



## Impact of Supporting Mobile Workers on EA Frameworks:

### From Place-Centric Computing to People-Centric Computing

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## Outline

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- Overview of The Open Group
- The Role of Certification
- Standards as a Basis for Interoperability
- Boundaryless Information Flow
- People-Centric Computing
- Adaptive Applications
- Qos-Based Application Management
- The Open Group Forums
  - Mobile Management Forum
  - Enterprise Management Forum
  - Quality of Service Forum

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## Overview of The Open Group

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## Structure and Mission

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### The Open Group is ...

An international vendor- and technology-neutral consortium committed to delivering greater business efficiency by bringing together buyers and suppliers of information technology to lower time, cost and risk associated with integrating new technology across the enterprise.

### Our Mission is to drive the creation of Boundaryless Information Flow by:

- working with customers on requirements, policies, and best practices;
- working to develop consensus and facilitate interoperability, to evolve and integrate open specifications and open source technologies;
- offering operational services to consortia, and
- certifying approved products and processes.

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## The Open Group Role

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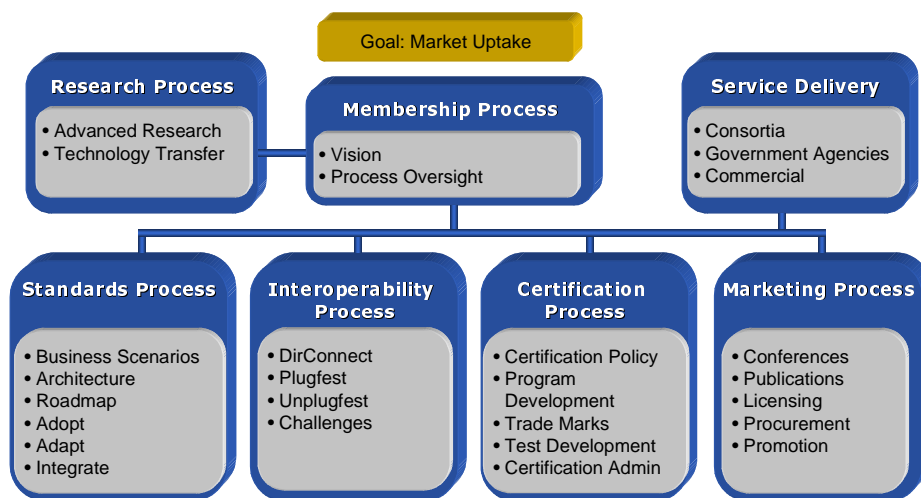
- Ensure requirements derived from real interoperability issues are driving standards (Customer view)
- **Ensure technical direction of interoperability standards are addressing market needs (Supplier view)**
- Enable networking with knowledgeable people who are making an impact on the technical direction of the IT industry
- **Provide a forum for IT standards with a focus on interoperability**
- Build relationships with other consortia
- **Deliver assurance of interoperability through testing and certification**

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## Process Overview

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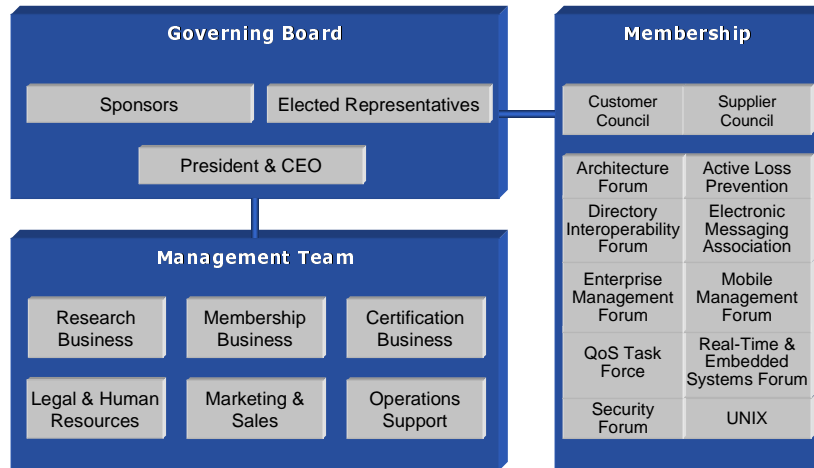


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## Organization Structure

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## Certification Services

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## Certification

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- Certification of a product provides formal recognition of conformance to an open standard or specification.
  - Suppliers are able to make and substantiate clear claims of conformance to a standard
  - For suppliers, it is a way to demonstrate that they stand behind their products.
  - Buyers are able to specify and successfully procure conforming products that interoperate
  - Buyers get a vendor warranty of conformance to standards when a product is certified.

