

Technology and the digital library

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Author's note

This version of the paper excludes the screen shots of web sites that were included in the original presentation to the SAOUG conference, but in all cases the appropriate URL has been added

The characteristics of a virtual library

- A virtual library is independent of
 - Distance
 - Information literacy
 - Time
 - Resource format
 - Language
 - Access device

The characteristics of a virtual library

- A virtual library respects
 - Commercial realities
 - Legal environment
 - Information relevance
 - The rights of users

Agenda

- Computer translation
- Corporate portals
- Enterprise search
- Information visualisation
- Wireless access
- Some difficult questions

Computer translation

- This is set to become increasingly important
- Some examples of companies offering computer translation are
 - www.sdlintl.com
 - www.richlink.com
 - www.worldlingo.com
 - www.lexiquest.com

Corporate portals

- A corporate portal/Enterprise Information Portal (EIP) enables a user to customise their view of structured and integrated external and internal information and applications through a browser interface
- An industry sector still in the early stages of development
- Companies are concerned about the financial viability of many of the 70+ smaller vendors, and the significant deployment issues

Corporate portals

- See the following sites
 - www.sagemaker.com
 - www.plumtree.com
 - www.factiva.com
 - www.mediapps.com
 - www.intranetfocus.com

Portal futures

- Significant decrease in the price of portal technology, driven mainly by Microsoft's entry into the market
- Rapid development of intranet-specific content management software
- The result will be a wider range of options for organisations seeking to provide “next-generation” desk tops that provide integrated access to content and applications on a customised basis

Enterprise search solutions

- A number of search technology companies are now planning to reduce their dependence on revenues from searching the web through the development of enterprise solutions
- Among the ones to watch are
 - www.northernlight.com
 - www.fastsearch.com
- Progression from “search” to “query” through natural language processing

