



# The significance of Business Intelligence in deepen the role of Business Decision Makers

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## ABSTRACT

In today's rapidly changing business environment, the need for very sensible and effective business information is acknowledged as being crucial for organizations not only to succeed, but even to survive. Business intelligence (BI) is a concept which refers to a managerial beliefs and a tool that is used in order to help organizations to manage and purify information and to make more precious business decisions.

This research aims to demonstrate the role of BI in the decision making process in the Bahraini commercial organization.

Based on results of the questionnaire and employees opinions, solutions and available choices can be considered to improve BI used by organizations in the Kingdom of Bahrain.

This research is recommending that using BI applications are based on personalized and Web-enabled information analysis, knowledge management, and decision support system technologies, and will lead to meaningful and high quality information that decision makers need.

## KEYWORD

<b>Business</b>	<b>Intelligence</b>
<b>Management</b>	<b>Information</b>
<b>Strategic</b>	<b>Enterprise</b>
<b>Decision</b>	<b>Planning</b>

**Preface**

Managing Enterprise Systems have been changing dramatically in the last two decades. As a result, a need has arisen to organize and control the flow of information, as information considered a power in conducting business, in order to enhance and support the decision making processes.

Due to the importance of information age, companies that leverage, exploit and maximize their information assets have a strategic advantage over their competitors. Business today moves at the speed of information; getting the right information into the right hands at the right time is essential in order to make wise, accurate and timely decisions.

A good decision can be defined as one that enables organizations move closer to its objectives. But how do managers make sure that the decisions they are about to make will help the enterprise meet its goals?

To achieve these goals, organizations should first analyze the way they make decisions and think about the information that managers need to facilitate for more confident and more rapid the decisions, as well as how they would like that information to be presented to them.

With the help of information technology nowadays, there are so many ways to improve business effectiveness especially in the decision making process. Business Intelligence (BI) is one of the latest developments in information technology by using Decision Support Systems. It offers important tools for analyzing and presenting data to managers so they can make more informed decisions.

Business intelligence (BI) is a data-driven DSS that merges data gathering, data storage, and knowledge management with analysis to provide input to the decision process. Business intelligence emphasizes analysis of large volumes of data about the firm and its operations. It includes competitive intelligence (monitoring competitors) as a subset under its umbrella.

Organizations normally, keep large amount of operational data, generated by daily transactions, in databases. These databases contain detailed information whereas managers need specific, summary information in decision making process. Using Business Intelligence, the

data from separate source systems is loaded into a data warehouse through a process of extraction, transformation, loading and data is then transformed to useful information and knowledge.

Organizations nowadays apply BI to enhance decision making, decrease costs and identify new business opportunities. BI is not just corporate reporting or a set of devices to build up data out of enterprise systems.

With today's BI tools, business people can take the plunge and begin analyzing data themselves, more willingly than wait for IT to generate multipart reports. This independency in accessing required information would actually facilitate users to endorsement business decisions and make it based on solid facts rather than on gut feelings and anecdote.

Moreover, it had been noted by executive business people that building an organizational strategic plan, would be more successful if it had been developed based in timely and accurate information. Such timely and accurate information can be obtained through the use of BI.

The aim of the research is to discuss, evaluate and find out the factors that inhibit using BI on Bahraini Business organizations. Is it the poor quality and irrelevant data, or huge and vague of data or is it management resistance, or confuse between BI and traditional IT?

By presenting this study of Business Intelligence usage in organizations to facilitate decision making process, a further contribution towards strengthening the dramatic expansion which has opened the door to benefit from such Business Intelligence (BI) systems by the suppliers, customers, and other business stakeholders of an organization for customers relationship management, supply chain management, and other e-business applications and to provide the key business information and the analytical tool for managers, business professionals and stakeholders.

The purpose of our paper is to discuss, evaluate and find out the factors that inhibit using BI on Bahraini Business organizations.

The results of this research were based on the analysis of a questionnaire that was distributed among different levels of employees in different organizations in Bahrain to have an overview of their

knowledge about how BI facilitates decision making process in an organization. The data was analyzed using SPSS package to test the hypotheses.

In order to form a clear framework and address the objectives of this research, the research can be divided into five sections.

