

A Study on Informatization and Administrative Functions

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I. Introduction

Influenced by the rapid development of information technology(IT) owing to the merger of computer and telecommunications technology, informatization has been fast advancing in the world. Informatization not only accelerates structural changes ranging from economics to society as a whole, but also has significant impacts upon national activities as well as individuals or society. In the light of implementing all the national activities in the future, therefore, developing trends, influence, and utilizing methods of the informatization are to be considered.

Initiated by the governments, the major countries in the world have already made efforts to prepare for the plans to meet changes of the informatization. As a part of the plans, they are advancing to establish management systems of national administrative information handling and joint-utilization systems. These efforts are aimed at administrative efficiency, enabling to use fair, prompt and accurate information and ultimately realizing 'a small and efficient government.'

The administration which had played the driving role of economic growth and national development in the 1970s and the 1980s here in Korea has been no doubt changing in the 1990s. Compared with that in the past, it is also true that its influence has been reduced. It is difficult, however, to imply that the reduction of administrative influence is the very decrease of administrative functions. The major reason is that the administration has changed from 'visible administration' in the past to 'invisible one' today. That is, although its influence appears to be reduced, its function peruse can not be said to be decreased but changed to be flexible and elastic.

In the era of 1960s and 1980s, for example, the number of civil servant for public welfare more increased than that to overall policies among the high-level civil servants (those who passed the higher civil service examination).¹⁾ In particular, as <Table. 1> illustrates, whereas the number of those who are in charge of

(Table. 1) Distribution Trend of Civil Servant of each economic ministry
(Unit: Person, Proportion %)

years Department	1960s		1970s		1980s		1970s / 1980s
	Pers	Prop	Pers	Prop	Pers	Prop	
EPB	17	19.5	159	21.2	72	14.4	▽
MOF	18	20.7	153	20.4	72	14.4	▽
MOT&I	16	18.4	111	14.8	67	13.4	▽
MOC	5	5.8	35	4.7	54	10.8	▲
MOH&S	4	4.6	34	4.5	36	7.2	▲
MOL	4	4.6	32	4.3	46	9.2	▲
Total	87	100	749	100	499	100	

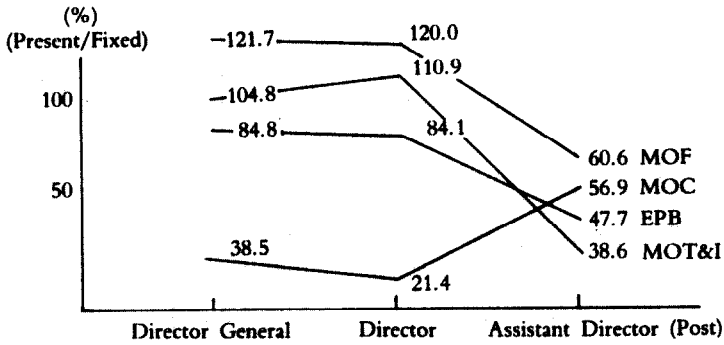
*Notes: — Above persons out of Administrative & Technical higher civil servant examination
— Above Table readjusted 6 Departments among the 11 Department which analysed initially

the overall functions such as the Economic Planning Board (EPB) less contacting with the public has been decreasing, that of those who are in charge of direct public services such as the Ministry of Communications (MOC) has remarkably increased in the 1980s. In fact, such a trend well implies that our administrative departments tend to meet the public services actively.

It explains that the downward type and role of administrative functions prevailed in the industrial society have transferred to the upward type influenced by social changes. This is well supported by (Table. 2)²⁾, which demonstrates the situation of the fixed number civil servants is very high, that of deputy or assistant directors is dramatically reduced in the policy-making departments such as the EPB, the Ministry of Finance, and the Ministry of Trade and Industry.

