



The Importance of Standards and Conformance to Aerospace IT

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The Boeing Company

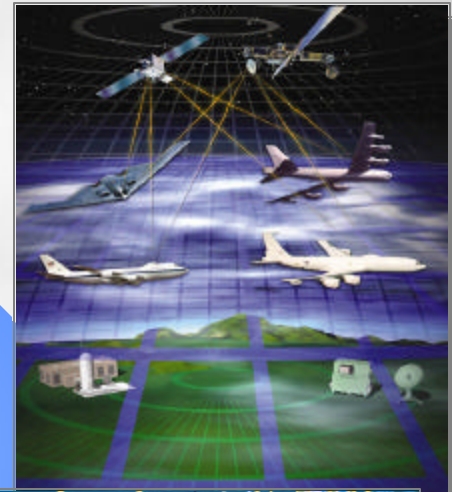
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The Boeing Company

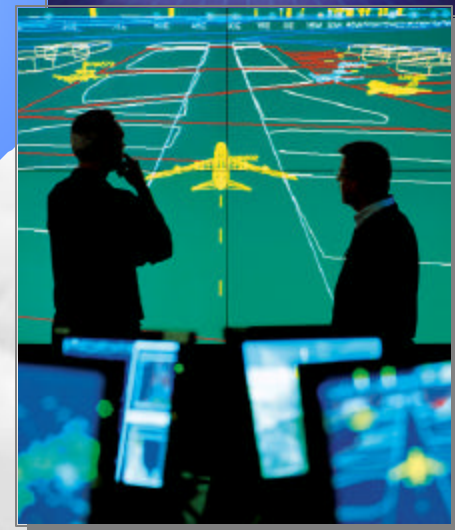
What We Do Today



- Manufacture commercial Jetliners
- Focus on airline passengers' experience, safety and security
- Produce defense platforms
- Provide satellites and launch vehicles
- Integrate large scale systems



\$50.5 Billion Sales in 2003



As a company we connect and protect people

Boeing Commercial Airplanes Group

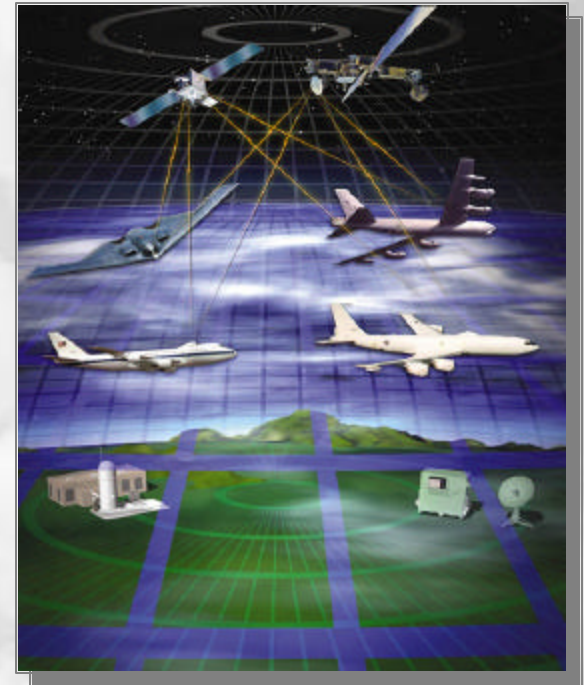
- Headquartered in Puget Sound, Wash., BCA generated 2003 revenues of \$22.4 billion
- Offers a broad portfolio of airplanes and aviation services for its passenger and freighter airline customers worldwide
- Boeing airplanes represents three quarters of the world's fleet with more than 11,700 jetliners in service
- Approximately seven out of every 10 BCA deliveries go to customers outside of the U.S.



