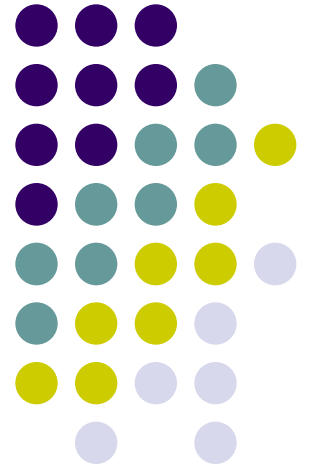
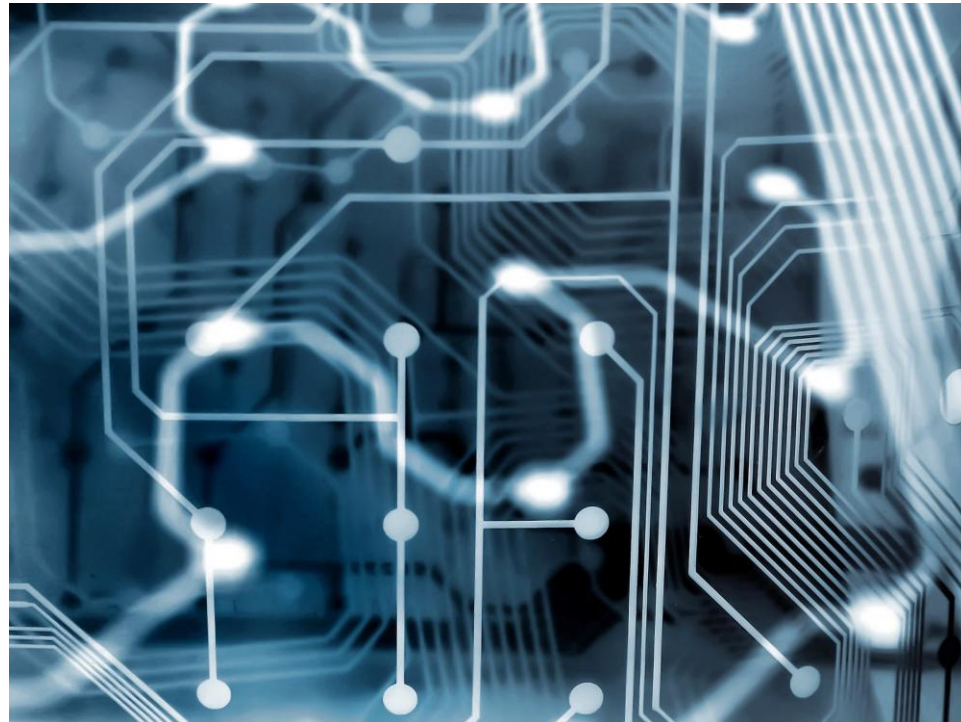


