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BUSINESS INTELLIGENCE IN STRATEGIC MANAGEMENT

Study of automation modifying the strategy of business

Thesis

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ABSTRACT

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<p>The core aim of this thesis was to provide better knowledge of business intelligence and how it has changed the style of business. The objective of this thesis was studying the need for technology in the business environment and how businesses can utilize technologies to gain profit. The purpose of this study was to understand the need for business intelligence in the present business market. Exploratory research was chosen to support this thesis. This thesis was done to get the idea of business intelligence and its tools and in what ways those tools can be used in the decision-making process. The motive of this thesis was to find the linkage between business intelligence and strategic management.</p> <p>The theoretical framework of this thesis discussed the preface of business intelligence and its components, history, analysis, and adoption of business intelligence globally. In this thesis, the author discussed the role of business intelligence in the decision-making process and strategic management. Moreover, the author explored the impact of business intelligence and its use. The target of this thesis was learning about business intelligence and its present trends.</p> <p>The results of this thesis provided how business intelligence can help in the decision-making process in businesses and how implementing business intelligence will enhance the performance of the organization. Moreover, the results discussed the utilization of business intelligence in strategic management and what benefits a company can get. Business intelligence has affected the business world. Many organizations have adopted it and other organizations will adopt it too in the future.</p>		

<p>Key words Business Intelligence, Data, Decision-making, Information, Strategic Management</p>

CONCEPT DEFINITIONS

BI	Business Intelligence
CAGR	Compound Annual Growth Rate
CPM	Corporate Performance Management
CRM	Customer Relationship Management
DSS	Decision Support System
EIS	Executive Information System
ETL	Extract, Transform and Load
EBM	Evidence Based Medicine
GDPR	General Data Protection Regulation
ICT	Information and Communication Technology
IDC	International Data Corporation
IDG	International Data Group
IoT	Internet of Things
IT	Information Technology
KMS	Knowledge Management System
OLAP	On-Line Analytical Processing

ABSTRACT
CONCEPT DEFINITIONS
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1 INTRODUCTION

The main aim of this thesis is to understand how the implementation of a BI system in a company can ease the decision-making process and improves company performance. The purpose of this thesis is to provide information on how technology has eased the way of doing business. Now technology and business go hand in hand. With the growing number of industries and their workload, manual handling of the transactions has become difficult. Companies now produce huge amounts of data. Those data need to be stored and analysed. Hence businesses require the help of automation to handle their day to day transactions. Moreover, technologies have benefited human beings from solving complex problems to make a proper strategic decision. Today, companies take the help of technology to make decisions for the future betterment of their company. Businesses rely on technology when it comes to development. Because development means change and to adapt change one must be able to foresee the results of the change. Thus, the business uses technology to make an informed decision for long term sustain.

Likewise, the objective of this thesis is to analyse how Business Intelligence (BI) can help companies make strategic decisions. This thesis studies how automation has changed the style of business. This thesis tries to sum up how BI can be used to overcome problems and make the correct decision for the company. This thesis also discusses the advantages and disadvantages of having a BI system in the company. BI can help to improve the performance of an organization via profound information. This thesis somehow shows the relationship between BI and strategic management. BI has become a magic wand for businesses to achieve success. BI has lots of features that help organizations to respond properly and timely. BI has proved itself to improve performance in an organisation and increase the profit. BI is continuously developing as the demand for better BI functions is increasing in the market. The agility and speed of the market influence BI to go through the upgrading process and become one important software in the business environment. Hence this thesis will provide an understanding of BI, its elements, and reason to implement BI in an organization.

The purpose of this topic is to understand BI thoroughly, the impact of BI in the organization and how it has supported the organisation. This thesis involves a descriptive study of academic materials and is a product of exploratory research. This thesis includes the introduction of strategic management and BI and later the functionality of BI in strategic management. Components of BI have also been described briefly in this thesis. BI components are the reason behind BI success. Utilization of BI components can help in better leverage of the company. Likewise, this thesis consists of the history of BI as how it has

evolved through times. BI has undergone many changes that are discussed in this thesis. The purpose of the study of history is to provide information about the development of technology in the area of BI. Furthermore, this thesis analyses BI such as the opportunities and threats, now and then. The challenges and chances of BI in the mere future are discussed.

BI is an emerging topic that has recently hit the market, so it was the reason to choose this topic. Thus, this thesis contains the adoption of BI globally and in Finland. This will help to understand how BI has gained popularity around the globe and which country focuses more on implementing a BI system. The results of the thesis will include a closer look at the merits and demerits of the BI system. Moreover, how BI can affect the strategic management of a company and help to make strategic plans and decisions. This thesis also studies the influence of BI on people's life, the jobs of the people after implementing the BI system and the future of the organisation and its environment. The research helps to provide better understanding i.e. if BI can support strategic management in the organization. This thesis also discusses if businesses should implement a BI system or not and what kind of industries should have a BI system. The outline of the thesis is to research the increasing prominence of BI in strategic management and how the adoption of BI can affect corporate performance.

2 RESEARCH METHODOLOGY

In this chapter, the research method used to do this thesis and its limitations will be discussed precisely. The research method selected for this thesis helped to provide information regarding the topic. The research was done to identify the value of BI in strategic management and how BI can assist in the decision-making process in an organization. This research provided a thorough understanding of BI and BI as part of strategic management. The purpose of the research is to find evidence that supports the aim of the thesis.

Exploratory research is the method used in this thesis. Exploratory research is an interactive and inexpensive type of research that provides the answers to questions such as how, why and what (Bhasin 2019). Exploratory research is done to gain a better understanding of an issue and generate new ideas (Pratap 2019). Exploratory research helps the researcher to understand and explore the problem however it does not provide the conclusion of the problem. Exploratory researchers use a lot of techniques to study the research topic. There are two methods to conduct exploratory research-primary and secondary. (Bhasin 2019.) This thesis uses the secondary method of exploratory research.

A literature review is one of the secondary methods of explanatory research. This thesis is an outcome of a literature review. A literature review means the evaluation of information available on the topic. This analysis provides an in-depth knowledge of the topic. This approach requires extensive review of related literature. This method involves the collection and analysis of papers found on the internet and libraries. The secondary sources used in this thesis were mostly online books, articles and scholarly journals from the library of Centria University of Applied Sciences and various articles from the internet.

Lots of scholarly journals and books were gathered and analysed. A huge amount of information was collected and then evaluated according to the need and requirements of the thesis. The research was performed mostly in the library and with a laptop with internet access. Relevant search was carried out in Centria UAS library browser, google browser and google scholar browser. Careful consideration was taken while using the information found on the internet by cross-checking its availability and reliability. All those information and literature used in this thesis are listed alphabetically in the "Reference" section at the end of this thesis. This research method has provided the results as demanded by the topic of the thesis.

However, there are some factors that may have affected the results of the research. This research only analysed the books, journals, and articles mostly found in the Centria UAS library and some internet information. There are many works of literature available that can be used in the research but due to limited access to the information that was not possible. The research method was a literature review so the author may have misinterpreted some of the information. The language used in the literature sometimes are difficult to understand and can provide different conclusions. Even though the information used in this thesis were verified, the quality of secondary data cannot always be guaranteed. The information found may be outdated or edited. Nevertheless, all the possible precautions have been considered to perform the research of the thesis.

3 THE FRAMEWORK OF BUSINESS INTELLIGENCE

This chapter includes the introduction of BI and strategic management. BI has served the business industry for a very long time, so this chapter also discusses the history of BI; the recognition and the development of BI along the time. Moreover, this chapter discusses how BI can be used in a company and why an organization should use BI. Also, this chapter comprises a brief description of the BI system supporting the strategic management of an organization to make strategic decisions for the long-term betterment of the organization.

