



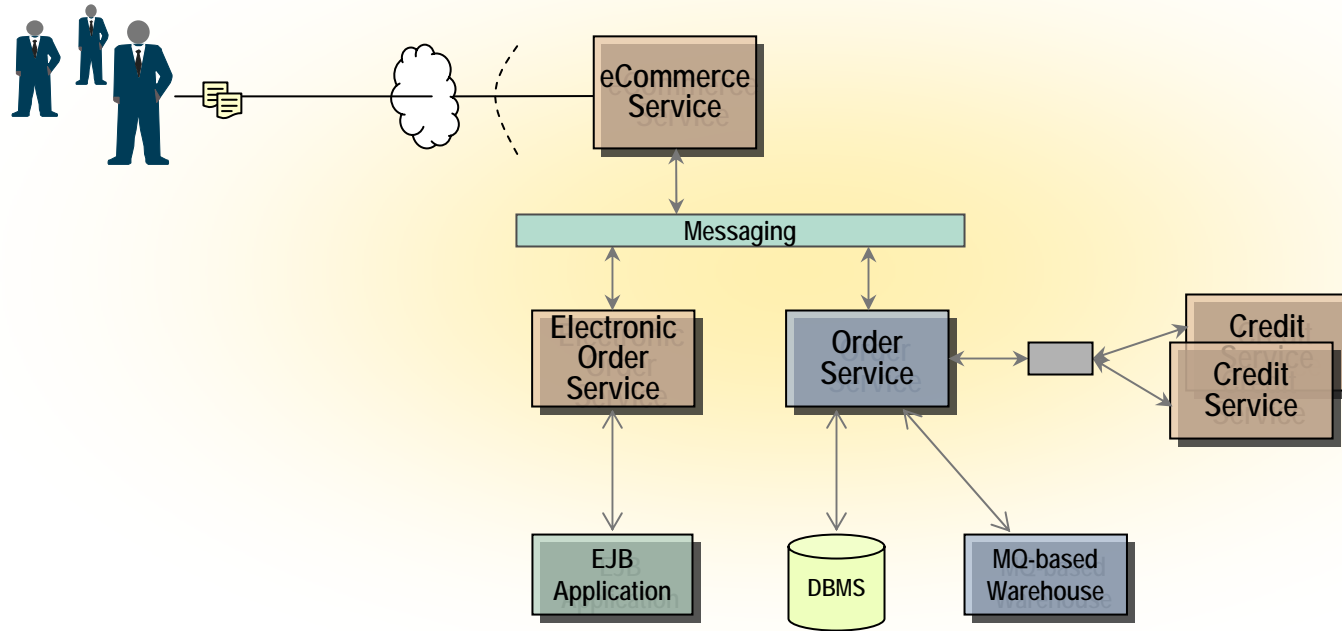
SOA and Your Network

Ed Horst

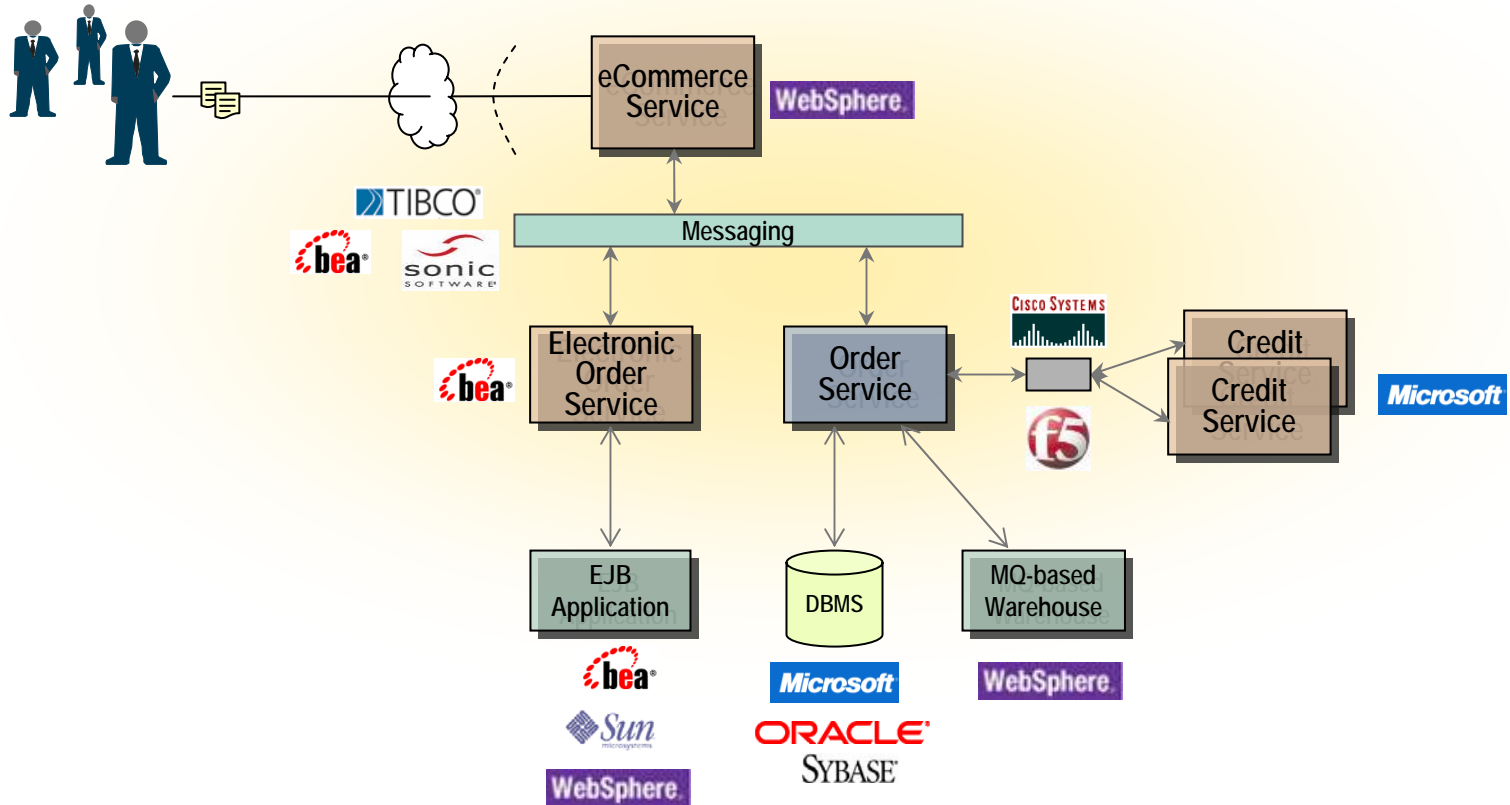
VP, Product Strategy

Interop 2005

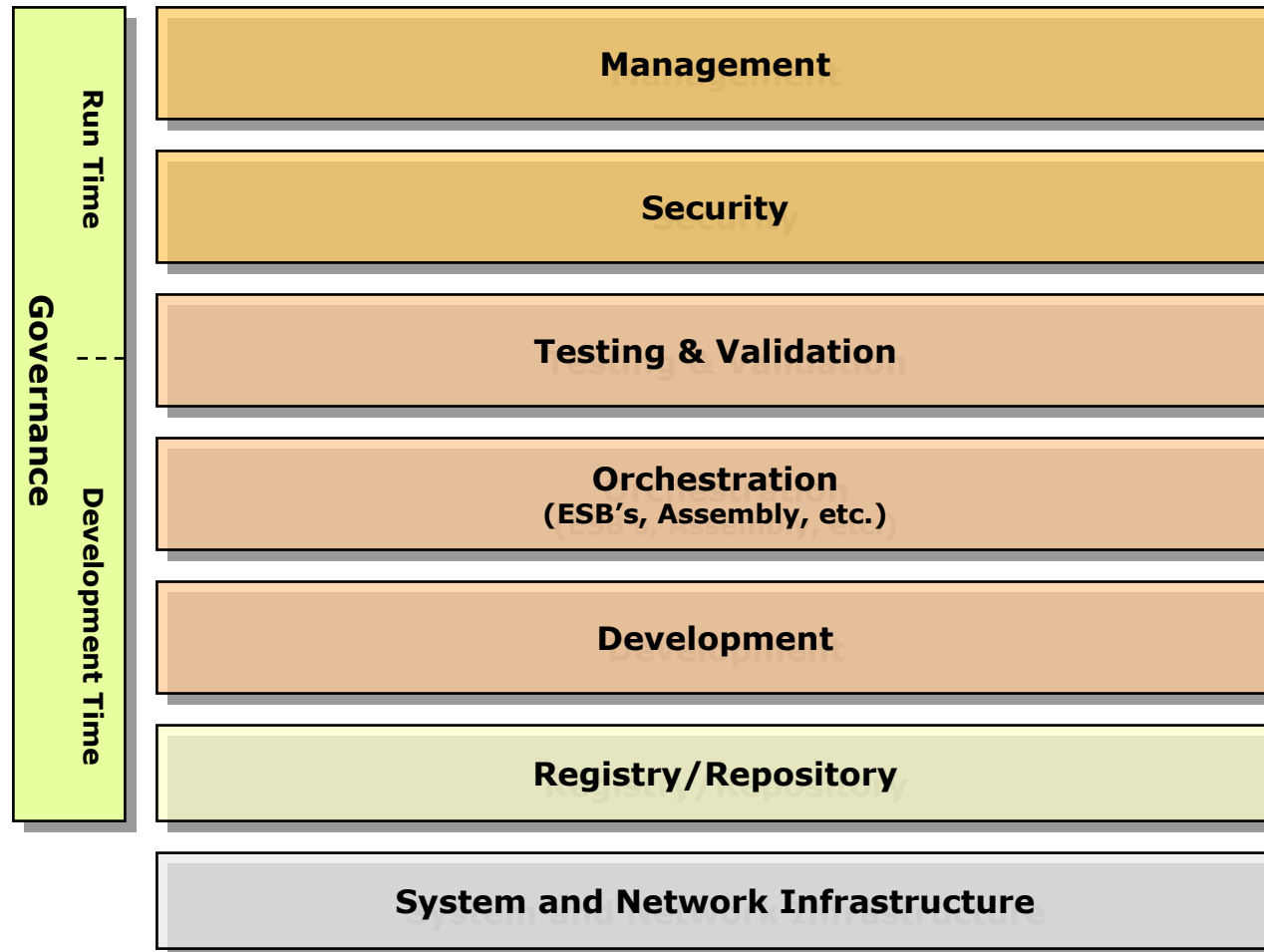
Wide Variety of Infrastructure for Deployed Applications



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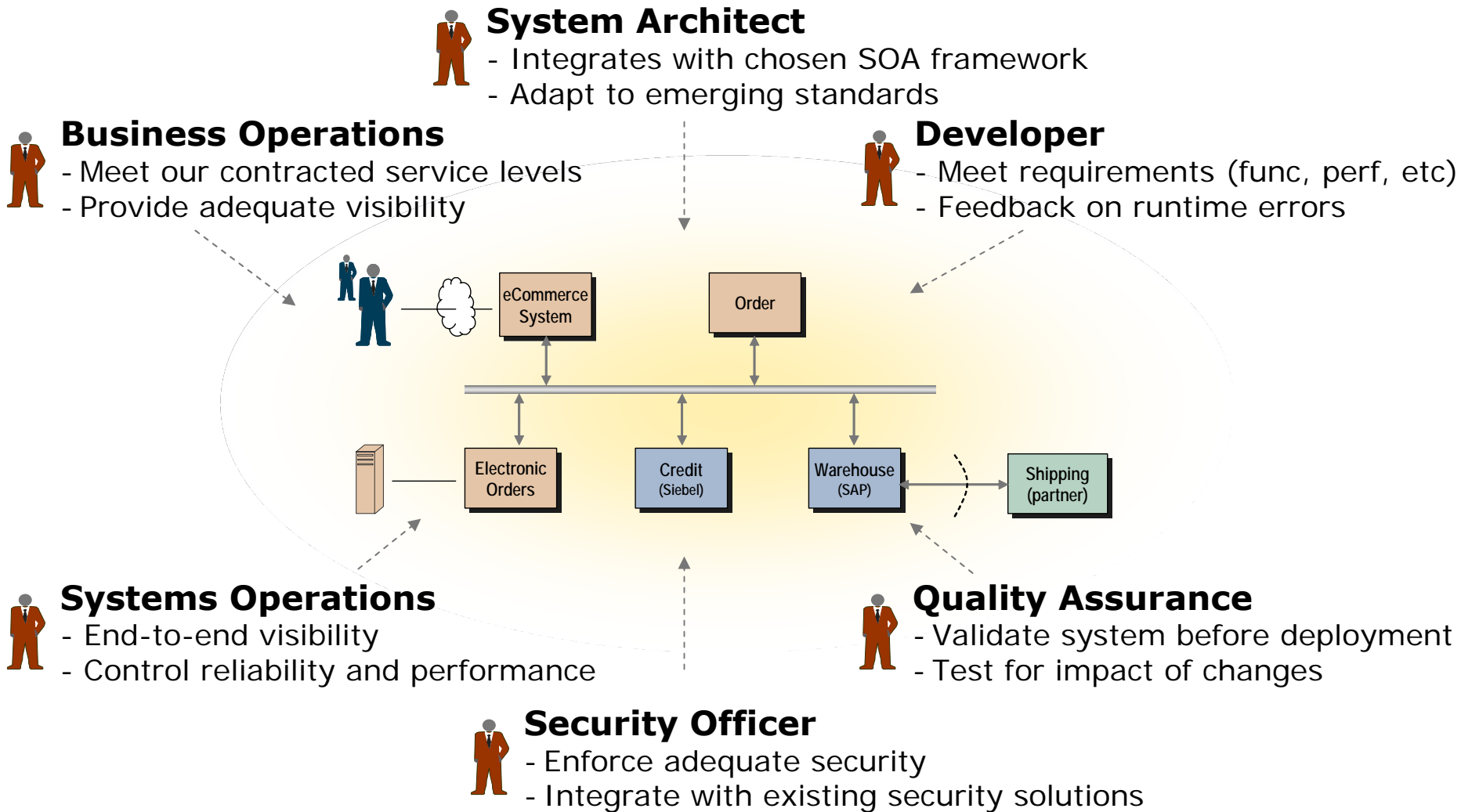


● Typical SOA Reference Stack



“More than 90 percent of internal and business-to-business SOBAs (Service Oriented Business Applications) in operation will be subjected to Web services outages, performance issues and failures. . . undetectable by traditional management techniques and technologies.”

