

Application Servers
G22.3033-011

Session 11 - Sub-Topic 1
Enterprise Application Integration (EAI)

Dr. Jean-Claude Franchitti

New York University
Computer Science Department
Courant Institute of Mathematical Sciences

**Enterprise Application
Integration (EAI)**

What is it? When to use it?

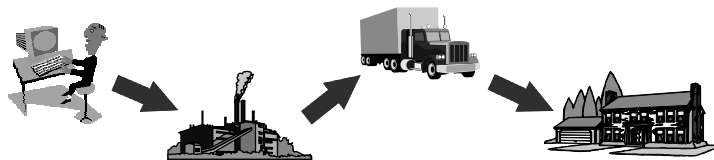
Trend: Shift to Packaged Applications

- In-house development cannot keep up with speed of change
- Y2K initiated many changes ...
- ... yet ERP still only 30% solution
- Integration with legacy & best-of-breed applications still required



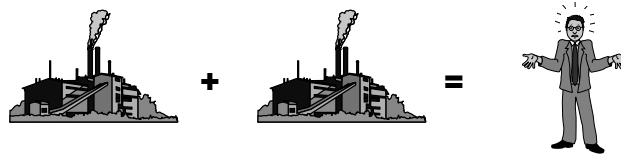
Trend: Electronic Commerce

- E-business requires connections between front-office and back-office
- Real-time business process integration
- Business-to-Consumer, Business-to-Business
- Challenges:
 - Security
 - Performance



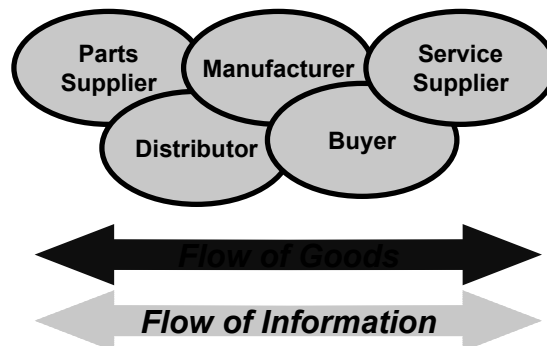
Trend: Mergers and Acquisitions

- Disparate systems, networks, software
- Differing business processes
- Fast business cycles require agile infrastructure that can accommodate changes rapidly



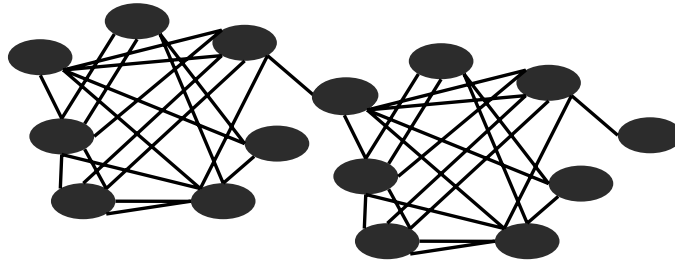
Trend: Supply Chain Optimization

- Business-to-Business integration
- External systems usually cannot be modified
- Virtual Enterprises:
 - formed around a project or program, then disbanded
 - require agile infrastructure, low cost of integration



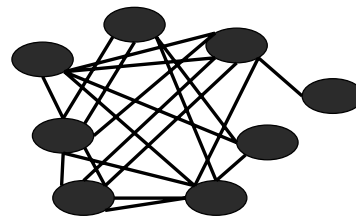
So what is EAI, anyway ?

- EAI enables the open flow of information between systems & across organizations
- Technology to seamlessly integrate packaged and legacy applications, using relatively little system resources
- Solution to 'Inter-Application Spaghetti' typically found in most enterprises

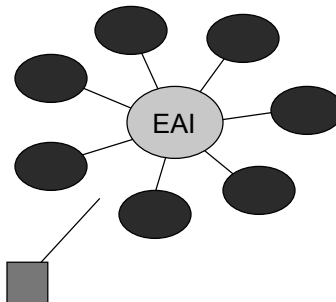


Enterprise Application Integration

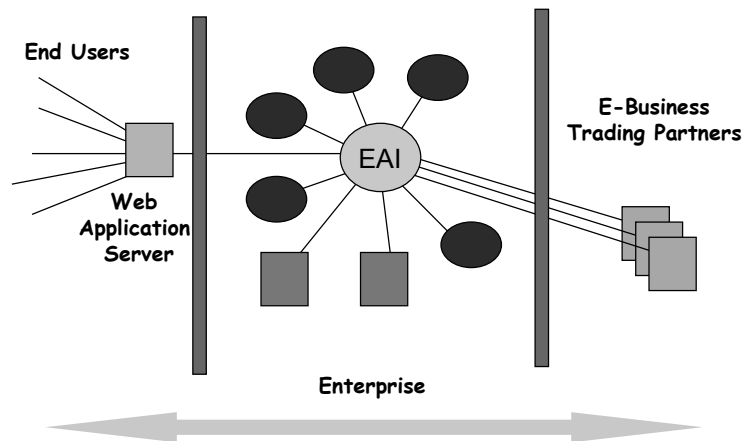
From
"Inter-application
Spaghetti"



To Application Integration
Architecture



EAI extends reach towards customers, employees or trading partners



Why EAI ?