It explains that whereas the former prefer to work at the policy-making departments such as the EPB, the latter prefer to work at the business-oriented departments such as the MOC. On the other hand the phenomenon that the number of civil servants increase in the business-oriented departments such as the MOC implicates the fact that the policy function of these departments is relatively emphasized. That is, a way in which departments establish their relationship one another is changing, through supplementing sectoral authority between departments such as decentralization and adjustment of establishing policy and adminis-

〈Table. 2〉 The situation of the fixed number of high-level civil servants in each department



trative right. In addition, the trend is a good illustration explaining that the administrative functions within the departments are transferring towards the public-centered administration.

In this regard, this study intends to look at the change of our administration and the tasks in the future in accordance with the advancement of informatization.

II. Recognition of the Problems Faced by Administration

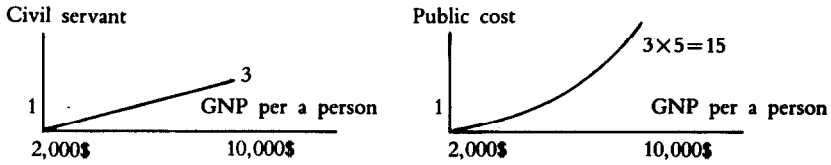
As the primary problem that administration today faces, increase of public costs and efficiency of national management will be examined.

The first is looking at problems resulting from the increase of public costs and countermeasures for the problems. To date, demands and expectations for the administration are rapidly increasing as a result of economic growth and increased income.

In order to satisfy such demands and expectations, administrative countermeasures meet limitations among which the very core is the public costs. This is also an inevitable problem that our administration faces in order to advance into the developed countries. According to experiences of the advanced countries such as European countries and Japan, as 〈Table. 3〉 illustrates, while the national income increases from \$2,000 to \$10,000, the number of civil servants and the cost of public service increase more than third and fifteenth times respectively. However, Japan among the advanced countries shows great differences from others in terms of changes in the national income and the number of civil servants.

For example, as 〈Table. 4〉 demonstrates, when the national income is \$10,000 per a person, the number of civil servants are 70 per a population of 1,000 in the U. S. A, F. R. of Germany, France, 150 in Sweden, and mere 35 in Japan. In return, Japan maintains "the smallest government" in the world. A direct and

〈Table. 3〉 Trend of increasing public cost according as increase of the income



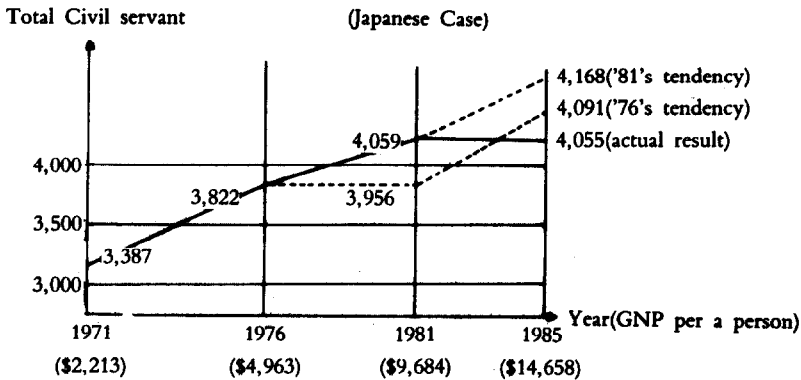
—Source: NCB, The Comprehensive Bibliography of National Computerization, 1988.

〈Table. 4〉 Comparison of Each Country Civil servant

Section	C. Searvant(thousand)	Remarks
U. S. A., Germay,	70	*Criterion of Nat'l income \$10,000 per person
France	70	
Sweden	150	
Japan	35	

—Source: NCB, The Comprehensive Bibliography of National Computerization, 1988.

〈Table. 5〉 A Current Change number of civil servant relating to the increasing of income



efficient factor among many others that enable Japan to maintain such “the small government” is likely resulted from that Japanese administration actively faced the pressure for national and social changes through science-oriented policies and computerization. This is empirically explained by 〈Table. 5〉, which illustrates a case study resulted from an analysis about the changing number of civil servants relating to the increase of income and the administrative informatization relating to computerization.

