Challenges in Event Based Systems for Commercial Use

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Event based approaches have been used in commercial systems management for decades

- Primarily for point to point integration between products that were not originally designed to work together.
- Loose coupling is more cost-effective than rewriting lots of incompatible products.

The proliferation of approaches now beginning to succumb to brittleness and O(n^2) complexity issues.

Where do we go from here?
The idea arose from the need to get two or more pieces of software to inter-operate when they weren’t designed to do that in the first place.

Passing a message of some sort was easier than rewriting complex applications.

People realized the advantages of flexibility through loose coupling.
Ancient History – 1950’s

Stand alone applications

Application A

All control flows are internal to the program
Tight coupling: Bound at link time

(Control flows are larger/longer, but still internal)
Slightly More Recent – 1980s

Loose coupling: Message Passing Between Functional Units

Application A

Application A’

(Better, but still typically 1:1 relationships)
Current Need

Loose coupling: Messages to/from Multiple Functional Units

Application A

Vendor X

Application A’

Vendor Y

Application B

Vendor Z

Application C

(Getting hard to manage)
We Agree Events Are Great, But…

- Many event interfaces and programming models
  - Logs, streams, traps, proprietary interfaces
  - Variety creates complexity for developers
- Very large numbers of devices in the network
  - Variety creates complexity for users
- Complexity has gotten out of hand
IT is Highly Distributed...

IDENTITY MANAGEMENT
SSO, User Access, Service Provisioning, End System User Access, Entitlement Management

APP MANAGEMENT
Availability, Performance, Failed TXs, Errors, SLAs, Always-On Recording, Transaction Tracing

ASSET MANAGEMENT
Databases, Web Services, Back-End Systems Availability, Performance, Errors, SLAs

CEM
Customer Experience, Transaction Success Rates, Failures, Errors, Defects, Scorecards, SLAs, Six Sigma Business Cost $$ and Impact

APP MANAGEMENT
Availability, Performance, Failed TXs, Errors, SLAs, Always-On Recording, Transaction Tracing

Managed Storage

3rd Party applications

Web Services

Mainframe

Database

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Database
Complexity Is Out Of Control…
Typical Integration Picture Now

- **r11 integration** (UI, workflow, messaging, event, MDB)

- **Service Desk** (Incident & Problem Mgmt)
- **NSM** (Service Performance and Event Management)
  - **NSM Systems Mgmt (Virtual Platform Mgmt)**
  - **Common Discovery**
- **Database Management**
- **Introscope**
- **Customer Experience Manager**
- **SPECTRUM***
- **eHealth**
- **eHealth for Voice**
- **CMDB**
- **Asset Mgmt**
- **Software Delivery**

- **Workflow Integration**
- **Alarm/event Integration**
- **Asset Integration**
- **Incident Integration**

* SPECTRUM / Service Desk integration scheduled for 1H 07

** Desktop and Server Management r11.2 available in Q1_07 will provide common discovery integration.
What’s Wrong With Events?

- There are just too many event formats
  - It is no big deal when you’re only interested in a few things
  - It is completely unwieldy if you’re interested in many things

- Management products are by their nature interested in many things
Too Many Permutations

- Single message producer single consumer
- Single producer multiple consumers
- Multiple producers and consumers
- Easy to do for 1:1 or 1:few
- Becomes burdensome for 1:many
- Need a broker to make sense of it
- But which one do you choose?
Is There A Way Out?

- Standards are a way out
- Map existing event sources into a common format understood by all consumers
- Provide a single mechanism for subscriptions and notifications
- Provide a rich and resilient mechanism for describing topics of interest
Our Future Architecture

- MANAGEMENT POLICY
  - Generation
  - Reporting

- REPORTING SERVICES

- OTHER CA OR 3RD PARTY VALUE-ADDED APPLICATIONS

- VISUALIZATION SERVICES
  (CA Portal/Eclipse)

CA Integration Platform

SOA Backplane

- Normalized Events
- Policy & Automation Services
- Infrastructure
- Management & Governance

Security

Adaptor
CA Network & Systems Management

Adaptor
CA Identity & Access Management

Adaptor
CA Business Service Management

Adaptor
CA Information Management

Adaptor
3rd Party Applications & Database

Adaptor
PLATFORM OS & Middleware*

Adaptor
Virtual HW Manager

*Mainframe & Distributed
Closing Plea

- DEBS are the right answer to the problems facing the management software industry
- Academic insights needed to help us find solutions to pressing problems
- Work within the scope of the standards
- Don’t create brand new standards, make the ones we already have better