

Designing a dashboard for sales enhancement using KPI's

Ashwini G S¹, Manjuprasad B², Sarath B Sribhasyam³

¹Computer Science and Engineering, GSSSIETW Mysore

²Computer Science and Engineering (Asst. Professor), GSSSIETW Mysore

³C.T.O(Chief Technology Officer), TheOrganic.Life Bengaluru

*Corresponding Email: ashwiniqua47@gmail.com

ABSTRACT

Due to rapid change and competition in retail market it is essential to have proper information management. Business Intelligence, retail have tools to turn huge amount of information which they acquire into useful and actionable knowledge. The need of tools for retailers at their disposal to operate efficiently and increase their revenue is important. Business Intelligence contain a different set of theories, architectures and technologies, of which a great volume of data, the historical data, is synthesized into information such as key performance indicators. This information is presented in many forms such as reports, charts or tables. The current Business Intelligence solutions provide wide range of reports for company management, one of which is the dashboard. KPIs play an important role in designing the dashboard. The paper presents the sales enhancement dashboard which provides better user experience by enhancing cross sell and upsell.

Keywords: Business Intelligence, Key Performance Indicator (KPI), Dashboard, Sales Enhancement.

INTRODUCTION

In today's economic world, organization system have an enormous amount of data to assemble and also process them in a way to make the finest decision as soon as it's possible. One of the solutions that can improve the decision making process is BI [1]. BI tools help transforming raw data into smart information and knowledge [2, 3]. Knowledge is typically obtained about customer needs, the competition, conditions in the industry, and general economic and technological trends. BI includes concepts and methods that would advance business decision-making by utilizing the fact-based support systems. Purpose of BI is to understand a firm's internal and external power and vulnerability, understanding different information for better decision-making. BI tools are kind of application software which are created to report, analyze and present the information in different forms. The common categories of BI tools

are: spreadsheets, reporting and querying software, online analytical processing (OLAP) tools, digital dashboards, data mining, process mining, and business performance management.

A performance dashboard is one of the performance management scheme. In detail, a performance dashboard will let the business members to: oversee critical business system and other activities using key metrics of business performance that will trigger alerts when hidden problem arises. Analysis of the primary source of problems by identifying suitable and timely data from different perspectives and at many level of details. Manages people and process to boost decisions, advance performance, and steer the organization in the proper path [4]. Dashboard and marketing recall us of the demand to better understand how the organization will cope with the increasing diversity and complexity of market

performance, evaluation and planning. It leads together with the marketing units with particular values, performance key metrics and well reporting practices.

DASHBOARD DESIGNING METHODS and IMPORTANCE

Method1: Business Intelligence and its Applications in Healthcare Systems [5]

BI helps to transform raw data into smart information. There are many BI tools such as extract transform and load (ETL), data warehouse, online analytical processing (OLAP), and dashboard. BI tools are usually used in public health fields for financial and administrative purposes. Now BI is also helping public health organizations with diagnosing and treating patients with long term conditions and evaluating alternative treatments based on outcomes analyses. BI is composed of four steps: integration, storage, analysis, and presentation. BI usually uses a dashboard in the presentation step to deliver the information to end users. The development an effective dashboard is still a challenge.

Public health organizations collect significant volumes of data. Quality information helps to identify and prioritize problems, develop and evaluate policies and actions, and organize clinical health services delivery. Now BI is also helping public health organizations with diagnosing and treating patients with long term conditions and evaluating alternative treatments based on outcomes analyses. For example, data from operation-level clinical systems can be used to prioritize heart bypass surgery versus angioplasty by looking at how quickly patients are discharged and whether they are readmitted. Additional capabilities include the ability to distinguish previously unrecognized disease patterns, identify at-risk patients, and review the performance of individual physicians.