The industry's source for customer-focused solutions

Integrated Defense Systems

- Formed in 2002 with the integration of Boeing's defense, space, intelligence and communications capabilities into one single unit
- A \$27 billion business with more than 76,000 employees
- Capabilities include the development and advancement of defense, intelligence, communications and space-based platforms, and an emphasis on network-centric solutions
- Customers include military, commercial and governments worldwide



Inventing the future

Connexion by BoeingSM

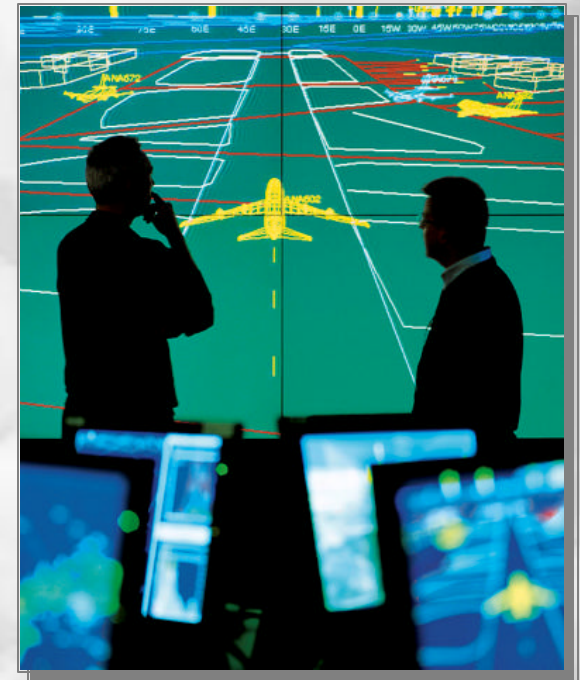
- Formed in April of 2000 to develop technologies that can provide high-speed broadband data communications to air travelers
- Enables broadband access to the Internet, Company Intranets, entertainment and television
- Customers include air travelers, airlines and executive aircraft operators, including those in government and the private sector
- Airline service demonstrations have begun on limited trans-Atlantic routes, with commercial service commencing in 2004



A new avenue of growth in emerging markets

Air Traffic Management

- Formed in late 2000 to increase the efficiency, safety and capacity of the air transportation system
- Developing a secure, globally integrated system that will link all elements of the air transportation system into one common network to provide real-time information to all users
- Collaborating with governments, business communities and private organizations throughout the world



