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The Alignment of Information Systems and Environmental Organizations Model in Perspective Capability

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***Abstract*—**The condition of the market is currently very dynamic, demanding organizations which is use system information to support the achievement of objectives should be necessarily improve the ability of information systems in accordance with the changes. Improved information systems capabilities need to align with the resource capabilities in internal environment of the organization, and vice versa. Alignment model between information systems and environment organizational in this capability perspective is expected can assist management in making the strategy for enhance the capability of information systems in accordance with resources internally within the organization, efficiency in the process of development, and optimization of contributions information systems in achieving organizational goals.

***Keywords*—**Capability, alignment, information system, environmental organizations.

I. Introduction

ALL organizations need a flow of information that helps to take a variety of decisions required. The flow of information is organized and directed in an information system. Information systems have a role in the decision making of daily process operations until long-term planning. Before computers appeared, information systems have become the organization's needs. This means the information system is not always based on computer.

However, with the development of computer functions, today, information systems are generally supported by the computer. Thus, the term of information system more often means that information system based on computer.

Information system is determined in organization depend on characteristics and structure of the business. This means that the information systems are modificative to the needs of the organization [6].

At this very dynamic market conditions and the intensity of competition between organizations is higher than the previous period. In order to survive, the organization has to reach competitive advantage from other competitors. These dynamic changes have impact on the need of information system which can adapt to reach alignment [1].

Alignment of information systems with the organization sphere, either internal or external, is required in order that information system which is built or developed to fulfill the needs of users, providing optimum services according to the business activity which is undertaken, easy and convenient to use, efficient, and economical

Thus, the information system is expected to contribute optimally to the achievement of organizational goals. But every organization has the capability of information systems and internal environment which is different so that alignment between them is necessary in order that the development is carried out in efficient manner. From the description above, it needs a model of alignment with the organization's information system.

II. Internal Environment Analysis Technique

The analysis of the organizational resources is the most used instrument for the internal environment analysis. Fig. 1 presents the organizational resources and capabilities may constitute the basis for developing the competitive advantage.

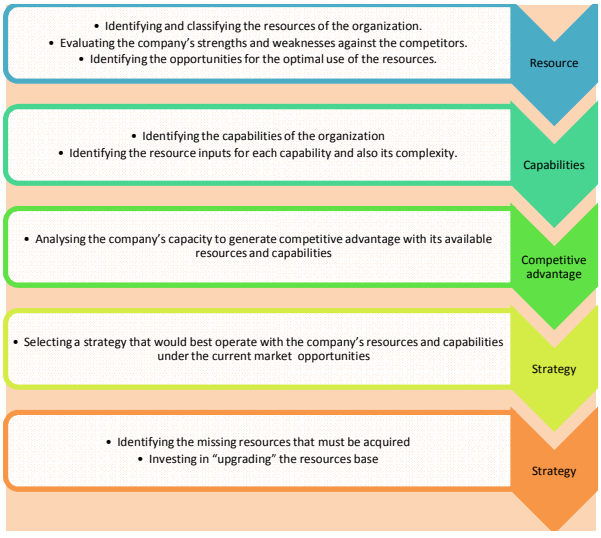


Fig. 1 The use of the organizational resource analysis as an instrument for the internal environment analysis [4]

The stages of this method are the following: defining the company resources that generate the organizational strengths and weaknesses; identifying the optimum method to combine

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the resources and generated capabilities; identifying the extent to which the combined resources and capabilities are generating sustainable competitive advantages. selecting strategies to best exploit the resources and capabilities of the organization in relation to the market opportunities; analyzing the main characteristics of the resources and capabilities in terms of sustainability, transferability and repeatability as basic elements in sustaining competitive advantage and identifying the resource gaps .The research conducted on the method of analyzing resources as a method of internal environment analysis has proven that the development of sustainable competitive advantage depends directly on the company's resources and capabilities. The analysis of resources is the basis for identifying those resources capable to sustain competitive strategies [4].

Value chain analysis model (Fig. 2) was formulated by Porter as a method of examining the nature and development of existing synergies between the internal activities of an organization.

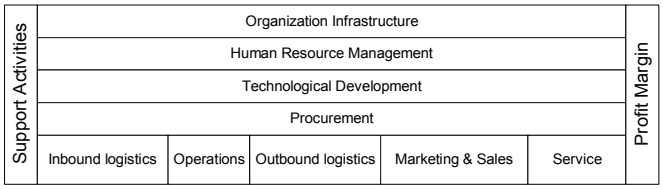


Fig. 2 The value chain model [8]

One of the simplest methods of analyzing the internal environment is the functional analysis. The abilities and resources of an organization may be classified under a capability profile starting from the basic business functions of the company: marketing, finance, research and development, production, etc. (Table I).

