IT MANAGEMENT AND STRATEGIES

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สำนักงานพัฒนาวิทยาศาสตร์และเทคโนโลยีแห่งชาติ

หัวข้อคำบรรยาย

- Foundations of IT
  - Concepts, Strategy and Organization
- Information Support Systems
  - Collaborative, Decision, Intelligent Support
- Management of IT
  - IT Resources, Security and Impact

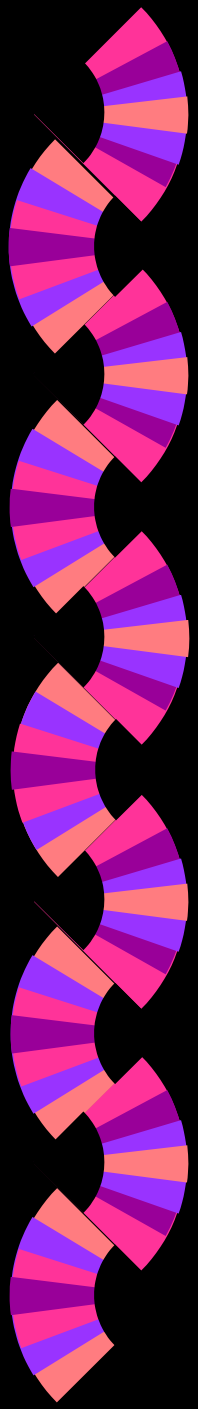
FOUNDATION OF IT

WHAT IS IT?

- Information Technology or IT consists of
  - Computer Technology
  - Communication Technology
- And is developed on
  - Microelectronics, Micromachinery, Optics, and Information Theory

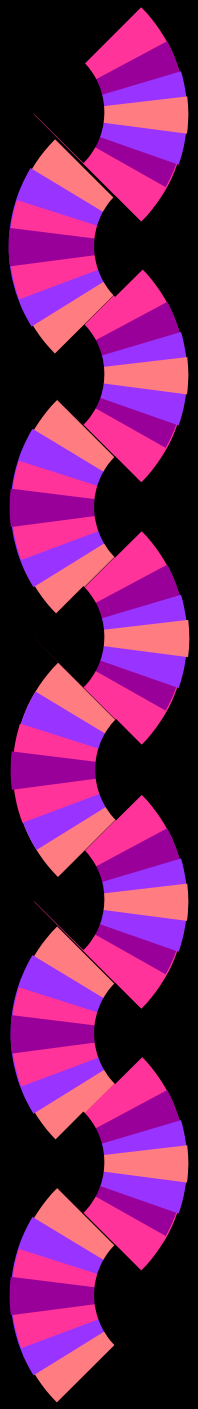
WHY "IT" IS IMPORTANT?

- "IT" provides ability to achieve "Anytime Anywhere"
- "IT" helps obtain information for timely and right decision making
- "IT" helps provides directions for improving business strategies and tactics



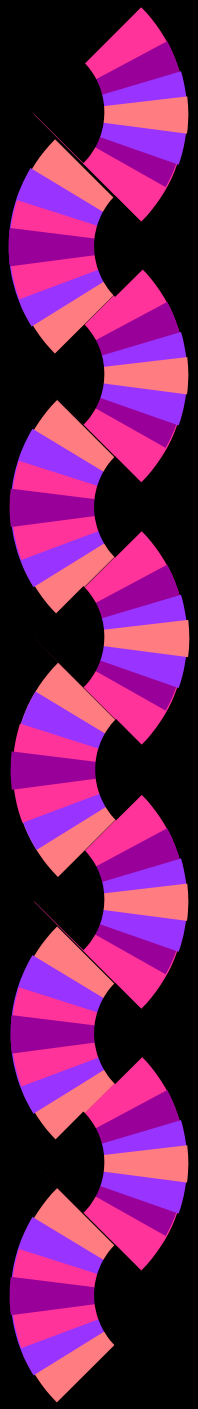
“IT” IS THE BASE OF BUSINESS

- All large companies use IT as a means to conduct business
- “IT” helps link business with partners and customers
- “IT” helps the company to know what customers want



TRADITIONAL "IT" APPLICATIONS

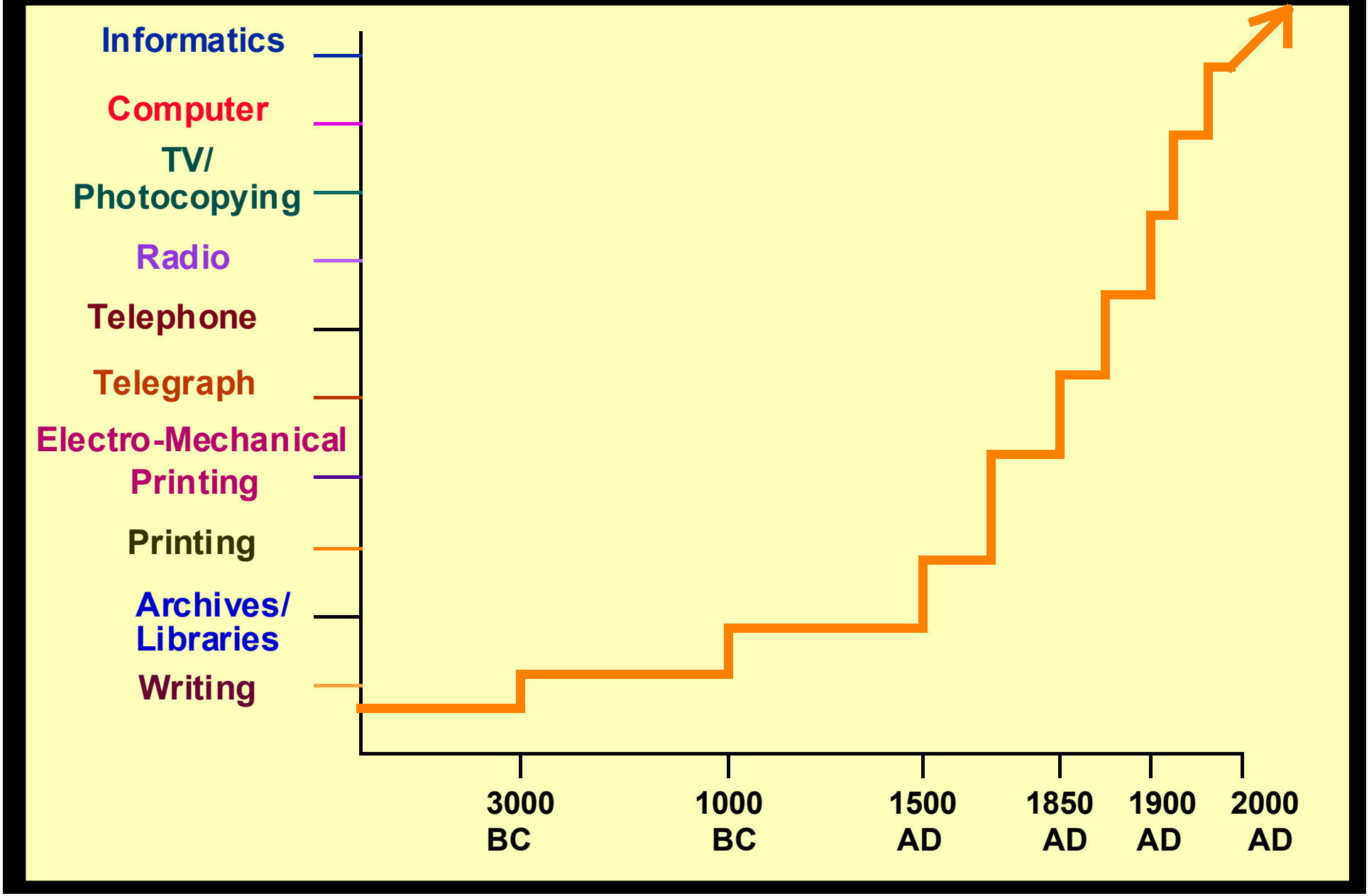
- Expedite business operations through work automation at lowest level
- Efficient operations at middle level
- Effective business decisions for management
- Strategic movement for the whole corporate

