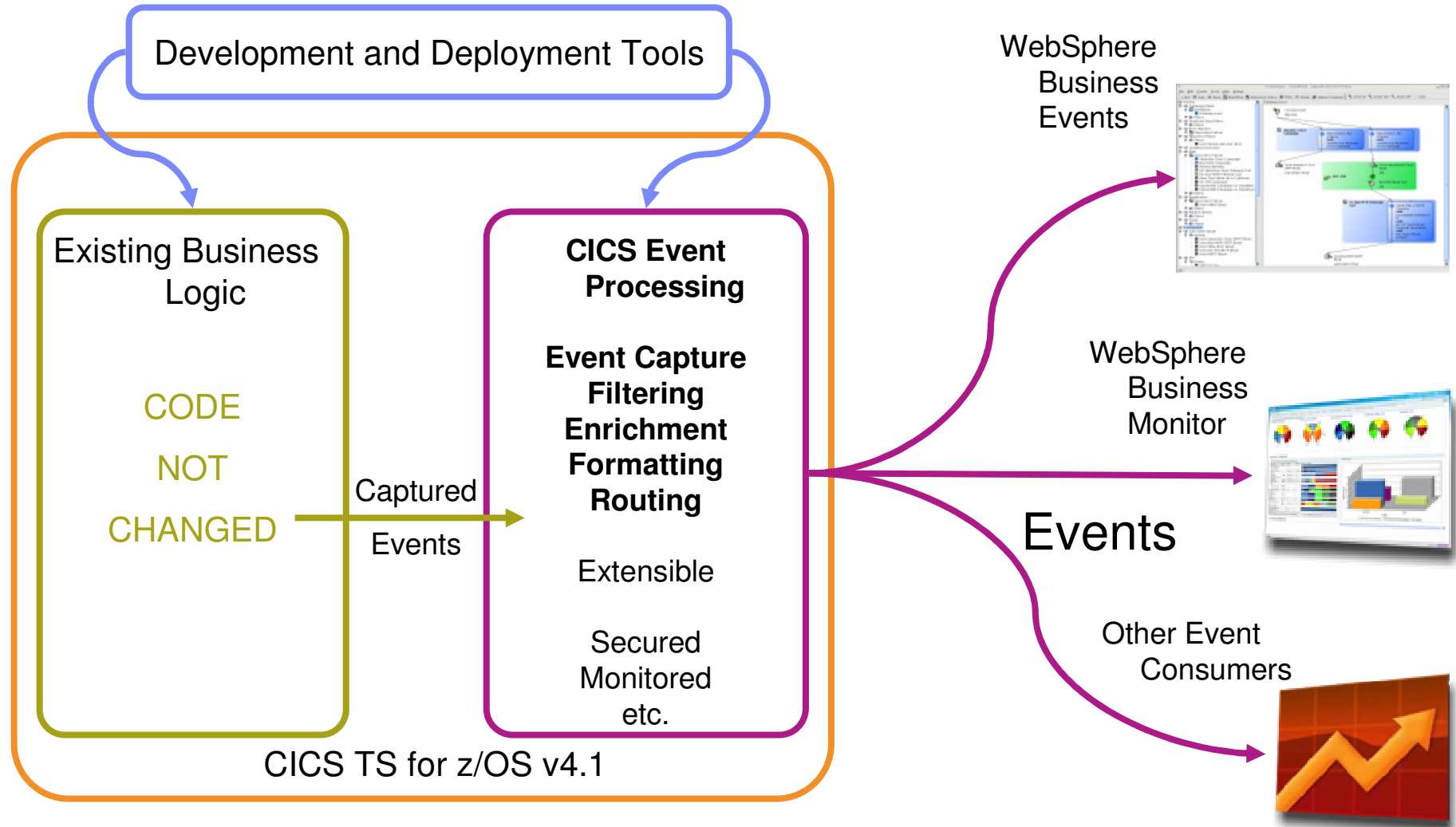




CICS and Business events



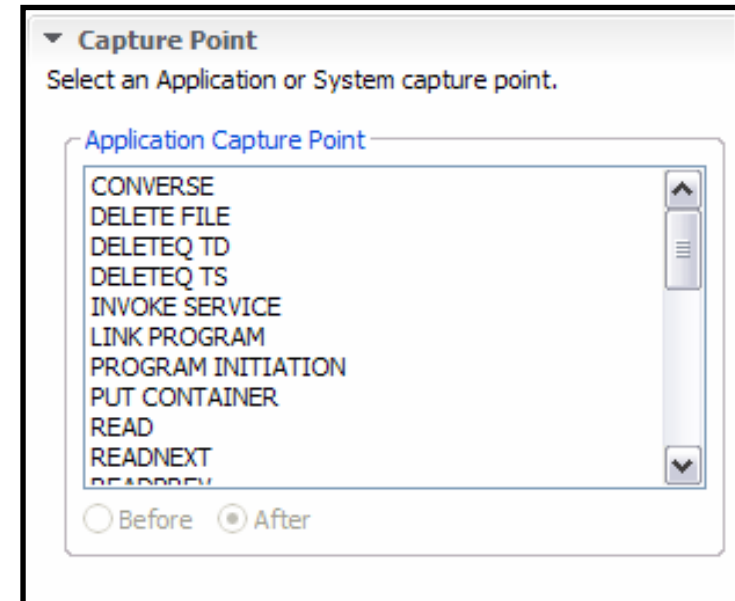
