

## Utilizing IT in Government: Strategic View to Digital Dashboards

Nastaran Aliy<sup>+</sup>

University of Tehran

**Abstract.** Our life starts and ends in the dominant of government. Governments as one of the giant organizations of any society trace missions and some goals. Probably, the most important mission of states is accomplishing social justice. In order to reach it governments must realize social problems and try to solve them and achieve collectivity benefit.

Digital dashboards are a common feature of an Executive Information System (EIS) that integrate information from multiple components and tailor the information to individual preferences ;they commonly be employed to assist managers to identify the status of key information or critical factors of success.

The author's purpose in the present article is implementation of this concept in order to help authorities to take advantages of IT Digital dashboards can use as a tool for link goals to strategies. The most important object is to realize that which information must be included in digital dashboards and how must this information be shown so that we reach the best information in minimum time.

Since governments make macro, strategic decisions, they face huge and diverse data and information.

Using IT and its capabilities will help to prevent from losing data and information as well as inexpensive data processing, because it does not look for everything available, it only looks for key performance indicators (KPI)s. Digital dashboards include important information so it is necessary to describe different availability levels for different users so that electronic reliance can be reached.

Result of this article shows that if digital dashboards are designed and implemented correctly, the results will be: Accountability, rapidity in decision making, accessing information within large data sets, and analyzing that information for managing performance. Being inexpensive in overall administrative costs and moving across real goals instead of superficial goals –such as maintenance of employees and image of power as the origin of their stability- are other advantages.

**Keywords:** Digital Dashboards, Government, KSI, KPI.

### 1. Introduction

Our life starts and ends in periods of different governments. Governments as one of the major organizations of any society trace missions and some goals. In order to realize these objectives, information technologies are being applied strongly by governments at different national, regional, and local levels.

“To drive a car, you need roads, highways, and a transportation infrastructure” (Howson, 2008) and to drive the actions of the government, you need them as well but in this case, there are more important things than roads, highways and... In fact, people and their whole life come to the fore.

---

<sup>+</sup> Corresponding author. Tel: +98 (9128040241); fax: +98(2188630535).  
E-mail address: (nastaran.aliy@ut.ac.ir).

Digital dashboard is a common attribute of an Executive Information System (EIS) that integrates information from multiple components and adapts the information to individual preferences. The aim of the present article is to find out the degree to which using dashboards enhances responsibility and efficiency?

The governments all over the world begin to use new technologies (Howson, 2008, p. 1), but the challenge is to determine the appropriate technology to achieve our goals and desires. Since governments make strategic and macro-decisions, they face huge and diverse data and information.

For strategic decision-makings it's not only enough to know about the things done, but also to know what is happening and even "what is likely to happen. " (Tapscott, 2008). A picture speaks more than thousand words. (Howson, 2008, p. 197). Now, the question to be investigated is that whether using dashboards enhance responsibility and efficiency?

Digital dashboards can be used as a tool for linking goals to strategies. The most important issue is to realize which information must be included in digital dashboards and how this information must be shown so that we can reach the best information in minimum time.

But how information flows will affect the activities is an important issue in developing digital dashboards. "One study shows that the government spends about 5.5 cents to administer every procurement dollar while its private counterparts spend only 1 cent to do the similar procurement task" (Moon, 2003) and this is an example which indicates efficiency for public sector is of high importance.

A key characteristic of dashboards is that they present information from multiple data sources (Howson, 2008).

## **2. Literature review**

In the past, governments spent much time on data collection and modification, so that they could extract useful reports for managers to be used in decision making, and this issue for public sector, which has huge amount of data and relates with different information sources is more considerable (Farcot, 2004).

Reformatting and recompiling this information as new charts and reports that can be used by the other managers –with different information needs- was difficult and erroneous and finally all of these reports should have been saved in different files and were often difficult to update.

But this situation was changed with the emergence of digital dashboards, because this technology is able to gather and analyze information from different sources to make them customizable report for different managers with different jobs.

Digital dashboards have enjoyed much popularity in Business Intelligence (BI) world for many years and much has been written on their benefits and capabilities. With cumulative growth in data and information available for decision making, traditional approaches to the problems are not working any more. (Baltzan & Phillips, 2008, p. 36)

Pioneer organizations, began to utilize EIS because they found that for accurate decision making, they need accurate information which is driven from facts and empirical data, and not based on intuitive, anecdotal data and personal value judgments. (Tapscott, 2008)

With increasing interest in E-government, many of public managers are eager to take advantage of technologies in accomplishing their tasks (Landsbergen, 2004). As services become more complicated (and expensive), the need for accurate decision making is increasing because government must move across collective benefits and improve transparency and social responsibility.

