

# Technology

Is it Useful vs. Threat?

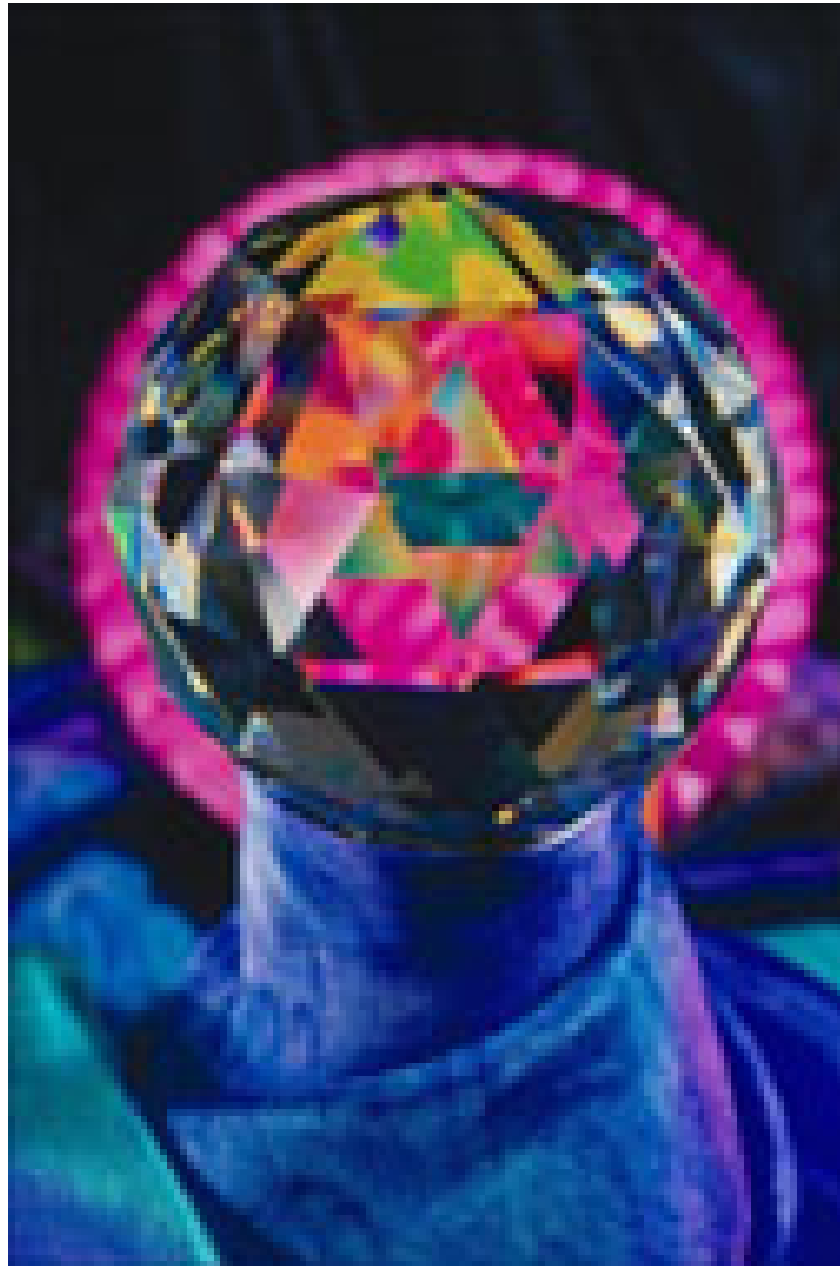
**How Computer Technology is Affecting the Way We Do Business**

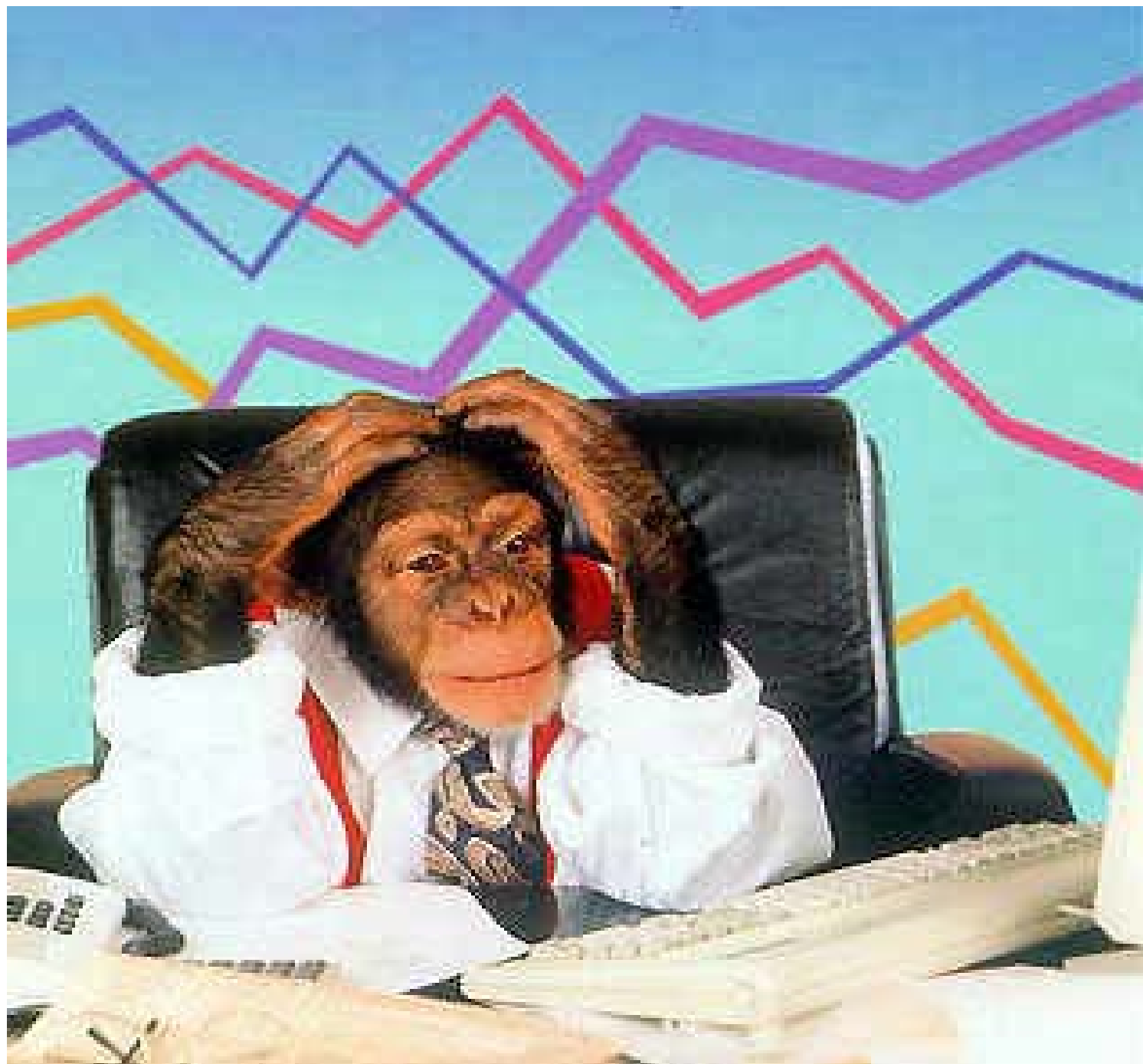
MAPPA 2004

**IOWA STATE UNIVERSITY**

FACILITIES PLANNING & MANAGEMENT

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Copier/Printer/Fax/ color



nvtech.com

Chat rooms

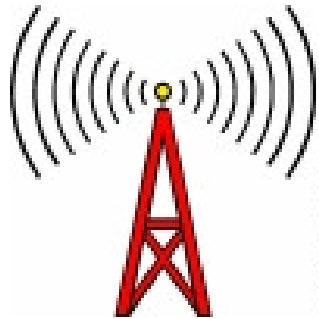


nvtech.com

Cellular Towers



Flash Drive



nvtech.com

Wireless



Battery Life



Networking  
Local/ Intra



Flat Panel



nvtech.com  
B2C



nvtech.com

Electronic Conferencing &  
Training



Cellular



nvtech.com

Surplus



Digital Cameras



PDA



Notebook & Tablet



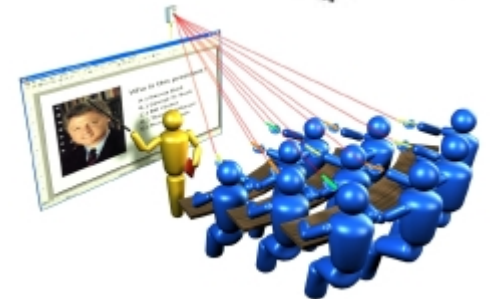
LCD Projectors



Electronic Whiteboards



Cellular Jamming



Electronic Classroom Voting



**Before one starts down the path, make sure you have your brains, courage, and most of all your heart!**

# Technology Objectives

**Integrate** – make sure what you get, works with what you already have. Complement and build upon your foundation.

**Optimize** – make sure what you have and get provides value. Maximize the use of the capabilities of what you have. Improve processes with implementation!

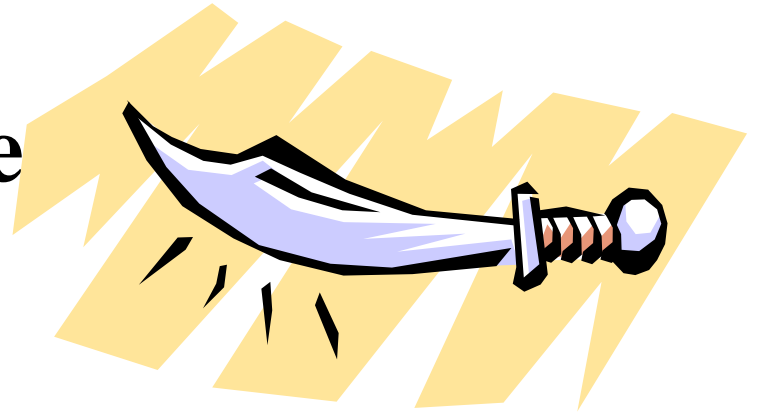
**Informate** – make sure that technology aids in helping the organization in making decisions as opposed to undercutting one's efforts. If you capture data, analyze it with intent to use it to support business analysis and/or decisions.