Public healthcare service usually collects great volumes of data. Quality information helps to identify and prioritize problems, to develop and evaluate policies and actions, and to organize clinical health service

delivery. To achieve these objectives, BI is used as a tool to develop a system for efficient and effective decision-making in public health. Many fields in public health, such as blood management, medical procurement, bioterrorism preparedness, disease management and control, and environmental health, use BI tools to develop the system and dashboards to deliver information to end users. There are three main types of dashboard on the market today. The web- browser based is the most popular because it as an effective tool, easy to access and can be managed anytime and anywhere. BI has made significant contributions to the cost-effective development of the public health system.

Method2: Business Performance Management [6]

Business Performance Management (BPM) is a series of processes and applications designed to optimize the execution of business strategy; indeed, organizations are discovering that BPM is more than just planning, budgeting, forecasting, consolidation, or score carding application- rather it is a common framework that underlays all above applications. Through this paper, the modern meaning of BPM is sorted out, a four step process BPM framework is developed; furthermore the use of technology and tools in BPM is introduced in detail. Finally, future research topics are mentioned. Business Performance as stated is a series of processes and applications designed to optimize the execution of business strategy. To understand and effectively design and implement such a solution a four steps closed-loop process framework is required: Strategize, Plan, Monitor, and act and adjust. Business Intelligence is introduced as an enabler technology for BPM, which can leverage the BPM applications in a packaged analytic solutions; Finally, dashboards and scorecard are introduced as the last component and the critical one of the BI architecture with its their three organizational, business user and IT needs. The role of analytic applications in BPM, BPM trends and market analysis, and BPM/KPI localization, are interesting future research topics.

Method 3: Dashboard's Necessity [7]

In this paper three different dashboard in different fields are reviewed. First is performance dashboard that is used for measuring, monitoring and managing business. It is to focus on the work of employees so that everyone are going in the same direction. Second is a model driven dashboard used for business performance. Describing models that can effectively represent all the elements necessary for the business performance reporting process on the basic interactions among them. Third is marketing dashboard that is used to compare performance across different products, market segments or units. Fourth is dashboard as integration tool and testing platform which is used by a consortium of eleven academic institutions to develop a suite of bidirectional machine translation system for nine pairs of Indic languages.

One of the more popular types of performance dashboards today is the Balanced Scorecard, which actually specific methodology for aligning organizations with corporate strategy. A Balanced Scorecard is a strategic application, but as we shall soon see, there are other types of performance dashboards that optimize operational and tactical processes that drive organizations on a weekly, daily, or even hourly basis. There is a growing trend in using model-driven methodologies for developing large system software, due to their high level abstraction and code re-use (or regeneration). They have been widely applied in related areas, such as software reuse, reverse engineering, and user interface design. The benefits of adopting model driven design include reduced software development time, enhanced code quality, and improved code maintenance.

Method 4: Dashboard User Interface [8]

Dashboard that acts as a user interface is used for the visualization of different processes in an industry. This visualization interface supports the basic purposes of process monitoring, problem identification and solving, communication and consistency, etc. All such purposes are intrinsically related to the performance metrics of a manufacturing organization. Such

performance metrics reflect the overall productivity of an organization. This research highlights the design and development of a collaborative dashboard that can be used as the performance monitoring and management of a virtual factory (VF). This VF works as an organization, where small and medium enterprises (SMEs) grouped together with common goals and to achieve specific business opportunities. The collaborative dashboard is presented in this research as an effective tool in performance management, not only measuring the performance metrics of the collaborative business processes but also for other purposes including communication among the partners' organizations. This research highlights and demonstrates critically the implementation issue of business dashboard that is to be used to monitoring and management of virtual factory business processes. In addition to present the basic functionality of a business dashboard an effort is demonstrated how this dashboard can be used to measure the overall performance metrics of virtual factory processes.