Working together to transform air traffic management

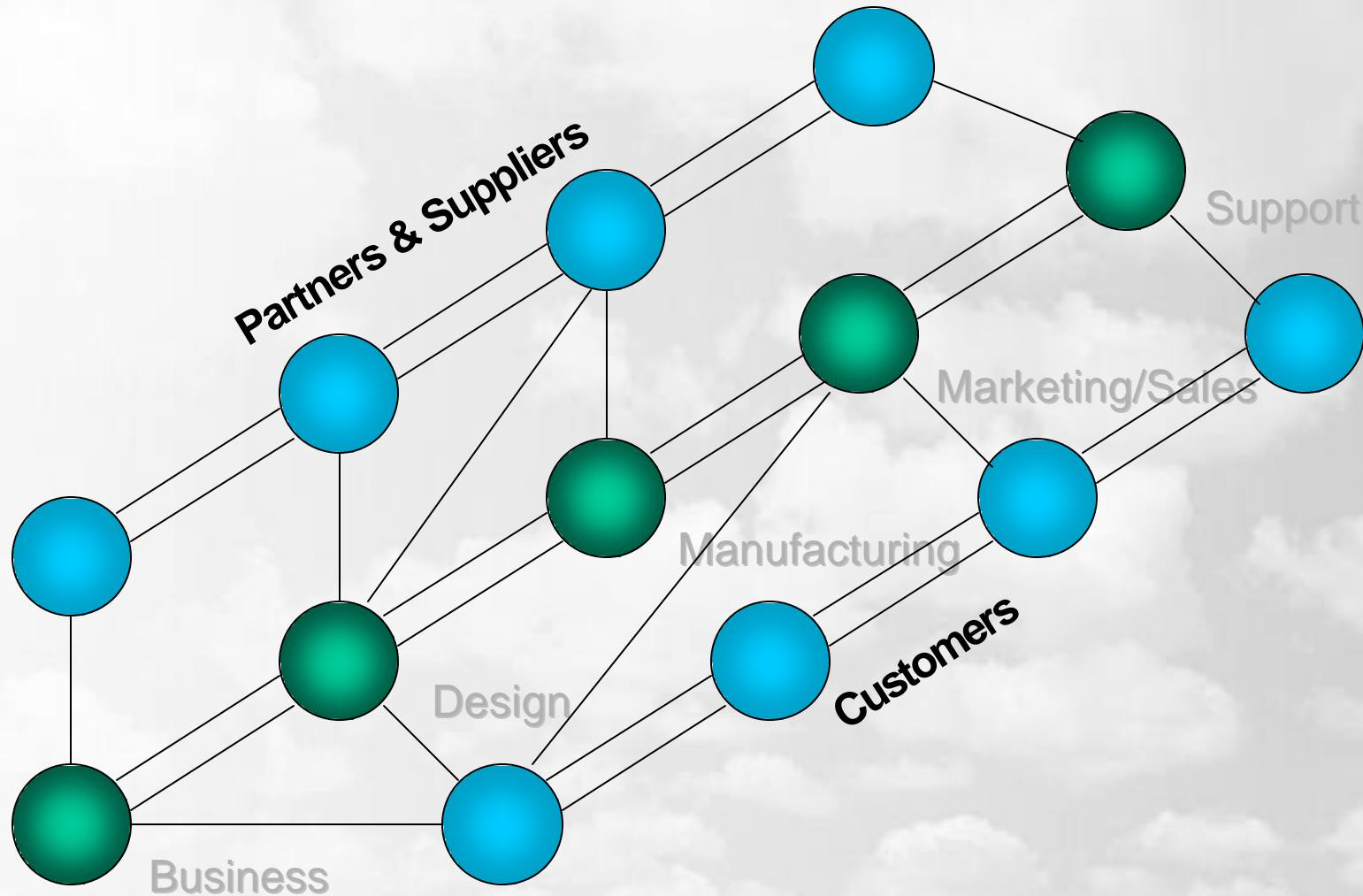
Global Scope

- More than \$16 billion in 2003 international sales, from customers in 145 countries
- More than 150,000 employees in 38 states in the U.S. and 70 countries
- More than 11,000 suppliers in 66 countries
- Research, design and technology development centers and programs in multiple countries
- Manufacturing partnerships with companies around the world