# Technology Working for You

**Bleeding edge**

(high tech)

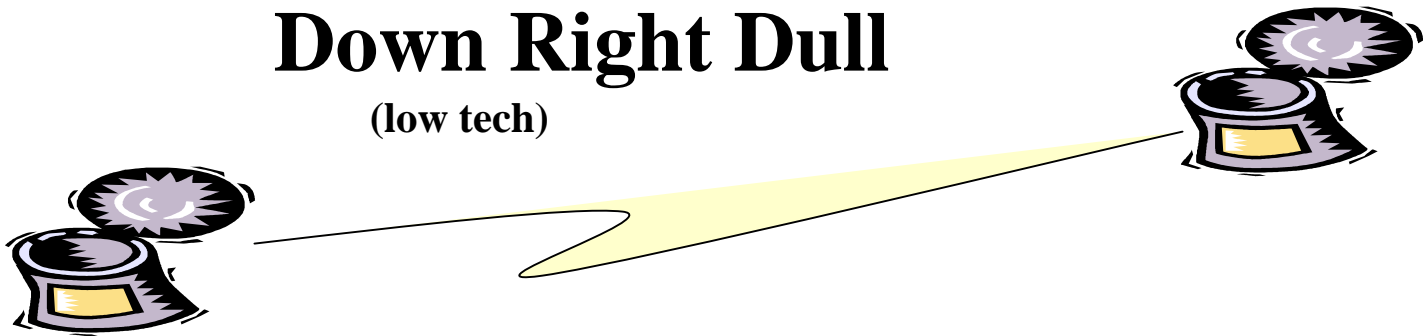


**Cutting edge**

...

**Down Right Dull**

(low tech)



# **Technology Working for You**

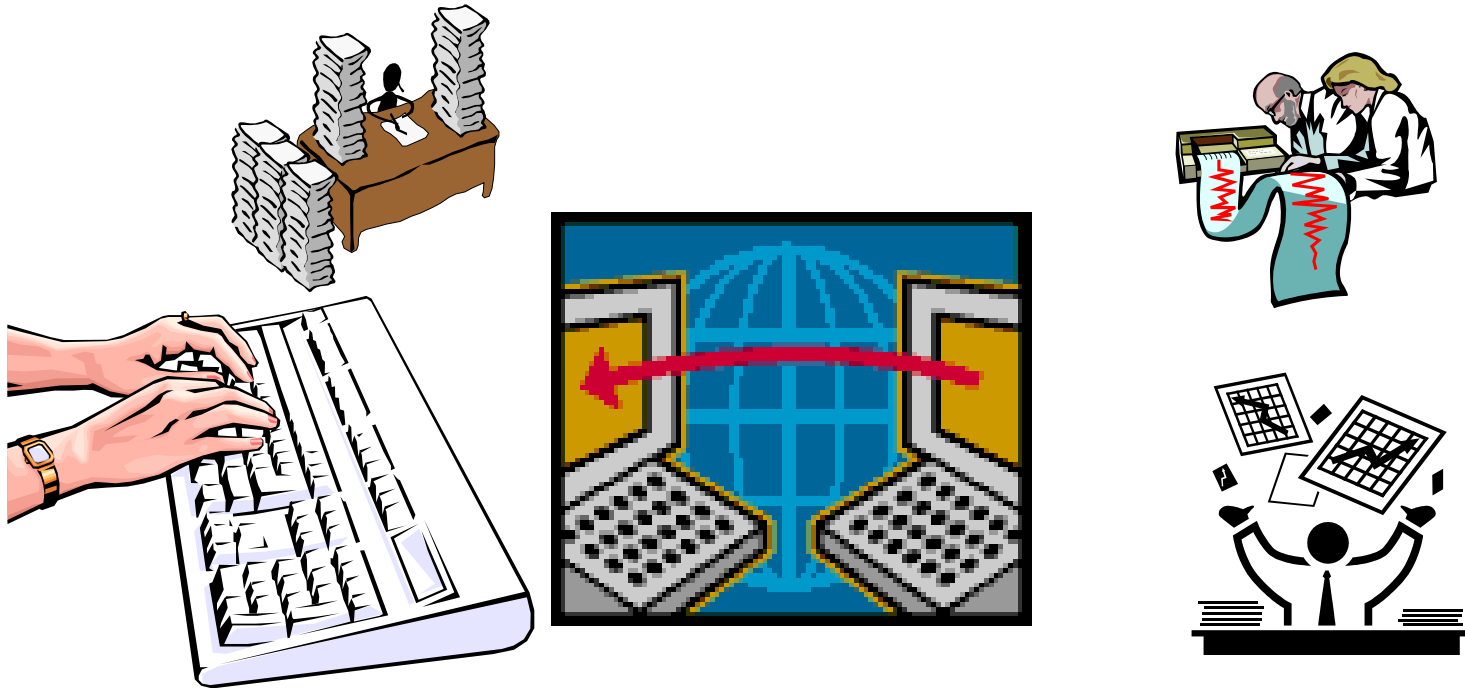
**If it is not working for you, at least make sure it is not working against you!**



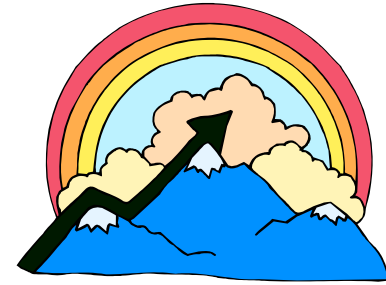
# Who is doing the data entry?

## Is that the most efficient entry method?

## Maximize reliability, accuracy, & validity?



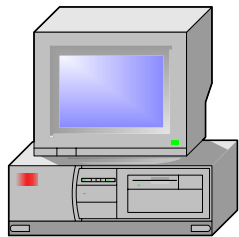
# ROI



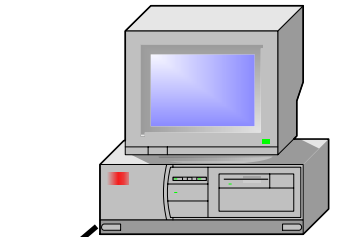
What is the “Return on Investment”



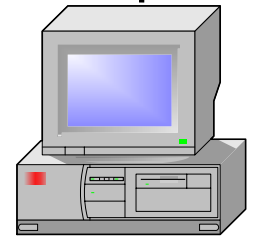
# Technology Issues Get Fuzzier and Less Clear as Complications Increase



