

An Empirical Study of Information Ethics by Management Levels**

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경영계층별 정보윤리의식에 관한 실증적 연구

최무진

It is assumed that employees' ethical judgements and attitudes in handling personal and organizational information differ, depending upon their hierarchical ranks in organizations and types of information. Therefore we investigated how differently employees at different ranks judge hypothetical behaviors(or situations); their manner of handling various types of information in their daily activities in business organizations.

Sixteen hypotheses based on combinations of 3 ethical areas and 5 information types were developed and tested. We found that three management ranks have shown significantly different ethical attitude about i)the accessibility to strategic planning and managerial information and ii)the property of managerial, operational and informal information.

This research can help organizations to design better education programs and ethical codes to guide employees who process sensitive information.

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I. Introduction

A variety of information passes through hands of workers in an organization. Computer-based technology, such as E-mail, networked databases, and group support systems vastly increased the potential for information sharing in organizations. As memory and database technology has advanced, accessing to and copying intellectual property has become easier and faster than ever before, but legal protections have become more difficult to enforce. Therefore, organizations have suffered abuses, misuses, and illegal copies of information by both insiders and outsiders. 'Insider trading' is a typical example of illegal use of internal information in stock exchange market. But often it is not clear whether an individual's behavior in handling various types of information meets legal or ethical standards. Workers have different perceptions and attitudes based on their subjective judgements. They have different levels of responsibility on the consequences of their misconduct, use different measures to control dissemination of information, and different understanding of the organization's rules, conventions, guidelines, and orders. To date, few companies have concerned about these issues and developed policies and guidelines to direct their employees in handling various types of information at work sites.

This research assumed that employees' ethical judgment in handling various types of information differ with their rank in an organization and investigated how differently managers judge hypothetical scenarios of

information handling. As this issue is further understood, organizations can better develop ethical codes to guide employees in processing sensitive information.

II. Previous Studies

2.1 Factors Influencing People's Attitude toward Information

Many studies have discussed how people take different attitudes toward various types of information in various contexts. Zaki and Hoffman [1988] argued that users apply different value judgments about data and the cost of obtaining or disseminating it. Different items of information have different values for the same users, depending upon their roles to play in the decision processes. Constant et al. [1995] investigated attitude that supports or constrains information sharing in technologically-advanced organizations. Organizational culture and policies as well as personal factors can influence people's attitudes. One conclusion is that attitude depends upon the forms of information. Sharing tangible information (e.g., documents) may depend on prosocial attitudes and norms of organizational ownership; sharing expertise (i.e., intangible information) may depend on people's self-expressive needs. Therefore, some organizations discourage information sharing because of the fear of industrial espionage or of diverting people's attention from their own work or of causing role conflict, and some encourage it by promoting a culture of good citizenship and voluntary help [Grover, 1993]. Studies have

shown that communication and exchanges among people are heavily influenced by their friendships and personal contacts and by their commitment to the organization [Kraut et al., 1990; O'Reilly and Chatman, 1986].

Zeffane and Cheek [1995] examined how individual and organizational characteristics affect the use of different type of information: written, computer-based, and verbal information. They found that job rank (manager vs. non-manager) and tenure are related to use of information. For instance, managers tend to use less computer-based information than non-managers do. Westin [1991] found that with the exception of the insurance sector, people's willingness to trade consumer benefits for a relaxation of privacy interests was not consistent across areas. Therefore, people's perceptions of what constitutes fair information practices vary from sector to sector.

2.2 Personal Information and Privacy Issues

Mason [1986] brought up four ethical issues: privacy, accuracy, property and accessibility. Many studies have addressed the privacy issues associated with company's policies for managing personal information [Linowes, 1989; Stone et al., 1983]. Straub and Collins [1990] discussed implications of unauthorized access to personal information resulting from a security breach. Grupe [1995] addressed privacy infringement occurring as governmental agencies released their public information to third parties under the Open Access laws. Therefore, the Open Access laws directly

conflict with the Privacy Act in many instances.

Culnan [1993] proposed that consumers' attitudes toward the use of secondary, personal information are influenced by the level of fear of privacy invasion, perceived benefits that companies may provide using the information, and other biographical factors. Prior research suggests that, in general, individuals are less likely to perceive information practices as privacy-invasive when (1) information is collected in the context of an existing relationship; (2) they perceive that they have the ability to control future use of the information; (3) the information collected or used is relevant to the transaction; and (4) they believe the information will be used to draw reliable and valid inferences about them [Baker, 1991; Stone et al., 1990].

Privacy has been a major concern to IS managers since many countries have enacted acts for protecting privacy: Sweden '73, USA '74, Germany '77, France '78, Canada '82, UK '84. "Guidelines on the Protection and Privacy of Transborder Flows of Personal Data" published by the OECD in 1980 and the Council of Europe's "Convention for the Protection of Individuals with Regard to Automatic Processing of Personal Data" in 1985 also contributed to awareness of privacy issues.

2.3 Types and Characteristics of Information

Primary information is that gathered from original transactions. The information is secondary when it becomes inputs to other

activities subsequent to the real transaction between the individual and an organization. Information sensitivity differs, depending upon the types of information (e.g., financial, medical, demographic) [Culnan, 1993].