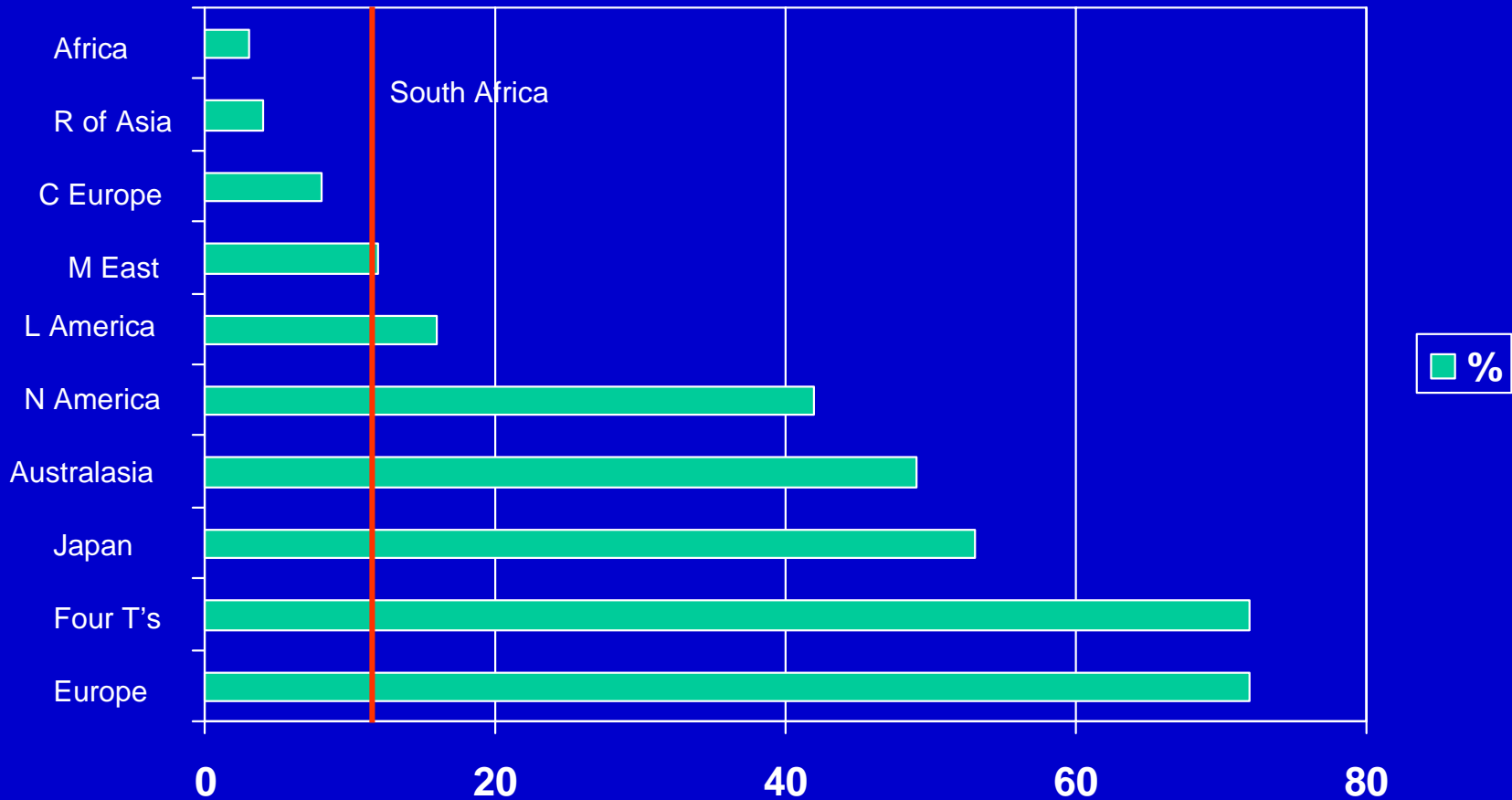
Enterprise web spiders

- The current search options are
 - Web search sites (Google/Yahoo)
 - Online databases
- But search sites cannot get inside query-driven web sites, such as Amazon, and only re-index the web on an occasional basis
- Now under development are intelligent search spiders that a user can send out to search the web, including subscription databases (e.g. www.insighttechnologies.com)
- Just-in-time web searching

Information visualisation

- Increased attention being paid to providing additional visual methods of presenting the results of searches, especially when users need assistance in refining their search strategies
- See for example
 - www.antarti.ca
 - www.inxight.com

