

Organizational Designing for National Informatization Policy

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Abstract: As Korean society has progressed into information society, the organizational innovation factor becomes more crucial to successful informatization projects than technical factor. This paper explores alternative organizational structure for informatization policy for Roh Moo-hyun administration. Current Informatization promotion Committee headed by prime minister doesn't work well. National informatization and e-government should consider the president's national innovation vision and agenda. Organizational structure for national Informatization is composed of national CIO and president's council, a ministry managing informatization, and ministerial CIO organizations. This paper suggests an organizational structure for informatization policy. President presides over Council for National Informatization. The chief secretary of innovation who is national CIO, coordinates the Council. The National Information Society Institute explains the President's vision and draws strategic informatization plan. The Ministry of Reform, Planning and Budget handles government innovation, planning, informatization, budget, and evaluation and implements the president's innovation agendas. A ministerial CIO handles sectorial informatization and e-government projects. Next government-wide ministerial reorganization under President Roh should create a national CIO, president's council of informatization, and ministry of reform, planning and budget.

INTRODUCTION

Roh Moo-hyun Administration was inaugurated at the end of February 2003. Since then, many ideas for new informatization policy and policy organizational system designing have been discussed.

Over the last decade, the Korean government has succeeded in building a broadband backbone network and a high speed Internet network with links to businesses and households across country. It is surprising that 56.6% of the population over the age of 7 are Internet users and that as of mid October 2002 10 million households were connected to a high speed Internet service network. The annual growth rate of information technology industry over the last 5 years is 16.4% and the IT industry contributed to 13.4% of GDP in 2001.

Nevertheless, Korean society and business culture has changed little over the last decade. There is still room to improve the values that an information

society requires: namely, encouraging creativity, improving transparency, efficiency and participation. It is disappointing that the wonderful achievements in information technology have not yet resulted in innovation in business, education and government.

The Korean economy is still struggling, and next year's economic forecast is not bright. Global industrial competitiveness is losing ground: China and Southeast Asian countries are catching up to Korea and in the goods and service markets, Korean companies are being overtaken by those newly industrialized countries. New President Roh's agenda is to improve creativity and efficiency in order to regain economic growth. Innovation through informatization and restructuring through information technology means that the administration should focus on informatization and fully utilize and expand the high-speed network across the country. It is time to review the national policy direction and organizational structure for informatization. The Information industry has expanded into the export of goods and services to

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western countries, and government's role should be changed to meet market demands. Since the early 1990's, the government has had a paternalistic role in informatization, but government should focus on being an arbitrator. The Government should play major role in shaping the vision, regulating anti-competition, supporting basic research and education, and proposing and amending laws and regulations. Each sector invests its own resources in information technology for its own IT-supported system. Governmental agencies support private sector's informatization efforts by providing the legal system adjusted to the new society. The government should support sectors without proper IT and financially support regional informatization efforts.

ISSUES OF INFORMATIZATION POLICY ORGANIZATIONS

Technology vs. Institutional Innovation

Informatization is an innovative process in open organization that utilizes information technology. In the early stages of the informatization project, the technological and financial aspects are emphasized, but later institutional and behavioral reform are considered the crucial tasks for the successful informatization project. In Korea, the Ministry of Information and Communication (MIC) has had control of the technological and financial aspects of the projects by Informatization Promotion Fund since 1995 when the former Ministry of Telecommunication and Postal Service was reborn. People have learned that the main barrier to informatization is not the lack of technology and money but rather the lack of innovative action inside and outside government. Electronic government projects are caught in a turf war between the Ministry of Information and Communication, the Ministry of Government Administration and Home Affairs (MOGAHA), and the Ministry of Planning

and Budget. Electronic commerce projects are caught in a jurisdiction struggle between the Ministry of Commerce, Industry and Energy (MOCIE) and MIC. The jurisdiction struggle between technology-controlling agency and a sectorial agency will continue while information technology spreads throughout every sector. As people become accustomed to information technology and to overcoming the technical barriers, they pay more attention to the organizational and legal aspects.

