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Implementing Business Analytics Solution in selected Industries in the Philippines

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Abstract:*In this milieu of technology and knowledge-driven societies, disruptive and innovation to operational practices are being sought after by the organizational leaders. These leaders as the focal resource in the company's profitability, cost-reduction on operational expenses, revenue generation and risk management; they ventured into integrating systems and processes improvement as well use of technology. This paper presents the practical impact of implementing an analytics solution to selected industries in the Philippines. The researchers used the Descriptive-Quantitative research design. A researcher-designed questionnaire was floated to the purposively selected respondents who were middle and top managers to get the practical applications and benefits of deploying analytics solutions in their respective organizations. Results have shown that most of the companies nowadays are using Descriptive Analytics, Predictive Analytics and Prescriptive Analytics. It can also be inferred that analytics is commonly used in Standard Reporting, information system visualization through dashboards. The researcher recommends that further studies should be conducted such as how the analytics solution impacted the companies' efficiency and conducting empirical analysis on customer retention, sales increase, and conversion.*

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I. Introduction

In this milieu of technology and knowledge-driven societies, disruptive and innovation to operational practices are being sought after by the organizational leaders. These leaders as the focal resource in the company's profitability, cost-reduction on operational expenses, revenue generation and risk management; they ventured into integrating systems and processes improvement as well use of technology. This paper presents the practical impact of implementing an analytics solution to selected industries in the Philippines.

Companies and businesses of today can make use of the analytical tools in order to facilitate carefully studied decision making. It is important for an organization to use its data and performance to identify gaps between its current performances versus its performance goal. Moreover, business can also consider the competitive advantage of how can it achieve the best outcome including the effects of performance variations, how can it achieve the best outcome, what happen next if; identify trends, what could happen, what actions needed. Also, analytical tool can help decision makers to point out what exactly is the problem, how often these problem re-occur and what happen why this problem exist[1, 2]? These notion and most commonly known questions can be answered by using analytical tools and deploy it operationally in the company. These analytical solutions include the Descriptive Analytics, Predictive Analytics and Prescriptive Analytics.

Descriptive analytics is an analytical tools that can be deployed which provides informative details of the organization, department or team past or current performance in the business ecosystem[1]. Descriptive analytics offers reporting tools which can be presented using a visualization tool which is dashboard. Descriptive Analytics includes Standard Reporting, Ad Hoc Reporting and Querying and Drill down Analysis[4]. Standard reporting presents what happened to the team, department and company based on the data being used, while Ad Hoc reports detail how many problems or gaps happened, its frequencies or how often its occurs or reoccur for recurring issues and query and drill down analysis directs to points of what exactly the problem is[1,2,3]. Descriptive analytics uses factual information based on the data examined in investigating the exact problem for possible improvement and eventually resolve it. Query and drill down analysis lower into aggregated data to get more detailed fact information[5].

In aid od prediction with confidence as to what will happen next to the company, or department based on the current performance, a Predictive Analytics can be used. Predictive Analytics also uses statistical tools and techniques in order to help business managers and decision makers to make well-informed decisions and improved business outcomes[5]. Since Predictive is dependent to the current performance and real-time events, this analytical tool heavily relies on the events and alerts including simulation, thence, suggest action. Predictive analytics uses simulation models to recommend what could happen next. It also uses Predictive models and

algorithm to perform forecasting and providing what-if scenarios in the organizations. Predictive analytical tools include alerts, simulation, forecasting and predictive modeling[4,5].

The context of Prescriptive Analytics is the analytical tool which offers high-value alternative actions. These alternative actions or decisions are generated based on the data being used with the complex set of business targets. In a particular business setting and performance, optimization technique can be used to identify and examine ways best possible to achieve best outcome in that particular situation. Also, risk can be mitigated using the Stochastic Optimization, a technique that can be used considering the variations of performance, technology being used or even the data being considered. Prescriptive analytics offers future outcomes based on the predictions being considered[1].

This study investigates the type of industry which deployed analytical solutions, identify the type of enterprise which deployed analytics solution, identify the number of years of operations, examine the type and number of information system or applications being used by the companies which deployed analytics solution and identify what type of analytics solution being deployed by the select companies.