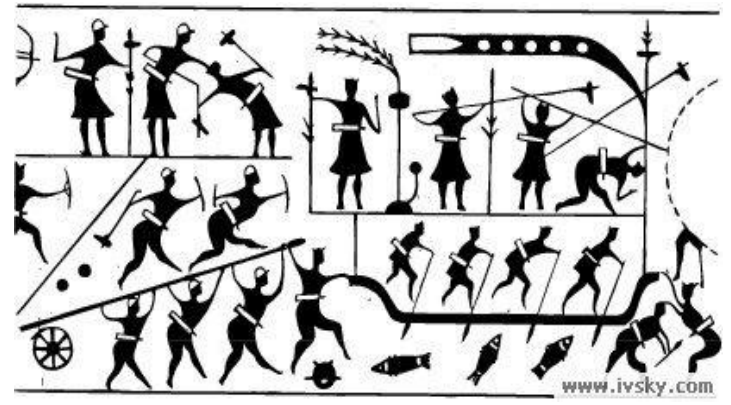


ICT发展历程及其对组织社会的影响





古代的信息传递



击鼓传令



飞鸽传信



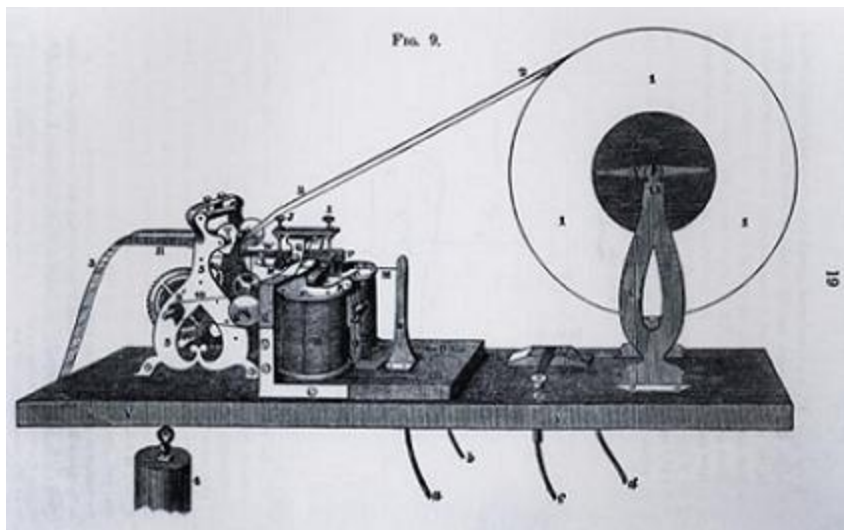
烽火狼烟



驿站传邮



近现代信息传递



电报

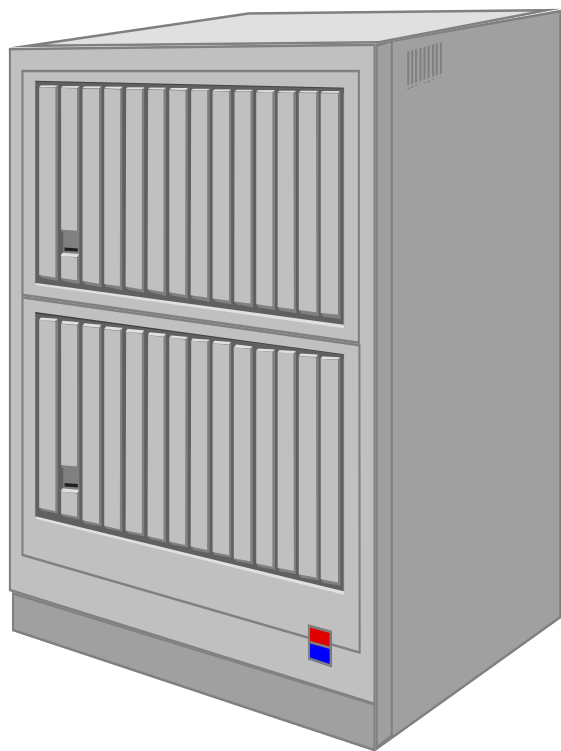


电话



Data Processing Era

数据处理时代



Early Decision Support

早期决策支持

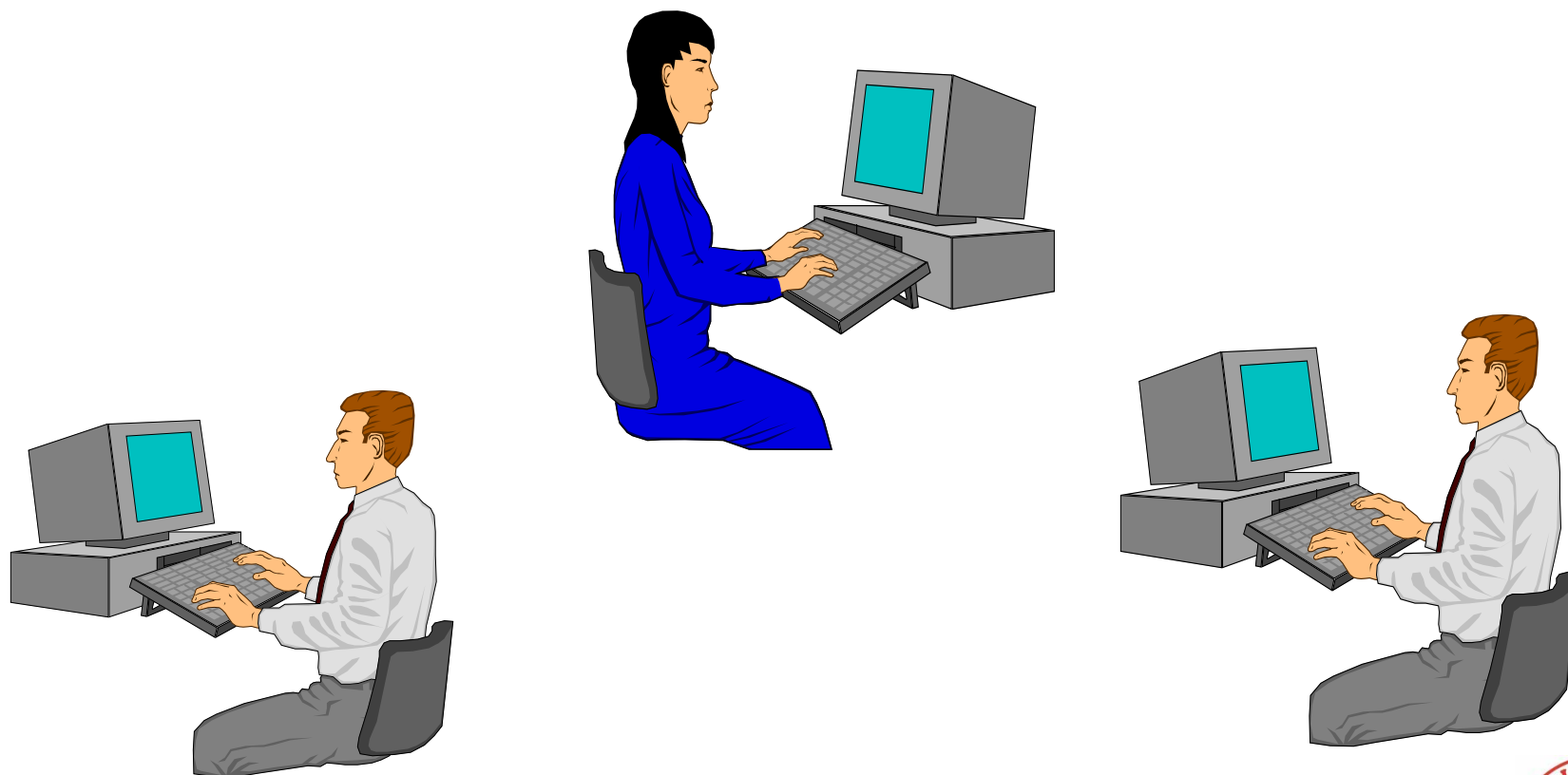


