Trends on business of GIS in China

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1. GIS Development in China

(1) Some excellent software have advanced technologies and occupy
    considerable market ratio.

• Technology of data scanning digitizing and digital photometering
  in domestic GIS software can compare with foreign GIS software

• Technology of mapping even overmatch the foreign software

• Application of AM/FM can compare with foreign GIS software

• Middle scale of GIS foundation software is close to the
  advanced level in the world

• The top-ten domestic software are:

    MapGIS series
    GeoStar series
    Tsinghua Sanwei software
        Wuhan SupreSoft software
    Beijing Geoway software
    Found MirageGIS software
        Guangzhou CASE software
    Satellite handle software
    CityStar software
    GIS Software developed by China survey and mapping
        research institute

The main foreign software used in China are:

ARCINFO series
MAPINFO
ENVI
ERDAS
PCI
AutoCAD
ERMAPEY
MGE
TITAN

(2) GIS Application experiences have been accumulated

• Establish national foundation geography information system
  includes
  - Topography database
  - Toponym database
  - DEM database
  - DOM database
  - DRG database
  - Geomorphology database
  - Gravity database

National class system are 1:1,000,000; 1:250,000; 1:50,000;

The main scales in province class system are 1:250,000; 1:50,000
and 1:10,000

- Typical applications

  - Flood prevention and weather Information System
  - Synthesize national geography information
  - Beijing Underground pipeline network map database system
  - Zhengzhou police Geographic Information System
  - Changsha foundation Geographic Information System
  - Hong Kong synthesizes geography information system
  - Hebei province information GIS
  - Macau underground pipeline network and ground transportation geography information system
  - Fire control geography information system
  - Remote and Geography Information System For Three- gorge address selection and transfer construction
  - Urban water pipeline synthesize information manage system
  - etc.

(3) Technicians with high quality and good related education foundation have formed in China;

- RS 3458 people, GIS 4060 people, GPS 1267 people (2000)

- In recent 5 years, 12341 undergraduate students, 2126 Master students, 573 Doctor Student, and 88 Postdoctoral researchers have been brought up

- Totally 1316 training classes were hold, and 20664 people attended, among them 116 are foreign training classes, and 2126 people attended

- In recent five years, 73 kinds magazines, 420 books, and 10514 papers were published, 69 patents were applied.
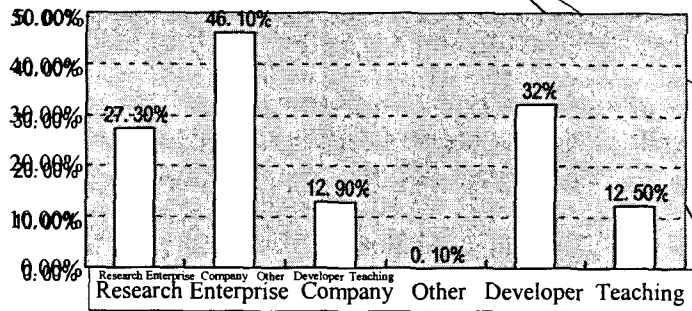
(4) GIS Market in China is very big and is increasing very fast

- Revenue

    - Nearly ten million US$ in 2002
    - Up to 5 to 10 hundred million in 2005

- The potential GIS market in China from 2001-2005
    "the 10th Five-year Plan"

    - 5 to 10 large National GIS Application Projects
    - 50 to 100 middle Local GIS Application Projects

- Opportunities

    - GIS software
    - Projects
    - GIS technical and consulting service

- There exists bland market in China

    - Combination of GIS and GPS
        the main application is ITS and dynamic survey
        and mapping