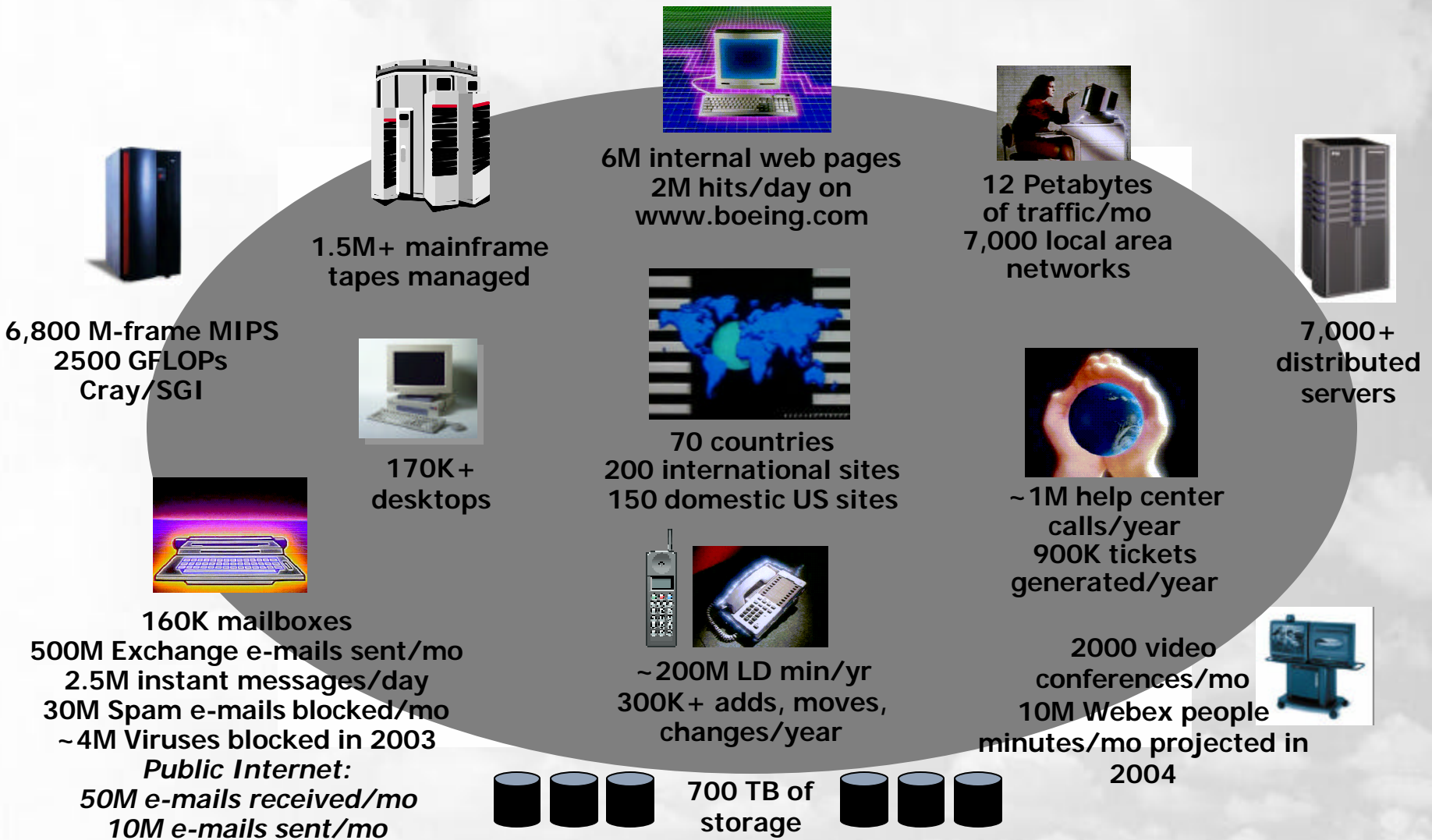
● Office Locations

Companies that change and adapt in a rapidly changing global economy will survive, grow and prosper

More than a Single Enterprise



Information Technology Infrastructure



IT Complexity

■ Platform Numbers

- 2 major enterprise server data centers
- 7,000+ distributed servers in campus data centers and elsewhere
- 200,000+ end user devices
 - High-end engineering workstations (UNIX & Windows)
 - General Desktop & Laptop workstations (primarily Windows)
 - Growing mobile (laptop, workpad, palmtop, etc.)

■ Platform Heterogeneity

- Wide range of distributed servers provided by many suppliers
- Significant variation of distributed server configurations driven by applications and other unique requirements
- Substantial local variation of workstation configurations

■ Applications

- 3000+ significant line-of-business applications

■ Applications and Data Heterogeneity

- | | |
|---|---|
| <ul style="list-style-type: none">- Security- Systems Management- Directory Services- Middleware- Data Management- Specific Business Domains | <ul style="list-style-type: none">- Business Applications and Data within the Enterprise- Business Applications and Data among Enterprises<ul style="list-style-type: none">- Partners- Suppliers- Customers |
|---|---|