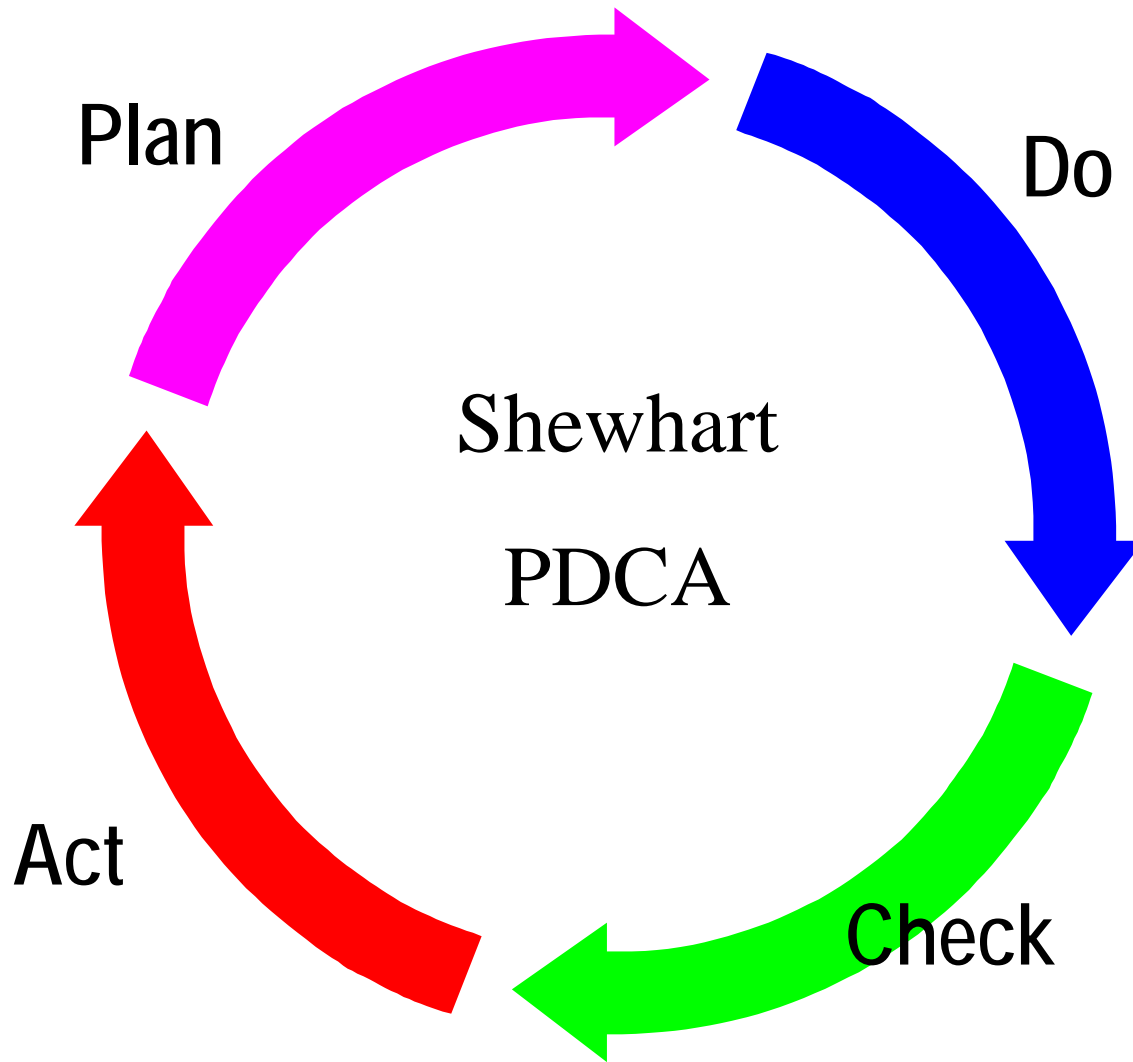
Computer



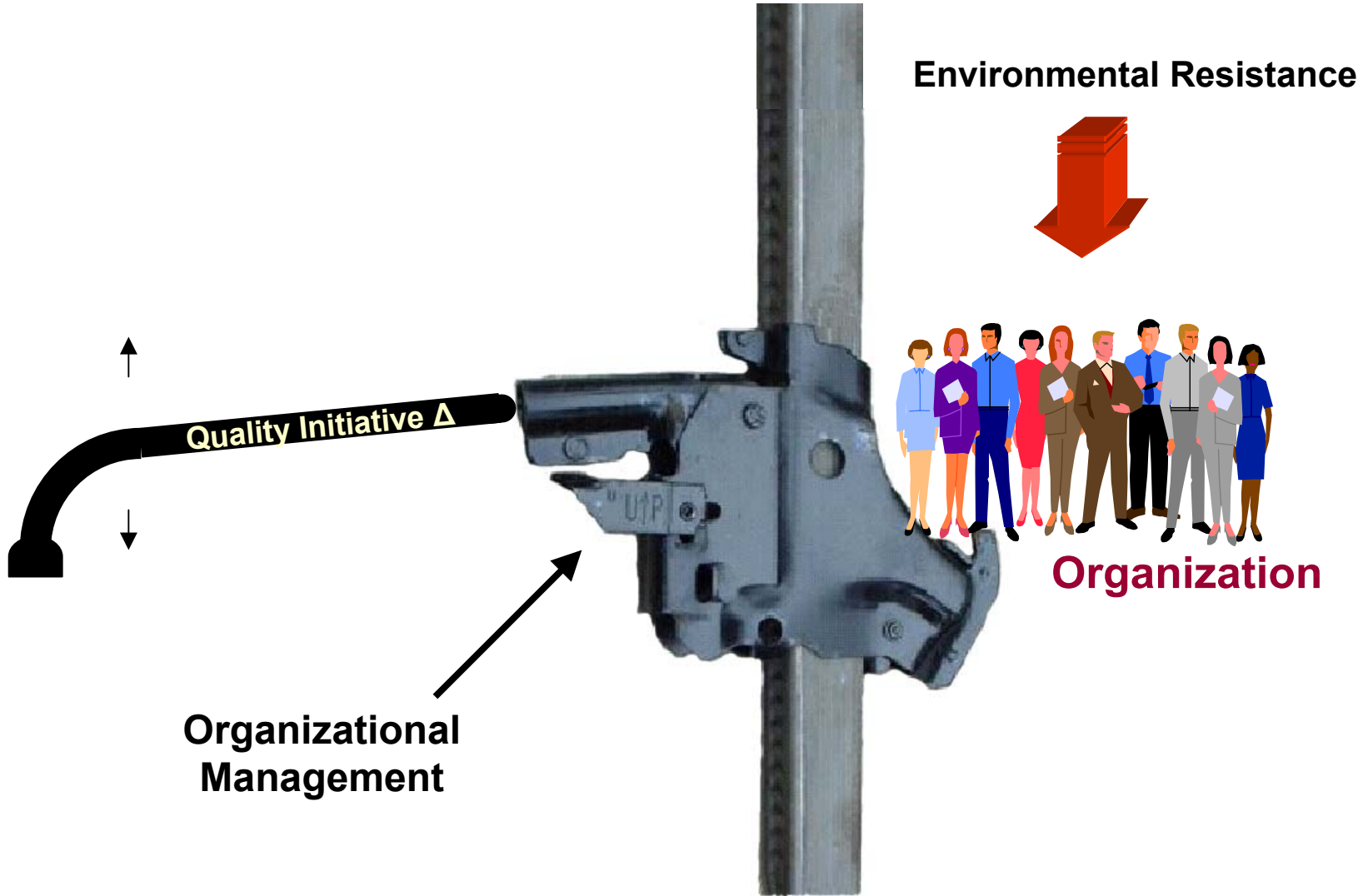
Computer



Computer

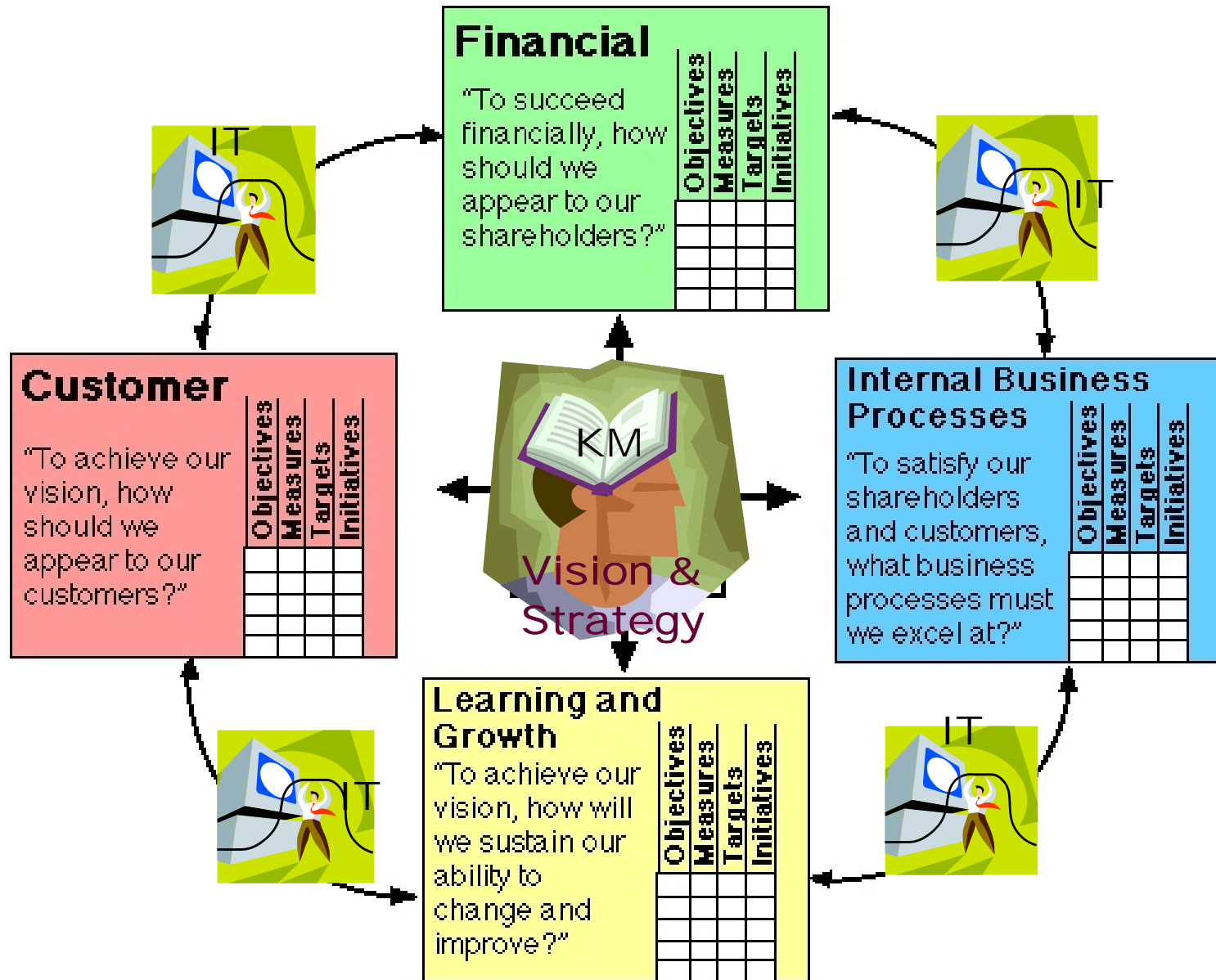


# Technology can be used to Leverage a Change Initiative



Improve processes with implementation!

