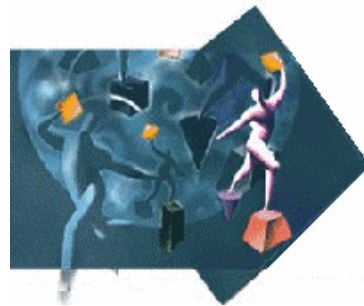


Making SOA real with WebSphere and MQSeries

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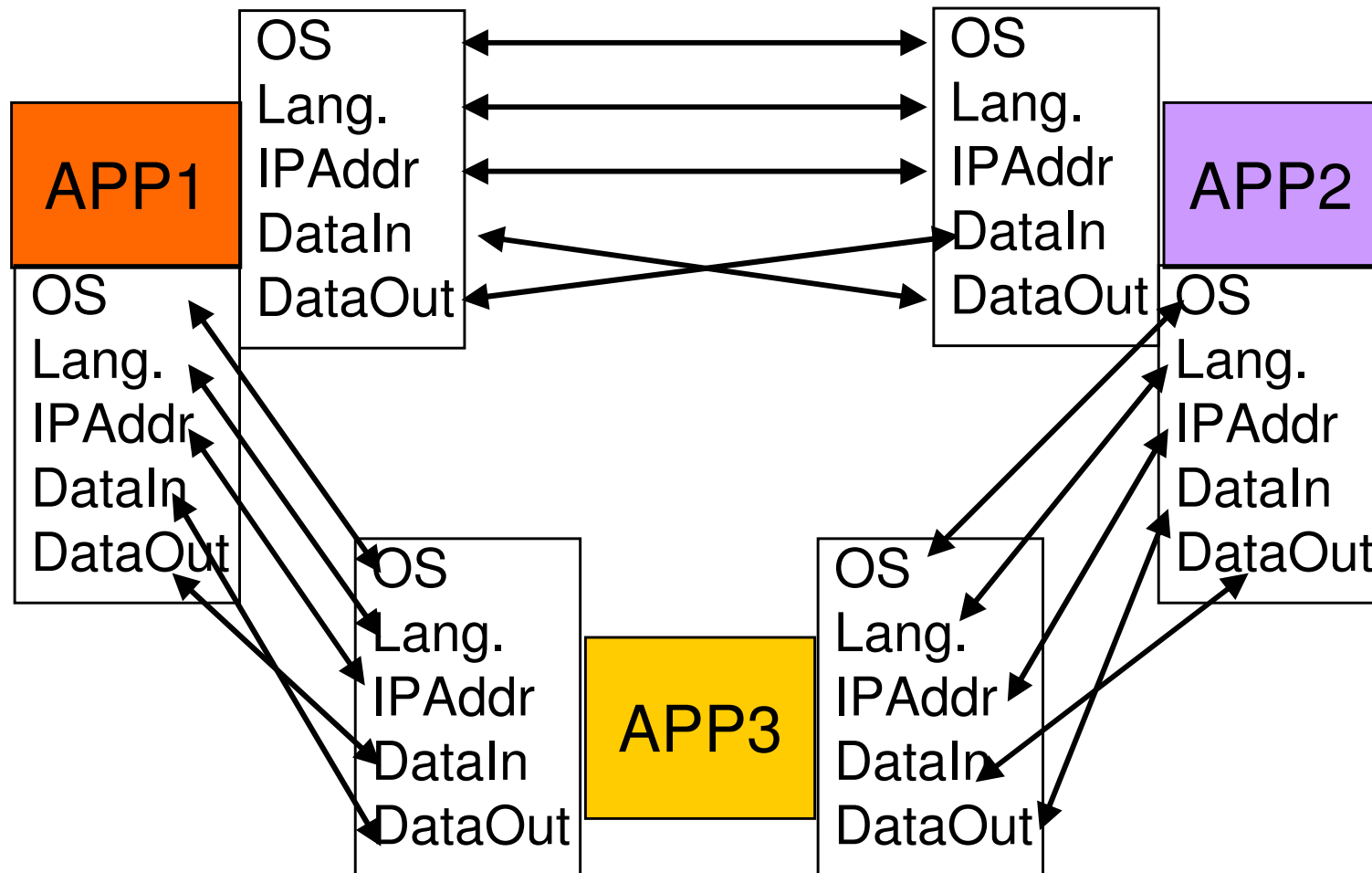
Abstract

- This presentation discusses the demands Service Oriented Architectures and messaging architectures make on the IT environment. WebSphere Products are key components of your SOA. As one of the first IBM SOA Specialty Certified Partners MQSoftware will also examine the question of how important monitoring the total environment is to achieving a successful ROI from SOA focusing on service to the business.

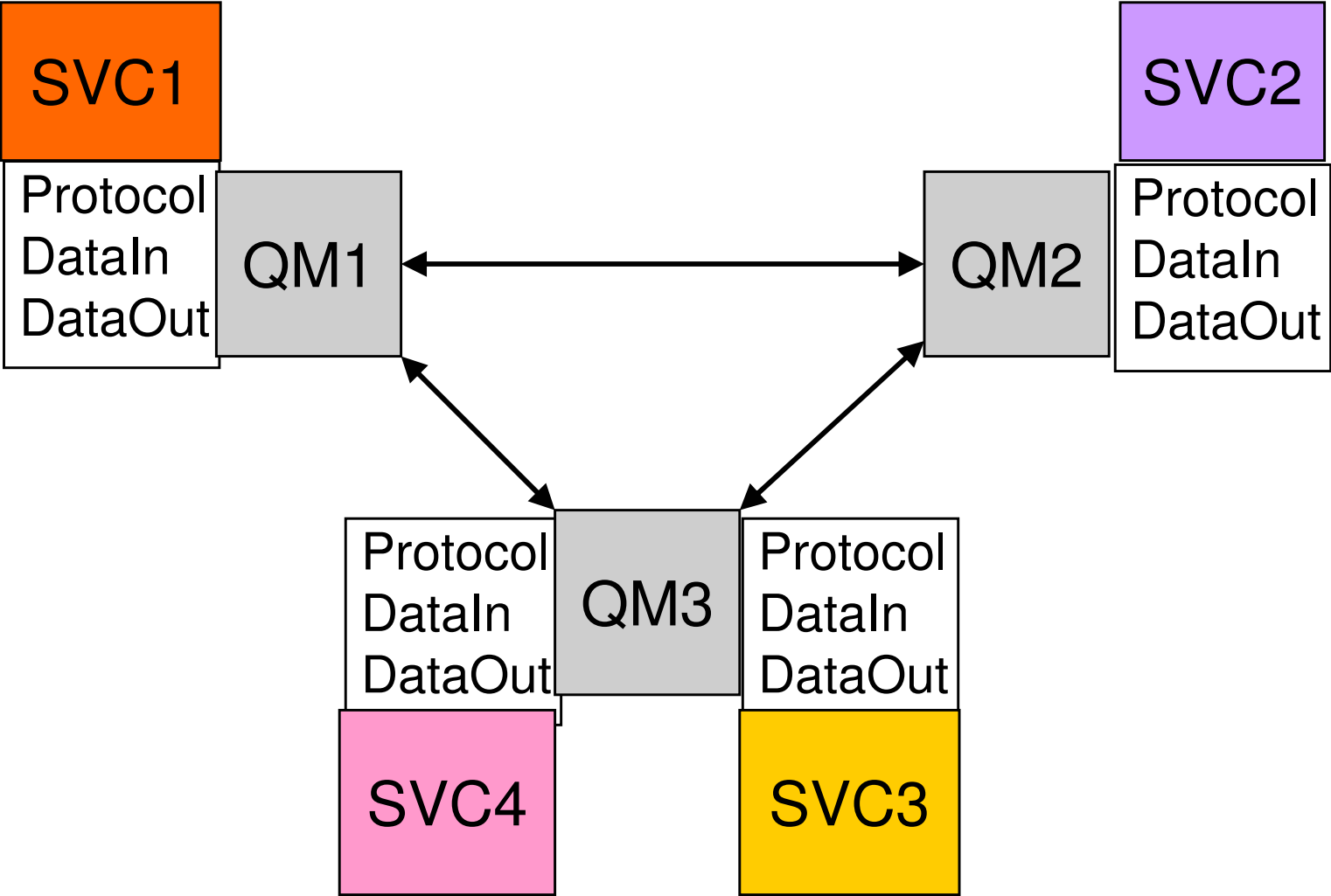
Agenda

- SOA
- WebSphere products in an implementation of SOA
- Monitoring your SOA
- QNami! solutions
 - Customer examples