3.1 Definition of Strategic Management

The word strategic management comprises of two words-strategy and management. Strategy means having plans set and executing them for the achievement of clear vision. Strategy is the appropriate allocation of resources for long term benefit by achieving the predetermined goal (Subba Rao 2009, 22). Strategy starts with having a goal than making plans and executing them to achieve the goal. Strategic management is more than strategy, it is a process that involves analysis of the environment by top managers for the formulation of the plan (Athapaththu 2016, 126). Strategic management is getting strategy and management mixed well together. Strategic management is a process of establishing strategies and managing them to achieve a common goal of an organization by providing long term benefits. Strategic management is a process that includes the collection of data, analyzing them and, making a decision based upon those data.

Strategic management involves the implementation of strategies and plans with the help of people to accomplish the target goal. In other words, it is an in advance lookup of a plan. (Johnson 2004, 2.) Strategic management comprises a set of steps such as: identifying or defining the business objective, environmental analysis, organizational analysis, analysis of strategies, implementation of strategy and feedback (Subba Rao 2009, 31). These are the important process of strategic management to form any strategic plan. Firstly, an organization needs to identify what their objective or goal is then the environment should be assessed if the goal can be achieved in that environment. Likewise, the organization's strengths, weaknesses, opportunities, and threats should be analyzed. Then strategies should be formulated, examined and implemented. Then, the evaluation must be held to review the function of the strategic plan. Thus, strategic management is a process that includes a series of steps. Moreover, strategic

management is a continuous process as the organization needs to adapt to a new environment that is everchanging. So, these steps assist to make a strategy as one strategy does not fit all the vision of the organization.

Strategic management is not the same as operational management. Strategic management requires advance research and anticipation of both internal and external environments. Strategic management systematically allocates the resources associated with the vision, mission, and strategy of an organization (Athapaththu 2016, 126). Strategic management helps to foresee the change in the global and dynamic environment and prepare the organization for that change. Organizations with strategic management have clear visions and goals with the measures to achieve them. Organizations with strategic management are not only efficient but they have proper guidelines to fulfill their vision. (Subba Rao 2009, 28.) Strategic management is all about balancing 5 P's namely Plan, Pattern, Ploy, Posture, and Positioning (Brijs 2012, 23). The strategic management process consists of strategic analysis, strategic choice, strategic implementation and evaluation (Subba Rao 2009, 26).

The business environment is everchanging. Organizations must plan for change. Changes in the organization are a hard task to do. That's why strategic management is necessary for the organization. Strategic management in an organization helps to lead more systematic decisions, improves performance, increases communication and coordination inside and outside the organization, provides criteria for achievement, allocates the resources appropriately (Subba Rao 2009,29). The main idea of strategic management is to monitor the path of the organization to achieve its goal with the help of the data available. Strategic management includes strategic thinking and strategic planning. But the most important is the execution of the plan and getting positive feedback. Strategic management consists of actions such as analysis and decision making which creates a sustainable environment in competitive advantage (Athapaththu 2016, 126). Due to the competition in the environment organization faces lots of problems and losses. But strategic management makes an organization more proactive than reactive. Having strategic management in an organization provides lots of benefits. Strategic management is a comprehensive process that helps an organization to determine its vision and objective by creating a sustainable competitive advantage. (Athapaththu 2016, 127.)

The concept of strategic management was developed at least 20 years ago. Since then it has been a large and growing body of business literature. Among most of the literature the common terminologies are integrated, multidisciplinary and the like. Strategic management has evolved to become one of the important elements of an organization. It helps operational decision making as well as helps to identify

corporate values and responsibilities. It helps to enhance the communication between staff level and management level which results in a combination of skill and improved efficiency. (Smith 1987, 220.)

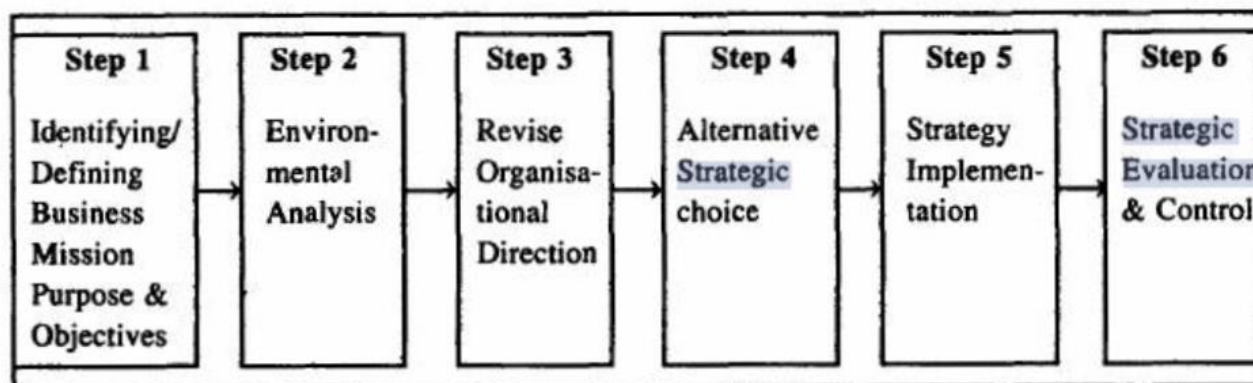


Fig. 2.3 : Major Steps in Strategic Management Process

PICTURE 1. Strategic Management and its process in a nutshell (Adapted from Subba Rao 2009, 31)

3.2 Definition of Business Intelligence

In simple words, Business intelligence (BI) is an application that helps to store and analyse data for the decision-making process. BI is an integration of business procedures and automation which helps in business functions. BI assists organizations in decision making by gathering information and analysing information. BI is a scientific approach to an organization's day to day operations. BI is a systematic collection of information to deliver significant results to the end-users (Brijs 2012, 6). BI is a set of tools that provide a quick understanding of the organization's state statistically. BI illustrates the past as well as the ongoing happenings of the organization. (Pratt 2019.)

BI is a system that needs patience, money, and vision as it is not a hard and fast rule. It requires a full understanding of the data and information. Moreover, the BI system is associated with more information systems such as knowledge management systems (KMS), on-line analytical processing systems (OLAP), decision support systems (DSS), executive information systems (EIS). These systems help the BI system to provide thorough information to the decision-makers by comparing all past and present data. BI systems have the ability to discover and realize what suits best for the organization to survive present and future obstacles. BI systems are a step ahead of all other information systems because BI takes account of all the internal as well as external environments to assist its decision-makers in making an informed decision. (Thierauf 2001, 3-4.)

There are two types of BI- traditional or classic BI and modern BI. The traditional BI is used by IT professionals to generate reports whereas modern BI is used by businesses to extract and analyse data more quickly. Generally, organizations use both types of BI; classic BI for regulatory or financial reporting and modern BI for quick insight of changing dynamics. (Pratt 2019.) BI is an application that includes data gathering, data storing, data analysing and extracting a piece of useful information from those data for the progress of the organization. BI not only gathers data, but it analyses and arranges those data in a form of information that is useful to the organization. BI helps the organization in planning and proposing new strategies to achieve the organizational goal.

BI is a broad concept that includes both business and technological components. BI is a support system in decision making that provides the right information at the right time with the right format and to the right people (Jordan & Ellen 2009, 16). Moreover, BI is a process for accumulating and analysing business data from databases and data warehouses. BI pilots its way through data to provide valuable information. (Fuad & Bohari 2012, 232.) BI includes a set of tools that makes the process even easier. It helps users to convert huge amounts of opaque data into transparent information with consecutive reports. (Hocevar & Jaklic 2010, 92.) BI is a combination of products, technology, and methods to manage key information to expand profit and improve the performance of the company (Williams & Williams 2007, 2).

