Czech University of Life Sciences Prague

Faculty of Economics and Management

Department of Information Engineering

Master Thesis

The Role of Business Intelligence in Strategic Business Planning

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CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Economics and Management

DIPLOMA THESIS ASSIGNMENT

Ing. Arun Konda

Systems Engineering and Informatics
Informatics

Thesis title

Role of Business Intelligence in Strategic Business Planning

Objectives of thesis

The main objective of this thesis is to assess and evaluate the development of Business Intelligence (BI) and its impact on business. It also will reflect the relationship between the BI and business model (BIM) to come up with recommendations on creating the strategic plan. The partial goals of the thesis are:
- to analyze the importance of technology in business,
- to identify how advanced technology affect the business environment,
- to analyze the ways the technology brings in profits for businesses.

Methodology

An exploratory method will be used to carry out the research, which will include both primary and secondary data tools. It will allow to get a better understanding of this study and come up with a new and innovative ideas. Exploratory research will use both the primary and secondary methods. For secondary methods, already existing online and offline scientific publications, books, journals, reports that have been carried out by other authors, which will help support the empirical implications of the study. Primary data tools will include numerical survey conduction with relevant questions for theory building and problem solving. This data tool will help analyze the target in a deeper and accurate version.

The proposed extent of the thesis

60 – 80 pages

Keywords

Business Intelligence, business model, business analytics, strategic business plan, decision-making, strategic management

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Recommended information sources

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Prague on 04. 10. 2022

Declaration

I declare that I have worked on my Master thesis titled "The Role of Business Intelligence in Strategic Business Planning" by myself, and I have used only the sources mentioned at the end of the thesis. As the author of the Master thesis, I declare that the thesis does not break any copyrights.

In Prague on   27/11/2022   _____

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The Role of Business Intelligence in Strategic Business Planning

Abstract

The purpose of this research is to know the role of business intelligence in strategic business planning. Strategic business planning is a very important process in an organisation because strategic planning ensuresa certain future for businesses. However, it is worth understanding how strategic business planning possible and business intelligence can be is a process to enrich this process. The thesis has used a mixed methods approach to serve this purpose, and the impact of technology in an organisation has been studied along with the main variables. One hundred employees from corporations in Prague participated in this research. Thematic analysis from the literature has provided secondary responses to serve the purpose. Both research methods have led to finding considerable support for the role of business intelligence in strategic business planning. The discussion on findings has taken secondary literature and primary responses together to get the final research outcome. It finds a positive relationship between business intelligence and strategic business planning. Organisations can enhance their ability of strategic business planning by focusing on business intelligence. Along with this, they should also focus on technology to make strategic business planning possible. At the end of the research, there are conclusions and recommendations for organisations to promote business intelligence to ensure strategic business planning.

Keywords: Business Intelligence, Strategic Business Planning, Technology, Organisations, Business, Employees, Prague

Abstrakt

Účelem výzkumu diplomové práce je poznat roli Business intelligence ve strategickém obchodním plánování. Strategické obchodní plánování je v organizaci velmi důležitý proces, protože strategické plánování zajišťuje podnikům jistou budoucnost. Nicméně stojí za to pochopit, jak strategické obchodní plánování a Business intelligence mohou tento proces obohatit. K tomuto účelu diplomovápráce používá přístup řady metod a společně s hlavními proměnnými byl studován vliv technologie v organizaci. Výzkumu se zúčastnilo 100 zaměstnanců z podniků sídlících v Praze. Tematická analýza literárních zdrojů poskytla sekundární odpovědi. Oba výzkumné přístupy vedly k nalezení značné podpory pro roli Business intelligence ve strategickém obchodním plánování. Diskuse k zjištěným výsledkům spojila sekundární literaturu a primární odpovědi pro získání konečného výsledku. Bylo potvrzeno, že Business intelligence umožňuje strategické obchodní plánování. Organizace mohou zlepšit svou schopnost strategického obchodního plánování tím, že se zaměří na Business intelligence. Spolu s tím by se také měli zaměřit na technologii, aby bylo možné vytvářet strategické obchodní plánování. V závěru výzkumu jsou uvedeny závěry a doporučení pro organizace a podniky na podporu Business intelligence pro zajištění strategického obchodního plánování.

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1. Introduction

Companies and businesses face stiff competition and a challenging environment to remain ahead of the competition. There is a continuous and fierce struggle between companies and businesses at all levels. This reality has emphasized the need for conducting strategic business planning. Strategic business planning is the process through which an organisation undertakes planning for the next five years or more periods. The main purpose of strategic business planning is to provide certainty and pave the way for a business to run. However, strategic business planning cannot be without information and insights into the business environment. A company's mission aims, and wishes cannot become strategic planning because they need to be realistic. Therefore, there should be an effective process or method to provide accurate and real-time data and information so that strategic business planning is possible. Business intelligence is one such field that provides accurate and recent data to ensure strategic business planning. Therefore, the role of business intelligence needs to be explored in strategic business planning. An underlying factor in business intelligence is the use of technology that makes it possible. Therefore, it is also worth exploring how technology can make business intelligence possible. Companies can ensure business intelligence through technology in formulating strategic business plans.

The use of technology is not optional, but it is integral to the use of business intelligence. Technology has increased the pace of doing things, and it is necessary for making faster and more efficient decisions for a business. When it comes to the processing of data and information, the use of technology is to increase the processing ability of that data and information. It is the basic requirement of business intelligence to process data and information about the market and competitors faster and more efficiently. Therefore, it is essential for business intelligence to use technology so that it can effectively benefit strategic business planning.

Background of the Study

Business intelligence is a modern phenomenon that has got popular with the evolution and advancement of technology. Until the late 1960s, it was a challenging job to translate data into meaningful information. It was because of the fragmented storage of data that was hard to extract. Decision Support Systems come as one of the first databases to turn data into meaningful

information. In the 1980s, businesses started realizing the power and effectiveness of data, and it led to the rise of business intelligence vendors as well. Online analytical processing was another system that emerged as part of data processing and information gathering. Initially, it was considered the domain of top executives and upper management professionals. Software named Executive Information System was developed to help upper management make decisions. During the 1980s, data warehouses became popular because they allow the analysis of data in-house. These data warehouses analysed data regularly, and it became a common practice for businesses to analyse data and turn it into information.
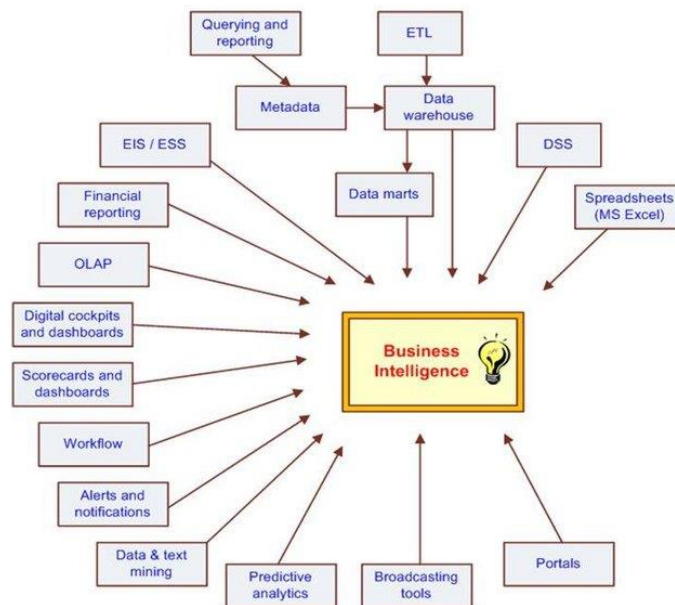
Figure 1 Transformation of Business Intelligence over decades

Source: https://www.researchgate.net/figure/1-Evolution-of-Business-Intelligence-BI_fig2_323174816

The above comprehensive figure shows how business intelligence capabilities have transformed and evolved over the years. There are some abbreviations but terminologies like data and text mining, predictive analytics, and others help to know how business intelligence reached to the present stage.

During the 1990s and 2000s, innovation in technology and easy access to the internet caused access to information conveniently. Descriptive analytics, prescriptive analytics,

predictive analytics, and different forms of analytics are used as part of business intelligence(Laursen & Thorlund, 2016). Now, technology has evolved to the level that a business can turn data into meaningful information, and this ability has gone beyond limits. Many streams of data are used simultaneously, and each stream contributes to information generation. It has been possible due to technology(López-Robles, Otegi-Olaso, Gamboa-Rosales, Rosales, & Cobo, 2018). There are various forms of technology that are used to enable business intelligence. Prominent technologies and processes enabling business intelligence include data mining, performance benchmarking, process analysis, and descriptive analytics. The basic concept of using these different forms of technology is the ability to process data(Bodislav, 2015). The ultimate objective is to assist in decision-making so that a business can undertake activities needed to sustain the business.

The relationship of technology with business intelligence is inevitable because the recent surge in the importance of BI is due to the rise of technology. Due to the increase in technology and innovation, processing ability has increased. Data mining, for instance, is the process where data is explored using different criteria and parameters. Collected data is further grouped and categorized as per set objectives. Process analysis is to know the best possible process needed to run a successful business. This is how; technology ensures business intelligence is possible(Olszak, 2016).

Figure 2 Data mining is an example of using technology for data management

Source: https://www.mindtree.com/insights/blog/reference-guide-implementing-data-mining-strategy

Business intelligence and its applications involve management of data and data mining is also a viable strategy in this regard. The above figure shows how data mining works, and it is helpful to understand its application in business intelligence and role in data management.

Strategic business planning is a process that has central importance of planning. This form of business planning is strategic that relates to many years involved in planning. It is a systematic process as it integrates and links different parts of planning in the business(Rajnoha, Lesnikova, Stefko, Schmidtova, & Formanek, 2019). An organisation must set its direction to remove uncertainty and ensure guidance for employees and management. Strategic business planning is the process that sets this direction, but it is through a systematic process. Another important part of the process is to outline metrics to be used for measuring success. Sales, employee turnover, shareholder value, brand equity, employee satisfaction, and customer loyalty are some indicators that need to be measured. A strategic business planning process ensures performance is evaluated based on these metrics. Here comes the role of business intelligence that contributes to strategic business planning.

Business intelligence empowered by technology helps an organisation set the future direction. For this purpose, it helps in setting objectives and metrics to achieve those objectives. It is possible because of the information management of an organisation through the business intelligence process. It processes data that can be turned into meaningful information(Pejić Bach, Zoroja, & Čeljo, 2017). However, it needs to be explored further as to how this role is established and challenges surfaced. Further discussion of this exploratory research is in the following sections and chapters.

Problem Statement

The problems to be addressed in this diploma thesis assignment are two-fold. Their explanation can set the direction of this research. First, there is a need to know the role of business intelligence in strategic business planning. It is necessary to know the role that is not clear until it is investigated and explored. There must be a justification for exploring the role of business intelligence. In other words, studying its role must solve any problem. The second important problem to be solved is to know how business intelligence can be done better. It is a highly important problem to identify and solve because the right and accurate business intelligence can contribute to strategic business planning effectively.

Figure 3 A simple strategic business planning process

Source: https://www.pngwing.com/en/free-png-sumon

The above figure shows how strategic planning process works and passes through different phases to achieve its results.

Organisations formulate strategic business plans, but there is a high rate of failure among organisations. It is usual for strategies and plans to fail, and the main reason is poor strategic planning and execution. Businesses must use data and information from within the business and from the external environment. Business intelligence is the process of making that data or information effective or valuable for the business. It is worth noting if organisations employ business intelligence in making strategic business plans. Second, it is to know the level of technology they employ in their business. Technology enables business intelligence to work effectively, which could not be possible otherwise. Therefore, the problem that this thesis address is the role of technology in business. It is because of the huge role of technology in business intelligence and the vital role of business intelligence in strategic business planning(Bryson, 2018). Therefore, the problem being addressed in this thesis is two-fold, as

mentioned at the beginning of this heading. It is to know the role of business intelligence in strategic business planning and to know the role of technology in the business through its integral role in business intelligence. The mention of technology is vital because it makes business intelligence happen.

Figure 4 Prominent features of Business Intelligence making it crucial for businesses

Source: https://towardsdatascience.com/top-10-key-features-of-bi-tools-in-2020-fd02c1dd4c71?gi=83e07efcb812

The above figure presents graphical representation of how business intelligence works and integrates other activities in a business. It brings efficiency and effectiveness in processes of a business.

The evolution of business intelligence has reached the level where it has become crucial for the success and growth of a business. However, a business must know how business intelligence can contribute to strategic business planning. This research has taken this objective asa priority. The rationale and problem statement in the following guide how this research should address this phenomenon. The ability of business intelligence to set criteria for measuring performance makes it suitable for strategic business planning. It is because planning is against performance that should be measured and calculated.

Rationale

A business doesn't want to fail or lag behind others. Every businessman wants to beat the competition in the industry, and it motivates him to undertake all possible options available for this purpose. Business intelligence is not the field that is hidden from businesses; instead, it is

known to every business. It means that businesses utilize business intelligence in making decisions and have guidance for strategic business planning. However, there is still room for improvement, and it has been behind the motivation to conduct this research.

This research has been conducted today because of the need to explore the role of business intelligence. A business intelligence strategy faces several challenges like a lack of a well-defined strategy, inability to use gathered data and information, lack of training, or low utilization of the business intelligence. The effective and right use of technology can solve these issues and challenges in the utilization of business intelligence(Teixeira & Junior, 2019). Therefore, the rationale of this research is to know exactly how businesses can effectively and successfully use business intelligence.

Once the role of business intelligence and the application of technology are observed, this research can help businesses and organisations to be effective and proactive in using collected data and gathered information. This is what the rationale of this research is that it must guide businesses and companies. Eventually, this research has been able to guide companies on how they can exploit opportunities and know the role of technology in benefiting their businesses. It is worthwhile to explain that technology is essential to let business intelligence work effectively and efficiently.

Significance of the Study

The research is important because of its practical aspect. Business intelligence, the role of technology, and strategic business planning are areas of practical significance. It has taken a comprehensive approach that is to explore the role of business intelligence. The role of business intelligence needs to be explored, as the problem statement has indicated. Companies realize the importance of business intelligence, but they might not be able to exploit it effectively. A prominent deficiency is due to the underutilization of data and information. Lack of proper training or inability to take meanings from the data for guidance and other challenges can be hurdles in the effectiveness of business intelligence.

Therefore, the study unveils the importance of the concept but extends it further as well. It has discussed the role of technology in a business that is essential, along with the concept of business intelligence. The research has analysed the importance and role of technology in

business. The use of advanced technology and different applications of the technology are areas that are worth exploring. An exploratory and investigative study on technology and business intelligence can be of great value in strategic business planning. Therefore, the outcome of this research is to help businesses in getting the finest and very effective strategic business planning.