Feldman and March [1981] argued that people do not view information as an inert commodity whose value is separable from its form, manner of presentation, possessors, or channel of communication. People seem to differentiate tangible information ("product") such as a written document or computer program and intangible information ("expertise") embodied as human memory, knowledge, experience, or skill, such as ability to type, ride horses, or fix a software bug. As far as the sensitivity of various types of information is concerned, medical and financial information have been reported to be more sensitive than other types.

III. Research Variables and Hypotheses

<Table 1> shows factors and management ranks included in this study.

The first factor is management ranks (levels). A widely accepted way of classifying them is (1)top-rank (president, vice-president, director, etc.), (2)middle-rank (department head, assistant manager, etc) and (3)low-rank.

The second factor is types of information that managers deal with in their daily activities. They vary depending upon the levels of managerial activities. The scope of operational control information is well defined and narrow, whereas the one of strategic planning

information is very wide. Operational control information requires a higher level of accuracy than strategic planning does. Five types of information were included: (1)strategic planning, (2)managerial, (3)operational, (4)personal, and (5)informal. The personal information is mainly private. The use of any personal information without consent is considered an invasion of privacy. Employees also often make decisions based on informal information like undocumented facts, conventions, rumors, verbal allegations, etc. This does not go through a formal chain of command and is often not well documented, but often plays an important part in critical decision making.

The third factor is areas of information ethics. This can be split into four areas: privacy, accuracy, property, and accessibility [Mason, 1986]. Accuracy issues pertain to who is responsible for the authenticity, fidelity, and accuracy of information, and who is to be held accountable for its errors. Property issues pertain to who owns information, and the just and fair prices for its exchange. Finally, accessibility pertains to what information a person or organization should have the right to obtain.

Sixteen hypotheses were developed based on <Table 1> and summarized in <Appendix A>. The hypotheses are: managers' ethical judgements are affected by the types of information in 3 areas of information ethics. An exemplary hypothesis (H1) can be stated like: three-rank manager's ethical judgements differ significantly on *strategic planning information* with respect to accuracy.

<Table 1> Research factors and levels

Factors		
Management Ranks	Types of Information	Areas of Information Ethics
Top management	Strategic planning information	Accuracy
Middle management	Managerial information	Property
Low management	Operational information	Accessibility
	Personal Information	
	Informal Information	

IV. Research Method

This study used a survey method and collected data using a questionnaire.

4.1 Developing Questionnaire

The items of the questionnaire are presented in <Appendix B>. A total of 15 questions describe hypothetical mini-cases that describe a situation of handling information during daily business activities. Most descriptions are based on true stories from business magazines, newspapers, and conversations with managers. For each question, subjects were asked to respond with their feeling in terms of one of the followings: (1)illegal act, (2)unethical act, (3)acceptable act, (4)unacceptable but may happen, and (5)not able to judge. The scenario or mini-case approach for teaching ethics to IS students has been proven to be an effective pedagogical tool [Constant et al., 1995; Couger,

1989].

Five managers and 5 academicians examined the questionnaire. They evaluated whether the scenario is appropriate and suitable. A pilot survey was conducted with 20 managers, and then, the test-retest method was used to evaluate reliability of 15 items using a group of 22 students. Cronbach coefficient α 's, the most widely accepted measure of a measure's internal consistency, were calculated to examine reliability of each question. The coefficients of 15 items range from 0.61 to 0.74. The minimum generally acceptable Alpha value is .70, however, Nunally [1978] suggested allowing a somewhat lower threshold, such as .60, for exploratory work involving the use of newly developed scales [Flynn et al., 1990].

4.2 Selecting Samples and Survey Implementation

Subjects were solicited primarily from the

MBA classes and top management education program of the university where the author is employed in Korea. The students of the top management education programs were included because responses from high-rank managers were relatively difficult to obtain. Each of the fifty-five(55) students were asked to administer the survey in their own organizations. Specifically, students were asked to select three to five employees at different ranks, ask them to answer the questionnaire, and return them to the researcher. The researcher examined the completeness and appropriateness of the responses. As a result, 252 usable responses were collected.

V. Results and Discussions

5.1 Characteristics of Respondents

<Table 2> summarizes characteristics of 252 respondents. Respondents work at banks, manufacturing, and retailing/service firms. However, a majority came from the manufacturing sector. Most respondents are: 30 - 49 years old, and graduated from high school and/or college. One hundred and eighty three persons had 5 - 20 years job experience, and therefore most of respondents had hands-on experience that involved various work situations. Respondents are also proportionally distributed among three management ranks: top, middle, and low.

<Table 2> Characteristics of Respondents

Industry	Banking	74 (29.4)	Job Experience	LT 3yrs	51 (20.2)
	Manufacturing	118 (46.9)		5 - 10	100 (39.7)
	Retailing/service	60 (23.7)		10 - 20	83 (32.9)
		GT 20		18 (7.2)	
Age	20 - 29	44 (17.4)	Management Rank	Top	58 (23.0)
	30 - 39	116 (46.0)		Middle	85 (33.7)
	40 - 49	79 (31.4)		Low	109 (43.3)
	50 - 49	13 (5.2)			
Education	High School	108 (42.9)			
	College	125 (49.6)			
	Graduate	17 (6.8)			
	Others	2 (0.7)			

Note. Numbers in parentheses are percents.

