An Introduction to
The National Digital Archives Project, ROC

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Outline
Background: *An ever changing world*
Some thoughts concerning the creation of a Digital Virtue World of Culture
An introduction to *the National Digital Archives Project of ROC*
Concluding Remarks

Background:
We are living in an ever-changing world.
   Major Driving sources:
      Micro-electronics
      Bio-Technology
      New Materials
      New Machines
      Communication
      Computer/Computing…
      Post-Modernism
         Else?

IT *is 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 build things
      Conduct research
      Deal with environment
   Transforming government
               National coordination Office for Computing,
               Information, and Communications, USA,   August 1998

The Transforming
How fast *IT* changes?
      Hardware life cycle: every *18~24* months

Software life cycle: every *24~36* months·
   Internet: 1 calendar year > 7 Net-years

   But the data/information we are using should   last for more than hundreds of years.
   How long will the transformations last?

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...	
⅄ ???...	*Karl Hsu, Lucent Technology Inc., 1998*

Some Concerns & Thoughts

How does information technology interact with our culture and society?
What are the cultural and social impacts of Information Technology?
   Can our culture survive the information age?
   Will our traditions become endangered while Internet becomes more popular?
If so, what shall we do?

An Informatics Theory for Humanities

O u t l i n e
Knowledge, Communication and Civilization
Communication, Media and Information
A Review of Media vs. Social Change
Digital Media
A General Definition of Information
The Nature of Information and the Properties of Information Technology (IT)
The Role of IT *in Academics*
IT *and Social Change*

Media and Social Change

From documented development of human civilization, media's influence on the representation and dissemination of knowledge has proven to be very great.

Whenever a new form of media was introduced, it invariably led to changes in the dissemination of information knowledge, modified human relations and society, initiated organizational and social change, and developed new forms of civilization.

In the information age, ideas, methods, tools, audience, range, situation, and effect of communication have all changed, along with the environment in which people and the society depend on.

The same multi-facet changes also happened in the field of knowledge processing.

Two Major Functions of IT

Communication
- **Person to person**
- **Person to Machine**
  - *Query and Access*
  - *Working & Learning*
- **Mass Comm.**
  - *Information*
  - *Dissemination*
  - *Education*
- **Machine to Machine**
  - *Internet*
  - *Satellite & Wireless*
  - *LAN*

Knowledge Processing
- *Storage*
- *Accumulation & Growth*
- *Representation*
- *Transformation*
- *Referencing &*
- *Relations set-up*
- *Applications*
- *Searching for new knowledge*

Communication and knowledge processing are two indispensable driving sources of civilization.

Information technology is both communication technology and knowledge processing technology.

The Role of IT in Supporting Various Disciplines

IT is not confined as 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 understanding problems*

IT has broadened and deepened the domain of every academic discipline.

The Role of IT in Academies
In terms of form of *IT*

Provide Simulation and Virtual Systems

IT *is creating a new virtual domain for studying and learning for every discipline, in parallel with the traditional physical domain .*

Make available digital materials and tools.

In terms of content by *IT*

⌃ *IT* will provide new ways to interpret various meanings of the components in a system. It helps us understand and utilize complex systems better.

⌃ *IT* will serve as a kind of new "energy" for learning, R/D and applications due to the content it carries.

As a consequence, IT will introduce a new civilization.
The NDAP is expected to meet the challenge.

Background of NDAP
Infrastructure:

Favorable Government Policy
Sound Tele-communication Policy and Capacity.
About 1/3 of the total population of Taiwan, 6.8M, are Internet users.
All primary schools have had ADSL access since the summer of 2000.
...

Coordination is needed for various digitization projects in Taiwan.

e-Government, e-commerce...
Distance Learning
Remote medical care
...

Technical merits of Taiwan

Prosperous Information Industry
Excellent capability in Chinese Language Processing and Chinese Document Processing
Good technical manpower support for multi-media systems and networking applications.

Cultural Traits

Very rich collections in many fields
Chinese culture viewed as a world treasure
Historically, many Asian cultures had been influenced by Chinese culture.   We are willing to help them digitize their historical documents and cultural collections.
An "APEC Digital Archives Consortium" proposal   have been submitted to APEC since 1999.