Aim

The study has the aim of exploring the role of business intelligence in strategic business planning.

Research Questions

1. What is the role of business intelligence in strategic business planning?
2. What is the role of technology in business intelligence and strategic business planning?
3. How can advanced technology affect an organisation?

2. Objectives and Methodology

2.1 Objectives

- To explore the role of business intelligence in the strategic business planning process

Partial Goals

- To explore the role of business intelligence in a business
- To explain strategic business planning and the role of business intelligence in it
- To analyse the importance of technology in business
- To identify how advanced technology affects the business environment

2.2 Methodology

This section has been divided into parts detailing the methodology used for this research. The main aim of this section is to ensure how data will be collected to draw results. The selection of methodology considers the objectives and research questions of the study. Objectives and research questions reveal that the importance of technology and the way it affects business are going to be explored. It shows that the target population should be businesses. More detail on the chosen methodology is in the following.

Research Design

Research design is the most important consideration in the methodology section that decides the breadth and depth of research. Among different research designs, the main secret is the type of questions that each research design responds to. Some important questions are what, how, and why. A researcher is interested in the "what" question to know the relationship between variables. How and why questions want to know the way this relationship or the impact happens related to variables. This is the context that might help to understand and justify the selected research design for the study.

It is better to discuss objectives here that focus on the analysis of the importance of technology in business. In the second and third objectives, the focus is on how and the ways technology affects or brings changes in a business. The title seeks the role of business intelligence in strategic business planning that is through the role of technology. The nature of

objectives and involvement of technology in the main relationship of the study indicates the need for exploratory research. It also reflects the relationship between business intelligence and business model to create a business plan. Exploratory research design is capable of coming up with requirements of these wide-ranging and broad objectives and research questions. Thus, exploratory research design will not only discuss these variables but also leads to finding more insights and realities around the relationship among variables.

Research Methods

Methods to research a phenomenon can be of two types mainly. These are quantitative and qualitative, while each of these methods relates to relevant reasoning. It can be deductive and inductive reasoning. There should be proper justification, and it should be through this context. Exploratory research design should guide the choice of the research method. Quantitative research methods are known for drawing results that can be generalized, and it is easy to capture this methodology. The qualitative research methodology requires a broader approach where a lot of secondary research is required to know about the phenomenon. It implies that quantitative research methodology helps to generalize results while qualitative research methodology can help to gather as much information as is required.

This thesis has chosen both research methods that it uses a mixed methods approach. It has gathered an extensive and huge amount of data and information on variables which are business intelligence, strategic business planning, business model, and the role of technology. There is a limitation of qualitative research methodology that it draws subjective analysis. However, quantitative research methodology is unable to expand the scope of research because of inherent limitations (Fetters & Molina-Azorin, 2020). Therefore, it would be better to choose both research methodologies so that the research methodology is perfect to the maximum possible level.

Data collection tool

Once it has been decided to choose both research methods with proper justification for this decision in the above section, for quantitative research methods, the questionnaire is a

prominent data collection tool. A questionnaire can be closed-ended with fixed options to choose from or open-ended, allowing the respondent to provide a bit more information. It is a very convenient data collection tool that can collect primary data in a short period meaningfully. For the quantitative research component of this research, a questionnaire was developed (Bosch-Baliarda, Vilageliu, & Orero, 2019). It had closed-ended questions where a respondent could choose one of these options from the Likert scale. For data collection, Google Forms have been used, which is an online and convenient method for data collection. It is also effective in having more participants be part of the research. They can get in touch with research by answering questions over the form. Google Forms are easy to distribute as well through sending links.

For qualitative research methodology, the chosen data collection tool is the research of variables over search engines and databases. Google, Google Scholar, and ProQuest give access to many research articles, news reports, and industry insights to have plenty of secondary information. This data collection tool is viable and effective in drawing more information with the recent publishing date. Relying on secondary data has given it the opportunity to furnish a good questionnaire and make strong hypotheses to test them. Quantitative research methodology has followed the qualitative methods, and this is how; the mixed methods approach has helped in exploring variables used in this research. This approach has been very successful and effective.

Sampling strategy

This section is purely for the quantitative research methods and the chosen data collection tool. The title confirms that it is about business and variables related to business. Business intelligence and its role in strategic business planning seem to be a complex relationship for ordinary people. If questions are asked of them, they might not provide meaningful or reasonable responses. Another prominent variable within the relationship is the business model, along with the role of technology. These variables and their relationship with each other cannot be explored or investigated if responses are obtained from ordinary people. At the same time, executives in a company or a business can also provide biased responses favouring their companies.

Employees can be effective in giving neutral and effective responses, and they have been taken as the target population for this research. Employees working in large corporations in Prague will be contacted through convenience non-probability sampling to get questionnaires

filled (Stratton, 2021). They will inform about the role of business intelligence in strategic business planning. They can inform for one valid reason that they know the impact of management decisions and directions at the ground level. They are the users of business intelligence tools and can also realize the impact of business intelligence. Their responses have helped in getting comprehensive insights which have been explained and analysed in the next results section of the thesis.
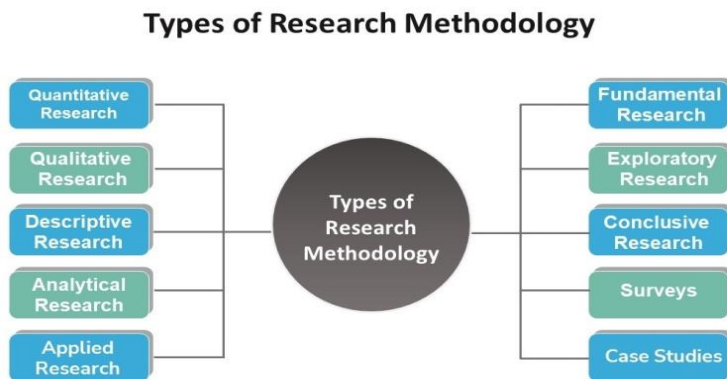
Figure 5 Types of research methods

Source: https://www.educba.com/types-of-research-methodology/

The above figure has simply presented types of research methodology which can be employed in research. It helps to understand and be aware of different options available in methodology.

Analysis methods

Until now, the methodology section has explained with justification the methodology chosen and applied in this thesis. Now, the question arises of the analysis methods employed once data has been collected. It is noted that data collection has been done using primary and secondary sources.

For analysis, the focus is on data collected through secondary sources. It was done at the time of writing the literature review for this research. Analysis of literature collected from secondary sources can be done by making themes. In the analysis section, themes drawn from the literature review have been identified, and findings have been made. However, thematic

analysis has been connected and related to the data collected through primary sources. It is the analysis method in the first place (Williams & Moser, 2019). Secondly, responses collected through primary resources have been analysed using descriptive statistics. The use of mean, median, and mode has been used for the analysis of collected data. The use of bar charts, pie charts, and graphical representations of data has been done for the analysis of data.

Then, the thematic analysis and primary data analysis were combined to draw findings for this research. This analysis method has been used to achieve the research objective, partial goals, and research questions.

For the goal of exploring the role of business intelligence in a business. Primary sources have focused on using awareness, knowledge, and information in understanding business intelligence. Themes from secondary sources have also focused on the role of business intelligence in a business. Then, the focus has turned to strategic business planning concerning the effect of business intelligence on it. The use of technology and the environment of using technology in a business has been asked in questions for primary research.

Measurement and analysis of technology within the organisation have been done by asking the extent of using technology in the organisation or a business. It has been interesting and delicate to know the role of technology in the workplace. It has been done considering business intelligence because technology enables business intelligence. Business intelligence is not possible to use without the effective application of technology. Primary questions on the use of technology and the theme of the importance of technology in an organisation have helped to know the impact of technology in a business.

Research questions, including the role of business intelligence in strategic business planning, the role of technology in business intelligence and strategic business planning, and the effect of advanced technology on an organisation, have been responded to by focusing on primary responses and secondary literature done in the literature review.

Ethical considerations

It is mixed methods research, so the burden of ethical considerations is also two-fold. Being primary research, it has collected data from human participants. All ethical guidelines have been observed and implemented in the research process. First, all respondents have been informed of the purpose and possible outcomes of this research. It has been ensured that this

research will benefit them to know the impact of business intelligence and its role in strategic business planning. This research has not offered them any monetary reward to participate as they have contributed voluntarily. It has been communicated that they can withdraw from the research at any time and can choose not to respond to any of the questions in the questionnaire. For data collection, the storage of primary data has been done carefully and responsibly. No irrelevant individual can have access to primary data collected from participants.

Regarding secondary research, valid sources have been used. Credible academic sources like journal articles, news, industry reports, and books have been used. Analysis of these sources has been done without any biased approach, and it has been ensured that neutral analysis is conducted. Along with these mentioned ethical guidelines, the research has complied with all ethical considerations which should be there in any research.

3. Literature Review

3.1-Business intelligence

Business intelligence has been studied in various research studies, and different definitions and perspectives have been part of this concept or process. It is worth noting if business intelligence is a tool, technique, technology, or methodology. Different definitions have emphasized different aspects of it, which should be reviewed to know the true essence of the concept.

Lonnqvist and Pirttimaki (2006) have regarded business intelligence as a systematic process, as per one of its definitions. This definition focuses on the process that business intelligence adopts, and its proponents focus on the systematic integration of different steps and parts to get things done. It is to mention here that this definition states business intelligence as a systematic process which implies that different processes play their role systematically (Pirttimaki & Lonnqvist, 2006). Their integrated and collective approach helps to get things done, and a business utilizes these processes.

Ranjan (2009) has taken the perspective of methodology that business intelligence is about various methodologies of undertaking different tasks. There is one method of doing things, but one method alone cannot perform. From this perspective, this research has considered business intelligence as a methodology available for a business to do things. It also refers to different ways of doing things and completing them. However, there are other ways to look into

the concept as well. Bose (2009) has termed business intelligence as technology. According to this perspective, business intelligence refers to different technologies used by the business. In other words, different technologies and means are employed to gather and manage plenty of information (Ranjan, 2009). This information is stored, organised, and interpreted using technology as technologies enable this entire process of information management.

Figure 6 Business Intelligence Features

Source: https://ostaraward.com/bi/

The above figure has explained how business intelligence and its different functions work together to bring about results. The basic and central theme of the figure is using data and applying it to attain business objectives and goals.

Elbashir, Collier, and Davern (2008) have also taken this perspective. They have also defined business intelligence through the lens of technologies. The basic argument under this perspective is that technologies enable business intelligence. In another way, it can be said that technologies are required for business intelligence as they enable the processing and organisation of data and information for a business and the environment (Elbashir, Collier, & Davern, 2008).

Business intelligence can be described as a technique, and some researchers have taken this aspect of definition as well. Lim and Lee (2010) have taken this perspective as business

intelligence is a combination of techniques. The technique is simply defined as the way to carry out tasks. In other words, it is the way of doing things that can be done through different ways and procedures. This perspective of definition is understandable as business intelligence guides toward a way of doing things (Lim & Lee, 2010).

All of the above perspectives have the rest part in common there are computer-supported systems involved. Computer-supported systems relate the definition with technologies, but it also indicates the need for these systems to make activities faster and more efficient. These computer-supported systems enable the collection, analysis, and dissemination of information. Otherwise, it is not possible to process or manage the information collected and stored from multiple sources. As a result, collection, analysis, and dissemination of information are employed for undertaking business activities and making effective decisions for the sustainability and success of the business. This is how; the definition of business intelligence covers the above aspects of the definition (Božič & Dimovski, 2019).

Chen et al. (2012) have presented the definition of business intelligence that is more popular and widely used. According to this definition, all components included in the above research studies definition have been included. These components include techniques, systems, methodologies, technologies, practices, and applications under the definition of business intelligence. These components enrich and equip an organisation in analysing information and data for an organisation so that it can better understand the environment. As a result, it enables and equips them to make good and effective decisions (Chen, Chiang, & Storey, 2012).

This is how; business intelligence contributes to value for a business. Processes, activities, and tools employed under it provide resources and expertise to the business. In this perspective, business intelligence has the capacity to contribute to the value and performance of a business.

3.2-Impact of business intelligence on business

The impact of different performance measurement systems on the business is certain. Firms must ensure performance measurement systems so that their performance can be up to the mark. Some of these systems are enterprise systems, IT-based supply chain management, enterprise resource planning, performance measurement systems, and business intelligence is one of them. However, business intelligence is more proactive and flexible in that it relies on information and data. It helps in decision-making and makes the performance of a business more

certain and ensured (Božič & Dimovski, 2019). With the rise in the importance of business intelligence, its impact on a business is worth reviewing in light of previous research studies.

Studies review that business intelligence systems focus on innovative and interactive use of organisational resources. According to this perspective, BI systems are advanced methods of exploitation of information resources. It results in capacity building across the organisation when information becomes an asset of whole systems within the organisation.

Some researchers have pointed toward the innovative and interactive use of information within the organisation and have linked it with the resource-based view. Resource-based view or any view on the integration of resources within the organisation must rely on information sources and their efficient use. Coordination ability is achieved through information systems within the organisation. It leads to strengthening the competitive advantage of a firm because information becomes an asset of the whole organisation and its present systems (Andersson, Dasí, Mudambi, & Pedersen, 2016).

Trieu (2017) has noted that there is an emphasis on studying firm performance resulting from business intelligence. He has concluded this after reviewing many research studies on business intelligence over the period from 2000 to 2015. He has found a lack of impact of business intelligence on specific organisational processes and actions. It has been recommended that business intelligence should be studied from the perspective of understanding how competitive advantage can be achieved through business intelligence systems (Trieu, 2017).
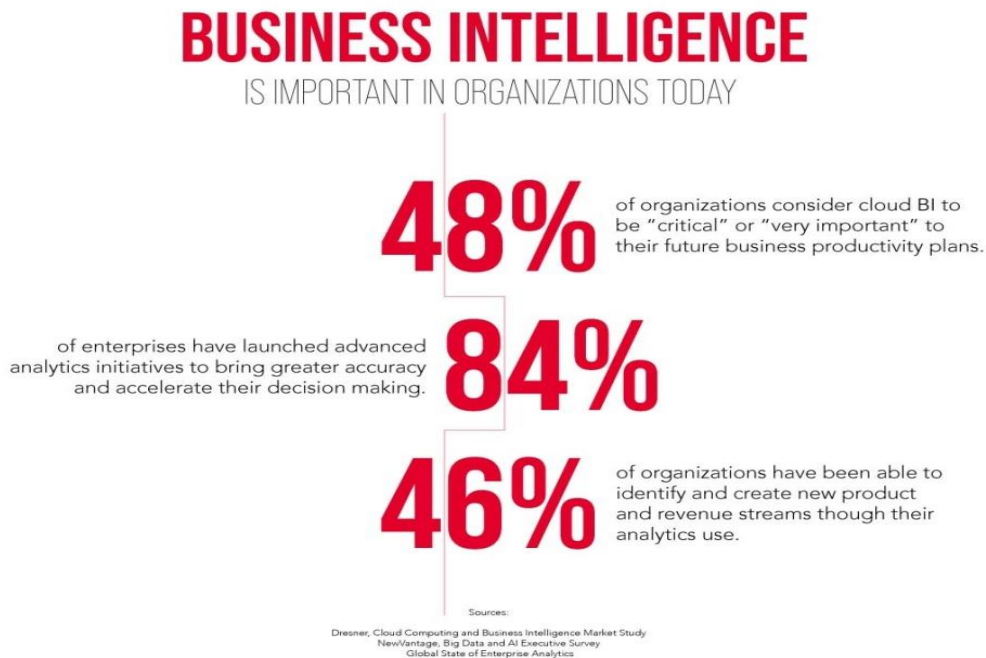
Figure 7 Impact of Business Intelligence using numbers

Source: https://www.impactmybiz.com/blog/future-of-business-intelligence/

As the evidence, the above figure shows the business intelligence and analytics are in use by different organizations. It shows its worthiness and criticality for a business.