<Table 3> Ethical Judgments in Dealing with Information Overall

Response Rank	Illegal act	Unethical act	Acceptable act	Unacceptable but may happen	Not able to judge	Total
Low	408 (25.0)	603 (36.9)	145 (8.9)	406 (24.8)	73 (4.4)	1635
Middle	280 (22.0)	506 (39.7)	144 (11.3)	298 (23.4)	47 (3.6)	1275
High	223 (25.6)	323 (37.1)	73 (8.3)	205 (23.5)	46 (5.2)	870
Total	911 (24.1)	1432(37.8)	362 (9.8)	909 (24.0)	166 (4.3)	3780

Note. Numbers in parentheses are row percents.

5.2 Overall Differences among Three-rank Managements(Hypothesis 0)

<Table 3> shows sums of all responses on 15 questions. Three management-rank tend to show similar percents on five choices.

5.3 Ethical Judgment on Accuracy (Hypotheses 1, 2, 3, 4, 5)

<Figure 1> shows that the lower-rank management is more likely to think that reporting inaccurate data to his/her superior is 'unacceptable but may happen' than the middle-rank, whereas top management tends to judge the act as 'unethical'. Therefore the lower-rank management is more likely to take such behavior for granted.

According to <Figure 2>, most of three-rank managers agreed on that an employee's negligent act such as recording inaccurate inventory data is 'illegal' or 'unethical'. However, more top-rank managers tend to think the act as 'illegal'.

According to <Figure 3>, predominantly managers in the three ranks think that leaking false operational information (e.g., false bidding prices) to competitors to manipulate bidding

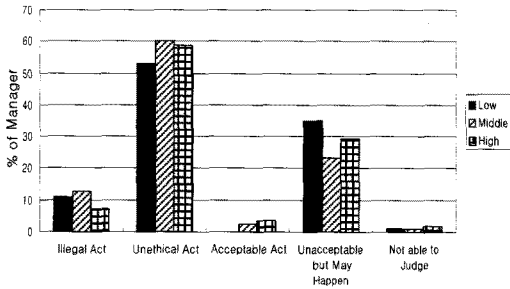
processes is 'illegal' or 'unethical act'. It is surprising to note that 32.54% of managers still think that leaking bidding information to competitors is just an unethical issue rather than a legal issue. The act is an obvious violation of the common business codes, but surprisingly 13% of managers still think that the act is 'acceptable' or 'unacceptable but may happen'.

According to <Figure 4>, a majority of managers at all ranks agreed that making an error in recording personal data that inflicted disadvantages on someone in his/her promotion is 'illegal' or 'unethical'. It is strange to note that most managers judge the act as an 'illegal act'. This implies that most managers think that someone who is responsible for the inaccurate recording of the information whether done on purpose or not should have a legal responsibility. One interesting contrast is that more managers at low rank viewed this act as a legal issue, whereas more managers at top rank think this act as an ethical issue.

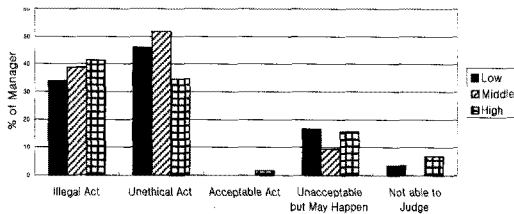
According to <Figure 5>, a majority of managers across the three ranks agreed that the situation is an 'unethical act'. A large number of managers think that making a decision based on a rumor is an "acceptable

act" or "unacceptable but may happen". This implies that managers often face occasions where decisions are made based on a variety of intangible information including rumor, feeling, hunch, etc.. Especially top-rank managers more often rely on 'soft' data such as ideas, gossip, opinions, predictions, appraisals and explanation from outside sources [Bird, 1991].

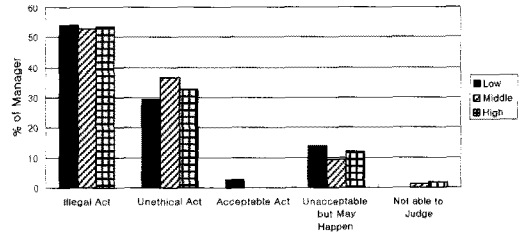
Despite it, top managers are more critical on the inaccuracy of informal (soft) information than the lower-ranks, and therefore tend to demand more reliable sources of informal information. This explain why top management has increasingly demanded developing EIS (Executive Information System) that is specially design to support executive's information needs and decision-making.