Integration and separation of Informatization and Information Industrial Policy

MIC has been unique since 1995. MIC was symbolic of the Kim Youngsam administration's national policy to strengthen the IT industry. In 1996, the informatization planning office stationed within MIC played the major role in planning, coordinating and evaluating the government's various informatization projects while receiving technical help from the National Computerization Agency (NCA). Within MIC, IT industrial policy (IT provision) and Informatization (IT utilization) policy are efficiently integrated and implemented. As MIC a more powerful ministry, the other ministries became more non-cooperative with it. MIC officials generally preferred industrial policy and regulation to informatization and wanted to avoid confrontation with other ministries. Consequently, informatization policy was not efficiently implemented. The integration of IT industrial policy and informatization guaranteed demand of informatization projects for the IT industry, but some critics say that the policy distorted the optimal choice of technology investment. The issue is whether now is time for the separation of IT industrial policy and informatization policy.

E-government Initiative vs. the National Informatization Initiative

Governments in developed countries put more

emphasis on the e-government initiative than on informatization for which private sector seeks a private incentive system. In developing countries, however, government plays a leading role on informatization within the private sector because national resources are limited. As the private sector becomes more autonomous, it wants to develop informatization projects on its own and becomes more resistant to government intervention. The private sector argues that government should focus on government informatization - e-government projects. The private sector has greater human, technological and financial IT resources than government has. It believes that the private sector should lead in national informatization and e-government projects and private-public partnership should be strengthened. As the government's role in national informatization decreases, government focuses more on the e-government initiative. Coordination between the national informatization and

e-government projects is necessary. Korea's e-government project such as G4C (Government for Citizens) project was former President Kim Daejung's principal informatization project and was coordinated by the special committee of e-government and implemented by MOGAHA.

PRESENT ORGANIZATIONAL STRUCTURE FOR INFORMATIZATION POLICY

Present Organizational Structure

In 1994, President Kim Youngsam established an informatization report meeting over which he presided. In 1998, President Kim Daejung replaced the meeting by an informatization strategy meeting that met two or three times a year until 2000.

According to Basic Act on Informatization Promotion, Informatization Promotion Committee was

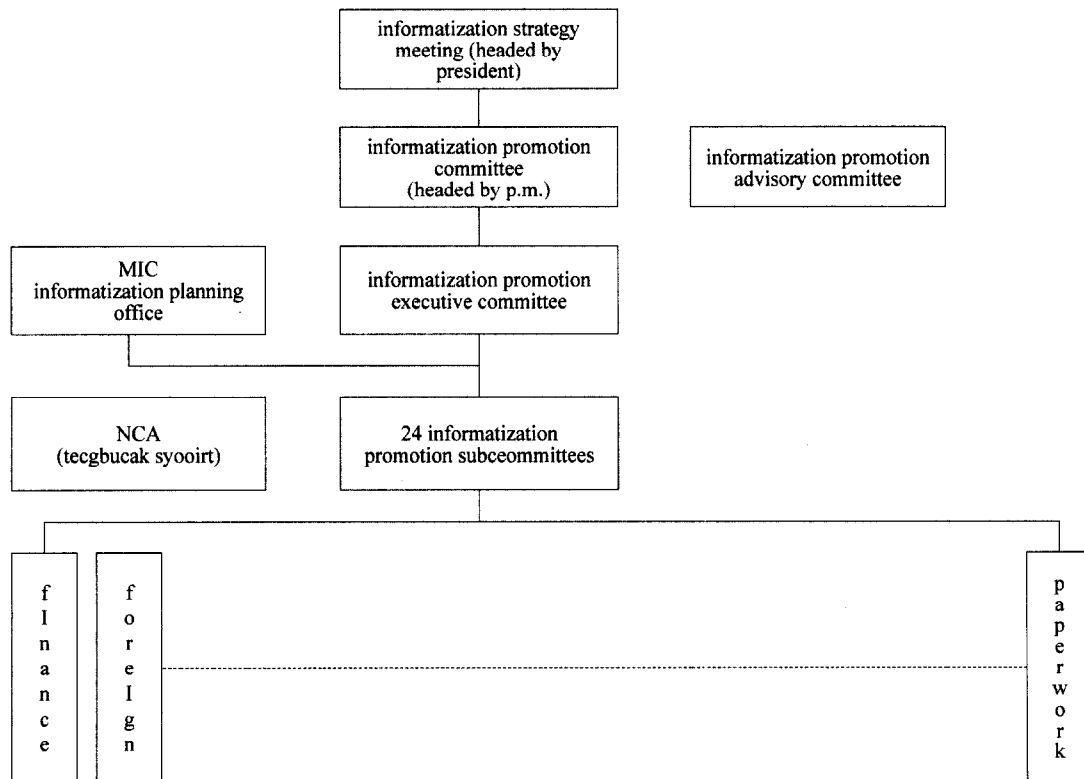


Figure 1. Government Structure for National Informatization Policy.