Cultural Traits *(continue)*

Good capability in Sinology Studies
> **CHGIS, ECAI, Rubbing…many on-going international projects**
> **Other international academic activities**

Unique language features
We have actively participated drafting Asian Language standards in :
Open Language Archives Community
ISLE, *Internal Standards for Language Engineering*

Nature Resources

Catalog of Life **(Indexing Taiwanese known species)**
Approximately 200,000 species of the most up-to-date checklist including citations.

Goals of **NDAP**

Preserving national cultural collections
Popularizing fine cultural holdings
Strengthening cultural heritage and guiding cultural development
Popularizing knowledge / Information sharing
Enhancing education and learning
Bootstrapping cultural and value-added industries
Improving literacy, creativity and quality of life
Promoting International Cooperation and resource sharing

Outlines of **NDAP**

NDAP is a National Project authorized by the NSC and conducted by Academia Sinica.

> *It is the fifth National Project of ROC, Taiwan.*
> *The project office is located in the Institute of Information Science, Academia Sinica.*
> *The Director of NDAP is Professor Kou-Shu Yang, Member of Academia Sinica.*

The first phase of **NDAP** will be a 5-year plan, from **2002** to **2006**.

Content Holders Participated in the **NDAP** up to present:

- *National Palace Museum*
- *National Library*
- *Historica Sinica* (國史館)
- *National History Museum*
- *National Museum of Natural Sciences*
- *Committee of Taiwan Provincial Archives*
- *Council of Cultural Affairs*
- *National Taiwan University*
- *Academia Sinica*

Budget Planned

Total Budget in 2002: 11.11millian *USD* ($383M *NTD*)
Estimated annul growth rate in 2002~2006: 10%~20%

Important Issues

Intellectual property rights
Time, Space and Language Coordination
Multi-lingual issues
Public information systems
Technical Specifications and Standards
Meta-language and Documentation

- *Metadata*
- *Content Markup*
- *References and Linking*

Cooperation and collaboration

Language Coordination

Linguistic Ontology

Word Net
  Synset
 Corpus
 Thesaurus
 Dictionaries
 Cross References and Links
Linguistic Markup and Standards
Multi-lingual mapping at concept & word level

Linguistic Markups
Phonetic Markup
  phoneme
  tone
  intonation
  breath group
  ...

Taiwan Digital Archives
Sources
  By donation
  By *NDAP*
Contents by ***NDAP: TDA***
  Language Archives and Language Coordinate
  Time and Space Coordinates
    Historical GIS
      Taiwan
      China
    Historical Time Mapping Tables
  (***All of the following contents are expected to be linked to the Language, Time and Space coordinates***)

Collections of indigenous cultures in Taiwan
Contemporary Historical Archives
  ⛰ 1860~1926 **Archive of foreign affairs**
  ⛰ 1895~1945 **(Japanese ruling period)**
  ⛰ 1945~1947 **Administration Archive of Taiwan**
  ⛰ 1950~1970 **Archive of Economical Cooperation and Development**
  ⛰ 蔣介石 **Archive**
  ⛰ **Archives of the Resources Planning Committee**
  ⛰ **Early time Government Archives**
  ⛰ 淡新**Archive (*Full Text and Image DB*)**
  ⛰ 岸裡大社 **Archive**
  ⛰ 伊能嘉矩 **script Archive (*Image DB*)**

Fishes and Shell Fishes in and around Taiwan
Plants of Taiwan

Insects of Taiwan
Minerals in Taiwan
Animals and Birds in Taiwan
Archaeological Collections
Fossil collections

Rubbings
    Bronze
    Stone
        From China
        From Taiwan, since 1860
    Bamboo and wood

Jade, porcelain and bronze collections
    Mainly Chin and Han Periods at present
Ancient Calligraphy collections
Ancient Painting collections

Historical Archives
    The Ching Dynasty Archives
Image database of Rare Books
An Archive of Drawings in Ancient Books
Selected Gazetteer Documents
Early Periodicals and Newspapers published in Taiwan

Concluding Remark

The Internet speeds up the coming of a new civilization.
The trend of shifting major media from paper to digital is unavoidable.
Cultural issues are thus the utmost priority that we must face and solve with collective wisdom.
NDAP provides a good start to address cultural issues in this fast and ever-changing world.
International cooperation and collaboration are most welcome. We are willing to share our work with you. Please contact us at:
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Or, visit our web-site at:
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