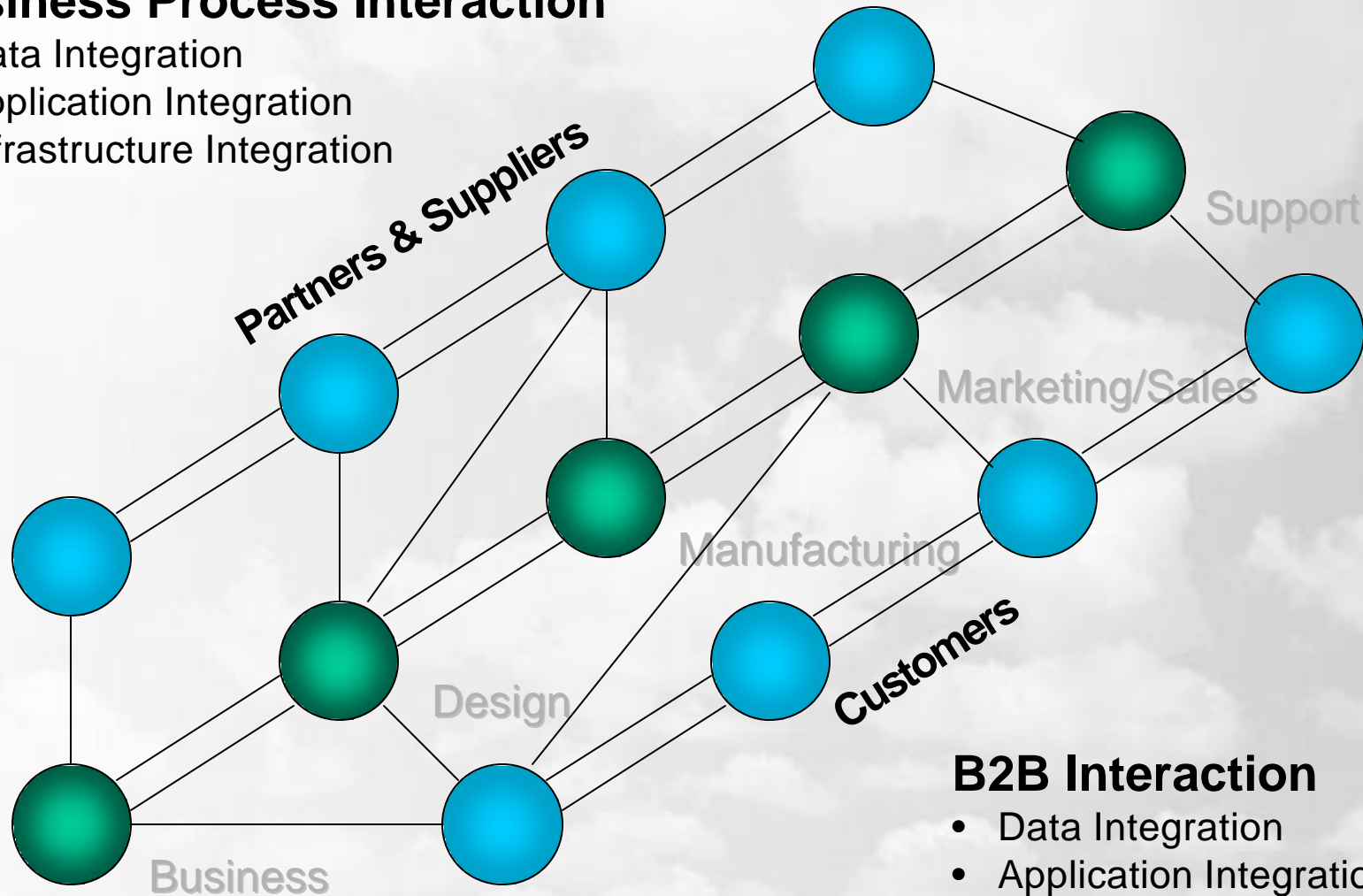
Global IT Deployment



Product Lifecycle Information Flow

Business Process Interaction

- Data Integration
- Application Integration
- Infrastructure Integration

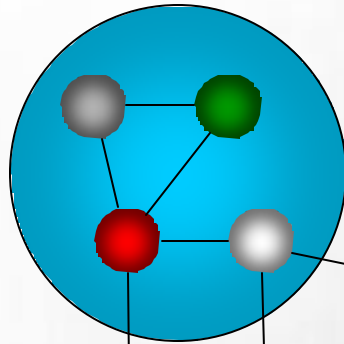


B2B Interaction

- Data Integration
- Application Integration

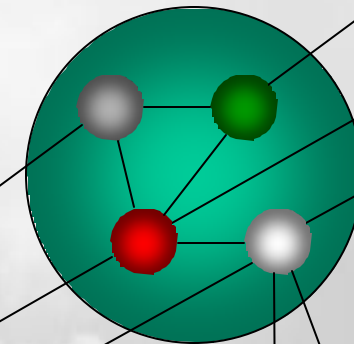
Integration Interfaces Depend on Standards