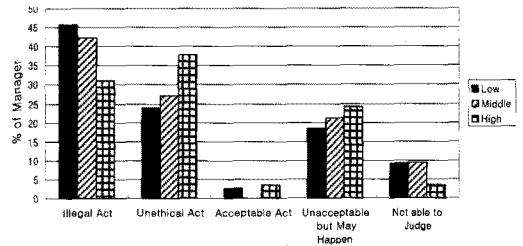
<Figure 1> Judgment on the Accuracy of Strategic Information



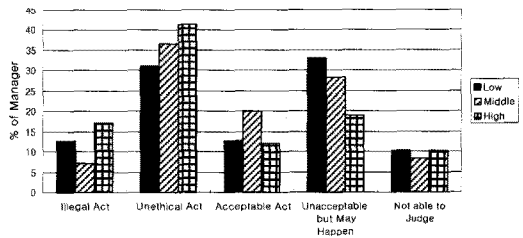
<Figure 2> Judgment on the Accuracy of Managerial Information



<Figure 3> Judgment on the Accuracy of Operational Information



<Figure 4> Judgment on the Accuracy of Personal Information



<Figure 5> Judgment on the Accuracy of Informal Information

Discussions

A majority of managers at all ranks judged the acts related to false reporting, inaccurate accounting practices and leaking incorrect information as either 'illegal' or 'unethical' regardless of information types. Therefore, most managers have a negative attitude toward the inaccurate practices in handling information. By the way, managers also tend to be less strict on the accuracy issue of the informal

information (see 47.2%, a sum of the total of "Illegal act" and "Unethical act" in <Figure 5>) than the other 4 types of information (67.5%, 82.5%, 86.1%, 69.5%).

Internal issues such as false reporting and inaccurate accounting practices are more likely perceived as 'unethical' (see <Figure 1>, <Figure 2>) than an external issue such as giving incorrect information to an outside party (see <Figure 3>), whereas accuracy issues related to external organizations (e.g., competitors) are more likely perceived as 'illegal' (see <Figure 3>) than the internal issues (see <Figure 1>, <Figure 2>).

5.4 Ethical Judgement on Property (Hypotheses 6, 7, 8, 9, 10)

According to <Figure 6>, top management is more likely to think that transferring a company's strategic information (e.g., information about purchasing network) to others is 'acceptable' or 'unacceptable but may happen' than the low-rank. On the other hand, 21% of the low-rank management judges the act 'illegal'. The legality of such act is often controversial, and therefore, it should depend on various legal and environmental considerations. However, the low-rank management tends to have higher ethical standards in the property of strategic information.

<Figure 7> shows that more low-rank managers are likely to think that transferring a company's managerial information (e.g., sales data) to its competitors is 'unacceptable but may happen'. On the other hand, top management tends to judge such acts as 'illegal' or 'unethical'. Therefore, low-rank personnel

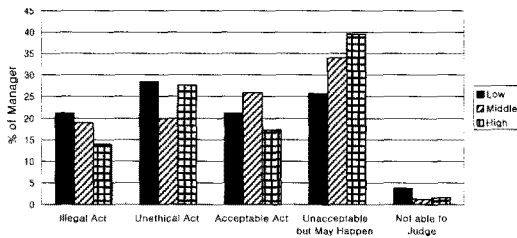
are more likely to accept exchanging some sensitive information between competitors for their managerial control activities. But top management seems to less favor such transfer of managerial information that belongs to an organization. The relationship was significant at $p=0.000$ (see H7 at <Appendix A>).

<Figure 8> shows that more managers at low rank tend to think that giving some operational information (e.g., inventory levels of specific products) to competitors via a close friend is 'unacceptable but may happen'. On the other hand, managers at top rank are more likely to think that such an act is 'illegal', and therefore are stricter when it comes to leaking operational information to competitors than the low-and middle-rank managers. The relationship was significant at $p=0.01$ (please see H8 at <Appendix A>).

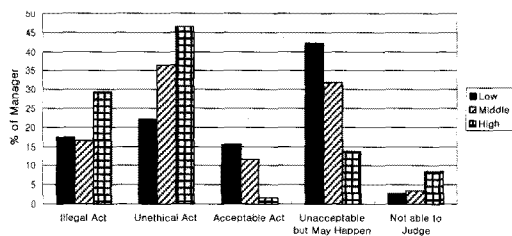
<Figure 9> shows that responses are evenly distributed among the four choices compared to other questions. This implies that the issue is controversial, and therefore opinions of managers are divided on them. However, managers at top rank tend to be stricter in judging the act of passing customers' personal information to a business organization. However, the Figure indicates the majority of managers still think the act as 'acceptable' or 'unacceptable but may happen'.

<Figure 10> shows that more managers at a low rank are likely to think that the act of stealing other's idea is 'unethical', and more managers at the top viewed the act as 'unacceptable but may happen'. Therefore, managers in different ranks tend to perceive the ownership of informal information from different viewpoints. The lower-rank managers

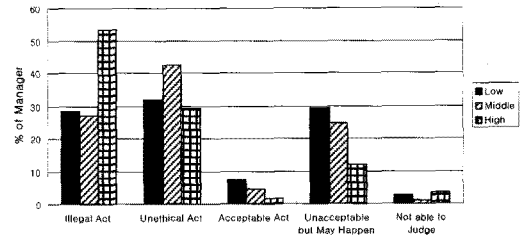
are more likely against the act than the higher-rank managers are. Often the idea-in-document and idea-in-talk have different meanings and social implication to people [Constant et al., 1995]. For example, a manager's computer printout about some statistic may have more influence in the organization than that in the manager's memory. From the legal standpoints, unless the ideas are documented and registered as an individual's intellectual property, they cannot be protected under the intellectual property laws: copyright, patent and secrecy. Therefore, in our case, since the idea was never documented and registered as an intellectual property, it is not under the protection. But 17% of managers thought that stealing other's ideas is an 'illegal act'. The relationship was significant at $p=0.01$ (see H10 at <Appendix A>).