TABLE I
THE PROFILE OF THE ORGANIZATION'S STRATEGIC CAPABILITIES [9]

Internal area	Resource / competence	Evaluation
The profile of the strategic capabilities based on resource analysis		
Material resource	New production facilities that incorporate the latest technology	High intensity strenth (+4)
Human resource	Highly specialized staff	Low intensity strength (+2)
Financial resource	High liquidity	Low intensity weakness (-2)
The profile of the strategic capabilities based on value chain analysis		
Intangible assets	Solid corporate image on the market Known brands	High intensity strength (+4)
Inbound logistics	Excessive use of a low number of suppliers	High intensity weakness (-4)
Outbound logistics	Inefficient management of external warehouses	Medium intensity weakness (-3)
Human resource management	High absenteeism	High intensity weakness (-4)

III. IDENTIFYING INFORMATION SYSTEM CAPABILITIES

Reference [2] advices that businesses rather improve efficiency of the existing IT systems than spending lavishly on IT. There are several points of view in identifying the capabilities of information systems, namely:

A. Functional View on Identifying Core IS Capabilities

Reference [3] argues that core IS capabilities are those that are needed to endure challenges in the exploitation of IT that a company must successfully address over time; a company must retain the core IS capabilities for strategically positioning itself in the dynamic market environment. Reference [3] presents functional view identifies three challenges in IT exploitation: Business and IT vision, Delivery of IS services, Design of IT architecture

In order to face these three challenges, [3] identify a set of nine core IS capabilities: leadership, business systems thinking, relationship building, architectural planning, making technology, informed buying, contract facilitation, contract monitoring, vendor development

Reference [3] not only identifies nine core IS capabilities, they also suggest some ways to cultivate the capabilities; [3] lists five essential skills that a company should posses. The five skills are: Technical skills, business skills, interpersonal skills, time horizons (balancing short-term and long-term interests), and motivating values (multi-talented work force).

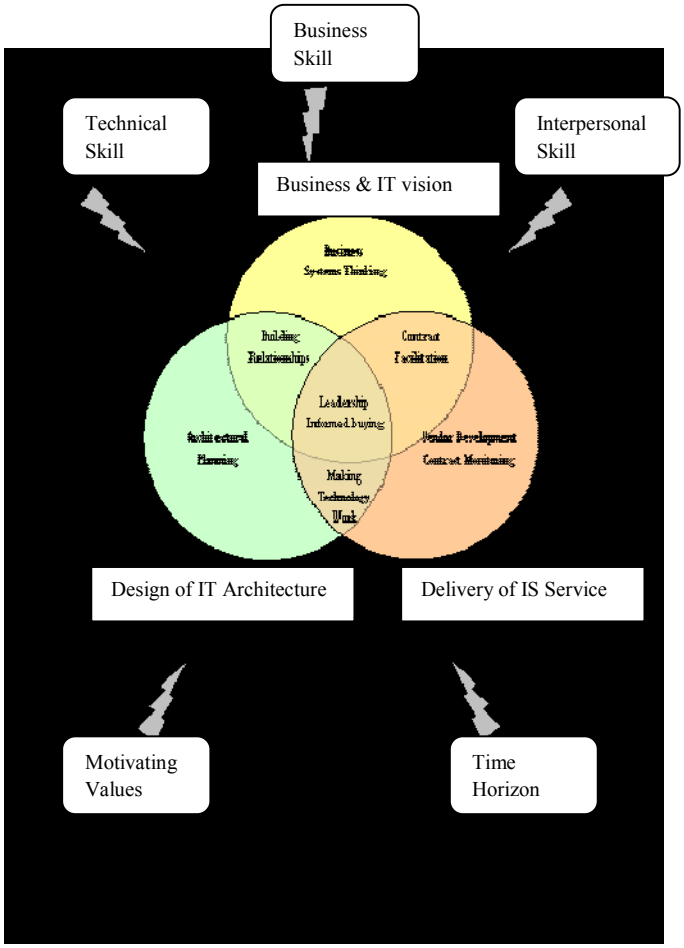


Fig. 3 Core IS capabilities: identifying and cultivating [3]

B. A Process View on Identifying Core is Capabilities

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In order to find the core IS capabilities, [5] explore about how does the interaction of three fundamental elements - people, information and technology - affect business performance; [5] believes that core IS capabilities are those that makes the interaction (of people, information and technology) that help boost business performance.