Gradually IT became a possible and applicable way of solving problems and helped decision making in public sector. And even e- procurement, was applied as a new alternative to the previous ways and is able to increase efficiency and analyze large amount of data and information accurately and with higher speed.

IT is not an asset in itself but can be a powerful tool through which information can be shared within and between government. This attribute leads to efficiency. Governments, all around the world, attempt to be result-oriented and achieve their own mission and social justice. For this aim, they started using ICT practically since 1990.

### 3. Creation of Digital Dashboard

To accomplish collective goals governments must have a clear understanding of the needs of all the people. In so doing, governments can make use of other applications of IT such as online queries and so forth.

Managers should have the opportunity to integrate in a digital dashboard their own preferences and be able to customize them to their needs rather than the mere utilization of pre-determined reports (Long, 2002).

Once a plan has been finalized, managers want to monitor the progress of this plan and this monitoring can be a part of digital dashboards (Howson, 2008)

In value chain of governmental activities, the most important issue is decision making, because it's about major concerns and has remarkable results whether they are right or wrong, and digital dashboards will assist us in this duty of public managers because they facilitate using the correct and real-time information through providing appropriate information to anyone at the time of need.

The reason for most of governmental costs is the superfluous, futile devotion of energy, time, and cost to doing the same thing again and lack of integration between different public organizations which brings about a kind of confusion and lack of awareness from each other's activities.

And digital dashboards with their capability can gather information from different sources and analyze them and show us the necessary information so that we (as a manager) can extract the most information with a glance.

Using IT and its capabilities prevent from losing data and information as well as inexpensive data processing, because it does not look for everything available, it only looks for key performance indicators (KPI)s. Pre-determined calculated values, known as KSI (key successful indicator) can be used as a measure as well.

In order to identify KPIs, first we must have a vivid understanding of our goals.

KPIs will help us in the measuring, analyzing and controlling (Long, 2002). Therefore, first we should know our goals completely, define standards for them, and then compare our status quo with those pre-defined standards and recognize the existing gap between our status quo and the standards, then we decide how to minimize the current gap.

Since government as a major organization is looking for increasing productivity then it should invest on strategic and professional project and out-source low level and routine works so that effectiveness and efficiency can be achieved. But differentiation between strategic and non-strategic activities is a challenge in itself and KPIs (for example, rate of outsourcing) can help us in decision making.

Steps to design digital dashboards for the public sector:

- Determining the purpose of digital dashboards: This goal can be accountability, rapidity in decision making, accessing information within large data sets, and analyzing that information for managing performance, being inexpensive in overall administrative costs and moving across real goals instead of superficial goals.
- To whom this dashboard will serve: Now we must determine that this digital dashboard to whom will serve as well as consider different availability level for different individuals so that insecurity can be avoided.
- Diagnosing information needs of different managers and providing their databases in order to satisfy their needs.
- Defining the KPIs that will help us in measuring, analysing and controlling.
- Selecting appropriate technology for satisfying our needs. Note that IT in itself is not an advantage.

