

# Decision support system example

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## **What is a decision support system**

In most circumstances, policy analysts or senior government officials or are confronted with a particular problem that calls for immediate attention. At such, the DSS team need to focus on developing a simple analytical database as well as a particular quantitative decision support model or tool. A web-based DSS allow for online exploration of data and other statistical activities at the right time analysis and aids in the generation of the reports required when making decisions collaboratively (Adla et al., 2012).

## **Decision support system history**

Throughout the last forty years, DSSs have evolved from simple systems that were based on models to multi-faceted units that are quite innovative. In the 1960s, most of the DSS were centred on the expensive and powerful supercomputer that offered managers organised and regular reviews. In the 1970s and as an outcome of MIS theory developments, DSS advanced into more sophisticated computer-based structures that reinforced production, marketing, advancement and even logistical purposes. DSS grew in popularity and in the 1980's it attracted academic interests as many researchers worked on developing the framework for Decision Support System (Power, 2007). In the 1990's, there was a paradigm shift, which resulted in a more complex system that incorporated client or server capabilities and advanced database technology. Many organisations started upgrading their network infrastructure, and with the advent of the internet, the Decision Support Systems were completely adopted.

## **Decision support system software**

The single user interface paradigm of the web, its growth of open standards as well as distributed interface has led to its significant growth (Lu & Ruan, 2007). Web browsers have enabled easy access for several operators to access various information sources. Most precise, the Web technologies have delivered a novel platform for information distribution on decision making and function as the desired choice for the DSS supply. Web-based DSS have catered for user accessibility and flexibility difficulties and also opened up the DSS abilities to a wider operator group (Hillegersberg & Koenen, 2014). They used web technologies to provide the process of decision-making among various people who are geographically distributed. Web-based DSS allows for geographical freedom as the user can utilize it from any location at any time. Usually, the DSS is incorporated into the existing systems and applications in Web domains including the Internet, business extranets, and corporate intranets. For instance, it can assist business managers, the policymakers in government and populaces in the making of decisions via an electronic government service scheme.

The Web-based DSS conglomerates the web infrastructure with the typical DSS structures. Most of them are constructed using the three-tier architecture (Lu & Ruan, 2007). By a web browser, the decision makers send a bid to a web browser by the utilization of the hypertext transfer protocol (HTTP) (Lu & Ruan, 2007). After web browser processes the request, it is displayed in the browser. Web-based DSS have minimized the technical blockades to make information relevant to decisions and avail decision support tools to utilize in locations that are geographically distributed. With

the help of the Web infrastructure, business-wide DSS can now be executed at a moderately lower price in decision makers that are at different geographical locations. (Abdou, Lewis & Al Zarooni, 2013). In e-government, the web-based DSS encouraged public participation because any citizen regardless of the geographic location has a platform to ensure that their voice is heard.

Establishing Web-based DSS increases the utility of decision information and DSS in the government (Abdou, Lewis & Al Zarooni, 2013). Web-based DSS enhances quick conveyance of decision making frameworks and analysis of the best practices as well as promoting more steady decision making on decision tasks that are repetitive across the organization in different geographical locations (Hillegersberg & Koenen, 2014). It also offers the means of managing the government's knowledge storehouse and gathers resources into the process of making decisions.

## **Key drivers of e-Government**

eGovernment focuses on facilitating the government's operations and the dissemination of the governmental services and information (Abu-Shanab & Khasawneh, 2014). The primary purpose of eGovernment is the ability to deliver an upgraded collection of public facilities to populaces in a cost effective and efficient style. Collaborative e-government has primary drivers including citizen-driven, value-driven, technology-driven and cost-driven (Al-Khouri, 2012) Value-driven entails bettering the decision making process, enhancing safety and security as well as improving the provision of services. Technology-driven involves creating collaboration platforms and tools. Economic/ Cost driven encompasses reducing the cost as well as ensuring

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that the processed or resources are efficient. Finally, citizen-driven is about providing transparency, public participation and encouraging shared governance (Al-Khouri, 2012)

Governments should certify that their systems, policies, and guidelines allow for citizen engagement and cover the requirements of enhancing the conveyance of services (Wauters & Colclough, 2006). The lifecycle of service delivery should be redesigned and reengineered to meet the anticipations of the citizens of enhanced quality life and social security. The government policies should also ensure that the government undertakes radical organizational transformation to foster the growth of services, minimize unnecessary regulatory burdens or costs on firms and strengthening the training and education systems (Sandoz, 2009). They should also encourage excellent management practices, push for new applications and innovations and raise the market settings and create a commercial atmosphere that encourages a fruitful economy.

### **Example of decision support system in eGovernment**

Proponents of eGovernment recognize the opportunities provided to ensure that citizens participate in the process of policy making (Al-Khouri, 2012). E-government also has great potential to directly and quickly connect the citizens to the government provisions without queuing and waiting. It reduces the costs through the integrated systems and streamlined communications that are highly convenient, efficient and effective. The eGovernment initiatives reduce the process time cycles, the administrative burdens, and advances responsiveness.

The functions of e-governance can be classified into four groups including e-service (entailing the provision of services), the participation of the public and e-democracy, government performance and social advancement and inclusion (Al-Nuaim, 2011). Classification of the e-government services is based on who is receiving the benefits and services including public agencies, citizens, employees, businesses, political and social organizations and non-profit organizations (Al-Nuaim, 2011). It includes Government-to-Nonprofit (G2N), Government-to-Government (G2G), Citizen-to-Government (C2G), Government-to-Employee (G2E), Business-to-Government (B2G), Government-to-Citizen (G2C), and Government-to-Business (G2B) (Al-Nuaim, 2011).

### **A decision support system in the United Arab Emirates**

In the United Arab Emirates, eGovernment is considered as the perfect way of developing a new economy that is more maintainable. Furthermore, it is believed to play a significant part in administrating and leading the course of change and restructuring that will improve the people's assurance (Al-Khoury, 2012). At such for the eGovernment services to be adopted successfully, then the citizens must participate in the eGovernment initiatives which entails the intents to get and offer information via the internet avenues. Since there is a growing spread of digital communication connectivity and tools, the connections of the government with the populaces through the virtual network are becoming more widespread. At such, the citizens are demanding more from the government regarding availability, quantity, and quality.

According to Benkert (2007), eGovernment is only 20 percent e and 80 percent government. The technical part is the simplest aspect of e-government and at such states ought to re-engineer their internal structures and restructure their management. The greatest challenge that governments face is seeing, managing and respecting the citizens and at the same time serving them effectively. At such, the government is viewed as a tool for eliminating corruption, developing democracy, enhancing ICT infrastructure and refining the service quantity and quality (Riad et al., 2010). Citizens demands include expecting fast diffusion of important information all day and night at an internet connection with very high speed that minimizes the charges for both the populaces and the government and also increases the level of trust between them.