That is, in case of Japan, although the total number of civil servant had increased after the 1980s when the administrative computerization reached the stage

of completion. The second is looking at efficiency problems of national management and countermeasures for the problems. In current global villages where all the sectors are closely exchanging and opening, the national management sector like other sectors is also demanded for raising economic strength and efficiency in order to enhance competitiveness. Also, the quality and quantity of information relating to production and management are diversifying and rapidly increasing in this sector. Hence, in the light of enhancing national competitiveness, the efficient management problem of national competitiveness, the efficient management problem of national administrative information is the national competition will depend upon which nation will minimize the cost of national management, the efficiency of national management will be subject to how much and soon the nation will get rid of national inefficiency. The most influential means to support this view is the very informatization.

On the other hand, in case of Korea, when its national income was \$2,002 per a person, the number of civil servants was 16.3 in 1983; \$ 4,968 and 17.7 respectively in 1989.

This will demonstrate that the Government has intended to realize a small government. However, the important point is a strategy to meet the time when our national income reaches \$10,000 in mid 1990s.³⁾

That is mainly because the national competitiveness in the world will be decided by whether or not a nation efficiently meet the public demands which will increase as a result of increased national income. In addition, increasing administrative demands will inevitably lead to increasing the number of civil servants. Similarly, it will not be avoidable to raise the wage of civil servants to the standard of private sector. In order to meet this forthcoming circumstance effectively, improving the productivity of civil servants should go hand in hand with reducing the increase in their number to the largest extent.

It does not mean to reduce the present number of civil servants but to decrease the number which will increase more than two times in the future.⁴⁾

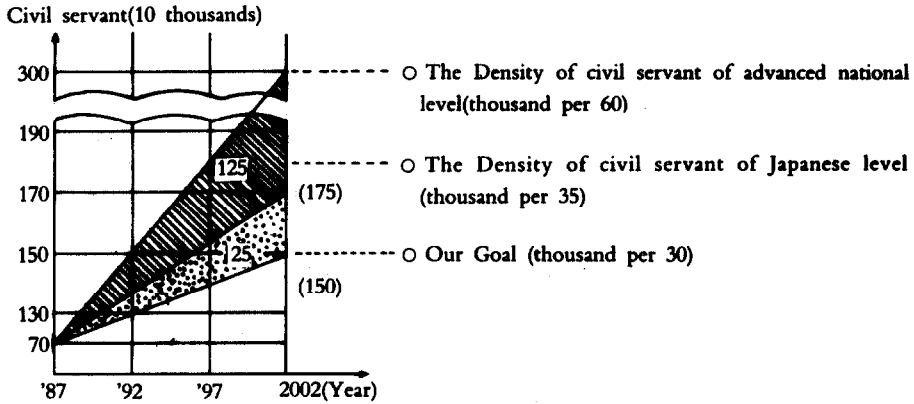
Also, a possibility of reunification between South and North Korea has never been so high until today when the rapidly changing international political trends led to the unification between two Germanies. In this circumstance, the national capability of efficient management as a whole becomes more and more significant to achieve the Korean unification.

III. Administrative effects of Informatization

Informatization is valuable as an appropriate means to solve problems that the administration today faces. This can be examined by two large aspects as follows:

Firstly, the administrative computerization will enable to advance the realiza-

Table. 6 Reduction effect of manpower and cost



—reduction effect of public cost
 In case of restrain 250thousands public servants
 (Unit: Billion won)

Section	Regular Value	Net Present Value
cost reduction(personal)	25,787	14,953
required cost computr'n	11,000	6,759
computerization effect	14,787	8,194

tion of national welfare. Through embodiment of small and efficient government at an administrative aspect and the improvement of convenience with offering fair, prompt and accurate information transmitting system nation-wide at a public service aspect.

Also, as <Table. 6> shows, establishing administrative computer network is able to reduce the enormous increase of costs and manpower in a variety of ways: e.g., diminishing overlapped investment among administrative organs; following efficient networks for administrative organizations and resources; and saving the budget relating to computer through developing its operation.