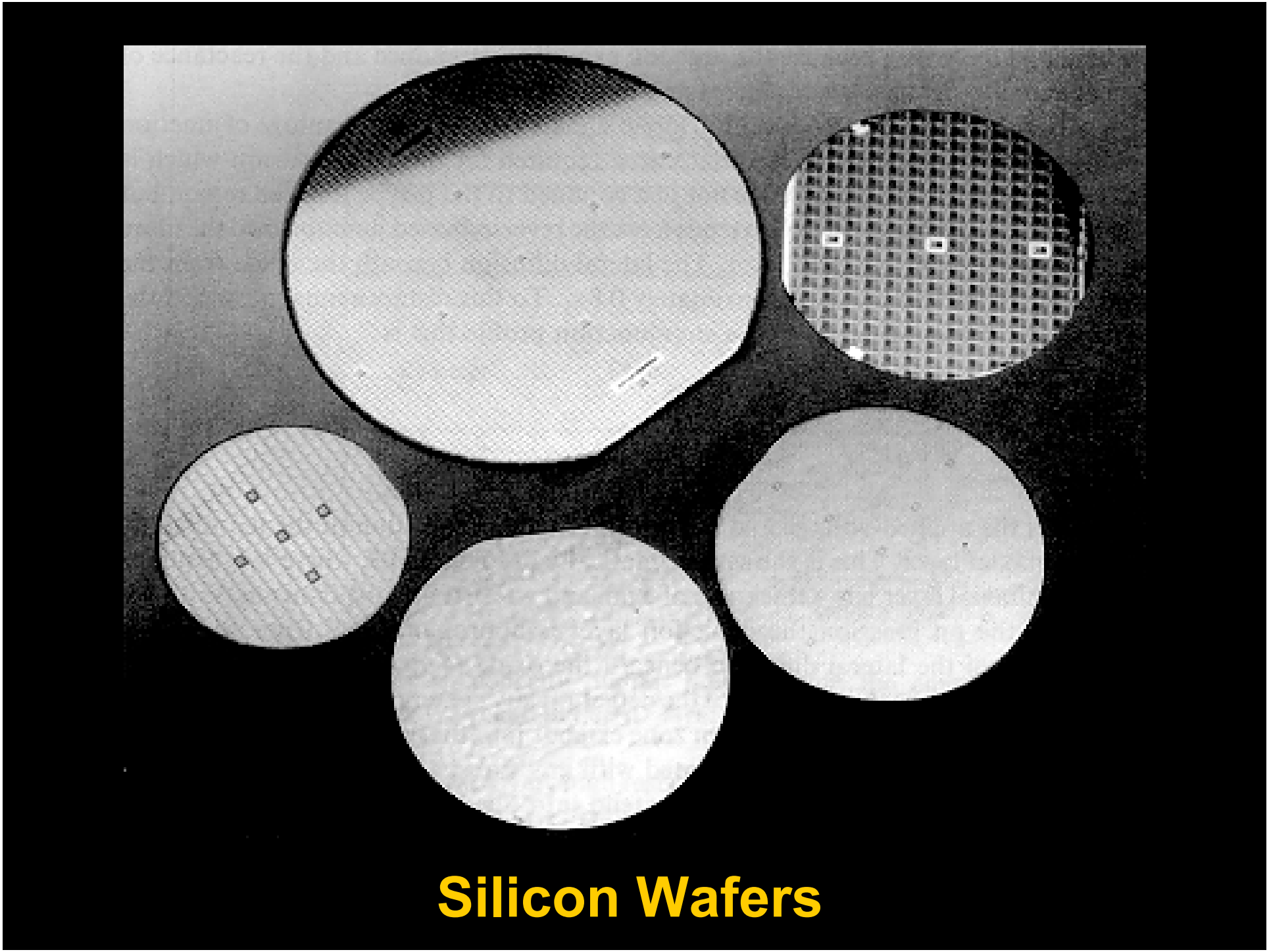


“IT” IS CHANGING RAPIDLY

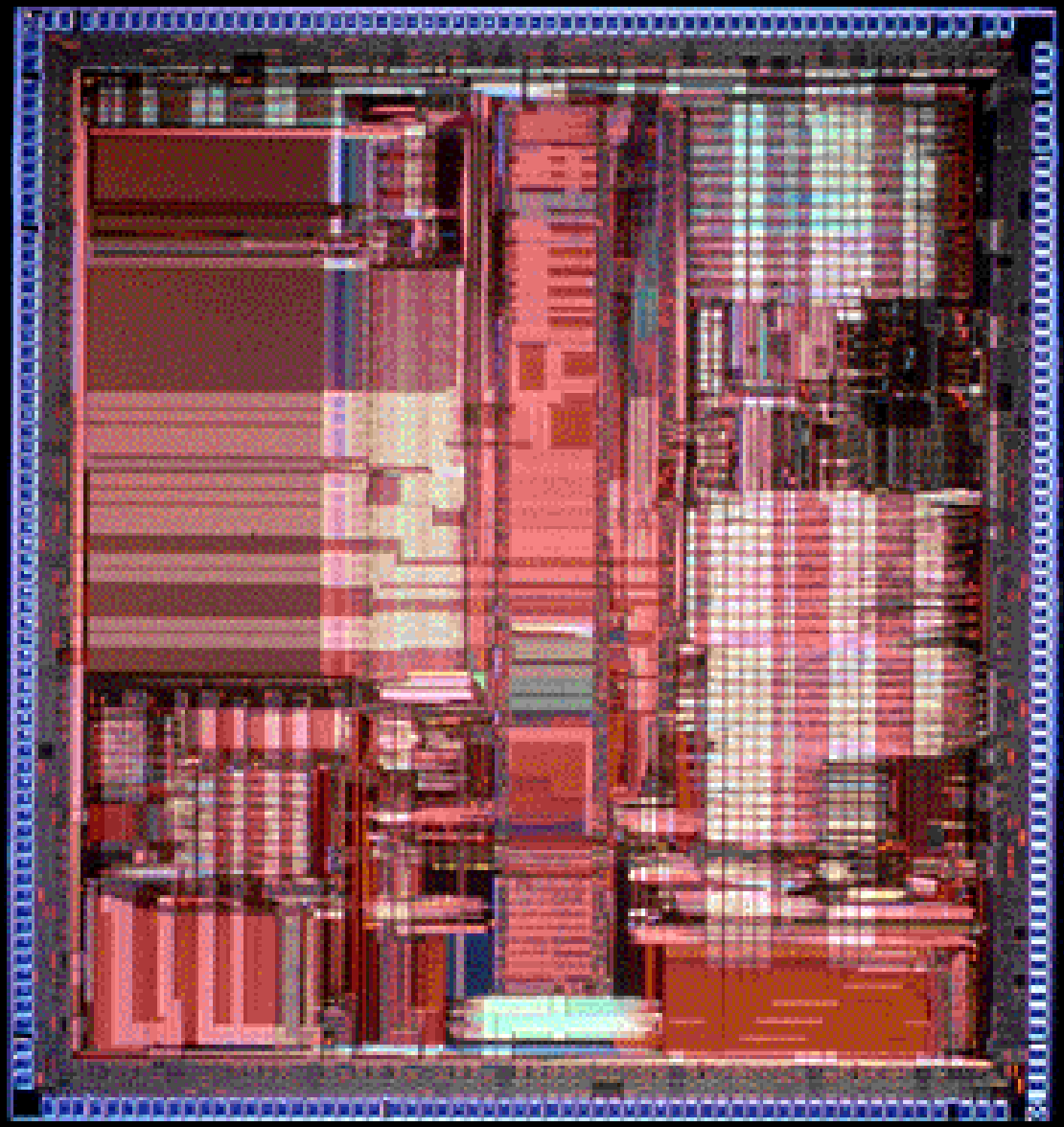
- “IT” is the only technology that changes faster than other technologies
- “IT” applications also change at the light speed. What is good today may not be adeaquate for tomorrow.
- We need to quickly adapt to changes