Later Decision Support

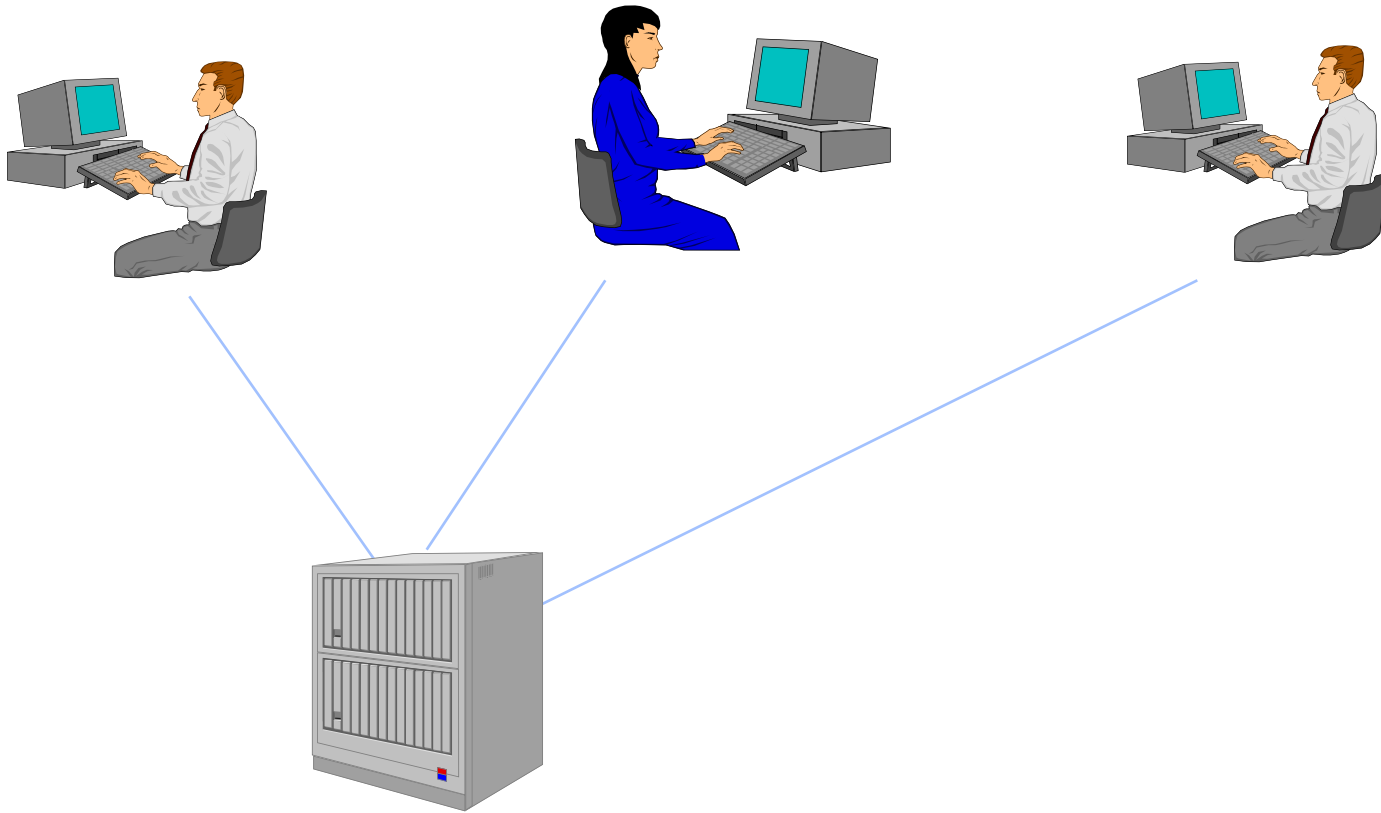
后期决策支持



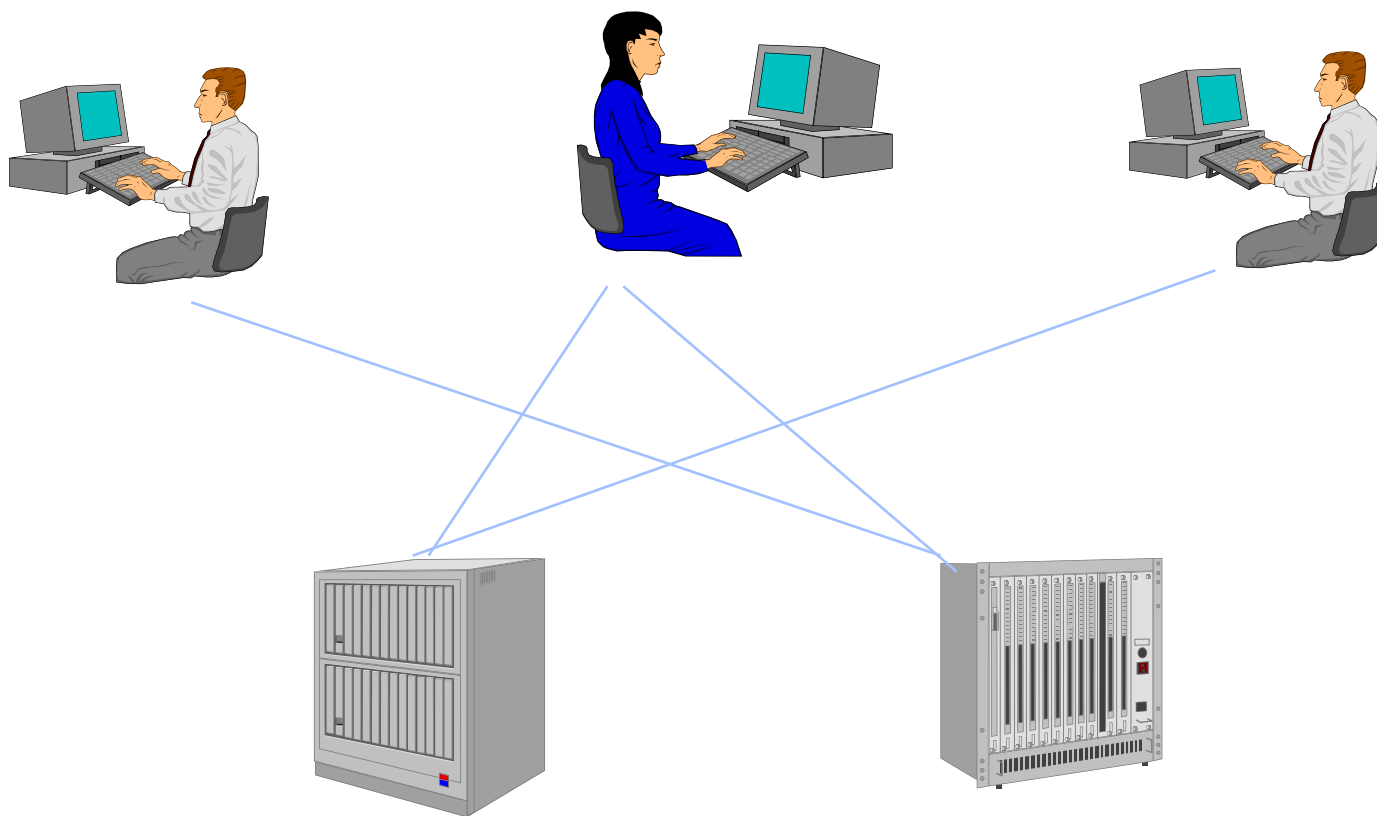
Personal Computing 个人电脑



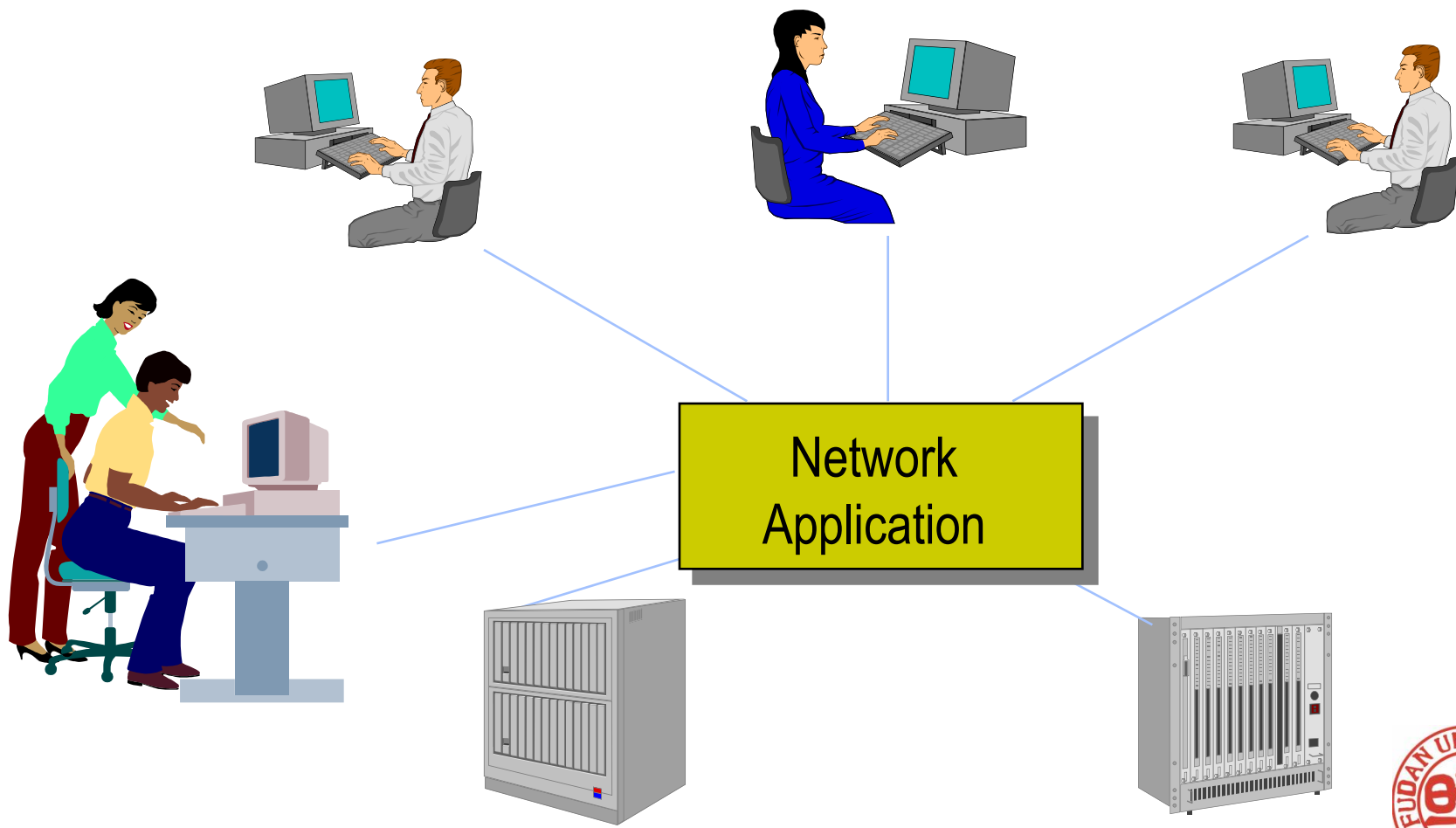
Local Area Networks 局域网



Client-Server 服务器

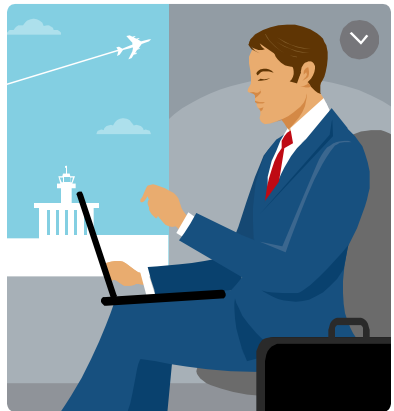


Internet 互联网

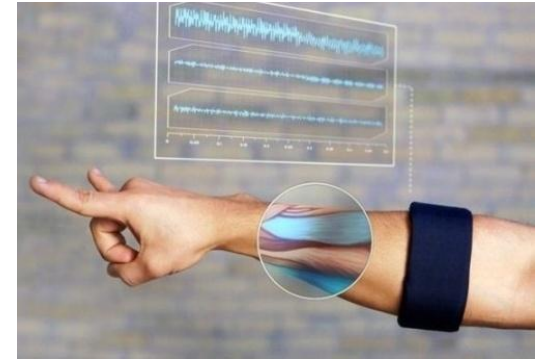


