

## CHAPTER 2: REVIEW OF THE LITERATURE

The research started with a review of articles on user resistance in the key management and IS journals: Harvard Business Review and MISQ, and was extended into important studies of change management. Summarized in Table 2-1 typical studies on user resistance were traced and analyzed. User resistance was first recognized in the late 1950s by researchers into human behavior; resistance behavior and its reasons were studied in the 1970s by researchers into

**Table 2-1: Time Lines of Literature on User Resistance**

Years	Typical Researchers	Significance
70s	Dickson and Simmons (1970) Ginzberg (1975) Ross (1976) O'Brien (1979) Kotter (1979)	<ul style="list-style-type: none"> <li>➤ Most resistance factors were identified with general IS, including change in job content, status and ego, threat of economy, interpersonal relationship altered, conflict among organizations, and insufficient knowledge of using new systems.</li> <li>➤ Dickson and Simmons noted that different types of subgroups in an organization resist change in different degree. It was particularly noted that IT staffs did not resist custom-built information systems for they had already adapted to the system process in the development phase.</li> <li>➤ At the same time, Kotter et al. discussed the overview of general company changes for all employees.</li> </ul>
80s	Markus (1983)	<ul style="list-style-type: none"> <li>➤ Power shift and political view of resistance are discussed in more detail.</li> </ul>
90s	Joshi (1991) Dickson and Wetherbe (1995) Strebel (1996)	<ul style="list-style-type: none"> <li>➤ Loss of equity status has been discussed with additional attention on information systems. New findings on resistance such as increased monitoring, additional work, role conflict and ambiguity, failure in learning and adopting new systems, fear of unknown and resulting in anxiety enriched the understanding of user resistance.</li> <li>➤ Incentive systems were suggested for promoting acceptance.</li> <li>➤ Meanwhile, Strebel pointed out that change failure occurred when employer and employee see change differently. It was suggested to recheck the commitments of users, from personal perception to comparison with relative outcome of organization and with those of other users.</li> </ul>
2000s	Jiang et al. (2000) Davenport (2000) Markus (2000) Robey et al. (2002)	<ul style="list-style-type: none"> <li>➤ Resistance to decision support systems and transaction Process Systems has been emphasized and tested by Jiang et al.</li> <li>➤ Due to the tremendous impact of enterprise wide package software on business running change management has become an important issue of ES implementation.</li> </ul>

organizational management. Additional political and social status factors were included in the 1980s and 1990s. Meanwhile, similar resistance patterns were also found in general IS implementation.

In order to consolidate existing knowledge about user resistance, tables of possible reasons for resistance, related resistance behaviors, and specific strategies for managing resistance were built in the following sections. These lists are by no means comprehensive; other possible factors remain to be explored.

## **2.1 Reasons of User Resistance**

Reasons for user resistance to information systems have been explained by many researchers. Kotter and Schlesinger (Kotter et al. 1979) consolidated the reasons into four major categories: parochial self-interest, misunderstanding and lack of trust, different assessment of ES and associated changes, and low tolerance of change. Several studies (Keen 1981; Markus 1983; Strebel 1996) have enhanced these categories with further tested cases and tactics. On the basis of equity theory, Joshi (Joshi 1991)) added another category by explaining that increased effort required bin the part of users caused resistance. These reasons for resistance may possibly be observed in various ES cases.

### *2.1.1 Reasons of Resistance to General IS*

Reasons of user resistance to information systems have been explained widely from many MIS researchers (deJager 1994; Ginzberg 1975; Janson et al. 1993; Jiang et al. 2000; Joshi 1991; Keen 1981; Markus 1983; O'Brien 1979; Ross 1976; Sanders 1979; Smith et al. 1992). Some Researchers view resistance from one of the three theoretical perspective: people-oriented, system-oriented, and interaction theory (Kling 1980; Markus 1983).

People-oriented theory: The people-oriented theory suggests that resistance to systems is created by factors internal to users as individuals or groups, such as personal characteristics (age, gender), varying background, value and belief of systems contribute to an individual's attitude towards technology (Gardner et al., 1993, Sacks et al., 1993).

System-oriented theory: The system-oriented theory posits that resistance is induced externally by factors inherent in the design of the system or the technology being used, such as user interface, realization of requirements, performance, reliability, and the degree of centralization, distribution or decentralization. Proper system design has been view as strategies to minimize or overcome resistance.