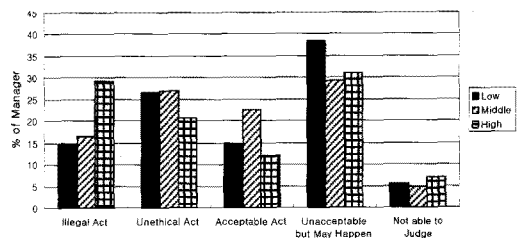
<Figure 6> Judgment on the Property of Strategic Information



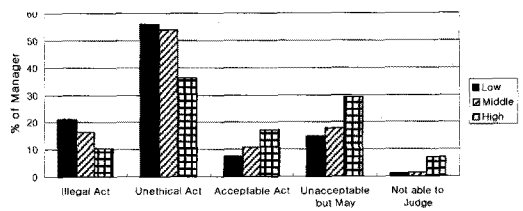
<Figure 7> Judgment on the Property of Managerial Information



<Figure 8> Ethical Judgment on the Property of Operational Information



<Figure 9> Ethical Judgment on the Property of Personal Information



<Figure 10> Ethical Judgment on the Property of Informal Information

Discussions

According to <Figure 11>, top-rank managers tend to show stricter legal judgment on the transfer of managerial, operational and personal information than on the strategic and informal information. Low-rank managers tend to take less seriously transferring managerial and operational information to outside organizations (see <Figure 12>). This implies that many managers lack a balanced sense of judgement

in handling various types of information.

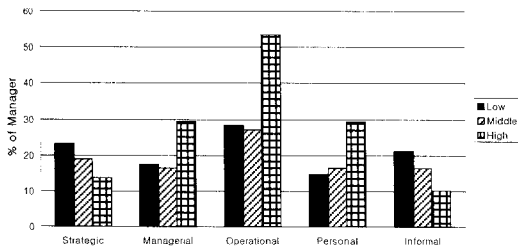


Figure 11> No and % of Managers who Think Transferring Information as an "Illegal Act".

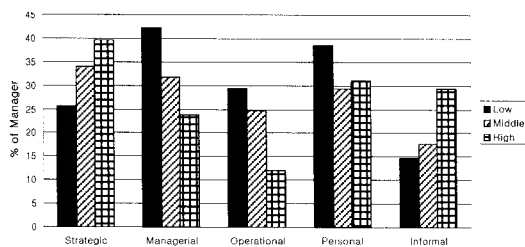


Figure 12> No and % of Managers who Think Transferring Information as an "Unacceptable But May Happen".

These findings can be explained by Kelley and Thibaut's [1978] interdependence theory that distinguishes between information exchange between two individuals acting alone and information exchange between two individuals who are influenced by their social and organizational context. That is, workers at low rank are more likely to give information to a counterpart of competing organizations when they expect some reciprocal acts of the competitor [Warsh, 1989]. The information sharing between competitors have often been acceptable at a low working level. Therefore, the awareness of the property about organizational information becomes thinner when information givers have rational self-interest and expect reciprocal

information from competitors.

Despite the issues of intellectual property have been widely discussed, it is still controversial. In our case, after a manager left Company A, he utilized the expertise (and knowhow) about the purchasing network of European markets for the other competitor that hired him. He could obtained the expertise from Company A that provided staff and resources. A widespread norm is that information should be shared within an organization because the organization owns the labor of their employees. Therefore, the information, outcomes of work such as an idea, process, invention, document, or computer program that an employee creates or acquires at work and/or using organizational resources, actually belongs to the employer rather than to the employee [Constant et al., 1995]. From this standpoint, it seems to be illegal to transfer the expertise to other company in our case. But only 18.65% of managers think that the transferring the strategic information to other organization is "illegal".

The oldest and probably most common form of protection of the intellectual property is secrecy. The trade secrets should be protected by contracts designed to ensure confidentiality on the part of licensed users. To be enforceable in court, the information considered a trade secret must be used commercially and relevant to a firm's competitive advantage.

5.5 Ethical Judgement on Accessibility (Hypotheses 11, 12, 13, 14, 15)

<Figure 13> shows that more low-rank managers

tend to view blocking information (e.g., information about a company's mass-layoff plan) from employees as an 'illegal' or 'unethical act', whereas top management is more likely to judge the act as 'unacceptable but may happen'. Therefore these two parties show strongly contrasted judgments on the access to strategic planning information. The relationship was significant at $p=0.000$ (see H11 at <Appendix A>).

