ARR 525 Recommendation

Windows Browser Evaluation

GOVERNMENT EXHIBIT
639

Scott Vesey
Windows Browser Product Manager
SSG Workstation Software Technical Services
12/1/97
Priority: 1

US/States v. Microsoft
HIGHLY CONFIDENTIAL
TBC 000561

Agenda

- Recommendation
- Business Case Summary
- Technical Case Summary
- Key Technical Issues
- Business Case Detail
- Next Steps

US/States v. Microsoft
HIGHLY CONFIDENTIAL
TBC 000562

Web Browser Recommendation

- Business case: Continue with Netscape as the standard web browser.
- Technical case: Upgrade the standard to version 4.04
- Pursue "Next Steps"(details follow) to position Boeing for further Internet Explorer integration with the operating system and Microsoft applications.

US/States v. Microsoft
HIGHLY CONFIDENTIAL
TBC 000563

Business Case Summary

- Cheaper to stay with Netscape
- Analysis includes:
  - 3 year life cycle.
  - 5 optional scenarios.
  - Upgrade and conversion cost.
  - Cost of training, support, and testing.
  - Discount to Net Present Value (NPV)

US/States v. Microsoft
HIGHLY CONFIDENTIAL
TBC 000564

Technical Case Summary

- Upgrade to version 4.04 because:
  - New administrative features.
    - LAN based (Node) installation. (to support S3 and other ESD strategies)
    - Multiple profile support: Laptops, roaming, portable profiles.
  - Browser security issues.
  - Bug fixes.
  - Java through the firewall.
  - Dynamic HTML.
    - Cascading Style Sheets (CSS)
    - Cascading Style Sheet Positioning (CSSP)

US/States v. Microsoft
HIGHLY CONFIDENTIAL
TBC 000565

Key Technical Issues:

Platform support

- **Microsoft**
- Internet Explorer 4.0 for UNIX /Solaris is in Beta test now and will not be production until first quarter 98.
  - Solaris support will release first to be followed by one additional UNIX platform every 90 days.
  - Solaris, HP-UX, Irix, and AIX are standard UNIX variants within the Boeing company.

- **Netscape**
- Communicator 4.0 is available for all platforms (except Apollo)

Conclusion:

Some level of Netscape support will be required for at least one full year and likely will remain a requirement indefinitely for some UNIX devices.

US/States v. Microsoft
HIGHLY CONFIDENTIAL
TBC 000566

Key Technical Issues:

Security

- **Microsoft**
- Active content handled by:
  - Security Zones
- Object Signing
  - Authenticode

- **Netscape**
- Active content handled by:
  - Capabilities-based trust model
- Object Signing
  - JAR

Conclusion:

- Neither vendor has third-party support for security initiatives.
- The W3C has separate security initiatives that may form the basis for standards.
- Either vendor solution produces non-interoperable applications.

US/States v. Microsoft
HIGHLY CONFIDENTIAL
TBC 000567

Key Technical Issues:

Operating System

- **Microsoft**
- Internet Explorer 4.0 introduces changes to the Windows 95 operating system.

- **Netscape**
- Communicator does not have platform specific operating system integration features.

Conclusion:

- The effect of Internet Explorer 4.0 operating system integration features needs to be better understood. The risk of potential conflicts with existing applications must be documented.
- Longer term this integration <u>may or may not</u> offer significant benefits to the Windows desktop environment.

US/States v. Microsoft
HIGHLY CONFIDENTIAL
TBC 000568

Key Technical Issues:

Java and Object Techology

- **Microsoft**
- Internet Explorer supports COM/DCOM.
- Some Java 1.1 extensions are tied to the Window API.

- **Netscape**
- Communicator supports RMI/IIOP/CORBA.

Conclusion:

- Internet Explorer will allow the development of Java applications that are dependant on the Windows platform. These applications may not run on other platforms.
- BCAG and ISDS stated architectural direction is CORBA for remote object software. Internet Explorer does not provide support for CORBA.
- Neither product fully supports JDK 1.1.

US/States v. Microsoft
HIGHLY CONFIDENTIAL
TBC 000569

Key Technical Issues:

Application Integration

- **Microsoft**
- Internet Explorer offers high levels of integration with the Windows 95 operating system, Office 97 applications and Exchange.
- It allows the display of Web content on the Windows desktop: "Active Desktop".

- **Netscape**
- Communicator supports the Office 97 integration features (including OLE) and will support some level of Exchange integration.
- It will not be integrated into the operating system, although it does have a desktop presentation: "Webtop".