Evolution and Productivity Growth in Information Technology

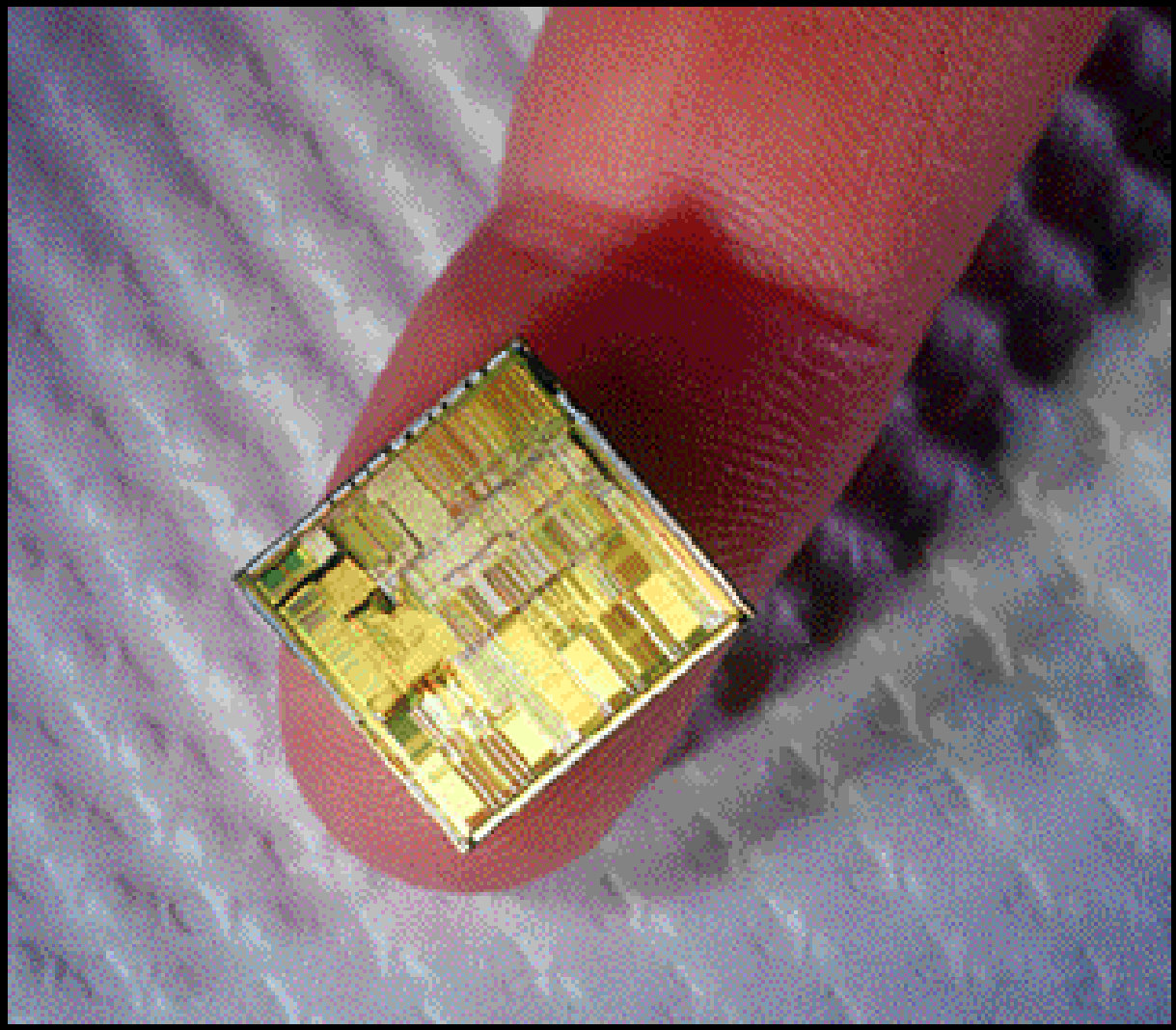




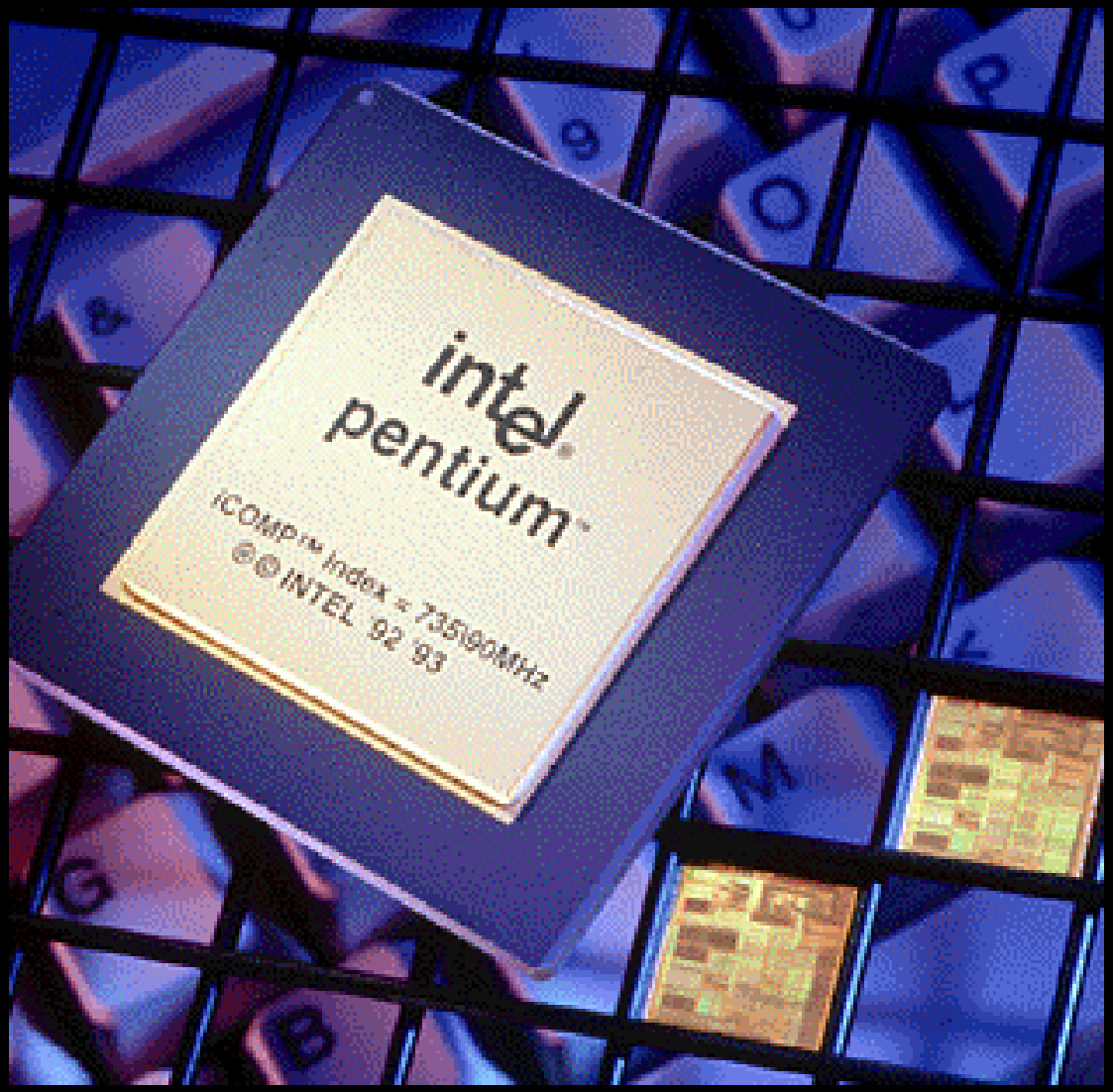
Silicon Wafers



Top view of 486 Microprocessor chip

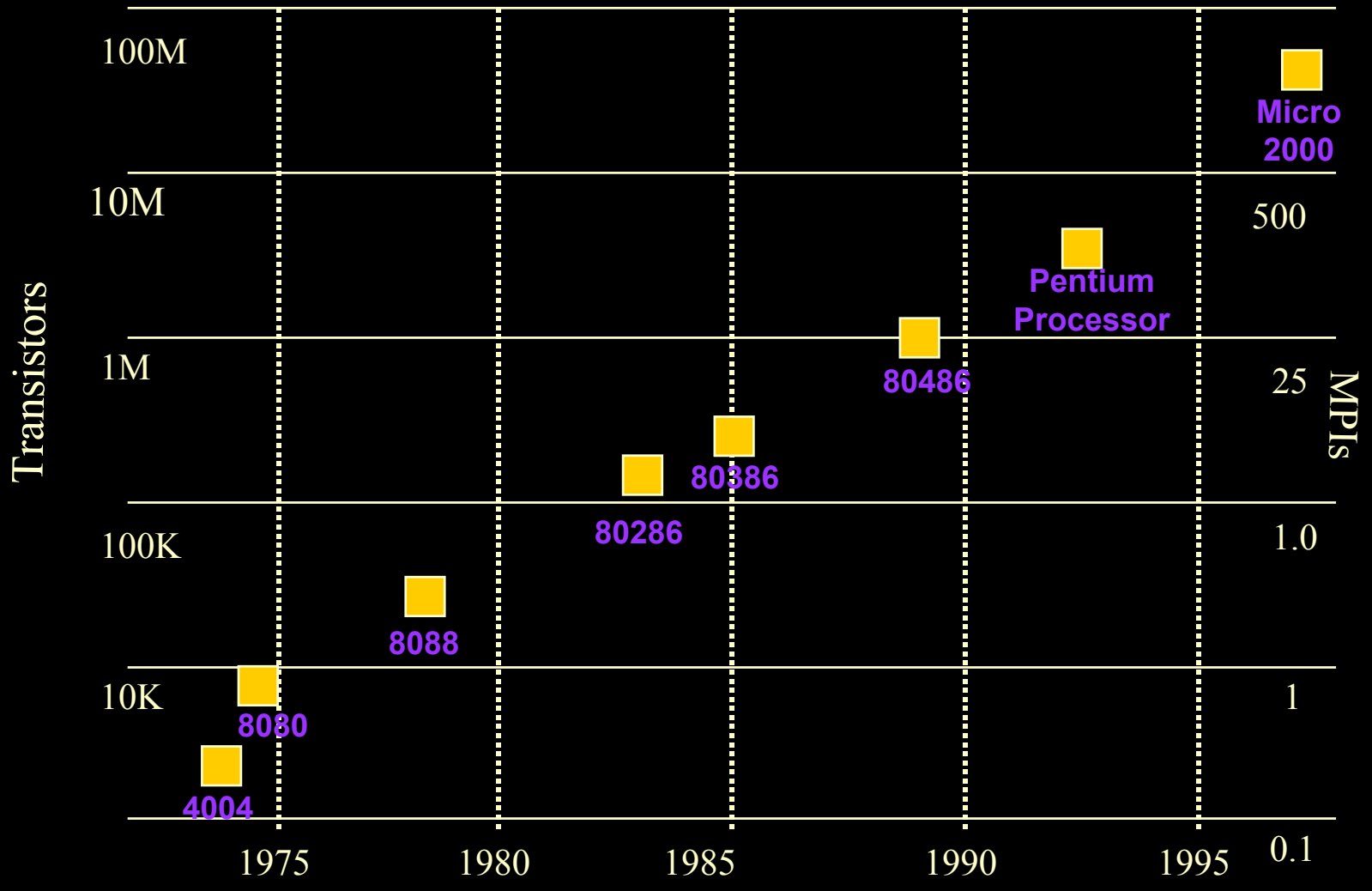


486 chip compare with a human finger



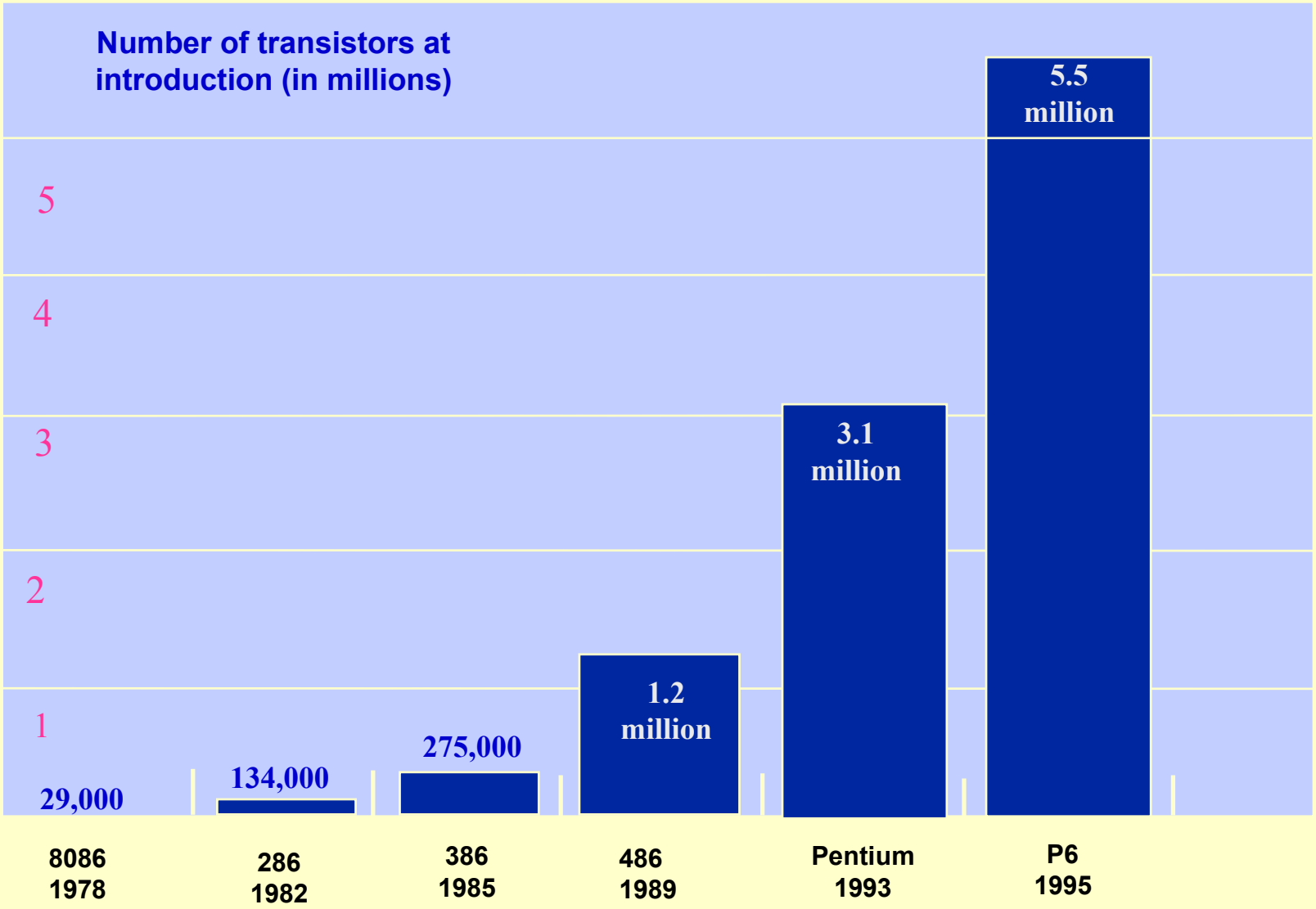
Intel Pentium microprocessor

Intel Microprocessor Evolution



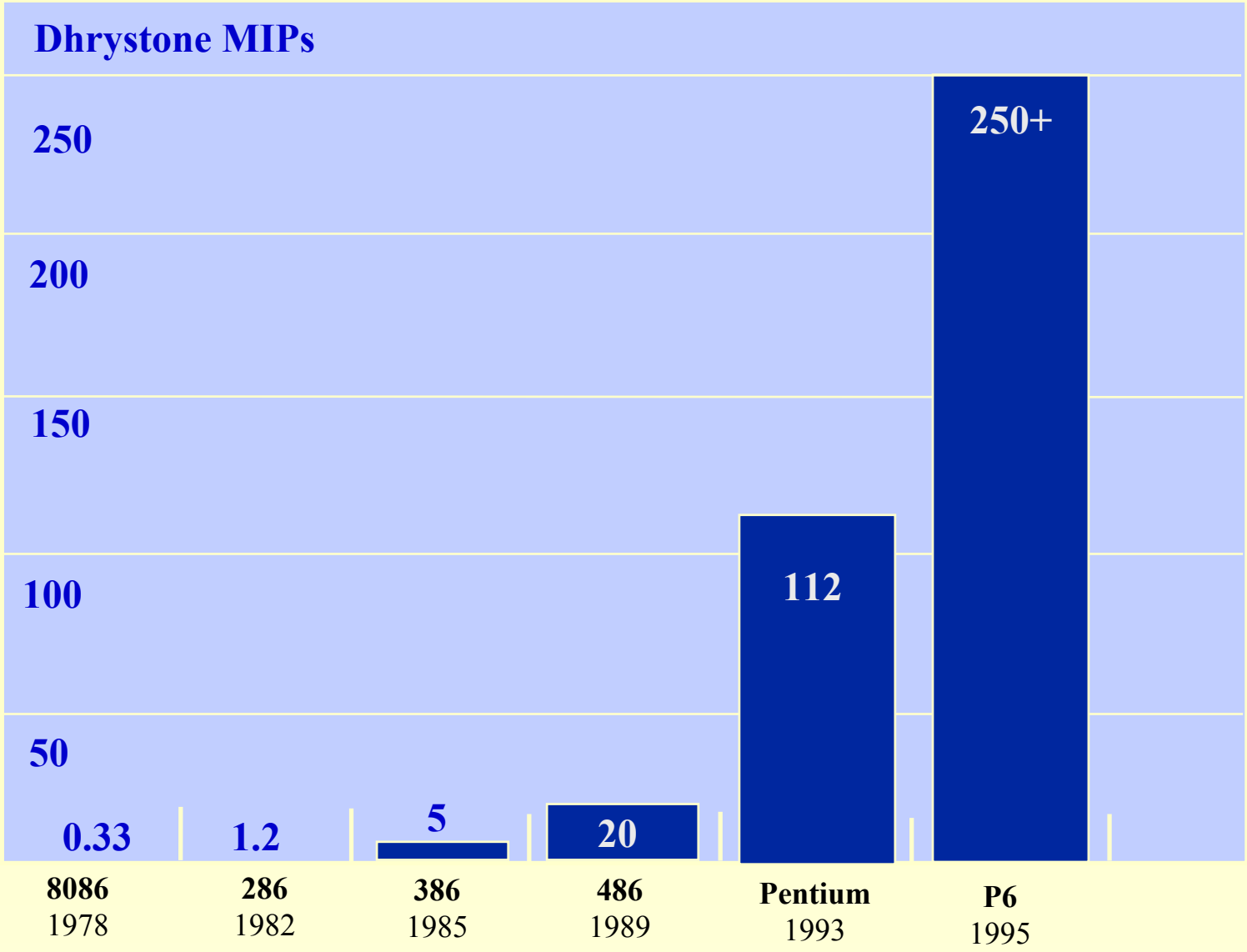
Intel microprocessors have doubled in transistor count approximately every eighteen months, in accordance with Moore's Law

More Complex Designs