Table 1. Informatization Subcommittee

Subcommittee	Lead Ministry	Subcommittee	Lead Ministry
Finance	MOFE	Health& Welfare	MHW
Foreign affairs	MFT	Environment	MoEnv
Justice	MJ	Industrial Manpower	MOL
National Defense	MOD	SOC	MCT
Administration	MOGAHA	Marine and Fishery	MMF
Regional	MOGAHA	Information Security	NIS
Emergency Service	MOGAHA	Intelligence	NIS
Education	MOE	Legislation	MoLeg
Science and Technology	MOST	Banking	Bank of Korea
Culture	MoCul&Tour	Knowledge Resources Management	MIC
Agriculture	MAF	Digital Inclusion	MIC
Industry	MOCIE	Paper Reduction	MOGAHA

established in June 1996. The committee is composed of 23 ministers and presided over by the prime minister. The committee's composition is almost the same as Cabinet Committee except for the absence of the president. Twenty-six business-people and academics participate in the Informatization Promotion Advisory Committee. Executive committee previewing the agenda supports the Informatization Promotion Committee. The executive committee is composed of 24 vice ministers and headed by Minister of Government Policy Coordination. MIC's informatization planning office provides administrative support for the executive committee. The Minister of MIC plays a key role in setting the agenda, the decision making process in both the executive and main committees.

Under the executive committee, there are 24 Informatization Promotion subcommittees, 21 sectorial subcommittees (finance informatization, foreign affairs informatization, ... banking informatization) and 3 subcommittees prescribed under separate acts (knowledge resource management committee, digital inclusion committee, paperwork reduction committee).

Each of the 21 sectorial subcommittees is headed by a vice minister and composed of 15~20 members

(some experts and some bureau directors).

The informatization planning office within MIC writes the 5-year basic plan for informatization, reviews the annual executive plans by sectorial subcommittee and decides upon the expenditures for the Informatization Promotion Fund. The office consists of one director, two deputy-directors, eight divisions and two task forces. The National Computerization Agency (NCA) provides technical support for MIC, the Office for Government Policy Coordination and the Informatization Promotion Committee.

Each ministry or administration has a bureau or division for informatization or information system management. Most ministries install an informatization division within their Office of Planning & Management.

A Chief Information Officer (CIO) is appointed for each ministry. Most CIOs are directors of Planning and Management and have little practical knowledge about information technology and innovation and, consequently no incentive to advocate informatization within their ministry. The CIO council does not function well. The council members meet once or twice a year to share or present informatization issues.