# Balanced Scorecard/Strategic Assessment Model (SAM)



Information Technology  
Knowledge Management

## **Worldwide internet users**

1995 - 44 million

2000 - 349 million

2005 - 766 million

## **Internet users by region (in 2000)**

43.2% - North America

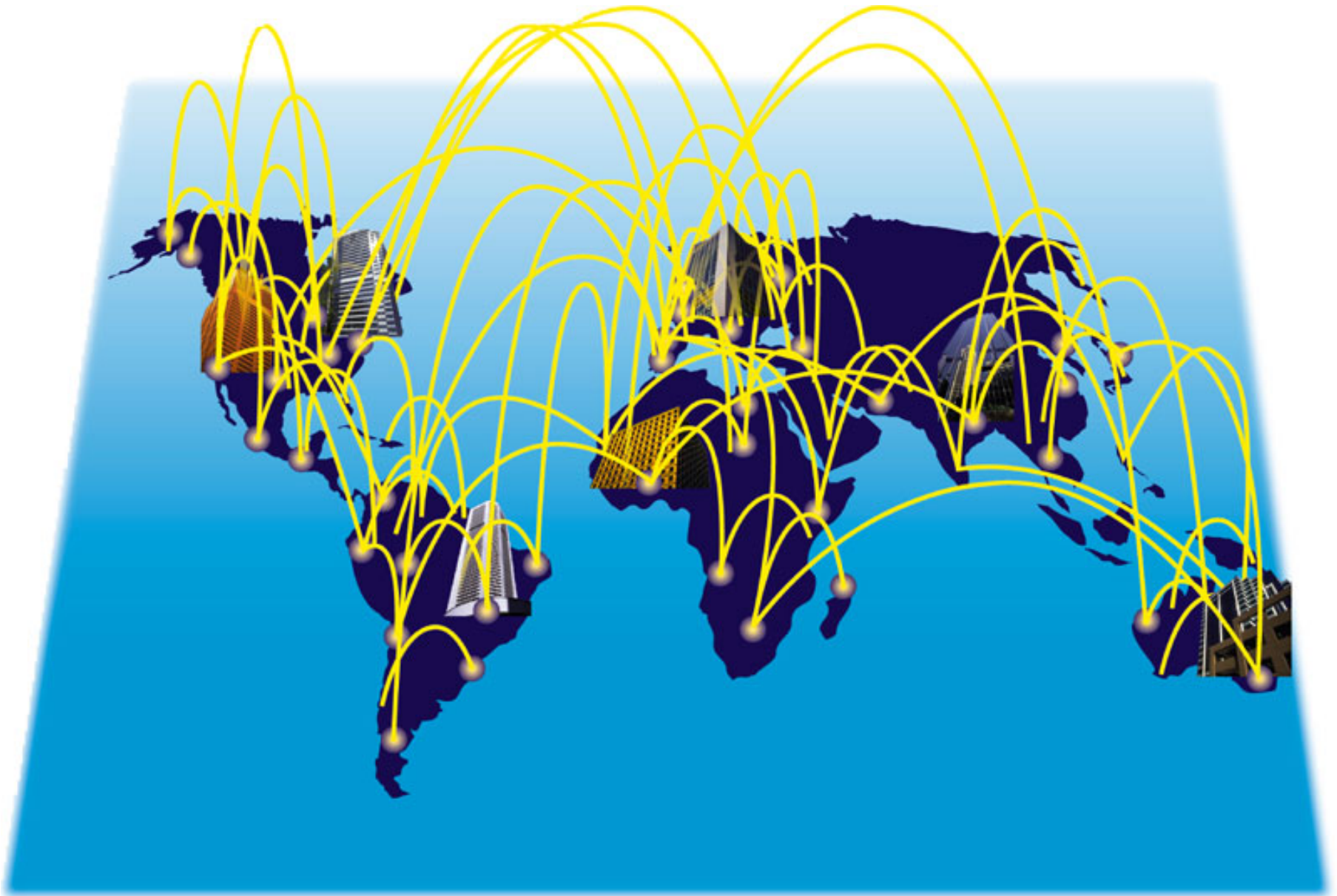
25.1% - Western Europe

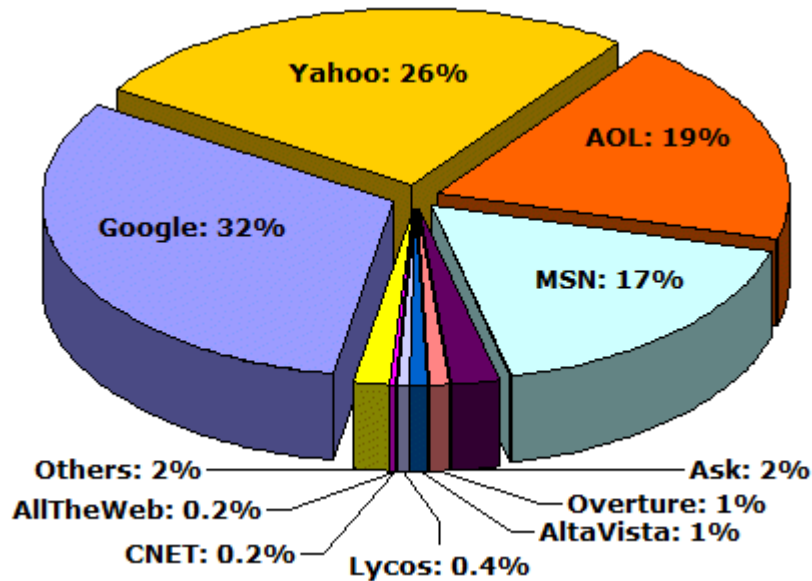
20.6% - Asia / Pacific

03.1% - Eastern Europe

05.6% - Latin America

02.3% - Middle East / Africa



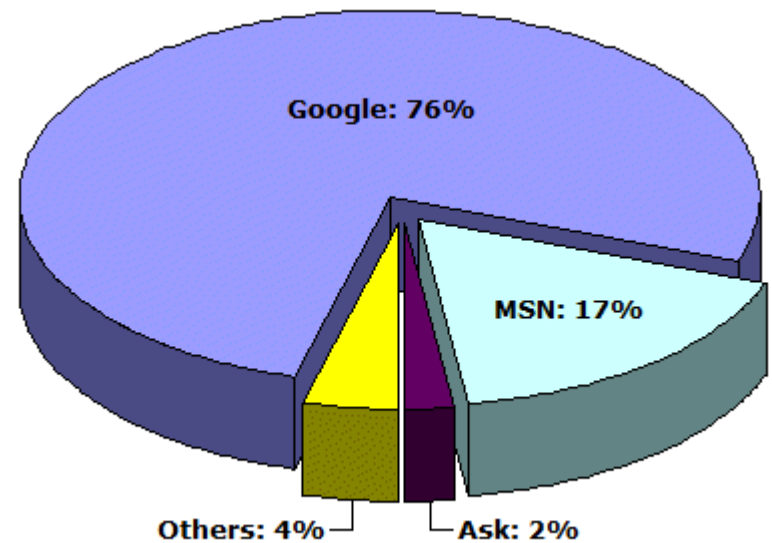


### Share Of Searches: August 2003

The pie chart below shows the percentage of searches done by **US web surfers in August 2003** that were performed at a particular web site or a network of web sites:

### Google's Slice Of The Search Pie

Below is a look at the same figures from above but this time showing what percentage of searches may be powered by Google. Google provides results to both Yahoo and AOL, so some of the searches at these places ultimately get served by Google.



InformationWeek Survey – **80%** (companies) claim increased worker productivity

(published April 2000)

American Management Association Study

**70%** viewed or sent adult-oriented personal e-mail at work

**64%** sent some politically incorrect (offensive) message

**57%** say Web surfing decreases productivity

**29%** have been caught surfing the net at work for non-work

(leisure)

(published June 2000)

## Lost Productivity Costs Are Staggering

$$\begin{array}{ccccccc} 50 & \times & 3 & \times & \$22.15 & = & \$3,322.50 & \times & 52 & = & \$172,770 \\ \text{users} & & \text{hours} & & \text{hourly rate} & & \text{lost expenses/week} & & & & \text{lost expenses/year} \end{array}$$

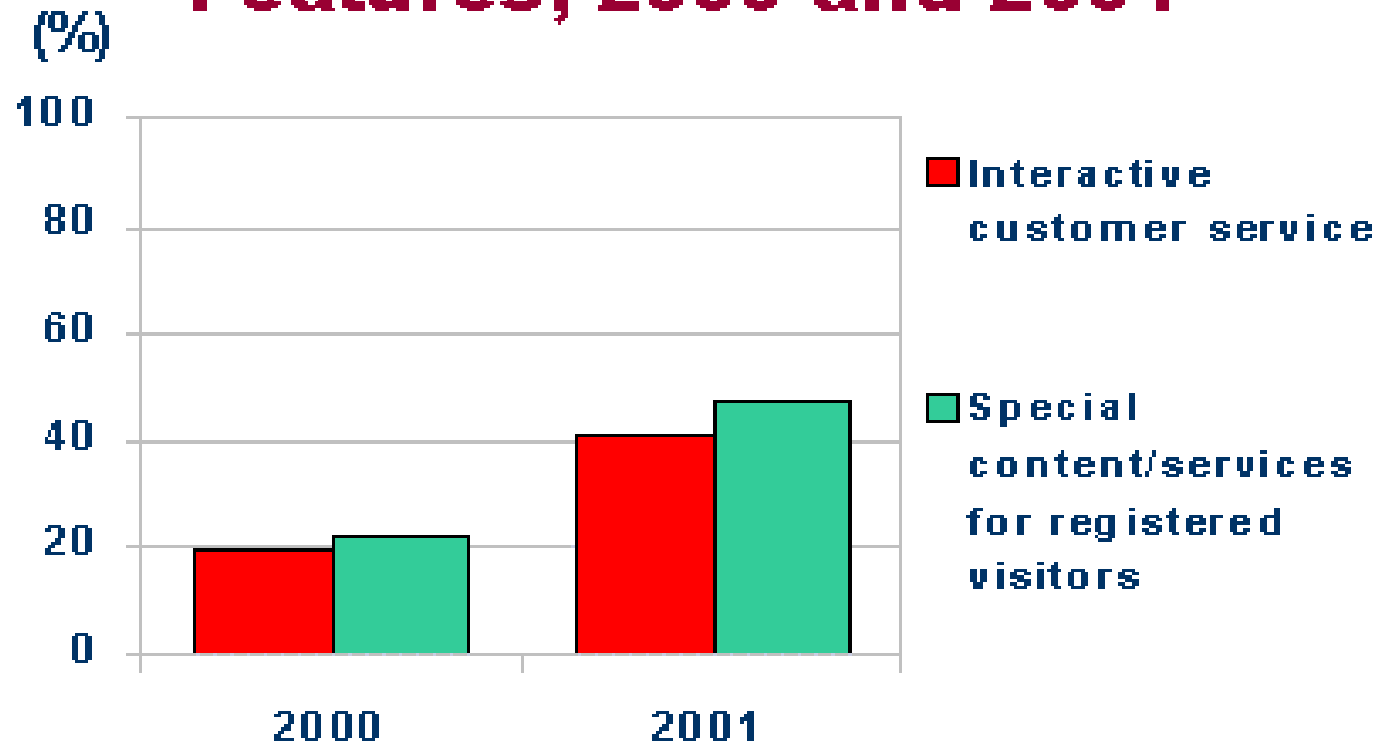
If 50 users spend 3 hours each week on recreational surfing during work hours, the cost to your company is \$3,322.50 in lost salary expenses each week, or \$172,770 per year.

Model per Internet Manager by Elron Software, Inc.

**Online Retail Sales will more than double over the next six years, reaching \$316 billion by 2010 (Forrester 8/23/2004)**

<http://www.forrester.com/ER/Press/Release/0,1769,937,00.html>

# B2C Sites Offering Customer Service Features, 2000 and 2001



**Note: N = 102**

*Source: IDC's Internet Executive ePanel,  
Spring 2000*

# Strategies:

## Internet use Policy

**Proactive** – up front

**Post-judgmental** – after the incident

# Privacy Issues

- Employee monitoring
  - Keystroke monitoring
  - Physical surveillance
  - E-mail/voice mail/files
  - Internet usage tracking
- Consumer information
  - Data communication increases sharing of consumer data
  - Telecommunication hides who you're giving data to
  - If you collect & measure (open records?)

# Network Security

- Key Areas of Network Security
  - Server and Data security
  - Transactions security
- Security Attacks - Internal & external
  - Virus
  - Eaves dropping & access confidential information
  - Modifying message stream
  - Denial of message service
  - Masquerade - Network address & user ID spoofing

# Internet Crimes – Vulnerability

## Fraudulent Schemes

- Toll telephone call
- Internet Provider Change
- Tricked to reveal sensitive information
- Misrepresentation – pyramid schemes, no-service, no merchandise, work-at-home con

## Viruses

# Claria Is A Leader In Online Behavioral Marketing

Claria works with **top tier advertisers** to display their advertising messages to consumers based on their actual online behavior through its [GAIN Network](#). The GAIN Network is a behavioral marketing network, serving over **43 million permission-based consumers** and more than 1000 advertisers to date.

Unlike traditional demographic targeting, Claria's approach combines powerful insights into consumer behavior and the ability to deliver contextually relevant messages to drive click-through and conversion rates 20-40 times higher than traditional banner ads -- boosting campaign results to unprecedented levels. The difference is consumer targeting. Claria allows advertisers to reach consumers **based on their individual interests, not mass, demographically targeted Web site populations. Claria sees consumer behavior in real-time, and displays ads in response through the GAIN Network.**

Learn how Claria can generate unparalleled results for you.

# Weatherscope

# DashBar™

Distributed with all Gator.com applications, including eWallet and Precision Time/Date Manager

**GAIN**  
Publishing



Date Mgr.

Yes. Every time a new site is visited, the address of the site (though not the full URL) is reported to Gator's servers, with a unique user ID which can be used to track your web usage.



Precision  
Time



## Advertising Parasites

Vx2 Transponder/TPS108 is bundled with subscriptions to porn sites run by Webdream/Digital Rooster. On installation it misleadingly describes itself as a viewer for adult video content. It may also be installed by porn-related pop-up ads through a security hole in Internet Explorer.

# New Vocabulary

**Portal** -- generally synonymous with *gateway*, for a World Wide Web site that is or proposes to be a major starting site for users when they get connected to the Web or that users tend to visit as an anchor site.

**PDA** -- (personal digital assistant) is a term for any small mobile hand-held device that provides computing and information storage and retrieval capabilities for personal or business use, often for keeping schedule calendars and address book information handy.

**Spam** -- Spam is unsolicited e-mail on the Internet. From the sender's point-of-view, it's a form of bulk mail,

**Phishing** -- On the Internet, phishing (sometimes called *carding* or *brand spoofing*) is a scam where the perpetrator sends out legitimate-looking e-mails appearing to come from some of the Web's biggest sites, including eBay, PayPal, MSN, Yahoo, BestBuy, and America Online, in an effort to phish (pronounced "fish") for personal and financial information from the recipient.

**Spoofing** -- To deceive for the purpose of gaining access to someone else's resources (for example, to fake an Internet address so that one looks like a certain kind of Internet user)

**WiFi** -- (short for "wireless fidelity") is the popular term for a high-frequency [wireless](#) local area network ([WLAN](#)).