    - Combination of GIS and RS
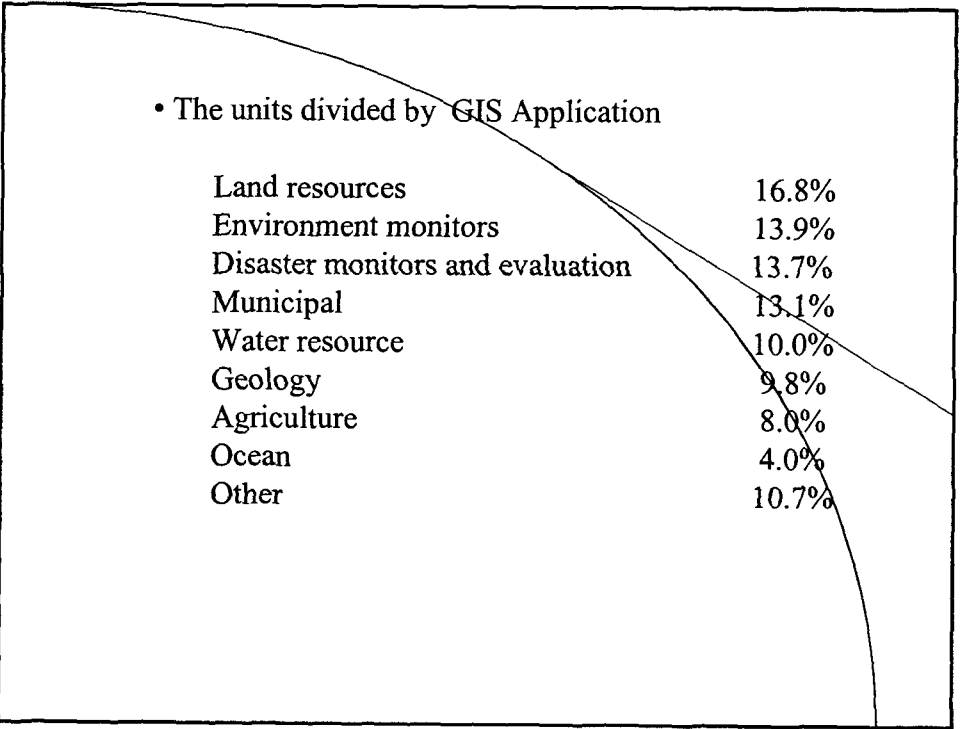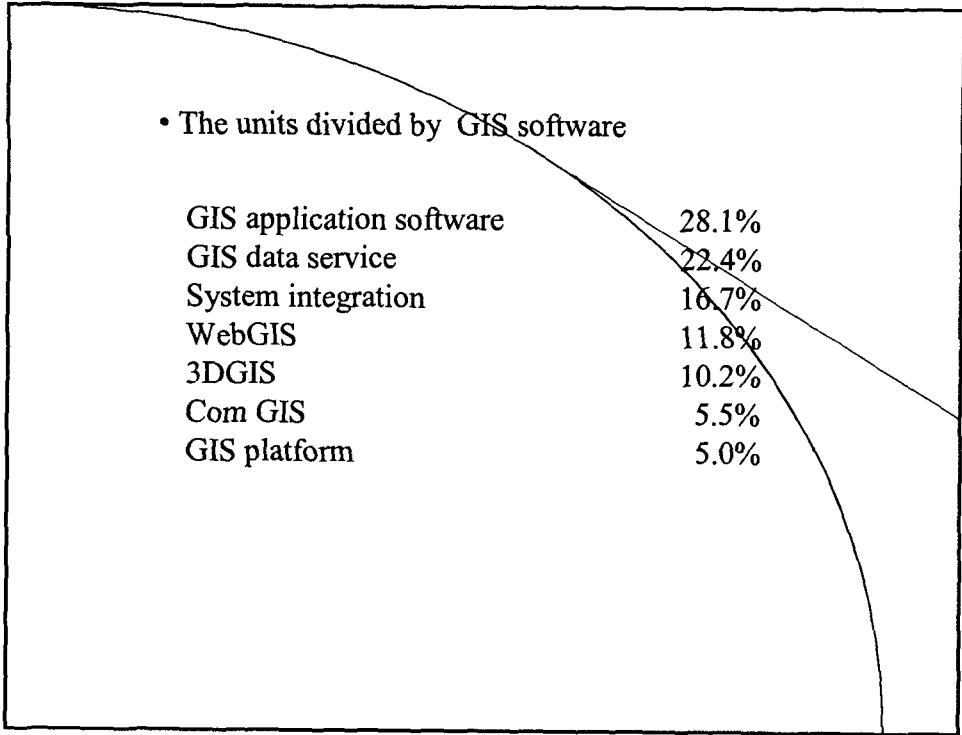   the main application is data update and data maintenance