Reference [5] identifies the core IS capabilities primarily by a process-theory based approach; the core IS capabilities are identified by measuring the capabilities of a large number of companies on how effectively they manage and use information. The results of the measurement are grouped into three independent pillars, associated together with 15 competencies (or skills) that cultivate the core IS capabilities.

Reference [5] found out that there were three core IS capabilities:

A. Information Technology Practices (ITP): The capability of a company to effectively manage appropriate IT applications and infrastructures in support of operational decision-making and communication processes.
B. Information Management Practices (IMP): The capability of a company to manage information effectively over its life cycle.
C. Information Behaviors and Values (IBV): The capability of a company to install and promote behaviors and values in its people for effective use of information.

The three IS capabilities are further divided into 15 competencies:

1) ITP competencies:
   1. IT for operational support
   2. IT for business process support
   3. IT for innovation support
   4. IT for management support
2) IMP competencies:
   5. Sensing information
   6. Collecting information
   7. Organizing information
   8. Processing information
   9. Maintaining information
3) IBV competencies:
   10. Integrity: effective sharing of sensitive information
   11. Formality: usage and trust of formal sources of information
   12. Control: flow of information about business performance
   13. Sharing: free exchange of non-sensitive (and sensitive) information
   14. Transparency: openness about failures and mistakes
   15. Proactiveness: reacting to changes in the competitive environment

C. A Hierarchical View on Identifying Core is Capabilities

Reference [7] presents a model for identifying core IS capabilities; the model is a hierarchical one, consisting of three levels: the resource level, the organizing level and the enterprise level (see Fig. 4):

1) The resource level denotes the resource components that are the key ingredients of the IS competencies, such as skills (e.g., business skills, technical skills), knowledge and experience, and behavior and attitudes.
2) The organizing level is concerned with how these resources are utilized, via structures, processes and roles, to create IS competencies.
3) The enterprise level is where the IS capability is visible and is recognized in the performance of the organization.

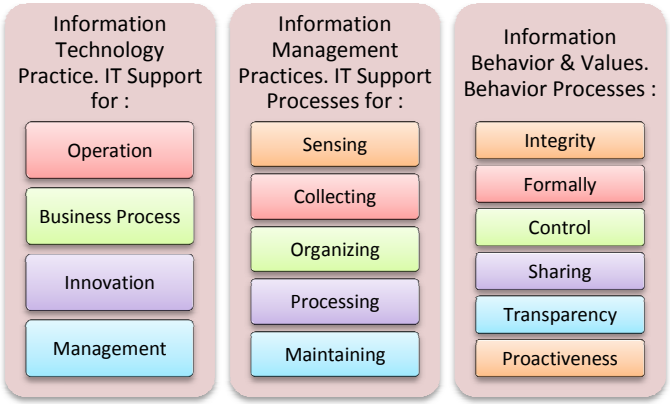


Fig. 4 Core IS capabilities based on measurement of how effectively information in managed and used [5]

Comparing 3 Views on Identifying Core IS Capabilities

This paper analyzes three works on identifying core IS capabilities:

1. A functional view based on the challenges in IT exploitation: [3] identifies nine core IS capabilities within three overlapping functions,
2. A process view based on measurement of effective information use: [5] identifies core IS capabilities as three independent pillars, based on supporting processes, and
3. A hierarchical view based on resource utilization: [7] identifies core IS capabilities based on resource utilization.

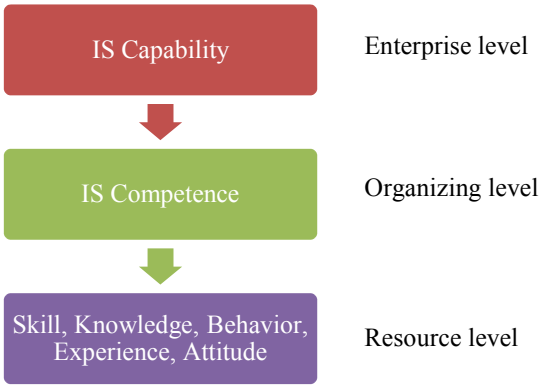


Fig. 5 A model for the IS capability [7]