Interaction theory: Interaction theory (Joshi 1991; Markus et al. 2000) attributes causality to the interaction between people and system factors. Resistance may manifest itself as a result of shifting power relationships. A well-designed system might resisted by those who fear it might take away some of their power or social stature in the organization. Therefore, the interaction theory argues that neither the system nor the people's characteristics themselves are the causes of resistance, and the real reason for resistance are users' perceived values and social content gain or loss before/after system implementation.

Since ES implementation involved strong interaction between users and systems, interaction theory is an appropriate basis of explaining the users and change in their daily work and social environment brought by ES.

It was noted that job content change (Ginzberg 1975) with insufficient knowledge of using new systems (O'Brien 1979) and the threat of ego, status, power, economy, autonomy, and control (Ross 1976) may create conflict among organization (O'Brien 1979). Based on equity theory, Joshi (Joshi 1991) suggested that increased efforts on users caused resistance. Jiang et.al (Jiang et al. 2000) found that these reasons may appear differently between decision-makers and end-users.

### *2.1.2 Diagnosing Resistance in Organizational Change*

Kotter and Schlesinger (Kotter et al. 1979) thought that a number of different reasons, individuals or group can react very differently to change, and managers should be aware of these four common reasons to predict the resistance forms people might take and spend more time before an organizational change to assess systematically who might resist these change initiatives and for what reasons.

Parochial self-interest: People resist organizational changes because they thought they will lose something valuable. They focus on their own best interests, but not on those of the total organization. People who view their potential loss from change as an unfair violation of their implicit, or physiological, contract with the organization sometimes initiate political struggles. Their resistance often results in "politics" or "political behaviors".

Misunderstanding and lack of trust: People also resist change when they do not understand its implications and perceive that it might cost them much more than they will gain. Such situations often occur when trust is lacking between the person initiating the change and the employees. This kind of resistance easily catch the initiators by surprise, especially when they

assume that people only resist change when it is not in their best interests. Misunderstandings are easily developed when change is introduced.

Different assessment: Another common reason people resist change is that they assess the situation differently from their managers or those initiating the change and see more costs than benefits resulting from the change. Managers who initiate change often assume both that they have all the relevant information required to conduct an adequate organization analysis and that those who will be affected by the change have the same facts. Under this kind of change, resistance might be helpful if non-initiators analyze the change more accurately than initiators do; however, the likelihood is not so obvious for some managers.

Low tolerance of change: People also resist change because they fear they will not be able to develop the new skills and behaviors that will be required for them. Organizational change can inadvertently require people change too much and too quickly. Even when managers intellectually understand the need for changes in the way they operate, they sometimes are emotionally unable to make the transition. A new and very different job will require new and different behaviors, new and different relationships, as well as the loss of some satisfactory current activities and relationships. If the change are significant and the individual's tolerance is low, he might begin actively resist the change for the reasons even he does not consciously understand.

Kotter and Schlesinger also pointed out that people may resist the change because of saving face, peer group pressure or their supervisor's attitude. There are endless number of reasons why people resist change, and assessing which of the many possibilities might apply to those who affected by a change is important because it can help a manager select an appropriate way to overcome resistance.

Strabel (Strebel 1996) further explained Kotter's category of different assessment between managers and employees. The main reasons that major change initiatives often failed has at least one common root that executives and employees see change differently. Employees see change as disruptive and intrusive. Leaders may overcome their employees' resistance to change by redefining their formal agreement between them.

### *2.1.3 Equity-Implementation Models*

Joshi (Joshi 1991) proposed an equity-implementation model developed by equity theory to explain resistance to change. The model is based on the premise that there is no fundamental

**Table 2-2: Equity-Implementation Model (Joshi, 1991)**

Level	Focus	Criterion	Operational Definition
1	Self	Change in equity status of self	Net change in equity status
2	Self and the employer	Fair sharing of profits (benefits) between self and employer	Relative outcomes of self vs. Relative outcomes of the employer
3	Self and other users	Asymmetry in the impact on equity when compared with other users in the reference group	Relative outcomes of self vs. Relative outcomes of other users

resistance to every change. Individuals are assumed to evaluate most changes, and changes that are considered favorable should not be resisted and may even be welcome. Equity theory suggests that in every exchange relationship, individuals are constantly concerned about their inputs, outcomes, and the fairness of the exchange. The greater the inequity or the decline in net gain (the positive difference of their inputs and outcomes), the greater the distress would be, and individuals who experience the distress of inequity or loss of equity are likely to resent the change and resist it by attempting to minimize their inputs and others' outcome as well as by attempting to increase others' inputs. Equity evaluation processes can be discussed in three levels in an organization context to explain user resistance (Table 2-2).