BI is system-built techniques used in identifying, digging-out and analysing hard business data (Faud & Bohari 2012, 232[Business Dictionary 2010]). BI is neither a product nor a system. It is a design and compilation of operational and decision support applications that provide easy access to business data. (Popovic, Turk & Jacklic 2010, 7[Moss & Atre, 2003].) BI focuses more on what is happening in the organization and what can be done which shows the human factor of the BI (Popovic et al, 2010, 8). BI refers to an ideal system which provides easy access to the information to its users so that they can do their work effectively. BI provides a detailed analysis of business data including database and application technologies. The word BI encloses software for extraction, transformation, and loading (ETL), data warehousing, database query, and data reporting, OLAP data analysis, data mining and visualization. (Gangadharan & Swami 2004, 140.)

BI can be defined in two main approaches. One is technological approach that describes BI as a system which collects data and gives availability to the organisation. The other approach considers BI as a process of transforming data into meaningful information to support decision making process in an organisation, where technology plays smaller role. The objective of BI is to provide assistance in the broad

range of business activities. The major purpose of the BI is to work with huge amount of data and interpret them to aid in business processes and increase the productivity and efficiency of an organisation. (Nykänen, Järvenpää & Teittinen 2016, 26.)

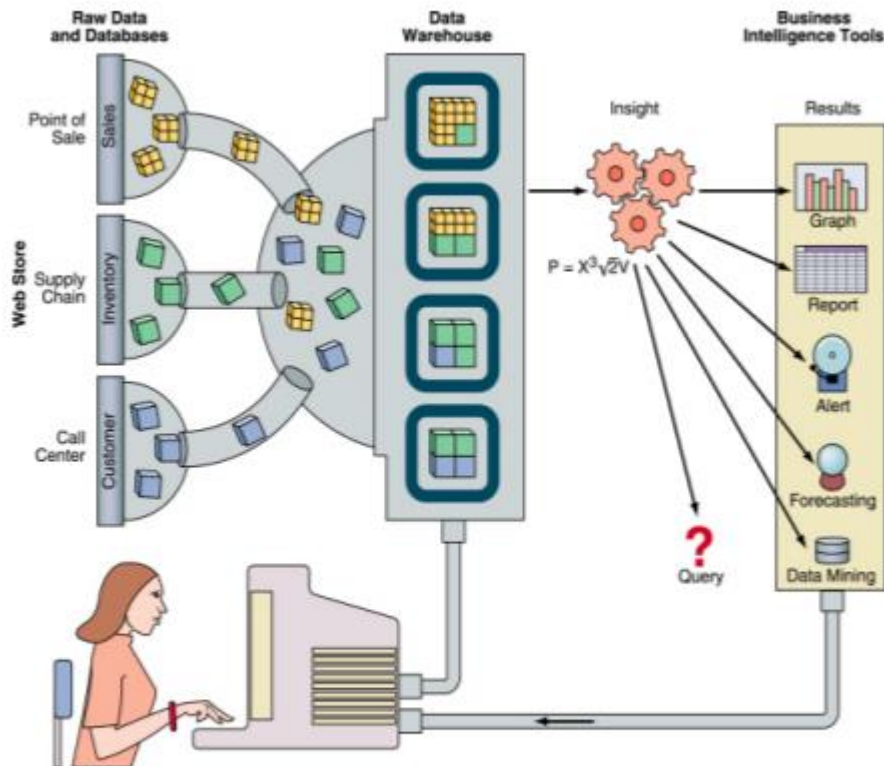


Fig 1. A basic understanding of BI

PICTURE 2. A basic understanding of Business intelligence (Adapted from Ranjan 2005, 64)

The word BI is dualistic i.e. it refers to information storing body which displays the outlook of the organisation and it is a process to yield intelligence from information. The vocabulary of BI in recent years has been more confusing. It is misinterpreted with other terms such as competitive intelligence, market intelligence, customer intelligence, and strategic intelligence. The practice of these terms can be chaotic in both academic and business world. Although they share almost same definition, the main purpose of BI is to aid in decision making with the ability to separate useful information from the mass of data. (Pirttimäki, Lönnqvist & Karjaluoto 2006, 83.) BI has different meaning for different personnel. For CRM experts it is an integration of customers data, to data warehouse expert it is just a new term and for data mining statisticians it is advanced data mining algorithm. BI is a collection of operational

and decision support system which can be used in any organisation for better output. (Gangadharan & Swami 2004, 140.)

3.3 Components of Business Intelligence

BI is popular because of its components. It has many components which is used to enhance business performance. There are primarily five components of Business Intelligence which are discussed in most of the literatures. They are OLAP, Corporate Performance Management (CPM), Real Time BI, Data warehouse and Data Marts, and Data source. (Dekic & Mladenovic-Ranisavljevic 2010, 1409.)

OLAP is that component of BI which refers to the way how businesses can segregate the data for navigation of dimensions such as time or hierarchies. OLAP is also known as analytical processing. It allows businesses to view multidimensional and summarized data and use them in reporting, modelling and planning. (Ranjan 2005, 61.) OLAP is all about collecting and sorting data for monitoring purposes. It helps to know the state of the organisation. OLAP works with other component such as data warehouse and data marts to form cluster of data and information, which provide requests to analyse the trend and critical factors (Ranjan 2005, 61). The standard application of OLAP includes business reporting for sales, marketing, management reporting, budgeting and forecasting, financial reporting and similar areas. OLAP supports three basic operations such as consolidation, drill-down and slicing and dicing. (Foote 2017.)

CPM and advanced analytics are used as synonyms. They both provide the same meaning as component of BI. CPM refers to the component of BI which uses statistical data to predict and analyse (Ranjan 2005, 62). CPM helps to foresee future. They alert companies about upcoming changes in trends such as sales trends, purchasing pattern and forecasting customers behaviour. (Foote 2017.) This component measures the potential of an organisation. For example, CPM helps to predict if a product will be successful or not by generating useful stats. CPM is referred as data mining, forecasting or predictive analysis (Ranjan 2005, 62). CPM is responsible for the better execution of an organisation. It involves business monitoring and performance analysis (Dekic & Mladenovic-Ranisavljevic 2010, 1409).

Real Time BI is the popular component of BI. It helps organisation to react in no time as it distributes the information through internet. This component provides information of real time trends and organisations can take advantage of those information. Real time BI offers a sharing of information through

email, messaging system and internet which is quick to respond (Ranjan 2005, 62.) This component provides organisation an opportunity to act before the competition. It has improved the flow of information. Here data can come from variety of source such as mobile phones, IoT, tablets and similar devices. It connects management to external data sources and analyse routine business operations in real time. Real Time BI encourages to create new business models and product innovator. It helps to know and act at any given moment. (Foote 2017.)

Data warehouse is a significant component of BI. It is integrated and systematically organised. (Ranjan 2005, 62.) Data warehouse is a single location to store all the data. This helps to save time and money. Use of data warehouse result in increased profit and minimise losses. (Foote 2017.) It is special purpose data integration tool which is feasible and economical (Williams & Williams 2007, 10). Data warehouse provides the ability to compare between the data and analyse the performance of the organisation. Data mart is collection of information use to support the decisions of an organisation. Each department in an organisation have their own data mart such as finance have their data mart, marketing have theirs and so on. Data mart and Data warehouse helps organisation to get information from different departments for better decision making. (Ranjan 2005, 62.)

Data sources are the structures that supports the line of business applications. It consists of various forms of data. It utilises data and convert them into meaningful information, with the help of software, which influences business transactions directly. It contains both structured and unstructured data. Structured data are tables, spreadsheets and unstructured data are plaintext files, multimedia information. Data sources can also help to define the needs of an organisation. Data sources can be operational databases, historical data bases, external data bases or existing data bases. Data source is the component of BI which gathers information from internal and external sources and transform them into actionable information through the medium of software. (Ranjan 2005, 62.)