- Clients have a strong desire to unlock access to "islands of information" throughout the enterprise
- Traditional point-to-point integration is expensive to build, difficult to maintain, and doesn't scale
 - **25-40% of IT budgets spent on application integration**
 - Alternative approaches to integrating application silos have not brought the sought-after benefits
- EAI takes a process-oriented approach that
 - empowers business owners,
 - handles 'plumbing' problems associated with enterprise-wide application integration,
 - reduces reliance on IT staff, and
 - is designed for change
- Analysts project
 - the EAI market to reach \$5 billion by 2002
 - 98% of new applications expected to include an EAI model by 2001

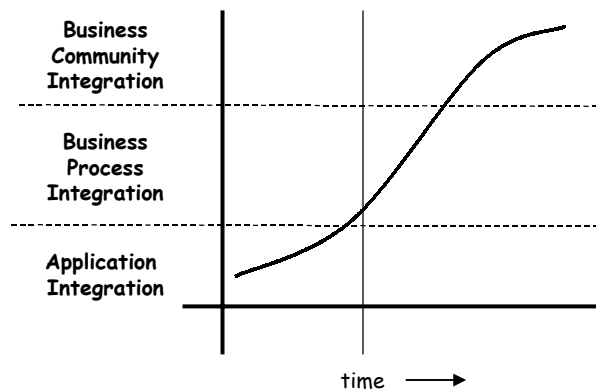
Gartner on EAI

“The greatest challenge to I/S in every large enterprise is finding better and simpler ways of making application systems work together more effectively.”

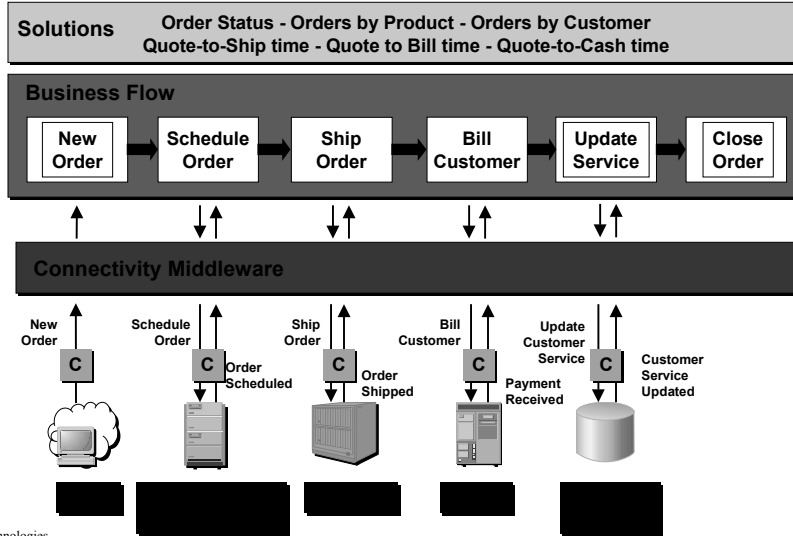
“Enterprises that thrive in the future will be those that can rapidly assimilate packaged applications and re-use their existing applications in new ways. They know that I/S does not have the time or money to develop new application systems from scratch. They understand that systems built to change are ultimately more valuable than systems that are built to last.”

Roy Schulte, VP, roy.schulte@gartner.com

EAI Landscape (AMR Research, Inc.)