Section 1 introduces the topic. Section 2 presents the significant literature review of the topic by valued previous studies. Section 3 introduces the research methodology that was followed to investigate the research questions. Section 4 demonstrates the findings and results of the test. Section 5 discusses some of the challenges that were revealed through the research and recommendations to the problems introduced in the previous section. Finally, section 6 provides a conclusion on the research findings.

### **Literature Review**

For an extensive review and a deeper understanding of the subject under study – BI – various literatures have been reviewed. The different literatures investigated and their significant points gathered could be summarized as follows: What is Business Intelligence and why we need it?

According to Kulkarni et al., (2007) Business intelligence system is a “strategic information system that provides actionable information using a centralized data warehouse, which is taken from many sources, and then converted into meaningful information through BI analytical tools, leading to informed decisions. Business intelligence highlights analysis of large amount of data about the organization and its operations. The major goal of BI is to improve the correctness and the quality of the input to the decision process”. Negash (2004) also refers to business intelligence systems as systems that “combine data gathering, data storage and knowledge management with analytical tools to present complex internal and competitive information to planners and decision makers”.

In 2009, Tobias Bucher, Anke Gericke and Stefan Sigg defined the process-centric business intelligence (PCBI) as “all BI capabilities that are dedicated to the analysis as well as to the systematic

purposeful transformation of business-relevant data into analytic information and that have been, at the same time, embedded into an operational process.”

This definition indicates that data and information are connected to the source, which is the operational process that have generated these data and information, therefore, such information should be extracted and provided in real-time or at the nearest possible.

Elbashir et al. (2008) believes that offering opportune, relevant and easy-to-use information and to increase the ability to analyze business information for the sake of improving decisions made by managers among a broad range of business activities is the main purpose of BI. The aim of such systems is to support knowledge workers at different levels in organizations

In 2002, W. F. Cody, J. T. Kreulen, V. Krishna, stated in their article published in IBM systems Journal, that the Business Intelligence (BI) and the Knowledge Management (KM) are the two technologies that have been essential in improving the quantitative and the qualitative value of the knowledge available to decision makers.

Moreover, they have stated that BI has applied the functionality, scalability, and reliability of modern data base management systems in order to construct larger data warehouses and utilize the data mining techniques to mine business advantage from the huge amount of available enterprise data. On the other hand, KM technologies are capable of combining today's management systems and the web with hugely improved searching and text mining capabilities to derive more value from the explosion of textual information.

In addition, this article argued that the ability of an enterprise in taking advantage of all available information as a critical and crucial component for success.

Matteo Golfarelli, Stefano Rizzi and Iuris Cella, argued the area beyond the data warehousing in business intelligence and they have referred to it as Business Performance Management which was defined by the authors as a set of processes that help organizations optimize business performance by encouraging process effectiveness as well as efficient

use of financial, human, and material resources.

Moreover, they stated that the data warehousing is quantifying business information in order to make them promptly available and certified, but the Business Performance Management is quantifying the enterprise strategy and targets to decentralize the decision making, and claim that the data warehousing is not enough for the decentralization of decision making because of the unsuitability of its technology for grain as well as for the freshness of the collected information which should quickly flow vertically and horizontally through the levels of the enterprise. In this research we agreed the definition introduced by Kulkarni et al., (2007) is the most appropriate and closest in terms of concept and harmony of this research.

Why to measure BI?

The measurement of business performance has long traditions in organizations. It is a practical managerial tool that can be applied in various situations and for different purposes. In the context of Business Intelligence, too, some authors have identified its measurement as a common view among researchers, in that the measurement of BI is difficult to carry out (Gartz 2004; Hannula and Pirttimäki 2003) and only few organizations have any mechanism in place to measure the value of BI (Marin and Poulter 2004). Thus, measurement is considered an important phase of BI but at the same time it is believed hard to carry out in practice.

According to Lönnqvist and Pirttimäki (2006), there are two main purposes for measuring BI: "the assessment of BI in order to prove that it is worth the effort and the measurement of BI activities in order to help manage a BI process".