3.4 The History of Business Intelligence

BI, we study now have a long history. It has adapted the change in the technological environment as well as business environment. BI has undergone many transformations to assist the organization. The term “Business Intelligence” was first used in 1885 by Richard Miller Devens in his work to describe the success of a banker named Sir Henry Furnese. In Devens’s work, the business intelligence meant the advance knowledge of gathering information. Lately, in 1985 a computer scientist Hans Peter Luhn

wrote an article about business intelligence. The name of the article is “A Business Intelligence System”. In this article Luhn describes BI as an automatic system for storing and quick understanding of huge amount of information. He introduced and developed the concept for the first time, so he is well-known as “Father of Business Intelligence”. (Heinze 2014.)

In 1970, the idea of storing data into computers lead to the invention of first database management system called Decision Support System (DSS) along with On-line analytical processing (OLAP) and Executive Information System (EIS) (Foote 2017). These systems assisted companies to store data and access it whenever required. The further change began in 1989 when DSS included advancement like data warehouses which smooth out the flow of information accompanied by the development of Extract, Transform and Load (ETL) tools and OLAP software. This development phase is known as Business Intelligence 1.0. (Heinze 2014.)

In that phase, there were two basic functions of BI: producing data and reports and organizing and visualizing it in a presentable way. In the late 1990s and early 2000s, BI services break into the market. BI tools were very efficient and allowed the users to become unbiased. It was user friendly and provided full functionality needed to the users. It was one platform for storing data and provided simplified access with business scenarios. As a result, businesses now could look after their ongoing processes and gather enough data. (Foote 2017.) However, the system was developed by experts and to handle BI tools advance training was required thus it was complex and time consuming. Even though BI was implemented it did not provide efficiency in the organization and caused expenses. Therefore, the tools began to change as to fit the users, but the change took place gradually. (Heinze 2014.)

In the 21st century, there came a new version of BI i.e., Business Intelligence 2.0. This century was the turning point for the BI system because of the development of the technologies such as cloud-based programs assisted BI systems to flourish and succeed rapidly. BI 2.0 consisted of different technologies that made the decision-making process much easier and faster. With the incorporation of different technologies now the users did not have to face difficulties and did not need help from IT experts which was the shining point for BI. The increasing trend of social media also supported the growth of BI system as there was sharing of ideas and opinions about new technology. In the year 2005, most of the companies chose to implement BI system to stay in the competition and understand the value of their customer. Since then BI have become more of a requirement than a choice. BI has evolved a lot since it was first introduced. In present times BI is customized for specific fields i.e. different companies can use BI with their demand. Tool specification, expanding self-service options and improving visualizations are three

important features of next leading edge of BI evolution. BI has helped companies to create millions of useful information from the gathered data. The advancement of BI is ongoing process as experts are trying to make it simpler and more convenient for the users. (Heinze 2014.)

3.5 Why Business Intelligence?

In recent times, business and technology are companions. Without each other they cannot thrive in the environment. Likewise, the rapid change in technologies increase the rate of competition among industries and vice versa. So, the use of modern technologies is a must for the companies to survive the competition and hence new technologies are developed as required by the competition. The increasing pace of change in business puts pressure in the companies to cope up with the change. Thus, a company can implement BI system to outlast the competition. BI helps companies to store and manage data in systematic order. BI assists companies to integrate its system under one big platform.

Lately, the companies have less time to make decisions due to competition in the market and delayed decision may result in lost. Decision making is not a simple process it requires study of all the information. But due to less time it is impossible for the companies to decide with distorted data from all the departments of the company. Therefore, to transform those data into useful information BI can be used by a company. The tools of BI help managers to gather data and convert into a meaning information. Managers can identify and analyse the gathered data and decide without the help of IT department and the decision making is quick. (Hocevar & Jaklic 2010, 91.) BI uses one platform for stepwise migration of information from different departments.

The main goal of every organisation is to increase revenue and decrease cost. BI is helpful with those two aspects. With the help of information, companies can invest in the market where they are gaining more profits which will result in more profits and less costs. BI is simple and quick so it will save time of any user hence it improves efficiency. Companies require to satisfy their customers. Customers are the key element an organisation depends upon. Customers are satisfied when companies fulfil their demands in time. BI helps to keep track of the customer needs as well with the help of Customer Relationship Management (CRM). Since BI is an integrated system it works with all the departments in an organisation and gives access to data from any department which makes decision making process easier and quicker.

There are many reasons why an organisation should use BI. BI has become necessity for all the companies due to large amounts of data and information which cannot be handled manually. Also, BI not only gathers information, but it gives an outcome from those data. Moreover. The reason to implement BI in an organisation is to improve organisation's performance (Nykänen et al 2016, 27). BI is an organised system which deals with acquisition, management and analysis of large amount of data in the organisation. It is a support system which circulates relevant information in the internal and external environment in no time. BI is formed with other information systems which makes the process more efficient. (Hocevar & Jaklic 2010, 92.)

BI helps organisation to find out the problems and key success factors. BI provides flexibility and access of data throughout the organisation and better overview of reports. (Hocevar & Jaklic 2010, 95.) BI helps to identify the development process and ideas for the development of the organisation. BI can be now specialised for certain purposes. Organisations can customise BI systems as per the requirement. Tool specialisation, visualisation and self-service options enhances BI so that it could fit any other organisation. BI is system-based with instructions and programmed to do what is requires so it have consistency in actions, decision, thinking and executions (Faud & Bohari 2012, 233 [Turban, McLean & Wetherbe 2007; Hogg, 2002]). Moreover, BI boosts the flow of information within the environment. BI not only helps to improve organisation's potential but it also benefits individuals (Nykänen et al 2016, 26). BI is less expensive than other information system and furthermore it is a man-based system with human knowledge and experience focussed in (Fuad & Bohari 2012, 233 [O'Brian 2007; Parson, Oja & Low 1999]).

With the help of BI, employees now can convert their business knowledge into analytical intelligence and solve different issues arising in daily business environment. BI helps businesses to detect their capabilities. Similarly, it also helps organisation to know their worth in compare to their competitors. Furthermore, companies' asset is their customers. BI helps to identify profitable and reliable customers and increase customers by providing information about their demands. Information is the second asset of an organisation and BI is a software which analyses and store information for future use. Hence, BI provides full security of both assets of an organisation and organisations can have lots of gains from BI. (Ranjan 2005, 64.)

4 ANALYSIS OF BUSINESS INTELLIGENCE

Every development has its opportunities and threats. This chapter includes detailed scanning of the opportunities and threats of BI.

4.1 Business Intelligence Opportunities

BI is a boon for business industry. With the expanding market and growing competition, companies needed to find their key to success and BI is the key to their success. BI has many opportunities and has provided many advantages to the companies as well as users. BI stores huge amount of data and helps to analyse them in no time. So, this is the one of the most important advantages of BI because the standard of BI to store and analyse data is a step ahead of all other information systems. BI allows users to understand complex data to make quick and better decisions (Hocevar & Jaklic 2010, 94). BI helps in both strategic and operational decision making (Dekic & Mladenovic-Ranisavljevic 2010, 1411). The main benefit BI provides is increased efficiency and effectiveness of the organisation (Hocevar & Jaklic 2010, 94).

The one opportunity of BI is that BI have been implemented in health sectors and the need of BI in health sectors is also increasing rapidly. BI is one of the recommendations to improve the quality of care by the Institute of Medicine in United States. BI helps to mine the electronic health record and identify the patient's condition. The use of BI is done to collect, analyse, curate and present evidence at the point of care which is also the practice of Evidence Based Medicine (EBM). EBM is the specific use of present evidence for making decision to care the patient. BI supports EBM in various processes such as identifying patient's condition, formulating the EBM question, evidence generation and analysis, evidence evaluation, evidence presentation and putting evaluation into practice. BI has helped both practitioner and researcher with the accumulation of huge amount of data. (El-Gayar & Timsina 2014.)