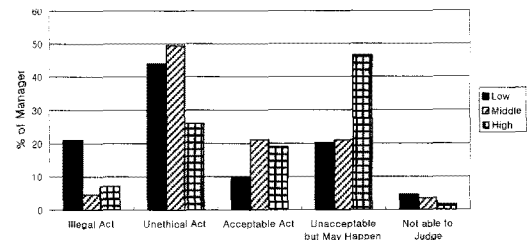
<Figure 14> shows that most managers in the three ranks think that concealing managerial information (e.g., inventory data of short-supply product) from colleagues is 'unethical'. However, the middle and high management is more likely to judge the act 'unacceptable but may happen' than the low management, and therefore think that such an act can often take place in a competitive sales department. The relationship was significant at $p=0.041$ (see H12 at <Appendix A>).

According to <Figure 15>, a majority of managers in three ranks think that allowing outside people to access operational information (e.g., customer's financial information at a bank) is an 'illegal act'. However, top-rank managers are more likely to judge the act 'illegal', whereas managers of low-rank are more likely to judge such an act as being 'unacceptable but may happen' than the high-rank, and therefore more likely to take the act for granted.

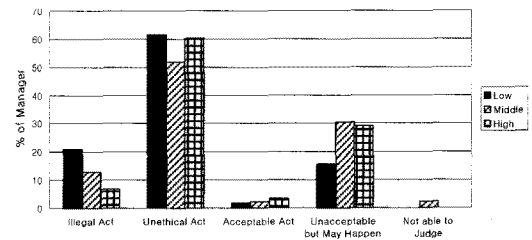
<Figure 16> shows that managers in the low and middle rank are more likely to view the situation of accessing personal information as an 'acceptable act' or 'unacceptable but may happen', whereas managers at top rank tend to be stricter in judging the situation. It is interesting to note that relatively a large number of managers were not able to judge

the situation.

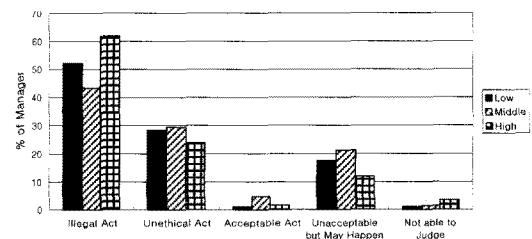
<Figure 17> shows that a majority of managers across all ranks judged the act of not providing informal information as 'unethical', but a relatively fewer number of managers believed that the act was 'unacceptable but may happen'. However, relatively a large number of managers were not able to judge the situation, and therefore the issue seems to be very controversial.



<Figure 13> Judgment on the Access of Strategic Information

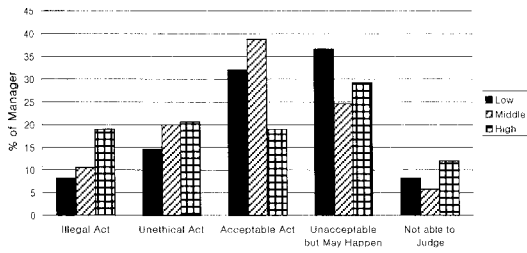


<Figure 14> Judgment on the Access of Managerial Information

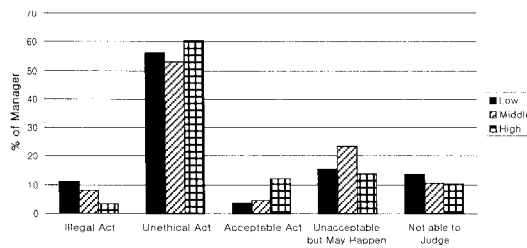


<Figure 15> Ethical Judgment on the Access of Operational Information

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<Figure 16> Ethical Judgment on the Access of Personal Information



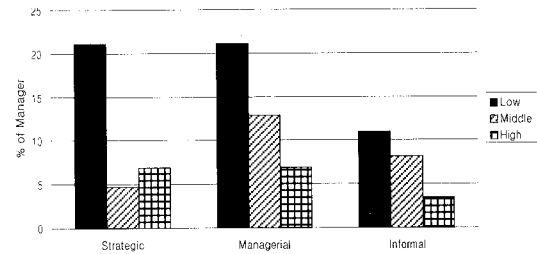
<Figure 17> Ethical Judgment on the Access of Informal Information

Discussions

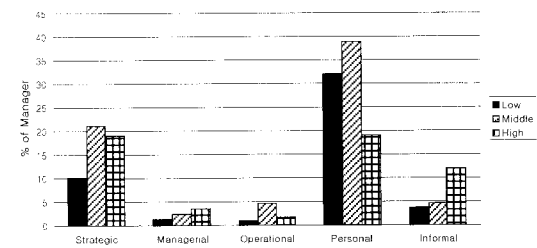
According to <Figure 18>, the lower rank managers are more against blocking the access to information than the higher rank managers are. This relationship is reflected in the accepted hypotheses 11 and 12 concerned with the accessibility. Particularly, the low-rank managers tend to show a negative attitude toward blocking information that may influence their employment (see "strategic"). This observation supports the argument that the motives of ethical behavior is strictly self-interest while the pure pursuit of self-interest may turn out to be incompatible with achieving it [Warsh, 1989].

Managers across all ranks tend to hardly think that concealing some information from their colleague is an "acceptable" act as shown in <Figure 19> (see "managerial", "operational"

and "informal"). However, managers are more likely to be generous in blocking some strategic information and permitting someone to access personal information for social activities (see "strategic" and "personal").