Table 2. Information Technology and Informatization Agent

Ministry	Agent	Ministry	Agent
Planning & Budget	Planning & Mgt Office informatization division	Gender Equality	Policy Office administration and legal division
Legislation	Planning Office informatization division	Construction & Transportation	Planning & Mgt Office informatization division
Government Information Agency	Planning Office data supporting division	Marine & Fishery	Planning & Mgt Office informatization division
Patriots & Veterans Affairs	Planning & Mgt Office informatization division	Customs Service	Information Cooperation Bureau Information Mgt division
Finance & Economy	Planning & Mgt Office administration and legal division	National Tax Service	Information Mgt Bureau
Education & Human Resources	Int'l Cooperation & Informatization Planning Bureau	Public Procurement Service	Item Information Bureau information mgt division
Unification	Planning & Mgt Office informatization division	National Statistical Office	Statistic Information Bureau information processing division
Foreign & Trade	Planning & Mgt Office informatization division	Public Prosecutors' Office	Planning & Coordination Bureau information & communication division
Justice	Planning & Mgt Office informatization division	Military Manpower Administration	Planning & Mgt Office informatization division
National Defense	Informatization Planning Bureau	National Police Agency	Information & Communication Bureau
MOGAHA	Government Informatization Planning Bureau	Meteorological Administration	Informatization Bureau
Science & Technology	Planning & Mgt Office informatization division	Cultural Properties Administration	Planning Office planning division
Culture & Tourism	Planning & Mgt Office informatization division	Rural Development Administration	Agriculture Mgt Information Bureau
Agriculture & Forestry	Planning & Mgt Office informatization division	Forest Service	Planning & Mgt Office administration and legal division
MOCIE	Planning & Mgt Office informatization division	Small & Medium Business Administration	Mgt Support Bureau Informatization support division
MIC	Informatization Planning Office, Planning & Mgt Office informatization division	Intellectual Property Office	Information & Data Bureau
Health & Welfare	Planning & Mgt Office informatization division	Food & Drug Administration	Planning & Mgt Office information division
Environment	Planning & Mgt Office informatization division	National Railroad	Planning Office
Labor	Planning & Mgt Office informatization division	Maritime Police Agency	Security Bureau information & communication division

Problems to be Solved

1. Overall, planning and coordination are weak because the current staff in charge of informatization in Presidential or Prime Ministerial Offices have little exposure to information technology and innovation. Therefore, the informatiza-

tion strategy meeting and the Informatization Promotion Committee are superficial. The supporting body for the meeting or committee is MIC's Informatization Planning Office, which has a strong technical and supply-sided orientation but is weak in sectorial barriers against informatization.

2. The coordination and review body has little

power and the informatization policy coordination for inter-ministerial conflicts usually does not work. The budget process is loosely linked to the Informatization Promotion Committee process.

3. Conflicts between MIC and the other ministries are frequent. MOGAHA and the Ministry of Planning and Budget conflict with MIC over e-government, and MOGAHA and MOCIE squabble over electronic signature and public key issues. MOCIE and MIC vie for control over e-commerce. Therefore, MIC has great difficulties in coordinating the informatization project with the 5-year basic plans for informatization, informatization promotion fund and the informatization committee system.

4. CIO appointees, usually Director of Planning and Management (grade 1), work on the greatest variety of tasks and are not qualified for the informatization job. Private experts want the job but have limited opportunities.

SUGGESTED ORGANIZATIONAL STRUCTURE FOR INFORMATIZATION POLICY

Guidelines for Organizational Design

National Coordination Function

Korea should maintain economic growth in order to provide a fair distribution of income and wealth. Without production and distribution system reform, economic growth cannot continue. Transparency, participation, freedom of choice and openness toward foreigners are crucial values for Korean society. Informatization planning should be based on strategies for national innovation and pursue desirable values both within and outside government. Informatization efforts should support the reform process and governmental innovation. A national coordination body should be established under the auspices of the President or Prime minister.

Innovation/Reform Orientation Emphasized

Until now, MIC and the major IT industrial companies have played a leading role in informatization. They have a big incentive to provide high quality technology and facilities in a short period but are not experts in understanding people's behavior or institutional background. The major barriers against informatization projects are the human or organizational structures. Informatization should build partnership with the ongoing innovation and reform process both within and outside government. NGO's demand for government reform should be regarded as one axis of reform process. A government informatization agent should support and utilize NGO reform activities.

Governmental level Design for Informatization Organizations

The President's agendas are summarized in the National development strategy and plan. Informatization should be an effective tool for those agendas. The President should be exposed to informatization planning. Last April, President Roh established Government Innovation & Decentralization Committee as a President's advisory council. The Committee has five special subcommittees, one of which is e-government special subcommittee. A top-level council for national informatization should be linked to the Committee and be presided over by the President. Key presidential staff should be in charge of national informatization and innovation. An executive minister and ministry are necessary to oversee the informatization projects. The ministry should have enough power to coordinate inter-ministerial conflicts during the period of planning and implementing projects. Informatization is closely related to reform and planning as well as budgeting, deregulation, program evaluation, and policy coordination, which are executed by Presidential or Prime minister's office.

A quasi-public agency is necessary to link the private sector and the government. The agency will analyze technological trends and foreign informatization experiences.