Mobile & wireless

移动与无线



Wearables 可穿戴设备



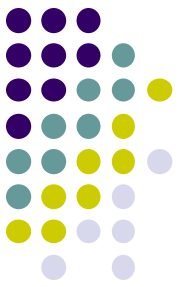


Web 1.0

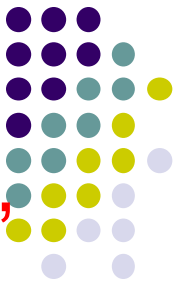
网站
门户
采编人员制作
创建者管理内容
阅读式
自上而下
依附
组织信息

Web 2.0

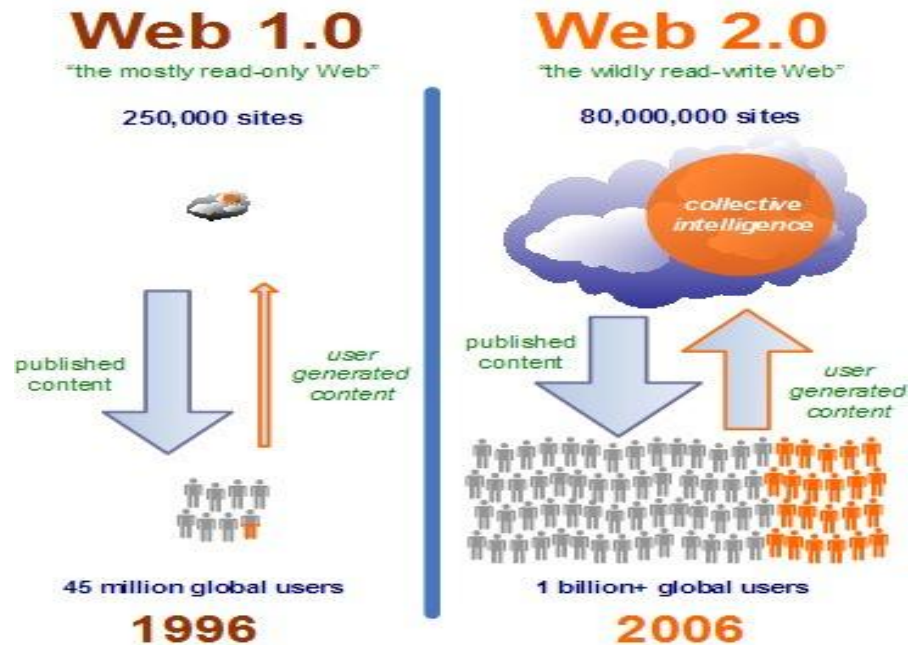
社会化媒体
搜索引擎
用户自创
维基
可写可读 (Prosumer)
平行点对点
聚合 (Syndication)
组织人