The opportunity of BI is also in banking sector. BI system has clear importance in banking industry. It is a channel for communication and diffusion which is reliable, transparent and permanent. BI centralises the customers' information and provide valuable understandings to the decision makers. This will help to improve efficiency and provide better relationship with customers. BI can help in marketing division by analysing customers' preferences and offering services as per their understanding. BI can also help

in risk management and fraud detection in a bank. With all the information integrated it will be difficult to carry a fraudulent activity. Moreover, BI helps to know the customer lifetime value i.e., how much revenue can be generated from single customer in future time. Bank industry requires the use of BI as the industry consists of huge amount of data which cannot be handled manually, and BI is a trustworthy application to implement. (Rao & Dey 2012.)

BI is a set of information technologies. It consists of several components. BI is developing its functionality. It is customizing and activating the software according to business demand. BI has become a huge hit in the market and there are everyday job opportunities in the field of BI. Younger generations are taking interest in the topic and new minds are associated with BI. There are different companies which provide the BI training and specialises individual in BI software. Most of the companies now implement BI which means they require employees with the knowledge of BI. Hence along with the growth in BI market, people will get more job opportunities and businesses will get more benefits from BI tools. BI enhances the quality of the work.

There are a lot of opportunities provided by BI. There are many other industries where BI has been used and the demand for BI is increasing day by day in all industries. With the implementation of BI, users get enough benefits such as less workload, increase in efficiency and improvement in performance. BI makes complex task easier. Even though BI is an application it does not require IT professionals. Users with training can easily use BI without the support of IT department. Some information software requires the support of IT department if any information is to be extracted but in BI any user can obtain any information anytime anywhere. Hence the work is not only easier but quicker. Furthermore, BI helps in communication. The data is centralised so any department edits or adds any information all the departments will be able to see the change. Companies who deals with loads of data will have more benefits with the use of BI system. Furthermore, BI and Artificial Intelligence will be merged to provide better services in the industry. This will result in the change of business intelligence ecosystem offering lots of job opportunities and training. (Fatemi 2019.)

Companies now demand faster and cheaper tools. They want to be ahead of the curve. One way to provide satisfaction to the companies is through cloud BI. It uses internet to store data which reduces storage cost and it is the fastest way to transfer information as information is just a click away. Moreover, there are mobile empowered platforms which provides information to the users in their smartphones, tablets and laptops. (Heinze 2014.) This will increase the demand of BI resulting in the growth of its opportunities in global market.

4.2 Business Intelligence Threats

BI is an information system. User requires training and knowledge to use the system. Without proper training and understanding about the system, user will not be able to operate the system properly. Therefore, the user must have training and the training cost of BI system is very high (Rostek 2009, 69). This will lead to people losing their job if they do not have knowledge of BI system. Moreover, BI provides access to extensive information to all its users (Gangadharan & Swami 2004, 142). This can cause the misuse of information. The threat is that there can be transfer of information which is supposed to be confidential. For example, customers' information. It is the organisation's duty to secure the information about the customer but due to easy access of data one can use that information and exploit it.

Furthermore, BI can perform only those tasks that are programmed and it does not provide space for creativity so to insert new ideas it will take time as initiating a new business information system (Faud & Bohari 2012, 233[Bohari, 2008; Laudon & Laudon 2007]). This means BI is operated with specific instruction. In addition, BI is a system which needs huge investment. There are a lot of cost associated with implementing the BI such as cost of hardware, cost of software, cost of data resources and many more. (Hocevar & Jaklic 2010, 99.) However, this may not provide satisfactory results for all the companies. Implementing BI can be a curse for some companies because it requires patience and time. If implemented inappropriately, BI can cause huge loss for the company.

Similarly, in the duration of BI implementation the organisation performance may degrade because most of the high-level employees are engaged in the process. Undoubtedly, the process involves changes in the managerial and operational management. This may be challenging for an organisation as change always does not bring benefits. As a result, it can affect the business performance. (Popovic et al, 2010, 19.) The different departments have different terms of business. The information provided by BI can have different meaning to different departments. This may cause conflict due to miscommunication among departments. (Williams & Williams 2007, 141.) Due to the growing popularity among industries, there is now greater risk of information leak. Some countries are now applying new regulation for data security. For instance, the European Union implemented a regulation to protect data and information (AI Time Journal 2019). This kind of regulation means limited access to the information. This is a setback for the organisation because less information means delay in information and may even lead to make wrong decisions.

With the development of BI, it has now reached its modern era. Recently, cloud BI and Mobile BI are widespread in the business market. Cloud BI is hosted by virtual network such as internet. This system generates threat for violation of information. The cyber frauds hack the system and get the information. This is the reason for losing money from the bank account, getting bills for something that has never been ordered and so on. There is always risk of power of exploitation (Jordan & Ellen 2009, 19). Likewise, since all the information are stored in a virtual network there is a threat in losing those data if there is a breakdown in electricity or server. Moreover, in the future period BI will be having more features related to AI. This brings the challenge for industries to develop an industry safeguard against misuse of AI. This change affects the jobs of the people in the industry. (Fatemi 2019.)

5 THE ADOPTION OF BUSINESS INTELLIGENCE

BI is a system with industry specific enhancements which is getting the momentum. This chapter deals with the application of BI in global context and in Finland.

5.1 The adoption of Business Intelligence in Global Context

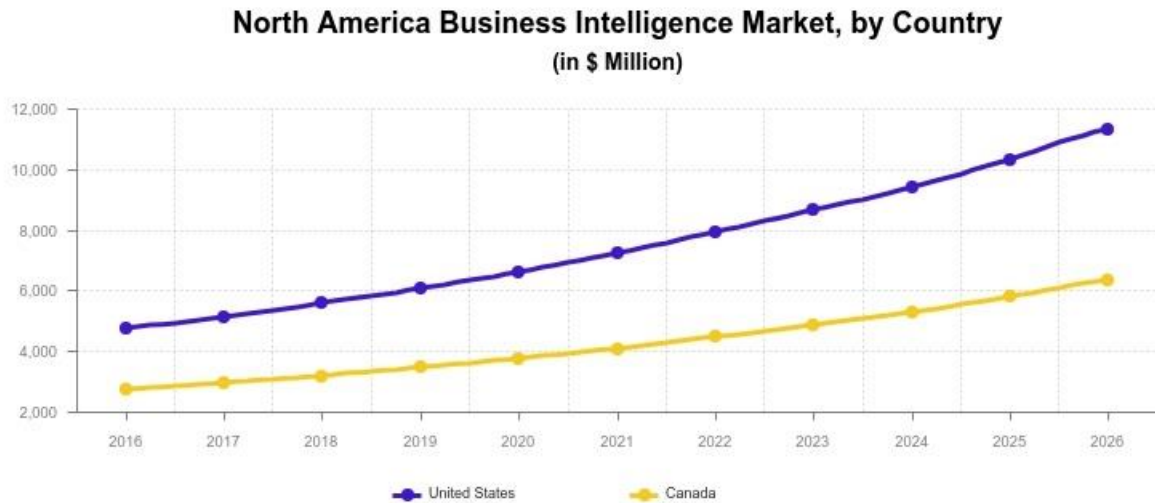
BI system is becoming acknowledged rapidly in different industries. Industrialisation has provided market for the BI system. With the growth in globalisation, there is a sudden increase in the demand of BI system. Globalization means exchange of goods and services in international scale which brings enormous amount of data into the organisation. To manage those data, organisations are implementing BI system. BI system has become a trend in global market. All the organisations want to do more with less and BI provides them an observable experience and meaningful actionable data. Due to many features and characteristics, BI provides an organisation what they seek for.

In the expectation of excellence, businesses have tilted towards BI solutions. With massive amount of information and pressure to make intelligent and informed decisions, businesses consider BI as necessity. Almost half (48%) of the industries regard BI as critical or very important for their operations. It has become a prerequisite for success in today's business environment. The global market for BI has liberated from USD 17 billion approximately in 2016 to more than USD 147 billion by the year 2025, representing a Compound Annual Growth Rate (CAGR) of 27%. (Fatemi 2019.) BI system is expected to grow in the international market and many researches has been performed to determine growth rate in different years.

