Aureus Summary

Business Information Systems Literature

AUREUS

aureus
services

Terms & conditions Summaries

In this summary you will find an overview of the course material. It is about the mandatory material of the lectures and chapters of the book.

This summary is written at the discretion of the author. When making the summaries, we try to guarantee the quality as much as possible. However, Aureus cannot accept responsibility for the user. This overview serves as a supplement / aid and not as a replacement for the compulsory course material.

All in all, Aureus is glad to collect summaries and place them on the website. Only using this summary as a preparation for your exam will not ensure you will pass your exam. Aureus is not responsible for the grades of the exams.

If you have any questions or suggestions about the summaries, please contact us by sending an email to info@aureus.nl or walk by at room HG-8A32!

Announcements Aureus

Wrote your own summary?

Did you write summaries for courses of this year and do you want to sell them to Aureus? Than please sent an email to *summaries@aureus.nl* and maybe we will buy your summary for €75,-! Of course the summary has to be of good quality, which we will check.

Participating in events?

Aureus has an activity for every student! From a fantastic and cozy winter sport, to the possibility to get in touch with more than 75 companies at the Amsterdam Career Days: Aureus organizes it! For every of the things you want to do during your study you can find the right events: social events such as drinks, career events such as the Business Experience Days, skills oriented events as the Aureus Academy, we all have it! Almost all of our events are for **free**, you just have to make sure you are a member. For all our events please check out at *www.aureus.nl/events*!

Tutoring

Did you read the book, followed the lectures , learned the summary by hard but are still insecure whether you will pass the exam? Aureus also offers tutoring classes! Look at *www.aureus.nl/tutoring* for the courses we organize this period!

Business Information Systems – Summary Morton & Hu (2008)
Implications of the fit between organizational structure and ERP: A structural contingency theory perspective

Enterprise Resource Planning System (ERP)

- A critical determinant of an IS's success within an organization is the "fit" between the design of the system and the organization
- The "backbone" of IT infrastructure
- May not be appropriate for all organizations
- They are referred to as "software packages that integrate information flow across business functions and unit boundaries and even among business partners."
- Succesful implementaiton is a difficult task
- >50% of ERP implementations are judged to be failures
- May be adopted by an organization without justifications of performance related benefits but under the pressure of institutional forces
- Implementation requires an organization to adpot the standard business processes embedded in the software and to move away from a function-based organizational structure in favour of an integrated process-oriented based

- Ideal types of organizational structures:
 1. Simple Form

2. Machine Bureaucracy
3. Professional Bureaucracy
4. Divisionalized Form
5. Adhocracy

- What are the characteristics of these ideal types of organizational structures?

Table 1
Ideal types of organizational structures (Mintzberg, 1979)

Ideal type	Salient characteristics
Simple form	• Small, simple • Low formalization • Highly centralized • Unsophisticated technical systems
Machine bureaucracy	• Perform routine operating tasks • Highly formalized • Relatively centralized decision-making • Automated and integrated technology • Highly differentiated structure • Standardized work processes used for coordination • Operate in stable environments • Regulating, non-automated technical system
Professional bureaucracy	• Decentralized decision-making • Standardization of skills used for coordination • Highly skilled workers who value autonomy • Nonregulating, nonsophisticated technical system
Divisionalized form	• Centralized headquarters • Semiautonomous, loosely joined divisions • Little interdependence or close coordination among divisions • Main goal of headquarters is to coordinate goals of divisions with that of its own without sacrificing autonomy • Standardized outputs of divisions used for coordination • Divisions are generally machine bureaucracies • Technical system separated into segments, one for each division
Adhocracy	• Operates as a cohesive group working together • Mutual coordination and cooperation • Innovative • Workers are trained experts from different specialties • Ad hoc project teams • Low formalization • Decentralized decision-making • Operate in dynamic environments • Sophisticated and often automated technical system (in the administrative adhocracy)

- Contingency Theory: organizational effectiveness is achieved by matching organizational characteristics to contingencies. Where, a contingency refers to any variable that modifies the effect of an organizational characteristics on organizational performance.