Partners

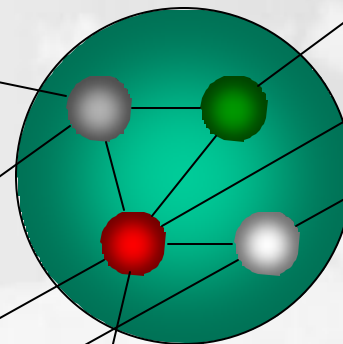


Foundational Standards

- Hardware and OS
- Communications
- Middleware

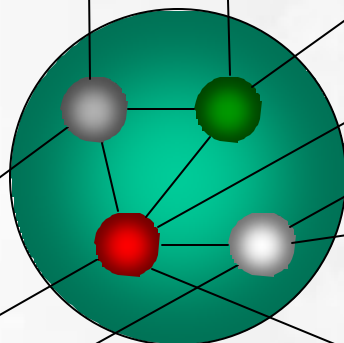
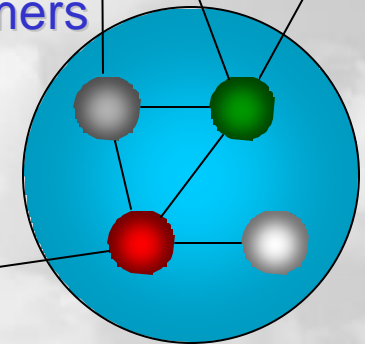


Marketing/Sales



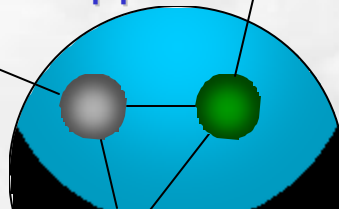
Manufacturing

Customers



Design

Suppliers



Application and Data Interoperability

- Within Functional Domain
- Between Functional Domains
- With other Enterprises

Vision

Boeing 2016 Vision

*People working together as a global enterprise
for aerospace leadership*

Boeing IT Services Vision

*Establishment of a network-centric, e-business
infrastructure utility*

- Key characteristics include:
 - **Reliability**
 - **Responsiveness**
 - **Cost effectiveness**
 - **Ease of use**
- Comprises core internet-based capabilities that enable Boeing users, customers, suppliers and partners worldwide to access and interact with information assets securely from any where, at any time, and to cost-effectively share information across the extended enterprise.

Infrastructure

Standards and Conformance

- Infrastructure standards, and the assurance that products conform to them, provide:
 - **Reliability**
 - Known behavior and interaction among elements
 - **Responsiveness**
 - Agility in adapting to change in requirements and technology
 - **Cost Effectiveness**
 - Mitigates burden of complex proprietary integration
 - Lessens extensive proprietary upgrades
 - **Ease of Use**
 - Less collateral changes to impact applications and users

Applications and Data Standards and Conformance

- Business application and data standards, and the assurance that products conform to them, provide the same benefits as infrastructure standards:

- **Reliability**
- **Responsiveness**
- **Cost Effectiveness**
- **Ease of Use**

and also enables intelligent flow of information

- **Common format**
- **Common semantics**
- **Common behavior**

The Pay-Off

- Standards and conformance to standards provide one of the foundational supports to Boeing leadership in the Aerospace Industry
 - Enabling information sharing with Partners/Suppliers/Customers
 - Enabling Boeing Information Solutions to the Industry
- Boeing has been, is, and will continue to be a staunch advocate of IT and Aerospace Standards