Secondly, the administrative computerization will enable to improve administrative system. Through the administrative computerization the administrative functions will change to the following directions:

1. The administrative functions will become more prompt and accurate. Stimulated by introduction of information technology (IT) such as office automation equipment, new information processing and network in the administra-

tion, the administrative service function will shorten the time and in consequence become prompt.⁵⁾

Owing to prohibiting human errors by using computer, accuracy of the administrative functions will also increase.

2. The administrative functions will become diversified. Through establishing the administrative information system, collecting and analyzing information which are necessary to the administrative functions will become easy. Also, computerization integrates businesses dispersed between departments and between regions through computer networks, and in turn new administrative services will be variously created. Hence, all these will satisfy a variety of administrative demands of the people.
3. The administrative functions will have great spheres. Influenced by expanding the supply of information equipment such as terminals nation-wide, people's opinions or thoughts can be widely converged, and in turn easily delivered to the administration. As a result, the opportunity of people's participation in the administration will increase. Administrative publicity and information transmitting functions through nation-wide terminal will lead to widen the operation range of administrative functions. This will be accelerated by emphasizing on the significance of distributing information and dividing administrative functions.
4. The administrative functions will be two-way. Through expanding and supplying information equipment nation-wide, people's opinions are easily delivered to the administration. Also the people have more opportunities to have access to the administration. In return, the administrative functions will change from one-way such as conveying the ideas of administrative organizations to the people, to two-way such as exchanging the ideas between them.
5. The administrative functions will be improved in terms of quality. Introduction of administrative information process system will improve ability to maintain the administrative information. A vast volume of information will be scientifically and systematically managed. The quality of administrative functions will be heightened by creating new value added on the basis of this processed information.

IV. Changing Prospects of Administration

As the administrative system is gradually changing from the conventional closed system to the open system, it will be more closely correlated with environment. In this context, the administration is necessary to accommodate changes resulting from informatization. The reason is that, influenced by the

development of IT, various factors relating to industry and social life which have been considered as simple external environment of the administration until now are connected through administrative networks.

A. Changes in Administrative Environment

Referring to changes in external administrative environment firstly, the value and patterns environment, of social members will change. Secondly, the character and substance of administrative problems will change.

Referring to changes in internal administrative environment, firstly, administrative organizations and structure will change. Secondly, communicating structure will change. Thirdly, methods of accomplishing businesses are also expected to change.

B. Changes in Administrative Demands

Advancement of industrial development, social improvement of living standards, internationalization and openness will all increase national demands for the administration. As Peter Self suggests, changes of administrative demands in information society can be looked at by three variables which have impacts upon administrative activities: technological change; economic change; and social change.

The first is changes in administrative demands resulting from the development and changes of information and telecommunications technology. The administrative demands will increase when the existing systems and facilities are required for amendments, and when the administration has to meet negative effects and political confrontations especially resulting from new IT.

The second is changes in administrative demands resulting from the information economy. As economic environment changes, so new regulation, deregulation, and re-regulation will be added. Furthermore, as openness, liberalization and internationalization are advancing so information flows and trade issues between nations will appear as administrative demands.

The third is changes in administrative demands resulting from social changes towards the information society.

A variety of phenomena such as acceleration of urbanization, nuclear families, and individualism, changes of social security, increase of feminism and so forth will need to formulate policies for the administration.

C. Changes in Administrative Organizations

The major concern is how power relations will change within organizations as a result of increasing the use of IT. That is, whether the introduction and utilization of computers within organizations will lead to centralize or decentralize

decision-making within organizations. Since computerization implicates both centralization and decentralization, a possibility of reinforcing the current trend of centralization can not be ignored.

Also, the administrative informatization will change substance of work, and in turn members of organizations as well as structure of manpower. Reducing the number of administrative organization will be inevitable, since informatization will have impacts upon the administrative organizational classes and controlling scopes, restructure of posts, and needs for new organizations. On the other hand, due to the informatization which will emphasize on decentralization, democracy, and so forth, organizations in which the people can horizontally and variously participate will be created and extended. As a counterbalancing effect, creating new organizations can result in reducing the number of administrative organization.