- Structural Contingency Theory: the performance of an organization is dependent upon the fit between organizational structure and organizational contingencies.

- Three main elements that form the core paradigm of the structural contingency theory:
  1. An association between contingency and the organizational structure
  2. Contingency impacts the organizational structure
  3. Fit of some level of the structural variable to each level of the contingency, where high fit leads to effectiveness and low fit leads to ineffectiveness

- ERP systems possess characteristics that relate the task uncertainty and task interdependence contingencies, as well as to the structural dimensions of formalization, structural differentiation and decentralization.

- The fit between organizational dimensions and characteristics of ERP systems has significant implications for the success or failure of ERP implementation in organizations.

- Political conflicts and organizational resistance to change → critical success factors for ERP implementation success and other IT projects.

- Successful implementation depends on emotions and politics as much as on rational-decision making.

- If the IS fits well with the organization, then the power structures, responsibilities, and job definitions will not change as significantly.

- The greater the change the system imposes, the greater the resistance, the less chance for implementation success.

- The arguments above are summarized in the figure below:
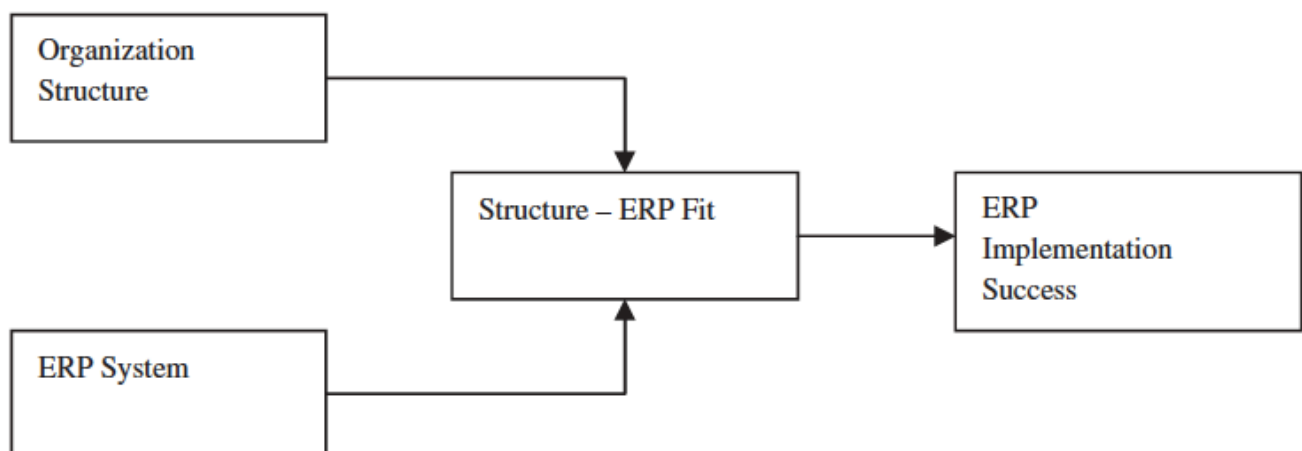
- ERP systems are a good fit with some organizational types, but a poor fit with others.
  → Organizations whose structures are a better fit with ERP systems are likely to have greater chances of successful implementations.
  → Organizations whose structures are a poor fit with ERP systems are likely to face organizational resistance to the systems and thus increase the chances of unsuccessful implementation.
- A framework of contingency fit between ERP systems and organizational types:
- Organizations implementing ERP must consider the fit with their structures, the

Table 2
A framework of contingency fit between ERP and organizational types

Organizational type	Structural dimensions			Degree of fit and likelihood of ERP success
	Formalization	Structural differentiation	Decentralization	
Machine bureaucracy	High	Medium	Low	High
Professional bureaucracy	Low	High	High	Low
Professional bureaucracy support staff component	High	Medium	Low	High
Divisionalized form	Medium	High	High	Low
Adhocracy	Low	High	High	Low
Administrative adhocracy operating component	High	Medium	Low	High

consequences of changing their business process, and the potential resistance from within.
- Managers within an organization must be able to determine if a proposed ERP system is a good fit with their organizational structure, or if it may only be a good fit with certain parts of the organization, or if significant customization and process redesigning or reengineering will be required.
- A limitation of this study is that the relationships between organizational structures and ERP systems is not empirically tested – even though, they are theoretically based and supported by anecdotal case evidences.

