

National Informatization Index System of China

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Outlines of the report:

- Introduction
- China and international research review
- *National Informatization Index* of China
- Measurement and Calculation Work of NIQ
- Open questions

Introduction (1)

--- definition of informatization

- “Informatization is an integrated system, with the extensive application of information technologies as its aim, information resources as its nucleus, information network as its basis, information industry as its pillar, information talents as its reliance, and regulations, policies and legal standards as its safeguard.”.

———*China’s The 10th Five-Year Plan For National Economy and Social Development: the Layout of Key Projects of Informatization*

Introduction(2) --- Framework of national informatization system of China

National informatization system consists of six aspects:

- Information resources
- National information network
- Application of information technologies
- Information technologies and industry
- Informatization talents
- Policies, regulations and standards

Introduction (3) --- Informatization course of China

- Our country's informatization course can be traced back to the middle of the 1970's, in which period the symbol was '748' Project whose development orientation were communications, information retrieval and exact arrangement of Chinese characters. Until now, China has undergone 30 years of informatization. China's informatization underwent the following stages.

1. Preparatory stage (Before 1993)

- ——In August 1979, Peking University succeeded in Principal Research Project of Laser Chinese Characters Edition Typeset System;
- ——In October 1982, the State Council organized a leading team of computers and LSI, being responsibility for important decisions and consultations on technological economy;

- ——In March 1986, ‘863’ Project was started. The project invested RMB10 billion, two-thirds of which was for relevant projects of information technology;
- ——From 1988 to 1992, National Development Program Committee, Mechanical & Electrical Industrial Ministry, National Committee of Science and Technology and Electrical Information Technology Promotion and Application Office had done a great deal of work in many fields like reconstruction of traditional industrial technologies, E D I Technologies, C A D / C A M and M I S , unceasingly promoting the in-depth development of the application of electrical information technologies.

2. Start-up stage (March 1993 -- April 1997)

- ——In 1993 , Joint Conference of National Economic Informatization was organized. “Gold Card”, “Gold Bridge”, “Gold Pass” etc. major informatization projects were started one after another, opening the prelude of national economic Informatization;
- ——In Jan. 1996, the Leading Team of the State Council Informatization Work was set up, leading, organizing and coordinating in unison national Informatization work, and the important position of informatization in national economy and social development was acknowledged.

3. Spread stage (April 1997— October 2000)

- — From April 18, 1997 to April 21, with the permission of the State Council, the Informatization Work Leading Team of the State Council organized in Shenzhen the first Work Conference of National Informatization. At the conference, *1995 Plan and 2010 Objectives of National Informatization* was approved, and it became the landmark in the construction of our country's informatization..
- — In March 1998, Ministry of Information Industry was established, and it made efforts to promote the reform of telecom system, realized the separation of the functions of government and enterprises, separate management of post offices and telecom offices, reorganization and structure transformation of telecom systems and the reform of State-owned enterprises. The situation come into being where China's Telecom, CMCC, China Unicom、 China Netcom、 China Rail-com are competing against each other.

4. Development stage (October 2000—Now)

- — In October 2000, the 10th 5-year came on. *CCPC's Suggestions on Framing the 10th 5-year Plan for National Economy and Social Development* pointed out:
“Informatization is the general tendency of current global economy and social advancement, and is the key to our country’s industrial optimization and upgrading as well as to industrialization and modernization.
- — In August 2001, Work Office of National informatization was set up.
- — In March 2003, Seminar for the Standardization of National Electronic Government Affairs was organized.

Since reform and opening up ,especially with the 10 year's construction,China promoted informatization to a great extent

- what should various sectors do in the actual implementation of informatization?
- How can we know what our position is in the process of global informatization?
- What development strategies should be taken?

To solve the above problem, we need a nationally unified informatization level evaluation index system that conforms to the reality of our country and communicates with the international community.

Informatization Index System research work review ----International

- Informatization indexes of Japanese telecom and RITE;
- Evaluation-guide (1,2) for the readiness of APEC's E-commerce ;
- Information social indexes of IDC (index structure, evaluation outcome);
- EU's "E-Europe" norm index system ;
- Urban informatization evaluation system of Seattle ;
- Nielson/NetRatings specialized informatization statistical assessment (NetRatings reports about Chinese web users, E-Commerce Readiness Assessment Tool ,ITU telecom index)。

Informatization Index System research work review ----China

- In 2000 ,A team of National Bureau of Statistics began this task research, and their latest outcome absorbed the advantages of previous relevant researches, and they developed a set of index system employing the data advantages of the Bureau of Statistics and they have done the actual calculation.
- On July 29, 2001, work meeting of national informatization index was opened in Beijing, sponsored by Ministry of Information Industry, National Informatization Promoting Office and Chinese E-commerce Association. At the meeting, Ministry of Information Industry came out with *Structure Scheme of National Informatization Index*.

Informatizationg Index System research work review ----China

- The meeting declared we should gradually establish a nationally unified informatization index system, scientifically assess the informatization level of various National and regions, and correctly guide the informatization development of different regions.
- National Informatization Evaluation Center, (shortened as“NIEC”) is established in this meeting. It is mainly responsible for the research of informatization index system, evaluation of informatization level and consultation services. It also carries on the research work of national information classification index system (enterprise informatization, governmental informatization, E-Commerce, information resources, urban informatization, etc), and takes to perfect national informatization index system.