<Figure 18> No. and % of managers thinking blocking an access to information as an "Illegal act"



<Figure 19> No. and % of managers thinking blocking an access to information as an "Acceptable act"

5.6 Overall Perspectives

<Table 4> shows that managers seem to be more generous about other's access to personal information for intra-organization activities such as employees' social activities (see the "Access" columns), whereas managers are more likely furious about inaccurate recording of personal information that directly inflict damages on themselves (see the "Accuracy" column). This finding supports the Culnan's [1993] proposition in part that the consumer attitude toward

uses of secondary, personal information are influenced by the level of consumer's fear on privacy invasion, perceived benefits that companies may provide using the information and other biographical factors (e.g., sex, age, etc). However, the privacy invasion caused by illegal use of personal information has been a serious social problem, but many managers still think the use of personal information without permission as an "acceptable act".

Among 16 hypotheses, Hypothesis 7, 8, 10, 11, 12 was accepted at the 0.05 level or above, and the others are not significant (see <Appendix A>). Most significant relationships occur in areas of property and accessibility. However, relationships between job ranks and

information types and between job ranks and areas of information ethics are further proceeded to examine independent effects of the two factors on managers' ethical judgements. Table 5 highlights that three-rank managers show significant differences in dealing with strategic planning information and operational information, and only in the area of property. Therefore, three-rank managers tend to show significantly different attitudes in dealing with strategic planning information and operational information and particularly in the area of property. This implies that companies need to consider three-rank managers' differences in the property issue of strategic and operational information in developing information ethics codes or guidelines.

<Table 4> No. and % of managers thinking the accuracy of, property of and access to personal information as an "legal act" or an "acceptable act"

Choice Ethical areas Rank	Illegal Act			Acceptable Act		
	Accuracy	Property	Access	Accuracy	Property	Access
Low	50 (45.87)	16 (14.68)	9 (8.26)	3 (2.75)	16 (14.68)	35 (32.11)
Middle	36 (42.35)	14 (16.47)	9 (10.59)	0 (0.00)	19 (22.35)	33 (38.82)
High	18 (31.03)	17 (29.31)	11 (18.97)	2 (3.45)	7 (12.07)	11 (18.97)
Total	104 (41.27)	47 (18.65)	29 (11.51)	5 (1.98)	42 (16.67)	79 (31.35)

<Table 5> Test results of relationships: job rank vs. information types and job rank vs. areas of information ethics

Factors	Types	F-value	p-value
Information Types	Strategic Planning	19.3	0.013*
	Managerial	12.0	0.282
	Operational	18.37	0.019*
	Private	8.85	0.355
	Informal	8.57	0.380
Areas of Information Ethics	Accuracy	9.27	0.507
	Property	17.17	0.028*
	Accessibility	12.64	0.125

* significant at p=.05 and above

VI. Conclusions

This study investigated how managers at different hierarchical ranks judge hypothetical behavior (or situations) that describe ways of handling various types of information in business organizations. Sixteen hypotheses were developed and tested. Among them, we found that three management ranks have shown significantly different ethical judgment on the accessibility to strategic planning and managerial information and on the property of managerial and operational information.

Managers often seem to have a difficulty in distinguishing legality issues from ethical ones. For instance, leaking false bidding prices of competitive bidders to a competitor and giving away a list of customers for profit are obviously illegal, but only about half and a fifth of managers judged the acts as "illegal" in both cases. This implies that managers' ethical insensitivity diluted the seriousness of these unlawful deeds and have numbed their rational judgments.

Overall this study disclosed a possibility that all-rank employees do not share identical ethical standards even within a single organization. The aggregation of individuals' morality may ultimately determine the company's ethical character [Andrew, 1989]. Therefore policies can be established to narrow the ethical gap

among different management ranks and then guide the organization to formulate balanced moral senses and values that can be helpful to build a positive corporate image. The findings of this study can assist companies to develop such ethics codes that can guide employees not to deviate from acceptable behaviors in handling sensitive information, and therefore can maintain a high level of ethical sense.

This research suffers some limitations due to the questionnaire. Even though the hypothetical situations and information types in the questionnaire were based on true stories, the validity of each question was not examined in an objective manner using statistical methods (e.g., factor analysis). Instead, experts' examinations were conducted; thus the questions suffer construct validity.

This study still left many questions to be further explored. For example, the reason why managers are less sensitive to the accuracy of information has not been clearly explained. For this, a series of studies are needed to explore other variables that can affect manager's information ethics such as biographical and organizational variables. This study also can be further extended by comparing with results of other country's managers. The comparative study can widen knowledges about possible gaps between managers' ethical level in two different countries.