The global business intelligence market is expanding. Businesses have started to appreciate the value of BI system. The global BI market was valued at \$14.3 billion approximately in year 2018 and is expected to grow to \$28.77 billion by the year 2022, demonstrating a CAGR of 19.1%. North America was the largest market for BI in 2018 and is estimated to remain largest for the next five years. (AI Time Journal 2019.) The North America BI market is likely to grow by 9.12% CAGR by the period of 2018-2026. Technical advancement is one of the reasons to boost the progress in this region. In North America, two countries the US and Canada are more responsible for the growth as shown in figure 3. Among these two countries, the US attributes to the 80% of the growth. Canada is monitoring improved efficiency

and boosted production in its industries with the adoption of BI system which will appraise the expansion of BI market. (Inkwood Research 2017a.)

NORTH AMERICA BUSINESS INTELLIGENCE MARKET



Source: Inkwood Research

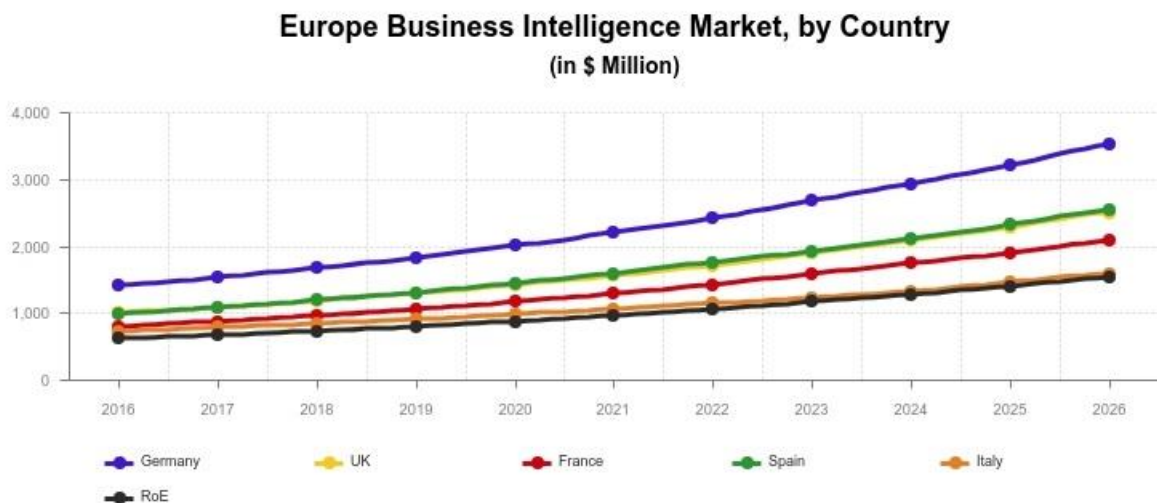
PICTURE 3. North America BI market, by country (Adapted from Inkwood Research 2017a)

Increase in data-driven projects helps BI software market growth. According to International Data Group (IDG), 69% of the companies are planning to execute data-driven projects to increase productivity and revenue. For example, Starbucks adopted BI software along with CRM software. Moreover, development of BI tools has also helped BI to hit the market. Cloud based BI has been increasingly adopted by the companies in order to enhance security and get benefit to access from anywhere. Cloud based BI is cost effective as it does not require extra hardware to store data. According to International Data Corporation (IDC), 50% of IT infrastructure spending is on cloud-based tools and for efficient data storage. It is anticipated to grow to 60-70% by 2020. (AI Time Journal 2019.)

Talking about global BI market, European countries have also contributed to increase the growth rate. In European region, the aspects leading the increase of BI market are expanding reception of cloud, development of cutting-edge investigation, appropriation of information-driven basic leadership, and the rise of Internet of Things (IoT). The Europe BI market is predicted to grow at a CAGR of 9.68% between the period of 2018-2026. The countries that steer the European BI market are the UK, France, Germany,

Italy and Spain. Germany contributes the largest share in European BI market as shown in figure 4. The penetration of internet in residential and commercial sector is a reason for the growth of BI market. (Inwood Research 2017b.) However, in May 25, 2018, European Union implemented a regulation called General Data Protection Regulation (GDPR). This regulation focuses on data protection, minimization, retention and confidentiality. This rule allows minimum data and information which might affect BI software market in terms of analysis and accuracy. (AI Time Journal 2019.) Although the market is expected to grow over the forecasted period the change in the regulation may threaten the growth process.

EUROPE BUSINESS INTELLIGENCE MARKET

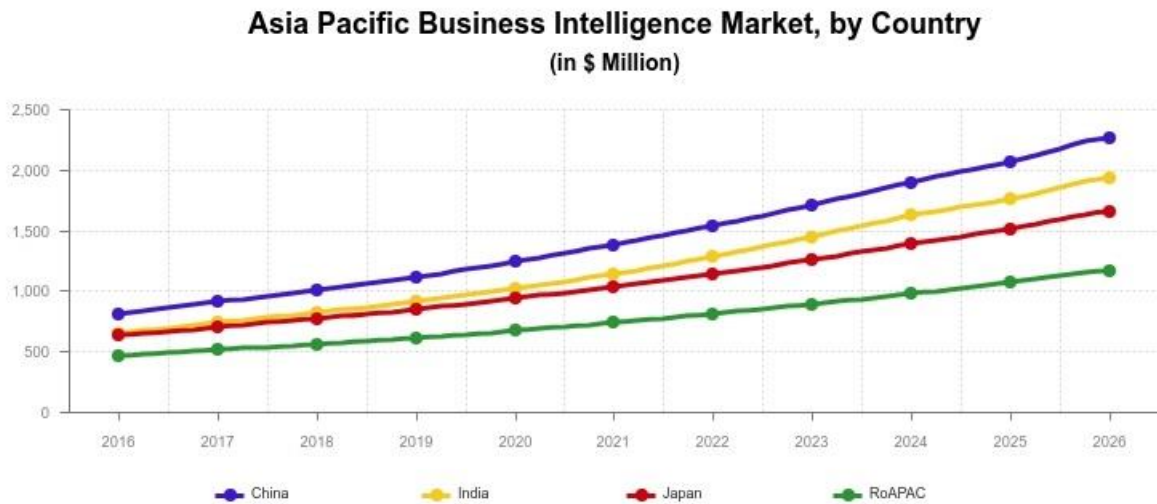


Source: Inkwood Research

PICTURE 4. Europe Business Intelligence Market, by country (Adapted from Inkwood Research 2017b)

Similarly, the Asia-Pacific BI market is estimated to grow at a CAGR of 10.52% over the period of 2018-2026. The BI market is increasing in the Asia-pacific region. Technological advancement, increased demand and market for IoT and Big data are the drivers to increase the demand of the BI market in Asia-Pacific region. Countries that contributes in the Asia-Pacific BI markets mainly are China, India, Japan and rest of Asia-Pacific as in figure 5. China and India are major contributors for the BI market. (Inkwood Research 2017c.) The Asia-Pacific region is expected to have higher growth rate than North America BI market and European BI market. The reason behind the growth is infrastructure development, advancement in algorithm, smartphones and machine learning.

ASIA PACIFIC BUSINESS INTELLIGENCE MARKET



Source: Inkwood Research

PICTURE 5. Asia Pacific Business Intelligence market, by country (Adapted from Inkwood Research 2017c)

The application of BI system has made a lot of companies work effortlessly. The enhancement in BI components and tools has made BI stand out in the market. The simplified access and configuration of BI has led to rise in the adoption of BI globally. With industry-specific enhancement tool BI can be used by any organisation thus making it globally demanding. BI system is now used in insurance companies, banks, construction companies, car distribution companies, health sectors and many more. In 2018, Cisco Systems Incorporated, bought Accompany, an AI driven business intelligence start-up for \$270 million (AI Time Journal 2019). This purchase offers different capabilities to BI in future.

