# Predict the effectiveness of academic information system Based on the components of strategic intelligence

Aleme Keikha [a]∗, Bibi Eshrat Zamani [b]

[a] *PhD. Student in university of Isfahan, Faculty member in the University of Zabol, Zabol, Iran*
[b] *Associate professor of Educational Technology, Psychology and education department, University of Isfahan, Isfahan, Iran*

**Abstract**

**Introduction**: Strategic intelligence is a novel theory concerning organization issue for finding basic capabilities and competitive advantages in present unstable organizational environment. Intelligence process converts information and makes intelligence. This process is done through analysis, interpretation, composition and application of information in the future decision making of organizations so the purpose of the present study is Predicting the effectiveness of academic information system Based on the components of strategic intelligence in university of zabol.

**Materials and method:** Strategic Intelligence questionnaire and standardized questionnaire for Effectiveness of Information Systems were employed for assessment.

**Results:** Finding reveals that there is a significant correlation between variables and also effectiveness of management information system and its components can be predicted by strategic intelligence.

**Conclusion:** Results indicated that high strategic intelligence leads to the effectiveness of academic information which give competitive advantage to the organization and also deliver a product or service that is at a lower cost.

∗**Corresponding author:** Email: aleme.keikha@yahoo.com

# 1. Introduction

Strategic Information System (SIS) in the field of information systems was developed in response to corporate business initiative which is intended to give competitive advantage to the organization and also deliver a product or service that is at a lower cost (Haag, Cummings & Philips, 2007).

Concerning Strategic information management Kuosa (2011) believed that is a salient feature in the world of information technology (IT) which helps businesses and organizations categorize, store, process and transfer the information they create and receive. It also offers tools for helping companies apply metrics and analytical tools to their information repositories, allowing them to recognize opportunities for growth and pinpoint ways to improve operational efficiency.

The world's information doesn't exist in one's memory and these cases don't have fit to person's common perception and don't adapt to one's experiences and activities. So person are affecting changes and Change and transition of raw date to strategic date which is short, but have a high speed, and have deep effect on social and commercial transition. It is mentioned that by increasing speed of changes, the issues like intelligence is shown seriously which have to manage their organization (Eghbal, Siadat, Rajaeepour & Hoveida, 2014).

The organization that is complex social systems and has more information, it causes to increase competition, try to detain competitive advantage and management difficulty in organization. In these complex environment, the organization needs to have managers who separate these complexity in their important deciding time, it need to new style of management to guarantee organizations duration and increase their action. The complete figure of present and future situation of competition are taken for managers to provide own organizations development by fast deciding and using information systems in organization (Karimi & Siyadat, 2014).

Therefore strategic intelligence is gathering , processing , analyzing and distributing information that have high importance in strategic methods .Basically strategic intelligence is related to national security and military strategic intelligence is method of using commercial thoughts, country security and military acumen , and commercial strategies include searching source, competition , observing , and analyzing developing designs . In other words, strategic intelligence is not merely a military method. Strategic intelligence is an efficient tool, which well administrating; we use it as source for succession in academic (Ghelich, 2009).

Management information and gaining effective management information system especially in university level is one of the important duties of academic management, and it depends to correct information. In much organization, there isn't good concentration on the selecting, gathering and analyzing needed information of strategic programming. Here, manager's strategic intelligence could have main role in increasing efficiency, affection and organization optimum and its success (Haag et al., 2007).

Montgomery and Weinberg (1998) define strategic intelligence system by concentration on selecting, gathering and analyzing needed for planning strategic intelligence system is increasing intelligence cycle during use of information systems, during planning strategic in strategic management in strategic management process. Strategic intelligence means creating and transferring information for higher level of deciding in organization, which are done generally, it could lead to innovation and advantage.