Business Information Systems – Summary Kim & Lee (1991)
A contingent analysis of the relationship between IS implementation strategies and IS success

- Coping with behavioral problems is as critical as solving technical problems to the implementation of IS in an organization.

- IS performance is more closely related to the management of behavioral, political, or organizational issues than of technical ones.

- Typical behavioral problems that impede IS implementation:
  1. Employee resistance to the changes that follow IS implementation
  2. Interdepartmental conflicts caused by the transition of power between relevant departments after IS implementation
  3. Difficulties in cooperation and communication between system developers and users in the midst of the IS implementation process due to cognitive differences and semantic gaps

- This research suggests → To include behavioral problem-solving methods that have been presented in existing studies, and categorize them into a number of group depending on substantial similarity and difference in their characteristics. The study considers each group of factors as a pattern of behavioral management strategy of IS implementation.

- Behavioral success factors (variables) for implementation management:

Table 1. Behavioral success factors (variables) for IS implementation management

Success Factors	Key Supporting Literature
User education and training	Fuerst and Cheney [3], Kotter and Schlesinger [6], Sanders and Courtney [20]
Selection and deployment of suitable personnel	Blaylock and Rees [21], Huber [22], Robey [23], Henderson and Nutt [24]
Effective communication between users and IS developers	DeBrabander and Thiers [14], Henderson and Nutt [24], Guinan and Bostrom [25], Cronan and Means [26]
Utilization of IS experts or consultants	Mumford et al. [27], Welsh [28]
Users' realistic expectations of IS	Ginzberg [29], Toubkin and Simis [30]
User participation	Mumford et al. [27], Kim and Lee [31], Ives and Olson [32], Zmud and Cox [33], Swanson [34]
Organizational climate favorable to IS use	Zand and Sorenson [7], Ginzberg [19], DeSanctis [35]
Activation of learning process of IS use	Argyris [36]
Application of OD techniques	DeSanctis and Courtney [2], Weiss [37]
Organic IS implementation organization	Zmud [38], Boland [39]
Fixer (leader) with full authority and resources	Keen [5], Bardach [40]
Cooptation of users	Keen [5], Kotter and Schlesinger [6]
IS developers with sufficient authority	Bardach [40]
Reorganization of reward system	Keen [5], Kotter and Schlesinger [6], Zand and Sorenson [7], Pressman and Wildavsky [41]
Operation of steering committee	Keen [5], Bostrom and Heinen [11]
System design coinciding with organizational power structure	Swanson [34], Samek [42]
Establishment of explicit IS objectives	Keen [5], Ginzberg [19], Pressman and Wildavsky [41], Kolb and Frohman [43]

- The success factors in the table above are based on the planned change theory. This planned change procedures and methods can be classified into three types of strategies:
  1. **Empirical/Rational Strategy**: people are rational and will utilize some rational calculus or judgment of self-interest in determining needed changes in behavior.
  2. **Normative/Re-educative Strategy**: people are inherently inclined to be active in quest of impulse and need satisfaction and are guided in their actions by socially funded and communicated meanings, norms, and institutions – in brief, by a normative culture rather than by individual intelligence.
  3. **Power/Coercive Strategy**: personal behavior in the organization is affected by political or economic sanctions whether they are authoritative or coercive. It is assumed that persons are apt to show strong resistance to a change if they feel they will not be rewarded politically or economically to an expectation level by the change.

- Organizational size → as organization are larger, they tend to more differentiated, specialized, and formalized. Thus, larger organizations are more likely to have a department in charge of IS implementation and a mature infrastructure for implementing IS.

- User competence → the more knowledge and experience regarding IS use users have, the more likely they can contribute to the system development process, owing to facile communication with IS developers.