With the rise in adoption of BI system, there is an increase in competition among the companies in BI market. Some of the companies that are well established are Rackspace US, SAP SE, Microsoft Corporation, Cisco Systems Inc., IBM Corporation, TIBCO Software Inc., among others. (PR Newswire 2019.) Implementation of BI system provides companies better understanding of issues and needs and help in decision making. In a global business environment, organisations face competition. They not only want to win the competition but want to sustain the victory. Organisation must make decision within

time limit to win the competition and for decision making they require empirical evidence and meaningful information. BI provides those information and evidence for total output hence BI is now in demand and globally accepted.

5.2 The adoption of Business Intelligence in Finland

Finland is one of the developed countries in Europe. Finland has many large-scale companies which operate in domestic as well as in international market. Finnish companies have adopted BI radically. Most of the Finnish companies operate globally and the global business environment has required Finnish companies to implement BI system. (Hannula & Pirttimäki 2003, 583.) BI has become essential for the companies to beat the competition. BI have many advantages that an organisation can use to succeed. BI provides up-to date information required for an organisation which assists in decision making. However, most Finns consider BI as a process to examine competitive environment (Hannula & Pirttimäki 2003, 583).

The research regarding BI in Finnish market was not done so often before 2002. The very first survey to find out BI in large scale Finnish companies was held in 2002. It consisted of 50 companies classified based on manufacturing, trade and services, and information and communication technology (ICT). Among these companies, 80% of the companies had implemented BI systematically. Likewise, among those 80% companies 38% of companies began their activities a decade ago. Moreover, 81% of the companies responded that the need for BI was to enhance information for supporting planning and decision making. (Hannula & Pirttimäki 2002, 594.) This survey provided the picture of adoption of BI in Finland and the reasons behind it. BI is used by the organisation to support their activities and has become a prerequisite to retain the competition. Hence Finnish companies have been adopting BI systems since very long time.

Similarly, in one survey held with 2180 respondents from different departments of different organisation in Finland, majority of the respondents said that BI is used because of improved efficiency, increased business knowledge and better decision making. Also, slightly more than half of the respondents answered that the limited knowledge of BI is one reason that is preventing BI to gain popularity in Finnish markets. (Nykänen et al 2016, 31.) Finnish market has adopted BI systems by looking at the benefits it provided. BI is implemented because of its convenience. Inadequate knowledge of BI is the main problem now in global world. Even though BI have been evolving since very long time, it has hit the market

recently and many organisations and users do not know about BI yet. However, large-scale industries which steer in global market are aware about BI.

Elisa, a Finland based telecommunication company also have BI system. Elisa have been using BI service since very long time but around the end of 2004 the company changed considerably. It reorganised BI system. It resulted in improvement in decision making and service efficiency. (Pirttimäki et al. 2006, 86.) Likewise, there are many industries in Finland such as construction companies, ICT companies, health institutions, banking industries and many more which uses BI systems. There have been held surveys to measure BI systems and its performances in different industries in Finland. There are many reasons to embrace BI.

Adoption of BI system in Finland has become widespread. Most of the large-scale industries in Finland and those which operate globally have BI system. These companies have adopted BI to handle the competition by managing business operations and make better decisions. BI has become a term for systematic arrangement of business information acquisition and analysis in the world of large-scale industries in Finland. BI adoption is gaining popularity in Finnish market and is believed to grow in future. BI system has become a necessity in Finnish industries to obtain information about business activities and its development possibilities. BI is not just a trend but a requisite for the companies. (Hannula & Pirttimäki 2003, 598.) Along with large-scale industries, small and medium enterprises will also start to adopt BI system in the future (Nykänen et al 2016, 25).

6 RESULTS OF THE STUDY

The findings of the study provide profound information regarding the research objectives. This chapter discusses the role of BI in strategic management and decision making. Moreover, this chapter deals with the impact of BI in an organisation and in human life.

6.1 Business Intelligence in Decision Making process in Business

Decision making is a challenge for a company especially when there is huge amounts of data and limited time period to decide. In this global environment, the industries are facing intense competition. Industries are merging, dissolving, expanding and so on. Thus, a company must be able to make a quick and knowledgeable decision in order to win the competition. Also, the enormous amount of information and work can give the employees of an organisation a nightmare and the performance of the organisation may drop drastically. So, BI is a system which helps in decision making process and can be used by the organisation for improved business processes.

The main objective of BI is to assist in decision making process in businesses. BI is gaining pace in the business market. The tools of BI make it different than other information system. The data mining tool helps organisation to capture all fundamental particles whereas data warehouse application assists to catalogue, index and cross-reference those materials. BI is a tool that is needed by decision makers for today and in future. BI tools not only lay out historical data, but it shows different future based upon the inputs. This provides the decision makers capability to understand the results. (Thierauf 2001, 3.) For decision making, users require both past and present information. This information helps users to make informed decision. BI is defined as a warehouse to store data. Hence, BI can help users in decision making.

Organisations often consider decision making a logical process. Decisions are made based upon facts and are reasonable. BI is suitable for organisations because they present accurate, relevant and up to date information. Originally information are data that comes from various sources which are important to make decisions. BI gather them in one big platform which makes decision making easier. (Nykänen et al 2016, 29.) Decision making is one of the crucial activities of an organisation. It determines the future of the organisation. Right decisions can bring in huge revenue whereas wrong decision may even result

in winding up the organisation. Hence, decision making should be done in accordance with all the information required. BI can be used in decision making process in an organisation. BI, as discussed, is a system which helps in decision making process by gathering and storing data. BI provides meaningful information required to decide. Decisions made with the help of BI systems are informed and provide benefits to the organisation.

Decisions in an organisation are made on a daily basis. Decision making is a rational process which includes risks. Companies want to bear less risk as possible. Decisions made with profound information are less risky. BI is a managerial concept which helps to manage business operations and used to make effective decisions (Pirttimäki et al 2006, 83). BI is a system with decision making supporting tools. Moreover, BI is an integrated system, so it helps to ease the communication within the organisation. This will favour in quick decision making because there is rapid flow of valuable information around the organisation. BI is a system developed to assist decision making process in the organisation. BI is designed in such way that it stores data from past and present and introduce them in visual forms for users to make appropriate decisions.

6.2 Utilization of Business Intelligence in Strategic Management

In present time, change seems to occur daily either that is in technological world or business world. The way of doing business is now different than it was in past. Business managers now are required to respond quickly to customer needs and competitive threats. Most of the companies are facing short time frames. In this run if a company does not have technology to support business activities then the company cannot face the competition. With the increased pace of change in the business, companies are forced to implement new systems that supports business activities. But the implementation process may be horrifying. Thus, to assist business activities companies should develop BI framework. (Thierauf 2001,5.)

Change is a difficult stage for any organisation and most of the organisation do not want it to happen. Change requires large amount of effort and time. Change requires strategic planning. Strategic planning can be supported with BI tools. Strategic planning is a step-in strategic management. Strategic management provides direction to top managers to forecast the change. Strategic management helps to make decisions on long-range forecast. (Subba Rao 2009, 21.) Strategic management forecasts the change

based on the information available. So, if there is BI system in the company then the strategic management have access to information about all the departments in one database. This will help the managers to make strategy in no time.

BI consists of both internal and external information, market information and analysis (Pirttimäki et al 2006, 86). This provides strategic managers the information about current trends and possible changes in the future. Strategic managers provide guidelines about the organisational goal. BI provides the base for the guidelines. BI system has a distinct significance in communication and information diffusion channel. It is integrated, streamlined and transparent. This helps in making strategic decision. (Rao & Dey 2012, 50.) There are different areas to keep record of while making strategy such as who are and who will be firm's customers, the means of financing the firm's activities and so on (Subba Rao 2009, 25). BI provides clear picture of an organisation's customer according to different categories like loyal customers, frequent buyers and many more. Similarly, BI provides an understanding of organisational performance. Hence, the time for strategic decision making is reduced.