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## The Open Group Certification Process

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- The Open Group has developed and operates today a process to provide buyers of certified products a guarantee that:
  - The product conforms to an open standard or specification
  - The product will remain conformant, through modifications, enhancement, fixes and upgrades
  - If there ever is a non-conformance, it will be fixed in a timely manner
- Supported by development and adoption of conformance test suites
- Support by branding program

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## Standards as a Basis for Interoperability

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## How do Open Systems reduce risk?

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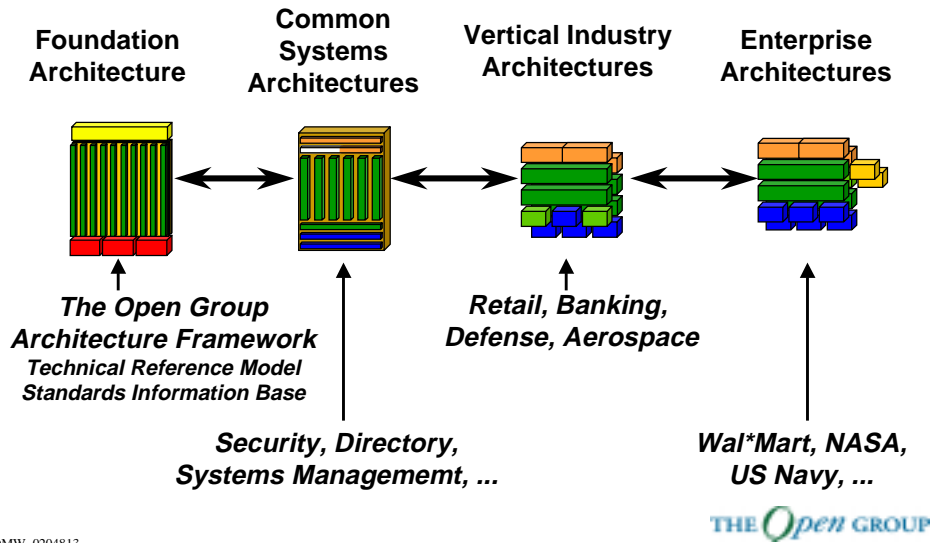
“Integration costs are lower with standards.”  
—Gartner Group

- For customers
  - Avoid vendor lock in
  - Avoid technology lock-in
  - Avoid obsolescence of interfaces
  - Get a guarantee of conformance – with certification
- For vendors
  - Reduce market entry risk
  - Accelerate / strengthen customer buy-in
  - Enable competition on speed, quality and value add

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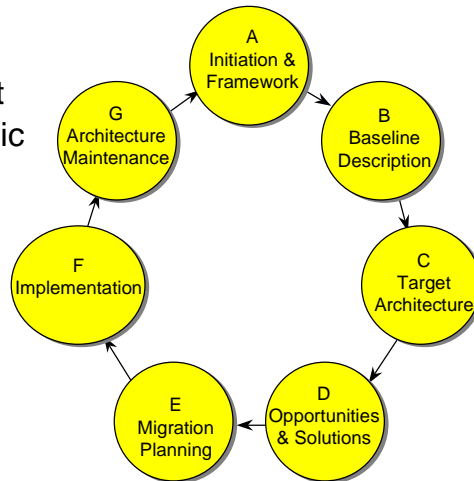
## Continuum of architectures...



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## Architecture Development Method (ADM)

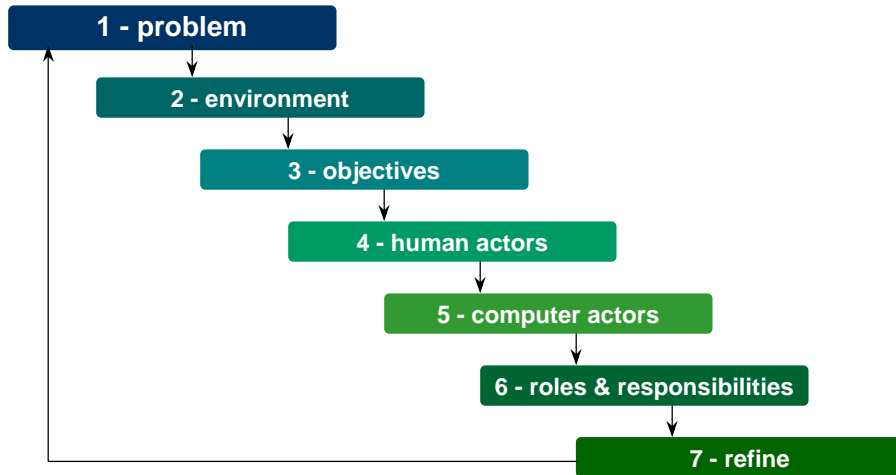
- ❑ Guides an architect
- ❑ Adaptable to specific needs
- ❑ Iterative process