- Top management support → when top management has much concern about IS implementation and is willing to give much support to it, mobilization of resources required for IS implementation is facilitated and users' attitudes toward accepting the system are likely to be positive.

- Project size → as the IS implementation requires more personnel and expense, effective management is more critical. Thus, thoughtful selection and deployment of personnel suitable for IS-related tasks is more necessary in implementing larger projects.

- Task unstructuredness → the more unstructured the task to be developed into an IS, the more difficult it is to clearly understand and determine the system's information requirements. Thus, in order to design an effective system for an unstructured tasks, effective communication between IS developers and users is critical to clarify the conceptual definitions of task-related terms and to obtain extensive and thorough knowledge about the task.

- Task interdependence → the more interdependent the task to be develop into an IS is, the most likely it is that task flows and power structure among the relevant individuals and departments in the organization will change after the IS

6

implementation; thus serious conflict and resistance to implementing the IS may be brought about.

- System innovativeness → the more innovative the expected changes caused by implementing a new IS are, the more difficult it is likely to be for users to adapt themselves to the system and accept it. There is also more possibility of a great deal of resistance to IS usage.

- Findings → the behavioral management variables relevant to IS implementation are categorized into three groups → three types of behavioral management strategies of IS implementation (empirical/rational, the normative/re-educative, and the power/coercive strategies) which are conceptually based on planned change strategies.

- IS implementors should look into the environmental characteristics and IS-object task characteristics and adopt an adequate strategy for successful IS implementation on the basis of that.

- Limitation of the study → the contents and properties of each strategy presented do not got beyond the range of the variables treated in previous research.

Business Information Systems – Summary Malone (1997)
Is empowerment just a fad? Control, decision making, and IT

- The research suggests → the dramatically decreasing costs of information technology (IT) are changing the economics of organizational decision making, with the result that decentralized control is becoming more desirable in many situations.

- The research further suggests → a simple pattern underlies many future changes. As improvements in technology reduce communication and coordination costs, the most desirable way to make decisions moves through three stages (discussed later).

- Unconnected, decentralized decision makers should be common when communication costs are high. When communication costs fall, centralized decision making becomes more desirable. When they fall still further, connected, decentralized decision making becomes desirable in many situations → derived from two assumptions:
1. New information technologies will significantly reduce communication costs.
2. Each stage in this progression requires more communication than the previous one, and in many situations, each stage has some other advantages over the previous stage.

7

- The next wave in retailing may already be happening at, for instance, Wal-Mart where local managers use global information to make more decentralized decisions. Local retailers make their own decisions, without supervision from any national chain or any need to appeal to a mass market. Small retailers have access to global markets and thus the potential to expand rapidly and dramatically.

- Three types of decision-making structures:
  1. **Cowboys**: independent, decentralized decision makers that have relatively low needs for communication.
  2. **Commanders**: centralized decision makers that have significantly higher communication needs.
  3. **Cyber-Cowboys**: connected, decentralized decision makers that require more communication than centralized decision makers.

- IT makes distance less important in determining where decisions should be made by bringing information to decision makers wherever they are.

- Many factors affect how decision-making power is distributed in organizations. However, decision information, trust, and motivation are especially important in determining the economic desirability of making decisions in different places.

- Three decision-making factors:
  1. **Decision Information** → Making good decisions requires information.
  2. **Trust** → If I don't trust you, I don't want you to make decisions on my behalf. IT can increase trust in several ways:
  > IT can make remote decision makers more effective
  > IT can help control and monitor remote decision makers more effectively
  > IT can help socialize remote decision makers and engender loyalty
  3. **Motivation** → The kind of energy and creativity that people bring to their work depends on who makes the decisions about what they will do.

- Of all three factors, decision information has the clearest implications for costs and benefits. The costs of the other two factors, trust and motivation are more situation-dependent. The costs of lack of trust do not depend primarily on the type of decision-making structure but on how extensively important decisions are delegated. Similarly, the costs resulting from lack of motivation, initiative, and creativity depend on the kind of work being done.

