Digital Media and Culture Change

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We are now living in an ever-fast changing world

Major Driving sources:

Micro-electronics
Bio-Technology
New Materials
New Machines
Communication
Computer/Computing

Post-Modernism ?

Interim Report To The President

- *Information technology (IT) will be one of the key factors driving progress in the 21th century — it is quite literally transforming the way we live, learn, work, and play.*
- *Advances in computing and communication technology will create a new infrastructure for business, scientific research, and social interaction.*

National coordination Office for Computing, Information, and Communications,

August 1998

Transforming the way we communicate

Vision

One billion people worldwide can access the Internet simultaneously and engage in real-time electronic meetings, download the daily news, conduct financial transactions, or talk to friends and relatives around the world.

This can be done regardless of the language in which the participants are speaking, since language translation can be done simultaneously, regardless of physical limitations, because devices can accept and provide input and output in many ways.

Transforming the way we deal with information

- ***Vision***

  An individual can access, query, or print any book, magazine, newspaper, video, data item,or reference document, in any language by simply clicking the mouse, touching the computer screen, talking to the computer, or blinking an eye.

  Individual can easily select among modes of presentation: data, text, image, or audio.

  Information can be referenced and derivations can be incorporated in many new ways, adding value and revealing insights through networked and software based tools.

Transforming the way we learn

Vision

Any individual can participate in on-line education programs regardless of geographic location,age, physical limitation,or personnel schedule.

Every one can access repositories of educational materials,easily recalling past lessons, updating skills, or selecting from among different teaching methods in order to discover the most effective style for that individual.

Education program can be customized to each individual's needs so that our information revolution reaches everyone and no one get left behind.

Information Technology: Transforming our Society

- Transforming the way we
  - communicate
  - deal with information
  - learn
- Transforming the nature of
  - commerce
  - work
- Transforming the practice of health care

- Transforming how we
  - design and building things
  - conduct research
  - deal with environment
- Transforming government

National coordination Office for Computing, Information, and Communications,

August 1998

A Humanity Point of View

- How information technology interact with our culture and society?
- What are the cultural and social impact of Information technology?
- Can our culture survive in information age? Will our tradition become endangered while Internet become more popular? If so, what shall we do?

Two major transforming functions

- Communication behaviors
- The way knowledge is handled

W. Weaver：

『The word communication will be used here in a very broad sense to include *all of the procedures by which one mind may affect another.* This, of course, involves not only written and oral speech, but also music, the pictorial arts, the theatre, the ballet, and in fact *all human behavior*. In some connections it may be desirable to use a still broader definition of communication, namely, one which would include the procedures by means of which *one mechanism affects another mechanism.* 』

in "A Mathematical Theory of Communication", 1949

Communication:

the source of civilization

- ***Information technology is also communication technology.***

Two Major Functions of IT

- Communication
  - Person to person
  - Person to Machine
    - Query and Access
    - Learning
  - Mass Communication
    - Dissemination
    - Education
  - Machine to Machine
- Knowledge Processing
  - Storage
  - Accumulation/Growth
  - Application
  - Searching for new knowledge

Progress of Communication Technology

- The 1st Period
  230-1830
  (1600 years)
- The 2nd Period
  1830~1990
  (160 years)
- The 3rd Period
  1990-2006?
  (16 years)

- The invention of Paper 105
- Woodblock Printing 650
- Movable type Printing 1045
- Pencils 1630
- Eraser, Carbon paper 1830
- Telephone 1870
- Broadcasting 1910
- Color TV 1950
- ESS, Satellite, Optical Fiber 1970
- PC, Fiber communication 1990
- ATM, PCS, CD, WWW, Multi-media.....
- ? ? ? .....

From Karl Hsu, Lucent Inc., 1998

Material obstacles to traditional media

- *There are many forms of traditional media, but all rely on the consumption or destruction of physical resources to spread knowledge; know matter how few they use, they still use significant resources.*
- *As long as they use manufactured articles, media will always have these physical characteristics, and there will always be economic problems regarding manufacturing, storage, transportation, and distribution.*
- *In use, besides having to pay attention to preservation, one needs to deal with depreciation, depletion, spoilage, not to mention loss, theft, fire and flood damage, etc. These are all material obstacles to media dissemination*

The influence of media material

- As carriers of information, the nature of the physical media thus influences forms of thinking, methods, form, efficacy, and cost.
- Examples triggered by photosensitive materials:
  - Photography, motion pictures, photolithography, microfilm ……
  - Microelectronic lithography
    - semiconductor wafers, microprocessors……

Digital Media

- Using ***energy*** as media with very, very low material obstacles
- Very easy to make copies at very low cost
- Almost no time barrier
- Almost no space barrier
- It is a unique general media.