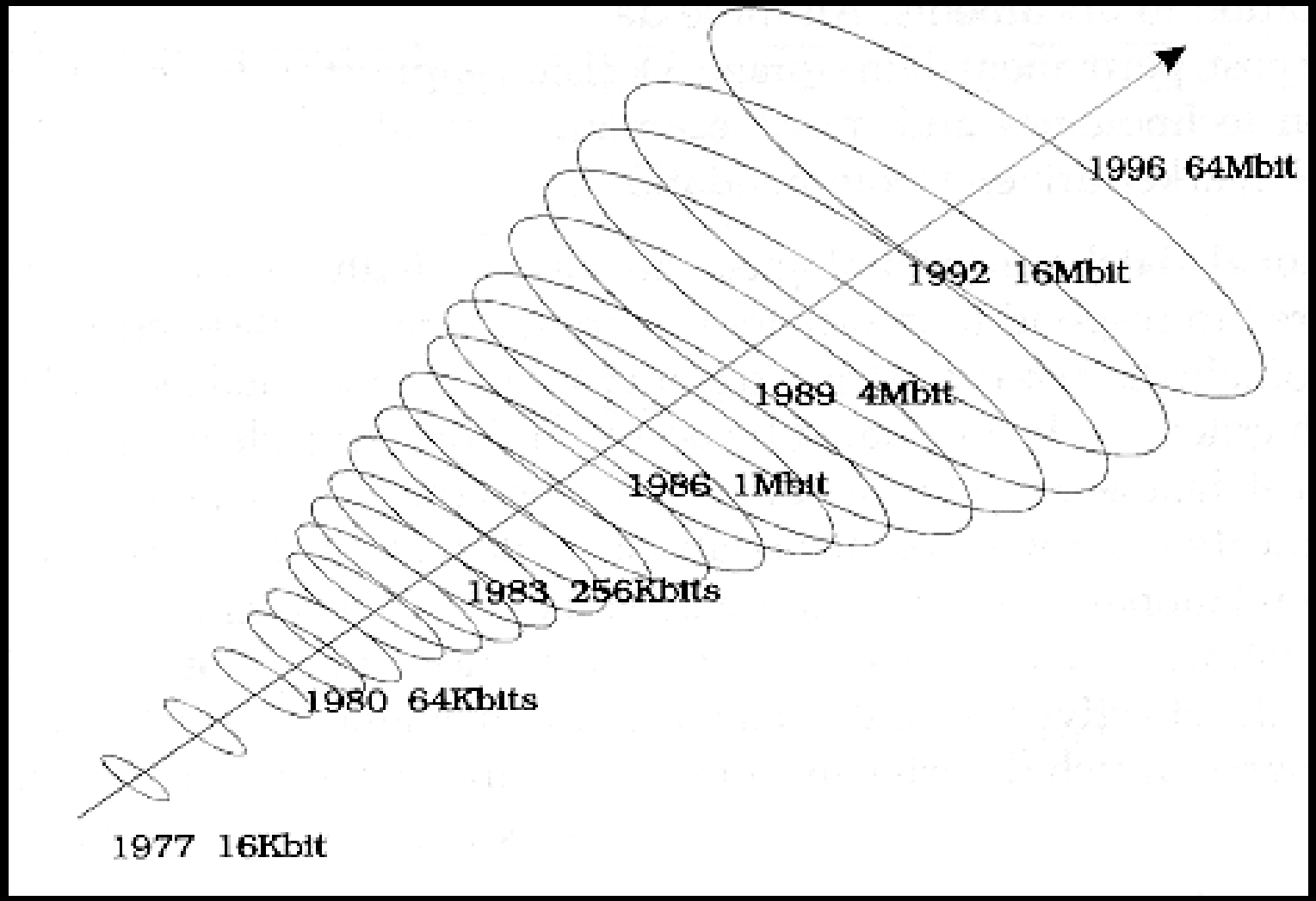


Since the 8086's debut in 1978, the number of transistor on Intel's x86 microprocessors has increased by a factor of about 190. This reflects the greater complexity of Intel's designs

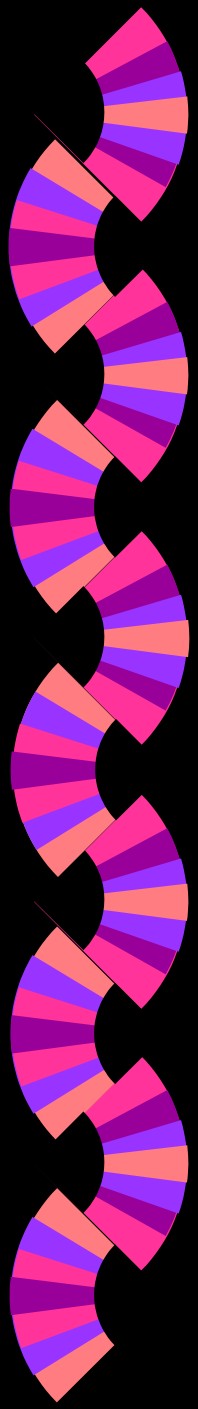
Increased Performance



Since 1978, Intel's x86 processor have steadily increased in performance. Although Dhrystone MIPs are no longer considered a good measure of CPU performance, they are the only benchmarks that span all six x86 generations

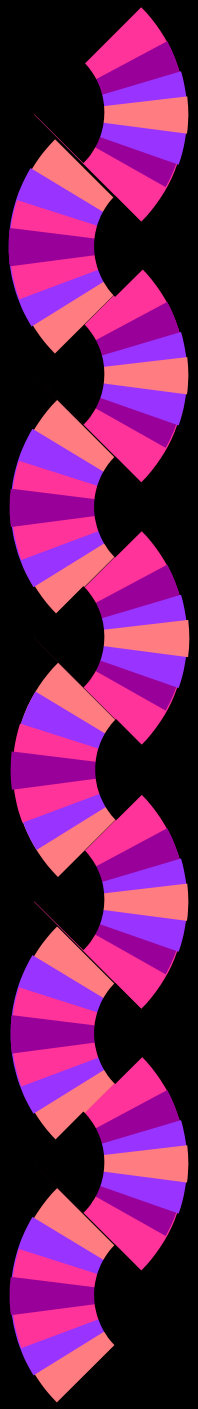


Seven generation of memory chip (D-RAM)