Traditional Application Integration



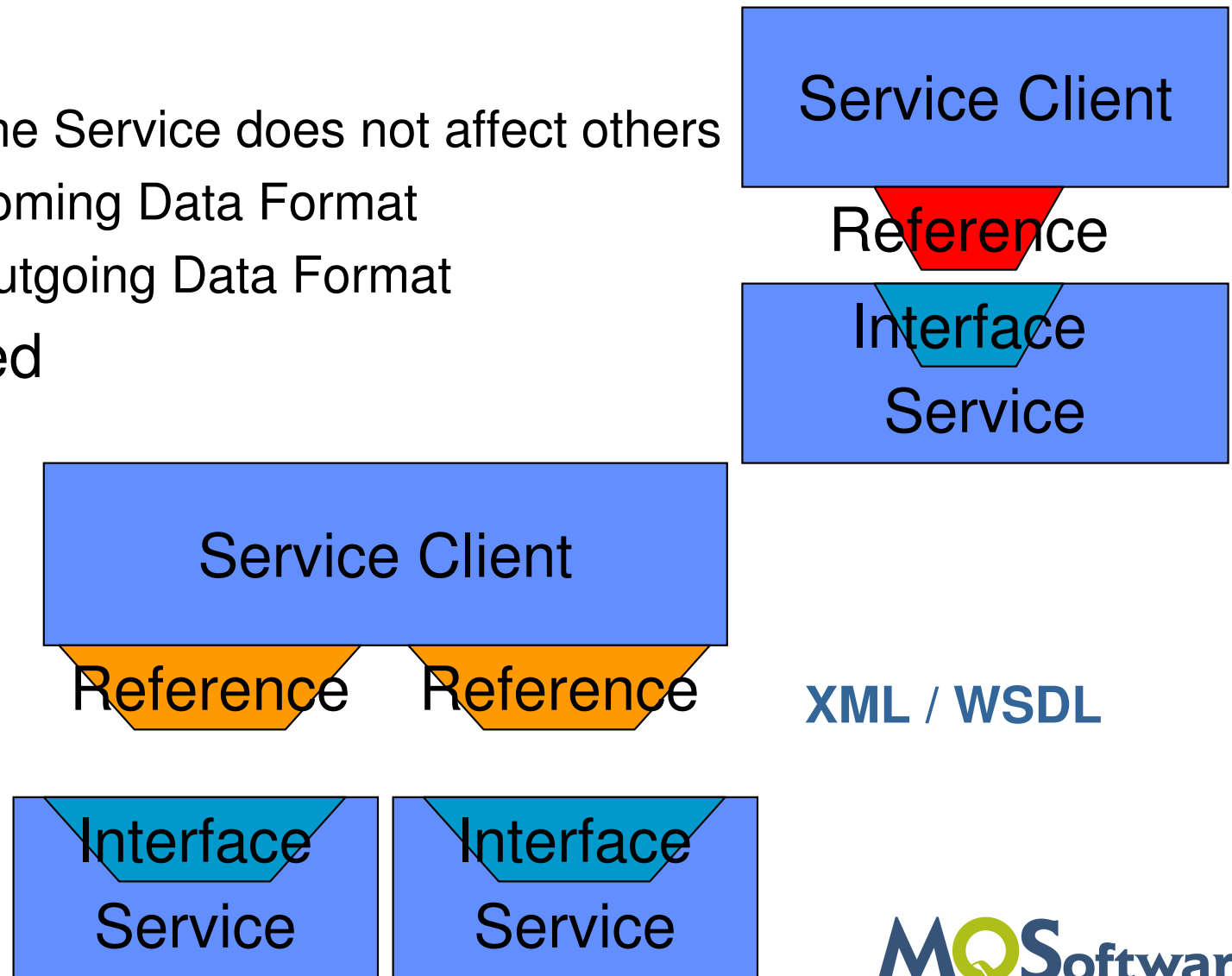
Service Oriented Architecture



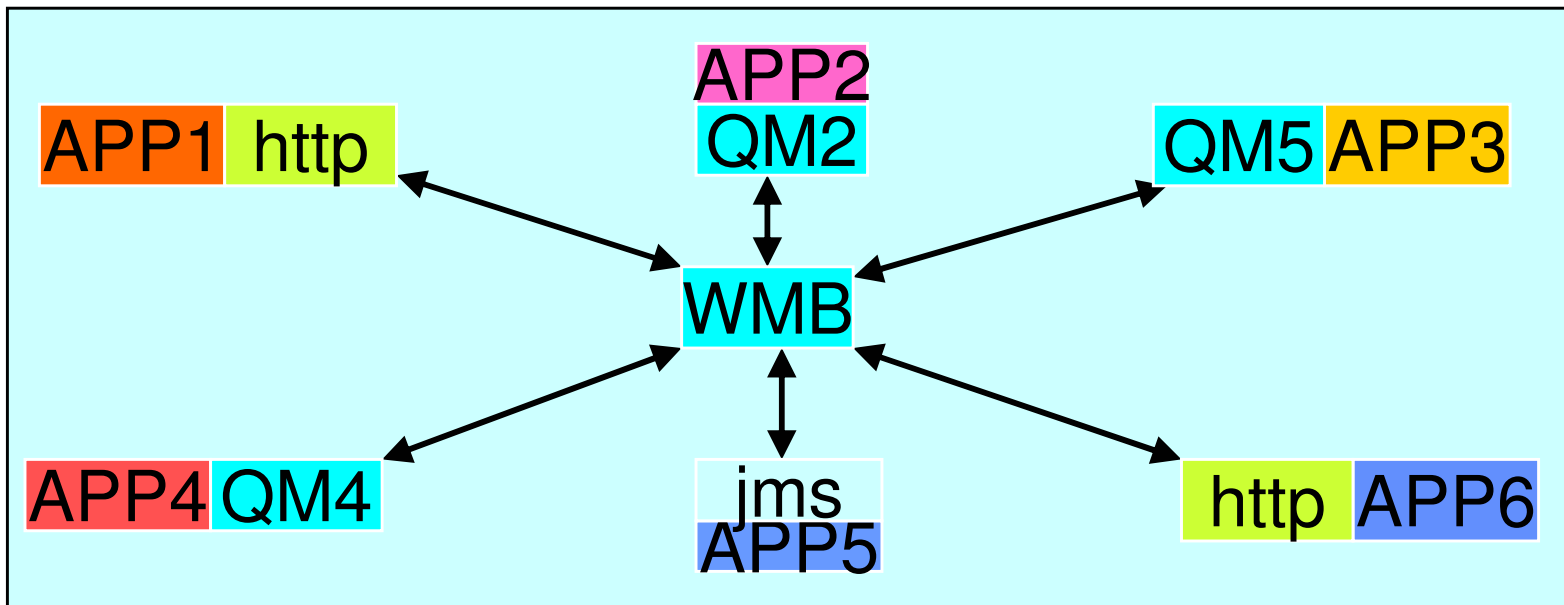
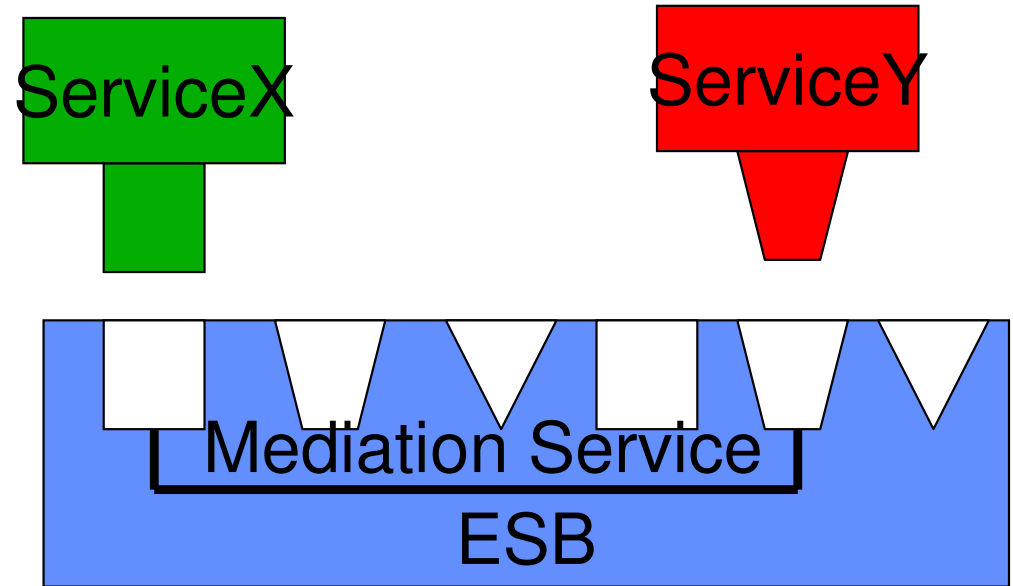
Service Oriented Architecture