Changes in outcomes are defined as the perceived benefits or losses that the implementation of a system brings about for the users, and in inputs are the additional efforts, skills, or abilities that a user may need to bring to the job. However, it is not unusual for different users evaluate the same change differently. It is possible for an old employee who is unlikely to rise further or seek a change in his/her job to regard learning the new system as an effort, and for a young, ambitious employee to take the advantage of the new skills in seeking a better job or promotion over time.

The reasons for resistance from previous literatures are summarized in Table 2-3 and Table 2-4.

**Table 2-3: Reasons for Resistance (Explanation)**

Reasons for Resistance	Explanation
Parochial self-interest	People resisting change to prevent losing something of value
Misunderstanding and lack of trust	Misconceptions about the implications and insufficient information about the benefits and gains
Different assessment	Employees see more costs than benefits and those initiating the change see the reverse as true
Low tolerance for change	Fear of not sufficiently developing the skills and behavior required
Increased efforts	Additional efforts or abilities needed for the job

**Table 2-4: Reasons for Resistance (Previous Studies)**

Reasons for Resistance	Details
Parochial self-interest	Losing power and status (Joshi 1991; Keen 1981; Kotter et al. 1979; Markus 1983; Ross 1976; Smith et al. 1992) Reduced scope for advancement or job insecurity (deJager 1994; Joshi 1991; Ross 1976; Sanders 1979) Loss of autonomy and control or specific skills (Joshi 1991; Ross 1976)
Misunderstanding and lack of trust	Misunderstanding the implementation of change (Kotter et al. 1979) Insufficient knowledge in using new systems (O'Brien 1979)
Different assessment	Disagreement that benefits will come with the new system (Dickson et al. 1970) System cannot provide real experience for decision making (Dickson et al. 1970)
Low tolerance for change	Fear of losing certain aspects of the current situation (Kotter et al. 1979) Role conflict and ambiguity within the organization (Joshi 1991; Ross 1976) Relationships altered (Ross 1976) Need for higher job skill levels (Joshi 1991)
Increased efforts	More effort in performing tasks in view of increased monitoring (Joshi 1991) Need to spend more time at work (Joshi 1991)

Reasons are consolidated into five categories of possible reasons of resistance to enterprise-wide system implementation.

## **2.2. Resistance Behaviors**

Dickson and Simmons (Dickson et al. 1970) have identified three types of dysfunctional behaviors associated with a new system: aggressive, projection, and avoidance.

Aggressive: Aggressive behavior represents an attack intend to injure the object causing the problem. The most dramatic aggression towards the system is when people attempt to destroy systems components. Sometimes people tend to prove that they are smarter than the system.

Projection: Projection exists when people blame the system for causing difficulties that are in fact caused entirely by something else, such as general incompetence of the individuals or individuals involved, or a wrong decision.

Avoidance: Avoidance means that when people defend themselves by avoiding or withdrawing from frustrating situations. This behavior often takes the form of ignoring the system outputs, particularly when it does not fulfill information needs.

Other researchers have described users' responses to change by several different behaviors

(Hultman 1979; Hultman 1995; Judson 1991; Mathieu et al. 1990; Odiorne 1981). Kirkman et al. (Kesner et al.) have concluded some negative responses that employees who resist change would take. Employees may manifest their resistance in such behavior as sabotage and vocal protests or in such attitudes as withdrawal and reduced commitment (Hultman 1979). And the effect of their behaviors and attitudes of fellow employees can be reciprocal (Salancik and Pfeffer, 1978). These resistance behaviors may lower productivity, affect the quality of goods or services, the cost of producing them and the safety level of work (Hultman 1979; Hultman 1995; Judson 1991; Odiorne 1981). Additionally, since ES implementation involves cooperation with consultants, problems arise when consultants and clients clash (Kesner et al. 1997); such dissonance is a typical resistance behavior in ES implementation. In this study, these resistance behaviors were organized into three types: non-destructive, proactively-destructive, and passively-destructive (Table 2-5).

