

## THE ROLE OF BUSINESS INTELLIGENCE IN BUSINESS PERFORMANCE MANAGEMENT: AN EXPLORATORY STUDY IN CASE OF ETHIOPIAN MEDIUM AND LARGE MANUFACTURING INDUSTRIES

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### Abstract

*Business performance management (BPM) is a key business initiative that enables companies to align strategic and operational objectives with business activities in order to fully manage performance through better informed decision making and action. Effective business performance requires an organization to model and monitor not only its tactics but also its strategies and the assumption on which these strategies are built. Thus, the aim of this paper was to examine the processes, methodologies and technologies underlying BPM in Ethiopian medium and large size manufacturing firms, the relation between BPM and business intelligence. Further the researchers tried to propose a framework for integrating corporate performance management and business intelligence in a holistic approach of managing business performance using AMOS Graphics techniques of path analysis.*

**Keywords:** *Business; Technological Deployment Strategy; Organizational Performances, Manufacturing Industry*

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### 1. Introduction

This section describes the background and the context of the study. It presents the research problems, key research objectives and justification of the study. It also gives a short introduction to the methodology and concepts used in the study. Additionally, this section discussed the scope of the study, significances, limitation and s the structure of this study.

#### 1.1. Background of the study

Nowadays economic environment represents a challenge at all levels, including the issues related to the concept of performance in business organizations worldwide. In this matter, the economic recession generated by the world financial crisis, with all its implications on funding, economic actors'

interactions, legal and political, economic and social environment, technological progress and knowledge development, imposes today, more than ever, the rethinking of the concept of performance in business organizations worldwide (Cosmin Octavian, 2012).

#### 1.2. Business Information Technology (BIT)

Business information technologies are seen as cutting edge competition in business organizations. Information technologies made on purpose to support business information engineering. Management methods and support tools could be seamless integrated with business intelligence components in special tailored or customized performances management systems. The main functions of these systems are as cited by (Berisha-Shaqiri,

2006): An effective Business Performance Information System is built and maintained by business users to support the decision-making process especially at strategic level, making use of various indicators quantitative and qualitative, lagging and leading- balanced against targeted objectives and/or industry benchmarks. Lately, with performance measurement periods becoming shorter, management must have the capability to more proactively influence the outcome. That requires monitoring and tracking capabilities that can generate current, complete and accurate information upon which they can act in real time. Business information technologies must respond to that need of proactively managing business performance.

Business performance management (BPM) can be considered as being the final component of business intelligence (Bergoren, 2001 ). If BPM is an outgrowth of BI and incorporates many of its technologies, applications and techniques, than why BI itself can't deliver the insight needed to improve overall business performance? From a theoretical viewpoint, it cans (Bergoren, 2001).

Like decision support, BPM is more than a technology. It involves the processes, methodologies, metrics and technology used to monitor, measure sand manage a business. Once selected the business process that has to be improved, and the business methodology to be implemented, there are the metrics (to monitor, measure and change) to be established. These metrics (key performance indicators) are defined and selected by the business and not by the IT. The final step is to choose the business performance measurement technology. We can say that business intelligence it is just business measurement and not business performance management. BPM is not a single technology, but rather a combination of elements- BI, score carding, profiling. BI looks at and analyses the past and what has happened up until today this is useful, as planning requires knowledge and you can set planning goals based on the past.

Score carding enables you measure how you are performing against those planned goals. Every organization has processes in place that feed back to the overall plan. What's new with BPM is the integration of these processes, methodologies, metrics and systems an enterprise wide strategy that seeks to prevent organizations from optimizing local business at the expense of overall corporate performance (Berisha-Shaqiri, 2006 ).

### 1.3. Business Performance Management Framework

The integration of business and IT process management and BI is a key enabler for BPM. It provides the ability to effectively manage the business and achieving business goals. The BPM framework presented below is based on the integration of business and IT processes at all decision levels (strategic, tactical and operational) (Mintzberg, 1979).

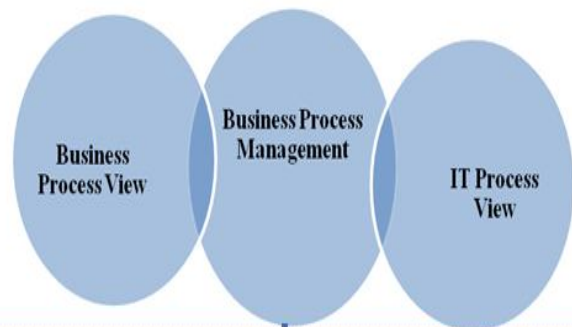


Figure 1: BPM Framework

Business flexibility and agility require continuous monitoring of the business processes and support of an appropriate BI environment. BI technologies and products are evolving in order to provide such an environment.