Each Application Is:

- Modular
 - Changing one Service does not affect others
 - Accepts Incoming Data Format
 - Produces Outgoing Data Format
- Self Contained
- Self-Defining



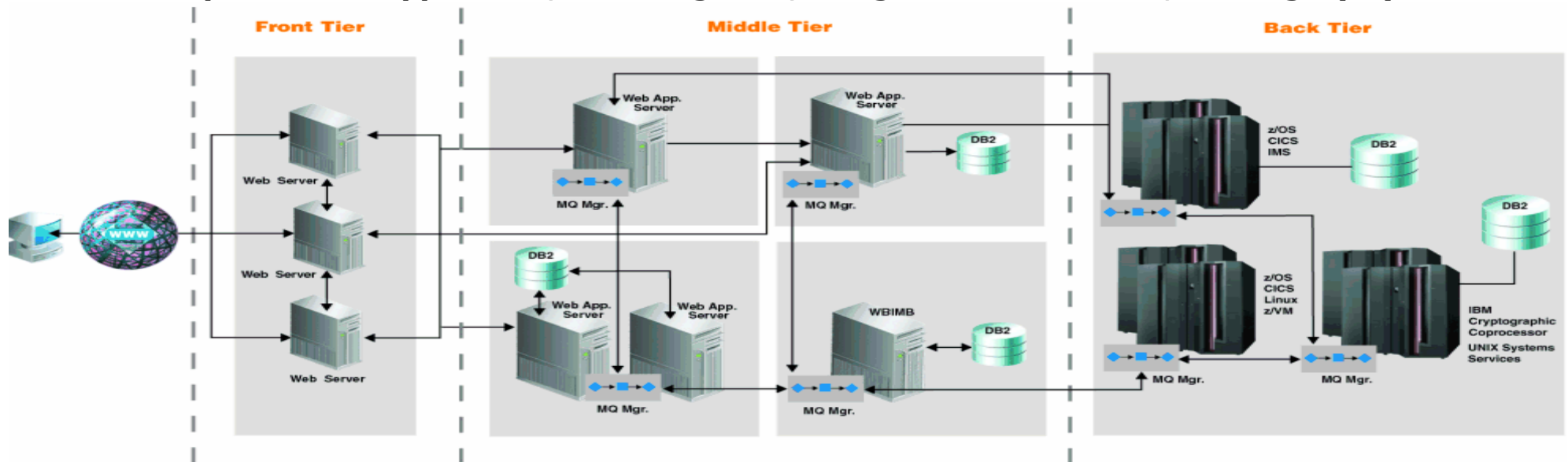
Enterprise Service Bus (ESB)



The challenges of composite application management

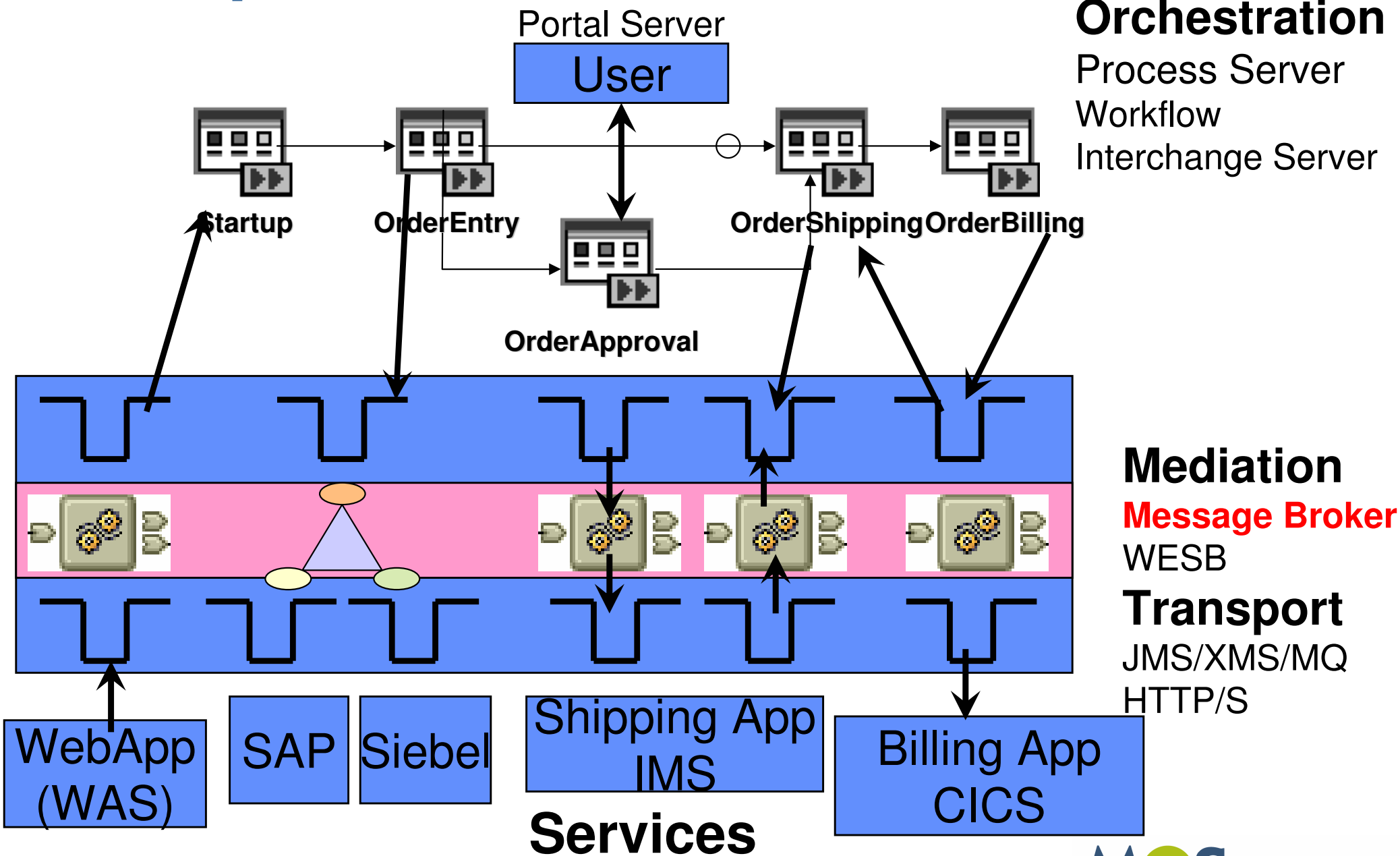
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A Composite Web Application, Involving J2EE, Integration Middleware, and Legacy Systems



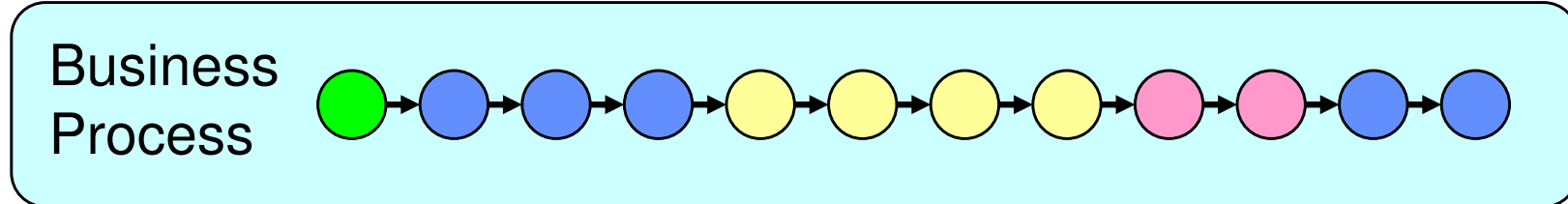
- Business processes are built on composite applications
- Composite applications are difficult to design, build, test, and manage for high performance and availability
- Traditional management processes and tools only provide a resource-centric (silo) view of performance