CICS TS V4.1 Event Processing Support - Overview





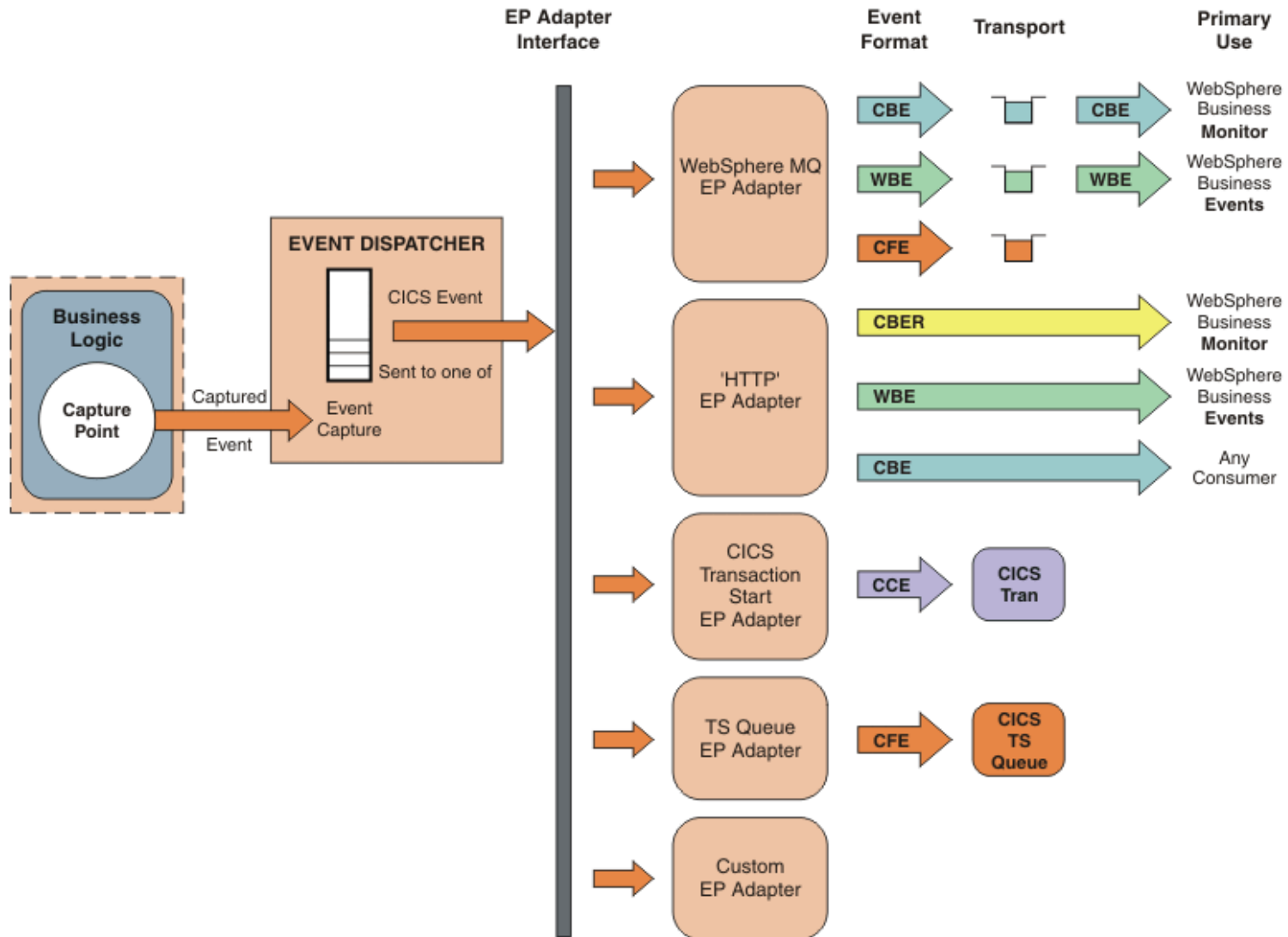
Where can CICS events be captured?