Web 2.0

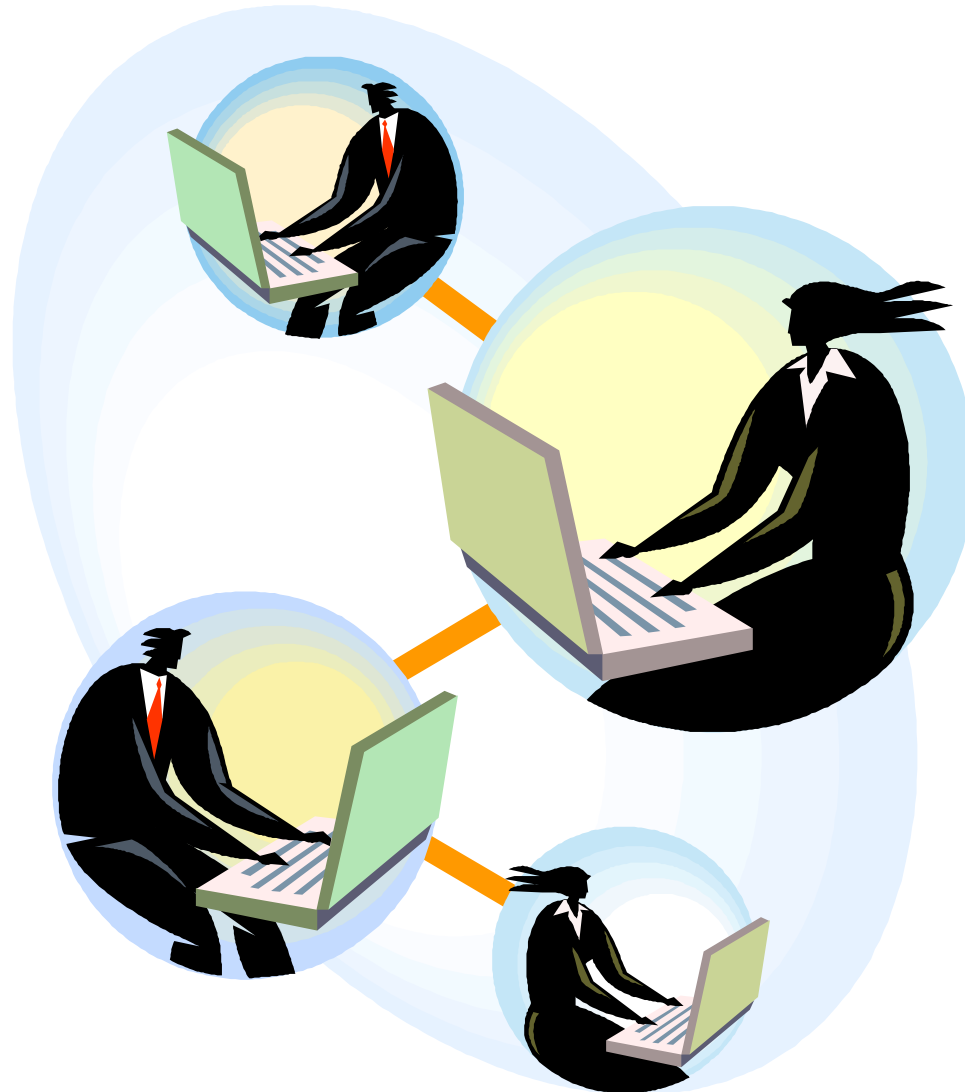


- Web 2.0使用户可以作为自创信息的“产消者”进行互动协同，而不是作为消费者被动地阅读别人为他们创建的信息
- A Web 2.0 site allows users to interact and collaborate with each other as creators (**prosumers**) of user-generated content, in contrast to websites where users (**consumers**) are limited to the passive viewing of content that was created for them.



Social Media

社会化媒体



Social Media 社会化媒体



- Social media are media for social interaction
- "a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content."^[1]
- 社会化媒体是实现社会互动的媒体







中国社会化媒体格局图改编自
[Brian Solis and JESS3, 2008](#)





个人头像英俊大气

有宝马、有全球护照（通关文牒）

职业体面

新浪微博认证用户

和国家领导人有合影、和名人有交流

遇见·西游小记



遇见·西游小记

贞观十三年

李世民：御弟，今日是出行吉日。
 通关文牒已经安装在你的手机里了，
 朕还替你安装了一个**遇见**，让你途中所用。
 此去西天，日久年深，山遥路远，
 御弟可善用此物，必有所用。
 唐三藏：谢陛下，待贫僧打开一观.....
呢.....



遇见·西游小记



人参果树被毁之后.....

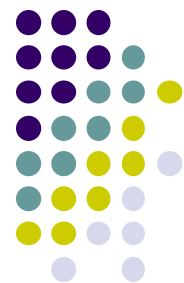
孙悟空：师父走快点吧，
镇元大仙距离我们只有1682.6km了！
唐三藏：你丫的就知道闹祸!!!



白骨精三戏唐三藏，还是大师兄眼光厉害....

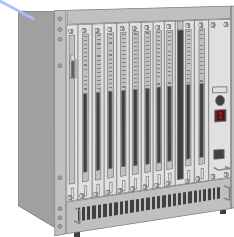
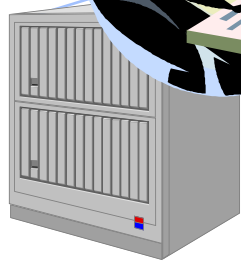
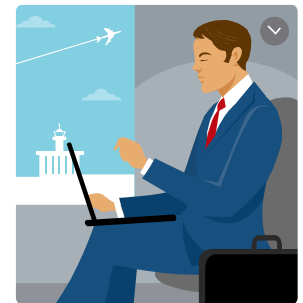
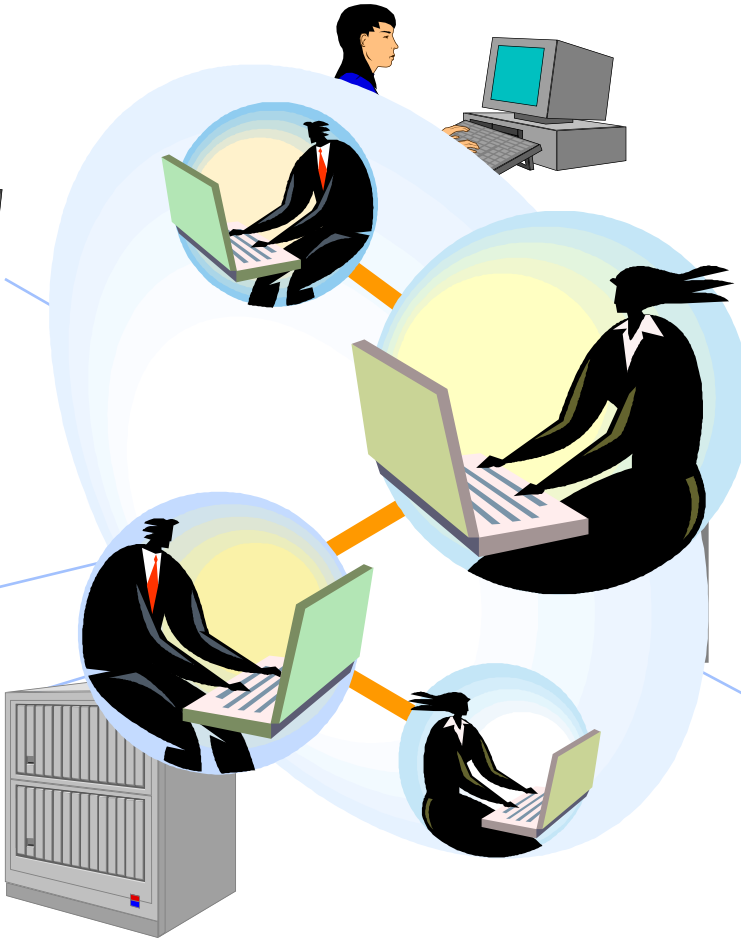
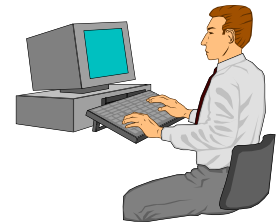
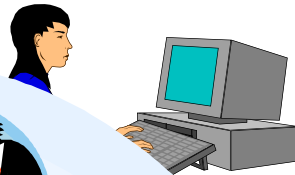
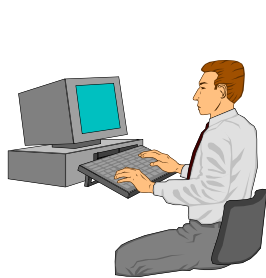