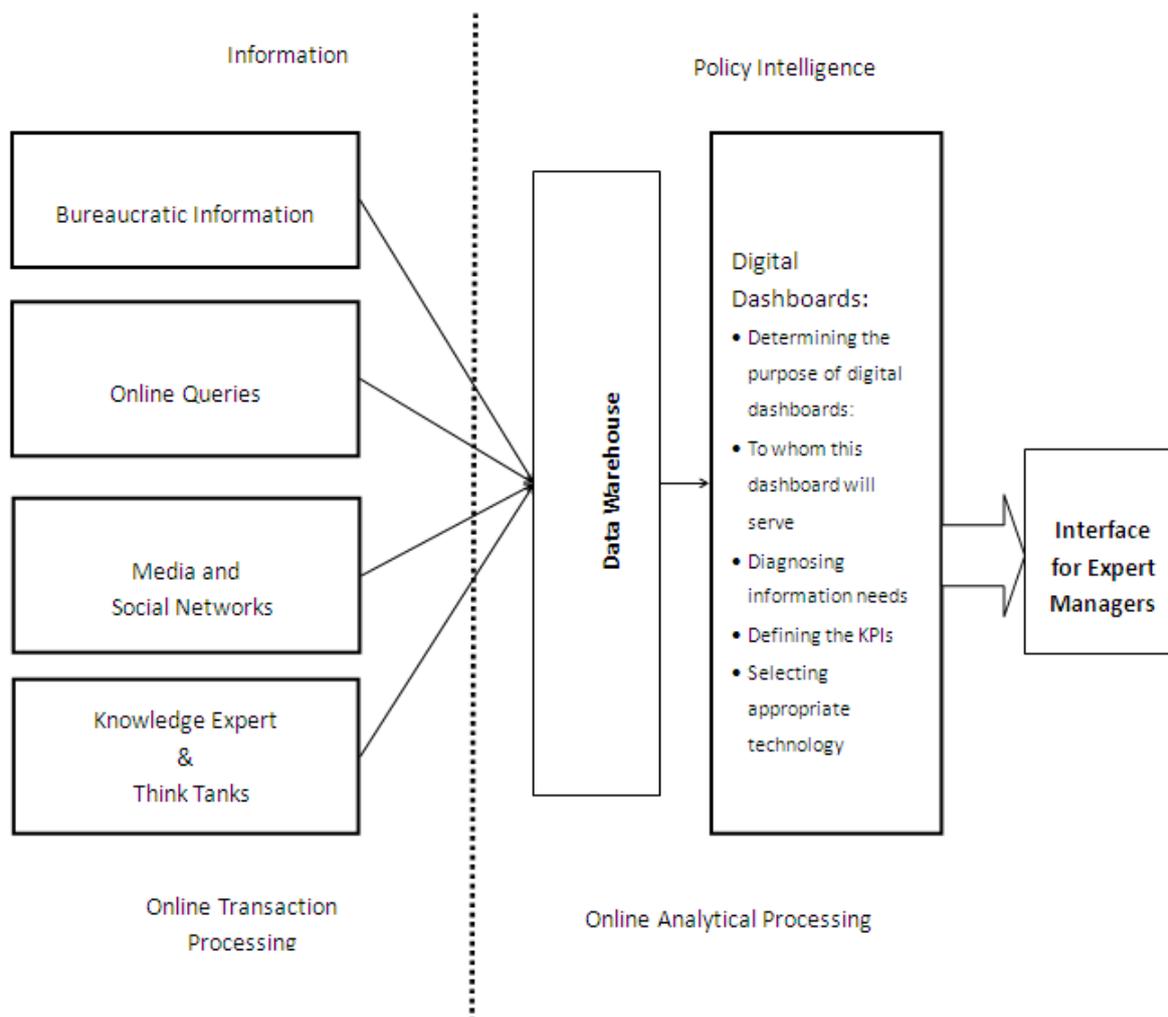


Fig. 1: Creation of Digital Dashboard for Policy Intelligence

### Sources of Information

**Bureaucratic Information:** It includes information gathered from public organizations and institutions.

**Online Queries:** To accomplish collective goals governments must know needs of all the people, in so doing, governments can use other applications of IT such as online queries and so forth.

**Media and social networks:** they are one of the most important information sources for public sector, because of their direct transactions with society and people.

**Knowledge expert and think tanks:** they reflect the past experience of managers and their insights and visions. The major challenge, in this case, is that they consider information as the major source of their power and avoid from sharing it.

Softwares of data mining in data warehouse will gather, analyze and summarize information from different sources and transform them to data marts.

## 4. Conclusion

In today's competitive environment, with using digital dashboards we can produce additional value. Even though a digital dashboard design in the best way, it will defeat if don't implemented properly.

If digital dashboards are designed and implemented correctly, the results will be Accountability, rapidity in decision making, accessing information within large data sets, and analyzing that information for managing performance. Being inexpensive in overall administrative costs and moving across real goals instead of superficial goals – such as maintenance of employees and image of power as the origin of their stability- are other advantages.

## 5. Acknowledgement:

I am heartily thankful to Dr. Hamza Khastar for his encouragement and guidance in the process of writing this article.

## 6. References

- [1] Baltzan, P., & Phillips, A. (2008). *Business Driven Information Systems*. McGraw-Hill.
- [2] Farcot, R. (2004). Digital Dashboard Technology — Visualize the Possibilities.
- [3] Haag, S., Cummings, M., & McCubbrey, D. J. (2008). *Management Information Systems for the Information Age*.
- [4] Howson, C. (2008). *Successful Business intelligence*. New York: Mc-Graw Hill.
- [5] Landsbergen, D. (2004). *Screen level bureaucracy: Databases as public records*.
- [6] Long, Peter. (2002). *Effective Measurement and Use of Key Performance Indicators*. Pty Ltd.
- [7] Moon, M. J. (2003). Can IT Help Government to Restore Public Trust? Declining Public Trust and Potential Prospects of IT in the Public Sector. *36th Hawaii International Conference on System Sciences*.
- [8] O'Brien, James A. Marakas, George M. (2005). *Management Information Systems*. McGraw-Hill Irwin
- [9] Tapscott, D. (2008). *Business Intelligence: Actionable Insights for Business Decision Makers*.