Wide Variety of Issues in Managing SOA Applications

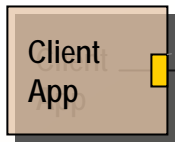


Management ≠ Monitoring
Management = Visibility + Control

● End-to-End Visibility

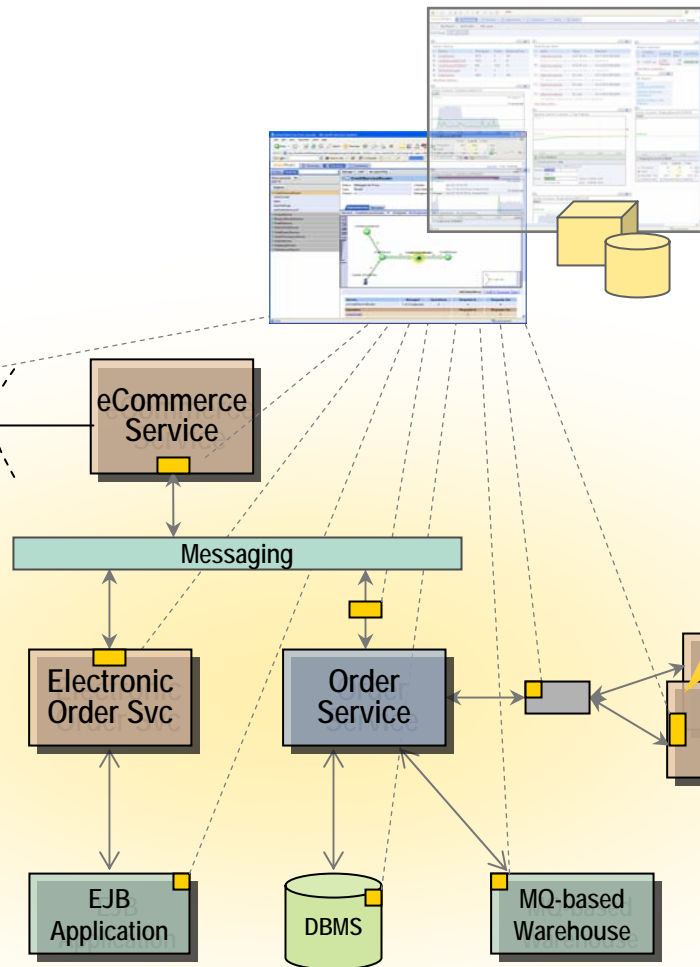
◆ Client Side

- Security based on service contract
- Service level metrics

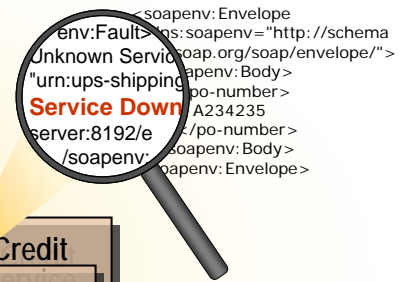


◆ Server Side

- Plug-in and proxies
- Major SOA platforms – BEA, IBM, JBoss, Microsoft
- And, into all tiers...
- Web pages, EJBs, DBMS, legacy systems, middleware (JMS)
- User defined for almost anything – blade servers, hardware sensors, etc.



- ◆ Service Network
- ◆ Dependencies & Impact
- ◆ Security
- ◆ Service level mgmt
- ◆ Exception management
- ◆ Testing & validation



Successful SOA initiatives require visibility and automation across the complete SOA infrastructure.

● End-to-End Visibility

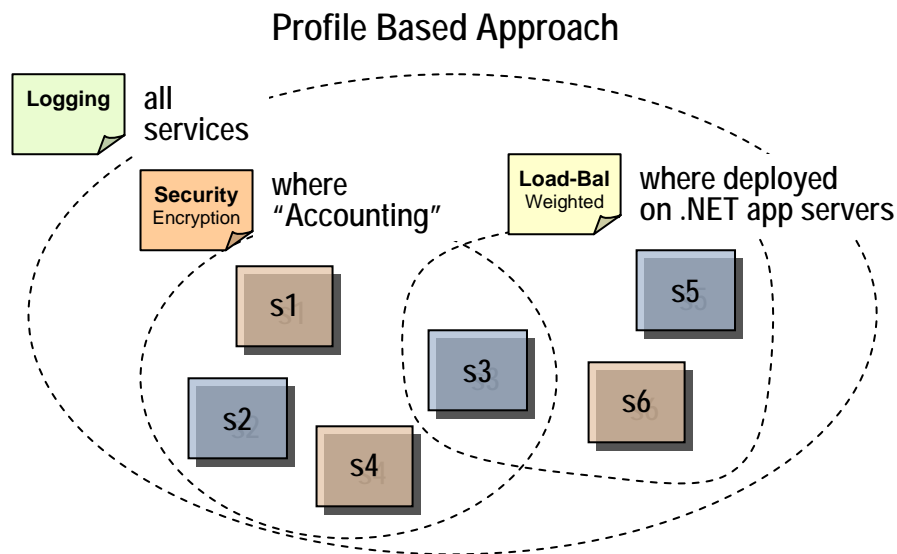
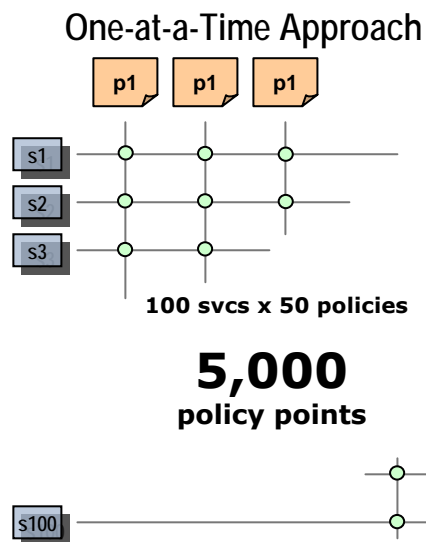
The screenshot displays the AmberPoint Services Console interface. The main area shows a dependency graph for the WarehouseService. The graph includes nodes for ShippingServiceSOA, WarehouseService, OrderServiceSOA, CreditServiceRouter, and CreditServiceSOAP. Arrows indicate dependencies with request counts: WarehouseService depends on ShippingServiceSOA (19), OrderServiceSOA (42), and CreditServiceRouter (38). CreditServiceRouter depends on CreditServiceSOAP (20). CreditServiceSOAP depends on CreditServiceRouter (18). A table at the bottom provides summary data for the WarehouseService endpoint.