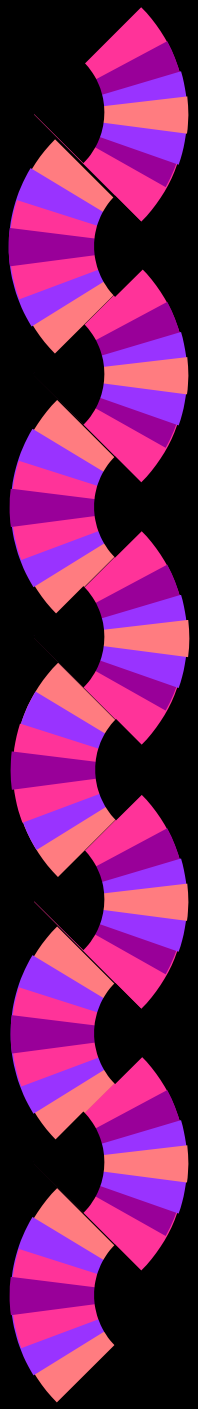
Evolution of Computer Usage

- Scientific computation
- Business computation
- Information explosion
- Office automation intiation
- Knowledge management



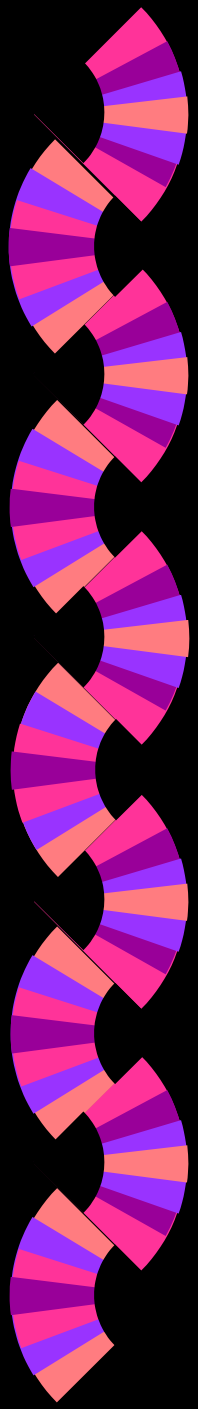
Responsibility of the CC

- Provide computing power
- Provide instructions, guidance, and help
- Develop quality applications
- Maintain quality services
- Provide efficient networks



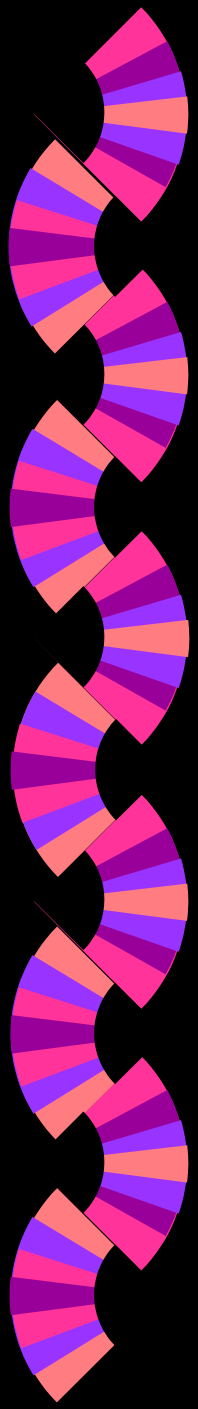
Changing Nature of Hardware

- Mainframes are downsized
- Personal computers become more powerful
- Mobile computing is common
- PDA and palmtop are widespread
- World Wide Web is computertainment



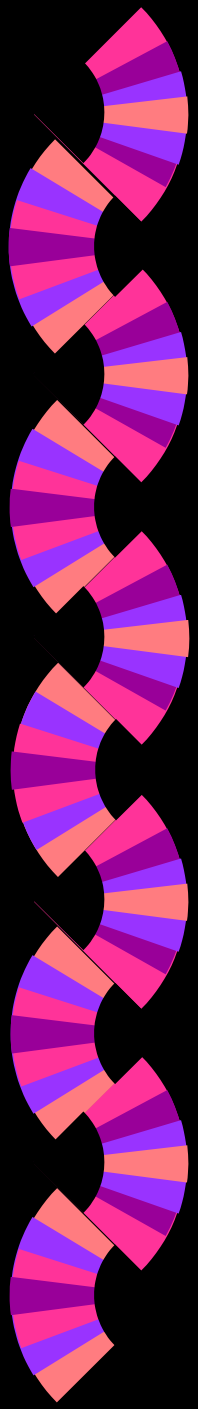
Changing Nature of Software

- Widespread of tailor made package
- More reliable through standardization
- Object oriented paradigm
- Natural language interface
- Voice recognition



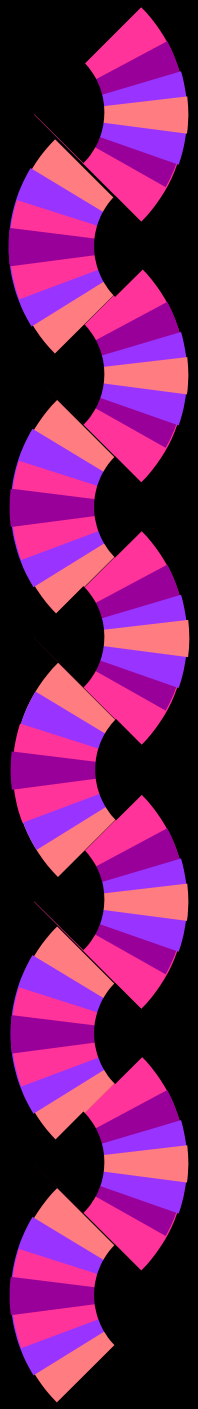
Changing Nature of Connection

- Adoption of Client Server System
- Islands of automation become global network
- Proliferation of Internet connections
- Development of intranet and extranet
- Development of Web TV



Changing Nature of Management

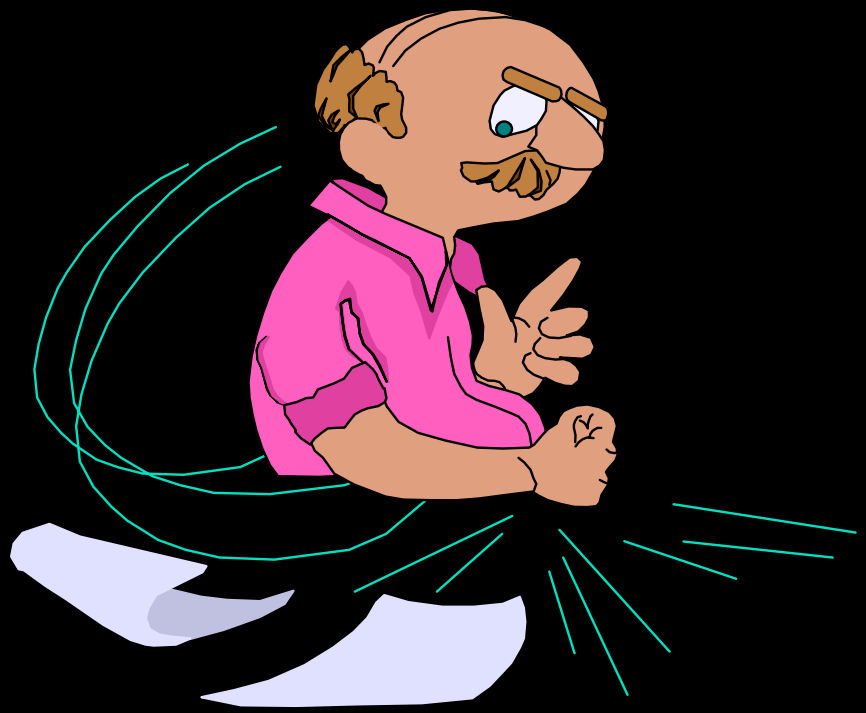
- Users have become more IT knowledgeable
- Insourcing becomes outsourcing
- IT strategy merges with business strategy
- Value of investment is seriously considered
- Emphasis on standardized integration

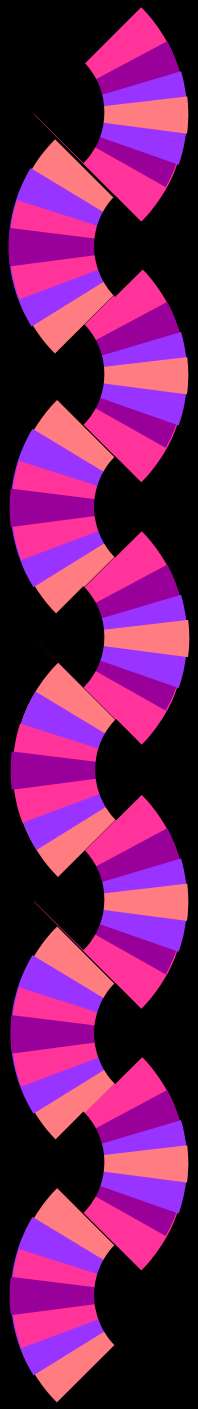


Changing Nature of Organizations

- Shorter line of management control
- More information flow between staff
- More authorization of decision makings
- More knowledge workers
- More employee and customer satisfaction

