

Helical Insight: A Self Service Business Intelligence Tool

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Abstract— A new trend of self service is catching on, in the world of business intelligence. Self-service business intelligence (SSBI) is an approach to data analytics that enables business and non-technical users to access and work with data even though they do not have a background in statistical analysis, business intelligence (BI) or data mining. BI software vendors and industry experts recognize self-service reporting as a key feature of BI because it eliminates obstacles to timely insight and decision making and lowers the costs of reporting, analysis, and metrics-driven management by putting data directly in the hands of those who need it.[1]

There are not many SSBI tools in the market that completely satisfy the needs of business and non-technical users. According to a 2012 study by Wayne Eckerson, approximately 64 percent of self-service initiatives are rated as having achieved only an “average” or lower level of success by BI professionals. A BI program—self-service or not—can fail quickly if the users don’t trust the information it provides.[2] Helical Insight is an open source SSBI tool that is API driven with a simplified user interface that aims to completely satisfy the needs of all the business and non-technical users and make the transition to a BI tool a smooth experience.

I. INTRODUCTION

Business intelligence (BI) is a technology-driven process for analyzing huge amounts of data and presenting actionable information to business managers, corporates, data scientists and others so that they can take well informed business decisions.

As BI catches on in the world, business and non-technical users are looking for BI software and tools that are simple, easy to learn and use but at the same time provides them with basic features like accessing the data, manipulation and visualization of data as well as advanced functionalities and capabilities to tackle complex problems. Demand for Self-service analytics is increasing while demand for traditional dashboard BI is diminishing

Self-service business intelligence (SSBI) tools with great data visualization features have become the need of the hour. Self-service BI appears to be the next big wave in business intelligence. [3] Helical Insight is one such SSBI tool that has been developed with the main aim of providing a simplified user experience with top notch functionalities and features that cater to the increasing pool of business users, corporates, data scientists and others.

II. SELF-SERVICE BUSINESS INTELLIGENCE(SSBI) HELPS SOLVE PROBLEMS FACED BY BUSINESSES AND BUSINESS USERS

SSBI helps business and business users solve a variety of different problems faced by them while using traditional BI tools and SSBI still manages to provide the immense value that traditional BI tools provide.

Flexible retrieval of existing data, creation of new views on data, is difficult for business users due to the complexity and variety of data structures.[4] Hence business users, require the continuous support of BI specialists or developers.

SSBI should, on one hand, empower casual users to perform custom analytics and to derive actionable information from large amounts of multifaceted data without having to involve BI specialists. Power users, on the other hand, can accomplish their tasks with SSBI more easily and quickly than before.[4]

Gartner Inc. pointed to growing demand among businesses for a "data discovery tool architecture" that provides end users with data and reports and enables them to navigate and visualize data in a "surf and save" mode. Data governance, security, centralized monitoring and control of user interactions are critical for any BI system, but particularly for self-service setups that give less-technical

end users direct access to the corporate data infrastructure.[3]

The problem with earlier generations of BI tools is that they forced users to conform to the way the tools work, rather than conform to the way users work and prefer to interact with information. The more BI platforms conform to the way users want to work, the more they disappear into the background, blending into core applications and central processes. Rather than shift to a separate application to view reports, users should be able to view information within the same application in which they perform their everyday tasks.[5] This type of functionalities are provided by SSBI tools which provide immense value to business users and organizations.

BI managers are finding it increasingly difficult to convince and educate business users to create their own analytical reports and queries as most of the available BI tools are not easy, for even the power users who write reports every day. Training is must but at the same time continuous support is required till users get accustomed to these complex tools. SSBI solves most of these issues by enabling and empowering end users to become independent as well as allowing them to customize reports according to their needs.