Endpoint	Managed	Service	Requests In	Requests Out
WarehouseServiceSOAP	Yes	WarehouseService	42	38

- ◆ Visibility into major SOA components...
- ◆ And into supporting components...
 - Databases
 - JAX-RPC and JMS messaging
 - EJBs
 - Custom, user-defined interceptors
- ◆ Dynamic Discovery
 - Find services deployed in the environment
 - Locate services even if they're not in the registry
- ◆ Dependency Tracking
 - Track actual interactions to determine dependencies
 - Critical to determining impact and drilling into problem areas

Need some approach to Automatic Policy Provisioning

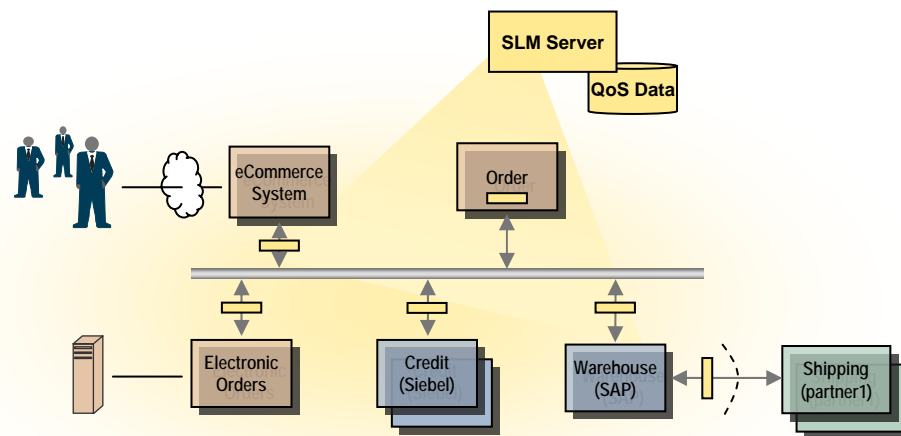
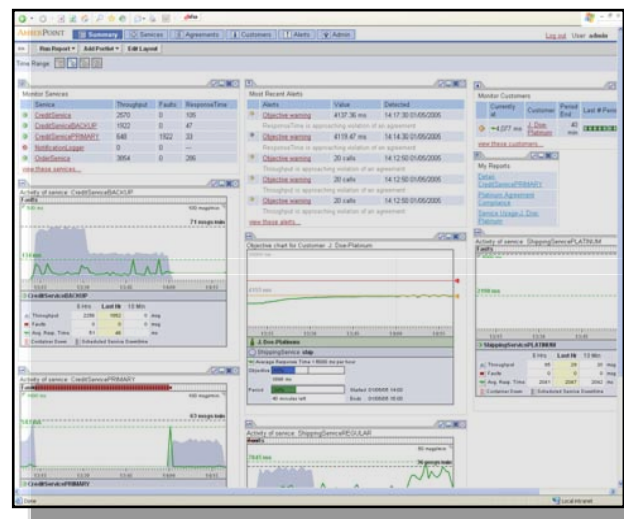
- ◆ Policies with a “where clause” that automatically assigns policies based dynamic attributes and message content. Eg.
 - All production services should be logged
 - All external-facing services should be encrypted
 - Alert me about orders > \$10,000
 - All services deployed in WebLogic containers should use load balancing
- ◆ Assignments are reevaluated as attributes change



Reduces complexity of managing policies.
Can manage system on “autopilot” where policies are assigned as appropriate.
Eliminates production mistakes by reducing manual steps.

● Service Level Management

- ◆ Real time segmentation & prioritization based on business criteria
 - Focus on most valuable groups – customers, partners, departments, etc
 - Should not require creation of duplicate services
- ◆ Enforce enterprise-class service level agreements
 - Sophisticated calendaring
 - Flexible time windows – not just one average for all users
- ◆ Prevent service problems
 - Early warnings
 - Trigger corrective actions
- ◆ Reporting
 - Compliance
 - Historical trends for capacity planning



● Automatic Corrective Actions

Service Level Objective (SLO)
 For Platinum customers:

- Ave. Response time per hour < 6 sec
- Warning threshold <= 4 sec
- Action: Re-route to favor Platinum

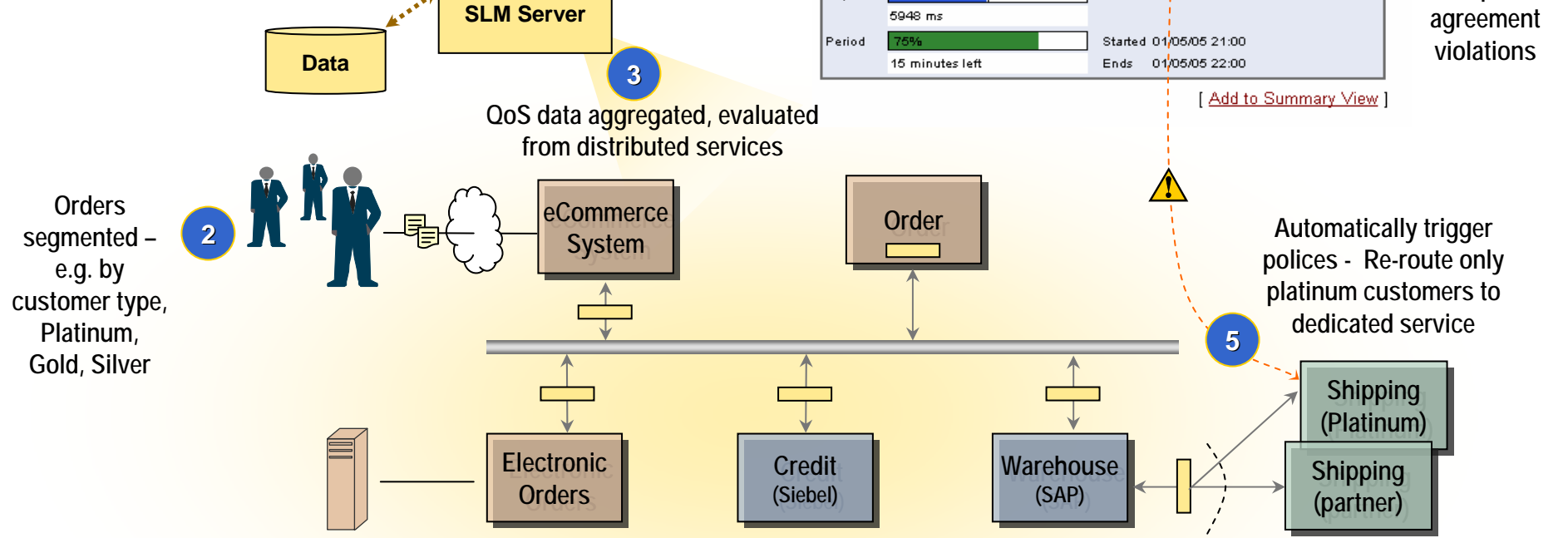
1 Definitions guided by historical base lines