President's Council for National Informatization

First, we decide who presides over the top-level committee. Though the President presides over the informatization strategy meeting, which is an event, the Informatization Promotion Committee holds periodic meetings and is high-level committee headed by the prime minister. The committee handles a long list of routine informatization projects as well as special projects. The committee should focus on a limited number of strategic projects to which the President can and should pay attention. The Council, called the President's Council for National Informatization (PCNI) is presided over by the President.

The Council consists of 10 or so members. They can be five minister-level officials such as the prime minister, ministers of planning and budget, commerce and industry, research and education, a chief secretary of innovation and five private sector experts. Compared to the current non-permanent Informatization Promotion Committee, private experts participate in the council and permanent non-governmental staffs work for the council members. The current sectorial subcommittee system has a negative effect on coordination. Therefore, the PCNI organizes a project team in which two or three council members participate. The council draws the blue print or roadmap for a future information society based on the President's vision. The chief secretary of innovation is a liaison officer between the President and the Council. He/She is national CIO and participates in both the President's Council for National Informatization and the Government Innovation & Decentralization Committee. The Clinton Administration spearheaded the Information Infrastructure Task Force

(IITA) and the National Performance Review (NPR), which are appropriate models for Korea's two Councils: one for National Informatization and one for Government Innovation.

If the Roh Moo-hyun administration launches a 'strong prime ministerial system' under which the prime minister exercises a semi-independent power to control ministers in some policy areas, a prime minister mindful of informatization can lead the Council. Teamwork between prime minister and chief secretary of innovation would be crucial for the Council's success. If the prime minister exercises her/his power in informatization policy and presides over the Council, her/his CIO can work as an NCIO who is supported by one secretary for informatization planning and another secretary for informatization evaluation.

The National Information Society Institute (NISI, a quasi-public research agency) assists the council members to produce the overall plan and develop strategic plan similar to current basic informatization plan, but will exclude the technical development and IT industry policy component. The private sector council members and the Institute will be the key players in producing the strategic plan. NISI researchers consist of full and part-time senior fellows and full time junior associates. Informatization planning and evaluation researchers in current NCA and KISDI can be assigned to the new institute NISI. NISI's status and role is similar to Korea Development Institute (KDI)'s in the 1970's. NCA's technical support can work with the institute that handles IT R&D, and it might be merged into Electronics and Telecommunications Research Institute (ETRI) in the long term.

Ministry of Reform, Planning and Budget

Alternative lists for the ministry in charge for informatization policy are the Ministry of Information and Communication, the Ministry of Plan-

ning & Budget, the Ministry of Government Management, the Ministry of Policy Coordination, and the Ministry of Government Reform. MIC is the key player for informatization policy because MIC draws up the basic informatization plan, exercises expenditures of the informatization promotion fund, and implements project evaluation. MIC has linked informatization policy to IT industrial policy and has succeeded in providing a domestic company favored network and a HW/SW for informatization projects. Separation between the IT industry and informatization will result in a reduced demand for domestic IT goods and services but will increase the efficiency of IT infrastructure and investment timing.

The planning and coordination process should be closely linked to the budget and performance evaluation process. An ideal alternative for a ministry handling informatization policy is to have the ministry handling administrative reform, planning, budget and evaluation. The informatization planning office should move from MIC to a new Ministry of Reform, Planning and Budget. The informatization promotion fund will be used only for IT R&D purposes and be managed by MIC.

The Organizational breakthrough of Roh Moo-hyun administration will come about with a new, powerful, innovating ministry. The Ministry of Reform, Planning and Budget (MRPB) merges the functions of Ministry of Planning and Budget, government innovation function of MOGAHA and informatization function of MIC. MOGAHA's current functions should be simplified and a number of jurisdictions devolved to local governments and the other ministerial agencies. The MRPB would be similar to the Economic Planning Board that existed from 1963 to 1994, and the OMB in the US. The MRPB Minister can take over deputy prime minister status from Minister of Ministry of Finance and Economy (MOFE). A strong prime minister system is not likely to fit within deputy prime minister system.

MRPB consists of Government Innovation Office, Planning bureau, Informatization Planning Office, Budget Office, Evaluation bureau. If MRPB includes the government affair function, its name will be the Ministry of Planning & Management.