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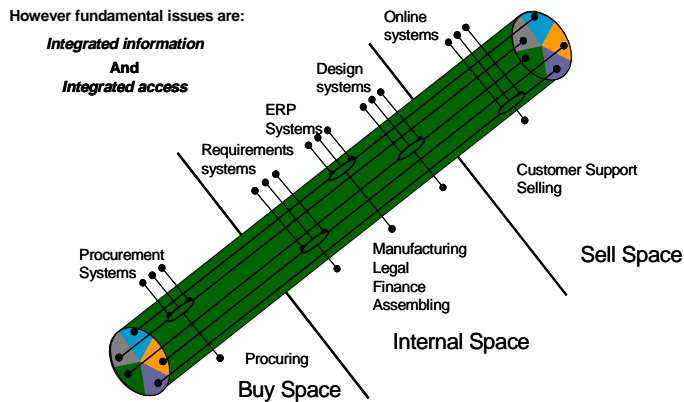
## Building a Business Scenario



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## Creating value chain integration



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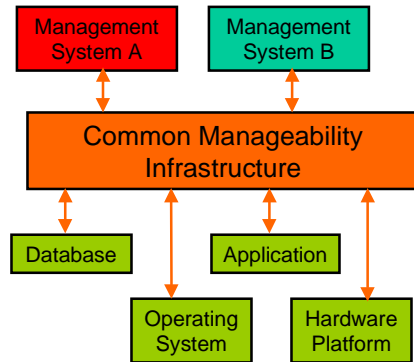
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## A Work in Progress: OpenPegasus

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A common, pervasive, manageability system that conforms to the DMTF Common Information Model (CIM) standard set.



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Success will deliver an environment in which all components can interact using standard interfaces and information models.

Currently this is not possible, and the result is increased cost and complexity in managing IT systems.

Benefits will be seen by all sections of the IT community – platform vendors, component vendors, developers, integrators and end-users.

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### What is Boundaryless Information Flow?

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## Background

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- Interoperability
  - A big issue for most organizations
  - Has many meanings
- Need to understand what is really meant by this requirement
  - Use business scenarios

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## What Is Meant by Interoperability

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- Working definition of interoperability
  - The ability of two or more entities or components to *exchange information* and to use the information that has been exchanged “*to meet a defined mission or objective.*”

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## Shared Problems across Industries

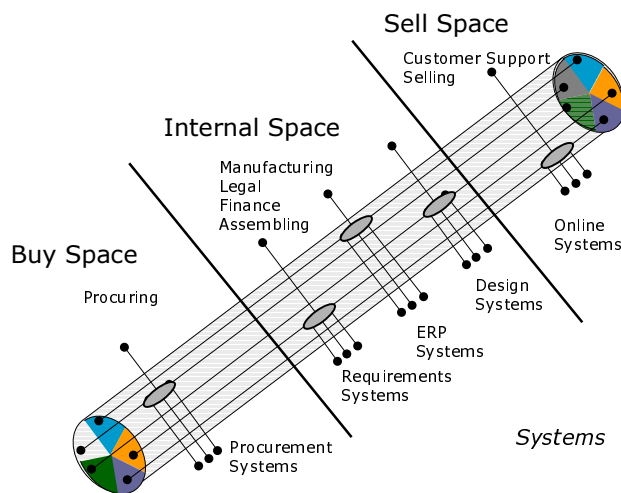
Manufacturing	Banking	Government
<b>Business Processes</b> Manufacturing Processes ... Scheduling Procurement Human resources, ...	<b>Business Processes</b> Banking Processes... Scheduling Procurement Human resources, ...	<b>Business Processes</b> Governing Processes... Scheduling Procurement Human resources, ...
<b>Business Logic</b> Manufacturing Scheduling Procurement Human resources, ...	<b>Business Logic</b> Banking... Scheduling Procurement Human resources, ...	<b>Business Logic</b> Governing ... Scheduling Procurement Human resources, ...
<b>Business Metadata</b> Manufacturing Scheduling Procurement Human resources, ...	<b>Business Metadata</b> Banking... Scheduling Procurement Human resources, ...	<b>Business Metadata</b> Governing ... Scheduling Procurement Human resources, ...
<b>Middleware</b>	<b>Middleware</b>	<b>Middleware</b>
<b>Operating Systems</b>	<b>Operating Systems</b>	<b>Operating Systems</b>
<b>Computer Hardware</b>	<b>Computer Hardware</b>	<b>Computer Hardware</b>
<b>Networks</b>	<b>Networks</b>	<b>Networks</b>

