



GISB 7th Annual Meeting
September 21, 2001

THE E-BUSINESS SOLUTIONS LANDSCAPE

- Back office Integration
- Relationship Applications
- Infrastructure Technologies
- E-Commerce Applications



Technologies for the Changing Energy Markets

Introduction

A discussion on the evolution of technology through the changing energy markets, and a look into which tools will be critical in the future.

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Current Assessment

Among other things, the Internet revolution has provided us with:

- A large and robust suite of “mature” technologies for utilizing a network of connected computers to provide value to a business organization.
- A scenario where virtually every serious business organization in the world has connected their computers to the same global network, and is addressing the technical and business hurdles of using this new global network to expand their business opportunities.

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Current Assessment

Among other things, the Internet revolution has provided us with:

A NEW attitude towards technology...

The single most important technological advancement brought about by the Internet age has not been pure technological innovation. Rather, it has been the cultural changes of our society's attitudes towards technology and the opinions about the **unlimited nature** of what can be accomplished using those technologies.

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Current Assessment

Among other things, the internet revolution has provided us with:

A NEW attitude towards technology...

Many energy organizations that have this 'all things possible' opinion towards technology and have that opinion as their most important technological tool.

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Where We Are Headed

The enabling of Collaborative Commerce

Where as e-commerce has become known as the simple transaction based activity of buying and selling over the Internet, Collaborative Commerce (c-Commerce), is the term used for the true inter/intra-company collaboration that enables a given marketplace.

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Where We Are Headed

C-Commerce, more than e-commerce

"Some business issues are too important not to address right away. In the next twelve months, c-commerce initiatives involving Web-enabled interaction between enterprises, their customers, trading partners and employees will surpass e-commerce as a top business priority. By 2005, nearly half of all Web-based commerce will be collaborative in nature." ...
(Gartner Group)

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Where We Are Headed

C-Commerce, more than e-commerce

C-commerce is the set of electronically enabled collaborative interactions between an enterprise, its suppliers, trading partners, customers and employees. C-Commerce leverages the web to develop and maintain an interactive business community of employees, trading partners, suppliers and customers.

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Where We Are Headed

C-Commerce, more than e-commerce

- This real-time Internet connectivity enables data, intellectual capital, human resources and processes that were once considered internal to be shared - and used - by the collaborative community at large.
- The c-commerce premise enables every member of these virtual communities to take advantage of each other's core competencies, intellectual capital and business processes.
- Shared Databases, Open systems, and high inter-enterprise visibility and cooperation ensure that each member of the c-commerce network provides greater value to its customers.

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Today's Needs

Enterprise Application Integration

Yesterday's methods of cobbling applications and business enterprises together with spaghetti networks of flat files and batch interfaces will be a thing of the past.

They have given way to more "mature" technologies that solve many of the technological hurdles and give IT teams the ability to create seamlessly integrated applications that span the enterprise.

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Today's Needs

Enterprise Application Integration

Business Drivers for EAI

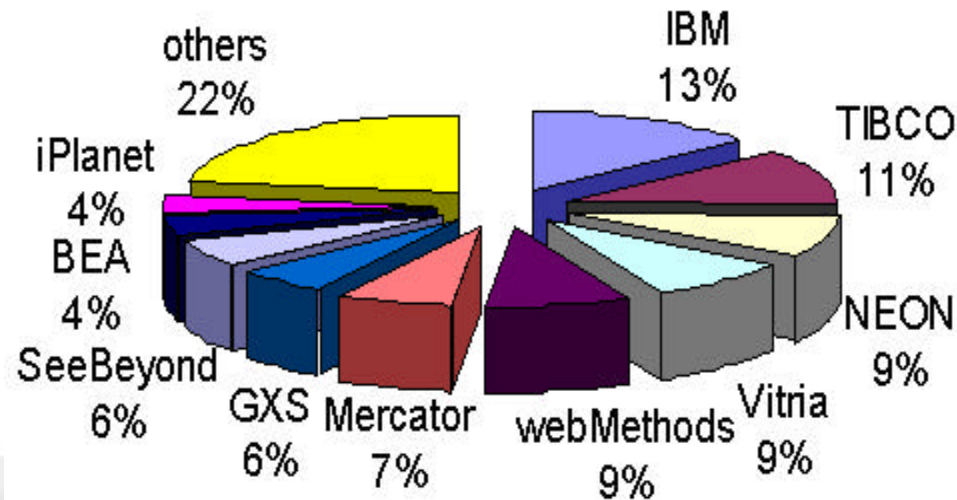
- Mature tool sets for integrating an enterprise
- IT cost containment by integrating off the shelf solutions
- Speed of change requirements (integrating vs. building)
- M&A activity
- Business Partner transaction automation
- Electronic market place activity
- STP (Straight Through Processing)