问：猪八戒是如何快速找到七个露天洗浴的蜘蛛精的？
答：答案在下图。



Ubiquitous 泛在

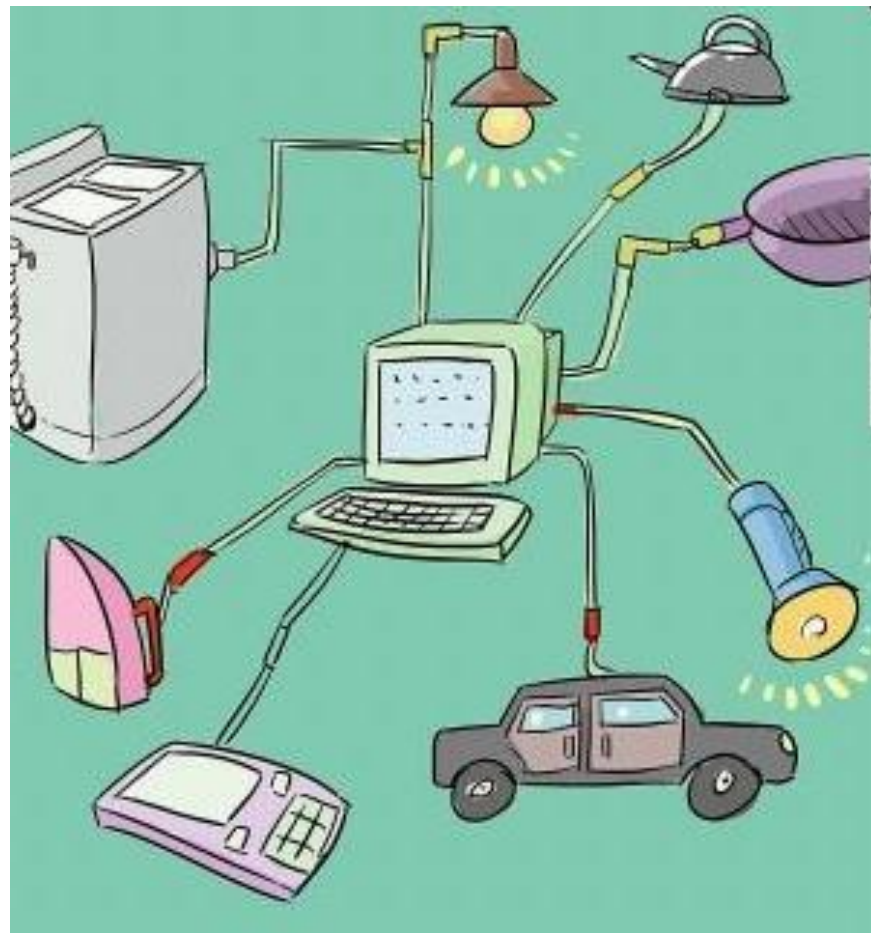
Anyone, Anywhere, Anytime



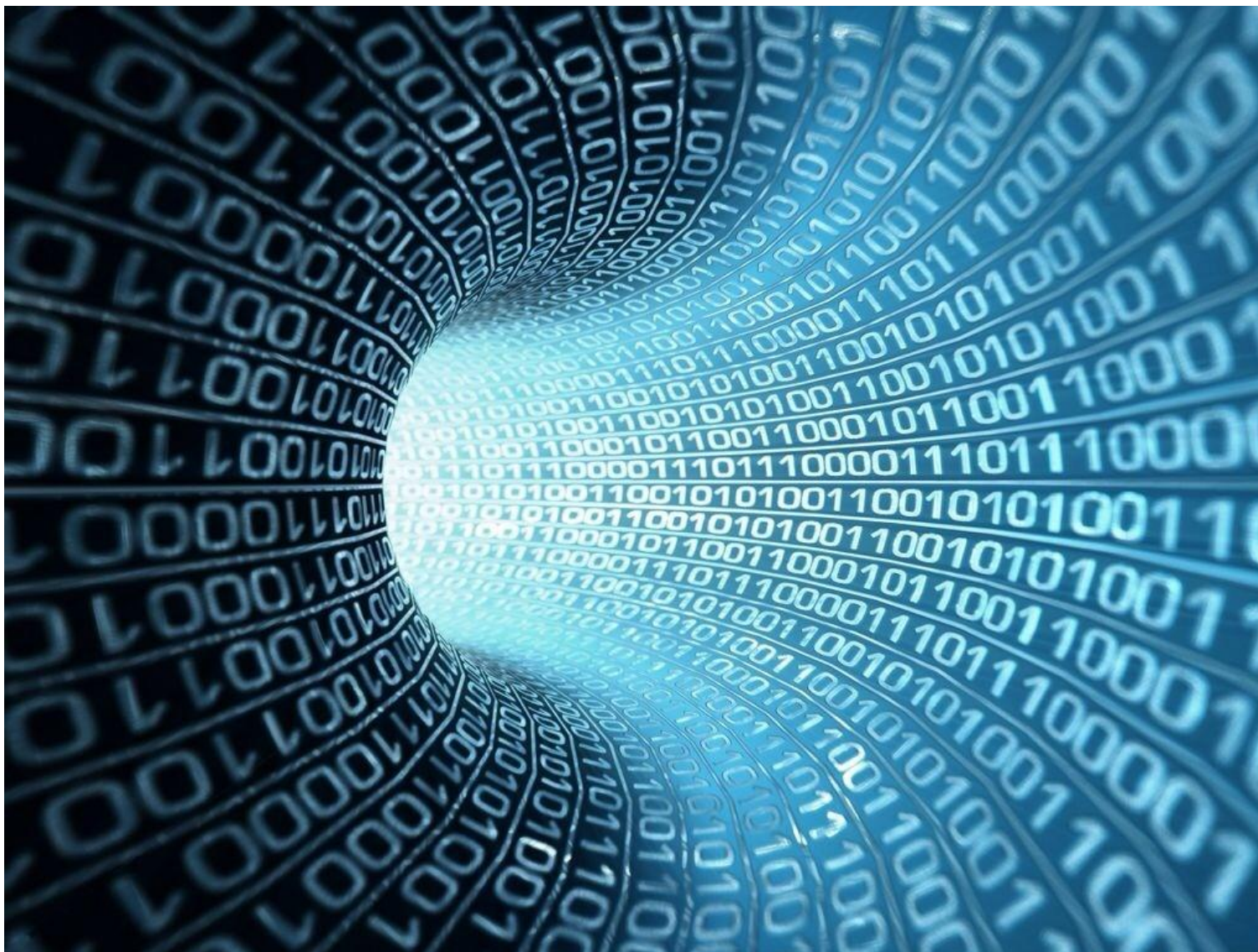
Cloud Computing 云计算



The Internet of things 物联网



大数据 Big Data





Big Data” refers to the collection and storage of mass quantities of data that can then be sliced, diced and mashed up to find patterns and trends related to everything from business to health care.

大数据是指采集和储存大量数据，对其进行切割、聚合—发现规律和趋势，可应用于从商业到卫生保健等一切领域。



WHAT IS BIG DATA?

VOLUME
Large amounts of data.

VELOCITY
Needs to be analyzed quickly.

VARIETY
Different types of structured and unstructured data.

Key questions enterprises are asking about Big Data:

- How to store and protect big data?
- How to backup and restore big data?
- How to organize and catalog the data that you have backed up?
- How to keep costs low while ensuring that all the critical data is available when you need it?

WHAT ARE THE VOLUMES OF DATA THAT WE ARE SEEING TODAY?



30 billion pieces of content were added to Facebook this past month by 600 million plus users.



Zynga processes 1 petabyte of content for players every day; a volume of data that is unmatched in the social game industry.



More than 2 billion videos were watched on YouTube... yesterday.



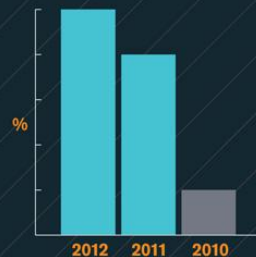
The average teenager sends 4,762 text messages per month.



32 billion searches were performed last month... on Twitter.

Source: Statista

Everyday business and consumer life creates **2.5 quintillion** bytes of data per day.



90% of the data in the world today has been created in the last two years alone.

Source: IDC

WHAT DOES THE FUTURE LOOK LIKE?

Worldwide IP traffic will **quadruple by 2015.**



By 2015, nearly **3 billion** people



will be online, pushing the data created and shared to nearly **8 zettabytes.**

HOW IS THE MARKET FOR BIG DATA SOLUTIONS EVOLVING?