**Table 2-5: Resistance Behaviors (Explanation)**

<b>Resistance type</b>	<b>Resistance Behaviors</b>
Non-destructive	Eliminate contact with the system
Proactively-destructive	Direct damage to new system processes
Passively-destructive	Passively damage the new system processes

### *2.2.1 Non-destructive behaviors*

Resistors attempt to eliminate contact with the system to avoid negative feelings, such as request for job transfer, withdraw from the job or increased absenteeism for the work, such as returning late from lunch or coffee breaks, or abusing sick leave benefits. Sometimes they communicate negative feelings with each other, such as complaint about being treated in an unfair way; however, even though these behaviors are not directly destructive to the work process in the organization, non-destructive behaviors would destruct the organizational climate in the long run.

### *2.2.2 Proactively-destructive behaviors*

Resistors may appear to be directly damage the new system processes where carelessly or intentionally, by sabotaging work process or make careless mistakes. These behaviors could be seriously subtle to the success of adopting change.

**Table 2-6: Resistance Behaviors (Previous Studies)**

<b>Resistance type</b>	<b>Resistance Behaviors</b>
Non-destructive	Request job transfer or withdrawal from the job(Hultman 1979; Joshi 1991) Increased absenteeism or tardiness (Hultman 1979; Hultman 1995; Judson 1991; Mathieu et al. 1990; Odiorne 1981) Communicating negative feelings to co-workers or vocal protest (Hultman 1979)
Proactively-destructive	Deliberately sabotaging work process (Judson 1991) Making careless mistakes (Hultman 1979)
Passively-destructive	Refusing to cooperate with other employees (Hultman 1979; Hultman 1995) Neglecting work assignments or Wasting time and making little effort to improve work-related knowledge and skills (Hultman 1979; Hultman 1995; Judson 1991; Odiorne 1981) Accepting inferior quality performance (Hultman 1979) Dissonance with consultants (Kesner et al. 1997)

### *2.2.3 Passively-destructive behaviors*

Sometimes resisters may behave intentionally against the new processes of the IT-enabled change and lower down the productivity or service quality by passively uncooperative actions, such as neglect work assignment or delay it, be reluctant to learning new knowledge and skills, refuse to cooperate with other employees, or spending excessive time discussing personal matters. Sometimes they may passively accept lower quality when they do not agree with the new change. In the ES implementation case, (Kesner et al. 1997) described the problems caused by the clash between consultants and their clients, bringing about the failure of the adoption of Enterprise Systems and delay of the project as well as increased budget.

## **2.3. Strategies for managing resistance**

Strategies for managing user resistance have been consolidated (Jiang et al. 2000) into two types: participative and directive. Kotter and Schlesinger (Kotter et al. 1979) also suggested two methods of managing change: offering consultation to groups and negotiating with employees and unions, and imposing changes by threatening users with explicit or implicit coercion.

### *2.3.1 Dealing with resistance*

Kotter and Schlesinger (1979) have suggested several strategies of dealing with resistance.



**Table 2-7: Methods for dealing with resistance to change (Kotter et al, 1979)**

<b>Approach</b>	<b>Commonly used in situation</b>	<b>Advantages</b>	<b>Drawbacks</b>
Education and communication	Where there is a lack of information or inaccurate information and analysis	Once persuaded, people will often help with the implementation of the change	Can be very time-consuming if lots of people are involved
Participation and involvement	Where the initiators do not have all the information they need to design the change, and where others have considerable power to resist	People who participate will be committed to implementing change and any relevant information they have will be integrated into the change plan	Can be very time consuming if participators design an inappropriate an change
Facilitation and support	Where people are resisting because of adjustment problems	No other approach works as well as with adjustment problems	Can be time-consuming, expensive, and still fail
Negotiation and agreement	Where someone or some group will clearly lose out in a change and where that group has considerable power to resist	Sometimes it is a relatively easy way to avoid major resistance	Can be too expensive in many cases if it alerts others to negotiate for compliance
Manipulation and co-option	Where other tactics will not work or are too expensive	It can be relatively quick and inexpensive solution to resistance problems	Can lead to further problems if people feel manipulated
Explicit and implicit coercion	Where speed is essential, and the change initiators possess considerable power	It is speedy, and can overcome any kind of resistance	Can be risky if it leaves people mad at the initiators

These strategies are recommended to use correspond to some situations and considered clearly as well as applied jointly (Table 2-7).

Education and communication: To educate people about change beforehand is one of the common ways to overcome resistance. Communication of ideas helps people see the need for and the logic of a change. The education can involve one-on-one discussions, presentations to groups, or memos and reports. This program could be ideal when resistance is based on inadequate or in accurate information and analysis. However, it requires time and effort, particularly when a lot of people are involved.