Along with the resource-based view, there is a resource orchestration perspective. It also focuses on how to streamline resources and integrate them to meet goals and objectives. Business intelligence systems present plenty of capabilities and strengths to consolidate, organise, link, and analyze data collected and stored from various sources (Martinez-Simarro, Devece, & Llopis-Albert, How information systems strategy moderates the relationship between business strategy and performance, 2015). A business can get data from different sources, including supply chain management, customers, competitors, and market environmental analysis. Under the business intelligence concept, this information or data is shared and communicated at the management level within the organisation to benefit an organisation and its business

(Martinez-Simarro, Devece, & Llopis-Albert, How information systems strategy moderates the relationship between business strategy and performance, 2015).

Research studies have confirmed that business intelligence systems help firms to understand the importance of current operational conditions and marketing performance. It also informs businesses about external factors affecting their business and other prospects. It acts as a resource to make effective and viable decisions, and it improves the planning ability of the business (Billinghurst, Clark, & Lee, 2015). It happens through the coordination of management efforts which are encouraged and promoted by business intelligence systems. BI systems also help to look beyond routine organisational information resources. It presents novel views and strategic organisational insights based on business intelligence (Trieu, 2017). From this view, BI presents the opportunity how to look at things, and this view must not be ordinary or reflect routine.

Shollo and Galliers (2016) have presented their view on the primary purpose of business intelligence systems. According to them, these systems must improve organisational capability by using information and data. Organisational capability is enhanced through the management and organisation of data and information that is available within the organisation. It is the power of BI to manage, collect, and interpret data in a way that leads it to draw insights of strategic importance (Shollo & Galliers, 2016).

The impact of business intelligence on business can be through the heterogeneous use of resources of an organisation. Businesses have resources that are imitable, common, and generalized, while some resources cannot be imitated and are rare and valuable. Resource-based view theory states that an organisation should use its unique and rare resources to build a competitive advantage and unmatched position in the business environment (Chen, Chiang, & Storey, 2012). Business intelligence can assist in this attempt to embed its systems with the overall organisational processes. It can also result in contributing to strategic business planning and management through its ability to coordinate and integrate resources and capabilities (Yiu, Yeung, & Cheng, 2021).

3.3-Business intelligence and business model

The relationship between business intelligence and the business model of a business led to a detailed research procedure. It unveiled the scarcity of research in this field, but business

model innovation takes place through data analytics and big data utilization (Andersson, Dasí, Mudambi, & Pedersen, 2016).
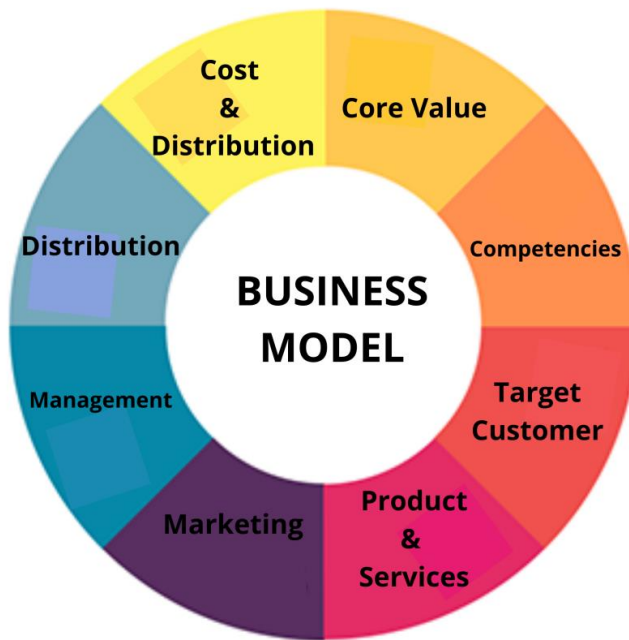
Figure 8 A definition of Business Model

Source: https://alcorfund.com/insight/business-model-vs-business-plan/

The above figure shows how business model comprises of different components and plays its role in bringing revenue and profitability to a business. It involves entire activities running in a business.

The business model is the process and integration of activities carried out to earn revenue. It is the configuration and logic of a business under which a business connects different activities to earn profit. Profit-making ability and efficient processes within an organisation heavily rely on the business model. An organisation chooses a business model based on three prominent objectives or priorities. These objectives include value creation, value proposition, and value capture (Ismail, Khater, & Zaki, 2017). Any process or activity effective for value

generation is valued at the organisational level, and it brings efficiency to business processes as well.

For value creation dimension of the business model, it involves resources and capabilities present in the organisation. A business has unique and rare resources to draw competitiveness; otherwise, it cannot sustain its presence in the competition. Resources are needed to be polished continuously and consistently to make them relevant to the environment. Resources available in an organisation lead to developing Intra and inter-organisational processes so that value can be generated. At this point, business intelligence and data analytics can contribute to value creation (Farooqi & Khozium, 2020).

Studies have noted that business intelligence adds value through a creative process. Resource-based views, the impact of business intelligence, and other perspectives create value because of their reliance on resources and their integration. Business intelligence plays a role in the process of capacity building, where different components and activities within the organisation work in an integrated and coordinated manner.

The second view of the business model is through the value proposition dimension. The value proposition is defined as the announcement of features to be provided with products and services from a business. Research studies note that the value proposition dimension focuses on the range, nature, and features of products and services provided by a business. It defines which type of products and services will be available in the product line of the business (Satyro, Sacomano, Contador, Almeida, & Giannetti, 2017). Business intelligence guides and helps a business in setting the right and required value proposition. The range, nature, and features of products to be offered must reflect customers and the external environment (Satyro, Sacomano, Contador, Almeida, & Giannetti, 2017). Business intelligence systems and their ability to process data and information play an instrumental role in doing this.

The third dimension of the business model is the value capture dimension. In this perspective, the focus is to convert the value into profit or return to the business. The conversion of value into profit must be sustainable, which implies there should be a long-term and certain impact of value proposition on the profit-earning ability of an organisation (Nickols, 2016). The value conversion dimension of the business model is crucial because it is closer to the overall purpose or objective of the business model. It has the aim to earn profit or revenue by combining

the resources and capabilities of the business. Business intelligence can provide data and information in making effective decisions for the business (Trieu, 2017).

Studying business models in relation to business models leads to the study of business analytics and big data. Business intelligence has been defined as computer systems allowing the collection, process, and interpreting of data and information so that a business can make effective decisions. It is through the collection and applying knowledge about customers, competitors, and markets that a business can find new value creation processes. It can translate business activities into revenue through the value creation process. It is the attribute of big data or data analytics that the processing of data takes place efficiently and fast (Chen, Chiang, & Storey, 2012).

Agility in the business model is required because it must respond and refer to the external environment. Agile organisational systems and processes make business models relevant, and it happens through big data and data analytics. A continuous and consistent flow of information and data leads to the processing and management of data and information (Farooqi & Khozium, 2020). The presence of data and information from a diverse range of sources bring dynamism and agility to a business. It affects the business model of an organisation that is effective due to big data, data analytics, and business intelligence. Business intelligence makes data meaningful through processing ability powered by computer systems (Farooqi & Khozium, 2020). The technological perspective of business intelligence contributes to the business model's effectiveness and strength.

3.4-Importance of technology in business

Technology is a very broad field, and innovations due to technology are also very broad and wide-ranging. Technology in relation to business intelligence can be information technology and data analytics. Technology has made processing and operations more efficient and faster because it is based on machinery and equipment made from the application of scientific knowledge (Chen, Chiang, & Storey, 2012). Scientific knowledge is behind the technology that comes into being from experiments and processes of trial and error. Application of scientific knowledge for the practical purpose brings technology that is used in the industry. It is through the application of scientific knowledge that machinery and equipment are developed (Chen & Siau, 2020). Therefore, technology affects the business positively because of its reliance on evidence and scientific knowledge of practical significance.

Figure 9 Technology and Business

Source: https://www.indiamart.com/proddetail/business-technology-management-7865008612.html

The above figure further shows how technology plays its role in business. It has considered as the business technology management where different components of the model work together to play their role. Application of technology is helpful in bringing marketplace agility, product quality and cost improvement, alignment of IT with ths business, and business innovations with technology enablers.

Business intelligence, data analytics, and big data have been the outcome of technology. They are based on scientific knowledge, as computer systems are behind them. These computer systems are developed based on technology, and their processing ability makes them attractive and high performing. Digitization and data analytics are not confined to one area of life, but they have penetrated different areas of life, including business. One of the sources of data is human beings, as they are data generators. Customers, competitors, the environment, and all stakeholders are providers of data and information. This huge amount of data and information have been effective and useful due to technology (Loebbecke & Picot, 2015).

Artificial intelligence is another application of technology that is based on the simulation of human intelligence. This simulation takes place in machines so that they can think like human beings and respond accordingly. These machines are programmed to respond like human beings, and they are used in various areas of a business. Business intelligence, data analytics, and similar areas of a business can exploit artificial intelligence by making data more meaningful and applicable. Technology enables data to be more meaningful and relevant to the context of a business. Learning and problem-solving capabilities prevail due to the application of technology

(Ismail, Khater, & Zaki, 2017). Artificial intelligence makes decision-making and business management more dynamic and interactive. It results in positive outcomes for a business.

Technology helps to exploit resources, and it also guides how resources can be used for maximum return. The resource-based view can be related to technology, and it can make resources unique and rare so that they cannot be imitable. For this purpose, the use of data analytics and digitization can play an instrumental role. Data mining, business intelligence, data management systems, and processing techniques make data rare because a business can employ customized parameters and criteria to get information from the chosen data (Arend, Zhao, Song, & Im, 2017). It results in making the information rare and inimitable even if competitors are also competing in the same market and set of customers. This dynamism and flexibility of user data according to business needs is due to technology that enables data analytics and business intelligence to work effectively (Arend, Zhao, Song, & Im, 2017).

Studying technology in relation to a business should consider information technology and information system strategy. Information technology and information systems go side by side. Research notes that it is a matter of concern for practitioners and researchers regarding the use of information technology for strategic use. The use of information technology must be in light ofthe evolution in technology and changes in business activity. Information technology application for a business requires systematic and effective utilization of resources and technology. It must consider business strategy on information systems so that everything remains on track (Martinez-Simarro, Devece, & Llopis-Albert, 2015). Strategy formulation for information systems requires an alignment between business and information technology.

Data analytics, big data, and business intelligence lead to offer meaningful applications. Information systems and processes within an organisation must coordinate and link with technology. Research studies note that IT alignment with the business objectives of an organisation. It should consider information systems strategy and the department's role in making information systems strategy (Nickols, 2016). According to research studies, information systems require a coordinated and integrated perspective and approach. There should be an integration of aspects like technology, business processes, and human resources (Järvinen, 2014). It gives a broad perspective to information systems. In these information systems, technology plays a very important role because it makes processes fast.

Technology has given rise to a range of opportunities and possibilities for a business. Information technology, digitization, data analytics, and business intelligence are possible through technology. The impact of technology on business is through innovations and transformation. Innovative business management techniques are possible through technology because it enables businesses and organisations to get ahead of others. Competitiveness is derived from technology because technology enables exploiting resources and their utilization for an organisation. Data and information management processes take a business ahead in the competition where technology plays an instrumental role (Pirttimaki & Lonnqvist, 2006). The link of business intelligence with technology is obvious because data processing and analytics can be more efficient through it.

Technology can have various applications, and advanced technologies play a more defining role in the sustainability and success of a business. Research studies have focused on advanced technologies and their impact on the business environment and business prospects.

3.5-Advanced technology and ways the technology affects the business environment and business

Business intelligence is the result of advanced technology or innovation in technology. One advanced technology has been reviewed above, which is data analytics and big data. According to research studies, big data analytics enable access, processing, and drawing findings from big data so that it can be accessible and valuable for a business. It affects a business in numerous ways because big data and extracted insights have multiple perspectives and aspects to help a business in a range of areas (Ahi, Sinkovics, Shildibekov, Sinkovics, & Mehandjiev, 2022).

Some other advanced technologies affecting a business include the Internet of Things, augmented reality, and blockchain. The following research studies focus on these technologies and the way they affect a business.
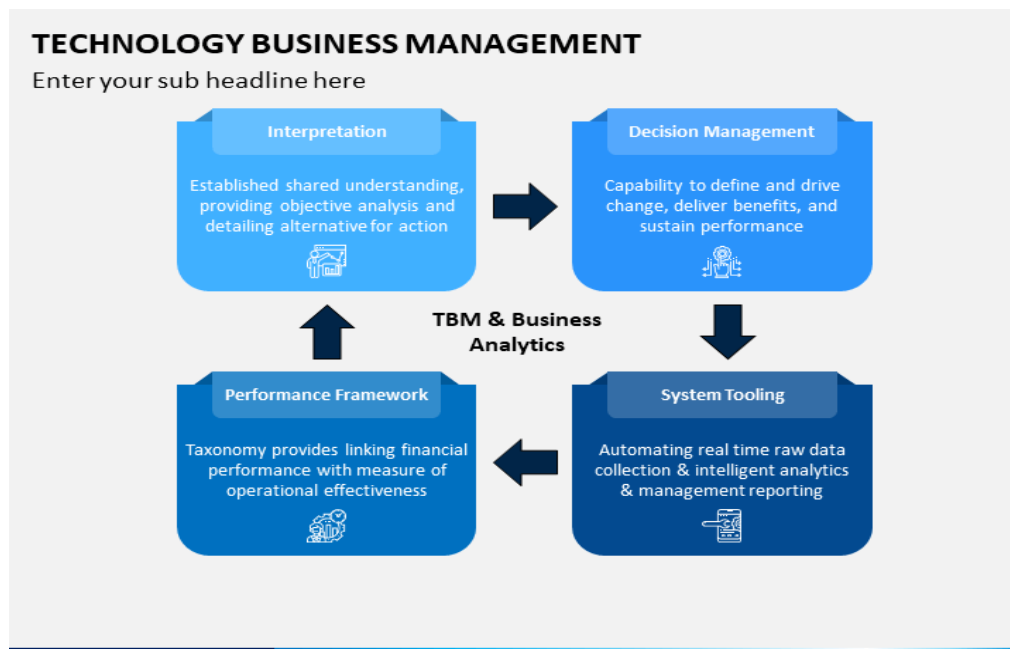
Figure 10 Technology in Business Management

Source: https://gulpin-hyposcope-overoxidizing.click/v1/redirect?