**Common problems**

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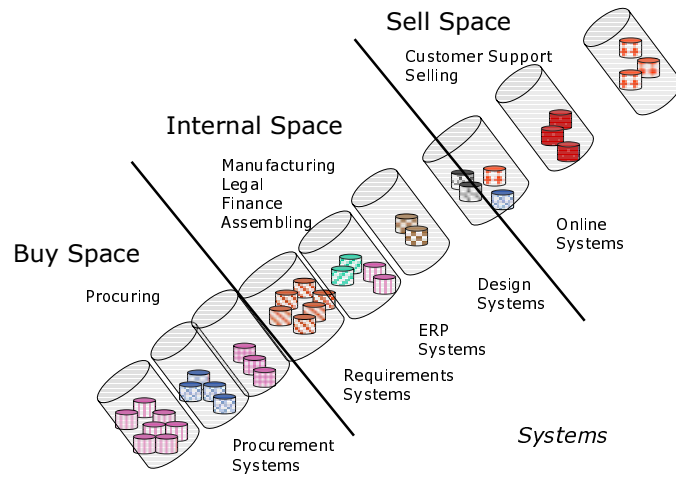
## Actually Want This...



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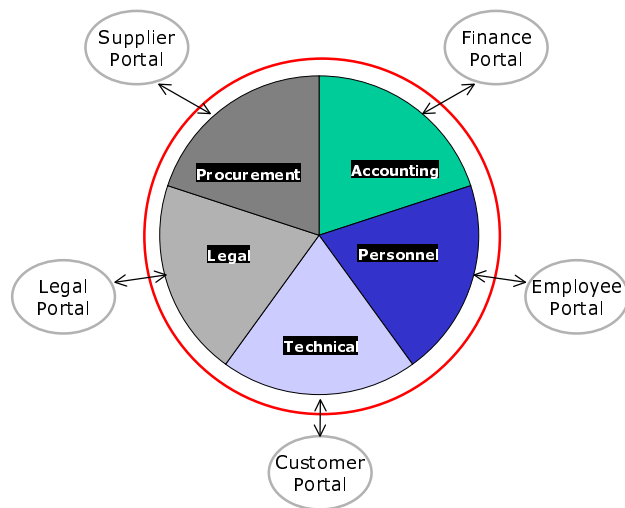
## But Have This



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## Need for Access



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## So What Is Boundaryless Information Flow?

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- **Boundaryless Information Flow** is a desired state for an enterprise's infrastructure specific to the needs of the organization
  - It has *open standard components* that provide services in a customer's extended enterprise that
    - Combine multiple sources of information
    - Deliver information to the places where that information is needed and
    - In the right context for the people or computer components using that information

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## “Boundaryless” Means...

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- Structuring the IT so it doesn't create boundaries for its own sake
- Being able to deploy IT so that its boundaries align with “real” boundaries that have value and utility
- Not creating the sorts of boundaries that make it so you can't get there from here.

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## “Boundaryless” Means...

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- Boundaries can be eliminated or surmounted easily when (*and only when*) appropriate
  - Bridges and gateways are made part of the fundamental complement of IT infrastructure element
  - Appropriate gatekeeper functions are available to ensure security, privacy, and other forms of autonomy
- Appropriate function is maintained even when the boundary characteristics change

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## “Boundaryless” Means...