WebSphere Products

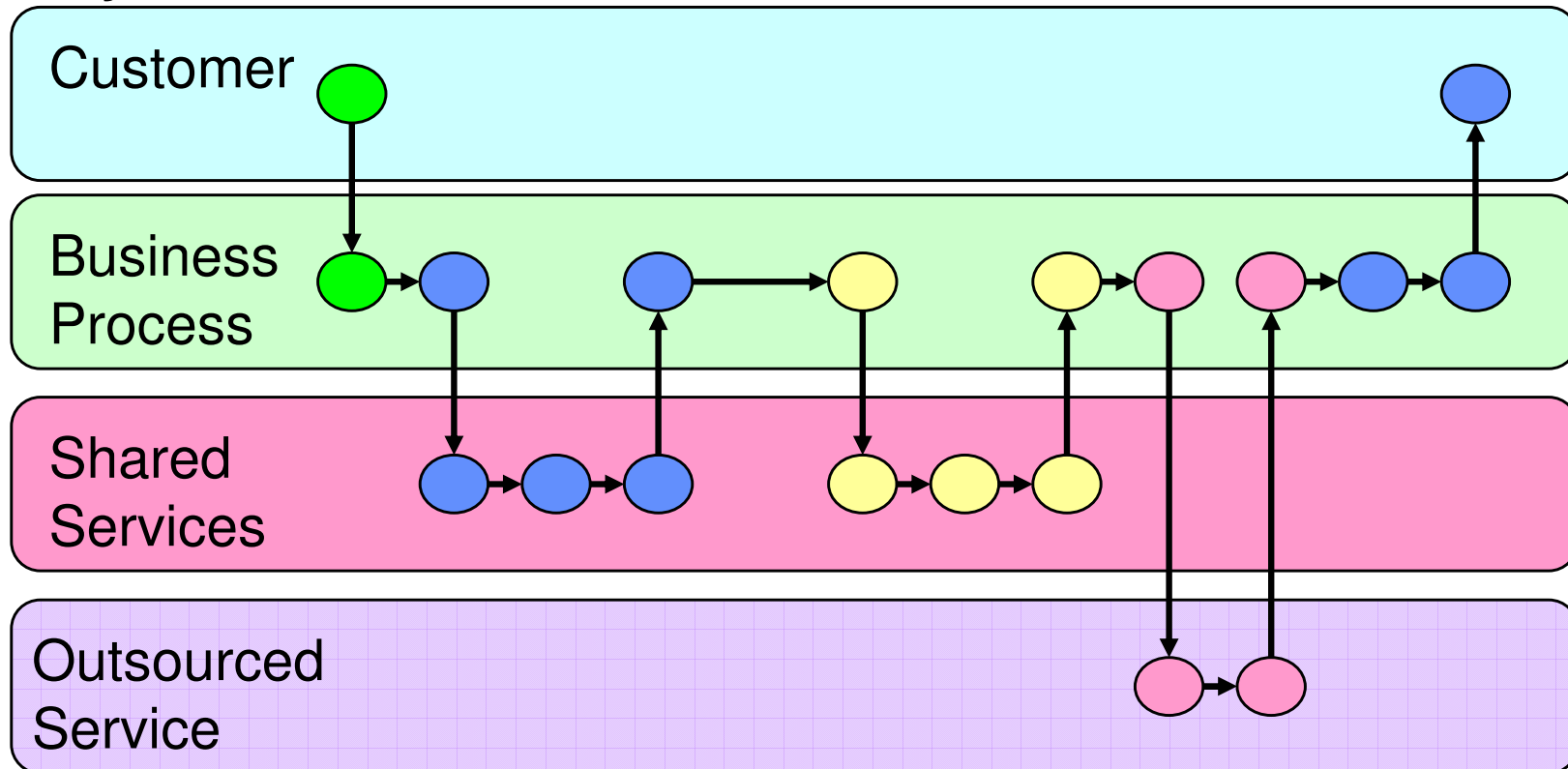


Business Application

Traditional business



Today's environment



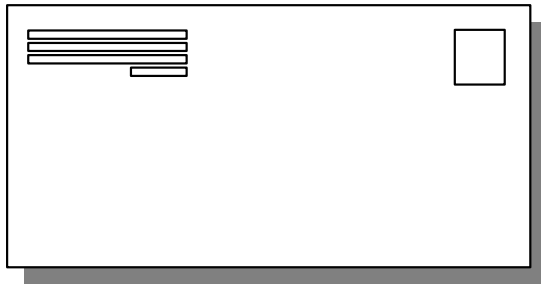
Monitoring Requirements

- Requirements
 - **Proactive not responsive**
 - Event Notification
 - Correlation of a service
 - Capacity Planning, Trending and Scaling of a service
 - Abstraction of the service rather than aggregation of service performance metrics
 - Business Transaction statistics flowing through the web service
 - SLA's, Assurance, Analysis
- Dependencies
 - Your role
 - What you want/need to see
 - Your role in the enterprise
 - Your monitoring philosophy
 - Change Management Process

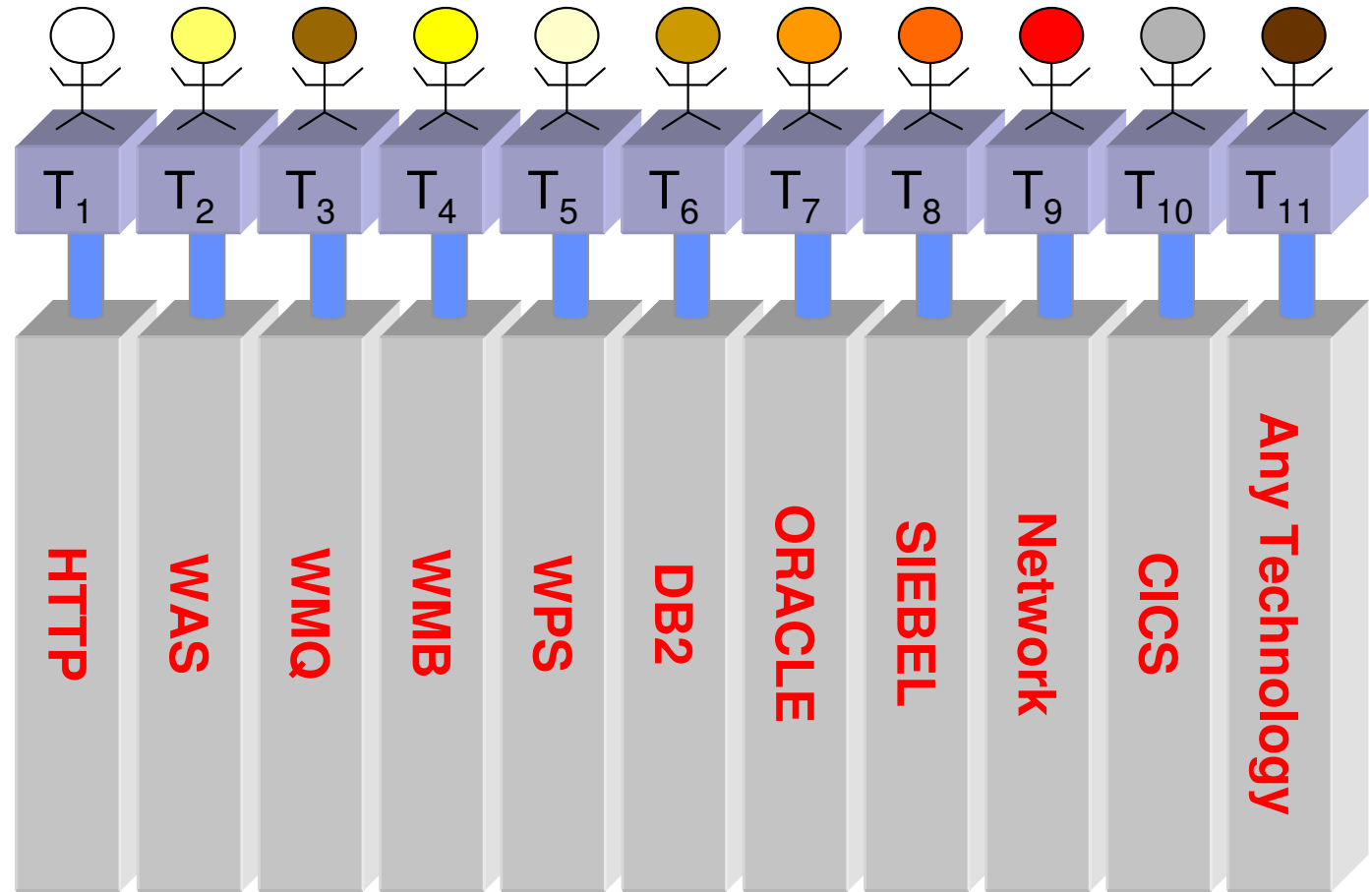
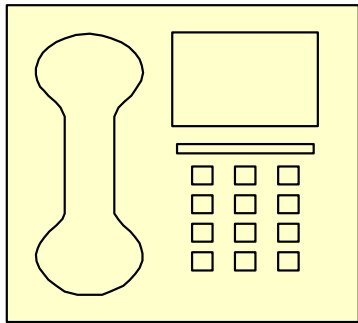
Monitoring