Warning alerts provide early visibility into long-term objectives

4

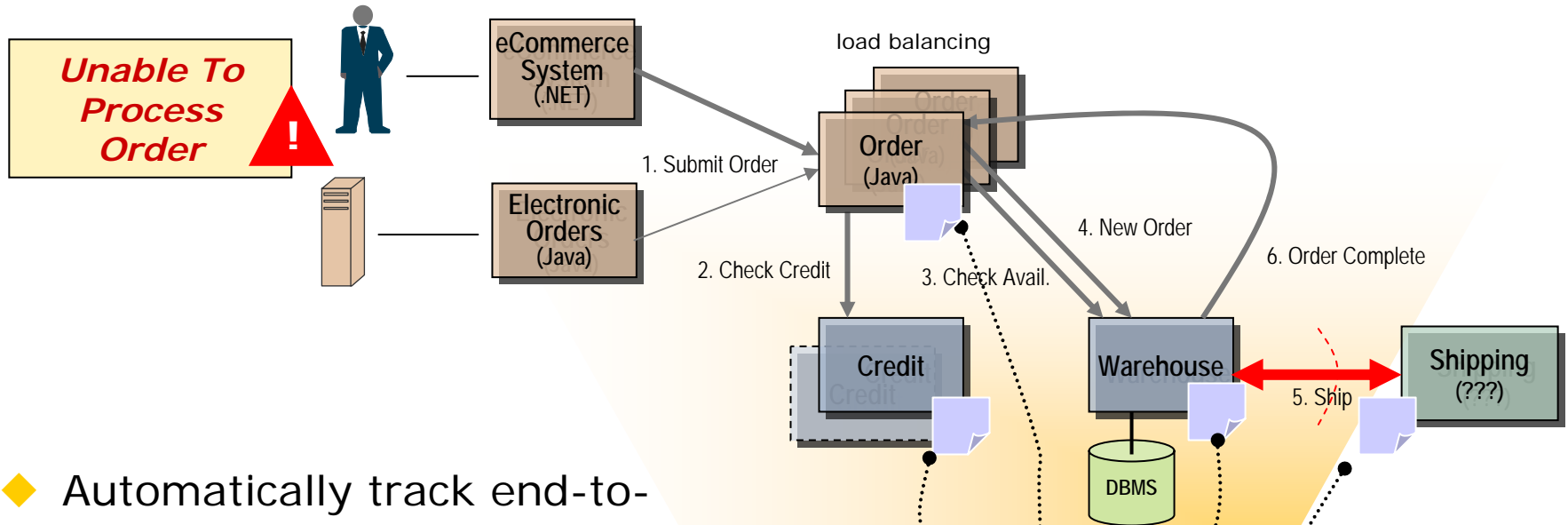
6

Stabilize response times, prevent agreement violations

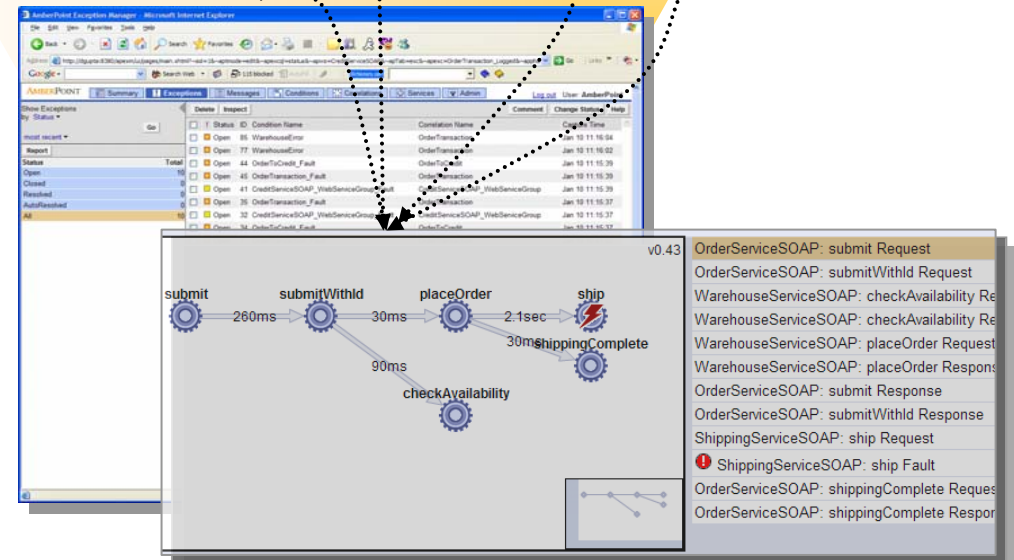


Automatic Exception Detection

Transaction Tracking & Diagnostics in a Highly Distributed App



- ◆ Automatically track end-to-end message trails
 - Non-invasive
 - Asynchronous and synchronous
- ◆ Quickly isolate problems
 - Eliminates looking through scattered log files
 - Inspect requests, responses, and errors
 - Use actual traffic to reproduce problem



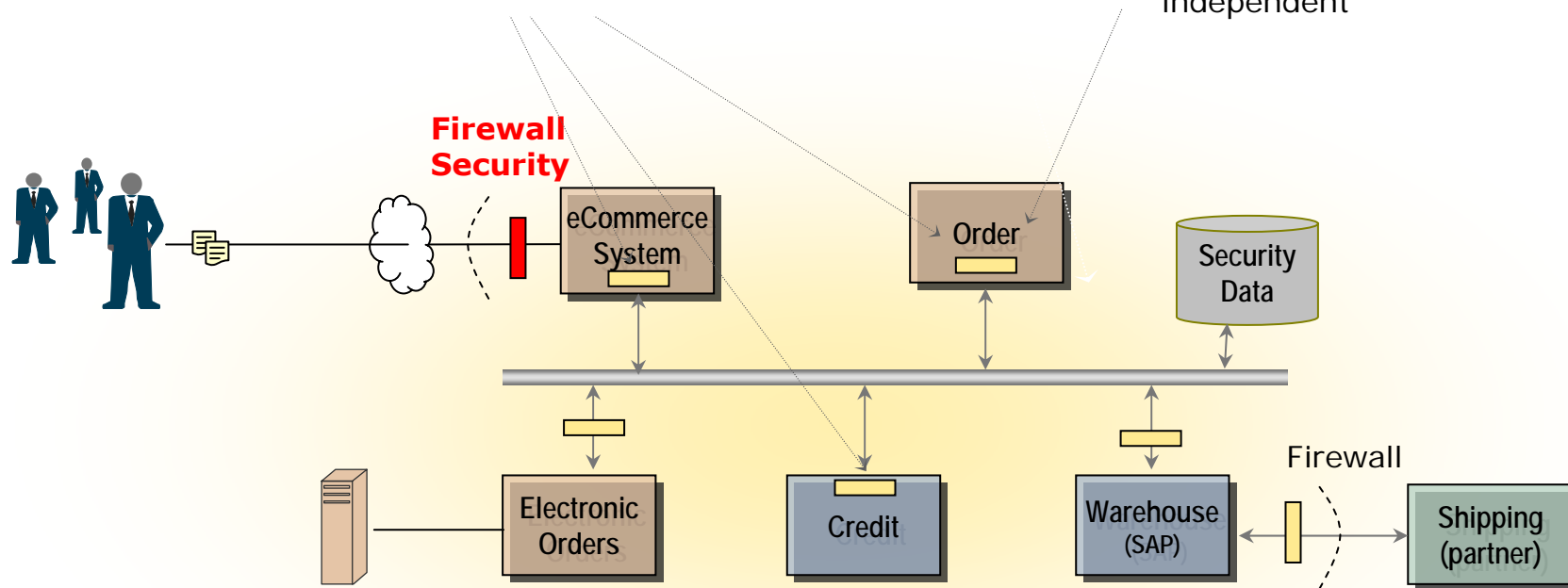
● Multilayer Your Security

Last-Mile Security for Distributed SOA

- Plug-in Agents enforce security for each end-point
- Manage security events & exceptions across distributed environments