II. Material And Methods

The researchers used the Descriptive-Quantitative research design. A researcher-designed questionnaire was floated to the purposively selected respondents who were middle and top managers to get the practical applications and benefits of deploying analytics solutions in their respective organizations based in the Philippines specifically in Metro Manila. There were 100 middle managers and top managers who were purposively selected but only 70 have responded to the online survey using the Survey Monkey. The questionnaire is divided into two (2) parts. The Part I include the company demographics, while the Part II captures the analytical tools and business analytics solution being used by the company.

III. Result and Discussion

The following section detailed the result of the research conducted. Table 1 show the type of industries which had responded to the online survey. It showed that the respondents were coming from the Banking and Other Financial Institution 5/70 (7%), Business Process Outsourcing 10/70 (14%), Contact Center Operations 7/70 (10%), Entertainment Industry 4/70 or (6%), Information Technology 12/70 (17%), Retail and Business- 5/70 (7%), Telecommunication- 2/70 (3%), Tourism and Travel- 10/70 (14%) and University/Education Industry with -15/70 or (21%).

Table no 1 The Distribution of the Respondents according to the type of industry

Type of Industry	No. of Companies	Percentage (%)
Banking and Other Financial Institution	5	7
Business Process Outsourcing	10	14
Contact Center Operations	7	10
Entertainment Industry	4	6
Information Technology	12	17
Retail and Business	5	7
Telecommunication	2	3
Tourism and Travel	10	14
University/Education	15	21

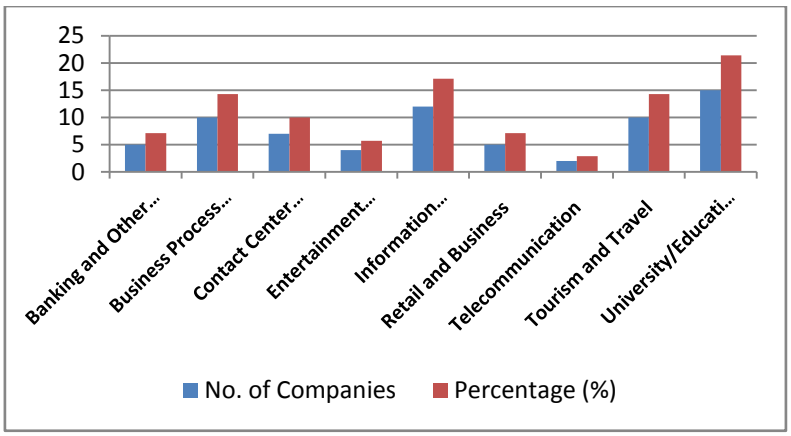

Figure no 1 The Graphical Distribution of the Respondents according to the Type of Industry

Table 2 presents the Distribution of the Respondents according to the Type of Enterprise. Businesses are classified or measured according to its collective size or its annual turnover. In this study, there were numbers of companies/respondents which were classified as Large (250 + employees) -45/70 or 64%, Medium Enterprises (which employs fewer than 250 employees) - 20/70 or 29%, and Small enterprises (with number of employees fewer than 50) - 5/70 or 7%, while there are no respondents coming from Micro-Enterprises or company which employs fewer than 10 employees.

Table no2 The Distribution of the Respondents according to the Type of Enterprise

Type of Enterprise (No. of Employees)	No. of Companies	Percentage (%)
Large (250 +)	45	64
Medium (fewer than 250)	20	29
Small (fewer than 50)	5	7
Micro-Enterprises (fewer than 10)	0	0

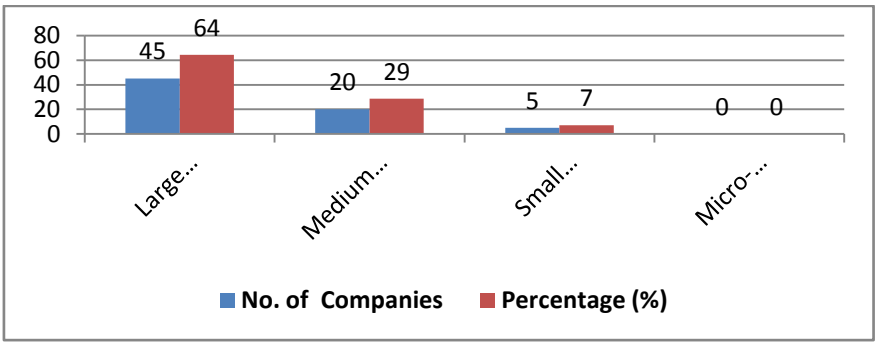

Figure no 2 The Graphical Distribution of the Respondents according to the Type of Enterprise