Gathering different intelligence, by Strategic intelligence and competition intelligence create effective knowledge and create extra value in deciding organization strategies. This system by presenting information and knowledge in deciding strategic, provide conditions for facing to future challenge and opportunities for increasing organization success. By composing business intelligence(commercial), competitive and knowledge intelligence, strategic intelligence is activated in organization, so effective process from information systems and well deciding are performed for obtaining organization perspective (Hashemi & Hashemi, 2010 ). Due to above subject and be new strategic problem in management literature, we considered role of this variable and its components in determining management information systems effects witch has considerable

importance in university level.
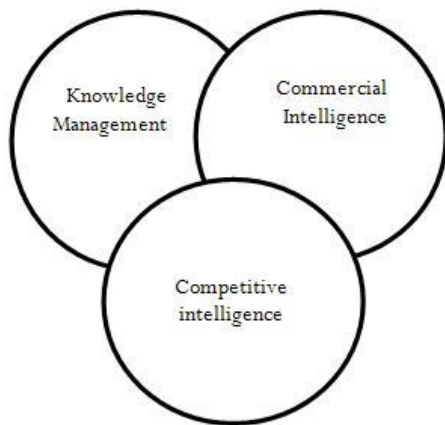


**Figure1.** Strategic intelligence systems

*1.2. Strategic intelligence content:*

   The intelligence is the oldest concepts of psychology witch have arguments in scientific texts, but still theorists don't have agreement to them, the intelligence has different definitions, some consider intelligence as a level of skills and cognition which are available for solving problem(Rajaeepour & Mohammadi, 2014).

   The V is set of cognitive definitions which able us to aware of world and learns to solve problems' and also it is a cognitive capacity witch provide obtaining knowledge, applying and solving problems. The V is a general mental ability and includes reasoning ability, thoughts and learning of experiments, The V is process of creating total image from operation environment which include competitors, customers and markets. Although Researchers presented different definition for organization, but still there isn't any general agreement about its meaning.

   In this view, Strategic intelligence is needed intelligence for national and military levels. Liebowitz (2010) consider Strategic intelligence as a used method for intelligence activities in form of intelligence is considered organization senior deciders needs and concentrate on dynamism activities. He believed that Strategic intelligence help to Strategic management through partnership in gathering analyzing and publication information. They found that high level of deciding in organization should collect information and add suggestion and more results to it. Also Pirttimaki (2007) mention that Strategic intelligence is realistic

perception of condition and applies it for work environment which is in different situations. Marchand and Hykes (2007) also believed that Strategic intelligence is understanding where does organization go to and how can it stay with future challenges and changes in long time. They defined Strategic intelligence as availability correct information for people having competence at suitable until they could adopt correct deciding for their organization future .Tom and Kim believes Strategic intelligence means that the organization know about business environment to leaded to do their organization processes that making value for customers, and finally increase their benefit in present and new markets.

   Strategic intelligence is gathering information related to organization external environment, which has potential effects on organization commission and Strategic goods.

   Marchand and Hykes (2007) believes that, Strategic intelligence need to information organization about own business environment which could predict changes , and design suitable Strategies and make value and cause developing future and create organization profit in new market.

   Strategic intelligence support senior management usually witch understand administrating and creating organization Strategies, Strategic intelligence have less attention to present time , rather future and past, we consider more to past two hours and 5 to 10 future years. This information allow organization to select own future option by more weight. (McGonagle & Vella, 1999).

   Strategic intelligence is method for increasing human intelligence in economic, political, and systems, on the other hand, this method is for meeting today community problems. Strategic intelligence is perception conditions realistically and using it for developing suitable Strategic and adopting work.

   Marchand and Hykes (2007) believed that correct Strategic intelligence is suitable about having correct information in people mind, so that allowing people is base of Strategic intelligence, and without correct information, deciding about market leader and staying in market for staff and managers are difficult. Therefore companies involve Strategic intelligence

processes, manage information and apply it for predicting success and answering to future procedures or its opportunities.

Marchand and Hykes (2007) present various definitions from strategic intelligence. They believe that success leaders are leaders who have five skills include prediction , thought , collecting partnership view and creating motivation , which Strategic intelligence form them operational definition:

The information is important source in this world and creating collection knowledge is for organization success. Naturally "when we couldn't create collection knowledge and information systems in organization, we couldn't use potential capacity for organization goods.