All the related literatures reviewed confirmed that business intelligence "combine data gathering, data storage and knowledge management with analytical tools to present complex internal and competitive information to planners and decision makers". The above literatures provide the same idea that these systems supply actionable information delivered at the right time, right position and in the right format to aid decision-making process. The main purpose is to improve the quality

of input data, in order to improve decision making.

### Research Methodology

Research scholars have identified three main purposes for any research, which are exploratory, the descriptive and the explanatory purposes (Saunders et al., 2000).

Initially, the current study shall adopt a descriptive purpose to answer the research questions, and to test the proposed hypotheses.

### Research Questions and proposed hypothesis

This study, aims to demonstrate how BI facilitates decision making process in an organization. It further aims to answer these questions:

- Why an organization still prefers traditional IT (spreadsheets) than Business Intelligence?
- What are the barriers that make an organization hesitate in dealing with Business Intelligence?
- Do people aware of Business Intelligence, its core components, and its important contribution in decision making?
- What are the solutions that reduce this problem and motivate the organization to use Business intelligence?

These questions, are correlated to our research objectives, are essential to the testing of the hypotheses and are important for the answering of the research questions. Notably, these questions are descriptive in its nature, which shall be answered by a descriptive research type.

Moreover, the current study developed three main alternative hypotheses:

**Hypothesis (1):** Lack of data leads to improper decision

$H_0$ : Lack of data doesn't influence decisions

$H_1$ : Lack of data influence decisions

**Hypothesis (2):** there is a significant effect of Implemented systems, good management, on Decision making.

$H_0$ : there is no significant effect of Implemented system, good

management, on Decision making  
 H<sub>1</sub>: there is a significant effect of Implemented system, good management, on Decision making

**Hypothesis (3):** Training, updated knowledge, awareness of market competitors are factors affect BI and thus decision making.

H<sub>0</sub> Training, updated knowledge, awareness of market competitors do not affect BI and thus decision making

H<sub>1</sub>: Training, updated knowledge, awareness of market competitors do affect BI and thus decision making

To achieve the goal of this research, we prepared an online questionnaire, which has been deployed among different levels of employees in different organizations in Bahrain.

Understanding the advantages and disadvantages of questionnaire as a data gathering technique is used in order to enhance the outcome of the research.

We have used the tabulated questions in the questionnaire to direct the research to a certain conclusion. There were 65 respondents for this research, which have been asked to fill up the questionnaire.

**Profile of Respondents**

The sample of our research consist of 62 employees working at different organizations in Bahrain under both the private and public sectors 55% of them are Males and 45% are females. The adults represent 87% of the surveyed sample.

They are at various level of education ranging from PhD to less than diploma. 75% of the samples are normal staff, but we have a 25% of managers and senior managers.

**Findings and Results**

The findings of 62respondents of the research of Business Intelligence as a tool in facilitating decision making in an organizations, indicates factors affect decision making, and further the factors of

BI, moreover, the problems affect BI.

These could be summarized as follows:

**Table 1, Gender**

	Freq	Percent	Valid Percent	Cumulative Percent
Valid	Male	34	54.8	54.8
	Female	28	45.2	100.0
Total		62	100.0	100.0

**Table 2, Age**

	Freq	Percent	Valid Percent	Cumulative Percent
Valid	less than 25	9	14.5	14.5
	25 - 35	45	72.6	87.1
	35 - 45	6	9.7	96.8
	above 45	2	3.2	100.0
	Total	62	100.0	100.0

**Table 3, Degree**

	Freq	Percent	Valid Percent	Cumulative Percent
Valid	PhD	3	4.8	4.8
	Master	20	32.3	37.1
	BSc	35	56.5	93.5
	Diploma	2	3.2	96.8

	Oth	2	3.2	3.2	100.0
	ers				
	Tota	62	100.0	100.0	
	I				

According to people awareness of what BI is, Out of the 62 of the respondent, (73%) of them know what Business intelligence is, while ( 27% ) them do not know the meaning of BI.

Table 4, Question 1: You are aware of what Business Intelligence is (BI)

		Fre	Perc	Valid	Cumulati
		q	ent	Perc	ve
				ent	Percent
V	Y	45	72.6	72.6	72.6
al	e				
id	s				
	N	17	27.4	27.4	100.0
	o				
	T	62	100.	100.	
	ot		0	0	
	al				

**BI factors that affect decision making process:**

Data: Almost 92 % of the research respondents have agreed that Business intelligence is using computer techniques to analyze business data to lead to a better decision while 8% were at neutral since some people do not know what business intelligence is.