- Monitoring Functions
 - Problem Management
 - Tell me something is wrong and where
 - Operations Management
 - Let me look at the status of components
 - Performance Management
 - How well is my application processing messages over time
 - Transaction Management
 - How is a transaction moving through the process
- Monitoring Methodologies
 - Silo technology monitoring
 - Business service monitoring
 - Business transaction monitoring

Silo Technology Monitoring



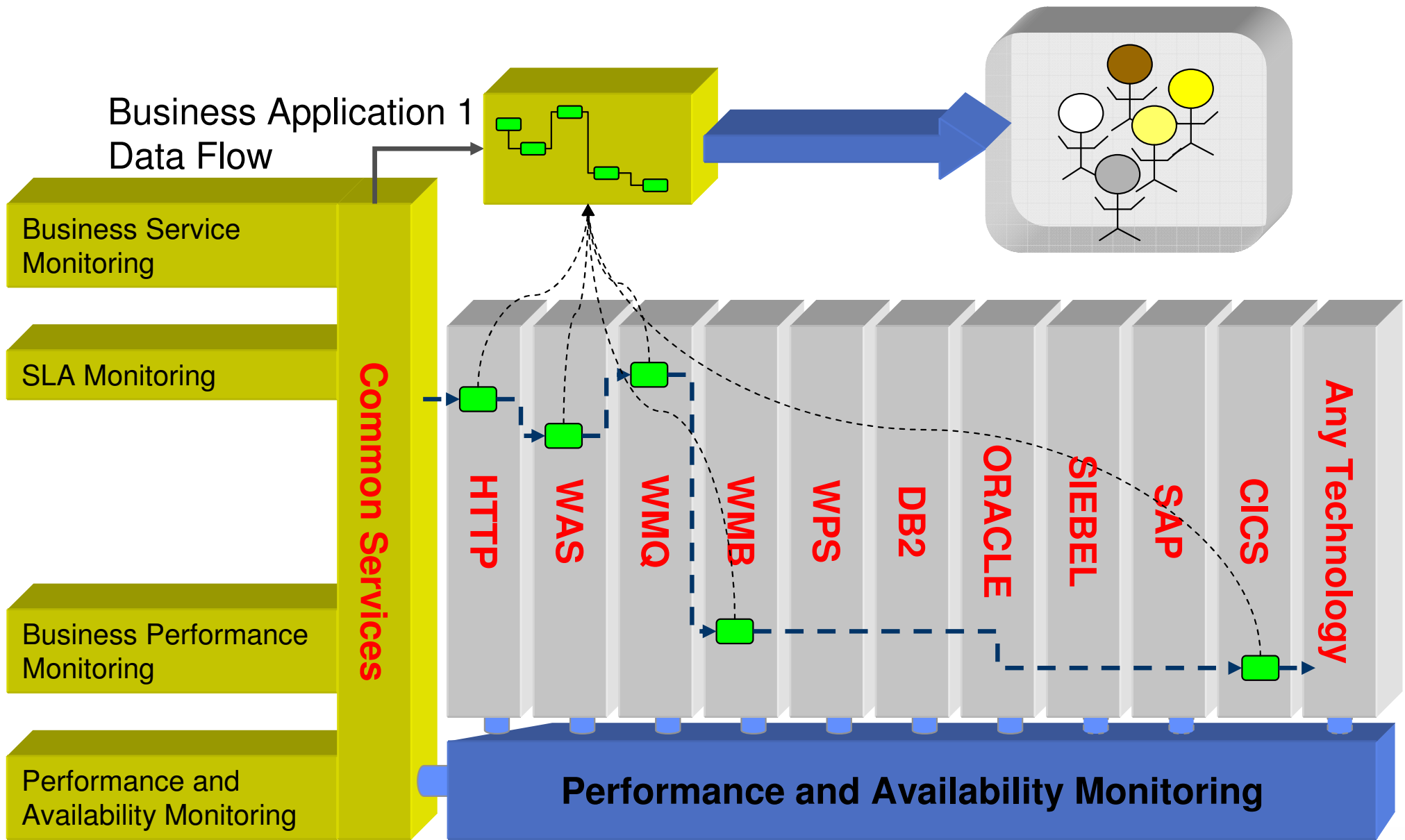
Indirect, asynchronous communications process with no common information – e-mail and/telephone



Silo Technology Monitoring

- Characterized by
 - Disparate users
 - Individual tool set
 - No direct collaboration
 - No sense of business applications
 - Communication is done asynchronously and independently
 - No common information

Business Service Monitoring



Business Service Monitoring

- Individual users
- Common tool set
- Direct collaboration
- **Business applications are exposed as business services**
- **Aggregate metrics for performance and availability**
- Common information is available to all users
- Users can be segregated by team or business application support centers

Transaction Monitoring

```
- <Customer>  
- <Details>  
  <Name>ACME</Name>  
  <Address>123 Street</Supplier>  
</Details>  
- <Order>  
  <Number>1234</Number>  
  <Amount>100,000< /Amount>  
</Order>  
</Customer>
```

Business Service Monitoring

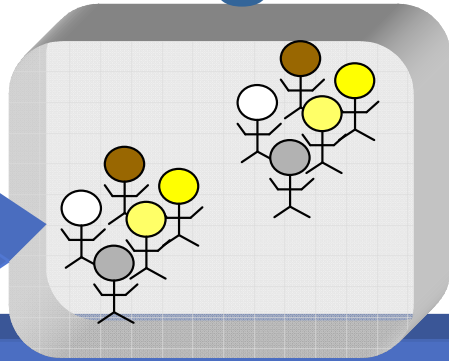
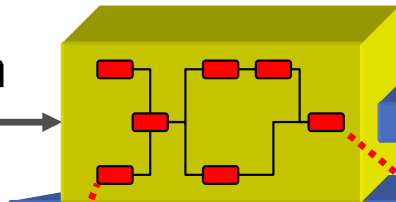
SLA Monitoring