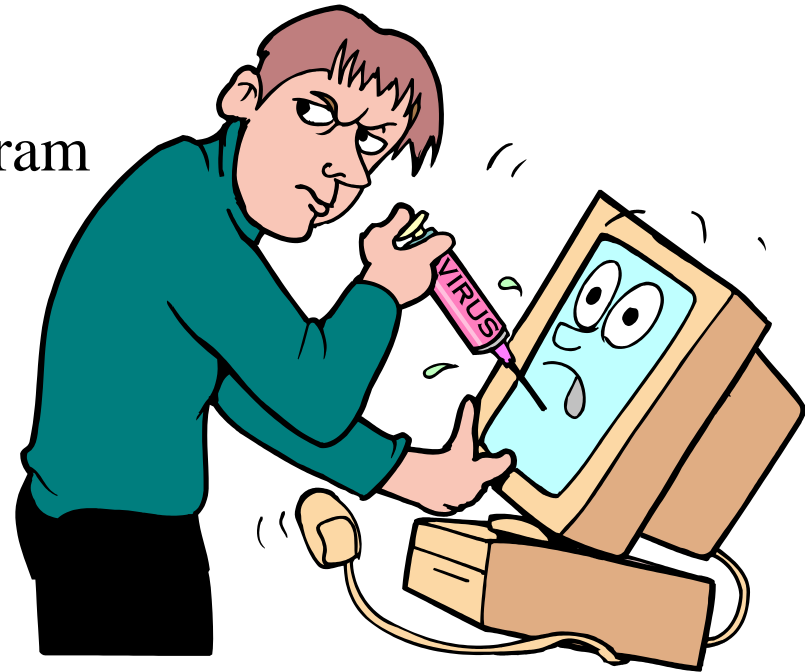
Spyware, Cookies, etc. → <http://www.trinity.edu/rjensen/booktech.htm>

# Virus

- Virus is a computer program that executes when an infected program is executed (only executables can be infected)
- Virus can be benign or malignant and reproduce themselves
- Non virus programs
  - Worms
  - Trojan Horses - destructive program
  - disguised in a innocent software
  - Logic bombs - timed device

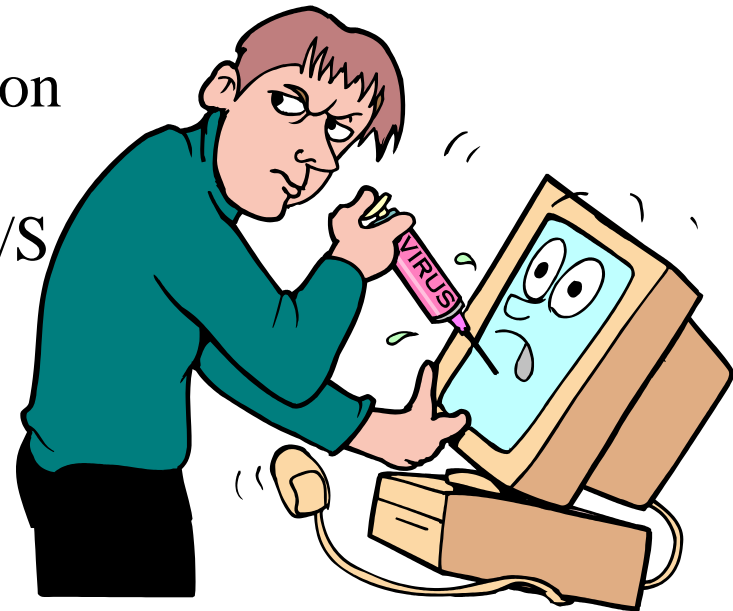


Cell Phones, PDA,  
etc.



# Virus

- Boot sector virus
  - rewrite the boot code so that it takes over when booted again - normally infected if booted with an infected floppy disk
- File infecting virus
  - Affects all executables
- Polymorphic virus
  - change appearance with each infection
- Stealth virus
  - stays in memory to avoid AV and O/S
- Multi-partite virus
  - combine all the virus types



# Virus+

**Sasser** – lead the way in late April to late May 2004 → 1.32 Million computers infected by worms and bots using a Microsoft security hole

**Korgo bot:** Collects key strokes for log-ins, passwords, credit card numbers; transmit them to the attacker

**Bobax worm:** Checks to see if infected PC has broadband connection, then sets up relay to broadcast spam

**Dabber worm:** Looks for PCs infected by Sasser worm; uses the weakness in Sasser to take control of PC.

**Phatbot:** Steals AOL log-ins and product keys for games. Harvests e-mail addresses for spam purposes.

**Kibuv bot:** Connects PC to a private Internet chat channel to listen for commands from attacker.

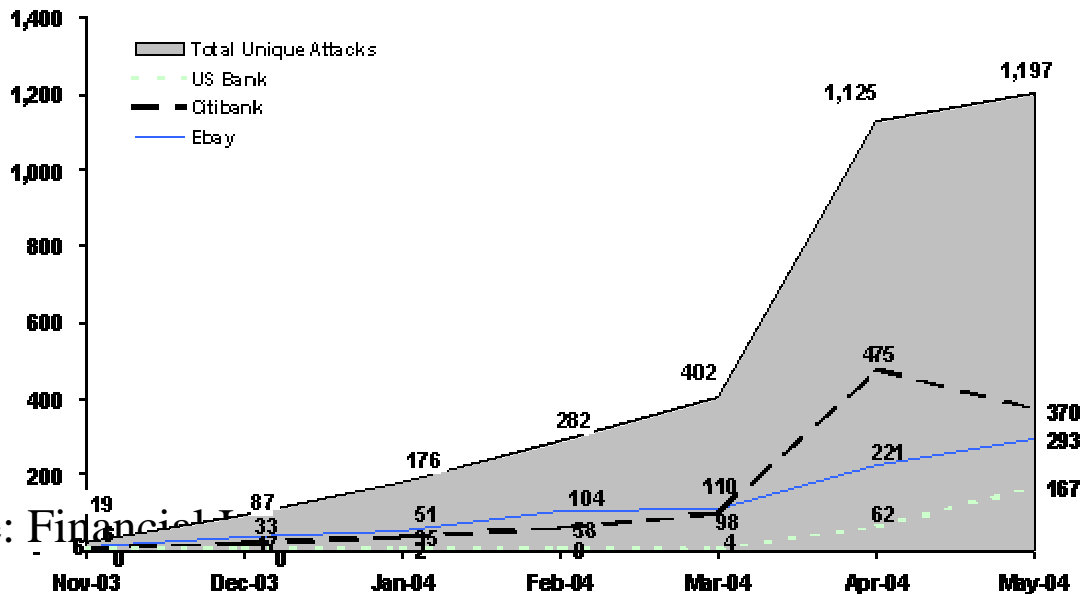
**Sdbot:** Turns infected PCs into spam relays

# Trojan Horse Virus



## What is phishing?

### Unique Phishing Attacks Reported to the Anti-Phishing Working Group (Nov. 2003 &#150; May 2004)

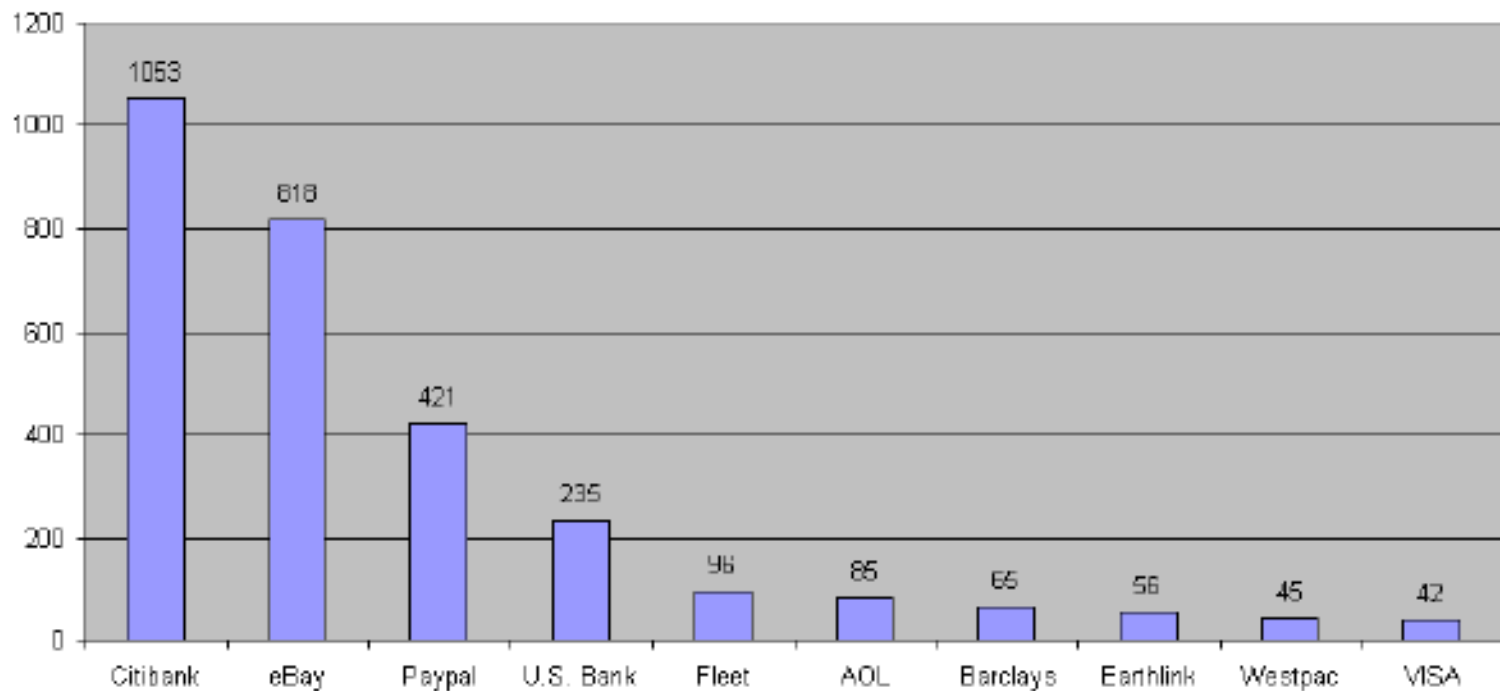


Source: Financial Times

[http://www.idc.com/getdoc.jsp?containerId=pr2004\\_07\\_14\\_191436](http://www.idc.com/getdoc.jsp?containerId=pr2004_07_14_191436)

Phishing attacks use spoofed e-mails and fraudulent Web sites designed to fool recipients into divulging personal financial data such as credit card numbers, account usernames, passwords and Social Security numbers. By hijacking the trusted brands of well-known banks, online retailers and credit card companies, phishers convince up to 5% of recipients to respond to them.

### Cumulative Reported Phishing Attacks Nov 03 - May 04



<http://www.antiphishing.org/index.html>

[http://www.antiphishing.org/APWG\\_Phishing\\_Attack\\_Report-May2004.pdf](http://www.antiphishing.org/APWG_Phishing_Attack_Report-May2004.pdf)

Dear eBay customer,

During our regularly scheduled account maintenance and verification procedures, we have detected slight error in your billing information. This might be due to either of the following reasons:

1. A recent change in your personal information ( i.e.change of address).
2. Submitting invalid information during the initial sign up process.
3. An inability to accurately verify your selected option of payment due to an internal error within our processors.

Please update and verify your information by clicking the link below:

<https://arribada.ebay.com/saw-cgi/eBayISAPI.dll?PlaceCCInfo>

If your account information is not updated within **48 hours** then your ability to sell or bid on eBay will become restricted.