Table 5, Question 2: Business intelligence is: " Using computer techniques to analyze business data to lead to a better decision".

		Fr	Perc	Valid	Cumulativ
		eq	ent	Perc	e Percent
				ent	Percent
Vali	Neutr	5	8.1	8.1	8.1
d	al				
	Agree	40	64.5	64.5	72.6
	Stron	17	27.4	27.4	100.0
	gly				
	agree				
	Total	62	100.0	100.0	

Table 6, Question 3: Do you think that your organization face lack of data problem?

		Fr	Perc	Valid	Cumula
		eq	ent	Perc	tive
				ent	Percent
Valid	Stron	2	3.2	3.3	3.3
	gly				
	disagr				
	ee				
	Disag	17	27.4	27.9	31.1
	ree				
	Neutr	10	16.1	16.4	47.5
	al				
	Agree	27	43.5	44.3	91.8
	Stron	5	8.1	8.2	100.0
	gly				
	agree				
	Total	61	98.4	100.0	
Missin	Syste	1	1.6		
g	m				
	Total	62	100.0		

94% of the sample believes that lack of data leads to improper decision, but only 52.5% of the surveyed employees have admitted that their organizations are at lack of data problem. The first figure shows that sufficient data is the backbone of business intelligence and thus decision making.

Table 7, Question 4: Do you think that lack of data leads to improper decisions in an organization?

		Fr	Perc	Valid	Cumulati
		e	ent	Perc	ve
		q		ent	Percent
Valid	Strongly	1	1.6	1.7	1.7
	disagree				
	Neutral	3	4.8	5.1	6.8
	Agree	2	43.5	45.8	52.5
	Total	7			

	Strongly agree	2	45.2	47.5	100.0
	Agree	8			
	Total	5	95.2	100.	
		9		0	
Missing	System	3	4.8		
	Total	6	100.		
		2	0		

**Implemented system:** 65% of the respondent agreed that implemented system (i.e: DSS, AI, OLAP and MIS) is a core component of BI. Meanwhile, 31% were at neutral.

Table 8, Question 8: Implementing system is a core component of BI.

		Fr eq	Perce nt	Valid Perce nt	Cumulat ive Percent
Valid	Disagree	1	1.6	1.7	1.7
	Neutral	19	30.6	31.7	33.3
	Agree	28	45.2	46.7	80.0
	Strongly agree	12	19.4	20.0	100.0
	Total	60	96.8	100.0	
Missing	System	2	3.2		
	Total	62	100.0		

**Good Management:** 86% believe that good management is a core component of BI. Good management means flexible and up-to-date management.

Table 9, Question 9: Good Management is a core component of BI.

		Fr eq	Per cen t	Vali d Per cen t	Cumul ative Perce nt
Valid	Neut	7	11.	11.	11.7

	ral		3	7	
	Agre e	39	62.	65.	76.7
	Stron gly agree e	14	22.	23.	100.0
			6	3	
	Total	60	96.	100	
			8	.0	
Miss ing	Syst em	2	3.2		
	Total	62	100		
			.0		

**Problems affect BI**

As concluded from the survey shortage of data, management reluctant, cost of implementation and IT illiterate employee are all problems facing Business Intelligence; which proves the said argument.

**Other Factors affects BI**

Question from 12 to 17 in our questionnaire, revolve around providing timely, relevant and easy-to-use information (market and competitor information), along with knowledge workers (trained staff) in order to achieve BI goals. An average of 85% agreed that knowledge and training is a crucial factor of BI to lead to a better decision making.

Table 10, Question 12: Do you think updating your knowledge with emerging new technologies in the field of your business and the features and benefits of these technologies are crucial to BI?