For application of technology in business, the above figure has shown how technology business management takes place. It is an integrated framework to link various processes and operations into one framework called technology business management. This is how; technology is applied in an integrated manner.

Internet of Things is an advanced technology that is also called a system of interrelated computing devices. Other machines and devices might include digital machines, objects, animals, and any object that can be part of the system of interrelated devices and machines (Haldorai, Ramu, & Khan, 2020). Due to the capability of the interrelated nature of devices and machines, this advanced technology has become more agile and flexible in guiding a business (Ismail, Khater, & Zaki, 2017). Interrelation between devices and various entities through the power of advanced technology brings more options and opportunities available for a business. It drives more success and bright prospects for a business and organisations (Ismail, Khater, & Zaki, 2017). Internet of Things also helps a business to develop its strategic presence and significance based on the power of advanced technologies.

Blockchain is another advanced technology that allows businesses to exploit opportunities coming from a distributed database or a ledger. It is also the power of advanced

technology that benefits organisations and businesses strategically. Blockchain technology works in a shared and distributed database format that allows participants to store information electronically. The information storing process is in digital format, and it makes transactions secure despite being decentralized (Sunarya, Williams, Khoirunisa, Bein, & Sari, 2021). It has been possible only through technology that has maintained accountability and checks on all participants of blockchain technology. Without the intervention of a third-party, technology plays a more neutral and efficient role for a business. It also delivers and shares data and information across participants using the technology. Therefore, it is also strategically viable and useful for a business because of the range of benefits and value (Sunarya, Williams, Khoirunisa, Bein, & Sari, 2021).

Augmented reality is another advanced technology. Research has found its significance for businesses as it provides an interactive experience of objects to viewers. The real-world environment can be enhanced and made clear using this advanced technology. Its application in the furniture industry has been studied, where the interior designing idea can be tested practically using this technology. It works through computer-generated perceptual information where the viewer can view an image or an object like it is in a real-time environment (Billinghurst, Clark, & Lee, 2015).

Business intelligence can work through these advanced technologies. Studies have studied the relationship between business intelligence and blockchain, artificial intelligence, and the internet of things. Business intelligence is a more powerful area to affect a business, and any advanced technology can be more effective using it. Data analytics and the ability to process big data through technology can make business intelligence more effective and useful (Ranjan, 2009). Strategic planning can also enhance by applying these technologies together in a business.

The following head reviews strategic business planning that can link with these technologies in making decisions and managing businesses and organisations effectively. The rest of the literature review section focuses on strategic business planning and its relationship with business intelligence.

3.6-Strategic business planning

Different research studies have taken this topic to study strategic management and decision-making. Strategic management has different components to finally guide a business in

the competitive environment. Strategic business planning comes at the initial stages of strategic management. Strategic management is the process of guiding a business by setting its direction, scope, and approach (Grab, Olaru, & Gavril, 2019). Strategic implies that the focus into the coming several years because strategic management does not cover a few months or a year. Researchers have noted that businesses focusing on strategic management are more stable and successful than those which do not undertake strategic management. Within strategic management, strategic business planning is crucial because it is the stage that is going to be followed in the rest of the strategic management process (Grab, Olaru, & Gavril, 2019).

Planning is one of the management components which focuses on the decision-making process about the future. Planning involves setting direction, choosing a position, and setting objectives for an issue (Pirttimaki & Lonnqvist, 2006). Businesses engage in planning to set direction and mission for the future. Planning as the management component is employed at the general level in an organisation. However, strategic planning is aligned with the strategic management process (Anh & Tien, 2021). The strategic planning process determines the strategic position of a business. Positioning for a business is crucial as it projects its offerings to the market and customer in light of positioning strategy. Strategic positioning is the step that positions a business for the coming period that starts a series of planning processes of operational significance (Anh & Tien, 2021).

The strategic planning process involves setting objectives to achieve in the future of the business. The importance of objectives is there for a business, and it can be specified as a particular product or a service. Objectives can be there specific to a business unit, and they can be linked with a product portfolio as well. The strategic planning process works in line with the strategic vision and position. For this purpose, it prioritizes and sets objectives for the business. Prioritization of objectives for a business is necessary because a selected set of objectives can guide a business. It is the process of choosing the most important aspect of the planning as part of the strategic management process (Arend, Zhao, Song, & Im, 2017).

The strategic planning process follows a strategic position and objectives-setting process. The development of a strategic plan is the central objective or purpose of the strategic planning process. A strategic plan consists of activities and steps needed to follow the strategic position and set objectives. A strategic plan looks into internal and external strengths to make decisions (Chen, Chiang, & Storey, 2012). Traditionally, a strategic plan focuses on the profitability of a

business to increase shareholder value. In contemporary business practices, a strategic plan takes the environment and stakeholders into view. Sustainability, green practices, and stakeholder orientation are also part of the strategic plan. A business pursues its objectives and milestones by taking care of a broader environmental approach (Morden, 2016).

Execution and management of planning is a valuable part of strategic management. However, in the planning process, a business sets the criteria for the management of a strategic plan and the way it will be executed. Roles and responsibilities are set, and a business can also consider new hiring and recruitment to manage the strategic plan (Andersson, Dasí, Mudambi, & Pedersen, 2016). Researchers have identified and noted considerable changes taking place in organisations engaged in the execution and management of the plan. In the planning process, data analytics, artificial intelligence, business intelligence, and other innovative methods are employed to make realistic assumptions and goals. The application of technology is at the highest level in the execution and management of the plan, where the focus is to make doable and realistic assumptions and projections (Nickols, 2016).

The strategic planning process keeps reviewing and revising the plan. The part of reviewing and revising the plan in the strategic planning process seeks to have a perfect form of policy for a business. The strategic planning process covers many years to come, and it involves various internal and external factors. A business utilizes a variety of processes and technologies to review and revise the plan (Kachaner, King, & Stewart, 2016). The strategic planning process finalizes after following these steps. However, its link with business intelligence is obvious because of its planning nature. The following head in the literature review includes studies that have studied this relationship. The planning aspect of this process can benefit from business intelligence because it can make it certain and predictable through data analytics and other analytical tools (Kachaner, King, & Stewart, 2016).

3.7-Business intelligence and strategic business planning

Business intelligence is a strategic framework because of its strategic significance. Strategic business planning can benefit from business intelligence because of its ability of data analytics and big data utilization. The importance of business intelligence is there in the formulation and execution of business strategy. Research confirms that it is an essential process available for a business to use rich information and data for the organisation. Business managers

and end users can convert huge amounts o data into an organised and structured form to draw insights and information about the market and business. It results in huge capabilities derived through business intelligence which managers and end users can exploit. Strategic business planning is a process that can be comprehensive and valuable through the contribution of data analytics and information processing (Ciampi, Demi, Magrini, Marzi, & Papa, 2021).

3.8-Technologies and strategic differentiators through business intelligence

A basic essence of business intelligence is the application of technology. Technologies employed under business intelligence coordinate projects and schedules to connect with components of the strategy of a business. Business intelligence technologies develop a roadmap through which technologies and corporate strategy come together. It also aligns with the strategic planning process that these technologies allow for forecasting and planning about the future (Romero, Andrés, Ortiz, Khalaf, & Prado, 2021). Internal and external data require management and processing. Business intelligence comes as the analytical tool to manage and process this data so that certainty can be restored, and appropriate knowledge can be created. It results in an effective decision-making process that helps an organisation extraordinarily (Romero, Andrés, Ortiz, Khalaf, & Prado, 2021).

Business intelligence contributes to strategic business planning based on its ability to link operational data with analytical tools. It makes available data and information strategically important and worthwhile, and it causes strategic differentiation and significance for a business. Researchers have termed business intelligence as a competitive differentiator that differentiates how to give a distinguished place to a business. The planning process strategically is complex, and the support from this competitive differentiator contributes to the planning process (Fink, Yogev, & Even, 2017).

Strategy formulation and implementation processes are dynamic, and they must respond to varying and emerging needs of a business. It leads businesses to address information technology's role in strategic management, where technologies contribute to dynamism and agility in business processes and strategic planning activities (Chen & Siau, 2020). Strategic management theories, processes, and concepts include the strategic planning component prominently. These theories and processes aim at guiding a business towards competitiveness and gaining a competitive advantage. One of the strategic models was presented by Porter, who

presented the five forces model of competition. He also presented the model for value chain analysis and generic competitive strategies (Satyro, Sacomano, Contador, Almeida, & Giannetti, 2017). Strategic analysis models, including these mentioned ones, help to offer competitiveness for a business. These models do not confine their effectiveness to any specific part of strategic management. Instead, they start guiding the whole strategic management process starting from strategic business planning.

3.9-IT alignment with the business strategy and strategic business planning

Flexible organisations have an excellent alignment of their IT processes with business strategy. Information technology must be in line with the overall business strategy so that there is cohesion between strategy and technological processes. It does so due to the accelerated rate of innovation and changes in technological factors that an organisation evolves in relation to the market. Due to rapid changes and enhanced innovative solutions, a business can bring new products faster than usual and reduce the life cycles of products. Strategic business planning gets market-oriented, resulting from innovation because the business relies on competitive advantage. Any researchers have taken the relationship between IT alignment and business strategy. They have highlighted the relationship as it is strategically useful for a business. As a result, researchers have reached the strategic alignment model (Järvinen, 2014).

The strategic alignment model is one of the models that explicitly and clearly link business strategies and information technology strategies. The combination of both strategies brings the alignment that draws competitiveness for an organisation. It keeps the organisation ahead of its competitors because of the salient and inimitable features of its business model (Ranjan, 2009).
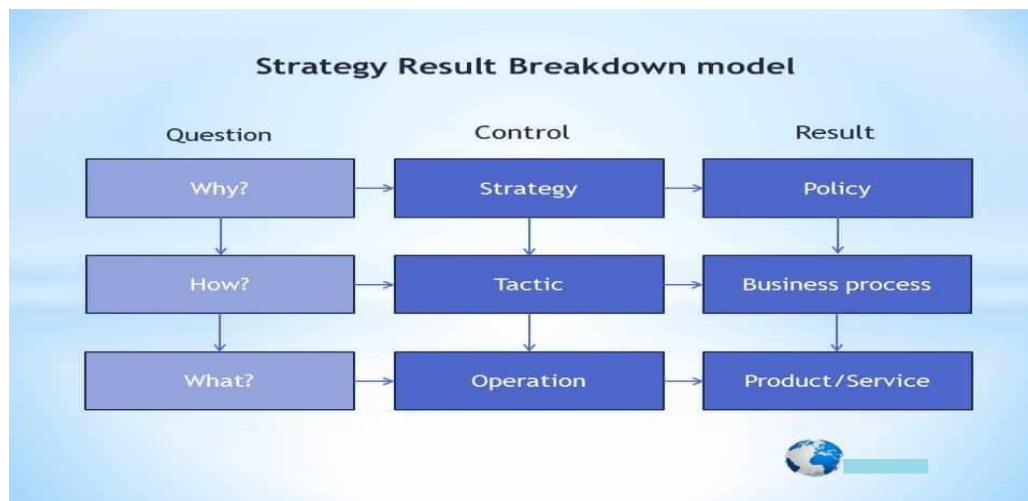
Figure 11 Strategic alignment with strategic planning

Source: https://en.itpedia.nl/2022/01/02/business-strategie-alignment-en-de-geheimen-van-strategische-planning/

The above figure shows that there must be a link between control measures and results so that business strategy works as per set objectives. According to the figure, strategy, tactic, and operation provide control measures which bring about policy, business process, and products and services. Alignment of information technology in these steps can be of great importance. It also helps to understand the dynamic and multi-perspective nature of business planning and strategic planning.

Researchers have studied the strategic alignment model concerning the strategic fit. Strategic fit recognizes the need to position a business in an environment where growth can be possible. Strategic fit also looks into internal operations and processes within the organisation to ensure functional integration and the development of internal structural systems. In the presence of strategic fit, a business can execute a viable business strategy of a business. It also requires alignment of business strategy and business planning strategically. IT alignment is linked with business intelligence because it is the combination of computer systems to enable business strategy and strategic planning. It ensures the formulation of IT strategy, but it does not confine to it merely (Wu, Straub, & Liang, 2015). It must look into external factors so that environmental uncertainty can be avoided. This uncertainty can be lifted by gathering more data and information about the strategic fit between external and internal affairs (Wu, Straub, & Liang, 2015). This is how; alignment between IT, business intelligence, and strategic business planning

makes a business flexible and dynamic because it responds to internal and external factors simultaneously.

3.10-Dynamic Capabilities and Strategic Business Planning

Dynamic capability's view is necessary for having strategic business planning successful and effective. Dynamic capabilities come into being when there is an alignment of information technology with strategic planning and organisational resources. It is worth making dynamic capabilities part of strategic management through strategic fit and alignment of the organisational strategy with information technology. Dynamic capabilities have the essence of dynamism that comes into being when a business aligns its internal environment and resources with the external environment and opportunities. It aligns with the environmental changes, and it ensures the sustainability and competitive advantage of the business (Lim & Lee, 2010).
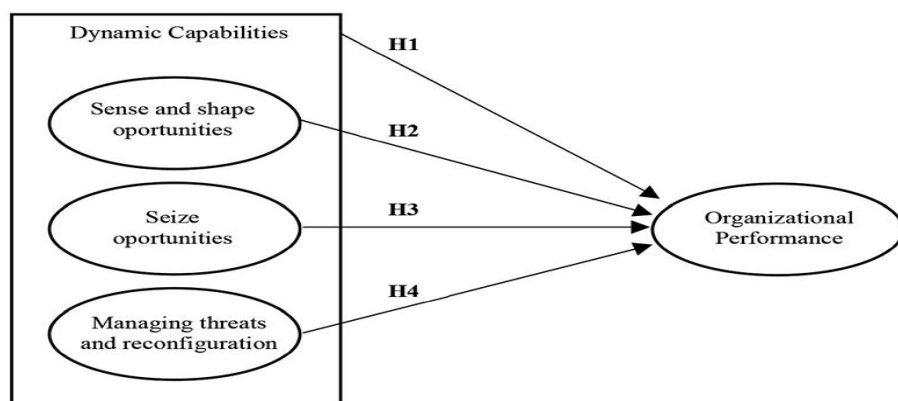
Figure 12 A model of dynamic capabilities

Source: https://www.redalyc.org/journal/1230/123062398003/html/

The above figure shows how different variables affect organizational performance under the model of dynamic capabilities. These capabilities affect organizational performance because of their ability to contribute to its functions.