Business Transaction Monitoring

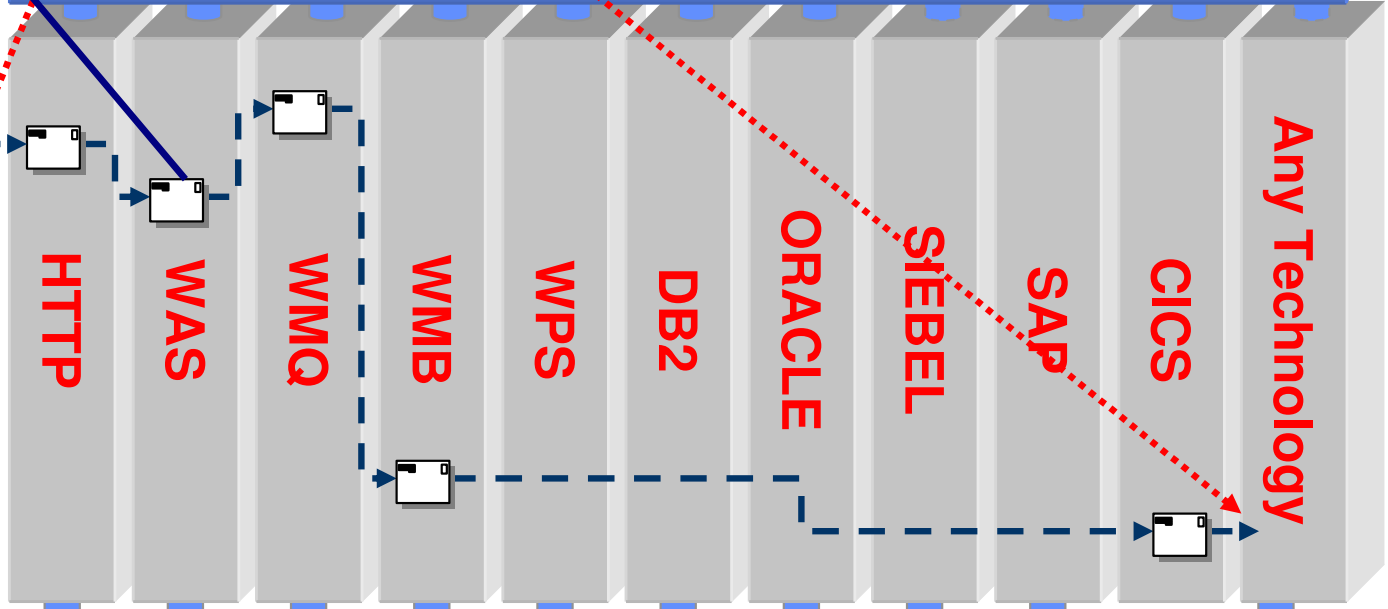
Business Performance Monitoring

Performance and Availability Monitoring

Common Services



Business Transaction Monitoring



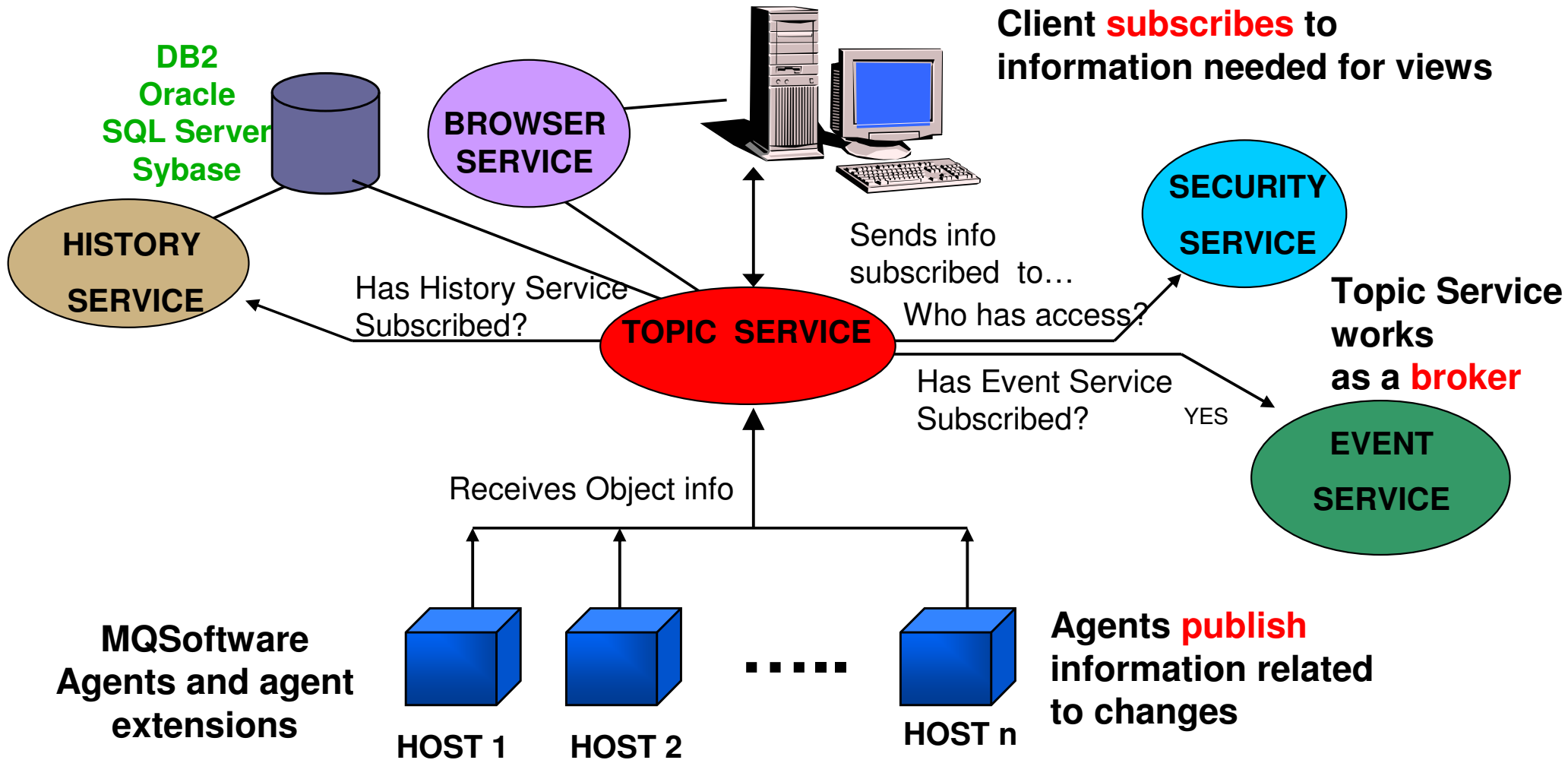
Performance and Availability Monitoring

Business Transaction Monitoring

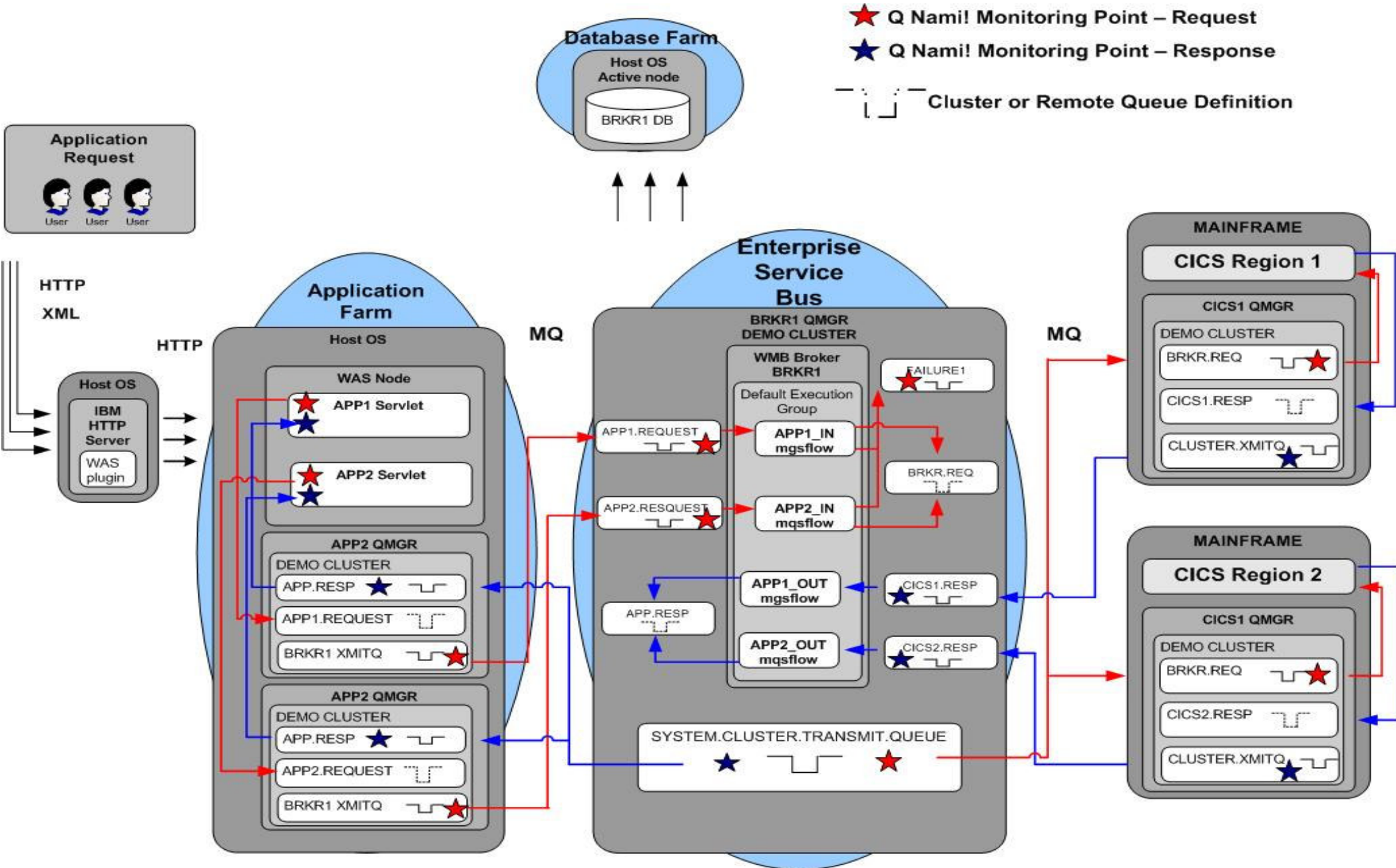
- Individual users
- Common tool set
- Direct collaboration
- **Business applications are exposed as transaction paths**
- **Individual, end-to-end transaction monitoring**
 - SLA Monitoring
- **Actual transaction metrics for performance and availability**
- More functionality is exposed to more users throughout the enterprise
- Common information is available to all users
- Users can be segregated by team or business application support centers