Knowledge and "What is known"

- ***People have the potential to learn to know.***
- ***In ancient times, when discussing epistemology, it was often said that man has "the ability to know".***
- ***All of the things which he does know are called "what is known".***

“What is known” thus includes:

- ***components of rationality, such as common sense and intellectual knowledge***
- ***components of sensation, such as feeling and mental reaction***
- ***components of creativity, such as planning and design***
- ***components of will, such as belief***

Media

- “What is known” is ineffable; it relies on material qualities for expression before it can be brought to the perception of others. Only after it has been brought to the perception of others can it be communicated, preserved, and otherwise made us of.
- For this reason, “what is known” is dependent on physical matter, and is thus limited by the properties of that matter, as well as by the skills and technology which expresses it.
- ***We use the term “media” to mean material, tools and techniques for expressing “what is known”.***

Media and Social Change

From historical investigations of the development of human civilization, media's influence on the representation and dissemination of knowledge has been very great. Whenever a new form of media was introduced, it invariably led to changes in the dissemination of information and knowledge, led to changes in human relations, brought about organizational and social change, and developed new forms of civilization.

Media and Culture: *A historical view*

- The Dawning of Civilization
  - The presence of Language
  - The presence of Writing
  - The invention of paper
  - The invention of woodblock printing
  - High speed printing and binding

A Definition of Information

- ***Information is the form of expression of "what is known" by media.***
  - ***They are two sides of the same coin; "What is known" is the content of information; information is the form of "what is known"***
    - ***Information is the projection of content on media.***
    - ***Information is not solely dependent on "what is known;" it is the form of expression of "what is known" by media; it carries "what is known" in a form that is perceptible to our sense organs. When we apply it, we use the content of information ("what is known") rather than its form.***

Nature of Information

- ***Inherits the nature of "what is known"***
- ***Subject to the nature of media; derived from the latter's material being***
- ***Harnesses the nature of media; enhanced by tools and technology for extension***
- ***Depends on methods for expressing content and quality of expression.***

The Role of IT in Supporting Various Disciplines

- Not only is it a very powerful tool
- For each discipline it
  - provides new ways of looking at problems
  - offers new ways of interpreting problems
  - offers new methods of solving problems
  - provides new models and new theories to understand problems

The Practice of IT

- ***Derived from the technical level, the means of transmission is independent of the content transmitted, but the converse is not true.***
- ***At the semantic level and the effective level, the influence of the technical level is considerable. Because of this, Shannon's theory ought to form one of the bases for communications theory.***

by W. Weaver

- ***C. Shannon, A Mathematical Theory of Communication***

Concluding Remark

- The Internet speeds up the coming of a new civilization.
- The trend of shifting major media from paper to digital is unavoidable. Under this circumstance, cultural issues are the most priority we must solve.
- Digital Museum/Library projects provide a good start to address cultural issues.

Concluding Remark

- Cooperation/collaboration is the key success factor to solve cultural issues.
- The major purpose of this meeting is trying to do something for the cooperation/ collaboration on creating Digital Museums among countries, especially for those in East Asia.
- So, your comments, suggestions, and actions will be very much appreciated.

The End

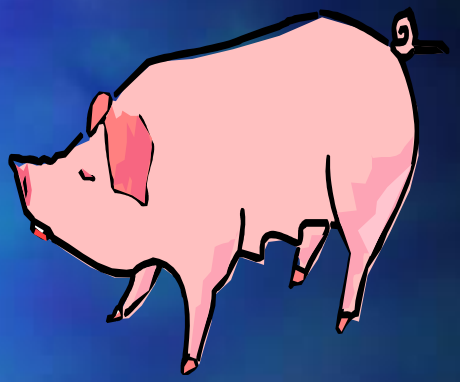
Thank you very much !

層出不窮的問題

- 花樣百出的電腦犯罪
- 防不勝防的電腦病毒
- 無聊之極的網路駭客
- 誘人沈溺的不良電玩
- 助長的暴力、色情、犯罪
- 工作適應、轉業和失業問題
- 電腦及資訊素養的教育問題
- 組織結構改變的問題
- 資料、知識和智慧財產的所有權、使用權問題
- 資訊倫理問題
- 資訊氾濫問題

敗壞既有成就、破壞原有安定和秩序

問:



捫心自問，

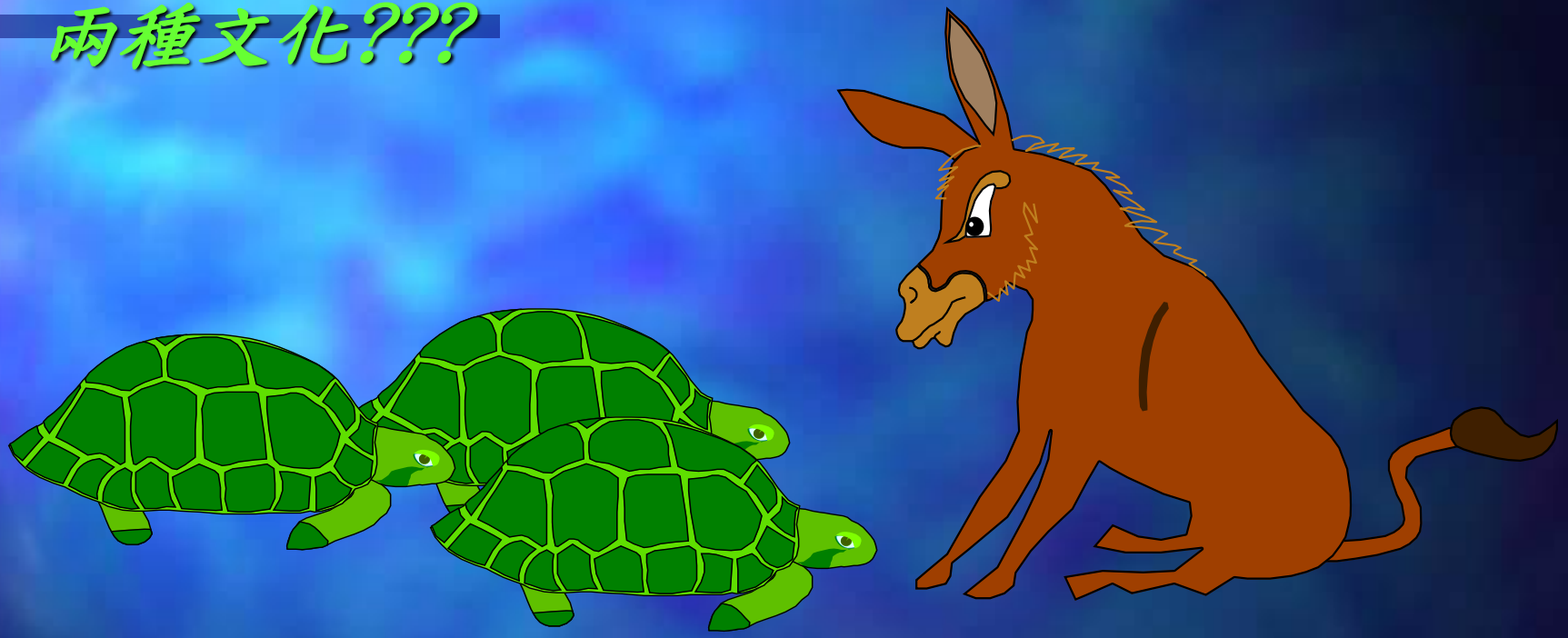
用了電腦之後

我們真正生活得更好些了嗎？

更快樂些了嗎？

當 人文 對上 資訊科技

兩種文化???



人文與思想的問題

- 人文和科技的協調與融合
- De-humanization, 人性之變遷與式微
- Ex-communication, 人際關係之淡化與孤立
- 『知識與資訊共享』的神話？(information gap)
- 『人生的目的與追求的目標』的重新思考
- 道德、倫理、與價值體系的重建？
- 人類知識體系在電腦網路上的聚集與重建.
- 未來的家庭、社會、國家究竟是甚麼樣子？

肯定人生的目的

- 不虛無、不悲觀。
- 把人生當作學習的過程, 體驗物質實相的機會。
  - 知性思考 + 人生經驗 + 直接感觸 + 沉思反省才能蘊釀成智慧, 人生的義意才能彰顯, 才能發揚光大。

道德的內在性

- 孟子曰：『仁義內在』
- 反躬自省, 明白怎麼做, 就是：
  - 良知。
  - 自律道德。
  - 肯定人性本善, 沒有原罪, 沒有永罰的恐懼。
  - 在喜悅、坦蕩中做個自在的人。

綜觀問題：

- 這些問題都不是純粹的科技問題，*是應用資訊科技於社會時，與人文和社會現況互動所產生的結果*。
- 是應用資訊科技時的眼光、價值取向、態度、方法以及規劃、創意發生問題。
- 如果不明白資訊和資訊科技的本質，不了解現代文化思潮的內容和趨勢，無視於科技與文化互動可能對社會帶來的改變和衝擊，那麼將導致嚴重的社會問題

因應之道：健全的資訊素養

- 建立新觀念
- 多了解環境的變遷和未來的趨勢
- 培養操作設備的技術
- 增強溝通及應用資訊的能力
- 加強本科的學識與技術水準
- 資訊倫理的培養
- 了解過渡時期的失序現象