It results in reviewing the business strategy if it is aligned with new modes of competitive advantage. A business cannot rely on outdated business practices and acquiring new modes of competitive advantage is highly relevant and necessary. Therefore, the dynamic capability's view is to remain actively observing internal resources and external environmental opportunities. Ensuring dynamism requires a firm to continuously search for opportunities and options by

finding the alignment between the internal and external environment. It also requires innovation and adaptability of organisational resources and capabilities so that a competitive advantage can be developed for the differentiation and sustainability of the business (Farooqi & Khozium, 2020).

3.11-The role of Business Intelligence

Flexible organisations can be developed with the help of business intelligence. Flexible organisation and dynamic capabilities are possible through the alignment of internal and external resources. Environmental factors must align with organisational expertise and resources. It is possible through business intelligence that manages and deals with data and information through using technology and computer systems. It results in differentiation and competitive advantage for the organisation under which new processes and solutions come into being, and an organisation exploits these resources to remain ahead of the competition (Alnoukari, Razouk, & Hanano, 2016).

Research has noted that organisations have many valid reasons and justifications for adopting business intelligence. One of its applications is in strategic business planning, as strategy building and development are possible through business intelligence (Pirttimaki & Lonnqvist, 2006). Organisations can ensure data management and alignment of external and internal factors in a manner that can contribute to organisational strategy. Adoption and application of business intelligence can help in responding to corporate strategies and objectives. It is due to the connection that business intelligence develops between the resources and capabilities of the business (Rikhardsson & Yigitbasioglu, 2018).

Business intelligence dashboards contain all important information and data that can ensure strategic management with information focusing on strategic planning. These dashboards contain strategic information on-trend production evolution, historical trends and data, forecast about the future, and market segmentation. These aspects of information dashboards show that business intelligence provides rich information sources to let businesses make wise decisions (Caseiro & Coelho, 2019). Data mining and analytics are the application of business intelligence to develop and progress the business strategy of a business in the future. It is up to businesses and organisations to know which information is relevant and useful for them (Nickols, 2016). Long term strategy of a business is part of strategic planning, which is about long-term planning.

In essence, business intelligence is a capacity-building procedure where a strategic decision-making process is possible through it. Strategic business planning is possible through business intelligence as a business informs and provides data in the planning phase of strategy development (Caseiro & Coelho, 2019)t. The benefit of strategic business planning resulting from business intelligence is the competitiveness of the organisation. Competitive advantage is the desired outcome through strategic business planning. It is possible through attributes and the capacity-building approach of business intelligence (Caseiro & Coelho, 2019).

3.12-Conceptual Framework

The literature review above has studied relationships between various variables. The main variable is the business intelligence that is playing its role in strategic business planning. This role is through its components and practices, which make the planning process more effective and more convenient (Caseiro& Coelho, 2019). Other variables also join the discussion on variables like the role of technology and the relationship of business intelligence with the business model. This is how; technology and the way it affects businesses have been reviewed. The literature review reveals that business intelligence has an important role in the strategic business planning process through the use of computer systems and technologies. It happens through the use of advanced methods and technologies (Božič & Dimovski, 2019). The definition of business intelligence is very broad that includes tools, methodologies, tasks, techniques, technologies, and other means to enable storing, spreading, and applying data and information in a business. Therefore, this literature review has studied various factors in an integrated manner to study the relationship between variables.

4. Results, Findings and Discussion

4.1-Results and Findings

The methodology section has explained in detail that the thesis adopts a mixed methods approach. The use of qualitative research is through the utilization of literature on variables. For quantitative research, the following results have been obtained from 100 participants, and this part of the section describes obtained results. Later, the discussion and analysis will be followed along with the review of the literature.

It is worth mentioning the research aim here. The thesis has focused on exploring the relationship between variables. It explores the role of business intelligence in strategic business planning. In so doing, it considers the role of technology and its application. Some of the questions in the questionnaire focus on the role of technology as well.
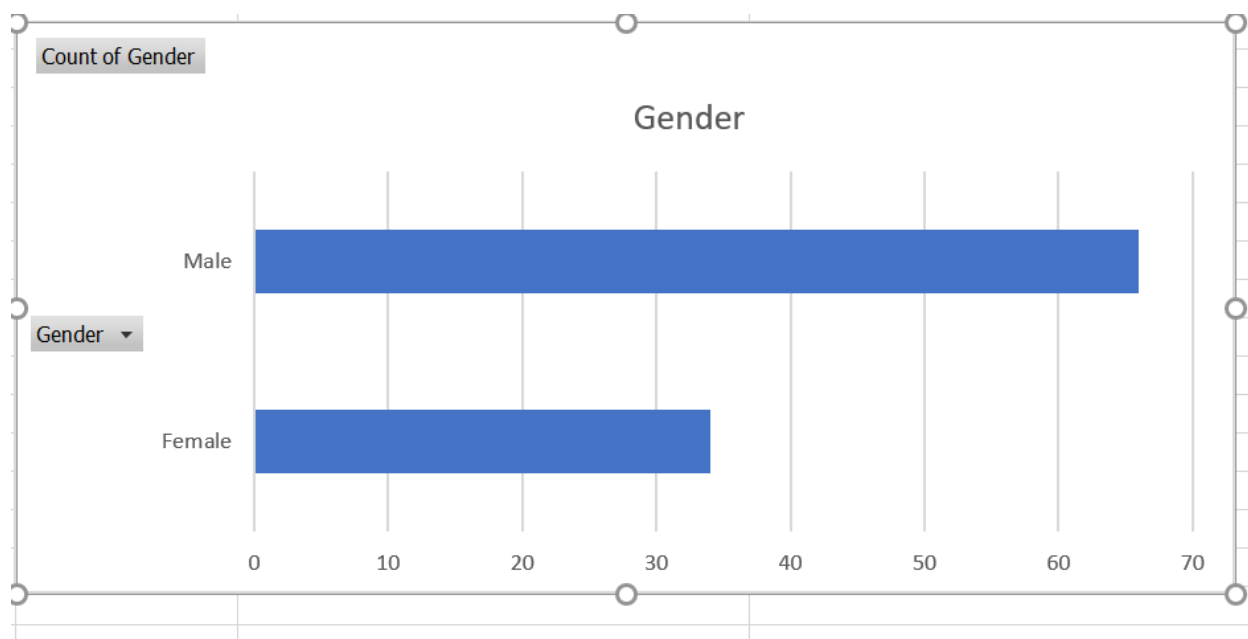

Figure 13 Gender

It is very important to discuss the gender of respondents in this thesis. One-third of the total respondents in this research are female, and two-thirds of the total are male. It implies that female respondents make up a considerable part of all respondents who participated in this research.

Count of Age

Age

Age	
61 years and above	
51-60 years	
41-50 years	
31-40 years	
20-30 years	
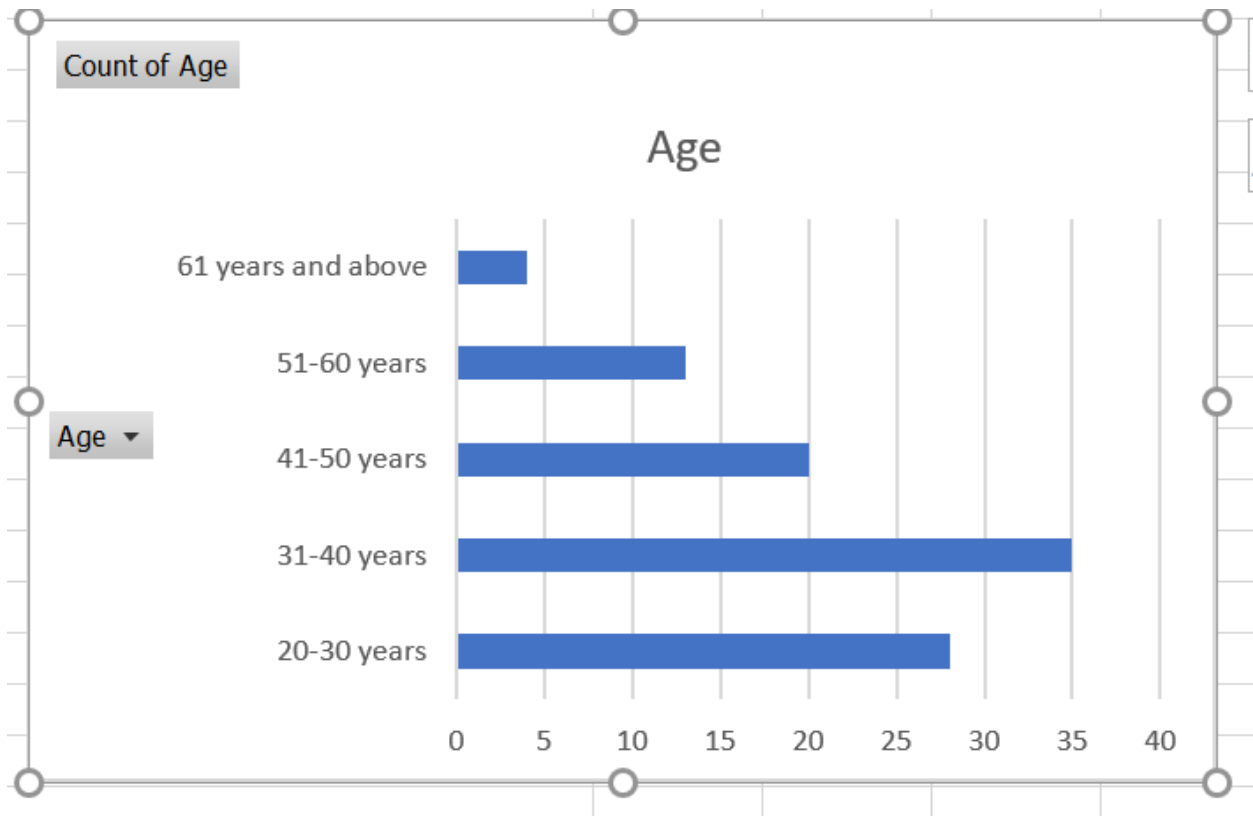
Figure 14 Age

Age is another important demographic variable that helps to know the context and position of respondents. Looking into the age of all respondents reveals that they belong to different age groups. The largest age group is between 31 years to 40 years which makes up 35 percent of all respondents. The second largest group is respondents between 20 to 30 years, and it makes up 28 percent of the total. The third largest group has 20 percent representation, and it includes respondents in their 41 to 50 years. Respondents in their 51 to 60 years age bracket make up 13 percent of the total number of respondents. It makes a considerable number of respondents. Only 3 percent of the total respondents belong to the age group of 61 years and above. It implies that the majority of respondents belong to the 20 to 50 years age bracket. However, older employees also have a considerable representation, making the sample very

representative   in   terms   of   age.
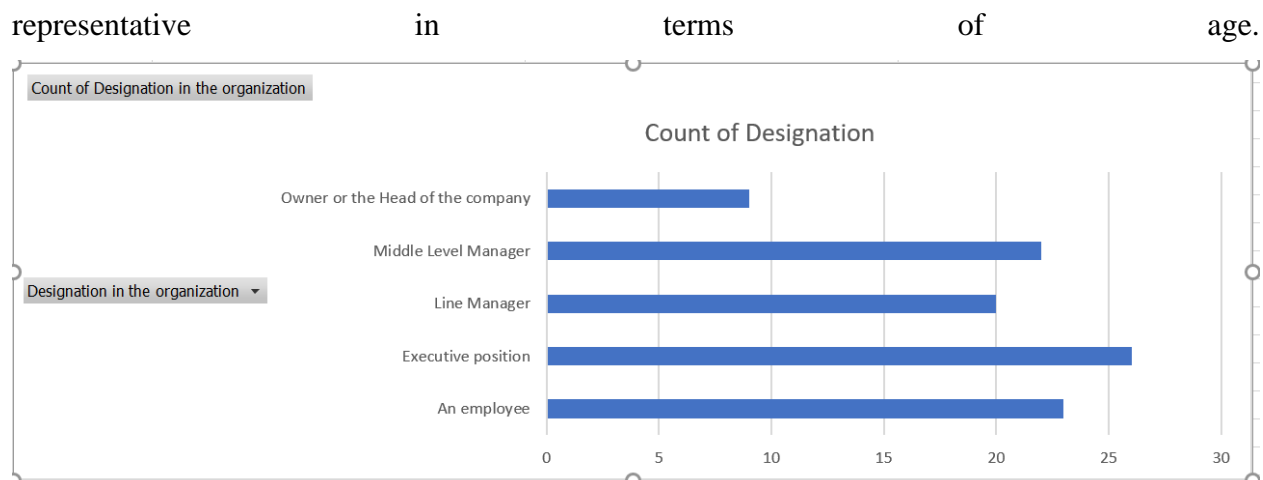
Figure 15 Designation in the organisation

Studying employees can have very important demographic factors, and the above two are important in that direction. One must know the gender and age of respondents because these demographic variables play a very important role. Similarly, it is also very important to know the designation of employees in the organisation. It is a very pleasant fact to know that all options have generated considerable responses that make the sample representative. A very interesting and useful thing revealed is that respondents being an employee and in executive positions make up the two largest segments in the sample. Twenty-six percent of all respondents hold an executive position, while 23 percent of the total are merely an employee. Line managers make up 20 percent, and middle-level managers make up 22 percent of the total number of respondents. There is 9 percent of respondents were an owner or heads of a company. Concerning the designation as the demographic variable, all options have got strong and considerable representation.
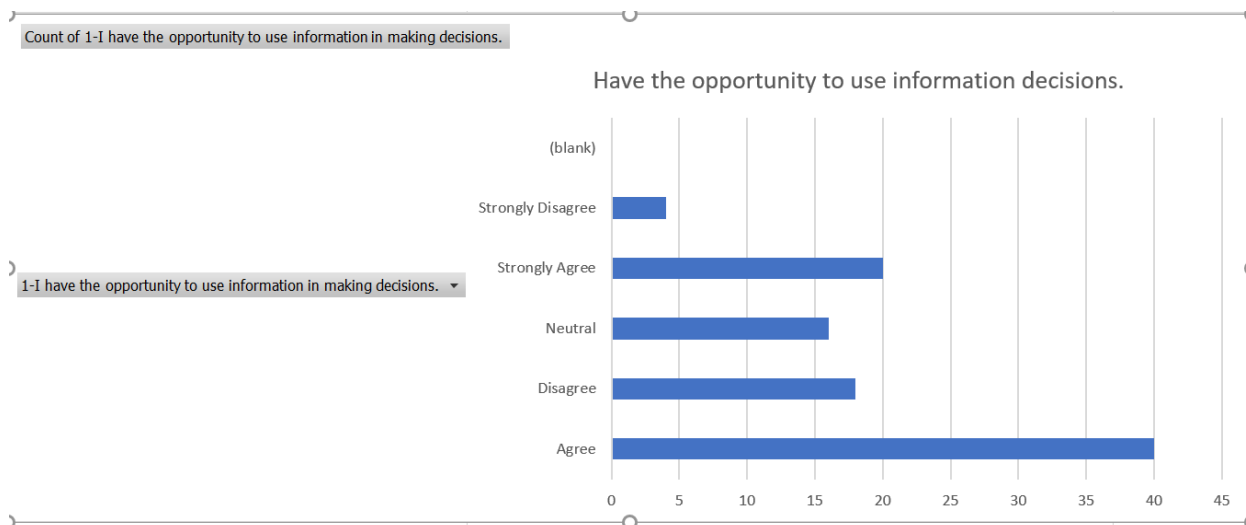
Figure 16 I have the opportunity to use information in making decisions.