Participation and involvement: With a participative change effort, if the initiators listen to people involved and use their advice in the design and implementation of the change, they can often forestall the resistance. However, managers have quite strong feelings about participation, whether positive or negative. When managers lack all the information they need or when they need whole-hearted commitment, involving others makes very good sense. Commitment could be need for some instances to be success factors, but failed without carefully managed and could be enormously time consuming.

Facilitation and support: Another way managers could deal with potential resistance would be by being supportive, such as providing training in new skills, giving employees time off after a demanding period, or simply listening and providing emotional support. This strategy is more helpful when fear and anxiety lie at the heart of resistance. However, the weakness of this approach can be time-consuming and expensive, and still fail. It is not practical to using supportive methods when time, patience, and money are not available.

Negotiation and agreement: To offer incentives to active or potential resistors, such as to give a union a higher wage rate in return for a work rule change, or to increase an individual's pension benefits in return for early retirement is another way of dealing with resistance. Negotiation is particularly appropriate when it is clear that someone is going to lose out as a result of a change and yet his power to resist is significant. However, it could also be expensive. Once a manager makes it clear that he will negotiate to avoid major resistance, he opens himself up to possibility of blackmail.

Manipulation and co-optation: Managers also resort to covert attempt to influence others. Co-opting an individual usually involves giving him or her desirable role in the design or implementation of the change. Co-opting a group involves giving one of its leaders, or someone it respects, a key role. This is not considered as a form of participation because the initiators do not want the advice of the co-opted, but merely their endorsement. Under some certain circumstances, co-optation can be relatively inexpensive and easy way to gain individual's or a group's support. However, if people feel they are being tricked into not resisting or being lied to, they may respond very negatively. Besides, the co-opted may use their ability to influence the implementation which is not in the best interests of the organization. Furthermore, a manager with reputation of a manipulator, his ability to use needed approaches could be undermined. Nevertheless, when there is no other alternatives and not enough time to educate, involve, or support, and without the power or other resources to negotiate, coerce, or co-opt them, information channels may be manipulated to scare people for

change is the only way to avoid coming crisis of them.

Explicit and implicit coercion: Managers often force people to accept a change by threatening them of loss of job, promotion possibilities, and so forth, sometimes even by actually firing or transferring them. In some situation that speed is essential and the change will not be popular, coercion may be the manager's only option.

Kotter and Schlesinger recommended that successful efforts come from that managers employ the approaches with sensitivity to their strength and limitations and appraise the situation realistically. Managers should avoid applying strategies regardless of the situation as well as in a disjointed and incremental way.

### *2.3.2 Strategies of adopting new information systems*

Strategies for managing user resistance have been re-described by Jiang et al. (Jiang et al. 2000) into two types: participative and directive.

Participative Strategies: Participative strategies include training in the use of the new systems, establishing user support services, allowing time to experiment with new system, praising new system use, and encouraging open communication between management and employees, incorporating user participation into the design process, and documenting standards for the new system.

Directive Strategies: Directive strategies are imposed by management, including the provision of financial incentives, job reassignment, user right directives, role modification, job elimination, power redistribution, top management support, job modification and job counseling.

Those strategies are suggested by previous researchers to mitigate resistance, however, these strategies could be classified more deliberately referred to the managerial style model.

### *2.3.3 Change Management Styles*

Dunphy and Stace (Dunphy et al. 1993) identify several types of leadership styles. Collaborative leaders being identified as leaders who promote widespread involvement of all parties will be affected by a decision. Consultative leaders are identified as leaders who consult all parties to be affected by a decision; however the consultative leader will be responsible for the final decision. Using a directive style of leadership, managerial authority is used to promote change throughout an organization. Directive leaders rely on power to enforce changes across

an organization. Finally, the coercive leader will impose change upon a group forcing an organization to modify its behavior, structure etc. (Dunford et al. 1990) has suggested that it may be necessary to manage rapid and radical change in a directive or coercive manner, as a traditional participative approach would be too time consuming and thus ineffective.