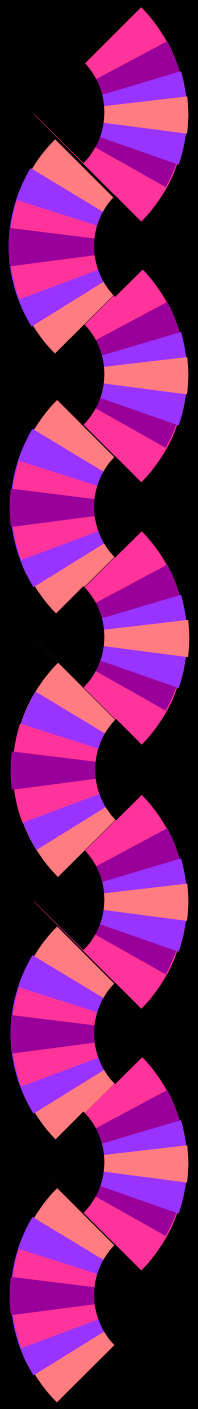
INFORMATION SUPPORT SYSTEM





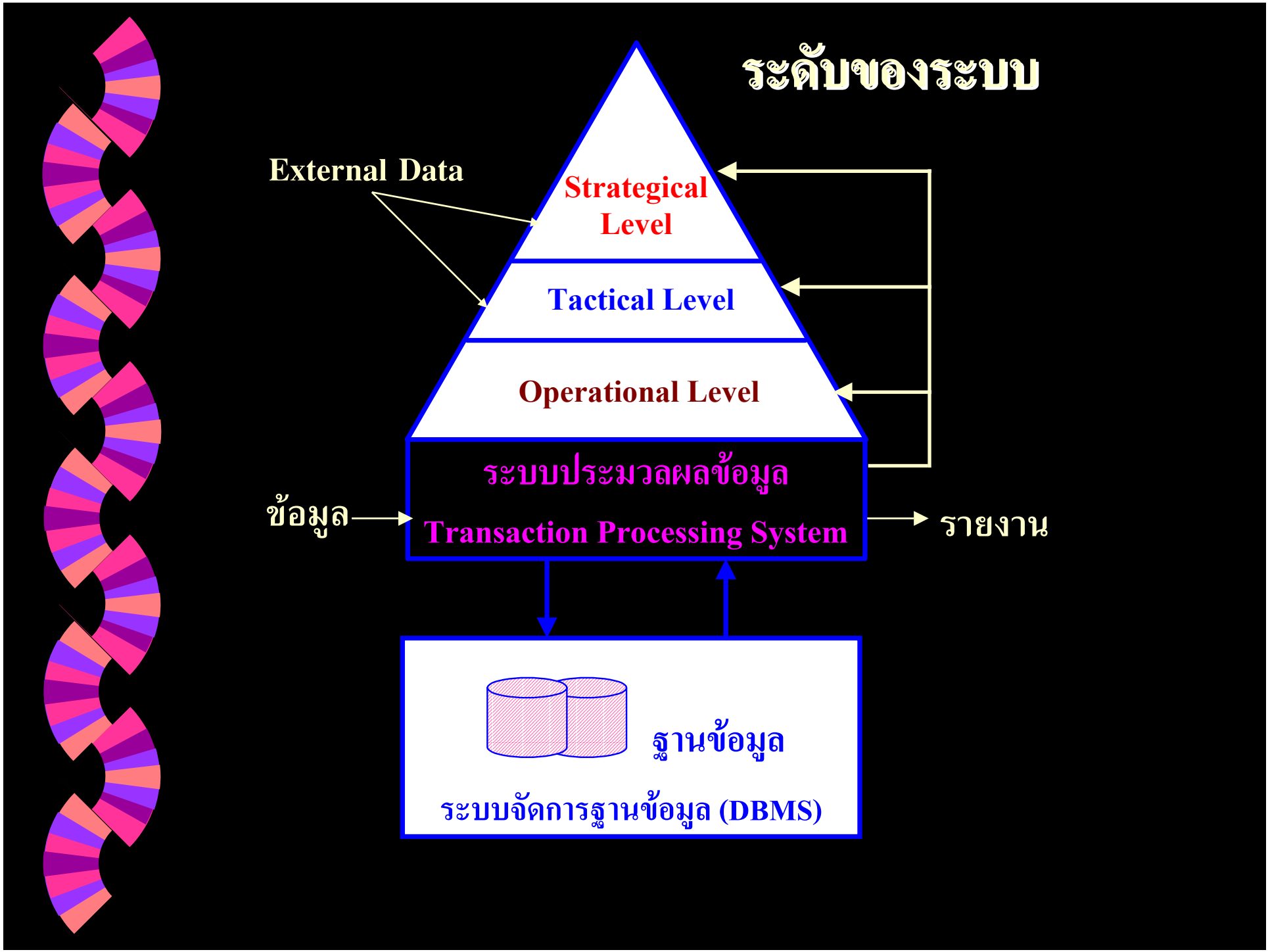
What is information

- Results of processing transactional data and other data by means of statistics, comparison, forecast, grouping, etc.
- Information is usually produced by information systems which are in a variety of forms and patterns



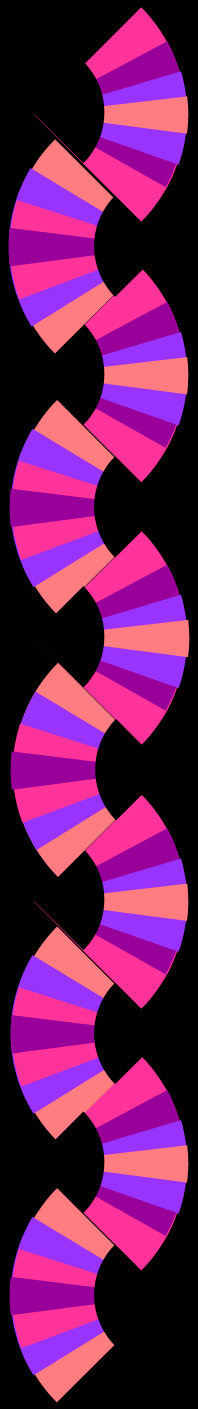
INFORMATION SYSTEMS

- An integration of computer hardware, software, network, human, and data to process and provide information
- There are many types of IS
- Each has its own functions and objectives
- Good IS must be user friendly


ระดับของระบบ
External Data
Strategical Level
Tactical Level
Operational Level
ระบบประมวลผลข้อมูล
Transaction Processing System
ข้อมูล
รายงาน
ฐานข้อมูล
ระบบจัดการฐานข้อมูล (DBMS)

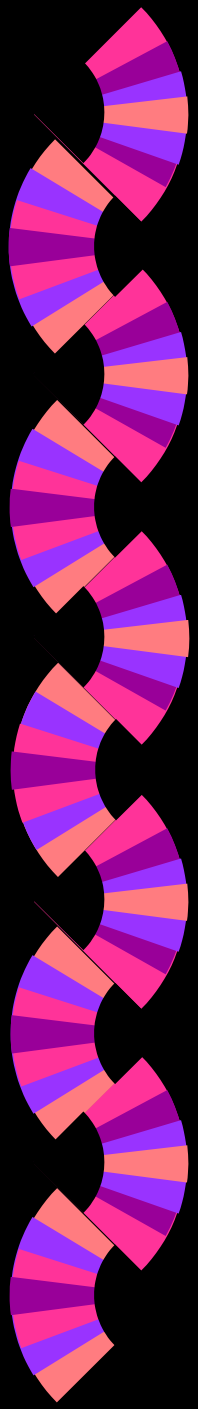
Transaction Processing System

- Most basic systems to collect all transactions and produce related documents
- Examples: Cashier counters in 7-11, UBC bill payments by subscribers
- TPS create databases for use in other IS and must be wisely designed



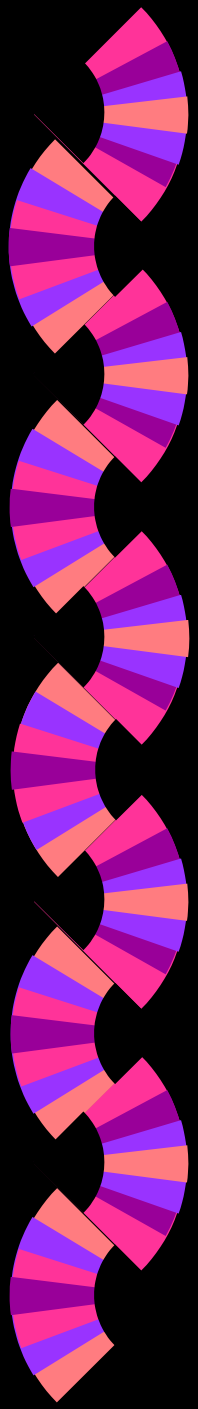
Management Information System

- MIS uses data in DB to produce information reports for supervisors and managers
- MIS concept has been developed long time ago but cannot be developed without TPS
- Mngrs must be involved in suggesting what information is necessary for decision making



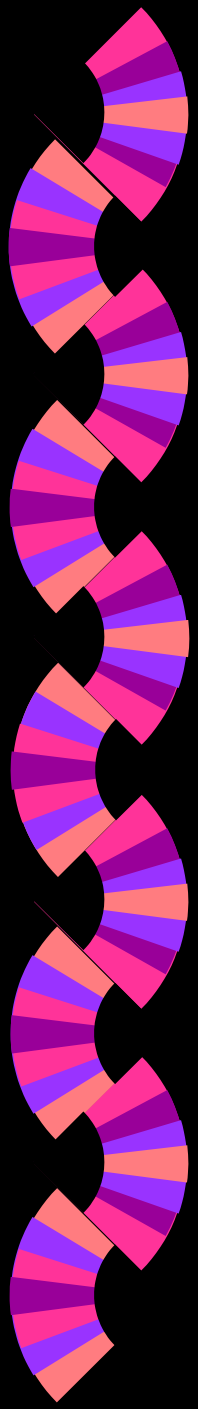
Executive Information System

- EIS provides capability to obtain high level internal and external information with some explanations from analysis teams
- Executives have terminals to read information and search for some doubtful data in the database



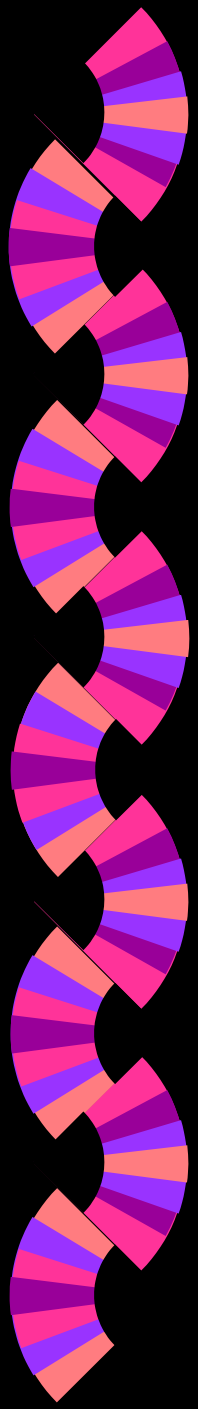
DECISION SUPPORT SYSTEM

- DSS helps users to predict and compare results of the decision making
- Prediction is through the use of models from Operations Research, Econometric, etc
- DSS does not make decision for mngrs



Expert System

- ES capture experiences and knowledge from human experts and put them in the way that other less experienced persons can use
- ES is useful in diagnosis problems, planning and scheduling
- Example is ES in diagnose plant diseases



Office Information System

- OIS is developed to help executives, mngrs, and staff obtain the benefit of IT and IS
- OIS provides ability to send and receive messages, data, information in the corporate
- OIS helps to achieve better communication