The levels of management are: superior management, middle management, and senior management. Senior managers have more emphasis on external information of organization rather lower level managers while administration managers pay attention more to internal information. The senior managers prefer that information should be short, due to their job nature, while administration managers need to complete and exact information (Figure 2).
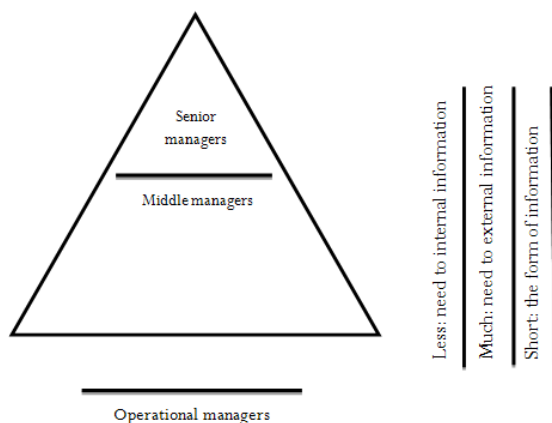


**Figure1.** Levels of Management

Sarafizade & Panahi (2001) mention that ISLC might to take long time or might take many years. So, business dynamic nature is followed with information systems and will be update when information and technical that could answer to information needs of users, otherwise it leads to futility stage. For avoiding early entrance of information system to stage of futility, it's necessary to assess system affection periodically, and improve

its deficiencies.

Management, information systems are important and its effective resulted to knowledge power for obtaining competitive advantage. Commercial and economic theorists confirm that knowledge is only source which is not copied. So we can have the most contribution as determiner key in developing Strategic intelligence. Marchand and Hykes (2007) believe that Strategic intelligence is about correct information in people mind and suitable time, so that it allows people to inform organization future. The information is base of Strategic intelligence and deciding about guiding market is difficult for staff and managers without information. Therefore companies involve with Strategic intelligence processes usually, and manage information and apply it for predicting success and answering to future processes or opportunities.
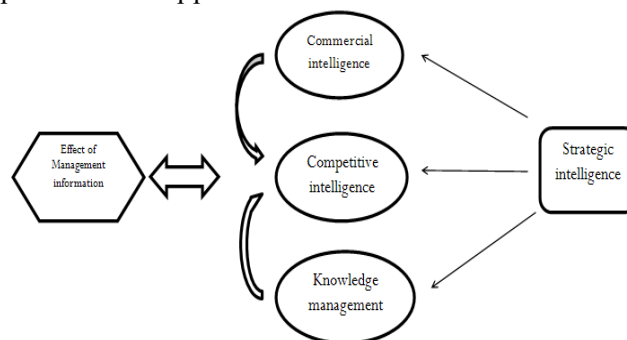


**Figure3.** Conceptual model

## 2. Method

The Present research is descriptive- measurement from point of view structure and application goal. Also this research is type of assessment which tries to assess effect of informational systems in view of strategic intelligence variable and its component.

### 2.1. Participants

Statistic community of research includes all managers (man and woman), high middle and operational level in Zabol University. Due to existence of different collages in university level, random classification method was used. And using Krejcie and Morgan table (1970), 56 people are selected as statistic sample.

### 2.2 Measurement

For measuring effect of adversity management information. Standard questionnaire of assessing

effect of informational systems were used. The questionnaire has 30 questions in 5 spectrum of Likert. Viewpoints of experts, the questionnaire is studied and the numbers of questions are decreased to 20 Q. the questionnaire measurement was estimated 87% using Cronbach Alpha Test, which due to measurement is higher than 70%, it show proper generation of research findings.

For measuring manager's strategic intelligence, due to after studying research literature, standard questionnaire have not obtained, so the curtained questionnaire was used. At first research literature for making questionnaire and strategic intelligence were considered and finally 3 components as strategic intelligence dimension were identified.

Due to 3 components of strategic intelligence and availability their standard questionnaire, 3 questionnaires include commercial, competitive and knowledge intelligence were given to 30 university managers. The questions of 3 questionnaires (100 questions) were distributed and after collecting, it is studied by exploratory analyze. Finally the questions having more managing, was put as the main questions in last questionnaire. The last questionnaire include 26 questions in 5 spectrum of Likert were extracted. Professors and theorists confirmed its measurement.

## 3. Results
Table 1 shows the correlation coefficients.

**Table1**. Correlation coefficients of strategic intelligence and management information system.

| variables | Strategic intelligence | commerce intelligence | competitive intelligence | knowledge |
|---|---|---|---|---|
| Management information | 0.338** | 0.264** | 0.318** | 0.370** |

** $p < 0.01$

Table 1 shows that Correlation coefficient between strategic intelligence and management information system is 0.33 which is meaningful in 0.01 levels. So by confidence 99% percent resulted that there are positive and meaningful Correlation between strategic intelligence variable and management information system.

Also there is meaningful relation between commercial intelligence in organization management and management information system by 0.2 Correlation coefficient so the effect of management information system is meaningful through commercial strategic intelligence.