Overall, increase of communications between administrative sectors will possibly change from the traditionally vertical type of administration to the horizontal one through unification of the administration. In the light of administrative organizations, as the number of decision-making procedures at both the simple clerical workers and the middle-level managers is reduced, so the organizations will be simplified.

D. Changes in Administrative Procedures

As the processing of collecting, integrating, analyzing, exchanging, and transmitting information is automatized through IT, the organizations which are in charge of handling the process will be reduced, and in turn the administrative process will be much more simplified. That is, owing to the simplification of administrative procedures, unnecessary forms and procedures among the current paperwork and civil petitions will disappear. Furthermore, since various admission procedures are simplified and the process of exchanging and confirming documents is carried out on the basis of data-base, when the basic data is input, it will be automatically transmitted to and referred at the relevant places. In particular, the most great changes in this process is those at the window for civil petitions, of which work is mainly to issue a variety of certificates. The issuing has been classified until now subject to the substance of work. However, on the basis of information and telecommunications networks, the window for civil petitions will be unified and simplified.

E. Changes in Administrators

In the future, strengthened by informatization change of administrative environment, demands, organizations and procedures will have great impacts upon creating new values and attitudes of administrators. That is, administrators as an

achievement-oriented type having strong desires for self-realization can be assumed to change to be creative and active. While simple and repeated administrators' work will be enormously reduced, administrators' capability of analysis, comprehension and creation relating to information processing will be required.

In particular, the middle-level managers will entrust the work relating to information processing to computers.

Since creativity will be more emphasized on searching information and solving problems, the substance of administrators' work will be highly improved. Therefore, whereas administrators' ordinary work will decrease, their specialized work relating to sophisticated information activities requiring creative ideas such as planning, project and design will be increased. As a result of the change in the type of administrators' work and environment, it will be necessary to give a new dimension of motivation.

V. Tasks for Administrative Changes

As described above, informatization has tremendous impact upon internal and external administration. In this context, administrative tasks in the future will be contributing to the national development through encouraging positive functions and is couraging negative functions of informatization.

A. Tasks for Administrative Democracy

As society is gradually opening and externalization of administration through opening information will become the most important course of the forthcoming administrative reform. In order for the administrative function to be persuasively accepted by the people, it is to have priority to 'reliable administration' and 'justifiable government.' The major reason why the administrative function could not in part obtain people's reliance in the past lies in closeness resulting from monopolizing information. The past experience ought to self-examined.

On the other hand, a highlighted argument is in recent that information should be opened at regulatory levels as soon as possible, in order to satisfy the basic rights relating to information such as 'the right to know', 'the right to use information' and 'the right to have access to information', as well as to recover administrative democracy and reliability.

Therefore, through opening information about policies and plans to the ordinary people as well as to the people involved interests, as many as the people can have opportunities to participate. In this way, it will be desirable to extend the base of supports about policies. However, in order to contemplate the primary issues resulting from opening the administrative information such as protection of individual privacy and equality of information, it is urgent to prepare for systematic mechanisms.

B. Tasks for Administrative Efficiency

As a part of national key computer networks, administrative computer networks are to date established. On this base, it became possible to share the administrative information. It is likely to 'enhance management functions' through information in the light of utilizing information between the government departments. Indeed, on the basis of integrating information about politics and economics as well as about trade, industry and technology, organic integration between information ought to be obtained.

As a matter of fact, if the collected and analyzed administrative information can be shared, the improvement of administrative services will be able to be expected through 'one-stop service' for the people. In addition, enhancing efficient management through decentralizing and adjusting administrative information is to be the major administrative tasks in the light of information theory.

C. Tasks for Administrative Autonomy

In order to implement free competition based on market principles, it is not desirable for the Government to intervene in private sectors. Therefore, the business-oriented government work is to be gradually transferred to the private sector in the future. For autonomous management, moreover, substantial transfer such as allowance of the ability of transferring and collecting information is more necessary than formal one such as reduction of observation or supervision and transmission of the right of management. In addition, the tasks for establishing administrative autonomy are urgently required not only by public and private sectors who need to divide their roles, but also by members of within the administration. In this regard, innovative changes are necessary within the administration. That is, the administrative reform should be not simply systematic, but autonomous on the bases of active participation of relevant groups, concern of high-level managers, and support of leadership. In this line, administrators' awareness and values should change towards the same direction.