IV. Discussion

Capability is the ability to take action. The ability of information systems can be used to make a rapid response to changes in the organizational environment. There are several

points of view about the capability of information systems as shown in the following figure:

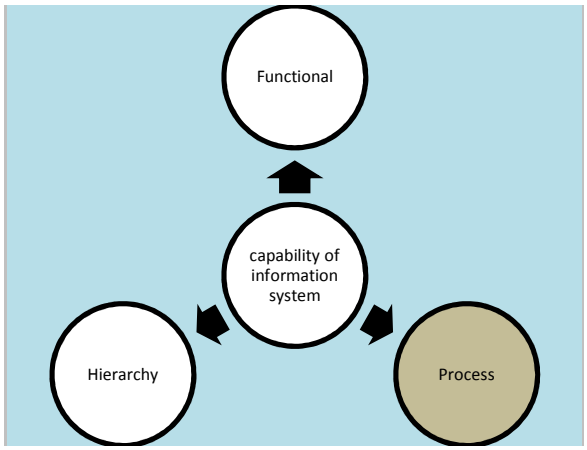


Fig. 6 Point of view of information systems capabilities

In this paper limited of capability information systems adopt the point of view of the process [5]. Point of view on this process identifies the capability of information systems into three categories of competence, i.e. as shown in the following figure:

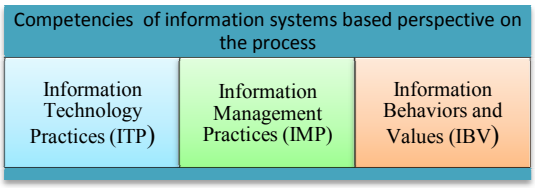


Fig. 7 Competencies of information systems based perspective on the process [5]

While, the capabilities internal environment of an organization uses the approach from the point of view of the organization's resources, organizational resources are those resources that can be replenished or replaced. Organizations use different resources to Accomplish goals. The major resources are used by Organizations Often described as follows: (1) human resources, (2) financial resources, (3) physical resources, and (4) information resources.

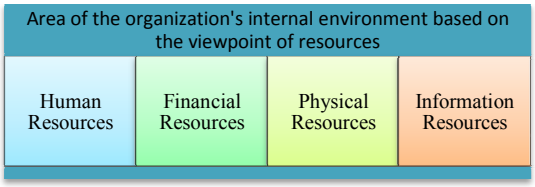


Fig. 8 Area of the organization's internal environment based on the viewpoint of resources

This paper proposes an overview model of how existing information systems within this environmental organization is able to provide optimal contribution to the achievement of organizational goals by knowing in advance the capabilities of existing resources within the organization in accordance with the expected competencies, then is made a strategy to improve information systems, thus is achieved alignment between information systems with environmental organizations. Or otherwise, to understand how the capabilities of existing information systems; then it is created a strategy to improve the organization's resources.

The proposed model is shown in Fig. 8 formation resources.

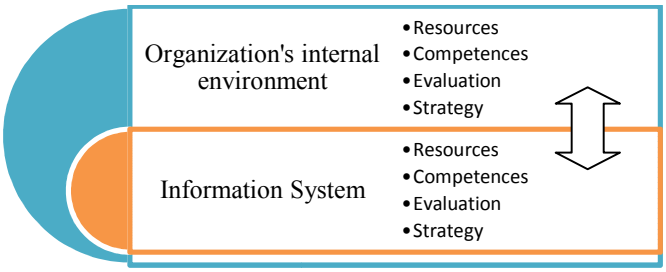


Fig. 9 The alignment of information systems and environmental organizations model inperspective capability

V. Conclusion

In the paper which be in form of the preliminary study, the authors propose that in order to information systems provide optimal contribution to the achievement of organizational goals, gain competitive advantage, and improve efficiency in the development process, need a alignment model between skills and abilities of information systems resources within organization's internal environment. To assess the information system capabilities, competencies which used is from the point of view of the process. Point of view this process divides competencies into three categories, namely, Information Technology Practices (ITP), Information Management Practices (IMP), and Information Behaviors and Values (IBV. Meanwhile, to assess the ability of the organization's internal environment is seen from the perspective of resource. Primary Resource in the organization's internal environment are human resources, financial resources, physical resources, and information resources.

VI. Future Research

From this model that has been made, then for the further research can be measured for each domain, so that it can identify the characteristics of information systems and environmental organizations from the perspective of capabilities, and it can be seen how the strategy should be made to improve the ability of each domain that achieve harmony.

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