III. REQUIREMENTS AND NEEDS OF BUSINESSES/BUSINESS OR NON-TECHNICAL USERS FROM BI TOOLS

Most of these needs and requirements of business users can be handled by SSBI tools. Some of them are listed below

Simple and easy to use interface that is extremely user friendly

- ❖ Should support a variety of data formats as well support for new formats
- ❖ A simplified drag and drop user interface with not many technicalities
- ❖ Geographical maps and geographic hierarchy capabilities[6]
- ❖ Ability to combine data formats and create dashboards and other visualization without IT assistance[6]
- ❖ Visual appeal and extensive graphic format options[6]

- ❖ Ability to consolidate data from multiple data sources into a single place.
- ❖ Vendors with open architecture that enables integration with other program so that BI tools are not limited.
- ❖ Compound reporting options like what if analysis
- ❖ Prompt and intelligent alerts via email that is crucial for businesses

This means a BI environment in which business users can get rich, accurate and real information at their fingertips as easily as we get information from a Google search. For this to happen, business and IT need to work together to create a self-service BI environment that enables business users to access information with minimum support from IT for their day-to-day operations, so as to increase overall ROI for BI. [7]

Most of these needs and requirements of business and non-technical users, specially the need for a Google like search functionality that provides instant answers, are fulfilled by a newly developed self-service business intelligence tool called as Helical Insight

IV. HELICAL INSIGHT: A NEW SELF-SERVICE BUSINESS INTELLIGENCE TOOL

Helical Insight (HI) is world's first open source self-service business intelligence tool. It empowers business users to gain immediate access to insights that increase help organizations immensely and provide quick access to necessary data and insights that enables business leaders and non-technical users to take critical decisions in an instant.

A. HI caters to the needs of business users

HI is different from other BI tools and as a self-service business intelligence tool it has several features and functionalities to cater to the needs of business and non-technical users as given below.

- ❖ One of HI's biggest features and UPS is the new feature that enables users to interact with data in their own natural English language and data answer their questions. Powered by machine learning and NLP, HI empowers business users and users with zero technical knowledge to be data scientists. HI's AI algorithm understands the data, tables and columns, filter to be applied, functions to be done

and shows users the relevant result instantly. Long development cycles will now be a thing of the past.

- ❖ HI allows Data Connections to different database sources like relational, columnar, big data databases, CSV, text and users can use this feature in-house as well.
- ❖ HI has a browser based interface (Safari, Chrome and Firefox) which enables users to access and connect to any database across different locations as well as devices and analyze and interpret the data.
- ❖ Different companies have different business processes that the existing BI tools do not encompass. HI permits business users to design their own workflows and specify what functional module of BI gets triggered and when. Users can use APIs to build their own external functional modules that can be used within HI's workflow engine.
- ❖ Unlike other BI vendors with closed-garden approach, HI is a SSBI tool driven by APIs. HI empower clients to build functionalities according to their business needs using their own IT resources.
- ❖ Helical Insight as a self-service tool allows you to simply drag and drop columns, add filters, apply aggregate functions if required, and create reports and dashboards instantly. as well as HI has the functionality to add JavaScript, HTML5 and AJAX which allows creation of reports, new dashboards, new charts and functions.
- ❖ Exporting your work has never been easier. HI provides users with all the power to export reports and dashboards in different formats like PDF, CSV and adds the capability to add more exporting types using the API- based software.
- ❖ HI allows users to mail a copy of a report or anything else in any format to the user specified email as well HI provided a scheduling function that provided an extensive range of options to users

- ❖ HI is client and user friendly, and thus provides users with the option of adding new functions like a different type of chart or any other functions by using the client's or user's own technical team
- ❖ HI provides organizations with User and Role management features that can be easily integrated into the company's system and thus ensures that data security is maintained
- ❖ HI is a platform independent SSBI tool that can run on different Operating systems (OS) and on different devices including smartphones, smart TV, tabs etc.
- ❖ Unlike other BI tools, HI provides a vast array of options for changing the look and feel of login or logout page, navigation method etc.
- ❖ HI provides users with a unique option of embedding helical insight with the client's applications or software.

V. BUSINESS INTELLIGENCE USE CASES

Given below are some use cases where SSBI tools like helical insight can be implemented.

In Finance, leaders often lack visibility into various performance aspects that don't fall in their department and spend many hours in data collection. Creating plans and forecasts are also difficult if very less time is devoted to analyzing the data. SSBI tools can be extremely useful for such non-technical business users that help them in performing complex analyzing tasks in an instant. It also helps users by helping them with what if analysis for future predictions.