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- Boundaries can remain effective but be transparent
  - Like a shopkeeper’s glass display case
- The contents of domains with opaque boundaries can be selectively exposed using directories and locator services
  - Like a merchant’s catalog

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## People-Centric Computing

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## Mobile Work: Natural Computing(\*)

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- From “Managing The Mobile Workforce”
  - The Open Group Conference, April, 2002
- (\*)“Mobile Work: Trends and Challenges”
  - Richard Baully, Psion Teklogic, Inc.
  - <http://www.opengroup.org/public/member/q202/documentation/plenary/baully.pdf>
- Assume “mobile work” is work done:
  - away from a traditional place of work, or
  - within the place of work but away from the desk
- Mobile work includes:
  - General management roles
  - Task-specific roles

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## People-Centric Computing

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- ❑ Mobility is the extension of the enterprise to the point of activity. It is moving from place-centric to people-centric computing.
- ❑ In a sense, it is a less constrained, more “natural” form of computing.
  - Most processes are oriented towards conserving the use of scarce resources.
  - As computing resources become less scarce and more manageable, we will return to treating the person as the resource to be conserved.
- ❑ Key driver is return on investment through lower costs and improved customer interaction

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## Impact of Mobility on EM Architectures

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- ❑ Increased use of shared corporate resources, e.g., CPU, spectrum
- ❑ Increased use of non-capitalized, shared resources, such as public networks
- ❑ Increased security vulnerability due to use of resources that can't be physically secured
- ❑ Increased interaction with other components
  
- ❑ Generally, increased dependence on resources whose characteristics can not be known in advance

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## Adaptive Applications

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## Resource Management Architectural Patterns

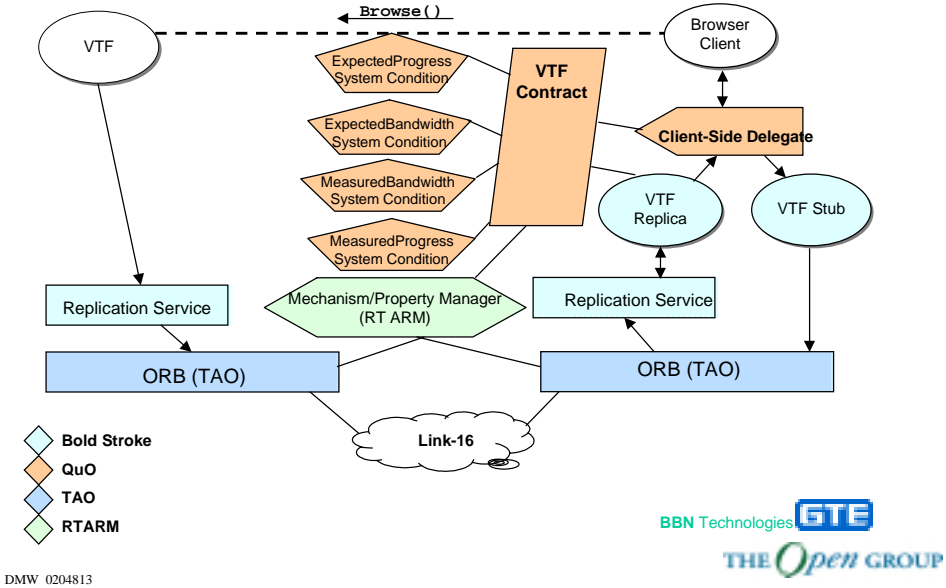
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- Adaptive Application
  - An application that can operate using differing algorithms and/or strategies based on the sets of resources that are available.
  - Example: web servers that guess available bandwidth
- Application Path
  - An execution sequence that requires a particular set of resources to execute successfully.
  - Examples: POSIX thread, DBMS transaction

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## Boeing's Weapons System Open Architecture (WSOA) Middleware Framework



## QoS-Based Application Management

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## Resource Management Concepts for Application Management

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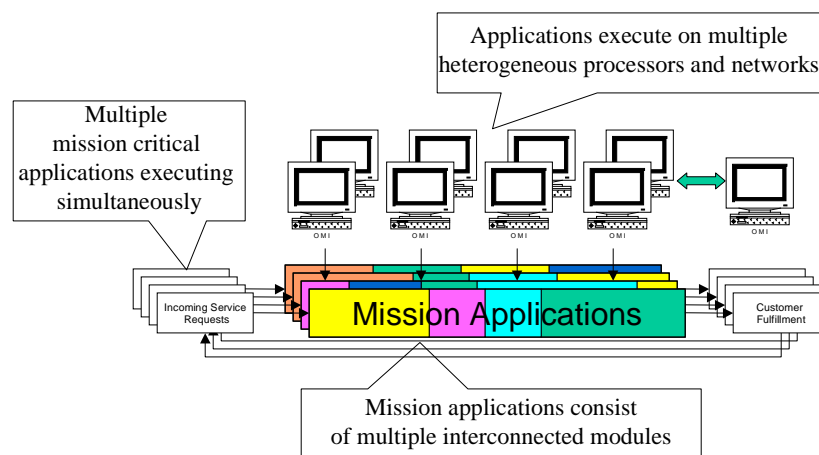
- ❑ Resource Management Components
  - The extraction of resource usage strategy from individual applications into a separate component in support of a more comprehensive strategy in utilizing available resources.
- ❑ Fault Management Components
  - The extraction of information about failures and failure dependencies into a separate component in support of a more comprehensive strategy in handling failures and in predicting future failures.