The Budget Office in MRPB handles a lump sum budget for each ministry or agency. Line item budgeting is executed by each ministry or agency. The Informatization Planning Office handles the president's informatization projects or multi-ministerial projects only. The majority of officials working in Informatization Planning Office should be recruited from the private sector (businesses, NGOs, and academia). The office plans projects, reviews project budgets and evaluates and audits project performance. The Informatization Planning Office and Government Innovation Office cooperate on e-government projects.

The director of Informatization Planning Office (grade 1) heads the CIO council and reports to the MRPB minister and chief secretary of informatization. The CIO council takes preliminary review on budget of informatization projects and turns the result over the Budget Office.

Next 5 years, the Ministry of Commerce, Industry and Energy and MIC can be merged. New merged Ministry of Commerce & Industry (MOCI) manages the IT industry's exports and e-commerce growth. Jurisdictional competition between MIC and MOCIE has escalated and a merger of the two ministries is an effective solution for their bureaucratic battle. MOCI will handle e-commerce projects with support of MRPB. The newly installed Communication Commission will exercise regulation over communications business.

The Ministry of Research and Education and the Ministry of Culture focus on audio/video content development and school and library informatization. Compared to current organizational system (see Figure 1), the new system (Figure 2) enhances research institutes and their visionary mission.



Figure 2. Organizations for National Informatization.

Ministerial CIO organization

The current 'office of planning and management system' within each ministry has been around since 1961. A CIO's mission can be divided into e-government projects and sectorial informatization policy. Some ministries are policy developers and managers and the other ministries are service agents. A CIO within policy development and management ministries such as Ministry of Construction and Transportation, and the Ministry of Commerce, Industry and Energy should have two separate missions but give a higher priority to sectorial informatization policy over e-government projects. The CIO can head the informatization bureau. A CIO in service agent ministry such as Ministry of Patriots & Veterans Affairs, or Korea Customs Service should integrate e-government and informatization projects. There should be a CIO stationed in new Office of Planning and Innovation (current the Office of Planning and Management) as deputy director of the office. In next five years, all the CIO position should be assigned to the open recruiting system one as bureau director or higher. Most CIO should be recruited from the private sector because there are few information technology experts at the bureau director level or above within government. The CIO council should be comprised of a majority of

private sector individuals. Ministerial CIOs report to their minister, the Chief Secretary of Innovation and the head of CIO Council (the director of Informatization Planning Office in MRPB).

Reorganization Summary

Present organization(s)		New organization
-informatization strategy meeting -informatization promotion committee	⇒	president's council for national informatization
-chief secretary of policy planning to the President	⇒	chief chief secretary of policy planning to the President chief secretary of innovation to the President
-ministry of planning & budget -administrative informatization planning office, MOGAHA -informatization planning office, MIC	⇒	Ministry of Reform, Planning and Budget · government Innovation office · planning bureau · informatization planning office · budget office · evaluation bureau
-informatization division within a ministry -office of planning and management	⇒	CIO bureau or CIO in office of planning & innovation
-informatization supporting team, informatization planning team in NCA -information society policy team in KISDI	⇒	National Information Society Institute

CONCLUSION

This paper suggests an ideal government organizational structure for informatization policy for Roh Moo-hyun administration. It does not consider the feasibility of and degree of resistance to ministerial reorganization because the new administration has little obligation to the stakes of incumbent bureaucrats. It is expected that President Roh will reshape the ministerial organizations after National Assembly Member election that is held on April 2004.

The new organizational structure for informatization policy is composed of:

- ① the President's Council for National Informatization headed by President
- ② the chief secretary of innovation who is national CIO and coordinates the Council

- ③ the National Information Society Institute, which explains the President's vision and draws strategic informatization plan
- ④ the Ministry of Reform, Planning and Budget, which is similar to OMB in the US and handles government innovation, planning, informatization, budget, and evaluation and implements the president's innovation agendas
- ⑤ a ministerial CIO who handles sectorial informatization and e-government projects.

A new direction of informatization policy and government reorganization for national informatization and e-government should consider the president's national innovation vision and agenda. My fondest hope is that President Roh and his aides understand the meaning and importance of informatization in Korea during the next 5 years.

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