- In CICS V4.1 events can be captured at...
- **...any event enabled API call**
 - Non invasive
- **...program initialisation**
 - Non invasive
- **...an explicit EXEC CICS SIGNAL EVENT call**
 - Small program change required



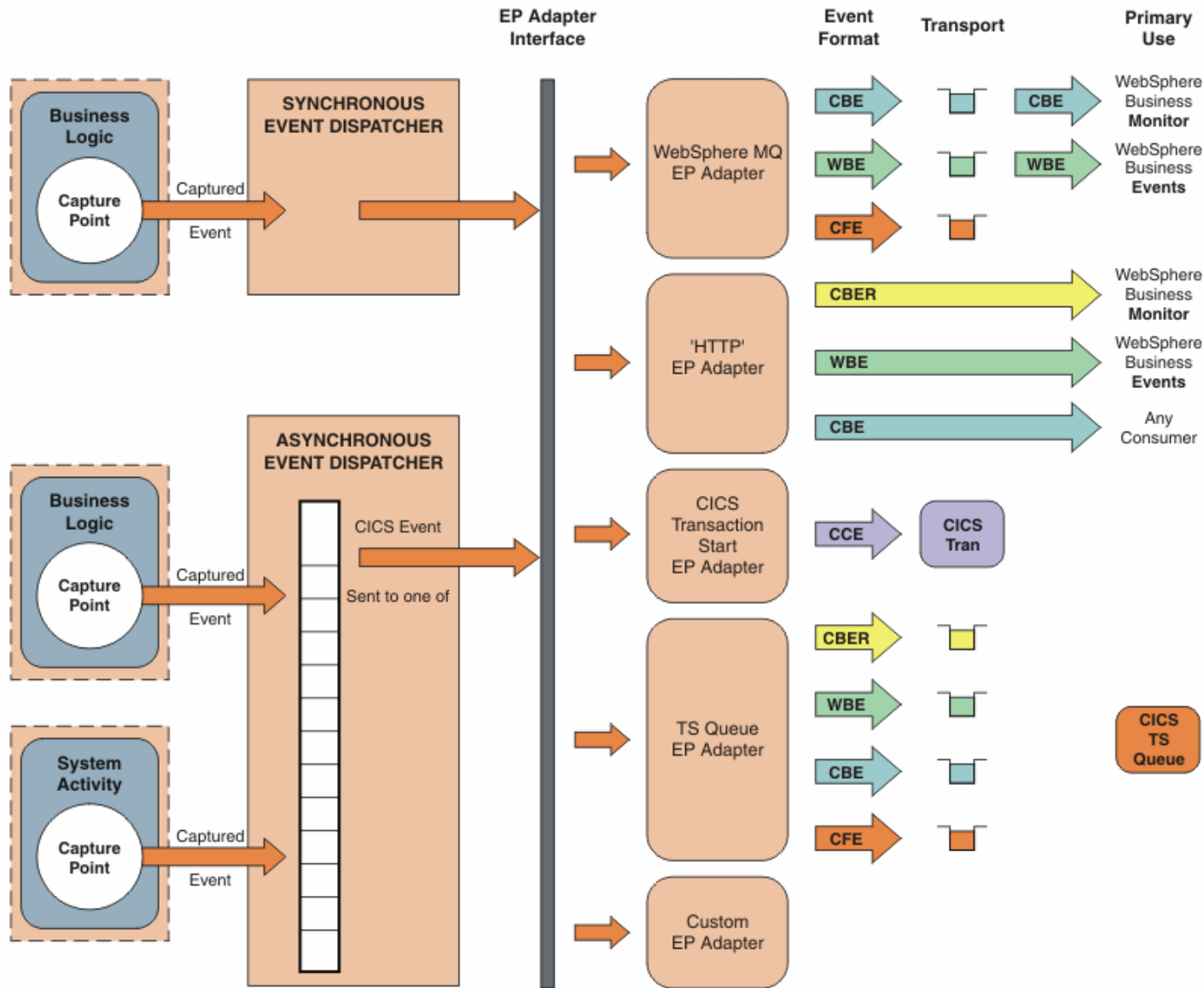


CICS TS V4.1 Event Processing Support - Overview





CICS TS V4.2 Event Processing Support - Overview



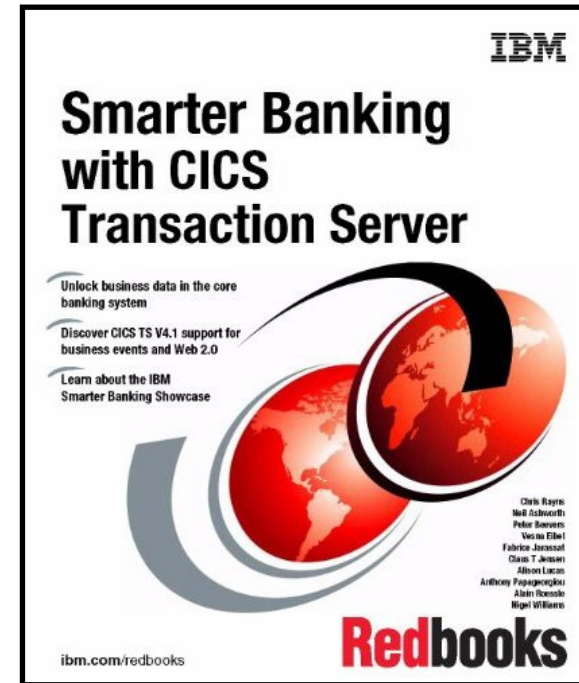


Smarter banking showcase scenario



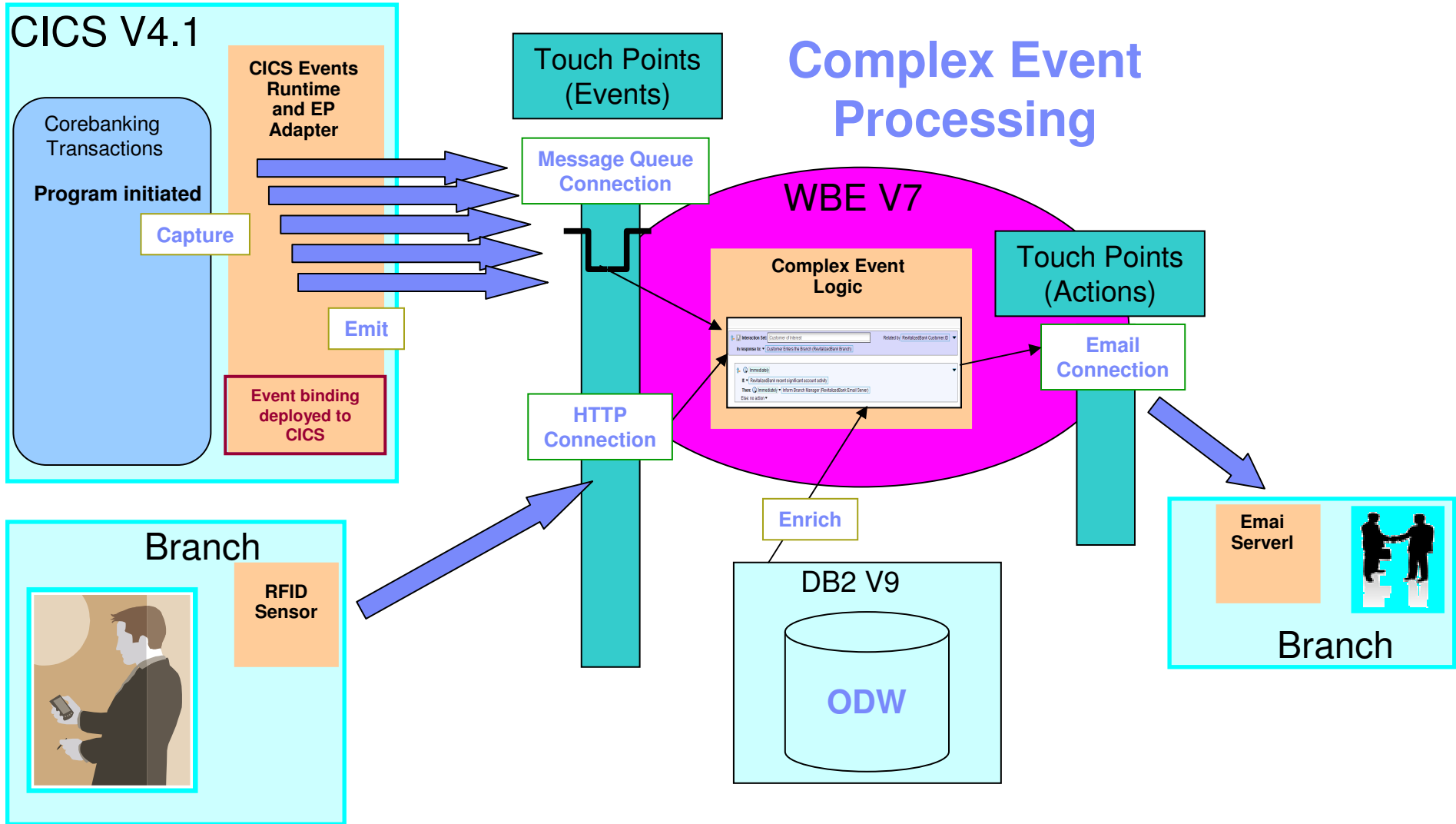
Personal customer service

- A Bank wants to engage with “customers of interest” on a more personal level to better understand their needs and ensure they are being met in the best possible way
- Alert the branch manager when a “customer of interest” enters the branch so that they can engage the customer for a more personal chat.
 - *“Customer of interest” is a customer who makes high value transactions*





Scenario in action





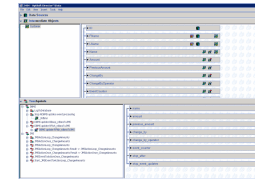
CICS & WBE Tools

- Event specification**
 - Business event name
 - Business info items
- Capture Specification**
 - Capture point
 - Filter (predicates)
 - Information Sources
- Event Binding**
 - Event Specification(s)
 - Adapter configuration

Configure CICS

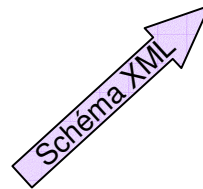
- Define event Payload content
- Define capture points Filters
- Define event type Connector

Design Data

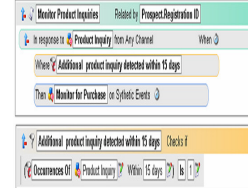


Configure WBE

- Define Touch points Connectors
- Define Events & Actions
- Define Intermediate objects