D. Tasks for Administrative Creativity

Creativity is no doubt the vital factor determining the value of information and knowledge which is the mainstay for an information society. In order to accommodate rapid social changes, the administrative creativity in association with breaking down rigidity and authority arises as the significant task.

In order to stimulate the administrative creativity in the information society, the management is to change to be creative ways.

For the administrative creativity, there are four necessary factors. Firstly, har-

mony of centralizing and decentralizing administrative resources. Secondly, combination between arranging administrators who are the greatest administrative resource and allocating business functions. Thirdly, assurance of personnel system such as appointment and arrangement. Fourthly, establishment of effective administrative information system.

Overall, when the administrative creativity is the key task for the development of administration, creativity is the foremost task to be solved for administrative environment, administrative organizations, and administrators in the information society. Therefore, the administration ought to preempt the potential demands from the people and vitalize creative suggestions.

VI. Conclusion

The administration should appropriately meet the pressure of informatization and the administrative sector ought to make every effort in order to solve the tasks resulting from the administrative changes influenced by informatization. For the purpose of continuing the key role of national development, the administration is to enhance priority to the realization of democracy, efficiency, autonomy and creativity of which tasks have been already mentioned previously.

In relation to national competitiveness, at present, administrative influence has been gradually decreasing in accordance with democracy and openness of administrative environment.⁶⁾ It is difficult, however, to say that the reduction of influence is the very decrease of administrative functions.

The significance as well as the change of needs regarding administrative functions and roles will more increase in the future. The major concern is here an expectation that the needs for democracy, efficiency, autonomy and creativity will increase with respect to the wave of informatization which expands the scope and depth of changes. In turn, it is urgently required to consider the direction of developing the administrative sector. Therefore, the administrative innovation is to be the prime mover for social innovation, which will lead to enhance national competitiveness.

In order to implement the functions and roles in more fiercely forthcoming competition between nations, the administration which has played the pivotal role for the national development ought to sensitively meet the change of social environment pursuing individuality, pluralism, democracy, openness, internationalization and equilibrium.

In addition, every effort should be made from the beginning for solving various problems which newly arises in the era of informatization.

Notes

- 1) Internal data of Secretariat of National Computerization Board. This is unofficial data analyzing the proportion of the high-level civil servants (grade 5: assistant director) between 1960s and 1980s, who are in charge of the major policies in the administrative departments (11 departments among the subject of economic ministers' meetings except the Ministry of Foreign affairs).
- 2) In line with <Table. 1> demonstrating the proportion of the number of high-level civil servants depending on each post, it explains the centralization at certain departments and the changes of civil servants over the period: director generals in the 1960s, directors in the 1970s, assistant-directors in the 1980s.
- 3) According to the Seventh Five Year Economic Development Plan that the EPB announced on September 6 1990, our GNP is foreseen to be some \$10,050 per a person in 1996.
- 4) In case of Korea where when the national income is \$4,968, the number of civil servants is 17.7 per a population of 1,000. On this base, if the national income becomes \$10,000, the number will be estimated as 35.4. Yet, Korea intends to limit the number to 30.
- 5) Secretariat of National Computerization Board, The Major current Data relating to National Computerization, 1989, p. 49. In case of issuing certified and abridged copies of resident registration, computerization will shorten the procedure from 4 to 2 steps, and the time from 10 to 2 minutes. In case of work or employment, from 6 to 2 steps, and from 20 to 3 minutes. In addition, owing to the administrative informatization the administrative functions are also anticipated to be prompt and accurate in areas such as real estate, automobiles, customs clearance, economic statistics etc.
- 6) Michael Porter, The Competitive Advantage of Nation, Free Press, 1990 (Cho Dong-seong, Translation), and Choong-Ang Economic Daily, July 13 1990, p. 13.