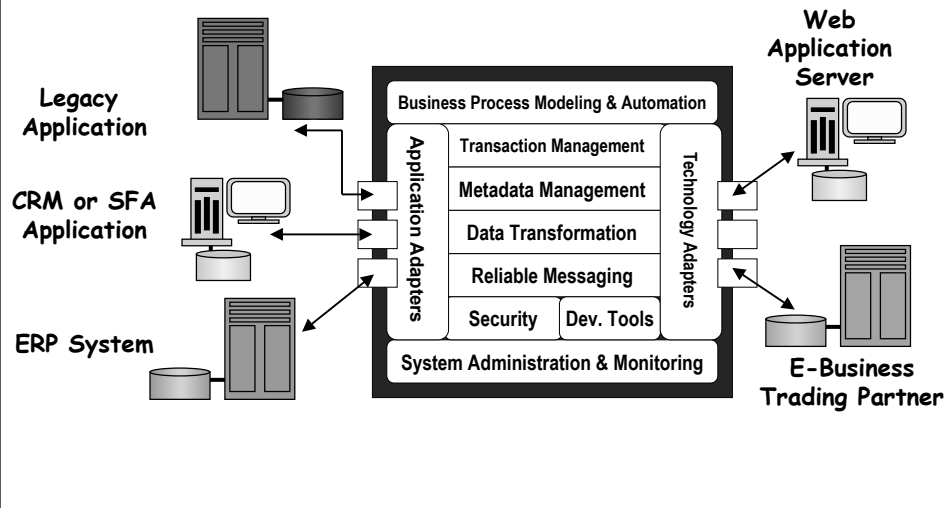


Business Process Integration



Source: Vitria Technologies

EAI Functional Diagram



When To Consider EAI Solutions

- **To automate cross-functional business processes**
 - Real-time access to information in multiple applications is required to complete a business process or to maintain application data integrity
- **To present a unified view of information from multiple applications to your users and/or customers**
 - Call Center, Cross-Selling
 - Corporate Web “Portal”
 - Mergers & Acquisitions
- **For business-to-business integration with trading partners**

When Not To ...

- **Ad Hoc Analytical Analysis (use Data Warehouse)**
- **Large Volume One-Time Data Conversion (use ETL tools)**

Architectural Principles for Successful Enterprise Application Integration

- **Adopt a Business Process Orientation**
 - Model processes as event-driven information flows
 - Take a non-invasive approach ... Hard-coded application modifications limit flexibility & increase maintenance costs
- **Plan for Change -- It Happens !**
 - Design a flexible information infrastructure
 - Adopt industry standards where appropriate
- **Ease of Use Increases Productivity**
 - Dynamic, Flexible Configuration (Metadata-driven)
 - Graphical Tools for Implementation & Administration
- **Demand an Industrial Strength Solution**
 - Scalability, Performance, Security and System Management

Enterprise Application Integration Strengths

- **Deep technical competencies in application integration**
 - Systems Architecture
 - Reliable Messaging, Transaction Processing
 - Data Architecture, Metadata Management
 - Security, Performance Engineering
 - Database Management
- **Applications Expertise**
 - ERP -- SAP, Oracle, PeopleSoft, ...
 - Customer Care -- Siebel, Broadvision, ...
 - Legacy -- Custom Development, Component Based, N-Tier, Mainframe, ...
 - Web Development, Business-to-Business integration
- **Industry-recognized business process design expertise**
- **Well-packaged methodology and best practices**
- **Vertical market knowledge**
 - Financial, Healthcare, High Technology,

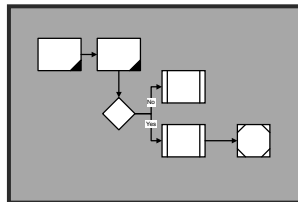
Caveats

- **This is an enterprise scale solution**
 - Implementations are complex (requires Java, C++, ...)
 - May be overkill for some situations
- **Short track record for large-scale production implementations**
- **EAI alone may not provide a total solution**
 - Other middleware may also be required
 - Examples: ETL tools, Web Application Server, ...
- **Additional issues for business-to-business integration**
 - Obvious heterogeneity between partners
 - Peer-to-Peer Relationships (e.g. trading partners)
 - Loosely coupled integration model, event-based
 - Higher security, performance, reliability concerns
 - Decentralized Administration & Management

Further Information

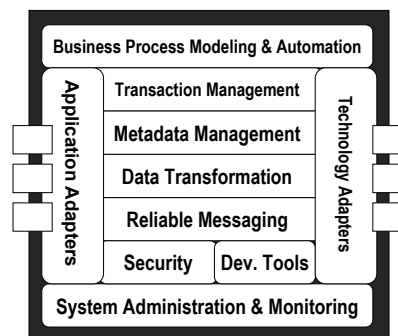
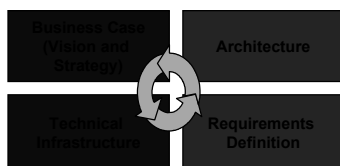
- Gartner Group Report
 - Middleware: The Glue for Modern Applications
- EAI Portal Site
 - www.messageQ.com
- “The EAI Journal”
 - www.eaijournal.com

EAI Perspective



Business Process
Integration

Methodology



Architecture

EAI Solutions are Appropriate ...

- To automate cross-functional business processes
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- To present a unified view of information from multiple applications to your users and/or customers
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When They May Not Be ...

- Ad Hoc Analytical Analysis (use Data Warehouse)
- Large Volume One-Time Data Conversion (use ETL tools)
- Fine-grained Integration Between Few Applications
(beware of creeping functionality ...)