		Freq	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	4	6.5	6.7	6.7
	Agree	41	66.1	68.3	75.0
	Strongly agree	15	24.2	25.0	100.0
	Total	60	96.8	100.0	
Missing	System	2	3.2		
Valid	Neutral				
	Agree	62	100.0		

**Table 11, Question 13: Awareness of the benefits of business intelligence, market knowledge and Reporting information relating are important for employees to contribute to BI process?**

		Freq	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	2	3.2	3.3	3.3
	Neutral	4	6.5	6.7	10.0
	Agree	35	56.5	58.3	68.3
	Strongly agree	19	30.6	31.7	100.0
	Total	60	96.8	100.0	
Missing	System	2	3.2		
Total		62	100.0		

**Table 12, Question 14: Organizations should train employees gathering and reporting information from customers, relating to their problems, product and service needs, and industry trends to support BI?**

	Freq	Percent	Valid Percent	Cumulative Percent

		Freq	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	3	4.8	5.2	5.2
	Agree	30	48.4	51.7	56.9
	Strongly agree	25	40.3	43.1	100.0
	Total	58	93.5	100.0	
Missing	System	4	6.5		
Total		62	100.0		

**Table 13, Question 15: Organizations team members should maintain a network of external industry contacts to help them gather and interpret business intelligence information?**

		Freq	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	2	3.2	3.4	3.4
	Neutral	11	17.7	19.0	22.4
	Agree	26	41.9	44.8	67.2
	Strongly agree	19	30.6	32.8	100.0
	Total	58	93.5	100.0	
Missing	System	4	6.5		
Total		62	100.0		

**Table 14, Question 16: Before launching a new product, market research and reviews to address issues such as competitiveness, market size, price points and barriers to entry of a competitor are essential to BI process?**

	Freq	Percent	Valid Percent	Cumulative Percent

		ent	Percent
Valid	Disagree	1	1.6
	Neutral	5	8.1
	Agree	26	41.9
	Strongly agree	27	43.5
	Total	59	95.2
Missing	System	3	4.8
Total		62	100.0

**Table 15, Question 17: Validating key competitive information with independent sources before making significant business decisions is an important factor for BI?**

		Freq	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	2	3.2	3.3	3.3
	Neutral	8	12.9	13.3	16.7
	Agree	37	59.7	61.7	78.3
	Strongly agree	13	21.0	21.7	100.0
	Total	60	96.8	100.0	
Missing	System	2	3.2		
Total		62	100.0		

**Analysis and Results of the proposed hypothesis of the study:**

Hypothesis (1): Lack of data leads to improper decision  
 H0:  $\mu < 3$  (H0: Lack of data doesn't influence decisions)  
 H1:  $\mu > 3$  (H1: Lack of data influence decisions)

According to question 4 in the survey, we've conducted the One-sample test, and the mean of the respondents' answers was  $4.3 > 3$ , which indicates that there is a significant effect of data on decision making.

**Table 16, One-Sample Statistics**

	N	Mean	Std. Deviation	Std. Error Mean
H1	59	4.3	.74042	.09639

Hypothesis (2): there is a significant effect of Implemented systems, good management, on Decision making.

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \epsilon$$

Where:

Y=Decision making

X1 = Implemented system

X2 = good management

H0 =  $\beta_1 = \beta_2 = 0$  (H0: there is no significant effect of Implemented system, good management, on Decision making)

H1=  $\beta_1 = \beta_2 \neq 0$  (H1: there is a significant effect of Implemented system, good management, on Decision making)

$$Y = 3.339 + 0.232 X_1 + 0.026 X_2$$

We will reject H0 and accept H1.

All independent variables affect with 91% in the dependent variable

**Table 17, ANOVA<sup>b</sup>**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	1.939	2	.970	2.816	.068a
Residual	19.281	56	.344		

	Total	21.2	5			
		20	8			
a. Predictors: (Constant), Q9, Q8						
b. Dependent Variable: Q6						
Table 18, Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.339	.585		5.710	.000
	Q8	.232	.108	.293	2.154	.036
	Q9	.026	.139	.025	.185	.854
a. Dependent Variable: Q6						

a. Predictors: (Constant), Q9, Q8					

Hypothesis (3): Training, updated knowledge, awareness of market competitors are factors affect BI and thus decision making.