XML Signatures/Validation

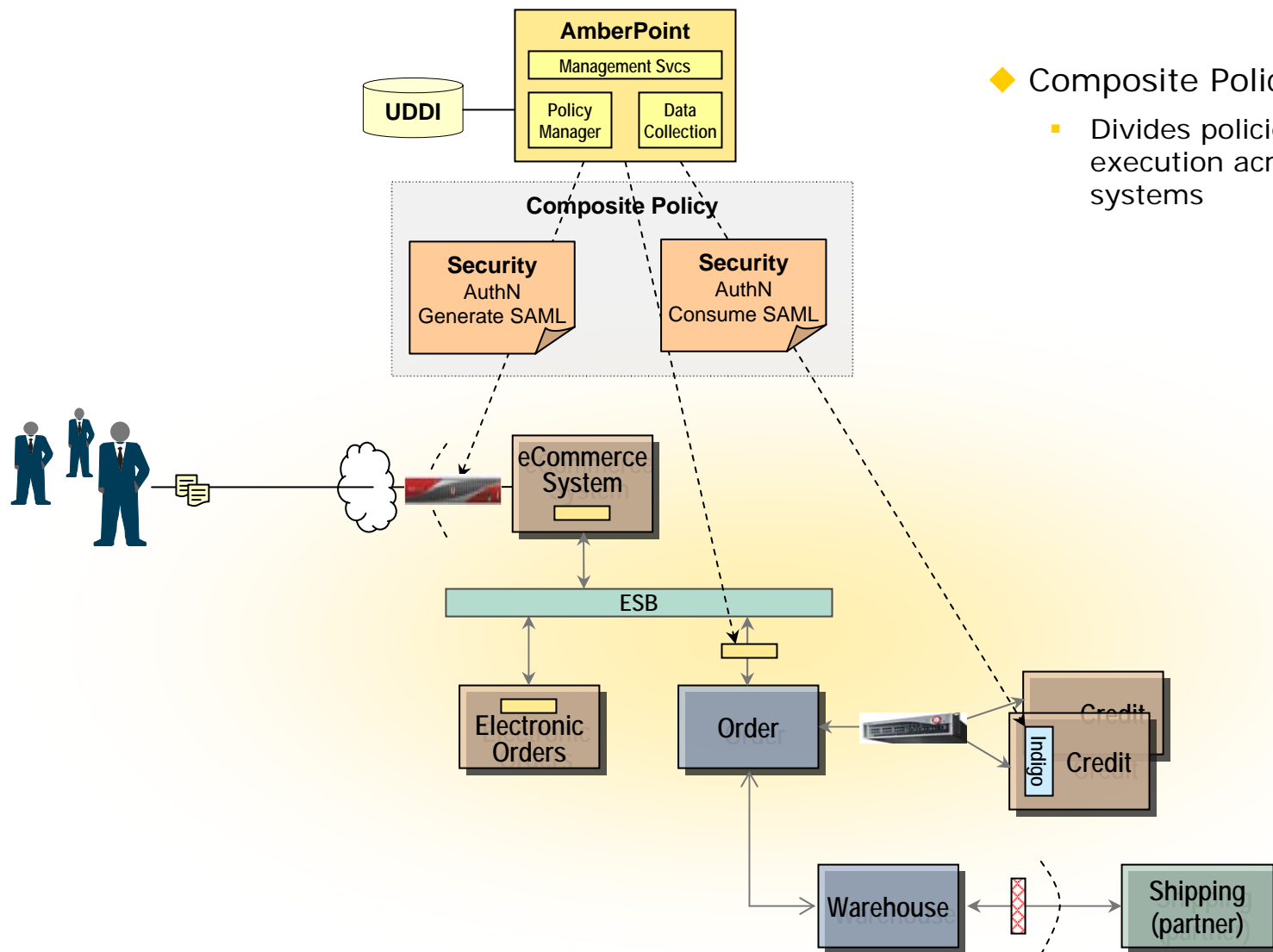
- Apply to parts of message, across multiple hops
- Transport, language & vendor independent



Integrate with Existing Security Solutions



● Partitioning Individual Policies



◆ Composite Policies

- Divides policies for distributed execution across different sub-systems

● Checking for Functionality and Performance

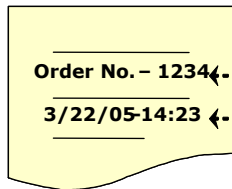
◆ Test messages at any stage

- Development, QA or Staging

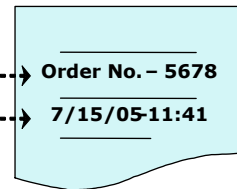
◆ Functionality

- Evaluate responses for functional correctness
- Compare w/ captured responses
- Rules to accommodate inherent variability – timestamps, sequential numbers, etc.