Additionally, there is meaningful relation between competitive intelligence in managers and management information system in Government University by Correlation coefficient 0.31 the effectiveness of management information system is meaningful through competitive intelligence component.

And also there is meaningful relation by Correlation coefficient 0.37. So the Effectiveness of management information system is predictable through knowledge management c component.

The results of above about step by step regression test, it show that Multiple Correlation coefficient is 0.370 and %13 resulted change in variable confidence to management information system is predictable through strategic intelligence.

**Table2**. Beta and Regression confidence for Regression analyze model

| Predictors | Unstandardized Coefficients | Beta | t | sig. |
|---|---|---|---|---|
| Strategic intelligence | 0.017 | 0.338 | 2.64 | 0.011 |
| Knowledge management | 0.045 | 0.370 | 2.92 | 0.005 |
| Competitive intelligence | 0.035 | 0.318 | 2.46 | 0.017 |
| Commercial intelligence | 0.031 | 0.264 | 2.01 | 0.049 |

*F=8.56        R=0.370        R²=0.137        Sig=0.005*

Independence variable: management information system

AS you see in Table 2, strategic intelligence variable has direct effectiveness of academic management information system; the components of knowledge management have the most effect on effectiveness of academic management information system.

## 4. Discussion

Liebowitz (2010) consider 3 components for strategic intelligence. In this research, the relation among 3 components of strategic intelligence following effectiveness of management information system in national university (Zabol) is considered. Then due to average of these 3 components, the scientific relationship between strategic and management information system were obtained. It means that management information system is inseparable part of strategic intelligence. And managers who had high IQ score could use effectiveness of informational systems in academic places especially universities.

On the other hand, Marchand and Hykes (2007) believe that effectiveness of management information system especially in university is one of the main duties of academic management and it depends to correct information. In many organizations there isn't a valid selecting method for investigating inquiries. Strategic intelligence is efficient tool which people employ for committing their routine works effectively. Additionally, Knowledge management on the part of organization leads to innovation, keeping knowledge, creating friendship and ownership and improving profit. Knowledge management is smart designing process, tools, structure and etc… Which is by aim of increasing, innovating, sharing and improving knowledge use?

The results of multiple regression showed that there is meaningful relation between strategic intelligence components and effectiveness of academic management information system three – dimensions of Knowledge management, commercial and competitive intelligence.

Obtained coefficient in this equation is 0.137, among strategic intelligence component, the variable of strategic intelligence by positive direction affected effectiveness of management information system.

Beta coefficient is extent and direction of effectiveness of strategic intelligence independence variable on effectiveness function variable of academic management information system, Obtained coefficient showing common variable of independence and dependence variable is 0.137,

means %13 percent effectiveness of university management information system are explicated by strategic intelligence variable which could use it as a source for succession in effectiveness of academic management information and reaching to competitive advantage see Tables 2 we can consider all dimension of strategic intelligence have meaningful correlation and relation with effectiveness of management information system. So we can say research Secondary hypothesis are confirmed in confidence level 99 and %95.

By comparing statistic community for each strategic intelligence components following effectiveness of management information system, resulted that Knowledge management has more effect in effectiveness of management information system. Montgomery & Weinberg (1998) believe that strategic intelligence system is defined by selecting, gathering and analyzing information for planning strategic, from their view, the aim of strategic intelligence system is increasing cycle of intelligence in using, during planning strategic in process of strategic management. Strategic intelligence is creating and transmitting information and knowledge for higher level of deciding. Also Waddell & Allee (2009) believes that knowledge management is concept in which information is converted to applicable knowledge and is used for people who can apply it.

Liebowitz(2006)believe that knowledge management is availability of information systematic and scientific saving , so on the other hand, Strategic intelligence can predict effectiveness of management information system, and cause its increase Also the results of variable analyze test show that this Regression was so meaningful(f=856, P<0.005) and showing there is line relation between variables.

Due to Table 6 Regression coefficient and T-test are presented for testing these coefficients and meaningful level, and B Colum show that by changing standard deviation of Strategic intelligence component %33, standard deviation happens in effectiveness of academic management information system, Also in return to change a standard deviation in Knowledge management variable %37 and for standard deviation in competitive intelligence variable %37 and for changing standard deviation in

commercial intelligence variable %20 standard deviation will happen in effectiveness of management information system.

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