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Today's Needs

Enterprise Application Integration

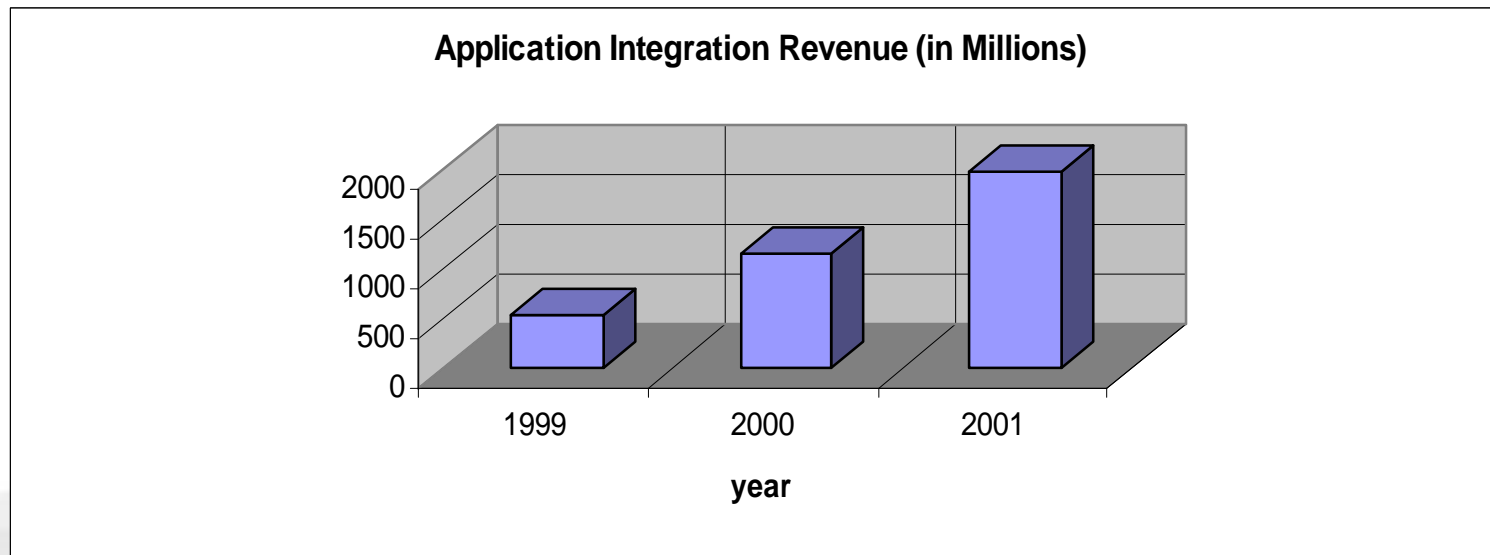
Key vendors – Market Share Comparison



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Today's Needs

Enterprise Application Integration License Revenue Growth



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Today's Needs

Enterprise Application Integration

What are some of the important components for an EAI project (besides choosing the EAI toolset)?

- Well planned EAI architecture and infrastructure.
- Control costs by developing data sharing standards (not just guidelines).
- Expanded use of XML or other interfacing technologies across all applications.

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Today's Needs

Enterprise Application Integration

Emerging Applications

Asset backed traders will want real-time integration of SCADA data, giving them real-time visibility of generation/delivery assets.

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Today's Needs

Enterprise Application Integration

Emerging Applications

Exchange integration will drive the need for many new and enhanced applications:

- Exchange integration will provide real-time forward price curve estimates and will allow periodic/midday VaR and real-time credit management/credit margining systems.
- Exchange integration will drive the need for tools to help identify new marketplace opportunities.

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Today's Needs

Enterprise Application Integration

Emerging Applications

Exchange integration will drive the need for many new and enhanced applications:

- As these marketplace analytics tools mature, the duration of simple arbitrage opportunities will approach zero.
- Complexity of these tools and the deal structures increasing
- Places increased burden on trading and deal capture system flexibility

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Emerging Technologies

Important Internet Technologies

Wireless and broadband technologies

- Still Waiting on that “Killer App” that will drive demand to this technology.
- Potential workforce implications shouldn't be ignored

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Emerging Technologies

Important Internet Technologies

A growing importance of ASP to the Energy Market Place

- Sharing software, hardware and IT Resources
- Makes sense for certain capabilities
- Potentially significant cost savings on recurring expense

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Emerging Technologies

Important Internet Technologies

Advanced Risk management applications and tools

- Trade complexity and the energy market trends that are driving PhD's to the trade floor are driving the need for a new level of complexity in the next generation of risk management tools.

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Emerging Technologies

Important Internet Technologies

Customer Interaction

- Market deregulation will make customer interaction critical in both the retail and wholesale energy sector.
- Customer Self Service, On-line Customer Analytics, EBPP, etc. will become the key to successful eCRM initiatives for energy providers.

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What could happen next?

Future Viable Technologies

User Experiences

- Advancement in computing speeds, raw processing power and voice recognition software will enable the development of VUIs (Verbal User Interfaces) within the next 5 years. Integrating these tools into our deal capture systems will become a hot topic in the years to come.