Design

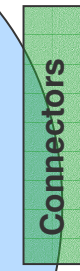
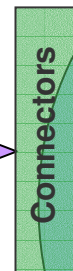
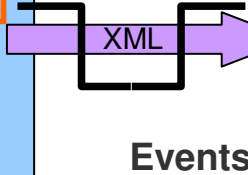
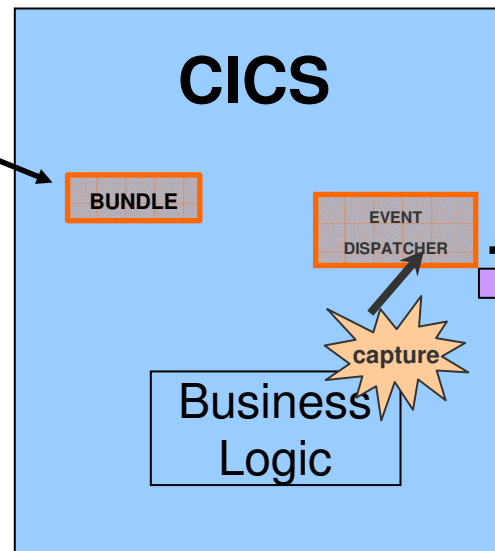
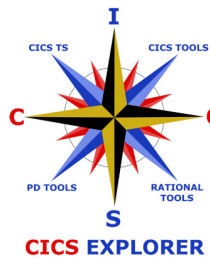


Repository



Express Event Logic

- Define Filters
- Define Interactions Events logic



Actions



ZAAP

CICS Event Specification Example

Event Specification:

Event name: LargeCashWithdrawal

Event description: Whenever a cash withdrawal is made which is over \$5000, this event is triggered

Emitted business information: Account_Number, Amount, Transaction_Type, Channel

Capture Specification:

Before EXEC CICS LINK command

← Capture Point

to PROGRAM(WPPEPM33)

← Application Command Options Predicate

from current_program = CPPEPM33

← Application Context Predicate

where Amount > 5000

← Application Data Predicate

Amount is in the Commarea or channel passed on the LINK

How to provide event data from data available from application and context
← Information Sources (Captured Data)

Event Binding:

LargeCashWithdrawal, LargeTransferIn, LargeTransferOut,

LargeCashDeposit, LargeCheckDeposit ← Event binding includes other related events