Validation Response



Production Response

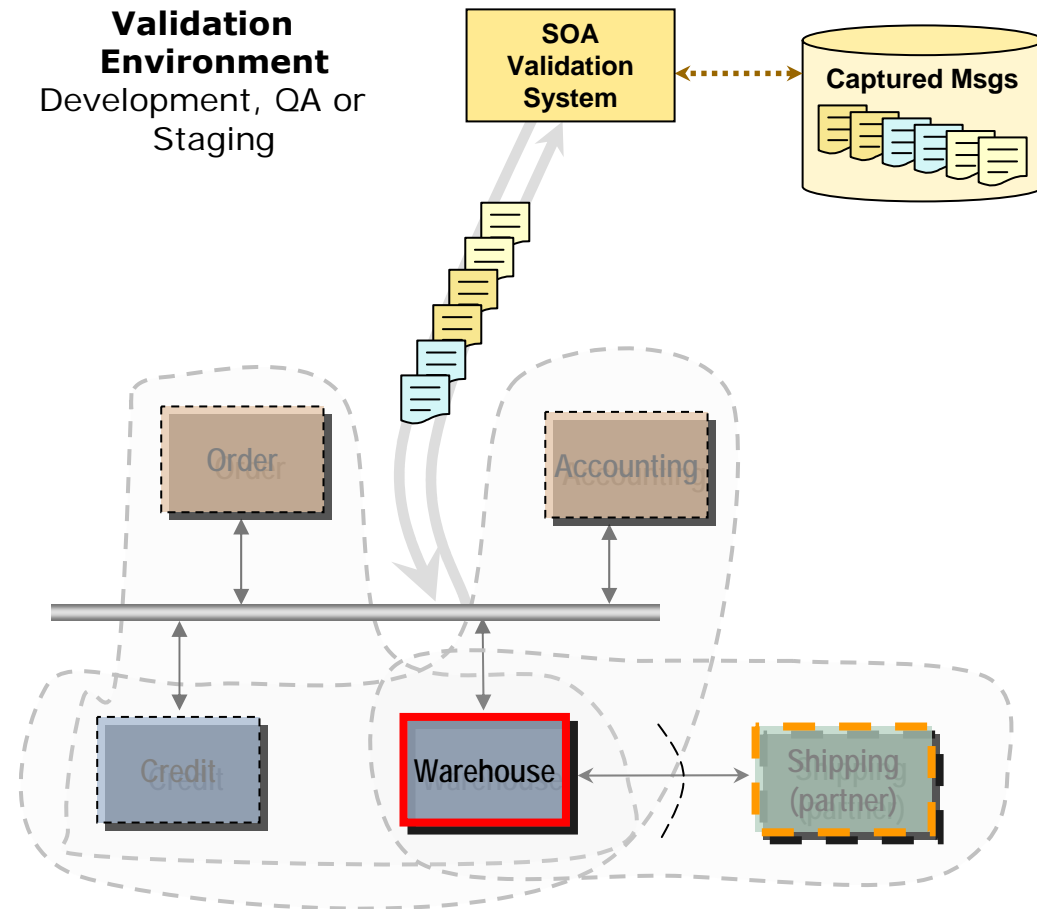


Invalid Order No.!

Invalid Timestamp!

◆ Performance

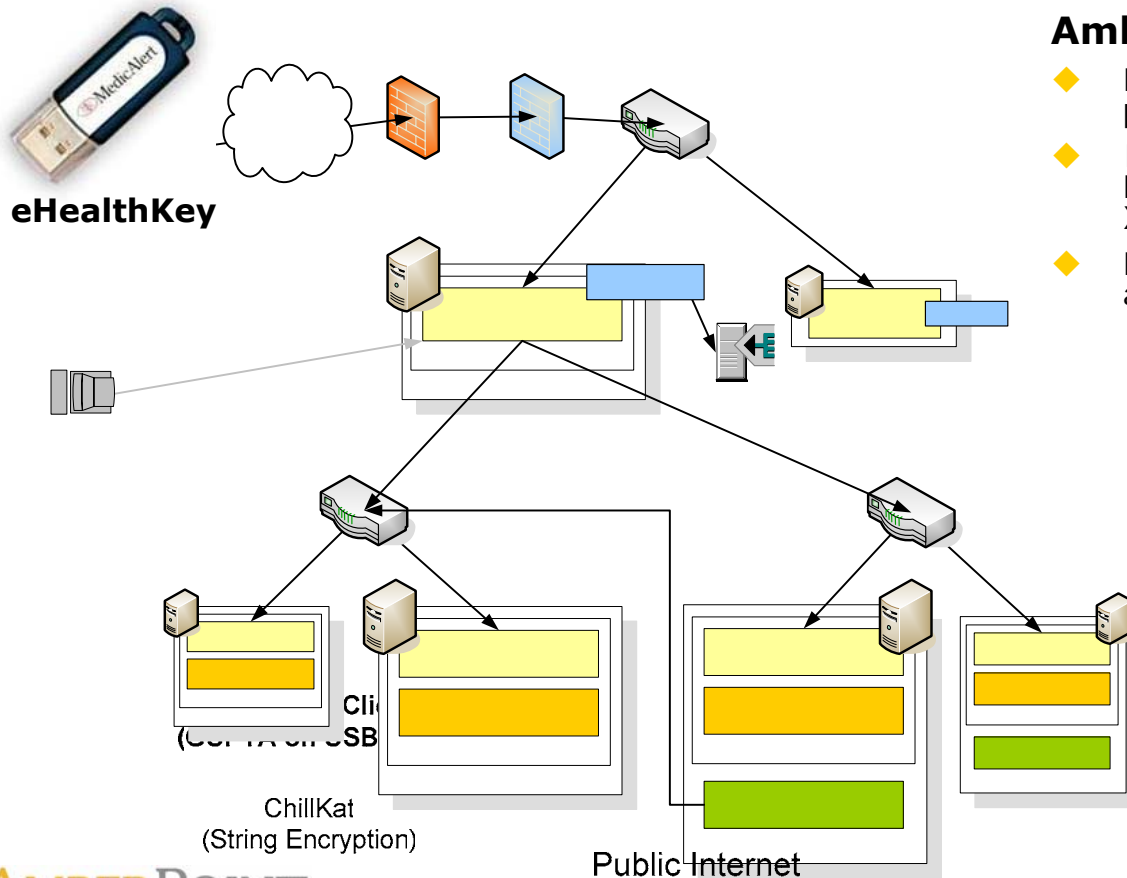
- Predict loads and saturation points
- Revalidate performance as system evolves



Health Care Services

Use of Service-oriented Applications

Personal health records for 4,000,000 world-wide members. Provides 24x7 access to critical medical information to authorized providers, payers, & first responders. Critical security, privacy, and confidentiality for compliance to government and industry regulations.



AmberPoint Met Key Requirements

- ◆ Ensure 'last-mile' security for sensitive & private patient information
- ◆ Interoperability with first line of defense using Forum XWall; integrates using WS-Security & XML Encryption
- ◆ Ensure high QoS requirements for partner's access to MedicAlert services

Add'l Benefits Provided by AmberPoint

- ◆ Visibility into service usage and performance bottlenecks
- ◆ Monitor impact of security & management policies on their SOA
- ◆ Facilitate online upgrades with transformations & routing