Conclusion:

- Internet Explorer may offer significant benefits to the Windows desktop environment with high levels of integration with other windows applications.
- Some risk may be present if our architecture allows applications to be dependant on any browser to provide specific functionality.

US/States v. Microsoft
HIGHLY CONFIDENTIAL
TBC 00570

Key Technical Issues:

Dynamic HTML (DHTML)

- **Microsoft**
- Internet Explorer implements <IFRAME ...>
- Document object model (DOM) notation.

- **Netscape**
- Communicator implements <LAYERS ...>
- Document object model (DOM) notation.

Conclusion:

- Both browsers support basic Cascading Style Sheets and Cascading Style Sheets Positioning.
- Creating browser neutral Dynamic HTML is somewhat difficult due to a lack of standards in specific areas.
- Web developer guidelines should be developed to assist developers with Dynamic HTML.

US/States v. Microsoft
HIGHLY CONFIDENTIAL
TBC 000571

Key Business Issues:

Support

- **Microsoft**
- Internet Explorer has a limited support infrastructure in place throughout most of the company. Boeing St. Louis being the notable exception.

- **Netscape**
- Navigator has an enterprise wide support infrastructure and extensive technical expertise that will continue to be leveraged by Netscape Communicator

Conclusion:

- Existing technical support can easily support Netscape Communicator. End users familiar with Navigator should be able to make the transition with little or no training.
- Technical support would have to be trained and support infrastructure created to effectively support Internet Explorer. End users familiar with Navigator should be able to make the transition with some basic user interface training.

US/States v. Microsoft
HIGHLY CONFIDENTIAL
TBC 000572

Business Case Details

1) Convert to Microsoft Internet Explorer and renew Netscape under the assumptions of the old contract
1b) Convert to Microsoft Internet Explorer and renew Netscape under the assumptions of the proposed contract
2) Renew Netscape, accept proposed agreement and operate version 3.0
3) Renew Netscape, accept proposed agreement and upgrade to version 4.0
4) Have both browsers available.

For Business case details contact Scott Vesey

scott.r.vesey@boeing.com

US/States v. Microsoft
HIGHLY CONFIDENTIAL
TBC 000573

Web Browser Recommendation

Next Steps

- Plan for installation kit - 1/31/98
- Plan for relation to affordability - TBD
- Plan for inclusion in S3 - TBD
- Plan for availability on Software Depot - TBD

US/States v. Microsoft
HIGHLY CONFIDENTIAL
TBC 000574

Web Browser Recommendation

Next Steps

- Continue to study the implications of Internet Explorer integration with operating systems and applications.
  - Examine impact of any applications that require Internet Explorer be installed. (Outlook '98, Internet Studio, MS Developer suite, etc)
  - Begin planning for eventual operating system integration.
  - Plan for structured pilot testing with controlled populations.

US/States v. Microsoft
HIGHLY CONFIDENTIAL
TBC 000575

Web Browser Recommendation

Next Steps

- Establish Web application development guidelines and policies.
  - Prohibit(/discourage) the use of **any** proprietary implementation features.
  - Preserve browser neutrality to allow for future browser migrations.
  - Incorporate Developer Guidelines (ARR 540).
  - Incorporate W3C Standards
  - Computing Security Working Group recommendations.

US/States v. Microsoft
HIGHLY CONFIDENTIAL
TBC 000576

Team Members

• Ann Bassetti	SSG - Web products manager
• Scott Vesey	SSG - Windows Web browser product manager
• Marc Amis	SSG - UNIX Web browser product manager
• Jerry Hackett	SSG - Macintosh Web browser product manager
• Dennis Lebbin	ISDS - Wichita
• Karl Guenther	Philadelpia
• Deanna Kelley	ISDS - Puget Sound
• Heidi Lewis	ISDS - Puget Sound
• Troy Colyer	ISDS - Puget Sound
• Cathy Neal	BNA
• Alan Roman	St. Louis
• Kris Ballew	Irving, Texas
• Bob Goudie	Corporate Support
• Ron Hanson	Executive Support
• Nick Feldhaus	SRC
• Dan Murphy	BCAG Architecture
• Wendy Jackson	BCAG Architecture

US/States v. Microsoft
HIGHLY CONFIDENTIAL
TBC 000577

ARR 525 - Standards Board Responsibilities

- PCSB Lead
- USB Joint
- A&IT Presentation
- DMSB Presentation
- ISTT Presentation
- ISDS(?) Presentation
- BDSB Presentation

US/States v. Microsoft
HIGHLY CONFIDENTIAL
TBC 000578