EP Adapter = WMQ Queue, WBE Format ← How events in this Binding are emitted

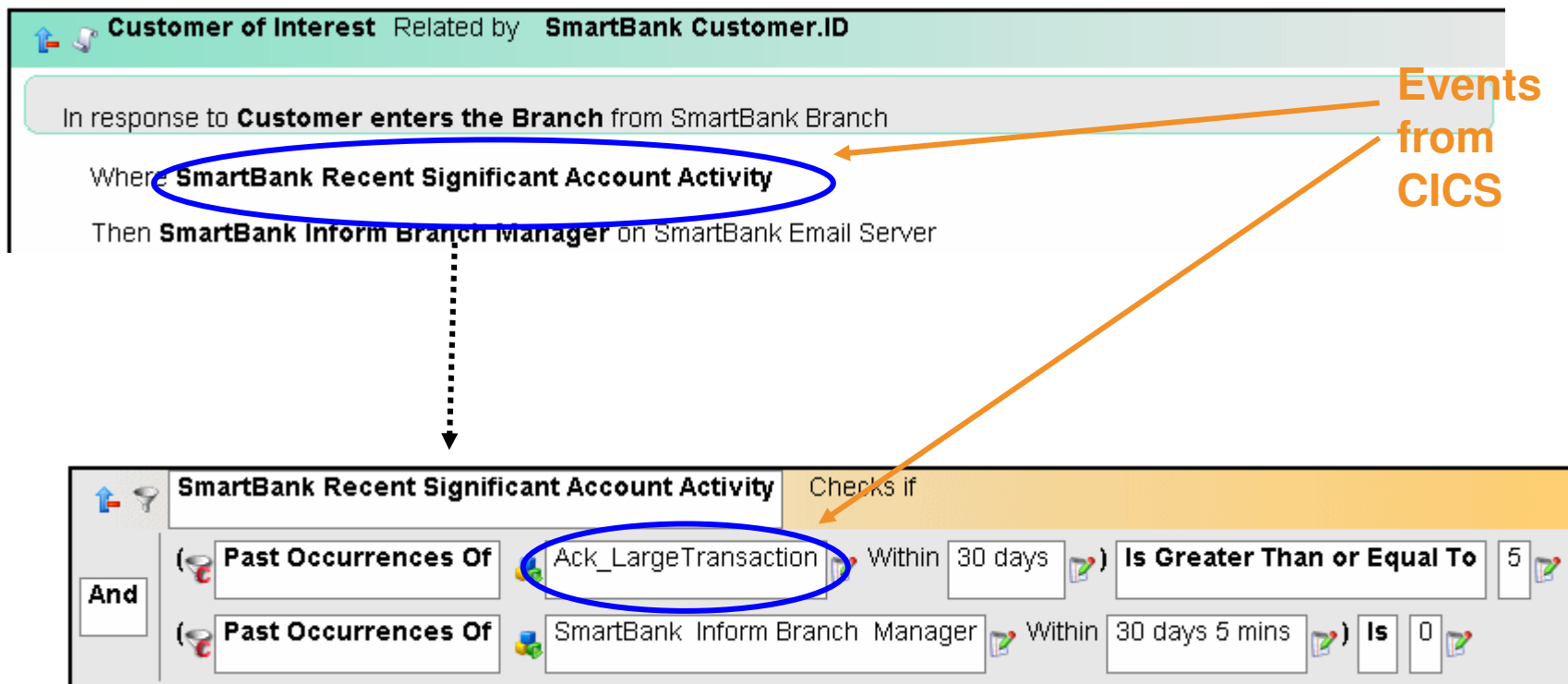
Event Binding Editor Tooling

The screenshot shows the IBM CICS Explorer interface with the Event Binding Editor tool. The left pane shows a project tree with 'LargeTransactions.evbind' selected. The main pane displays the 'Specifications' for 'LargeCashWithdrawal'. The 'General' section shows the event name and description. The 'Emitted Business Information' section contains a table of data elements.

Name	Type	Length	Precision	Description
Account_Number	Text	10	0	Account Number
Amount	Numeric	0	0	Withdrawal amount
Transaction_Type	Text	3	0	Type of transaction
Channel	Text	3	0	Channel used for transaction

- Event specification**
- Business event name (LargeCashWithdrawal)
 - Description
 - Emitted Business Information