After three demographic variables, it is the first question pursues the aim of exploring variables in the relationship. The relationship is between business intelligence and strategic business planning. Business intelligence is related to information and making decisions using information. Of the total of 100, 98 respondents have responded to this statement, and 40.8 percent have agreed. From all responses, 20.4 percent strongly agreed. However, 18.4 per cent disagreed, and 16.3 percent remained neutral to the statement. Looking into responses is mixed though the majority of respondents have agreed on having an opportunity to use information in making decisions. It shows that respondents have different perspectives and aspects related to the use of information in making decisions.

Figure 17 My organisation offers technology-intensive resources to complete tasks

The second statement asks about resources provided by the organisation to enable respondents to carry out tasks. To be specific, it has asked if their respective organisations or companies provide technology-intensive resources. Responses are mixed, with an overwhelming majority agreeing with 45 percent of all respondents and strongly agreeing with 20 percent of all

respondents. Eleven percent of all respondents disagreed, and 18 per cent were neutral. It is worth noting that six per cent strongly disagreed that their organisation provides technology-intensive resources to complete tasks. Though agreeing responses are in the clear majority, responses are mixed. Respondents have chosen all options, and every option matters in this case.
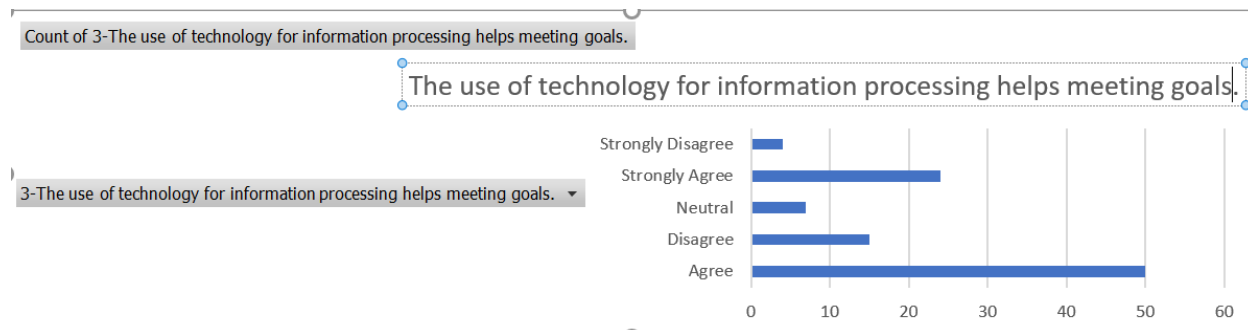
Figure 18 The use of technology for information processing helps meeting goals.

The third statement further links the use of technology in meeting goals. It is crucial to use technology in meeting goals because of the link being studied between business intelligence and strategic business planning. Fifty per cent of all respondents agreed, and 24 per cent strongly agreed that the technology used for information processing helps meet goals. Fifteen per cent of the total number of respondents disagreed, and seven per cent were neutral. There are a few strongly disagreeing responses as well. Three-quarters of all responses agree and strongly agree, which indicates the importance of technology in information processing. Further, it reveals that information processing through using technology helps meet goals.
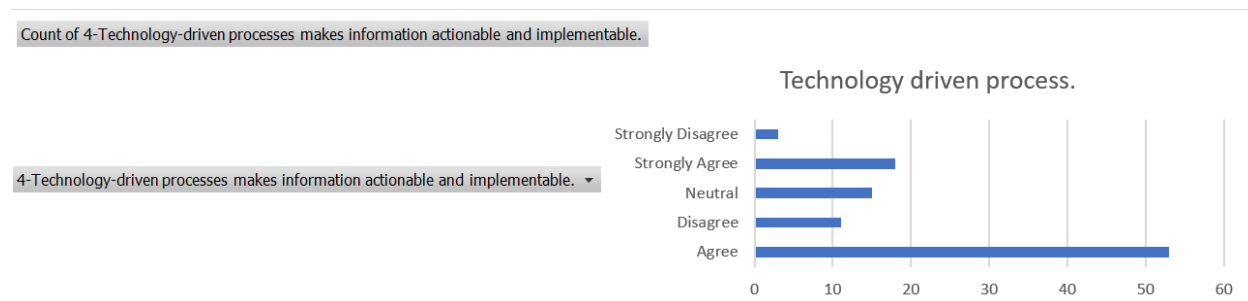
Figure 19 Technology-driven processes makes information actionable and implementable.

The fourth statement takes another aspect of technology-intensive processes and functions within the company. This aspect is about making information actionable and implementable due to technology-driven processes. It is very much relevant to the variable of business intelligence that uses technology to make things happen. On the other hand, with information being actionable and implementable, it is useful for strategic business planning.

More than half of all respondents, 53 per cent, agree with the statement, and 18 per cent of all respondents strongly agree with the statement. However, neutral responses are 15 per cent of the total, and 11 per cent disagree with the statement. A few of all respondents strongly disagree with the statement as well. Though agreeing responses are in the majority, overall results are mixed.

Figure 20 My organisation makes decisions based on business intelligence.

In this statement, the business intelligence term has been used clearly, and respondents were informed about the definition and purpose of this term. This statement asks if the respective companies and organisations of respondents make decisions based on business intelligence. Of the total number of respondents, 43 per cent agreed, and 21 per cent strongly agreed with the statement. However, this statement has produced mixed responses, which might be the reason for using the business intelligence term in it. Sixteen per cent of respondents were neutral, and 14 per cent of the total disagreed with the statement. There is six per cent of respondents opted to strongly disagree with the statement. It implies that these responses must be considered before making clear conclusions and views on the use of business intelligence.

Count of 6-Strategic business planning requires information to be effective

Strategic business planning requires informmation to be effective

Figure 21 Strategic business planning requires information to be effective.

The sixth statement has been straightforward about the strategic business planning term if it requires information to be effective. It might be obvious to realize that strategic business planning must need information. It is not only necessary to make it happen but also for its effectiveness. Neutral responses to this statement are 17 per cent of the total and 11 per cent of the total have disagreed with a few have strongly disagreed with the statement. There is 47 per cent of the total have agreed, and 21 per cent of the total have strongly agreed with the statement. There needs to work and know more about neutral and disagreeing responses. Their perspective can be important to know why they are not certain about the use of information for strategic business planning.

Count of 7-Information processing based on technology facilitates strategic business planning.

Information processing based on technology facilitates strategic business planning
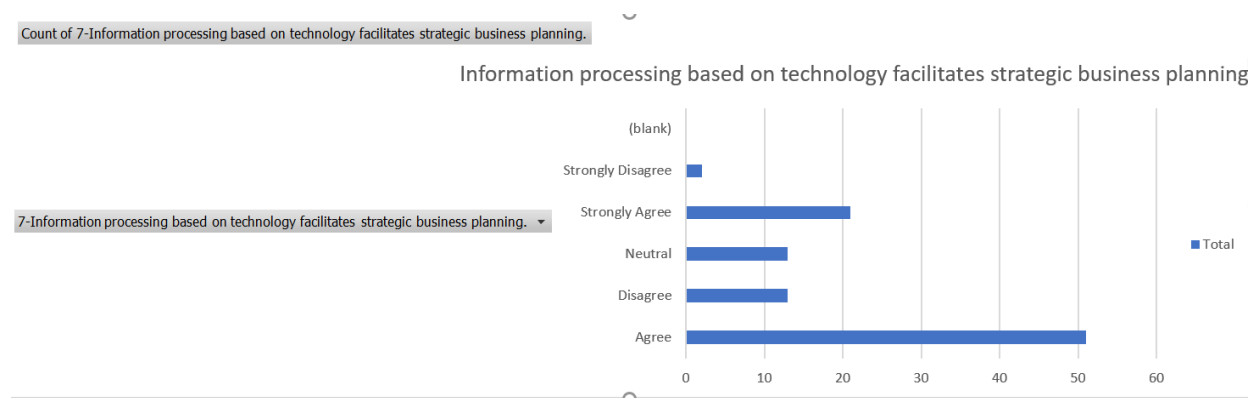
Figure 22 Information processing based on technology facilitates strategic business planning.

The seventh statement links the information process based on technology and its link with strategic business planning. Out of the total number of respondents, 51 per cent agreed, and 21 per cent strongly agreed with the statement. There are very few who strongly disagree with the statement, but 13 per cent of the total disagrees with the statement. The same at 13 per cent have remained neutral in response to the statement. Responses are mixed, but the trend of

overwhelming agreeing responses has been there in this statement as well. It implies that technology-based information processing is crucial for strategic business planning.
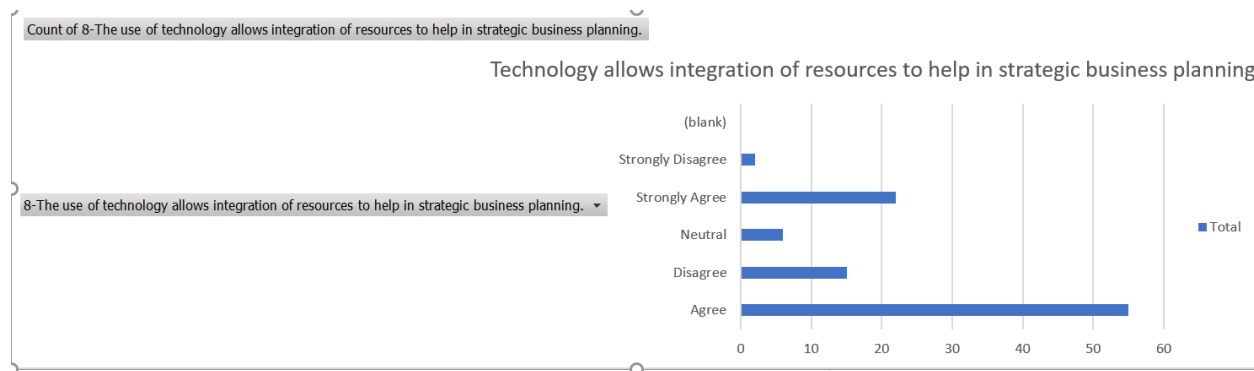
Figure 23 The use of technology allows integration of resources to help in strategic business planning.

Integration of resources is strategically important, and it is one of the main objectives of strategic business planning as well. Integration of resources is possible through technology, and once it is done, it enables strategic business planning. Of the total respondents, 55 per cent agreed, and 22 per cent strongly agreed with the statement. There is 15 per cent of all respondents have opted to be disagreeing with the statement. Neutral and strongly disagreeing responses are not considered, but they also exist. More than three-quarters of respondents agreed with the statement, but 15 per cent of all respondents disagreed with the statement. It indicates that an overwhelming majority of respondents have favoured the use of technology to integrate resources within the organisation. As a result, it helps in strategic business planning. This response is important to learn the role of technology and strategic business planning for the integration of resources. Favourable results confirm the importance of technology and its role in strategic business planning.

Figure 24 Strategic business planning has its role for information utilization.

Information utilization is the need that triggers other processes to initiate and make their way. Strategic business planning has its role in information utilization, but here the purpose is to know the perspective of respondents. Respondents in this study have different designations, from employees and line managers to executives and owners of th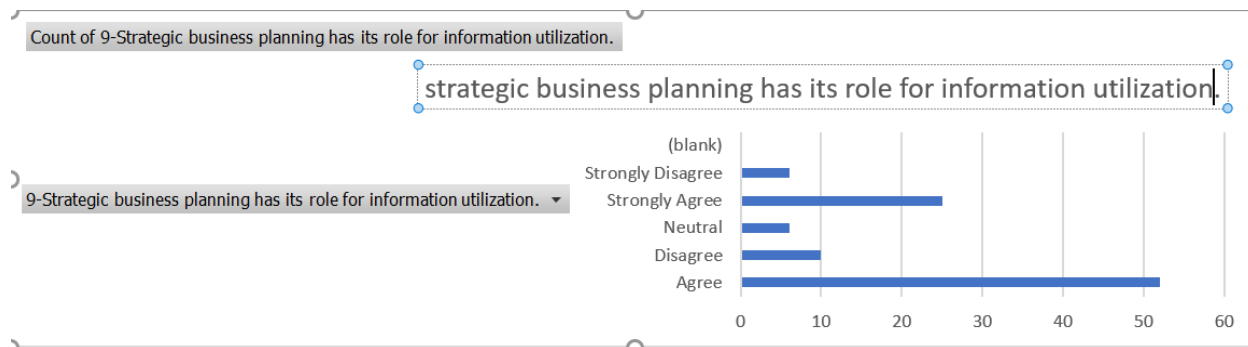eir respective organisations. In this context, this statement asks if strategic business planning has its role in information utilization. In other words, strategic business planning addresses the need for information utilization. Of the total, 52.5 per cent of total respondents agree, and 25.3 per cent of all respondents strongly agree with the statement. It makes up more than 77 per cent of all respondents. It makes other options less influential as they are minimal. Information utilization and strategic business planning have found a relationship through this response. In the previous statement, the role of technology has been established in light of the views of all respondents.

Count of 10-My organization allows participation of all employees in strategic business planning.

Organization allows participation of all employees in strategic planning.

10-My organization allows participation of all employees in strategic business planning. ▾
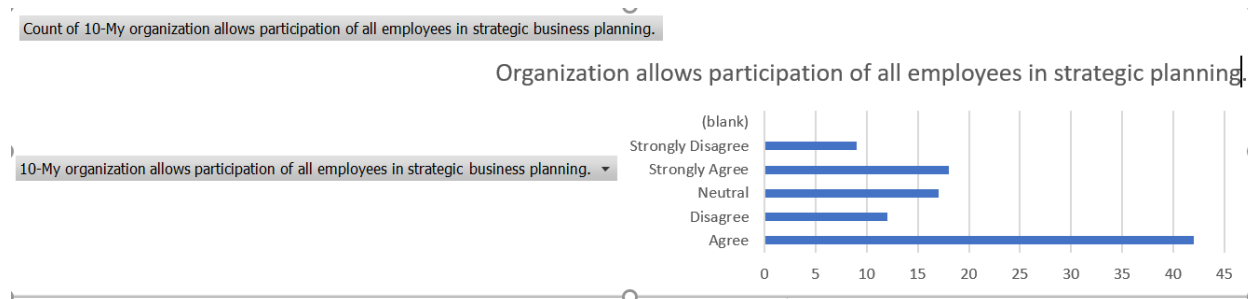
Figure 25 My organisation allows participation of all employees in strategic business planning.