Mobile penetration levels



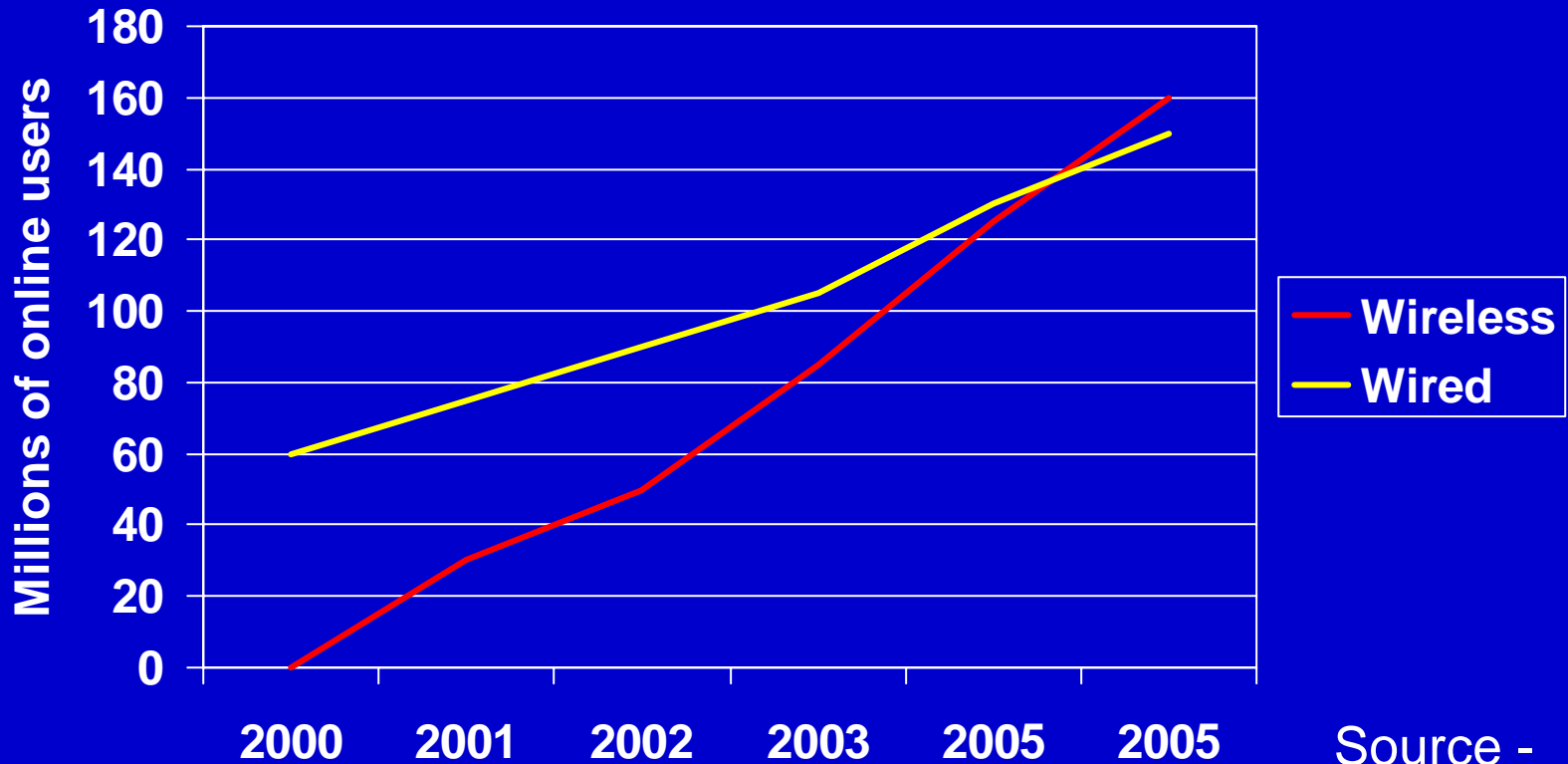
The challenges of mobile access

- Limited data transfer rates
- Time taken to log on to a network
- Screen size and resolution
- Numeric keypad
- Memory cache size
- Content design
- Business model

Bandwidth expansion

- Landline
 - PSTN telephone line and modem = 56kbps
 - ISDN line = 64 or 128kbps
 - ADSL line = 512kbps
- Wireless
 - GSM = 9.6kbps
 - GPRS = 115kbps (potentially)
 - EDGE = 400kbps (Enhanced Data Rate for GSM)
 - UMTS (3^G) = 512kbps – 2Mbps

Wired/wireless access transition



Source -
Merrill Lynch

Six technology enablers

- Mobile data (1998)
- Wireless Applications Protocol WAP (1999)
- Global Packet Radio Services GPRS (2000/2001)
- Bluetooth (2000/2001)
- Wireless LAN (2001/2002)
- 3G/UMTS (2003/2004)

3G roll-out issues

- The auction process used in Europe for 3G service bandwidth gained immense tax benefits for governments but has caused major problems for operators
- The operators need a critical mass very quickly, and one of the key questions is whether 3G is a consumer or a business technology, and what the take-up will be
- Meanwhile GPRS may be more than a transition technology

Location recognition

- Depending on cell size the location of a handset can be determined to within a few kilometres, and with GPS overlay to within a hundred metres
- There are some concerns about privacy
- By recognising the location of the handset the list of options offered can be reduced, but made more relevant
- Users seem willing to pay a premium for these services, which can have very short term paybacks

Virtual library access

- More likely to be undertaken with hand-held devices than mobile phones
- Ensures that staff working outside of the office have access to the entire information and expertise resources of the company
- Issues of security and content architecture need to be addressed
- An interesting approach has been developed by the UK company iOra (www.iora.com)

Bluetooth and Wireless LANs

- Bluetooth
 - Links peripherals to a PC
 - Range of 10 metres
 - Low-cost chip
- Wireless LAN (IEEE Standard 802.11)
 - Links PCs to each other, and the Internet
 - Range of 50 – 100 metres
 - Base stations cost around \$1000 at present

Wireless LAN evolution

- 802.11b
 - Bandwidth of 11 Mbit/s
 - Uses 2.4GHz band, as does Bluetooth
 - Home/small office market
- 802.11a
 - Bandwidth of 54Mbit/s
 - Uses 5GHz band
 - Distributed office environment
- Two standards are incompatible, and 802.11b cannot be upgraded to 802.11a

In conclusion

- Storing content will get rapidly cheaper
- Wireless access will facilitate the development of virtual libraries
- Finding relevant information will become increasingly important, and difficult
- Information technology is now embracing information science
- Network bandwidth and costs are the major barrier to virtual library development

However!

- Will we end up with virtual libraries that contain virtually nothing pre-1998?
- Will the Google generation be interested in working for an organisation that does not provide virtual library resources?
- Will we ever find a way of valuing information assets?
- When will governments recognise the importance of the information economy, information policy and information literacy?
- ...and what are we, as information professionals going to do to about these questions?