H0:  $\mu < 3$  (H0 Training, updated knowledge, awareness of market competitors do not affect BI and thus decision making)

H1:  $\mu > 3$  (H1: Training, updated knowledge, awareness of market competitors do affect BI and thus decision making)

According to questions (12, 13, 14, 15, 16, 17) in the survey, we've conducted the One-sample test, and the mean of the respondents' answers was  $4.1 > 3$ , which indicate that there is a significant effect of Training, updated knowledge, and awareness of market competitors on decision making.

Table 20, One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
H3	61	4.1923	.43798	.05608

Table 21, One-Sample Test

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
					H3	21.60

Table 19, Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.302	.091	.059	.58678

**Discussion and recommendation**

The research findings have conclude that the good decision making is accomplished with the perfectness use of BI tools, as similarly identified in the related literature review in section 2.

All mentioned literature reviews agreed on the definition of business intelligence, and its impact on the decision making process. By referring to our research respondents who are also approved that Business intelligence is a sunshade term which refers to a variety of software purposes used to analyze an organization's unprocessed data. BI as a discipline is made up of several related activities, including data mining, online analytical processing, querying and reporting which leads to improve the correctness and the quality of the input to the decision process. According to the survey (Q4, Q8, Q15) most of the respondent agreed with what Kulkarmi suggested that BI is an actionable system that use centralized data warehouse. Also the majority of them agreed with him that the goal of BI is to improve the quality of input to decision making, (Q6, Q11, and Q15). Business Intelligence and data warehouse have been developed enough to support both business analytical and operational needs. An organization should have an open mind and apply the technologies smartly to meet any business challenges.

Awareness of the benefits of Business Intelligence and training of employees are crucial factors affect BI as concluded by our survey, which also supports Elbashir review. With the help of BI systems, employees adjust their individual and team work practices, which leads to improved performance among the gathered data and reports. (Q12-17)

Q11 reported that decisions might go wrong in an organization because of several factors affected by poor quality of data, poor implementation, and insufficient data. This notion is support the review of Kulkarmi's and Eppler, which leads to poor decision making. Respondents agreed that their organizations were having wrong decision because of insufficient and due to poor implementation.

To implement a BI system, organizations should first analyze the way they make decisions and consider the information that executives need to facilitate more confident and more rapid decision-making, as well as how they'd like that information presented to them (for example, as a report, a chart, online, hard copy). Discussions of decision making will drive what information companies need to

collect, analyze and publish in their BI systems.

### Conclusion

To be conclude with, Organizations use BI to improve decision making, cut costs and identify new business opportunities. BI is more than just corporate reporting and more than a set of tools to entice data out of enterprise systems. CIOs and managers use BI to identify inefficient business processes that are ripe for re-engineering. Executives have to ensure that the data feeding BI applications is clean and consistent so that users trust it and used it for proper decision making. Therefore, everyone involved in the process of decision making must have full access to information related to business case.

BI projects should start with top executives, to the normal employees. They should be more likely to grip the tool which is facilitating their work.

Good BI systems need to give context. They need to explain what factors influencing the business, when implemented strategically, ought to fundamentally change how companies operate and how people make decisions, CIOs need to be extra attentive to users' feelings.

#### *Proper decision making process*

This is a prerequisite for consistently sound decision making. The greater you understand of your organization, your competitor and your environment, the more you can move from guess work to making strategic choices.

#### *Employees need access to good technology and training*

Access to advanced information system is crucial to improved decision making, as well as training in helping employees to make full use of them. Such tools must also be easy to use.

#### *Sound judgment*

Decision-making processes, whether formal or not, need to leverage the strengths of human intuition. Data does not run organization; people do.

#### *Trust*

To gain employees' confidence in management decisions, establishing

transparency and trust is at least as essential as a good track record.

#### *Flexibility*

Approaches to decision making, and even to the use of data, need to reflect the fact that the world is a diverse place, and one size does not always fit all.

We also recommend more tips for getting BI right one of them is analyzing how executives make decisions, consider what information executives need in order to facilitate quick, accurate decisions.

Moreover they should pay attention to data quality as mentioned above and the devise performance metrics that are most relevant to the business. Provide the context that influences performance metrics. Due to improvements in the technology and the way CIOs are implementing it, BI now has the potential to transform organizations. CIOs who successfully use BI to improve business processes contribute to their organizations in more far-reaching ways than by implementing basic reporting tools.

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