Using a change management style model (Dunford et al. 1990; Dunphy et al. 1993) the strategies are organized into four types: directive, participative, consultative, and coercive. (Table 2-8)

**Table 2-8: Strategies for Managing User Resistance (Explanation)**

Management Style	Strategies
Directive	Use of managerial authority to effect change
Participative:	Widespread participation by employees on direction and process of change
Consultative:	Provide employees with information and moral support
Coercive:	Forcing or imposing change on key groups

Directive: In this category, with little participation from employees, managers use managerial authority to effect change. Directive strategies are imposed by managers, including the provision of financial incentives, job reassignment, and role modification, job modification, etc.

Participative: This type of managerial style involves widespread participation by employees about direction and process of change. In effect, participation is an effective approach to change when both managers and employees are motivated to support the changes needed to bring an organization into fit. Negotiation and communication are two main characteristics in this category.

Consultative: Users have limited involvement in goal setting. Job counseling, being supportive, conducting orientation sessions and provide one to one discussion are major consultative strategies.

Coercive: Coercion is normally used when there are significant and often irreconcilable differences between the interests of key stakeholder groups (not just management and employees but shareholders, customers, clients, governments, etc). Coercion strategy involves managers or outside parties forcing or imposing change on key groups in the org. If there is significant resistance from key stakeholders and management, more coercive approaches may

**Table 2-9: Strategies for Managing User Resistance (Previous Studies)**

<b>Management Style</b>	<b>Strategies in Detail</b>
Directive:	<ul style="list-style-type: none"> <li>➤ Pacing conversion to allow for reasonable readjustment period (Zuboff 1988)</li> <li>➤ Standardizing documents so new procedures are easy to learn and reference (Nord et al. 1987)</li> <li>➤ Retraining employees to be effective users of the new systems (Aggarwal 1998; Kotter et al. 1979)</li> <li>➤ Rewarding ideas that will improve throughput (Lawler et al. 1991)</li> <li>➤ Clarifying job definition before the changeover (Martinsons et al. 1999)</li> <li>➤ Upgrade work environment following change (Swanson 1988)</li> <li>➤ Altering job titles to reflect increased responsibility (Rivard 1984)</li> <li>➤ Arranging for voluntary job transfers to avoid users with no interest in new procedures (Klein et al. 1990)</li> <li>➤ Calling a hiring freeze until all displaced personnel are reassigned (Rousseau 1989)</li> <li>➤ Give employees time off after a demanding period (Kotter et al. 1979)</li> <li>➤ Giving unions higher wage rates in return for a work rule change (Kotter et al. 1979)</li> <li>➤ Increase pension benefits in return for early retirement (Kotter et al. 1979)</li> <li>➤ Giving a leader or respected figure a key role in the design or implementation of a change (Kotter et al. 1979)</li> </ul>
Participative:	<ul style="list-style-type: none"> <li>➤ Involving employees in development of new systems to encourage a feeling of ownership (Mumford 1979)</li> <li>➤ Providing employees with information regarding system changes to preserve ownership (deJager 1994)</li> <li>➤ Opening lines of communication between employees and management (Land 1992)</li> <li>➤ Initiating morale boosting activities: company parties and newsletters to promote community (Nord et al. 1987)</li> </ul>
Consultative:	<ul style="list-style-type: none"> <li>➤ Providing job counseling and organize group therapy to help employees adjust (Holmes et al. 1970)</li> <li>➤ Listening and provide emotional support (Kotter et al. 1979)</li> <li>➤ Conducting orientation sessions to prepare for change (Anderson 1985)</li> <li>➤ Being receptive to complaints following conversion to maintain employee contact and trust (Nord et al. 1987)</li> <li>➤ Providing one-on-one discussions (Kotter et al. 1979)</li> </ul>
Coercive:	<ul style="list-style-type: none"> <li>➤ Implicitly and/or explicitly threatening loss of job and promotion possibilities, or Firing or transferring people who resist change (Kotter et al. 1979)</li> </ul>

be needed in order to ensure a critical mass of support for the change.