Thank you  
The eBay Billing Department .

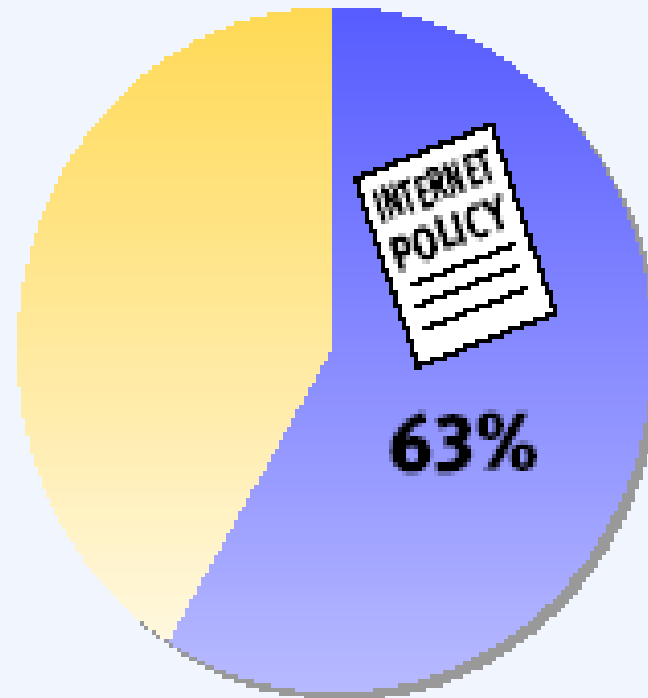
# Intellectual Property Issues

- Illegal software use and distribution
- Distribution of copyrighted © artistic and literary materials
  - News stories
  - Images on web sites

# At Issue (Internet/e-mail use policy):

- **Benefit vs. Loss**
- Entitlement (yes/no)
- There are always some poor performers
- Need and Cost of a plan
- In support of Training Curriculum (research & delivery)
- Ramifications
  - enforcement, monitoring, legality, morale, poor training

## Most Respondents Have an Internet Usage Policy



**63% of those surveyed have an Internet Usage Policy.**

**This is a 29% increase from 1999.**

Source: 2001 Corporate Web and Email Usage Study

## Netiquette

Golden Rule: *Treat others as you would like them to treat you.*

1. In e-mail, newsgroups, and chat rooms:

- Keep messages brief, using proper grammar and spelling.
- Be careful when using sarcasm and humor, as it might be misinterpreted.
- Be polite. Avoid offensive language.
- Avoid sending or posting **flames**, which are abusive or insulting messages. Do not participate in **flame wars**, which are exchanges of flames.
- Avoid sending spam, which is the Internet's version of junk mail. **Spam** is an unsolicited e-mail message or newsgroup posting sent to many recipients or newsgroups at once.
- Do not use all capital letters, which is the equivalent of SHOUTING!
- Use **emoticons** to express emotion. Popular emoticons include
  - :) Smile
  - :( Frown
  - :| Indifference
  - :\ Undecided
  - :o Surprised
- Use abbreviations and acronyms for phrases such as
  - BTW by the way
  - FYI for your information
  - FWIW for what it's worth
  - IMHO in my humble opinion
  - TTFN ta ta for now
  - TYVM thank you very much
- Clearly identify a **spoiler**, which is a message that reveals a solution to a game or ending to a movie or program.

2. Read the **FAQ** (frequently asked questions), if one exists. Many newsgroups and Web sites have an FAQ.

3. Use your user name for personal purposes only.

4. Do not assume material is accurate or up to date. Be forgiving of other's mistakes.

5. Never read someone's private e-mail.

# Key Points

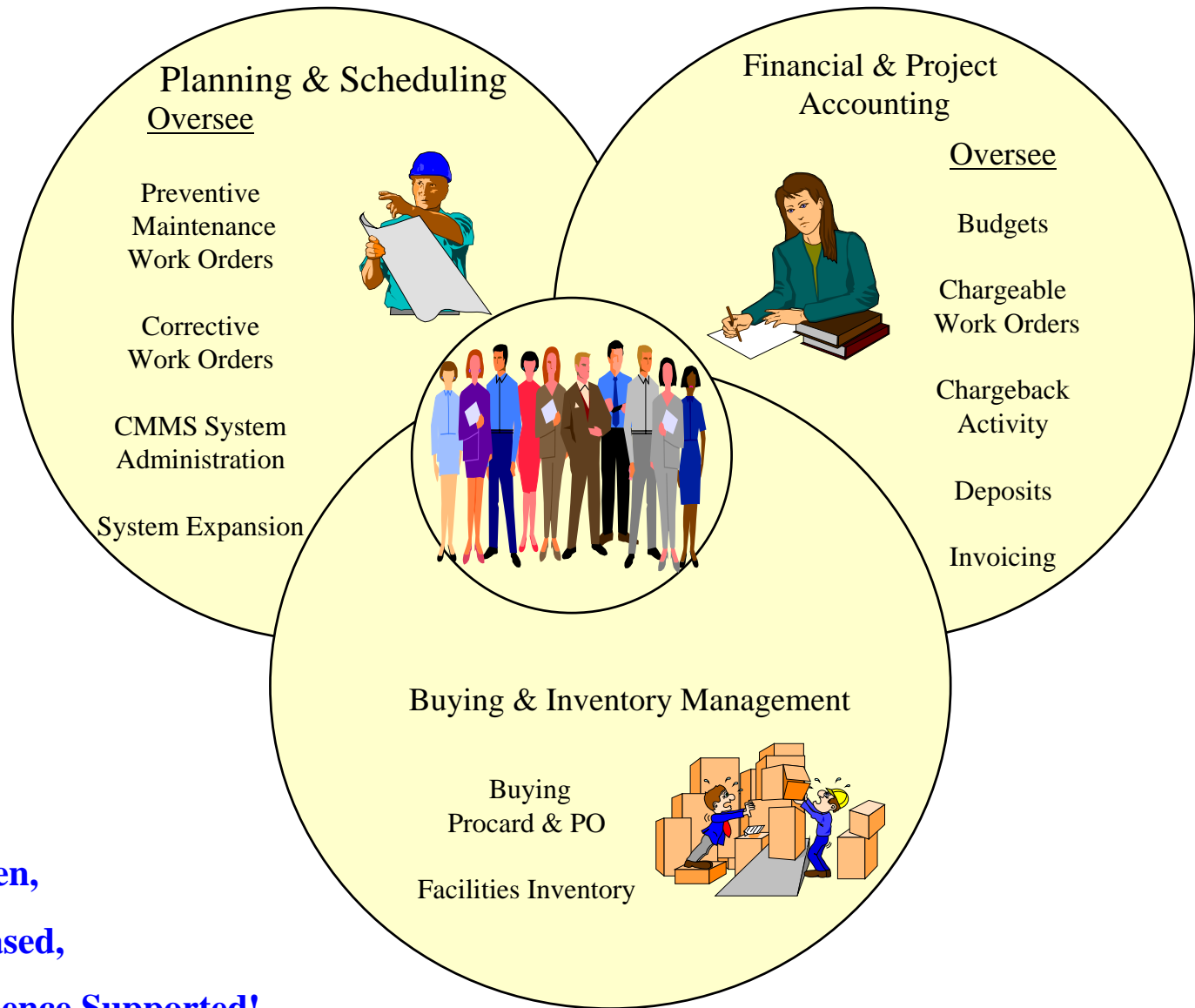
Policy with Enforcement

Monitoring Usage (hardware & software tools)

No Training vs. Poor Training (minimal)