- In general, cowboys should incur the lowest communication costs because they do the least communicating, followed by commanders, then cyber-cowboys. In addition, both commanders and cyber-cowboys enjoy the benefits of remote information, whereas cowboys do not.
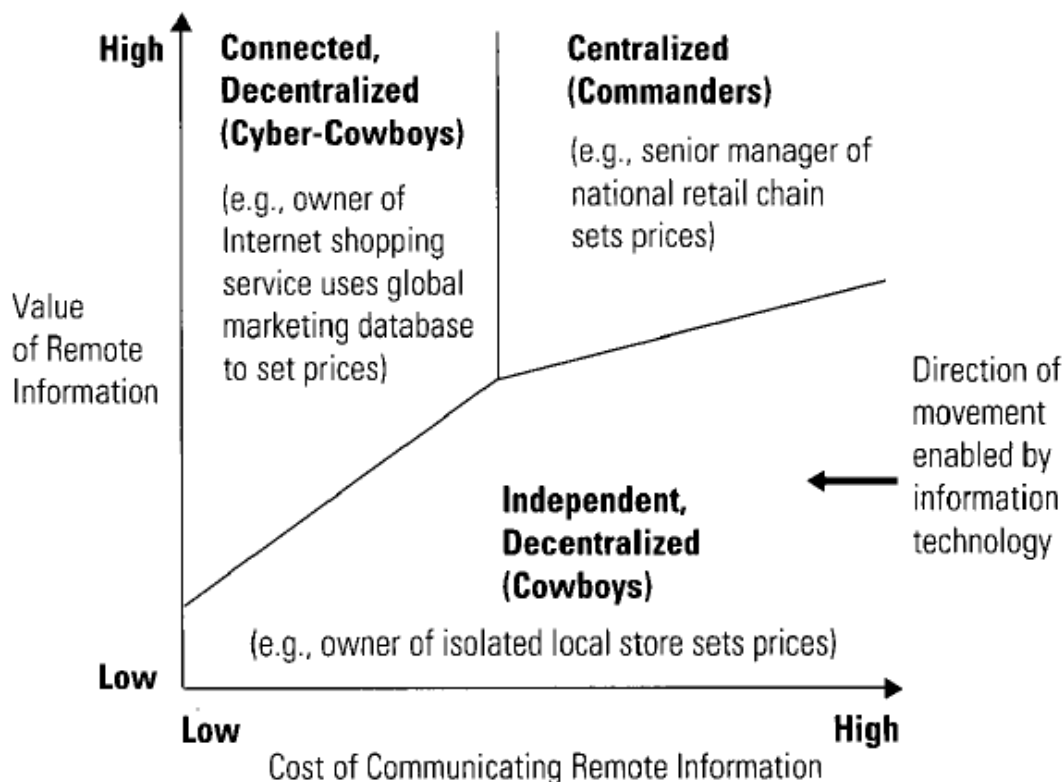
- To bring the costs associated with each decision-making structure in picture:
- The desirable decision-making structures for each kind of decision:

Table 2   Costs of Various Decision-Making Structures

Decision-Making Structure	Costs of Communicating Remote Decision Information	Benefits of Considering Remote Decision Information	All Other Costs (Trust, Motivation, etc.)
Independent, Decentralized (Cowboys)	Low	Low	?
Centralized (Commanders)	Medium	High	?
Connected, Decentralized (Cyber-Cowboys)	High	High	?

- Greater decentralization in business is not just a fad but a response to fundamental

Figure 2   Desirable Decision-Making Structures for Different Kinds of Decisions

High

Connected, Decentralized (Cyber-Cowboys)

(e.g., owner of Internet shopping service uses global marketing database to set prices)

Centralized (Commanders)

(e.g., senior manager of national retail chain sets prices)

Value of Remote Information

Direction of movement enabled by information technology

Independent, Decentralized (Cowboys)

(e.g., owner of isolated local store sets prices)

Low

Low   High

Cost of Communicating Remote Information

9

changes in the economics of decision making enabled by new IT.

- Decentralization may never occur in some cases, and greater centralization may occur before increased decentralization in others. But in the knowledge-based economy that is emerging, globally connected, decentralized decision makers will play increasingly important roles.