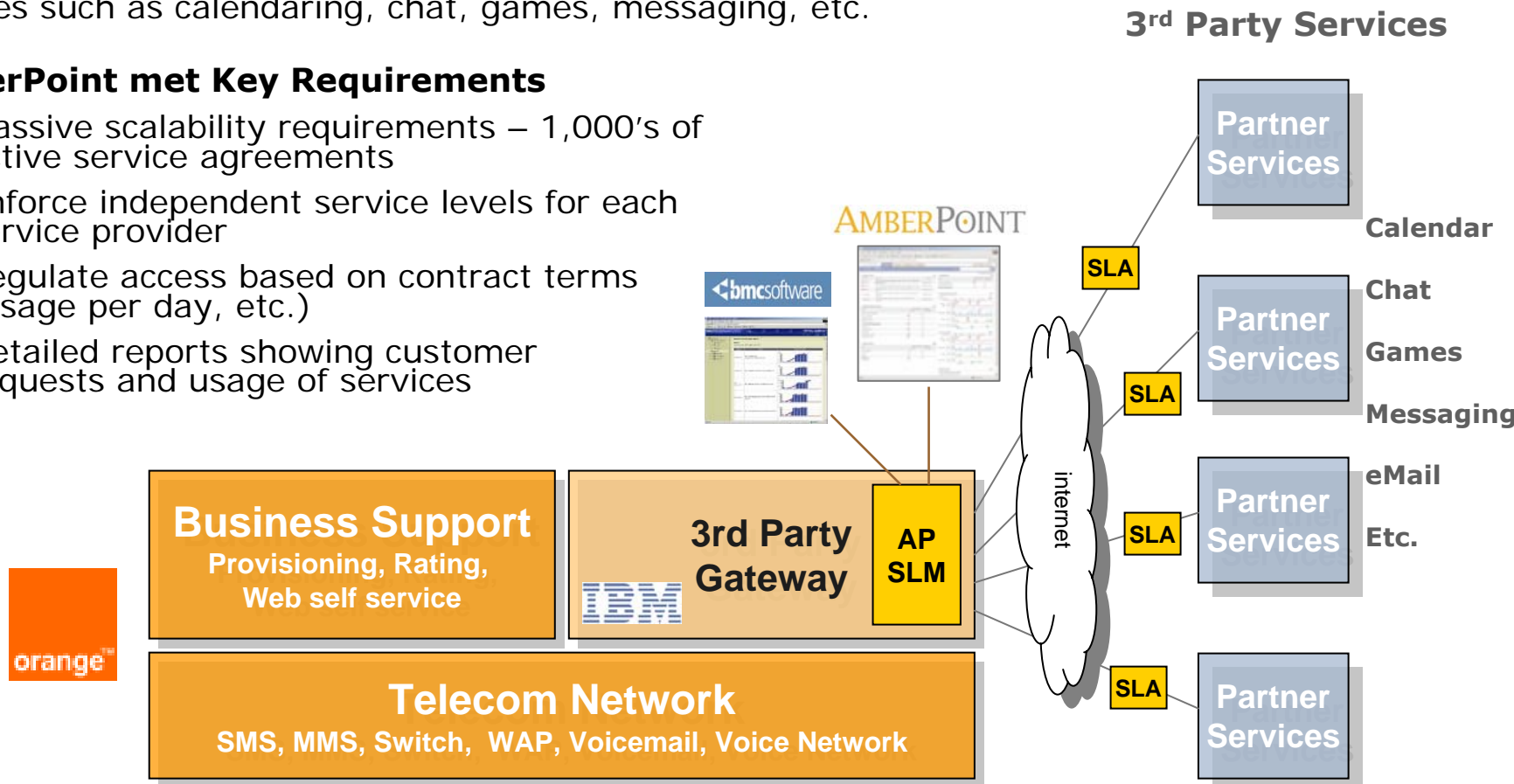
Telecommunications

Use of Service-oriented Applications

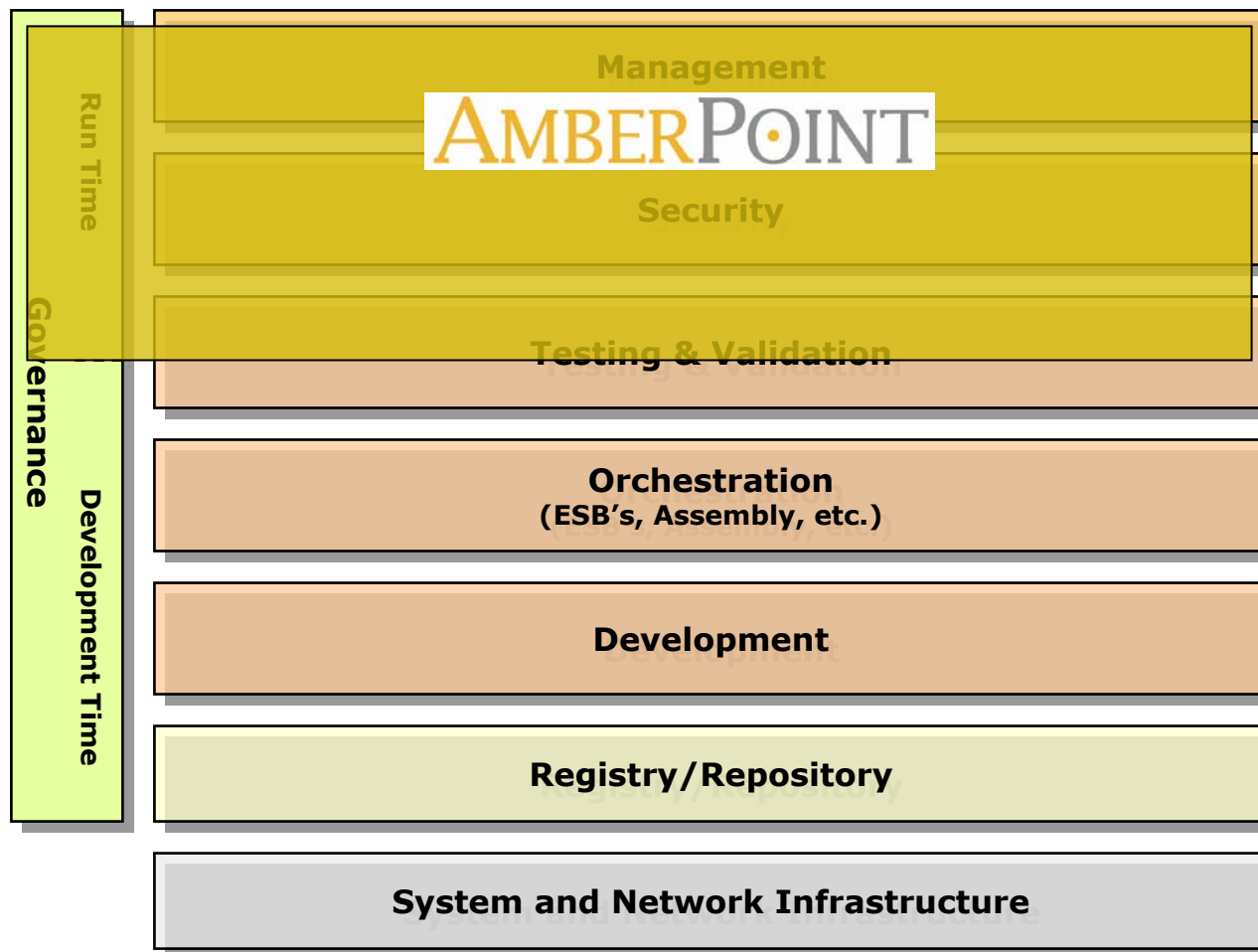
2nd largest European mobile provider (20€ B) that is moving to Web services as the standard interface for external mobile services such as calendaring, chat, games, messaging, etc.

AmberPoint met Key Requirements

- ◆ Massive scalability requirements – 1,000's of active service agreements
- ◆ Enforce independent service levels for each service provider
- ◆ Regulate access based on contract terms (usage per day, etc.)
- ◆ Detailed reports showing customer requests and usage of services



● AmberPoint's Focus



AmberPoint focuses on Managing the Runtime Aspects of SOA Applications