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## The Managed QoS Environment

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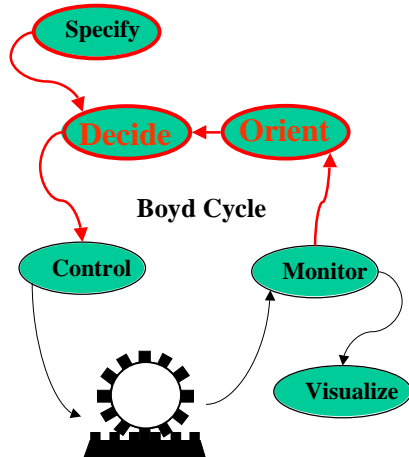


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# Resource Management

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- QoS management is part of existing organizational structures and processes
  - Set service levels
  - Monitor for compliance
  - Evaluate situation
  - Determine tactics to correct
  - Take action
- QoS automation mirrors human structures and processes
  - Faster response
  - Increased scale

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## The Open Group Forums

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## Mobile Management Forum

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- Investigation into use of applications on “any” enterprise information infrastructure
- Mobile Architecture (MMF-MA)
- Device Management and Provisioning (DMaP)
  - Management and control of devices
- Mobile Architecture (MMF-MA) and Mobile Identity Management, Access Control and Security (MIMACS)
  - Security, security, security!
- Developing a Mobility and Directory (MaD) Challenge
  - Target 1CQ03

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## Enterprise Management Forum

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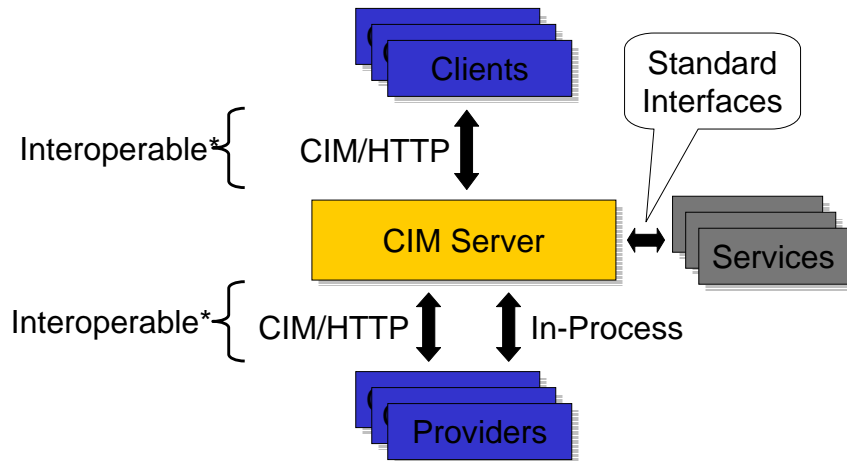
- Working with Distributed Management Task Force (DMTF) on manageability standards
  - Common Information Model (CIM) instrumentation
  - Web-Based Enterprise Management (WBEM) web services
- Developing OpenPegasus
  - An open source implementation of CIM and WBEM standards
  - Portable and highly modular
  - Expected to be incorporated into several commercial products

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## Pegasus Architecture

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## Quality of Service Task Force

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- Standard approach for propagation of QoS requirements and measurements
  - Enterprise top-to-bottom and bottom-to-top
  - Customer-to-vendor and vendor-to-vendor
  - Quantifiable, observable, interoperable
- Assurance of Delivery of Service—End-to-End
  - Bridging the gaps between separate enclaves
    - Vendor(s): We've solved your problem.
    - Users: No, you haven't. Work together!
  - Manage toward business-specified goals via application-specific metrics