A new IDC study says the market for big technology and services will grow from \$3.2 billion in 2010 to \$16.9 billion in 2015. That's a growth of 40% CAGR.



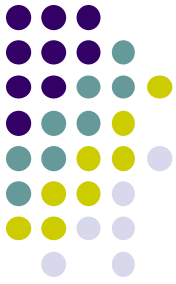
58% of respondents expect their companies to increase spending on server backup solutions and other big data-related initiatives within the next three years.

Source: Economist Business Unit

2/3rds of surveyed businesses in North America said big data will become a concern for them within the next five years.

Source: Economist Business Unit

Asigra.



数量
速度
多样



BIG DATA

Big Data is data that is too large, complex and dynamic for any conventional data tools to capture, store, manage and analyze.

The right use of Big Data allows analysts to spot trends and gives niche insights that help create value and innovation much faster than conventional methods.

The "three V's", i.e the Volume, Variety and Velocity of the data coming in is what creates the challenge.

VOLUME



Amount of Big Data stored across the world (in petabytes)

VARIETY



PEOPLE TO PEOPLE

NETIZENS, VIRTUAL COMMUNITIES, SOCIAL NETWORKS, WEB LOGS...



PEOPLE TO MACHINE

ARCHIVES, MEDICAL DEVICES, DIGITAL TV, E-COMMERCE, SMART CARDS, BANK CARDS, COMPUTERS, MOBILES...



MACHINE TO MACHINE

SENSORS, GPS DEVICES, BAR CODE SCANNERS, SURVEILLANCE CAMERAS, SCIENTIFIC RESEARCH...

VELOCITY



2.9 MILLION

EMAILS SENT EVERY SECOND



20 HOURS

OF VIDEO UPLOADED EVERY MIN



50 MILLION

TWEETS PER DAY

VALUE



57.6% OF ORGANIZATIONS SURVEYED SAY THAT BIG DATA IS A CHALLENGE



72.7% CONSIDER DRIVING OPERATIONAL EFFICIENCIES TO BE THE BIGGEST BENEFIT OF A BIG DATA STRATEGY



50% SAY THAT BIG DATA HELPS IN BETTER MEETING CONSUMER DEMAND AND FACILITATING GROWTH



数据驱动的决策 (Data-driven Decision Making)



- “实施 ‘数据驱动的决策方法’, 不仅要使用新的技术, 还要改变目前的决策过程.....政府将更有效率, 更加开放, 更加负责, 引导政府前进的将是 ‘基于实证的事实’, 而不是 ‘意识形态’, 也不是利益集团在政府决策过程中施加的影响。”

---- “Governing by Numbers: The Promise of Data-driven Policymaking in the Information Age”, Daniel C. Esty