PROPOSED SYSTEM

Dashboards provide distinct and powerful to communicate information with specific benefits, but they also pose a specific set of design challenges [9]. As such, the design challenges are largely challenges of visual design. The process of actually implementing a dashboard involves the identification of Key Performance Indicators (KPI). A Key Performance Indicator or a metric is a measurable value that demonstrates how effectively a company is achieving key business objectives. Organizations use KPIs at multiple levels to evaluate their success at reaching targets. As a dashboard, all of the information should fit on a single screen. Prominence should be given to the major metrics and attention should be drawn to any measures that indicate poor performance in relation to the targets [10]. The dashboard should be designed in a way that allows sales executives to know at a glance any areas of sales - both problems and opportunities - that might require their attention.

KPI's will optimize the company or organization's valuable assets and expenses. They provide a way in managing the performance in an easier way and to make decisions in prior for the great impact. Before designing the Dashboard, identification of KPI's is most needed. For that understanding of business objectives and translating it into goals that are measurable and then selection of KPI's for these goals are to be done. Some of the key steps required for the identification of the KPI's include a SMART criteria, Smart goals will provide a great guidance and structure for the project and help in accomplishing the goal. Here SMART means Specific, Measurable, Achievable, Relevant and Time-bound. And, set the main goals and for each goal having at least 3 KPI's is important. Finally more KPI's need to be linked to main objectives of the project [9].

The proposed system involves in the identification of some KPI's, including Gross Merchandise Value, Total orders, Total revenue, Transaction Failures, Product review by product and many more.

- **Gross Merchandise Value:** The total Merchandise sold over an established time period.
- **Total Orders:** Total number of orders placed within certain time period.
- **Total Revenue:** It is the total income of a business and is calculated by multiplying the quantity of goods sold by the price of the goods.
- **Transaction Failures:** It is the sum of total order value where the status is equal to pending.
- **Count of Tickets:** It is the count of number of tickets raised by the customers.

All these KPI's are designed as charts or grids using the tool, the final screen would like in the figure 1, which is shown below.

Designing of the dashboard using a tool called Scriptcase is proposed in the system. The system architecture includes the following which is shown in the figure 2. Queries are written to fetch the desired result either in grid or chart forms, finally all are linked into a single dashboard screen. All these things are done using the Scriptcase tool, part of which is shown below in figure 3.

CONCLUSIONS

Dashboard efforts for the visualization of the business action that can be used by different users to work on monitoring, management of inventory, monitoring and measurements of the performance, etc. This variable use of the dashboard will enhance organizational managers to evaluate the business and its performances against the predefined objectives or goal.

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DASHBOARD

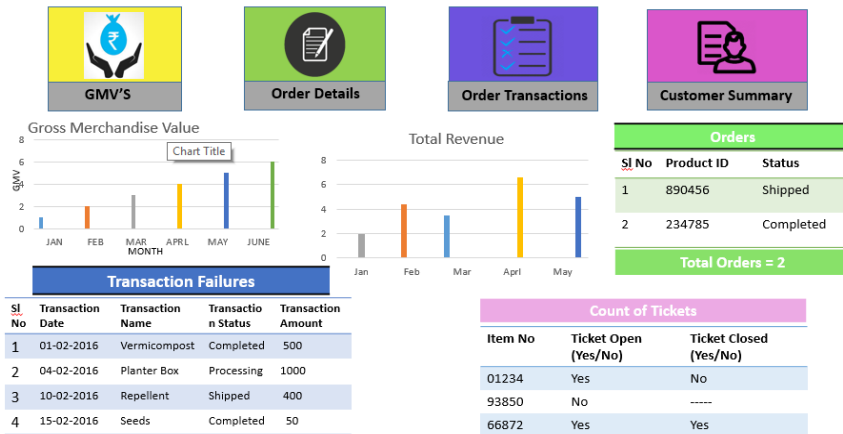


Figure 1: Screen design of the dashboard



Figure 2: System Architecture

Summary - sales_flat_order



Figure 3: Chat view of the KPI Total Orders