(5) GIS trade classification and analyze

• The present main trades include

	Research	Enterprise	Company	Other	Developer	Teaching
	27.30%	46.10%	12.90%	0.10%	32%	12.50%

• The units belong to the following main departments:

Department	Percentage
National territory and resources	13.3%
Survey and mapping	10.6%
Municipal	8.6%
Government decision	7.3%
Agriculture	7.1%
Geology	6.9%
Environment conservation	6.9%
Forestry	6.9%
Water	6.1%
Transportation	5.4%
Weather	2.9%
Police	2.3%
Ocean	2.1%
Electric power	2.0%
Telecommunication	1.7%
Roadway	1.5%
Petroleum	1.1%
Coal	1.1%
Other	6.2%

• The units divided by GIS software

GIS application software	28.1%
GIS data service	22.4%
System integration	16.7%
WebGIS	11.8%
3DGIS	10.2%
Com GIS	5.5%
GIS platform	5.0%

• The units divided by GIS Application

Land resources	16.8%
Environment monitors	13.9%
Disaster monitors and evaluation	13.7%
Municipal	13.1%
Water resource	10.0%
Geology	9.8%
Agriculture	8.0%
Ocean	4.0%
Other	10.7%

2. The Challenge of China GIS Development

(1) Problems on GIS industry development

• The industrial structure is not reasonable

  - Geography data industry is still not formed, geography data are still not the real merchandise, data share mechanism has not established, thus cause many repeat and low-level works, and also lack enough data update abilities

  - The absence of a certain quantity of GIS business service enterprises

  - Lack of good environment and effective social support system for GIS software industry, especially the lack of application technician training system

- Criteria is not assorted, the market system and the industry policy are not perfect

  - Lack of criteria in the side of spatial information

  - The market system is not perfect, is also an important factor to restrict the development of Chinese GIS software industry

  - Policy for GIS industrialization is not perfect

- The series of software product is not complete, and the technique innovation is not enough

  - The platform of local GIS foundation software concentrate in the small-scale product, Lack of the large GIS foundation software

  - Chinese GIS enterprises have small scale, and invest inadequate to new product development, technology team structure is also not reasonable

  - Enterprises have low abilities to absorb mature technologies and research results from other subjects

(2) Challenge of technology

- Object oriented technology changes the structure of GIS software

- New generation GIS software was developed following
  the development of DBMS technology

- GIS application was changed from focusing on software to
  focusing on data

- etc.

(3) Challenge of Market

• The management system of most enterprises is not perfact

• The economic strength of most enterprises is not powerful

• The market competition is very sharp due to the entering of
  foreign GIS software

• The competition of human resource is also very intense

• etc.

3. Trends of China GIS Development

(1) Intensive development of GIS industry

- China government will strengthen economic support to GIS enterprises

- Alliance between enterprises will be formed

- Modern management system will be established to stabilize the staff

(2) Promoting GIS application and developing GIS Market

• Establishing the criteria of spatial information

• Setting up a reasonable market system

• Making perfect Policy for GIS industrialization

• Setting up demonstration of GIS application

• etc.

(3) Pay more attention to technology innovation and speed up the development of new products

• Component GIS

• Web GIS

• Open GIS

• Distributed System

• GIML

• etc.

(4) Developing GIS industry based on capital market support

• VC

• Come into the stock market directly

Thanks!