Q Nami! Architecture

Q Nami! Database



Application Topology



Transaction Pathway

SnagIt Capture Preview

File Edit View Image Colors Effects Help

Operations History Events Security BTM

The diagram illustrates a transaction pathway starting from a 'Begin' node. It branches into two parallel paths: one through APP_PUT1 and A1_XMITQ, and another through APP_PUT2 and A2_XMITQ. Both paths converge at BRKR1_REQ, which then branches into two paths: one through CICS1_REQ and C1_XMITQ, and another through CICS2_REQ and C2_XMITQ. Both paths converge at CICS_RESP, which then branches into two paths: one through APP1_RESP and APP_GET1, and another through APP2_RESP and APP_GET2. The pathway ends at an 'End' node. There are also two 'FAILURE' nodes (FAILURE1 and FAILURE2) and two 'End' nodes (End1 and End2) shown in the diagram.

Transaction	APP_PUT1	A1_XMITQ	APP_PUT2	A2_XMITQ
2007... 2266	✓	0	0	02:48...
2007... 1062	✓	0	0	02:49...
2007... 235	✓	0	0	02:49...
2007... 3187	✓	0	0	04:04...
2007... 1141	✓	0	0	04:09...
2007... 1344	✓	0	0	05:12...
2007... 93	✓	0	0	05:15...
2007... 1437	✓	0	0	05:16...
2007... 391	✓	0	0	05:22...
2007... 1219	✓	0	0	05:22...
2007... 219	✓	0	0	05:23...
2007... 1094	✓	0	0	05:24...

Transaction Data

Txn Id: 20070127160446

Activity: A1_XMITQ

Name	Label	Value
PolicyLOB	0	Auto
PolicyType	0	Issue
PolicyValue	0	1122535

BTM View BTM History View Daily Report Monthly Report Yearly Report

1024x768x16M 623,375 100%

SEE IT WORK.

Insurance Line of Business Owner View

Real time SLA and Performance metrics for policies quoted by line of business

Real time SLA and Performance metrics for policies issued by line of business

Insurance policies issued by line of business and value using payload monitoring

Daily Insurance Policies Quoted

Policies Quoted by LOB

	Over SLA	Under SLA	Total
Automobile	0	55	55
Workers Comp	0	60	60
Property	0	43	43
Health	1	36	37
Total	1	194	195

Policy Quoting Performance Metrics
Committed SLA of 2000 ms (2 seconds)

Hourly Min Elapsed Time (ms)	156
Hourly Avg Elapsed Time (ms)	1,187
Hourly Max Elapsed Time (ms)	2,844
Daily Min Elapsed Time (ms)	78
Daily Avg Elapsed Time (ms)	888
Daily Max Elapsed Time (ms)	2,844

Daily Insurance Policies Issued

Policies Issued by LOB

	Over SLA	Under SLA	Total
Automobile	0	5	5
Workers Comp	0	4	4
Property	0	3	3
Health	1	2	3
Total	1	14	15

Policy Issuance Performance Metrics
Committed SLA of 2000 ms (2 seconds)

Hourly Min Elapsed Time (ms)	453
Hourly Avg Elapsed Time (ms)	1,573
Hourly Max Elapsed Time (ms)	2,844
Daily Min Elapsed Time (ms)	93
Daily Avg Elapsed Time (ms)	866
Daily Max Elapsed Time (ms)	2,844

Dollar Value of Policies Issued by LOB

Automobile (in thousands)

	\$ 0 - 500	\$ 501-1000	\$ 1000 <
# of Policies	0	55	0

Workers Comp (in thousands)

	\$ 0 - 500	\$ 501-1000	\$ 1000 <
# of Policies	60	0	0

Property (in thousands)

	\$ 0 - 500	\$ 501-1000	\$ 1000 <
# of Policies	0	43	0

Health (in thousands)

	\$ 0 - 500	\$ 501-1000	\$ 1000 <
# of Policies	36	1	1

Customer Inquiry Performance Metrics (SOA service)
Committed SLA of 500 ms (.5 seconds)

Hourly Min Elapsed Time (ms)	15
Hourly Avg Elapsed Time (ms)	25
Hourly Max Elapsed Time (ms)	94
Daily Min Elapsed Time (ms)	0
Daily Avg Elapsed Time (ms)	307
Daily Max Elapsed Time (ms)	1,594

Daily Transaction Metrics Per Service

	Over SLA	Under SLA	Total
CI Service 1	28	72	100
CI Service 2	25	70	95
Total	53	142	195

Insurance Policy Transaction Reports

- Daily SLA Reports
- Weekly SLA Reports
- Monthly SLA Reports
- Customized Transaction Reports

Real time SLA and Performance metrics for the SOA services

Access to Customized Business Transaction reports

Business Service Views

Indicators / Alerts showing that the broker and message flows are down

Q Nami! Management Console - [Demo_Application_View]

File Edit Tools View Window Help

Operations History Events Security BTM

Application Servers

JVM1

freeMem	6,336
totMem	101,317
usedMem	94,980
avgGCdur	537
avgtimebGCCalls	14,017
numGCCalls	21

HTTP Servers

HTTP Server 1

Up Time	4,582
BusyServers	1
IdleServers	49
BytesPerReq	4,249
BytesPerSec	254

HTTP Server 2

Up Time	4,582
BusyServers	1
IdleServers	49
BytesPerReq	4,249
BytesPerSec	254

Database Server

DB Details QNAMI

Buffer Pool Hit Ratio	100
Deadlocks	0

Broker Servers

BROKER BRKR1 Details

REQUEST MESSAGE FLOW (Red indicator)

REPLY MESSAGE FLOW (Red indicator)

OMGR Details BRKR1

APP.REQ Queue	10
CICS.RESP Queue	10
FAILURE Queue	0
Cluster Xmit Queue	0
EQR	0
DQR	0

BROKER BRKR2 Details

REQUEST MESSAGE FLOW (Green indicator)

REPLY MESSAGE FLOW (Green indicator)

OMGR Details BRKR2

APP.REQ Queue	0
CICS.RESP Queue	0
FAILURE Queue	0
Cluster Xmit Queue	0
EQR	24
DQR	24

DB Details BRKR2

Buffer Pool Hit Ratio	99
Deadlocks	0

Mainframe

CICS Region 1

OMGR Details CICS1

BRKR.REQ Queue	13
Cluster Xmit Queue	0
CQD	0
EQR	12
DQR	12

CICS Region 2

OMGR Details CICS2

BRKR.REQ Queue	53
Cluster Xmit Queue	0
CQD	0
EQR	12
DQR	12

Event Correlation:

Indicators / Alerts showing the message flow input queue depths are rising

CLUS SDR CHL Status

- Channel Online (Green)
- Channel Offline (Red)
- Channel Unknown (Grey)

CLUS REC CHL Status

- Channel Online (Green)
- Channel Offline (Red)
- Channel Unknown (Grey)