The last statement has taken the employee's perspective if they are allowed in the strategic business planning process. Considerably mixed responses have made these responses concerning. For instance, 9.2 per cent of all respondents strongly disagree with the statement, and 12.2 per cent of the total disagree with the statement. It means that more than one-fifth of all respondents are of the view that they are not allowed to participate in strategic business planning by their organisations. There were 17.3 per cent of all respondents on the neutral side. Almost 43 per cent agreed, and 18 per cent strongly agreed with the statement. Mixed responses note that organisations do not allow participation of employees though they recognize the link of technology with information utilization and strategic business planning.

The above responses revealed that technology has its role in strategic business planning. It is also an integral part of business intelligence that has a direct link with strategic business planning. Business intelligence has an integral link with technology, and it has been established as being closely linked with strategic business planning.

4.2-Discussion

This research has one main objective, which is to explore the role of business intelligence in strategic business planning. Pursuing this main objective, the methodology has decided to use qualitative and quantitative research methodology. Qualitative research is based on a literature review of these variables and their different aspects. The quantitative methodology has been adopted by taking responses from employees and executives working in different companies in Prague. Being the mixed methods research, the following discussion section discusses the literature on variables. Then, it relates their responses to the literature reviewed in the above section.

The discussion follows a pattern. It discusses relevant parts of the literature review. Then, it connects the discussion of the literature review with responses collected from respondents. Thus, it can reveal if primary responses are in line with the broader literature review. The literature will also be guided on how to establish the link between business intelligence and strategic business planning.

4.2.1-Business intelligence and the use of technologies

There are many research studies in the literature review taking business intelligence and the use of technologies. Among different research studies on the topic, some of them have been included in this section to link business intelligence and the use of technologies. One of the research studies in the literature review is from Elbashir, Collier, and Davern (2008). They have taken this perspective after defining business intelligence through the lens of technologies. It is worth noting the link of technologies with business intelligence. According to this research, the main argument is the enabling role of technologies in business intelligence.

From another perspective, technology is an essential element of business intelligence as it enables business intelligence to happen. There should be technologies as an essential element for business intelligence so that they enable the processing and organisation of data. The research has also taken the information perspective as business intelligence seeks the latest and genuine information to make decisions for a business. Technologies help to make use of information for a business in a given environment (Elbashir, Collier, & Davern, 2008).

Responses gathered through primary research noted that information is essential for making strategic planning and decisions. It is due to the role of technologies in processing

information and knowledge. The overwhelming majority of respondents agreed with the link between information and business intelligence. However, there is a very important role of technologies that make business intelligence to be effective for a business. As per the definition of business intelligence as well, there should be processing ability of information using technology. Various statements presented in the questionnaire have been found to agree with responses from respondents as they have favoured the use of technology to let business intelligence work.

In this context, it is convenient to define business intelligence. Some research studies have considered business intelligence as the technique used by companies in their business. This perspective has been taken by Lim and Lee (2010) as they consider business intelligence as a set of techniques and tactics. According to their perspective, business intelligence is a combination of techniques, and it is enriched by technologies. The link between business intelligence with technologies is established and strong that it cannot be removed or avoided. It has been in line with responses where respondents have confirmed this link that technology links with business intelligence and the way their organisation makes decisions. It is confirmed through research that business intelligence is the technique to carry out tasks. Business intelligence is the way of doing things because it informs and provides knowledge about how to make decisions to do things. More information and knowledge develop and guide respective organisations to do things through different ways and procedures. It has been revealed through primary responses of respondents that business intelligence has a link with information and technology. In so doing, business intelligence helps to carry out tasks and processes within a company. Therefore, the literature review confirms the perspective that business intelligence guides toward making decisions to do things (Lim & Lee, 2010).

4.2.2-Importance of technologies

Technologies are important for a business, and business intelligence requires technology to play its role. Some statements asked from participants are about their use of technology in the organisation. It has been asked if their respective organisations are offering them opportunities to use technology in information management and processes. Using the literature review and past research studies, it is confirmed that technologies are important for a business. Organisations

utilize technologies, and business intelligence has a direct role in it. Thus, technology affects business intelligence, and it must affect strategic business planning. Responses are mainly mixed, and especially employee participation has been mixed in making decisions within the organisation. However, strategic business planning has considerable input from business intelligence. However, respondents have responded that they do not have consistent availability of technology to be used within the organisation.

Research has noted that business intelligence has to do with technology. For instance, business intelligence, along with data analytics and big data, is possible through technology. These three areas can be enriched and enhanced using technology. Information communication technology, information management, and processing are further tasks to be done. These tasks focus on scientific knowledge where computers and devices with processing abilities process that information for a business.

Studying the link of business intelligence with strategic business planning, there must be an association of technology with information management and processing. Technology and computer systems help in increasing the ability of process and information utilization. This aspect of technology and computer systems is very important for strategic business planning. However, respondents have informed that they can use technology in their organisation, but there are disagreeing voices as well. It implies that there is a need for some perfect way forward for strategic business planning.

Today's businesses are using computer systems for information processing and making strategic plans. These systems are developed using technology, and their effectiveness in drawing desirable results makes them strategically important for high performance. It is worth aligning it with previous research studies where digitization and data analytics are studied for making viable and rational decisions.

Research has evidence that digitization and data analytics is not limited to a certain field or profession. These applications of technology have influenced almost every area and field where business is a prominent one. One of the sources of data is people, as they provide rich, timely, and instant information on required issues. It is the reason they are called data generators. It emphasizes putting them in the centre so that they can keep guiding the business. It is also the case with strategic business planning, as these data generators can contribute to enabling strategic business planning.

Primary data has noted that there is no strong contribution from employees in the process. They are not a permanent part of the decision-making process, and they can hurt the effectiveness of business planning. Business intelligence aims at accessing data through innovative methods, and customers, competitors, the environment, and all stakeholders make this happen. The role of business intelligence in strategic business planning is considered only if there is an effective and strong connection with these data generators. These are the people who are to contribute more information and knowledge that can be helpful in strategic business planning. There is a central role of technology because this huge amount of data and information are effective and workable only through technology (Loebbecke & Picot, 2015).

4.2.3-Streamlining and integration of resources

Another important subheading concerning results and findings is the integration of resources. Strategic business planning is a very important process that requires the integration of organisational resources so that all resources can be used to make decisions and formulate policies. In this regard, previous research studies have reviewed and discussed resources using the resource-based view.

It has been reviewed and discussed that the resource-based view is also in line with the resource orchestration perspective. This perspective ensures integration and combining resources so that collective efforts can do miracles. It is highly necessary and strategically required for an organisation to streamline resources and integrate them to meet goals and objectives. Concerning strategic business planning, the integration of resources for an organisation has been studied to meet the goals and strategic objectives of an organisation. The concept of dynamic capabilities has been reviewed and noted in the literature review. Thus, primary research responses, technologies, resources, and dynamic capabilities possessed by an organisation make the context favourable for business intelligence. It is because of its role in strategic business planning because business intelligence enriches the strategic business planning process effectively.

Business intelligence has been regarded as a technique while it has been termed as a set of systems as well. It offers considerable capabilities and opportunities for an organisation. These capabilities and opportunities have the purpose that is to assist in strategic business planning. An organisation must have the capability to consolidate, organise, link, and analyse information and knowledge collected and stored from various sources, including competitors and

markets. It is also in line with the primary responses of those who agree with the integration of information and business intelligence. They have also shown agreement with the relationship between business intelligence and strategic planning procedures conducted in their respective organisations (Martinez-Simarro, Devece, & Llopis-Albert, 2015).

A business can get data from different sources, including supply chain management, customers, competitors, and market environmental analysis. Under the business intelligence concept, this information or data is shared and communicated at the management level within the organisation to benefit an organisation and its business (Martinez-Simarro, Devece, & Llopis-Albert, 2015).

4.2.4-Strategic business planning

Questions in the questionnaire and research studies in the literature review have considered strategic business planning. It is the dependent variable that is being studied in terms of the impact of business intelligence. Planning is one of the management functions, and it helps in the decision-making process in the future. Business planning means planning for the business, and strategic business planning focuses on planning for the long-term future. Responses to questions on strategic business planning have overwhelmingly agreed on the importance of information in strategic business planning. Information is highly instrumental and centrally important for this to happen. Technology facilitates planning as well because it increases information processes. However, there are mixed responses to the statement about employee participation in the process of strategic business planning.

If one focuses on planning simply, it is very instrumental in setting direction for employees within an organisation. A study reviewed in the literature review states that planning involves setting direction and objectives to make a position about an issue for an organisation or a business (Pirttimaki & Lonnqvist, 2006). Strategic business planning is also for this purpose to show the future for an organisation so that it can look into the distant future from the current time. It is the reason why businesses and organisations take an interest in planning to set direction and formulate a mission for their strategic objectives and goals for the future. Planning is not a special kind of function that requires special preparation or process to be implemented. In essence, planning is a fundamental management component that is employed in any organisation. Strategic business planning is more important because of its strategic focus on

meeting objectives. It is the reason why strategic planning is aligned with the strategic management process (Anh & Tien, 2021). There is an increasing importance of information and its processing for organisations and businesses so that strategic business planning can materialize.

There is no doubt that the strategic planning process ensures the strategic direction of a business. It can happen in any area of the business, including marketing, finance, human resource management, and other departments, because strategic management connects every function and department. It also provides a unique positioning to a business that is very necessary for the sustainable future of a business. Research studies confirm that strategic positioning is the area that sets the direction and space for a business for the time to come. The strategic planning process has very effective and of long-term importance for the operational activities of a business (Anh & Tien, 2021).

4.2.5-Business intelligence and strategic business planning

Now, the discussion takes both variables together and discusses how responses and prior research studies guide this relationship. There is a lot of roles of information and knowledge in making business intelligence possible. It is the reason why there are questions on information accessibility and utilization in organisations of respondents. The relationship of information and knowledge with business intelligence is also necessary because business intelligence looks for innovative ways to get information that can benefit an organisation or a business. It is, therefore, obvious for a business to link business intelligence and strategic business planning to be ahead of competition competitors.

Business intelligence is a strategic framework as it helps and guides an organisation into the distant future. It increases the strategic significance of business intelligence for any action or function being carried out in an organisation. Once it is the framework or function of strategic significance, it can contribute to strategic business planning. Strategic business planning requires rich and innovative information that is unique for an organisation. A dynamic environment keeps shaping new dynamics for businesses and organisations. Strategic business planning is necessary, and it can take benefit from business intelligence. Responses have noted that respective employers of respondents provide information utilization opportunities. They are also providing them opportunities of using new technology through which they can increase the

processing ability of available information. Business intelligence can respond to this need for information for a business because of its ability of data analytics and big data utilization.

Thus, there is the strategic significance of business intelligence in an organisation for the formulation and execution of business strategy. Previous research studies have also noted that the utilization of rich information and data for the organisation is highly essential. Business intelligence has provided plenty of opportunities for a business and managers. Getting information from the market and processing, it is essential so that businesses can remain sustainable and successful. Business managers and employees can translate rich data into a structured order to take useful insights and information about the market and the external environment. Responses have noted that companies are offering their employees the opportunity to use information. However, there is little participation in the decision-making process among employees. Moreover, responses have also provided mixed responses to statements. It calls for taking special focus to let information management provide opportunities for a business. However, it has been revealed through responses and previous studies that business intelligence affects strategic business planning favourably and positively.

Research notes that business intelligence is a blend of opportunities and possibilities to let strategic business planning to work effectively. There are plenty of capabilities derived through business intelligence for managers and employees to exploit. Research also notes that strategic business planning is a process that is comprehensive to cover the whole organisation and its functions. It is also valuable for its ability to contribute through data analytics and information processing (Ciampi, Demi, Magrini, Marzi, & Papa, 2021). However, there must be some further aspects to consider for this relationship to work effectively. Responses and literature have shown the importance of information technology alignment and dynamic capabilities to enrich this relationship. It is like the recommendation that should be guiding organisations if they wish to promote business intelligence for strategic business planning.

4.2.6-IT alignment

Business intelligence is not possible without the application of technology. Businesses must ensure that IT is aligned with the process of business intelligence. It will help in strategic business planning because IT alignment makes information meaningful and useful for the organisation. A successful organisation must ensure an alignment of IT with its business

strategy. This is because the role of innovation and creativity in business strategy is beyond any doubt. Technology and its role in information processes and management have given rise to information technology. It is effective if information technology is in line with the overall business strategy, and it is possible if it relates to the strategic business planning function of an organisation.

Alignment of information technology with business strategy ensures enrichment in strategic business planning. It also contributes to the cohesion between strategy and technological processes, and it provides integration. Integration of resources is essential for sustainable and successful business processes where the contribution from employees is also worth promoting. There is a need to bring employees into the decision-making process, and it ensures the integration of resources. However, there should not be negligence on the part of information technology because of the accelerated rate of innovation. It has made the environment dynamic and ever-changing, which puts pressure on businesses to respond appropriately.

It increases the importance of technological factors and steps that an organisation evolves concerning the market. In this context, strategic business planning aligns with business intelligence because IT alignment brings rapid changes and enhances innovative solutions. It further results in bringing new products faster than usual. If the product life cycle reduces, a company can better respond to changes felt to take appropriate steps and actions. Strategic business planning ensures the company gets market-oriented based on its ability to innovate because a business achieves a competitive advantage. Competitive advantage is the unique edge over competitors through which a business ensures its sustainable and long-term position in the market. It can happen through IT alignments, and responses have confirmed the ability and opportunity to use IT for employees to get things done in their respective organisations. Many research studies have worked on the relationship between IT alignment and business strategy, which is also helpful in establishing the relationship between business intelligence and strategic business planning. The purpose of highlighting the relationship is for its strategic usefulness for a business. Researchers have favoured and supported the idea for organisations to reach the strategic alignment model (Järvinen, 2014).

4.2.7-Dynamic capabilities

Dynamism in the environment has increased the importance of dynamic steps. For this purpose, businesses ensure they have multiple steps to play in responding to the environment. Therefore, the literature has confirmed the importance of dynamic capabilities, and it is in line with variables. Dynamic capabilities also call for the integration of resources from within the organisation because of their importance in responding to the external environment. Employee participation and their role in decision-making are highly crucial for having an integrated picture of the resources of the organisation.