Sophisticated and Valuable Tool

# CMMS (Computerized Maintenance Management System) -- "Team Tool"

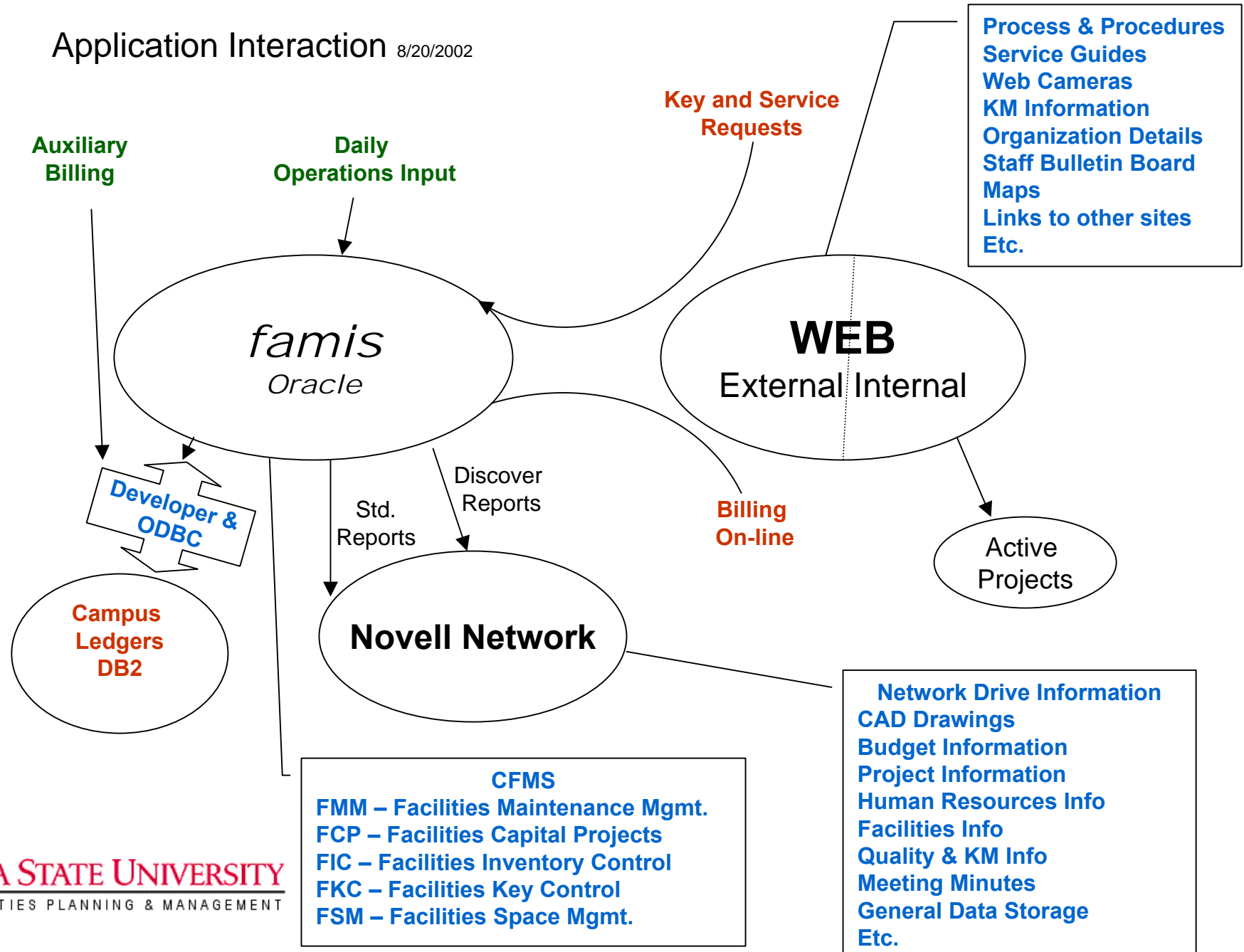


**Data Driven,**

**Fact Based,**

**Evidence Supported!**

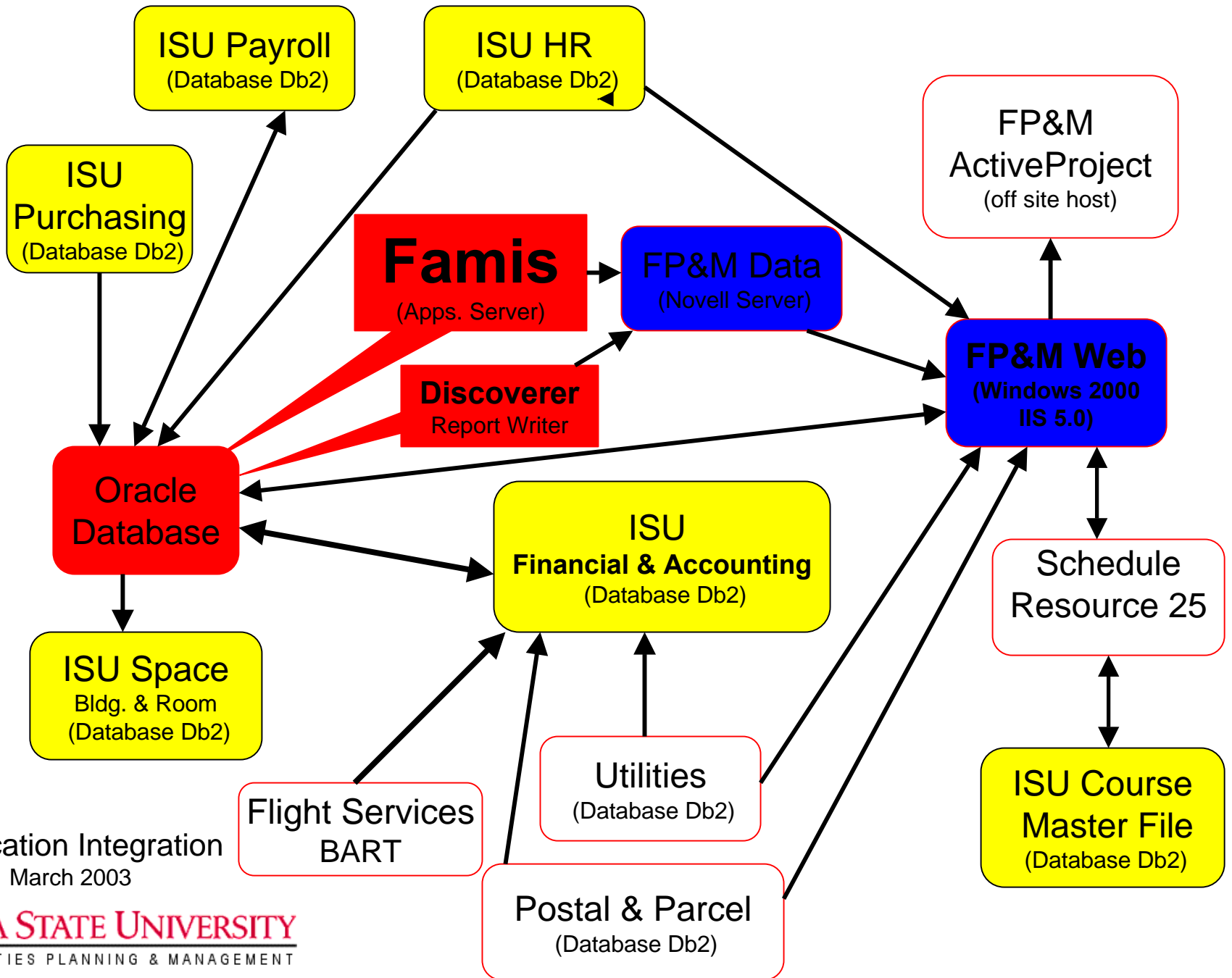
# Application Interaction 8/20/2002



- Process & Procedures
- Service Guides
- Web Cameras
- KM Information
- Organization Details
- Staff Bulletin Board
- Maps
- Links to other sites
- Etc.

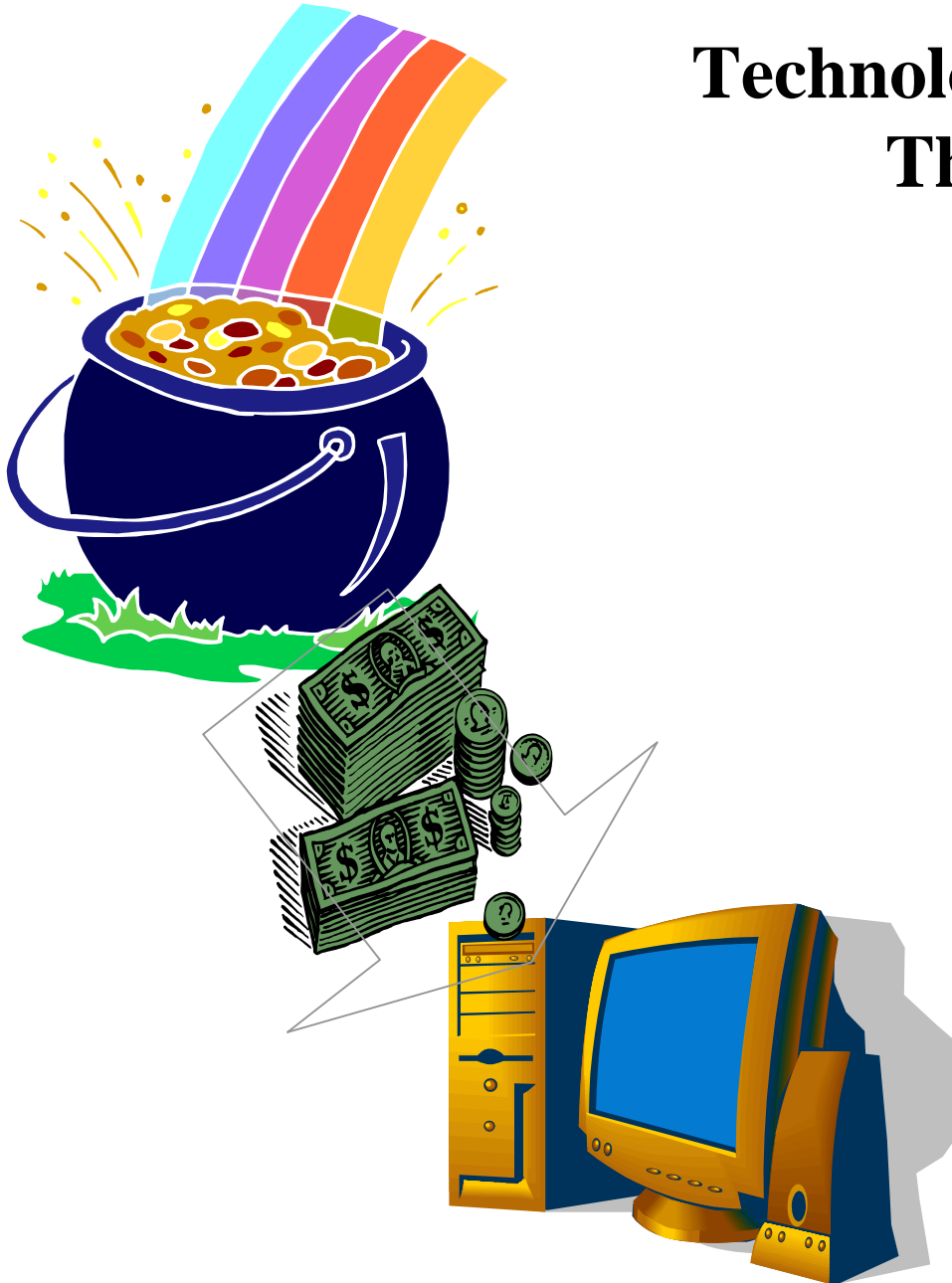
- Network Drive Information
- CAD Drawings
- Budget Information
- Project Information
- Human Resources Info
- Facilities Info
- Quality & KM Info
- Meeting Minutes
- General Data Storage
- Etc.

- CFMS**
- FMM – Facilities Maintenance Mgmt.
  - FCP – Facilities Capital Projects
  - FIC – Facilities Inventory Control
  - FKC – Facilities Key Control
  - FSM – Facilities Space Mgmt.