Structure Scheme of National Informatization Index of China

No.	Index Name	Explanation	Unit	Source of Information
1	Broadcast &TV hours/1000 people	So far , traditional sound/visual information resources still account for a large percentage , and they are to be evaluated by this index	Hour/1000 People (total population)	Statistics from the Bureau of Broadcasting and Electricity
2	Bandwidth/ Person	Bandwidth is the embodiment of the actual communicating capability of communications infrastructure based on light cable length; this index is used to evaluate actual communication ability	Kilobit/ Person (total population)	Statistics from Ministry of Information Industry
3	Numbers of Phone Calls/ Person	Voice service is part of communication service. The index is used to measure using frequency of phone lines to show information application extent	Phone calls/person (Total population)	Statistics from Ministry of Information Industry and the Bureau of

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No.	Index Name	Explanation	Unit	Source of Information
4	Long-distance Cable Length	Used to measure bandwidth, and is the most common index for communication infrastructure	Core long Kilometer	Statistics from Ministry of Information Industry and the Bureau of Statistics Data statistics from Ministry of Information Industry and the Bureau of Statistics
5	Microwave Channel Number	Micro-wave communication is currently decreasing, and this index is used to show traditional bandwidth resources	Wave path Kilometer	Statistics from Ministry of Information Industry and the Bureau of Statistics
6	Planets Station Number	Planet communication is important since China covers so large an area.	Planets stations	Statistics from Ministry of Information Industry, the Bureau of Statistics and the Bureau of Broadcasting and Electricity

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No.	Index Name	Explanation	Unit	Source of Information
7	Phone Lines number/100 people	So far, the size of fixed communication network determines the size of voice business. The index is used to reflect masterstroke popularization (including cell phones)	Masterstroke/100 people (total population)	Statistics from Ministry of Information Industry
8	Cable TV Number every 100 people	Cable TV networks can be used for transporting comprehensive information. The index is used to measure the popularization of cable TV	Cable TV Number/1000 People (total population)	Statistics from the Bureau of Broadcasting and Electricity and the Bureau of Statistics
9	Web net number/Million	The index is used to assess the number of web users, thus indicating the development situation of webs	Web net users/Million (total population)	Statistics from CNNIC, the Bureau of Statistics
10	Computer number/1000 people	Reflecting the extent of Popularization of computers, including huge-size, middle-size, small-size computers and PC of units and individuals	Computer owners/1000 people (total population)	Statistics from the Bureau of Statistics

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No.	Index Name	Explanation	Unit	Source of Information
11	TV number/100Households	Reflecting traditional information equipment, including Color TV and Black and white TV	TV number/100 Households (total number of households)	Statistics from the Bureau of Statistics
12	Total volume of network resource data bank	Total volume of network resource data bank various regions and total number of recordings reflect information resource status.	G	Online survey
13	E-commerce turnover	It refers to transactions Through networks including transactions between enterprises, enterprise and individual, and enterprise and government. Reflecting the level of technology application.	RMB100 million	Spot check
14	Percentage of assets investment on enterprises information technologies in the assets investment of the same period	Investment on enterprises information technologies refers to enterprises' software, hardware, network construction, maintenance and acceleration and other relevant investment, reflecting the level of technology application.	Percentage	Spot check

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No.	Index Name	Explanation	Unit	Source of Information
15	Percentage of information industry growth in GDP	Information industry growth mainly refers to the growth in such industries as electricity, posts and telecommunication, broadcasting and TV information service industries, reflecting the status and importance of information industry.	Percentage	Statistics from the Bureau of Statistics
16	Direct contribution percentage by information industry for GDP growth	Calculation of the index is: ratio of the growth value of the year in the growth value of the information industry with growth value of the year in GDP; Reflecting the contribution information industry makes to the whole integrated economy	Percentage	Statistics from the Bureau of Statistics
17	Expenditure In information research and development in total national research and development	The index is used to show governmental policies towards information industry; the extent our government supports the construction of information industry infrastructure reflects the strength relevant policies.	Percentage	Statistics from the Ministry of Science and Technology and the Bureau of Statistics

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No.	Index Name	Explanation	Unit	Source of Information
18	Information Industry infrastructure percentage in whole infrastructure investment	National infrastructure investment refers to investment on resources, transportation, posts and telecommunications and irrigation works. The extent our government supports the construction of information industry infrastructure reflects the strength relevant policies.	Percentage	Statistics from the Informatization Industry Ministry, the Bureau of Broadcasting and Electricity and the Bureau of Statistics
19	Percentage of university graduates in 1000 people	Reflecting consumption level of information	University Graduates/ 1000 people (total population)	Statistics from the Bureau of Statistics
20	Information index	Percentage of consumption except for eating, clothing and living, reflecting consumption ability of information	Percentage	Statistics from the Bureau of Statistics

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Features of the Scheme

- Conforming to China's national situation and guidelines and policies of the construction of national informatization;
- Being convenient for contracts among nations;
- Being integrative and manageable;
- Guiding informatization work.

Measurement and Calculation of National Informatization Index quantity (NIQ)

- According to the *Scheme*, National Informatization Evaluation Center published in March 2002 the NIQ between 1998-2000
- <<*Research Report of National Informatization Level*>>.
- (1) China's NIQ in 2000 was 38.46 ;
- (2) the average NIQ growth from 1998 to 2000 was 21.9%.

NIQ be calculated by the formula:

$$NIQ = \sum_{i=1}^n \left(\sum_{j=1}^m P_{ij} W_{ij} \right) * W_i$$

Where n is the component number of informatization system; m is the index number of the i th component ; w_{ji} and w_i is the corresponding weight; p_{ij} is the standardized index value.

Open questions:

- Preciseness of indexes choice. The choice of indexes used in evaluation system needs to take into consideration comparability and acquirability of data, integration of indexes and brevity of index systems.
- Data procession in index synthesis arithmetic.

Thanks for your
attention!