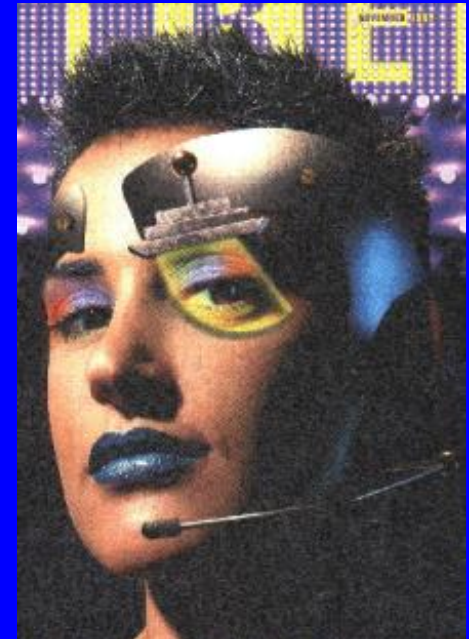# INFORMATION TECHNOLOGY TREND 2001

Disclaimer

- Difficult to forecast technology trend
- "Don't Let Bozosity Grind You Down" [Guy Kawasaki]

Quotes on Forecasting

- *This "telephone" has too many shortcomings to be seriously considered as a means of communication. The device is inherently of no value to us"*

  Western Union internal memo, 1976

More Quotes

- *"I think there is a world market for about five computers"*
  Remark attributed to Thomas Watson, chairman of the board of IBM, 1943

- "There is no reason for any individual to have a computer in their home"
  Ken Olsen, president of Digital Equipment Corporation at the Convention of the World Future Society, 1977.

Keypoints - Summary

- Ubiquitous / pervasive computing
- Networked, wired, always on
- Wireline vs wireless
- New applications
- Other technology to watch
- New business models
- Human Resources issues

Ubiq computing

- "Computers" are everywhere but you don't see them as computers

Networked World

- Wired, always On
  - Security issues
- Standards
  - Too many

New [smart?] Devices

Connecting you to the best of the Internet.

–Personal Digital Assistants (PDAs)
Palm OS, Symbian, Windows CE, Linux

Digital Darwinism

- Follow evolution: digital darwinism
  - Smart devices will survive
  - Ability to negotiate

Wireline vs Wireless

- Wireless users are increasing rapidly
  - In Indonesia: more cellular phone users than Internet users

Wireline Issues

- Still the best technology for quality
- But more expensive and slow in adding users
- Technology: DSL vs Cable
- More homes are connected to the Internet. Security? Personal firewall?

Wireless Issues

- Faster to implement/add users
- Cellular technologies
  - GSM, GPRS, 3G, CDMA, TDMA
- Data networking technologies
  - IEEE 802.11b, Bluetooth, IrDa
- RF spectrum regulation
- Still slow speed
- Power

Wireless Applications

- Fad: WAP
- New applications
  - SMS is popular in Asia
  - Peer-to-peer: Bluetooth (does not involve operator)
  - Wireless LAN IEEE 802.11b
- New social implications
  - Noise in meeting/movie theater
  - Cheating

New IT Applications

- ASP?
- M-commerce?
- Peer-to-peer applications?

Other Technologies To Watch

- Biotechnology
- Nanotechnology
- Telemedicine
- Semiconductors

New Business Models

- New Economy? Is it for real? YES!
- New market:
  Generation-X? Generation-D?
- Business
  - Internet Service Provider (ISP)
  - Internet Content Provider
  - Application Service Provider (ASP)
  - Digital Cybercommunities

Model: ISP

- Provides access, connectivity: dialup, dedicated, co-location
- Examples
  - AOL
  - AT&T Global Network (IBM.net)
  - Intel data center(s)!

Model: Content Provider

Content is king, but people rules

- Portals
  - Hot today, fad tomorrow?
- Knowledge repository
  - Data warehouse, mining
  - V. Bush's memex concept
- Examples: AOL

Model: ASP

- Application lease, rentals
  - Users don't buy software directly
  - Free software (FSF, GNU), open source "Cathedral vs Bazaar"
- Implemented as web-based, downloadable Java applets, applications
- Sun's StarPortal for mobile platform

Other Issues

- R&D ideas worth exploring
- Lack of talented human resources!
- Link with universities
- Community:
  - Bandung High Tech Valley

What the future looks like?

Now ...

Future ...