Strategic management process is a time consuming and difficult task (Subba Rao 2009, 28). It takes time because it consists of several steps including gathering information from internal and external sources and analysing them. If BI is implemented in the organisation, then the time for gathering and analysing the data will be saved and the strategic management process will be short. Similarly, BI helps to convert raw data into stats. This provides the picture of business performance. BI helps in distribution of reports and information and sharing of ideas and views. This will help in quick strategic decision making because of the effective communication. There are many uses of BI in strategic management.

Strategic decision making and decision making are two different tasks. Decision making is carried out in daily basis while strategic decision making is carried out when there is change in business processes or business objectives. In both decision-making process, BI is helpful. BI is a source of information required to perform daily task. BI works on a slogan "Build it once, use it many times" (Brijs 2012, 96). This means that BI implemented provides benefits for long time. BI can be utilized in strategic management because it provides information about external environment and organisation can adopt rapid changes in business environment faster. Utilization of BI in strategic management will result in fast system with low cost and effort. This will provide an organisation transparent business scenario in one big image and enable generic enhancements.

6.3 Impact of Business Intelligence

Discovery of BI has been a blessing in business sector. In this globalised world, businesses face enormous competition. Due to which many businesses and employees encounter failures. BI have become a survival kit for companies. The impact of BI in business world has been tremendous. Businesses seek help of BI in their activities. Looking at the adoption and growing rate of BI, it has become vital in the business world.

BI is used throughout the organisation. It is input to tactical and strategical decisions for top level managers whereas it is a system which helps lower level employees to perform their daily tasks. (Dekic & Mladenovic-Ranisavljevic 2010, 1413.) BI is a supportive tool for both the employees and the organisation. Most of the organisation have faced positive impact after implementing BI system. BI is helpful for information gathering and presenting them in a form to enhance the performance of the organisation. BI has been useful to employees of an organisation as well. BI helps employees to perform their daily activities easily. The pressure of work has been decreased with the help of BI. BI has a bright future mostly in large scale industries and globally operated industries. BI systems must be associated with business goals, decisions or actions otherwise it is a waste of investment. BI system implemented in right way has tremendous impact on organisation's profit and performance but done wrong is waste of time and money. (Williams & Williams 2007, 2.)

However, with the development of BI and its tools, BI will likely have features that are driven by AI in the future. This will result in the impact on BI system by AI ethical implications. (Fatemi 2019.) This system may provide the impact in the jobs of the people. With the collaboration of BI and AI people will lose their jobs. There will be change in the style of business and not everyone can accept the change easily. By then new people must be appointed. (Dekic & Mladenovic-Ranisavljevic 2010, 1413.) BI is now demand in most of the organisation. BI has impacted the business world such that it will become necessary to deploy BI system in more and more industries to neutralize the competitive advantage. (Williams & Williams 2007, 140.)

6.4 Recommendation of Business Intelligence in Business Sector

Business sector is advancing day by day. Businesses require to have technological assistance in order to cope up with the advancements. BI is a technological development to assist business activities. BI is

mostly beneficial for large scale industries where there are huge amounts of data and business activities. Industries that are globally operated or have lots of information should try implementing BI system. BI is an integrated system and requires training to use it so companies should first accumulate the need and cost for implementing BI system. However, some companies fail to implement BI system because it takes time to provide result and lack of patience may end in failure. But once BI is implemented successfully it have a lot of benefits.

There are many companies which have implemented BI successfully. For example: Elisa, Finland based full telco implemented BI. Elisa's customers include large companies, societies, small and medium sized companies and consumers. The main purpose of BI at Elisa was to enhance decision making and service efficiency. BI functions, targets and strategies were chosen based on Elisa's vision. The implementation of BI served many advantages in Elisa such as information acquisition and deliver cost-effectiveness. The usage level of BI system and information is high as well as user satisfaction. (Pirttimäki et al 2006, 88.)

Similarly, Harrah's Entertainment, hotel and casino operator in Las Vegas, Nevada and other dozen states in US also implemented BI. It earned \$235 million profit on more than \$4 billion in revenue. It enjoyed 16 consecutive quarters of revenue growth. Harrah's also invested in BI to win and consolidate the loyalty of its best customer. (Williams & Williams 2007, 3.) There are different companies which have implemented BI and have succeeded. To implement BI organisations, need to have specific purpose and goal. Any organisation which needs to enhance performance and increase revenue must implement BI.

BI provides right business information which results in increased profit and productivity (Williams & Williams 2007, 193). There are many reasons to recommend BI in business sector. BI improves business decisions and helps to shape the business activities. BI systems should be implemented when there is high competition. Businesses must know their objectives. Even though the business world is changing and becoming competitive, if the target market and business is small then implementing BI would only be cost and time consuming. But if the target market is massive and so is the industry then there is a huge change of competition and to sustain in the competition the business should have BI system. Due to the lack of awareness of benefits of BI many companies have not implemented BI. But BI offers lots of benefits and opportunities to the organisation.

7 CONCLUSION

The main aim of this thesis was to examine how the use of BI in strategic management can ease the way of doing business. This thesis began with the introduction of BI and strategic management. This provided the foundation for the research topic. BI is not a new system. It has been developed long ago. However, it has recently been in the gossip of the business world because of its systematic change and promising benefits. BI as discussed, is a system to store data and convert them into meaningful information for daily business operations and decision making. Hence, the research topic of this thesis was how BI can be utilized in strategic management and as a supportive decision-making tool. So, this thesis discussed BI and its components that can be used in the decision-making process. Moreover, the research also focussed on the impression of BI in the business industry.

This thesis is based on a qualitative research method. It used literature review as a medium to reach the results of the thesis topic. Lots of books, articles, and journals were studied to do this thesis. This thesis is a result of deskwork with research materials. Also, this thesis demonstrated the adoption of BI globally and which countries are responsible for the growth rate of BI annually. This thesis focused on the concept of the use of BI in strategic management to enhance the performance of the organisation.

The results of the thesis showed that BI can be used in strategic management and in the decision-making process. The components of BI are made to gather, store and analyse data so that organization can make informed decisions. BI as discussed in chapter 3, is an information system that supports decision making process. BI is technological development and can be customized according to the need of the organisation. BI can be implemented by any other organization, but it needs to be coupled with a goal. BI has many advantages one being that it provides real time information and organisation can grab the opportunity in no time. BI stores data and compares the information from past and present which give a clear picture of the growth of the organization.

Furthermore, BI is an integrated system which collects and stores information from all the departments in one big platform. This idea helps to improve the flow of information in the organisation and develop safe communication between the departments. This integrated system helps in strategic management and decision-making process because all required information can be found in one place that saves time and requires less effort. BI helps to secure valuable customers in the organization by providing information about the customers' needs and demands. BI is a beneficial approach an organization must take in order

to neutralize the competition and escalate the growth. With the help of BI, organization can gain profit and reduce costs. The findings of the research showed that the use of BI in an organisation can encourage lots of opportunities. BI has influenced the business industry and most of the companies now demand BI. BI is gaining pace in many industries around the globe. Looking at the examples of successful BI implications, the author recommends implementing a BI system with a goal and as per the need of the organisation.

The thesis encountered some limitations. The research method used was exploratory so there are some facts that arise dispute. This thesis used secondary sources so there is no possible way to claim all the information is correct. There was difficulty in finding resources related to some of the research topic. Moreover, BI is a broad concept so author could not accumulate all the information about the BI in this thesis. Despite the limitations, the author has tried to analyse and gather information to provide all the answers to the research topic.

To sum up, BI is trending in the business industry and it has lots of advantages. It helps an organisation to increase performance, better decision making, reduces cost and time saving. BI has become a requirement for an organisation. This thesis provided the author better understanding of BI and its role in the business environment. Moreover, this thesis provided information about how BI systems can be used in strategic management and decision-making process. Further research may consist of understanding applications of BI in other departments and the process of implementation.

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