Application Integration  
March 2003

# Technology Useful in Finding That Pot-of-Gold



**Paperless Information**

**Ongoing Communication**

**Data & Analysis (real-time)**

**Record Keeping (accurate)**

**Business Transactions**

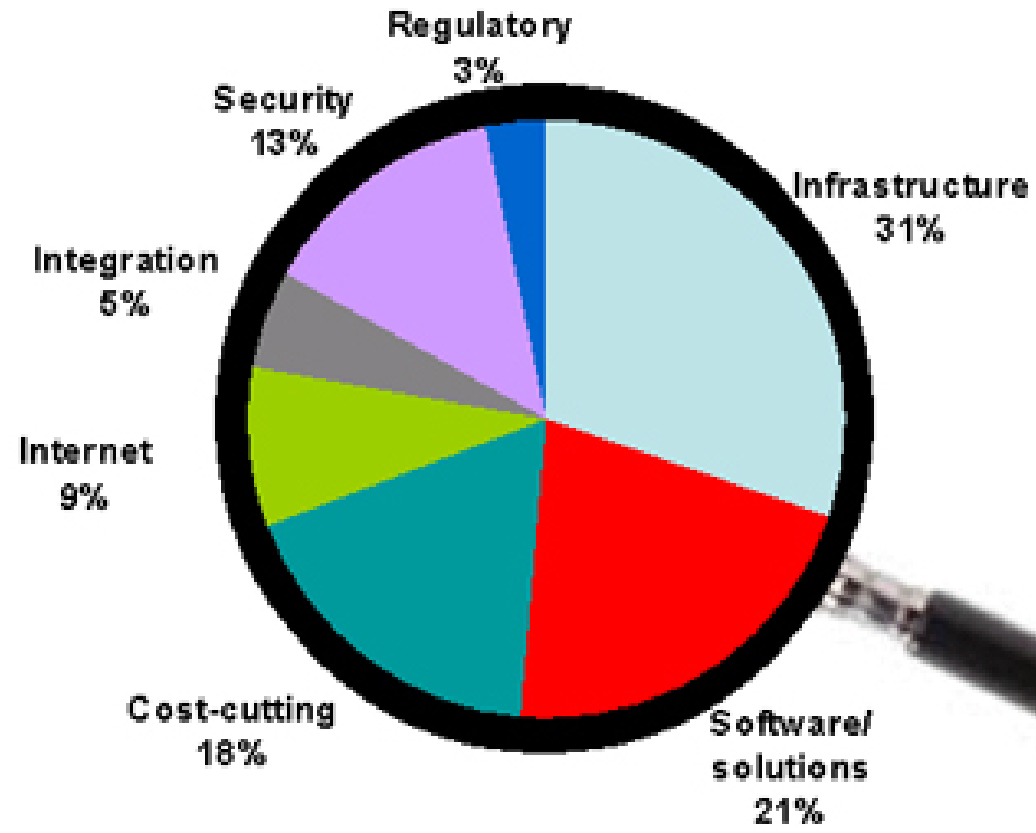
**Training On-line**

**Using Familiar Tools**

**Knowledge Management**

**Resources Use (optimize)**

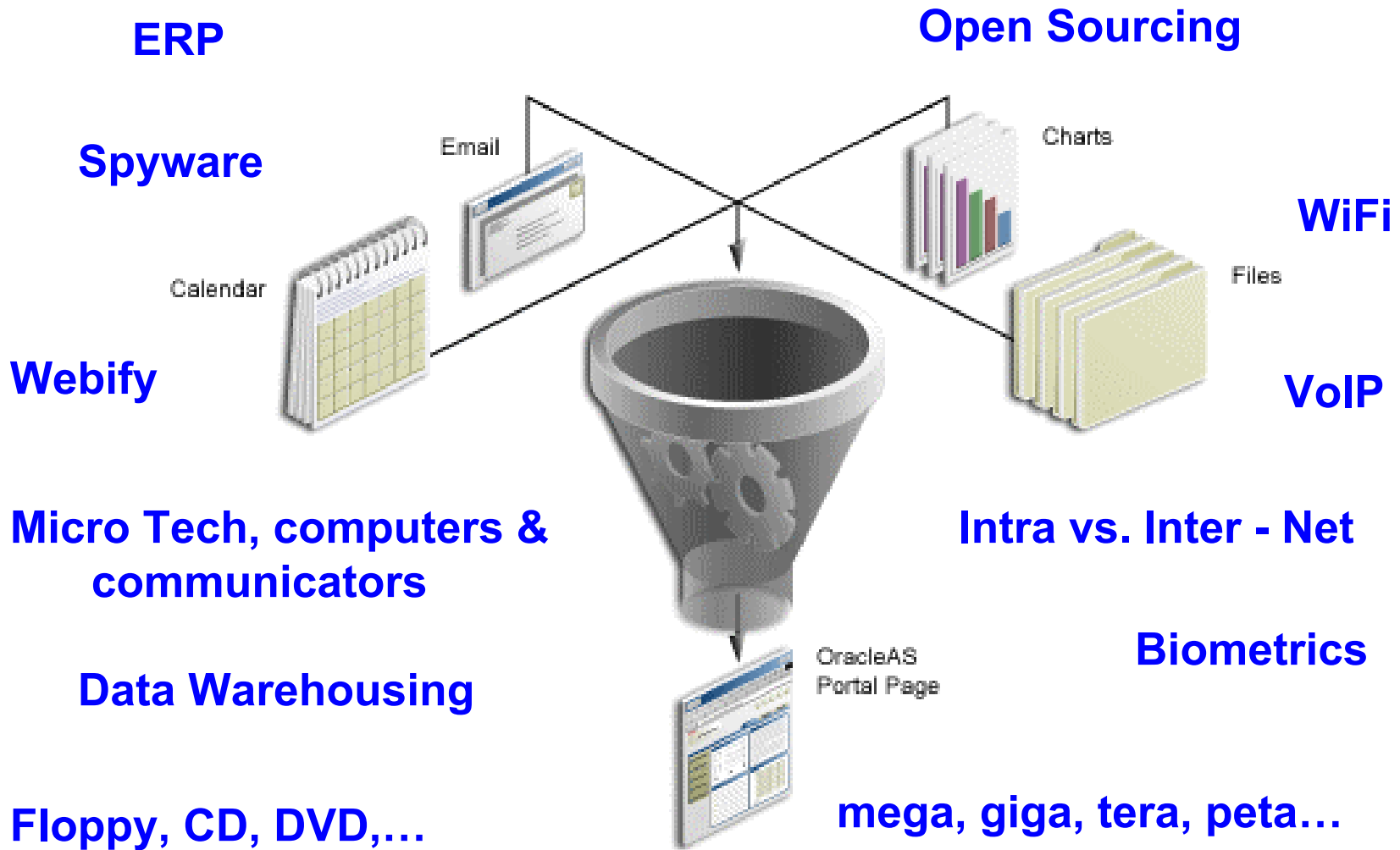
# Main Focus for IT Department in 2004



[http://www.idc.com/prodserv/extras/futurescan\\_leading\\_it.jsp](http://www.idc.com/prodserv/extras/futurescan_leading_it.jsp)

Source: IDC Executive Market Watch US End-User Survey May 2004

# Portal



## The Future or Hype?

# Helpful Websites

[http://www.spywareguide.com/product\\_list\\_full.php](http://www.spywareguide.com/product_list_full.php)

<http://www.sans.org>

<http://www.trinity.edu/rjensen/booktech.htm>

<http://whatis.techtarget.com/>

<http://www.pcwebopaedia.com/>

<http://www.howstuffworks.com/>

# How Computer Technology is Affecting the Way We Do Business?

- \_\_\_ 1) **WiFi** → a) Acronym for “Why Fight”    **b) Wireless Fidelity**    c) What’s In it For I
- \_\_\_ 2) **Phishing** → a) **on-line scam to get confidential info**    b) Fishing without a hook    c) Can’t spell fishing
- \_\_\_ 3) **Worm** → a) Bait for Phishing    **b) program that propagates itself by attacking other computers and copying itself to them**    c) popular species of agri ecosystems
- \_\_\_ 4) **SPAM** → a) Ham in a can    **b) unsolicited e-mail**    c) measure of distance
- \_\_\_ 5) **SarBox** → a) **Sarbanes & Oxley Legislation**    b) Storage for one’s stars    c) Method for treating the SARS disease
- \_\_\_ 6) **CFMS** → a) Can’t Find Most Sides    b) Control For Making Shapes    **c) Computerized Facilities Management Systems**
- \_\_\_ 7) **ERP** → a) **Enterprise Resource Planning**    b) Lawman from OK Corral    c) Release of intestinal gas, less than a burp
- \_\_\_ 8) **ROI** → a) Partner to Dale Evans    **b) Return on Investment**    c) King (French)
- \_\_\_ 9) **PDCA** → a) **Plan do check act**    b) Please don’t catch animals    c) Policies don’t control all
- \_\_\_ 10) **KM** → a) Knitting Materials    b) Kneel More    **c) Knowledge Management**    d) Kitchen Mess
- \_\_\_ 11) **IT** → a) Hairy cousin of Adamms Family    **b) Information Technology**    c) Ill tempered
- \_\_\_ 12) **:o** → a) **Netiquette “surprised”**    b) Colon Os    c) Morse code for “\$”
- \_\_\_ 13) **What do the following have in common: Phatbot, Sdbot, Korgo bot, & Kibuv bot** → a) They all end in bot    b) Can’t tell their top from their bot    **c) Known technology viruses**
- \_\_\_ 14) **SANS Institute** → a) **SysAdmin, Audit, Network, Security**    b) Strategic American National Security    c) South American Networking Security
- \_\_\_ 15) **TYVM** → a) Total year volume made    **b) Netiquette “Thank You Very Much”**    c) Tight yet very movable
- \_\_\_ 16) **Sniffer** → a) some one with a bad head cold    b) animals with long protruding beaks    **c) wiretap that eavesdrops on computer networks**
- \_\_\_ 17) **I.M. Pei** → a) Internet Mail Pest elite inspector    b) Information Management Processing environment interface    **c) Designer of the Rock n’ Roll Hall of Fame & Museum**
- \_\_\_ 18) **Blogger** → a) Folk dancer    **b) person who maintains a personal journal for public viewing on the Internet**    c) person who records the backlog of deferred maintenance

## References

1. ComScore (2004) Weekly Online Retail Sales Break Through \$2 Billion Mark, comScore Reports (2003) comScore Media Metrix Search Engine Ratings
2. Elron Software, Inc. (2002 ) Internet Manager – Guide to Internet Usage and Policy
3. Loch, K. (April 1999). Setting a Policy on Internet Use. Beyond Computing (Volume 8, Number 3).
4. Machlis, S. (July 20, 1998). Web surfing under scrutiny. ComputerWorld, [http://www.computerworl.com/cwi/story/0,1199,NAV47\\_STO318600,00.html](http://www.computerworl.com/cwi/story/0,1199,NAV47_STO318600,00.html)
5. Machlis, S. (April 7, 1997). Gotcha! Monitoring tools track Web surfing at work. ComputerWorld, [http://www.computerworl.com/cwi/story/0,1199,NAV47\\_STO3425,00.html](http://www.computerworl.com/cwi/story/0,1199,NAV47_STO3425,00.html)
6. Marshall, J. (1999). Internet Crimes Encountered By Novice Surfers. Journal of Industrial Technology (Volume 15, Number 2), February 1999 to April 1999.
7. Oldman, M. & Underwood, J. (May 15, 2000). Should You Watch Them on the Web? CIO Magazine (Volume 13, Number 15), pp. 240.
8. Paul, P. (November 19, 2000). Firms relax stringent Net rules. Des Moines Register (Atlanta Journal), pp. K1.
9. Prime, G. (Winter/Spring 1998). Tailoring Assessment of Technological Literacy Learning. The Journal of Technology Studies (Vol. XXIV, 1), pp. 18-23.

Thank You

Questions?

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## References

10. Santosus, M. (January 2003) The Need for Speed Slows Down CIO (Volume 16, Number 6)  
<http://www.cio.com/archive/010103/>
11. Stahl, S. (April 17, 2000). Productivity: IT All Adds Up. InformationWeek,  
<http://www.informationweek.com/782/82uwen.htm>
12. Thibodeau, P. (July 24, 1997). State agency fires two for Web surfing at work. ComputerWorld,  
[http://www.computerworl.com/cwi/story/0,1199,NAV47\\_STO21477,00.html](http://www.computerworl.com/cwi/story/0,1199,NAV47_STO21477,00.html)
13. Upton, M. (September 14, 2000). B2C Sites Prepare for Holidays. IDC  
<http://www.idc.com/newsletters>
14. U.S. Census Bureau (January 7, 2003) <http://www.census.gov/mrts/www/mrts.html>
15. Wagner, M. (May 5, 1997). Tool pushes 'net data, limits surfing. ComputerWorld,  
[http://www.computerworl.com/cwi/story/0,1199,NAV47\\_STO3989,00.html](http://www.computerworl.com/cwi/story/0,1199,NAV47_STO3989,00.html)
16. What Productivity Revolution. (June 12, 2000). Business Week Online,  
[http://www.businessweek.com/2000/00\\_24/b3685258.htm?scriptFramed](http://www.businessweek.com/2000/00_24/b3685258.htm?scriptFramed)
17. Yu, J. and Le, T. (2001). Internet and Network Security. Journal of Industrial Technology (Volume 17, Number1) November 2000 to January 2001.