Application Topology Business View

MQSoftware Customers by Industry

MQSoftware has over 650 blue-chip clients, most of which are Fortune 2000

Banking Financial Services & Insurance



Healthcare / Pharmaceuticals



Consumer Products & Retail

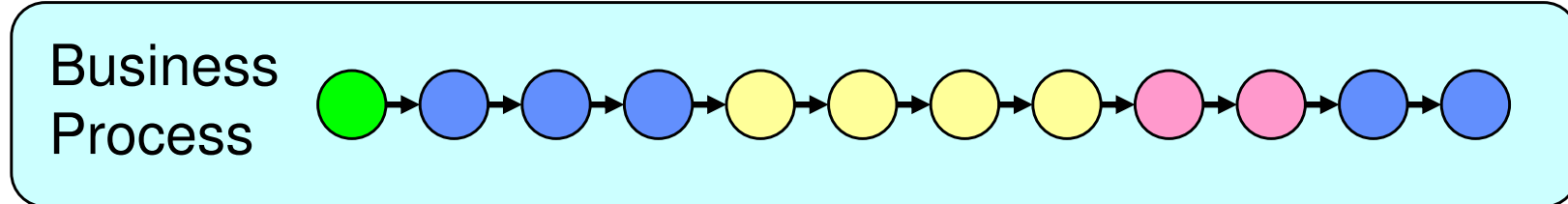


Other

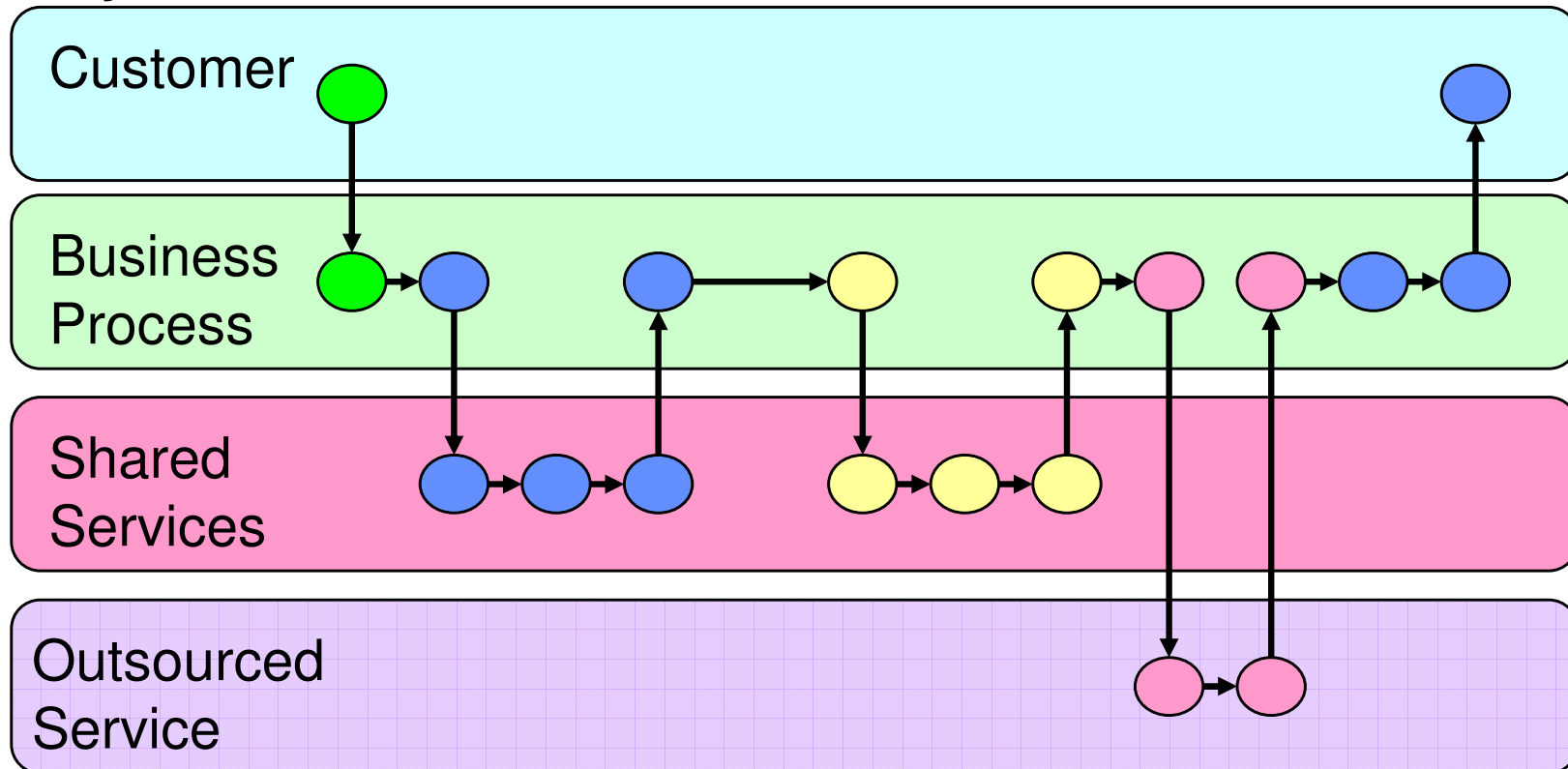


Business Application

Traditional business



Today's environment



SOA Business Issues

- Service Level Agreement (SLA) compliance
 - The Customer: A global credit Card Processor handling transactions for another business
 - Service Level Agreement
 - on average transactions sent for processing must be returned within 1.2 seconds, monitored for every 5 minute interval of the 24 hour day
 - SLA compliance must be demonstrable
- Regulatory Compliance
 - The Customer: One of the largest asset managers in the world one of the largest securities lenders
 - Application runs on mainframe under WebSphere
 - Outsourced back office for new global trading application
 - Needed to be able to monitor all traffic sent to back office outsourcer
 - Needed to be able to identify & manage any “slow” transactions in real time

Ready for

IBM | **SOA**

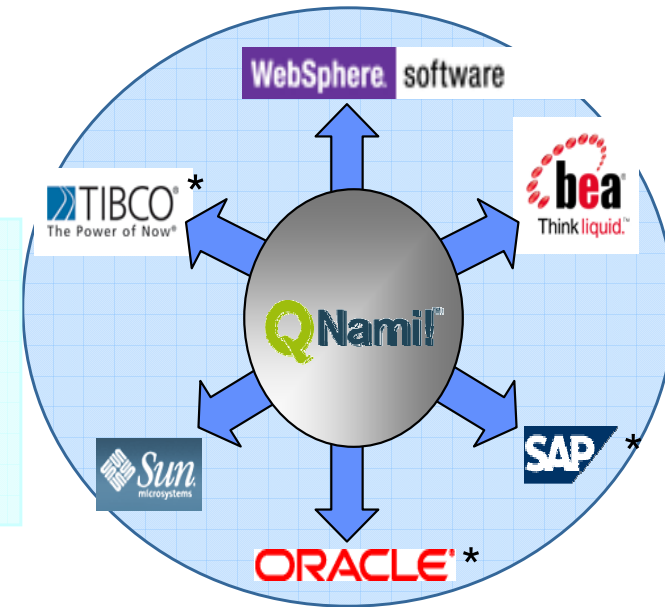
Specialty

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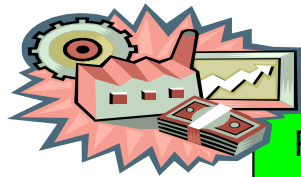
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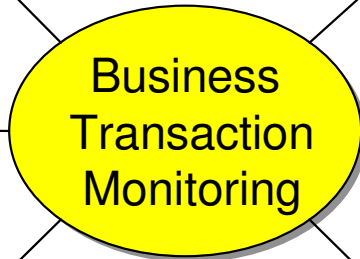
QNami!



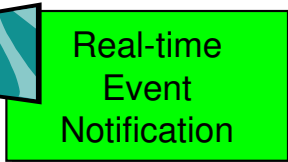
Business
Performance
Monitoring



Business
Process
Measurements



Business
Transaction
Monitoring



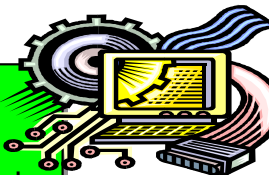
Real-time
Event
Notification



SLA
Verification



IT Technology
Performance
and Availability



Business
Service
Management

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