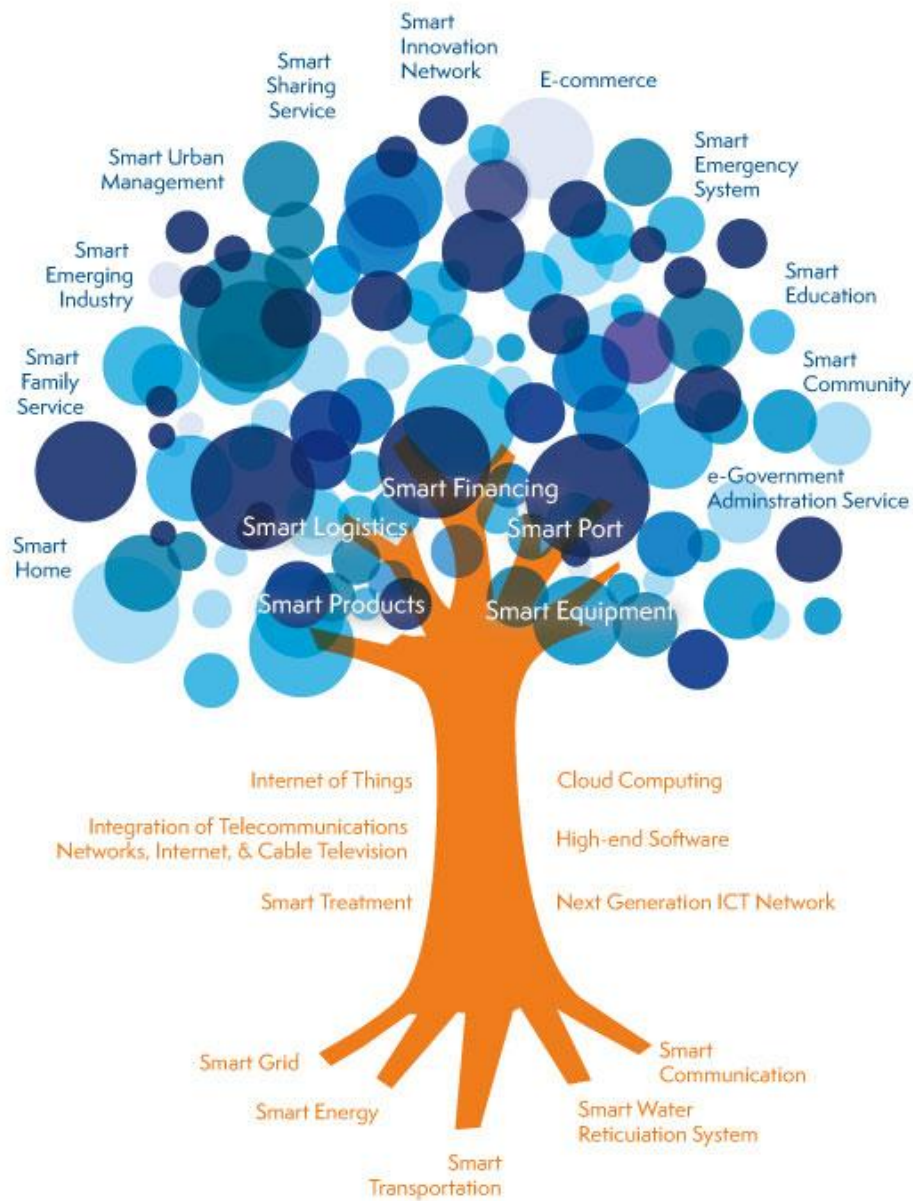


有限理性 (Bounded Rationality)



人的知识有限，决策者既不可能掌握全部完全的信息，人的**计算能力和信息处理**有限，决策者无法作出完全理性的决策，只能尽力在他的能力范围内实现有限理性 (Herbert Simon)





Smart City: a System of Systems of Systems...



趋势 Trends



- 单机--联网
- 单体集中--多机分散--多机协同
- 有线固定--无线移动
- 专门计算机—计算无处不在
- 信息单点发布--信息多点发布
- 操作应用--深度分析--决策支持
- 计算机与计算机的连接、计算机与人的连接
信息人与人的网络与空间



趋势 Trends

- 计算机与计算机的连接
- 信息与信息的连接
- 人与人的连接
- 人与物的连接
- 物与物的连接
- 人-物-计算机-信息
- 信息不对称--信息对称



Q & A 提问



智慧地球 Smart Planet

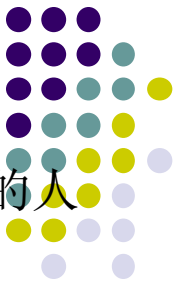
智慧城市 Smart City



侧重点	学者/机构	定义要点
侧重技术	IBM (2009)	更透彻的感知 (Instrument) 更广泛的互联互通 (Interconnected) 更深入的智能化 (Intelligent)
	吴胜武 (2010)	通过新一代的信息技术来改变政府、社区或公司和人们相互交互的方式
	王辉 (2010)	充分运用信息技术手段，全面感测、分析、整合城市运行核心系统的各项关键信息
侧重以人为本	Giffinger.G (2007)	智慧经济、智慧公民、智慧治理、智慧移动、智慧环境、智慧生活
	Caragliu.A (2009)	网络设施、商业导向发展、公共服务、高新技术与创造性产业、学习型社区、可持续环境
	Forrester 研究机构 (2010)	通过技术，实现城市行政、教育、医疗、公共安全、住房、交通、公共事业的智能与高效



Figure 2. List of characteristics and factors



智慧的人

智慧的移动

智慧的生活

智慧的经济	SMART ECONOMY (Competitiveness)	SMART PEOPLE (Social and Human Capital)
	<ul style="list-style-type: none"> ▪ Innovative spirit ▪ Entrepreneurship ▪ Economic image & trademarks ▪ Productivity ▪ Flexibility of labour market ▪ International embeddedness ▪ <i>Ability to transform</i> 	<ul style="list-style-type: none"> ▪ Level of qualification ▪ Affinity to lifelong learning ▪ Social and ethnic plurality ▪ Flexibility ▪ Creativity ▪ Cosmopolitanism/Open-mindedness ▪ Participation in public life
智慧的治理	SMART GOVERNANCE (Participation)	SMART MOBILITY (Transport and ICT)
	<ul style="list-style-type: none"> ▪ Participation in decision-making ▪ Public and social services ▪ Transparent governance ▪ <i>Political strategies & perspectives</i> 	<ul style="list-style-type: none"> ▪ Local accessibility ▪ (Inter-)national accessibility ▪ Availability of ICT-infrastructure ▪ Sustainable, innovative and safe transport systems
智慧的环境	SMART ENVIRONMENT (Natural resources)	SMART LIVING (Quality of life)
	<ul style="list-style-type: none"> ▪ Lack of pollution of natural conditions ▪ Pollution ▪ Environmental protection ▪ Sustainable resource management 	<ul style="list-style-type: none"> ▪ Cultural facilities ▪ Health conditions ▪ Individual safety ▪ Housing quality ▪ Education facilities ▪ Touristic ▪ Social cohesion

Giffinger, 2009