## **2.4. User Types of Information System**

### *2.4.1 Subgroups in an Organization*

Prior studies have indicated that users of different types of information systems such as

**Table 2-10: Work Groups, MIS Interaction, and Possible Types of dysfunctional Behaviors (Dickson and Simmons, 1970)**

Organizational Subgroups	Relation to MIS	Possible dysfunctional Behaviors
Operating Personnel	<ul style="list-style-type: none"> <li>➤ Provide system inputs</li> <li>➤ Particularly affected by clerical systems: job elimination, job patterns changed</li> </ul>	<ul style="list-style-type: none"> <li>➤ Aggression</li> <li>➤ Projection</li> </ul>
Operating Management	<ul style="list-style-type: none"> <li>➤ Controlled from above by information systems; job content modified by information decision systems and programmed systems</li> </ul>	<ul style="list-style-type: none"> <li>➤ Aggression</li> <li>➤ avoidance</li> <li>➤ projection</li> </ul>
Technical Staff	<ul style="list-style-type: none"> <li>➤ Systems designers and agents of systems change</li> </ul>	<ul style="list-style-type: none"> <li>➤ None</li> </ul>
Top management	<ul style="list-style-type: none"> <li>➤ Generally unaffected and unconcerned with systems</li> </ul>	<ul style="list-style-type: none"> <li>➤ Avoidance</li> </ul>

transactional and decision support systems may perceive system usefulness differently and react to change differently (Dickson et al. 1970). In the behavioral side of MIS, Dickson et al. identified four subgroups of an organization: operating personnel, operating management, technical staff, and top management. Their relations to MIS and possible dysfunctional are listed in Table 2-10. In their research, operating management and operating personnel (especially clerical workers) have more reasons to resist than top management, and technical staffs are not regarded as resistors at all. Top management, by the nature are little affected by the clerical systems or programmed systems, however, they have much to do with the decision support systems.

Because the ES implementations are often triggered by top managers and demand a deliberate valuation, top management could seldom resist the system at least in the implementation phase. Technical staffs in the ES projects are more than the system designer, who could resist the system, however, our focus pay more attentions on the direct business related use, i.e. operating managers and operating personnel.

#### *2.4.2 Resistance in Transaction Process Systems and Decision Support Systems*

Jiang et al. (Jiang et al. 2000) have surveyed 66 managers in a variety of organizations and concluded that different types of systems tend to be associated with organizational functions

**Table 2-11: Resistance Reasons and Promotion Strategies by System Types**

	TPS	DSS
Reasons for resistance	<ul style="list-style-type: none"> <li>➤ Change in Job Content</li> <li>➤ Uncertainty</li> </ul>	<ul style="list-style-type: none"> <li>➤ Change in Job Content</li> <li>➤ Change in Decision Making</li> <li>➤ Uncertainty</li> </ul>
Promotion Strategies	<ul style="list-style-type: none"> <li>➤ Involve employees</li> <li>➤ Open communication</li> <li>➤ Provide change info</li> <li>➤ Rewards idea s</li> <li>➤ Document standards</li> <li>➤ Show sympathy</li> <li>➤ Retrain employees</li> <li>➤ Pace conversion</li> <li>➤ Clear authority</li> <li>➤ Orientation</li> </ul>	<ul style="list-style-type: none"> <li>➤ Involve employees</li> <li>➤ Open communication</li> <li>➤ Provide change info</li> <li>➤ Rewards ideas</li> <li>➤ Document Standards</li> <li>➤ Show Sympathy</li> <li>➤ Retrain Employees</li> </ul>

and classes of users, and suggested that DSS and TPS are resisted for different reasons. Thus promotion strategy effectiveness also differs. In their study, no unique strategies for DSS in spite of having an additional reason, change in decision making, for resistance and some strategies for TPS are unique and could be by passed in a DSS implementation. Those differences are shown in Table 2-11. In the ES implementation, it is unreasonable to separate the integrated systems into two parts respectively; however, to distinguish two types of use are necessary and helpful in the company-wide change.

## 2.5. Summary

According to previous literatures, different types of system use could lead to different reasons and behaviors of resistance as well as different promotion strategies, furthermore, two major types of users has not been addressed in the ES implementation projects yet. This study intends to identify resistance of managerial users and operational users, and believe that differences in resistance to ES may also be found with these two types of users while research to date on change management has not addressed this. To apply the three sets of tables on reasons,

**Table 2-12: Definition of Major Types of Users**

Activities	Definition
Managerial Users	➤ Operational activities are usually repeated periodically and involve acquiring and consuming resources.
Operational Users	➤ Business management activities involve allocation and control of the firm's resources, monitoring operations, and supporting strategic business decisions.

behaviors, and strategies of resistance, along with two major types of ES users, it is hoped to get more insight on resistance to change initiative enabled by newly introduced technologies. However, the review of literature is not exhaustive. The main purpose of this review was to examine some of the common or most important issues reported in the management and IS journals, including Harvard Business Review, Sloan Management Review, MISQ, and JMIS, etc.