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An Empirical Study of Information Ethics by Management Levels

<Appendix A> Sixteen Hypotheses and Test Statistics

Hypothesis No	Three-rank managers' ethical judgements differ significantly		F values	p values
	on types of information	with respect to areas of information ethics		
H0	All types	All areas	22.08	0.106
H1	Strategic planning	Accuracy	7.21	0.513
H2	Managerial		15.37	0.119
H3	Operational		7.11	0.525
H4	Personal		9.96	0.268
H5	Informal		9.26	0.321
H6	Strategic planning	Property	7.73	0.460
H7	Managerial		30.35	0.000*
H8	Operational		18.85	0.01*
H9	Personal		9.62	0.293
H10	Informal		20.1	0.01*
H11	Strategic planning	Accessibility	33.41	0.000*
H12	Managerial		16.12	0.041*
H13	Operational		10.70	0.219
H14	Personal		13.20	0.105
H15	Informal		10.70	0.220

* significant at p=.05 and above

<Appendix B> An Abridged Questions of the Questionnaire

Please read the following fifteen mini cases and assign one the following five categories to it:

- A. Illegal act: The act needs a legal examination. If someone violated relevant laws, he/ she should be prosecuted.
- B. Unethical act: The act did not violate the codes of law but is unethical.
- C. Acceptable act: The act is acceptable considering common sense and social conventions.

D. Unacceptable:

but may happen: The act is unacceptable, but it may occur without sanction.

- E. Not able to judge: Unable to reach a decision.

- H1. [Accuracy, Strategic planning] A sales representative of Acme Precision Engineering Co. manipulated sales amount of some items and reported inflated market share data to his superior. Therefore, he could put off reporting shrunk sales amount for a period of time.

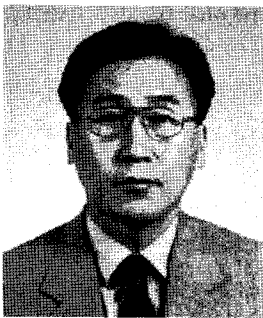
- H2. [Accuracy, Managerial] A worker in a warehouse of Laze Trade Co. has not kept updating inventory records of miscellaneous parts accurately, and therefore the company has often ordered the parts despite the inventories are left.
- H3. [Accuracy, Operational] Mr. Carr leaked incorrect bid information to one of vendors who are going to make a bid for computer supplies on purpose, and consequently his close friend could win the bid successfully.
- H4. [Accuracy, Personal] An employee lately knew that he lost a chance of promotion since someone in the personnel department made an error in recording job evaluation scores and prize/punishment records.
- H5. [Accuracy, Informal] Mr. Shon, working at a bank, has heard of a rumor that Acme Trade Co., one of his client, is in danger of bankruptcy. He reported it to his boss as if it is a proven fact, and consequently he decided to cut credit lines of the Acme Trade Co.
- H6. [Property, Strategic planning] Mr. Lopez, ex-purchasing manager of General Motors who moved to Volkswagen Automobiles recently, used his 'network know-how': this was the purchasing strategy for European markets that he had developed while he was in GM. After he transferred, he developed the strategic plan to penetrate American auto industries using this information.
- H7. [Property, Managerial] An employee of Massy Department Store informed sales amount (volume) per m2 during the Spring Sales to his close friend working in other competitive company. His friend also passed over similar information to him.
- H8. [Property, Operational] Miss Karr passed over inventory information of special parts (materials) that are prohibited to outside figures to her close friend who is working for her competitive company. What do you think of her act?
- H9. [Property, Personal] An employee of Gale University gave a printed list of graduates' names and addresses to his close friend who is a marketing director of a company that designs and manufactures a variety of graduation souvenir.
- H10. [Property, Informal] Mr. Quinncy engaged in an informal party with his company colleagues, and chatted about his ideas for improving product quality. Later he saw a column of newsletter where his idea was selected and implemented to improve the quality management. However, surprisingly the prize for the idea was awarded to Mr. Starkey, one of his colleagues.
- H11. [Accessibility, Strategic planning] Solomon Trade Co. is planning company-wide corporate innovation programs that include layoff of many staffs and merging or closing some departments or divisions. But the top management have never informed these plans to his employees prior to its implementation.
- H12. [Accessibility, Managerial] A sales representative of Chrysler Trade Co. has plotted with a warehouse worker to receive inventory information of short-supply products exclusively. Consequently he always has outperformed

his colleagues in the sales department.

- H13. [Accessibility, Operational] An employee of South Pacific Bank gave a credit and transaction report of a client company in secret to his close friend who is planning to do transactions with the client.
- H14. [Accessibility, Personal] An informal and religious meeting group that has been active in an organization has obtained a printed information about employees' religion and hobby from the computer center to plan their activities.

H15. [Accessibility, Informal] Kermit Retailing Co. has an unwritten rule (convention) that all employees have to keep in mind. Since many close relatives of the owner have been positioned in various ranks of the organization, employees have to never talk bad things about the owner. However, Mr. Delmon, who was recently hired and never heard of the rule, has often criticized the owner, and eventually was fired. Should his colleague have warned him.

◆ 저자소개 ◆



최 무 진 (Choi, Moo-jin)

고려대학교 경제학과를 졸업하고, 미국 Georgia State University에서 경영학 석사 및 박사학위를 취득하였다. 1990년부터 계명대학교 경영정보학과에 근무하기 시작하여 현재 부교수로 재직중이다. 교수분야는 의사결정지원시스템, 정보시스템의 운영과 정책, 운영체제 등이며, 연구관심 분야는 DSS/GDSS, 전자상거래, Information Ethics 등이다