Enterprise Resource Planning

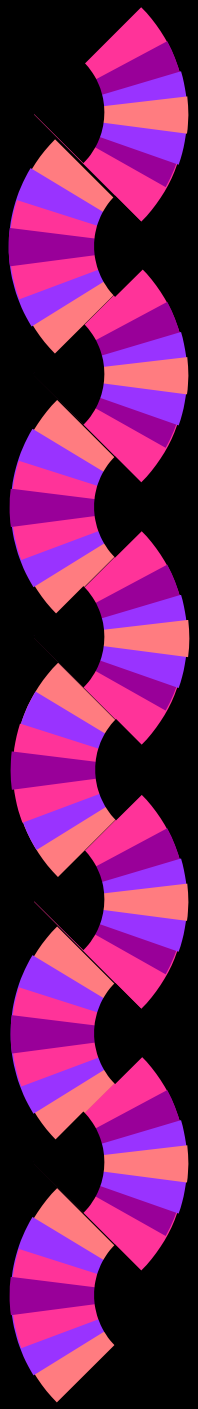
- An integrated information system covering activities from transaction to decision making and links to partners and customers
- Very attractive but risky because the companies that succeed in this are limited

Customer Relationship Management

- CRM comes very strong at present
- It is a system that keeps track of customer activities, complaints and contacts both through the salespersons and Internet
- CRM can help make better service to customers which result in satisfaction

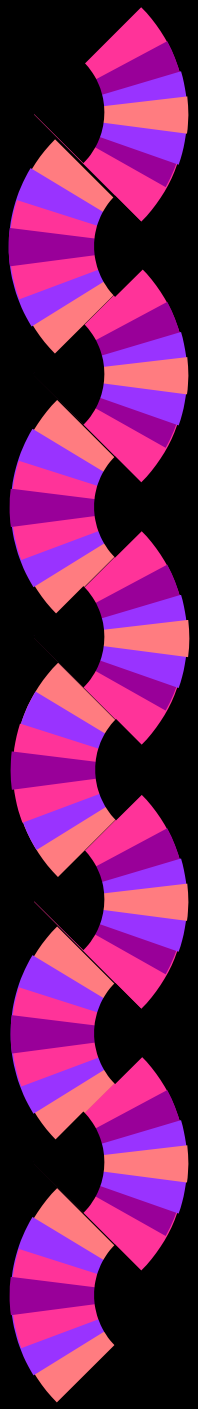
Mobile Information System

- New kind of system which enable mngrs and staff to work while on the trip
- Tools: Lap top or Notebook PC, Modem card for connectivity, browser software, Internet membership, and other software
- Most important tool is the Internet



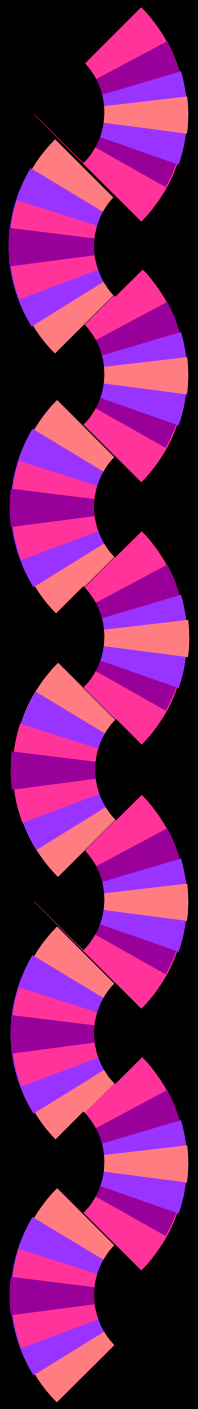
Internet

- Largest computer network
- Provides connectivity to home, offices, schools, universities, companies, industries, corporations, government organizations
- Provides several services: email, telnet, information search through WWW



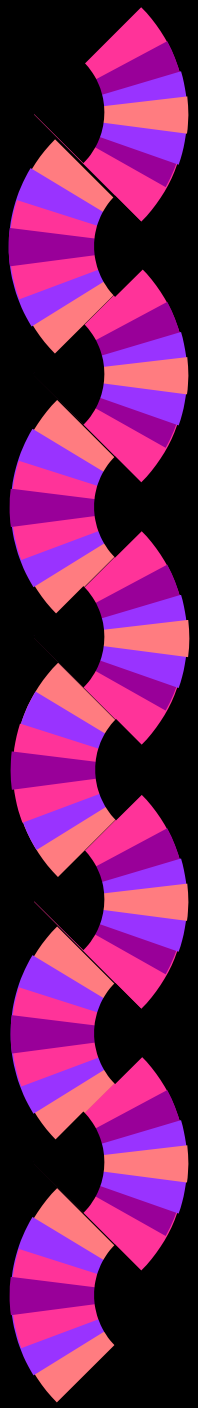
World Wide Web

- Mechanism for public relations, advertisement of products and services, provide information both internally and externally
- A basis for e-commerce
- A tool for competitive intelligence



Requirements to search WWW

- Needed information is there
- Search engine is available
- Know what to search
- Know how to search
- Sense to tell whether information is true



Information in the WWW

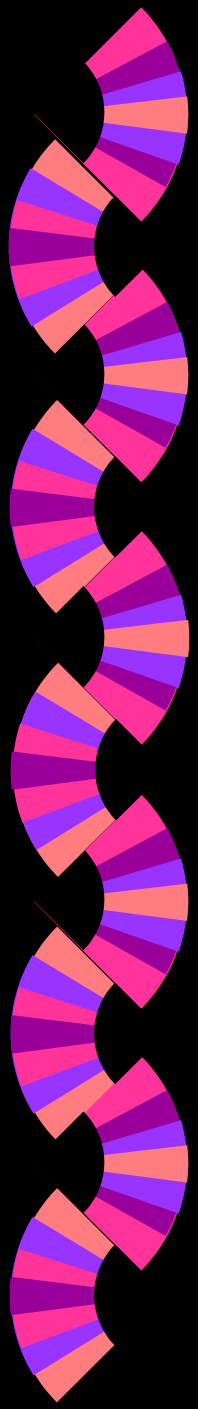
- Market data for products
- Public relations materials
- Staff directories
- Current news
- Government information
- Press releases
- Article reprints
- White papers

Information not accessible in WWW

- Trade secrets
- Commercial databases
- Copyrighted materials (can be accessed by authorized members)
- Fee based learning materials

Important notes for WWW search

- URL (Universal Resource Locator) is an address of the website
- Information can be text, picture, voice, sound, video clips or animation image
- Relevant software is necessary to obtain information put in different formats



HTML

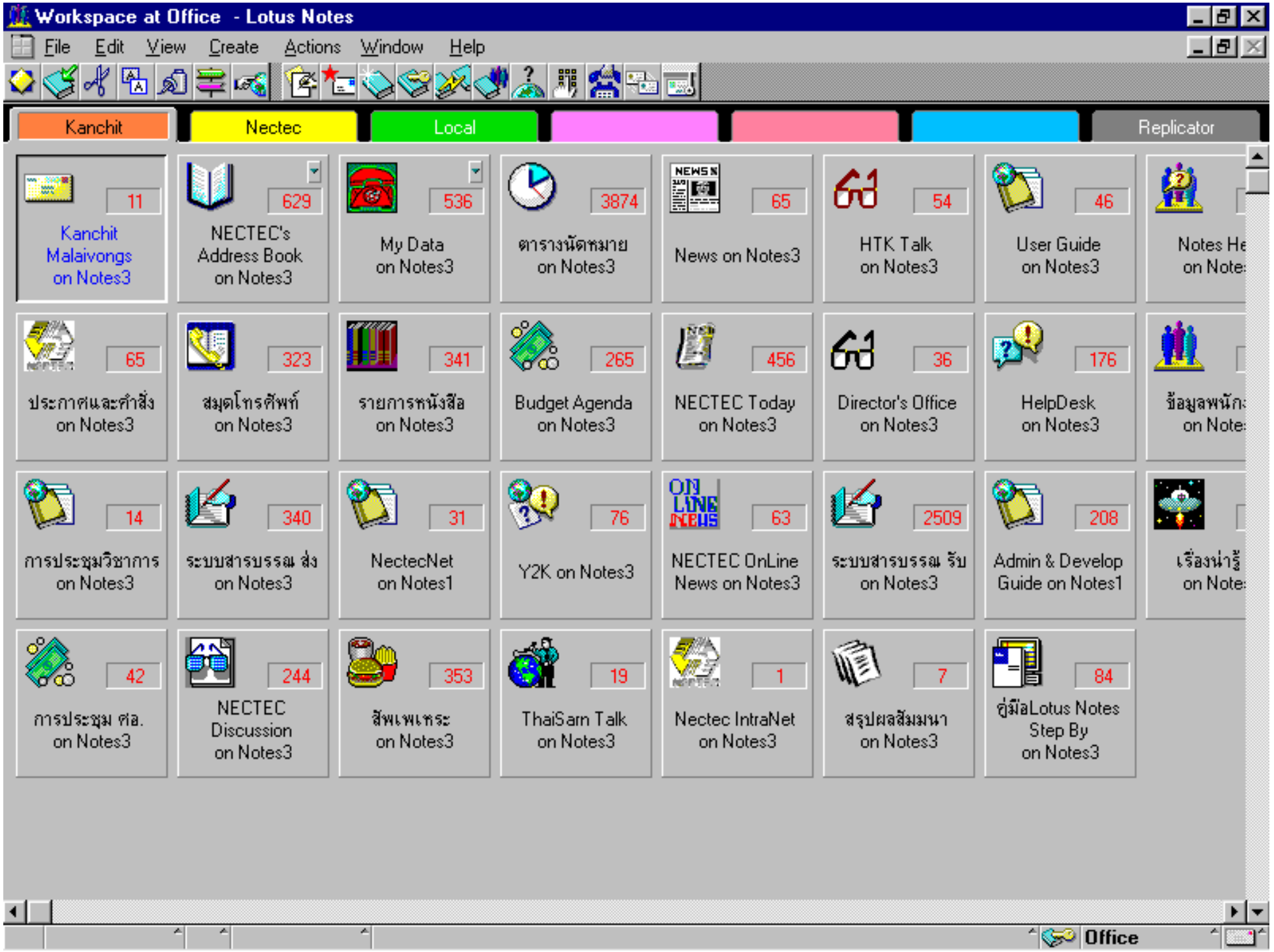
- All information and documents are stored in the form of hypertext
- Hypertext is the information with links to other documents in such a way that it is easy to point and click at the indicated words and the linked document will be displayed

Web vocabulary

- Website is where we store our web pages
- Webpages represent information as a set of short documents which fit in a few screens. Each screen is equivalent to a webpage
- Homepage is the first webpage of any website

How does IS help executives?

