DECISION SUPPORT SYSTEM FOR COMPETITIVE ADVANTAGE

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Abstract: Decision support system supports effective decision-making in an organization. Decision support system has become as an important tool that can assess all the important aspects quickly, perform in-depth analysis of data and suggest various possible courses of action for the purpose of decision making. A modern-day Decision support system is capable of envision future trends, offering useful insights to businesses information. Potentially, decision support systems can yield competitive advantage for an organization or at least maintain competitive position of an organization in this dynamic environment. Information technology is providing various tools and techniques that extend capabilities of DSS that can help to yield competitive advantage for an organization. DSS provides support to managers mainly in semi-structured and unstructured situations. This paper discusses the contribution and uses of the decision support system (DSS) in gaining competitive advantage to organization

Keywords: Decision Support System, Managers, Semi-Structured Situation, Competitive Advantage, Strategic Decision Support System

I.   Introduction

Decision support system is interactive computer based system that assists in decision making process. Decision support system use specialized database, analytics models, decision maker's own insights and computer based interactive modeling to taking semi-structured business decisions. DSS is used to solve the problems that are less structured and underspecified typically faced by upper level of management. As organizations are working in a highly dynamic environment so managers have to change strategies regularly and have to take many decision quickly, so decision support system is the decision support facility to provide various alternative solution to the managers. It provides competitive advantage to an organization by taking

timely decision. A competitive advantage here means an organization does much better than its competitors.

Keen and Scott Morton stated that "Decision support system couple the intellectual resources of individuals with the capabilities of computer to improve the quality of decision. It is a computer-based support system for management decision makers who deal with semi structured problems**"**

DSS processes following characteristics

- It is supportive in nature.
- It helps in what-if analysis.
- It is effective in solving semi structured problems at all levels of management.
- It uses database for information storage.
- It uses various mathematical, analytical and operation research model.
- It provide interactive user interface.

II.   Architecture of DSS:

Today organization has huge amount of data. An organization has different sources from which it can collect enormous data like internal sources which include TPS and MIS data and external sources which include market data and competitors' data. This data is inputted in DSS for analysis. User interacts with DSS using dialogue management component which is interactive in nature and put his/her queries. DSS uses various data models like strategic model, financial model, operational research model etc. to analyze the data and answers the queries of user. All these three sub

components database sub component , model base sub component and dialogue management component works together to provide prompt solutions which helps in decision making in organization. The following diagram shows the generic architecture of decision Support system:
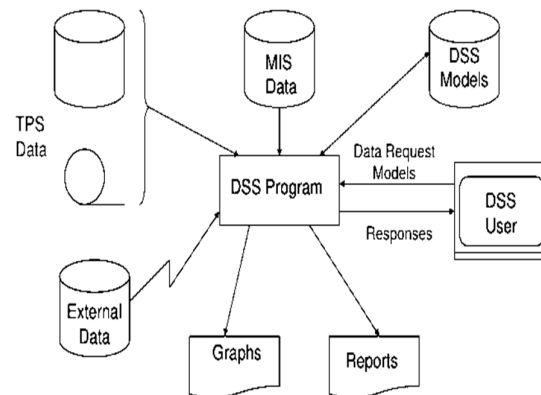

Fig. 1 Generic Architecture of decision support system

III.   Decision Support Systems to Create Competitive Advantage

Organizations that invest a huge amount of money and time in DSS to achieve competitive advantage, wants a sustainable system. To create a sustainable system, an organization should prevent its competitors by becoming first in market. Organization should know its goals and potentials, the potentials of its competitors, and should assess the effects of implementing DSS is beneficial for it or it has adverse effects.

Decision support system performs the decision making process in a structured method and it helps decision makers identify the best possible and acceptable solution for a specific problem. Decision support systems can help an organization to create a time and cost advantage. It accelerates the decision making process which in turn helps managers to change strategies quickly according to the situation. Decision support systems can provide many advantages including improving efficiency of managers, accelerating problem solving process and better organizational control. A decision support system helps organization to take competitive advantages and to remain ahead in competition. Possible advantages an organization achieves through DSS are:

A. Shorten Decision Cycle:

Time plays a very significant role in the success of any organization. All types of decision support systems are intended towards saving time and simplifying things. A DSS helps a decision maker in quickly taking an effective decision by analyzing all perspectives. The time taken in analyzing and comparing the possible courses of actions is reduced significantly.

B. Reduction in Cost of Decision Making:

The deployment of a decision support system reduces the cost of processing and analyzing data. The cost of information storage is also falling considerably with the advancement in information Technology. This means the cost of distributing decision-making technology is decreasing even to the lower levels of hierarchy.

C. Direction and quickness:

Moving in the right direction as quickly as possible helps organization to stay ahead in the competition. This is the fact that keeps organizations nimble and proactive. As environment is highly dynamics and unpredictable, it is essential for an organization to respond quickly to the competitors' strategies and changes in environment. In today's business environment, it is crucial that companies move in the right direction, from the inception.

D. Increased value:

Decision Support System changes the way businesses operate. A decision support system takes into account historical data, current trends and economical factors and future estimations to determine the profits, cost and overall value of organization. It provides alternative courses of actions that provide economically distinct solution to any problem. In brief, it advises the manager best course of action that provides solutions at lower cost and creates higher value to an organization. Surely, an organization can gain competitive advantage when the value it creates exceeds its operating cost.

E. Improved data accuracy:

In an organization before DSS, the analysis and interpretation of data is performed by managers which are based on human biasness. Each manager has its own perception, experience and personal judgment so they cannot create a universal accepted truth. A decision

support system interprets and analyzes data without creating any kind of biasness as it is analyzed by software.

F. **Improved efficiency of manager**:

Computerized processing of decision-related task improves the accuracy and consistency. It allows the managers to spend more time on important and substantive tasks t rather than clerical aspects of their jobs.

G. **Improved decision quality:**

DSS uses various models for analyzing real time problems. These models provide various alternative courses of actions. Manager can choose any alternative which give more benefit to an organization. The quality of decision making is also improved because it analyze all perspectives without any human biasness.

Although DSS is providing these competitive advantages, but the implementation of DSS is very costly and time consuming which lost purpose of its implementation. Sometimes some managers do not accept Decision Support Systems. They resist it because of following reasons:

- Some managers think that use of DSS will weaken their authority and status in organization.
- Sometimes managers' problem solving method is based on intuition rather than analytical style,

so DSS may not suit to a manager's style of problem solving.

- Some managers say implementation of DSS is costly and time consuming. But in practicality DSS is not difficult to implement and actually it save managers' time and they can promptly take their decisions.
- Some managers argue that DSS increase the information overload. But actually it reduces the problem of information overloading by properly managing their work.

Conclusion

If an organization is implementing a decision support system managers should analyze various factors like cost of implementation, benefits of DSS, managerial effectiveness and how DSS helps in providing optimal solutions to various problem. Generally DSS speed up decision process, reduce the cost of decision and improve the quality of decision which in turn helps in gaining competitive advantage to an organization. Organization should constantly improve their DSS to increase and retain competitive advantage. To gain competitive advantage, DSS supporters should provide knowledge of benefits of using DSS to managers who resist the use of Decision Support System.

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