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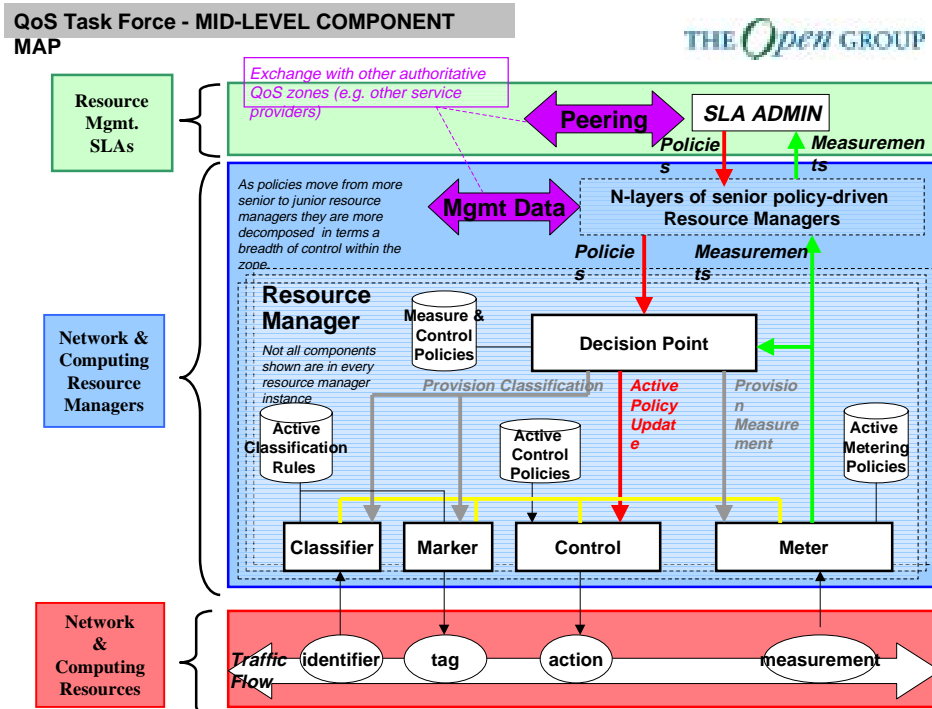
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## Sample QoS Task Force Work Items

- Develop End-to-End Service Level Agreement Concepts
  - TeleManagement Forum SLA Handbook
    - Add enterprise and application service level agreement parameters for telecommunications
- Maintenance of Standards Information Base
  - Listing and summary of existing standards
- Architectural Component Map
- Business Scenarios for adaptive applications
  - Both computer and organization processes
  - Identification of relevance of application metrics to business goals

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## Other Task Force Activities

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- Real-Time and Embedded Systems
  - Extending POSIX 1003.13 profiles to address market requirements
  - Examining security requirements
- Active Loss Prevention
  - Business risk analysis and amelioration
- Directory Interoperability Forum
  - Use of interoperable directory services to locate “nearby” resources
- Platform Forum
  - UNIX® and POSIX Standards Development
  - Convergence with POSIX and Linux

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## Conclusion

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## The Open Group is Looking at...

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- ❑ Boundary services for protected systems: security, integrity, discovery, characterization
- ❑ Political and regulatory limits on information flow
- ❑ Property rights in a boundaryless world
- ❑ Information aggregation and disaggregation: portals and beyond
- ❑ Turning data into information, and knowledge into understanding

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## Why participate in standards?

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- ❑ One point of view
  - Standards are slow
  - Standards are boring
  - Standards are for vendors



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## Why participate in standards?

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- ❑ Improve / protect competitive position
- ❑ Improve efficiency and productivity within organization
- ❑ Create / grow markets
- ❑ Change the power in vendor relationships
- ❑ Reduce risk
- ❑ Improve effectiveness of IT Professionals

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## How can participation reduce risk?

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- ❑ Make informed technology bets
- ❑ Influence / prioritize standards in areas of vulnerability
- ❑ Learn from the experiences of others

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## How can participation improve effectiveness?

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- IT Professionals can
  - Develop their understanding of the application of standards in technology and systems development
  - Broaden their understanding of business environments and the deployment of information technology
  - Learn how others apply IT to accomplish business objectives
  - Remain current on industry best practice

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### **Impact of Supporting Mobile Workers on EA Frameworks:**

**From Place-Centric Computing  
to People-Centric Computing**

For more information:  
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