- Ability to see what is going on clearly
- Ability to forecast what is going to happen
- Ability to closely control all expenses
- Ability to work anywhere anytime
- Ability to understand competitors, customers
- Ability to make right decisions


Workspace at Office - Lotus Notes
File Edit View Create Actions Window Help
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Local
Replicator
11
Kanchit Malaivongs on Notes3
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NECTEC's Address Book on Notes3
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My Data on Notes3
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ตารางนัดหมาย on Notes3
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HTK Talk on Notes3
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ประกาศและคำสั่ง on Notes3
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สมุดโทรศัพท์ on Notes3
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รายการหนังสือ on Notes3
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Budget Agenda on Notes3
456
NECTEC Today on Notes3
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Director's Office on Notes3
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HelpDesk on Notes3
ข้อมูลพนัก on Note
14
การประชุมวิชาการ on Notes3
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ระบบสารบรรณ ส่ง on Notes3
31
NectecNet on Notes1
76
Y2K on Notes3
63
NECTEC OnLine News on Notes3
2509
ระบบสารบรรณ รับ on Notes3
208
Admin & Develop Guide on Notes1
เรื่องน่ารู้ on Note
42
การประชุม ศอ. on Notes3
244
NECTEC Discussion on Notes3
353
สัพเพเหระ on Notes3
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ThaiSarn Talk on Notes3
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Nectec IntraNet on Notes3
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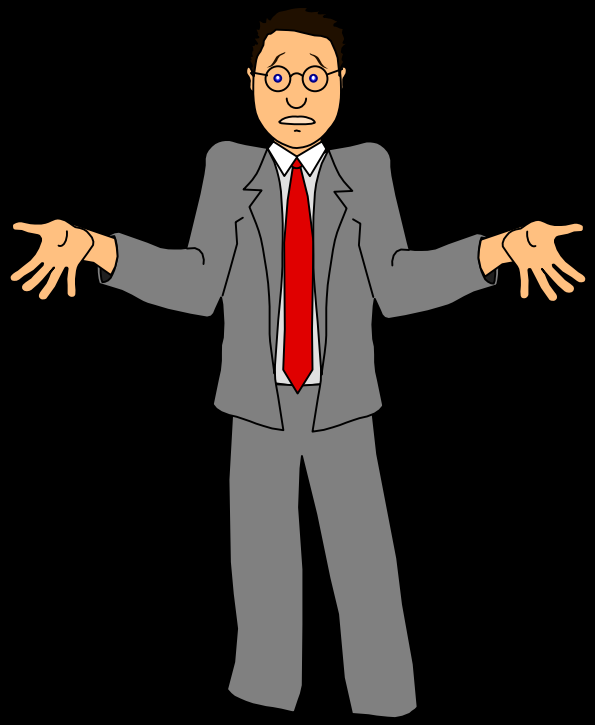
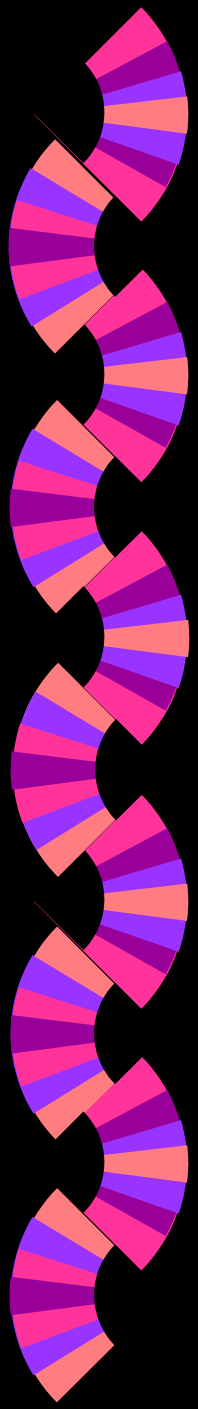
คู่มือLotus Notes Step By on Notes3
Office

MANAGEMENT OF “IT”



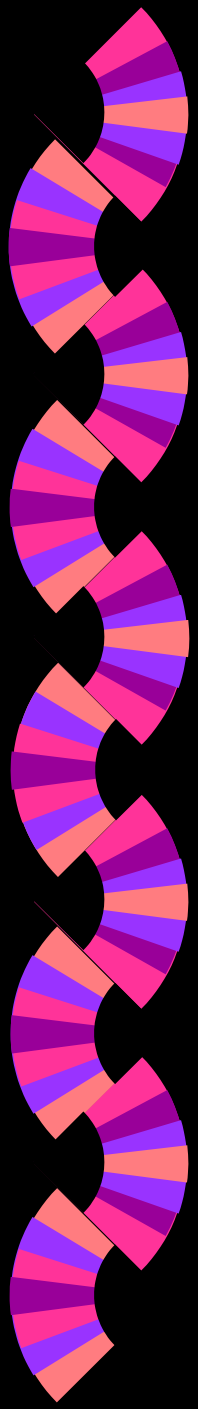
Information Resources

- Hardware and Software
- Network and telecom equipment
- Data and databases
- Website and webpages
- Human resources



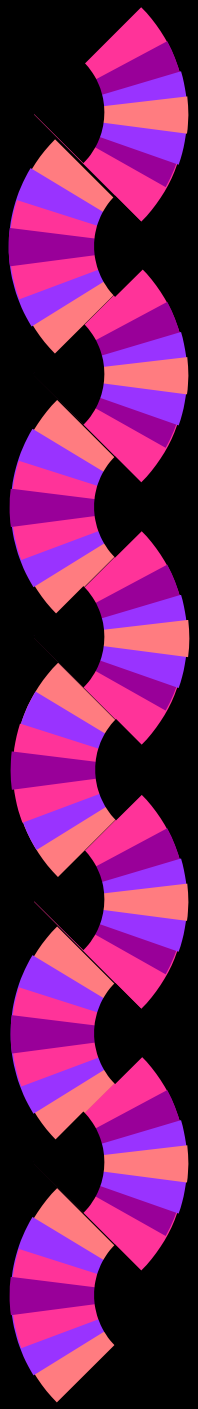
IT Resources must be managed!

- IT management is very vital for survival
- Misinvestment may lead to disaster
- Wrong choice of IT may be costly
- Negligence of security may cause bad image
- Mistreatment of staff can be detrimental



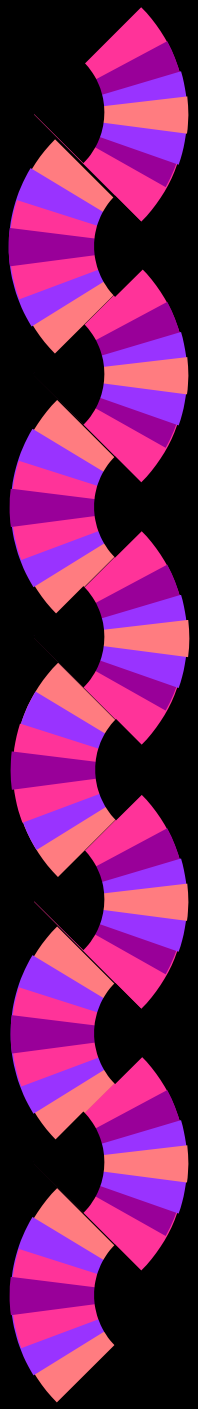
IT Management is changing!

- Traditional computer center or MIS center is changing to assist management to think strategically and work more efficiently
- Network is gaining more vital for corporate
- Customers must get what they want
- Users must get help and assistance rapidly



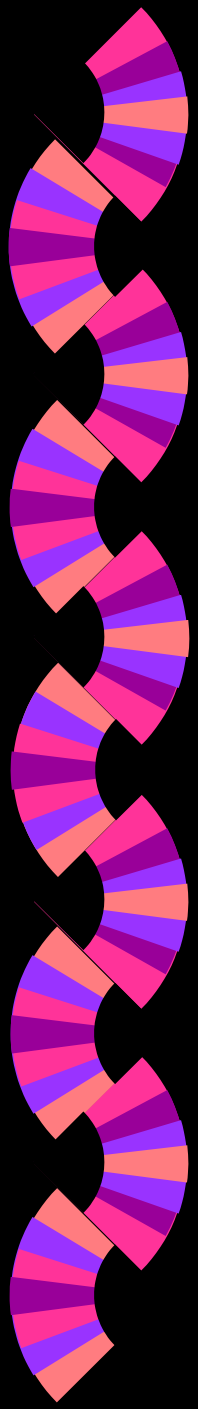
IT Management in 2000

- Change from authority to facilitator
- Implement new strategic directions quickly
- Get involved with strategic decisions
- Work more with users than with technology
- Develop knowledge base for the corporate



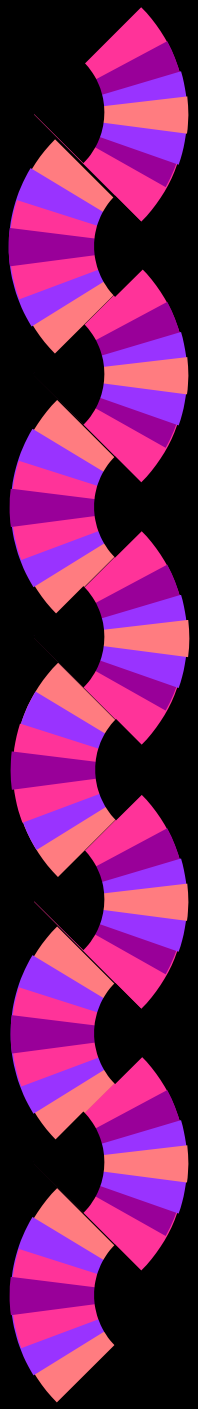
Impact of "IT"

- Impact is on everyone
- All employees must learn how to change and adapt themselves to IT environment
- Users must be receptive to new technology
- Competitors are everywhere
- Bad guys are watching!



Security

- Security is a matter of life and death
- Learn to have a sense of security protection
- Develop a mechanism for protection
- Create a scenario of disaster and develop a disaster mitigation plan



Where are the problems?

- Natural and manmade disasters!
- Databases can be lost or destroyed
- Detrimental virus can penetrate networks
- Unhappy staff may destroy data
- Negligence may cause a big loss

Mechanism for Security Protection

- Use of IT protection such as Firewall
- Use of encryption to protect data
- Use of backup to maintain continuity
- Use of password for login
- Develop a team of Computer Audit