In sales, SSBI tools can be extremely useful as they can help sales managers keep track of the number of goods sold or pending sales, profits and losses that help them to achieve sales targets at the click of button without continuous support and help from technical teams or IT department.

Additionally SSBI tools can used in sectors such as manufacturing, marketing, health, education, and literally every possible sector because with the huge amount of data in every sector business intelligence tools are a must.

Listed below are some demo dashboards of use cases in which helical insight has been used. These demo use cases are just for simple demonstrations purpose only.

A. K-12 Education domain dashboard

Commonly used in the United States, parents can now evaluate and analyze schools and thus select the right school they wish to enroll their child in. Similarly school administrations can now see the statistics of relevant data for students and teachers at a glance. Given below is a demo dashboard using the drag and drop interface of the SSBI tool Helical Insight. The dashboard has 3 sections to view data visualization district wise, teachers and student

The demo dashboard in Figure 1 gives parents that want to enroll their child in a particular district consolidated information and analysis related to the count of the students, the ethnic diversity, the number of English speaking and non-English speaking students, the average students per class.



Figure 1: District view of the dashboard



Figure 2: Teacher view of the dashboard

Screenshots in figure 2 and 3 depict the teacher section of the demo dashboard that shows visualizations for the grade wise distribution, the ethnicity and percentage of blacks, whites and Asians as well as the attendance percentage.

Screenshots in Figure 3 shows the student section of the demo dashboard that depicts data visualization for each particular student that depicts student information, overall scorecard percentage and the class average percentage as well as the attendance breakup of students for different classes. A sunburst chart shows the name of the subject along with the total marks in that subject.



Figure 3: Teacher view of the dashboard

B. Ticketing dashboards

A Ticket dashboard can be used to track sales for various categories in different states

Screenshots in Figure 5 and 6 show the sales dashboard can keep track of sales through data visualization using charts which display a breakup of the genre of sales in which a tree chart has been used. It also displays the top 5 sales for the category of movies as well as displaying the different mediums through which sales have been completed.



Figure 4: Student view of the dashboard



Figure 5: Ticketing dashboard



Figure 6: Ticketing dashboard

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REFERENCES

[1] Weber, M. (2013). Keys to Sustainable Self-Service Business Intelligence. *Business Intelligence Journal*, 18(1), 18-24

[2] Meyers, C. (2014). How Data Management and Governance Can Enable Successful Self-Service BI. *Business Intelligence Journal*, 19(4), 23-27

[3] Horwitt, H & Elisabeth, E.(2011). Self-Service BI catches on. *Computerworld*, 45(2), pp 30-32.

[4] Alpar, P., & Schulz, M. (2016). Self-Service Business Intelligence. *Business & Information Systems Engineering*, 58(2), 151-155.

[5] Eckerson, W. W. (2005). The keys to enterprise business intelligence: Critical success factors. *The Data Warehousing Institute*. Retrieved 10th August 2016

[6] Saporito, P. (2012). Power to the People. *Best's Review*, 113(7), 72.

[7] Kosambia, S. (2008). Business Intelligence The Self-Service Way. *DM Review*, 18(7), 20-22

[8] Helicalinsightcom.(2016).Helical Insight. Retrieved 10th August, 2016, from <http://www.helicalinsight.com>

[9]Tectargetcom.(2016).SearchBusinessAnalytics.Retrieved 10 August, 2016, from <http://searchbusinessanalytics.techtarget.com/feature/Eckerson-Self-service-business-intelligence-not-a-give-and-go-affair>

[10]Arcplancom.(2016).Arcplancom.Retrieved 10th August, 2016,from <http://www.arcplan.com/en/blog/2014/03/examples-of-business-intelligence-use-cases/>

[11] Mike Iamblie.(2016).CIO.Retrieved 10th August, 2016,from www.cio.com/article/2911492/big-data/gartner-business-intelligence-and-analytics-summit.html

[12] Jetreportscom.(2016).Jet Reports.Retrieved 10 August, 2016, from <https://www.jetreports.com/2014/07/23/why-do-we-need-business-intelligence/>

[13] Selecthubcom(2015).SelectHub. Retrieved 10th August, 2016, from <https://selecthub.com/business-intelligence/top-bi-requirements/>