The dynamic capability's view is one of the perspectives that is essential for strategic business planning to make it successful and effective. The emergence of dynamic capabilities comes with a context that is through the alignment of information technology and strategic planning with organisational resources. It implies that dynamic capabilities respond to the dynamic environment, but they must not ignore the importance of organisational resources. These are resources that come into being through the combined role of information technology and strategic planning. It is information technology that must be aligned with strategic business planning to let dynamic capabilities work effectively.

For making recommendations to an organisation, this thesis can have many points to present. Dynamic capabilities must reach the strategic fit between the external environment and the internal resources possessed by an organisation. Research studies have taken the perspective that dynamic capabilities are part of strategic management. A fundamental purpose of strategic management is to set the direction for an organisation where it reflects the external environment. Alignment and integration of all resources make up an important aspect of every business. Knowledge, information, and awareness about the external environment play a central role in the successful journey of any organisation. Dynamic capabilities are a set of possibilities and strengths through which a business reaches dynamism. It makes it embrace the reality of volatility that is present in the environment. However, there must be support and participation from organisational members and employees; otherwise, the firm might not work effectively. Only this is how; it can turn into a competitive advantage for the organisation because integration and utilization of resources are inevitable components of a successful business (Lim & Lee, 2010).

4.3-Summing up the Discussion

This chapter has first discussed findings from primary responses, and then the discussion part has aligned research studies with these responses. The literature review has helped a lot in shaping the discussion course to know what the relationship between variables is. Business intelligence has been regarded as the process that seeks up-to-the-date knowledge and information to guide and assist organisations and businesses. For this purpose, it adopts innovative ways to access information so that businesses can make viable and sustainable decisions. In this context, its relationship with strategic business planning seems obvious that it requires rich and recent data to make decisions.

Responses, therefore, focused on the situation of information management and processes within respective organisations in Prague. Respondents are employees working in large corporations working in Prague, and they are informed on how they use and process information being part of the organisation. Overall, they agree with the use of information and technology to process it in their respective organisations. However, their responses should be taken as mixed because they have chosen other options as well. One statement is very important that has gotten mixed responses, and it is related to the participation of employees in the decision-making process. There should be more and greater efforts to involve employees in the decision-making process. In the first chapter, the aim and research questions focused on this research have been presented. Their purpose is to set direction on how the research will adopt its course of action. The following discussion will follow that aim and research questions to know if they have been achieved and answered respectively.

It has been presented in the first chapter that the study has the aim of exploring the role of business intelligence in strategic business planning. It is worth praising here that this aim has been achieved effectively and nicely. The research has focused on business intelligence, and information management is one of the most important aspects. An employee equipped with information management and processing must equip the organisation with business intelligence. The use of technology for this purpose has also been studied, and it has been confirmed that there is the use of technology in information processing and management within organisations. The impact on strategic business planning is obvious once the discussion focuses on business intelligence. Respective organisations have got the required resources and capabilities to ensure

the impact of business intelligence on strategic business planning. This is how; the research has achieved its aim meaningfully and smartly.

The research has focused on the relationship between business intelligence and business model because the way of earning revenue must be the outcome of business intelligence. Strategic business planning makes it impossible, but here the focus is only on business intelligence. More information and technology utilization to process information within organisations ensure en4ichement in business models, and businesses benefit from finding new ways of earning revenue and profit. It implies that organisations can ensure better and more sustainable ways of earning revenues if they engage in business intelligence. In this manner, the strategic importance of this strategic process becomes more highlighted and important for an organisation.

It has been studied if there is any role of business intelligence in strategic business planning, and this thesis has covered this aspect keenly and effectively. Different attributes and aspects of business intelligence have been explained ad studied in this thesis. These are comprehensive, and they point towards reality. The reality is that business intelligence provides the context and offers salient features needed to make strategic business planning work. Strategic business planning requires rich information and awareness of the environment and business situation. It allowed a business to consider factors from within and outside of the organisation. Business intelligence has the required attributes to enable strategic business planning to work.

Information processing and management cannot be possible without technology. Despite the importance of information and knowledge for business, it would not have been possible without the use of technology. Therefore, it is worth noting the role of technology in business intelligence and strategic business planning. Before working towards this aspect in this research, it was established that business intelligence contributes to strategic business planning. It must be the technology that has enabled this relationship to work. The application of business intelligence is not possible without the application and use of technology. It is not possible to let information be used for the business if there is no technology involved. Primary responses have also highlighted the importance of technology in an organisation that makes the use of business intelligence possible in the organisation.

It might be a supplementary aspect to focus on knowing how advanced technology can affect the business environment. The application of business intelligence and its positive aspects

are enough to substantiate the importance of technology and especially the role of advanced technologies. Therefore, it is worth promoting and encouraging the role of technology, but the focus must be there on advanced technologies. This is how; this research has reached the valuable and practical finding where the importance of business intelligence is beyond any doubt in strategic business planning for a business.

5. Conclusion and Recommendations

5.1-Conclusion

The research has concluded that business intelligence has a very close, direct, and positive impact on strategic business planning. Employees working in large corporations in Prague have responded to statements presented before them. These statements revealed that there are resources available for employees to use the information for carrying out tasks. The presence of technology and its application for information processing and management are prerequisites for business intelligence to work for an organisation. It is found that there is this prerequisite present in the studied organisations, and employees are using technology for this purpose. Implementation of technology and the presence of management support are in line with each other because management must provide a suitable and friendly environment for employees. They have also responded favourably to the presence of opportunities to let them engage in strategic business planning. However, employee participation is not a widely present factor in these organisations. There is a need to promote a culture where employee participation is of central importance.

Demographic factors are important in considering the findings of this research. Three demographic variables have been used, including the gender, age, and designation occupied by them in large corporations in the city. The sample has many representatives, and respondents belonged to all options present for them. For instance, they have one-third of respondent's female, and age groups are also well-represented. However, the most represented age groups are from 20 to 40 years of age. Overall, they belonged to any age group, but respondents over the age of 60 were very few. In terms of designations as well, respondents have been represented from all options of occupation before them. It implies that results can be implemented on employees belonging to all demographic variables. It is a good sign for them that they should be praised and admired.

The research has employed a mixed methods approach which means quantitative and qualitative research methodologies have been implemented in this research. This aspect has made this research comprehensive because the mixed-methods approach removes any limitation in terms of methodology. Though there can be a need for improvement, it has effectively achieved the aim and objectives of this research. It makes this research perfect and comprehensive as far as methodology is concerned. Primary responses have provided rich information from one hundred respondents who have provided information regarding variables. Literature review and research studies in it have provided secondary information on variables. It has provided rich aspects and perspectives about variables, and it has played a role in making this research theoretically and conceptually sound and effective.

The role of previous studies in finding the relationship between business intelligence and strategic business planning has been comprehensive. First, the focus has been on the definition and different aspects of business intelligence. It is learned that it focuses on getting new information and knowledge about the environment that is applicable to an organisation. From this point, it turned its focus towards technology, application of information technology, the role of dynamic capabilities, and information processing and management. This is the literature that has also helped in developing the questionnaire to ask respondents. It is the reason why the focus has been on information management, information utilization, participation in strategic business planning, and related factors. Once there is information management and processing in an organisation, it is possible to use in any action. Strategic business planning is the process that is organisation-wide, and it covers multiple aspects of operations and activities within an organisation. Within this context and discussion on variables, the importance of strategic business planning has been very crucial and important.

The importance of strategic business planning is without any doubt because it looks into the distant future. Strategic planning is a very important function of strategic management that makes plans and make decisions for coming years. The term strategic covers at least five years, and it indicates how critical planning is for strategic management to work. Strategic planning must be there to keep guiding how to manage the business strategically. Due to the volatile and dynamic environment, the pace of change is huge. Therefore, strategic business planning must set measures, yardsticks, and indicators to keep the strategic management process going. In this context, strategic business planning is of great importance and value for a business. From another

perspective, strategic business planning is highly valuable, and it is due to the essence of planning. Planning is the process of evaluation and assessment of resources. Integration of resources and calculation of strengths and weaknesses must be the prerequisite to doing strategic business planning to work. The question that is important here is to know how strategic business planning can be effective in this context.

The answer to this question is the role of business intelligence. From the above discussion on the importance of strategic business planning, it revealed that it covers five years ahead of time. Until this point, it is understandable to know its importance. However, it is concerning to realize the pace of change that strategic planning can be out of context. Once there is huge change and technology has reshaped the way business is done, strategic business planning can be irrelevant. It is the context for business intelligence where it can keep strategic business planning relevant and connected with the environment. Information processing, management, accessibility to new information, insights, and exploitation of opportunities are salient features of business intelligence. It is the process that makes information strategically important and relevant. Various resources like technology are used to make business intelligence work in favour of a business. One can imagine that without it, any kind of planning is obsolete and irrelevant. Competitors can go ahead, and it is not a good situation for any business.

It reveals that business intelligence becomes a source of competitive advantage as well. Here, information and knowledge of the market and the business environment are the main opportunities and ways to be ahead of time for the business. In this context, its relevance to the business model also becomes important. The business model is the concept that deals with how the business earns a profit. A business is engaged in different activities, actions, and methods. These functions must work for the sole purpose of a business that is earning profit or revenue. Once business intelligence has been linked with a competitive advantage and sustaining competitiveness, it becomes integral to the business model as well. It makes business intelligence a source of unbeatable strength and competitiveness. It is only due to the power of information and getting insights into the market and the business environment. A large amount of information enables a business to make crucial decisions that can keep ahead of others. This huge information further benefits the strategic planning process. This strength of business intelligence has come into being due to the emergence of technology. It is a technology that has

made information and knowledge accessible and implementable in business and its various functions.

It is the reason why this research has studied the role of technology specifically. Technology application is there in today's business context, and companies are yielding success stories and strengths based on technology. Technology or information technology has been in trend for businesses and strategic management. The reason for the huge popularity of technology is because of its ability to turn the environment into an opportunity. For instance, it is the application of technology that makes information accessible and usable for businesses. Huge processing ability is due to technology and its various applications. It is not wrong to give credit to business intelligence and similar developments to technology because technology is the main differentiating feature for businesses. It has turned information into a competitive advantage, and an organisation can use it to make decisions. The application of information in strategic business planning is due to technology and its various applications.

5.2-Recommendations

Based on this research, the following recommendations are very relevant:

The research recommends organisations focus on business intelligence. For this purpose, they should ensure information accessibility and utilization among their employees. Information management and processing are possible if organisations provide a favourable environment for employees. It is the job and responsibility of the employer, and there should be no negligence on their part. Otherwise, they can lag behind the time, and competitors can take the lead. Therefore, aligning business operations and processes with business intelligence is inevitable for the sustainable future of organisations and businesses. It is worthwhile for organisations to make decisions for the full utilization and application of information. For this purpose, they must focus on business intelligence.

The research recommends organisations get employees along the process of information processing and utilization. They cannot rely on third-party information providers or customers. They should provide an open and flexible culture in favour of information and knowledge. It can happen if they get employees along the process and taking them into the decision-making is a useful step. However, this research has found that studied organisations do not have such arrangements for employees. Therefore, they must provide such facilities and opportunities for

employees so that they can be an active participant and stakeholder in the organisation's pursuit of information management and business intelligence.

Strategic business planning is inevitable and crucial for the sustainable and certain future of any organisation. There is no option for organisations to ignore its importance. However, this research has noted that strategic business planning will be irrelevant if it is not enriched with business intelligence. Therefore, organisations must invest in business intelligence so that their strategic business planning remains relevant to new circumstances and the environment. Otherwise, a strategic business planning process will not be effective and workable in a dynamic environment. It is recommended investing in business intelligence and information management must be at the heart of this process. It will make strategic business planning valuable and useful for businesses.

The research takes the opportunity to recommend researchers as well. There are rich contributions from researchers in any field of research. Companies and businesses can get help from these research studies. Now, they should focus on business intelligence and strategic business planning. In this perspective, they must research the impact of business intelligence on the business model as well. As a result, they will be riding on the new trend that is going to be more important in the coming years. They should take data analytics, big data, and similar topics in their research studies to make their research studied enriched with new trends.

The above recommendations are only an indication that these should be adopted. However, it is the responsibility of organisations to make suitable decisions. This research has noted the need for more investment in employees as well. They should be made part of the decision-making process because investment only in business intelligence cannot be effective. Therefore, human resource management must be there, along with information management and processing.

5.3-Limitations of the Study

The research has implemented a mixed-methods approach and has studied the role of business intelligence in strategic business planning. The use of a rich literature review and primary responses have combined to achieve the aim and objectives of this research. However, there are some limitations that should be considered in future research directions as well.

The sample taken for this research consists of 100 respondents only. It can add more respondents to get responses so that it is more representative. It has used descriptive statistics for analysing primary responses. Future research can apply robust statistical tools like correlation, regression, t-test, or similar tools to study the relationship between variables. Furthermore, there can be more research studies to uncover different aspects of business intelligence. It is better to unveil more aspects of this important process because of its central importance in this research. Collectively, these limitations should be used in future research directions while this research has done its best to present findings. Now, it is time to present recommendations for organisations, practitioners, and researchers.

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Appendix

Questionnaire

Demographic Information

Gender

Male		Female		Prefer not to say	

Age

20-30 years	31-40 years	41-50 years	51-60 years	61 years and above

Designation in the organisation

An employee	Line Manager	Middle Level Manager	Executive position	Owner or the Head of the company

Business Intelligence

1. I have the opportunity to use information in making decisions.

Strongly Disagree	Disagree	Not certain	Agree	Strongly Agreed

2. My organisation offers technology-intensive resources to complete tasks.

Strongly Disagree	Disagree	Not certain	Agree	Strongly Agreed

3. The use of technology for information processing helps meeting goals.

Strongly Disagree	Disagree	Not certain	Agree	Strongly Agreed

4. Technology-driven processes makes information actionable and implementable.

Strongly Disagree	Disagree	Not certain	Agree	Strongly Agreed

5. My organisation makes decisions based on business intelligence.

Strongly Disagree	Disagree	Not certain	Agree	Strongly Agreed

Strategic Business Planning

1. Strategic business planning requires information to be effective.

Strongly Disagree	Disagree	Not certain	Agree	Strongly Agreed

2. Information processing based on technology facilitates strategic business planning.

Strongly Disagree	Disagree	Not certain	Agree	Strongly Agreed

3. The use of technology allows integration of resources to help in strategic business planning.

Strongly Disagree	Disagree	Not certain	Agree	Strongly Agreed

4. Strategic business planning has its role for information utilization.

Strongly Disagree	Disagree	Not certain	Agree	Strongly Agreed

5. My organisation allows participation of all employees in strategic business planning.

Strongly Disagree	Disagree	Not certain	Agree	Strongly Agreed