WebSphere Business Events - Design Tool



Monitoring

- CICS Monitoring

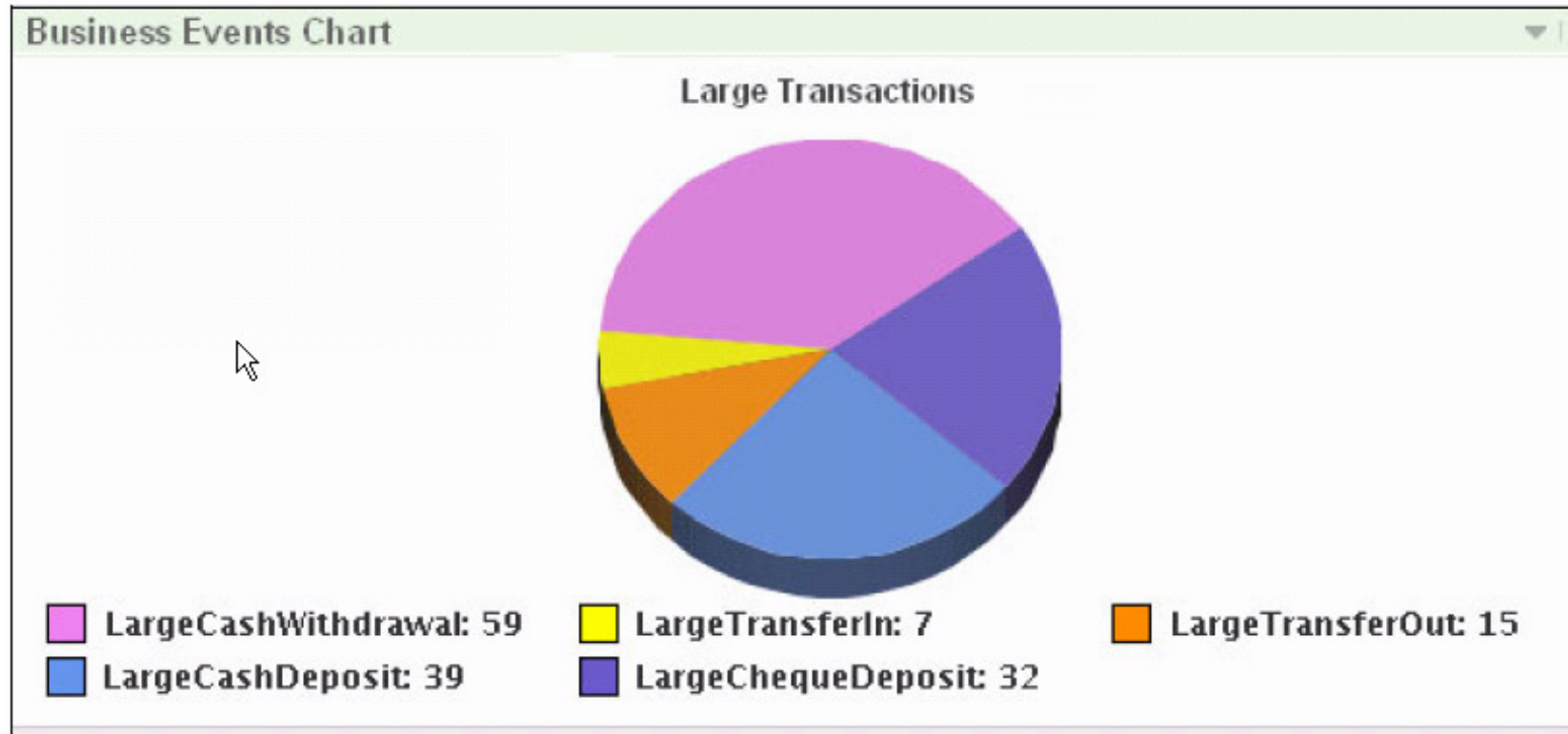
Region	Capture Specification	Event Binding	Ca...	Capture Point	Event Name	Events Captured
CICSRA10	LargeCashDepositCS	LargeTransactions	?	PROGRAM_INITIATION	LargeCashDeposit	13
CICSRA10	LargeCashWithdrawalCS	LargeTransactions	?	PROGRAM_INITIATION	LargeCashWithdrawal	7
CICSRA10	LargeChequeDepositOnThemCS	LargeTransactions	?	PROGRAM_INITIATION	LargeChequeDeposit	0
CICSRA10	LargeChequeDepositOnUsCS	LargeTransactions	?	PROGRAM_INITIATION	LargeChequeDeposit	0
CICSRA10	LargeTransferInCS	LargeTransactions	?	PROGRAM_INITIATION	LargeTransferIn	0
CICSRA10	LargeTransferOutExternalCS	LargeTransactions	?	PROGRAM_INITIATION	LargeTransferOut	0

- WBE Monitoring

Events by touchpoint by time		
from Apr 23, 2010 12:00:00 PM to May 1, 2010 12:00:00 AM		
Touchpoint	Time	Event
CICS Core Banking	Apr 23, 2010 1:48:49 PM	LargeCashDeposit
CICS Core Banking	Apr 23, 2010 1:48:50 PM	LargeCashDeposit
CICS Core Banking	Apr 23, 2010 1:48:51 PM	LargeCashDeposit
CICS Core Banking	Apr 23, 2010 1:48:52 PM	LargeCashDeposit



WBE Business Package





Our Business Events scenario – what next?

To decide what products to offer customer of interest