### 2. Materials and Methods

The mixed approach was used for this study because mixed approach consists of both qualitative and quantitative data. This method of data collection recognizes that there are weaknesses inherent in each type of data. By combining both quantitative and qualitative data, researcher can neutralize the weaknesses involved in each single method of data collection (Creswell, 2003)

The target population for the study includes Ethiopian medium and large manufacturing companies. The study used both primary and secondary data sources. Both of the data sources help the researchers to gain reliable,

		Organizational Performance	Technology deployment
Organizational Performance	Correlation Coefficient	1.000	.569**
	Sig. (1-tailed)	.	.000
	N	139	139
Technology deployment	Correlation Coefficient	.569**	1.000
	Sig. (1-tailed)	.000	.
	N	139	139

\*\* . Correlation is significant at the 0.01 level (1-tailed).

credible and accurate information while conducting the study (Creswell, 2003). Primary data was one of the data types that the researcher applied to this study that is Likert scale questionnaires run from Very unimportant to Very important with the value from 1 to 5 respectively. Moreover, open and close ended questions were used to collect the first hand information from target respondents-mangers of the companies. Regarding with secondary data the researchers used sales volumes and the level of technology deployment in their business operation which determines the company's business performance.

Thus, after determining the sampling frame and sample size with the help of scientific sampling formula, the researcher used multi stage cluster sampling and simple random sampling to select the final target respondents. Regarding measurements of variables used in the study, Amos Graphics-Structural Equation Modeling (SEM) was employed. Using Amos Graphics-SEM, the researcher measured exogenous latent variables and endogenous variables at the same point in time using self administrated five point likert type questionnaire which run from Very unimportant to Very important.

### 3. Results

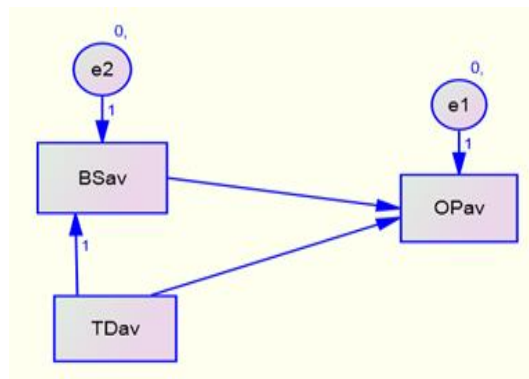
As describe earlier, the general objective of this research was to empirically examine the effect of technological deployment on business performance and its contribution in the case of manufacturing firms in Ethiopia. Using self administered questioner and secondary data collected from the managers of the manufacturing firms, the following analysis is made and possible conclusion was drawn.

#### 3.1. Kendall's tau correlation for Technology Deployment and organizational performance

Table3: Kendall's tau correlation for Technology Deployment and organizational performance using SPSS version21.

As shown in table3, "there is significance positive relationship between technology deployment and organizational performance." Because, statistical significance value equals (0.000) is less than one percent ( $p < 0.01$ ). The calculated correlation coefficient (0.569) is also indicating the existence of strong and positive relationship between Technology deployment and organizational performance. Thus, based on the coefficient values obtained in Kendalls' correlation, it is possible to compare the relationship of the variable. Therefore, the variable technology deployment got with coefficient of 0.57 has better relationship than other variables with organizational performance of the manufacturing firms.

#### 3.2. Trilogy Path Analysis



As shown in the above research model the following outputs are reported and possible analysis are made below accordingly.

**Table1: Regression Weights: (Group number 1 - Default model)**

Path	Estimate
BSav <---TDav	.707
OPav<---BSav	-1.094
OPav<---TDav	1.264

**Where,**

BS = Business

TD= Technological Deployment Strategy

OP= Organizational Performances

In referring the above statistical output from a total of 139 medium and large manufacturing firms the observed t-statistics using the 3000 Amos bootstrapping and the hypothesis were tested. From the proposed hypothesis all hypothesis were supported with 0.05 levels of significance. This means, it does have positive effect on firms performance. But business strategies has negative effect, which sound logical in short run most of the business strategies may incur cost and may reduce the total sales of the firms which should be recap and/or harvest in the future is better business strategies is designed.

To bring to light the path relationship and effects of path coefficient, it means that when firms show improvement/usages of business strategies and technology deployment, firms

are more times likely to increase or decrease to improve maximum level of their performance by amount respective estimate.

#### 4. Conclusions

Managing and optimizing business performance is a critical requirement not only for maximizing business profitability but even for remaining in viable in today's dynamic and competitive business environment. Effective business performance management will blend business intelligence with elements of planning, budgeting and real time monitoring as well as providing a window on performance. The integration of business and IT process management and Business Intelligence is the first step in managing

Path	Estimate	S.E.	C.R.	P
BSav<---TDav	1.000		**	
OPav<---BSav	-.938	.040	-23.65	**
OPav<---TDav	1.532	.056	27.32	**

business performance. Finally, BPM is all about taking a holistic approach for managing business performance. The holistic approach enables the integration and use of business intelligence, process management, business service management, activity monitoring and corporate performance management to achieve a single and complete view of the enterprise.

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