Table 3 shows the companies based on the number of years that it has been doing the business. Based on the percent distribution, there were companies which are operating for 10 years and above- 5/70 or 7%, 20 years and above- 8/70 (11%), 30 years and above- 10/70 (14%), and 40 years and above- 15/70 or 21% and the highest number of respondents/ companies have been operating for 5 decades already or 50 years and above - 32/70 or 46%.

Table no3 The Distribution of the Respondents according to the Years of Operation

Years of Operation	No. of Companies	Percentage (%)
10 years and above	5	7
20 years and above	8	11
30 years and above	10	14
40 years and above	15	21
50 years and above	32	46

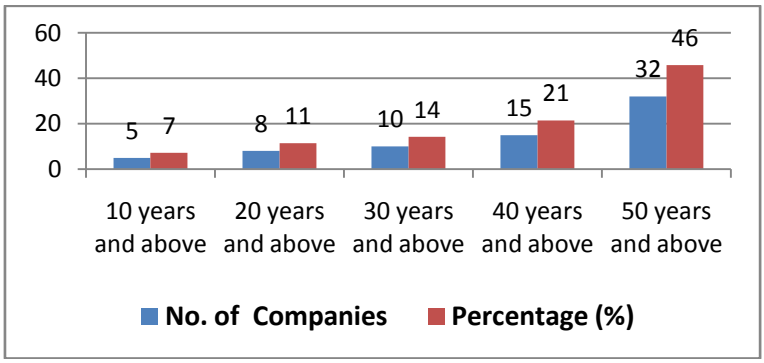

Figure no 3 The Graphical Distribution of the Respondents according to the No. Years of Operation

The use of information technology is very important to the business and employees efficiency and productivity. This information technology is used as tools for delivery and developing the products or services of the companies'. The technologies may include office automation systems, computer applications with a centralized database, cloud and online applications which primarily used by the customer and even the suppliers. Table 4 shows the number of information system and or application being used by the companies'. Based on the table, a company which uses 10 - 20 applications is only 1/70 or 1%, 21-40 applications- 4/70 or 6%, 41- 60

applications- 5/70 or 7%, 61- 80 application- 10/70 or 14%, 81- 100 applications- 30/70 or 43% and there are 20/70 or 29% companies which are using more than 100 applications.

Table no 4 The Distribution of the Respondents according to the No. of Information System/Application Used

No. of Information System/Application Used	No. of Companies	Percentage (%)
10 - 20 applications	1	1
21-40 applications	4	6
41- 60 applications	5	7
61- 80 application	10	14
81- 100 applications	30	43
more than 100 applications	20	29

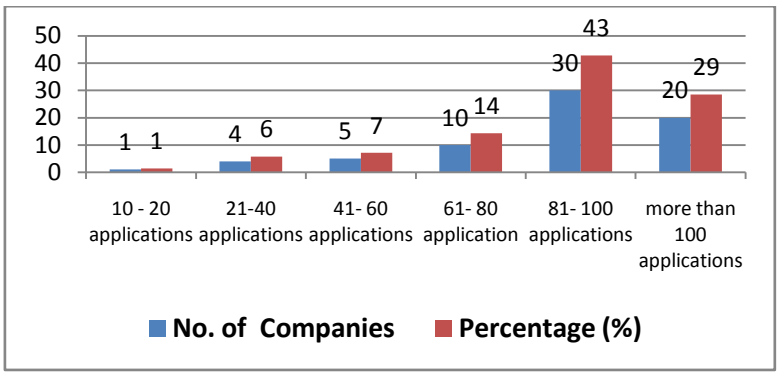

Figure no 4 The Graphical Distribution of the Respondents according to the No. of InformationSystem/Application Used

Table 5 shows that the 70 companies have been using analytics solution for several purposes as well as the type of analytics for their specific needs. There are 40/70 or 57% of these companies which were using the Descriptive Analytics. For Predictive Analytics, there are 21/70 or 30% of these companies have been using analytics for forecasting companies performance and requirements, while there are 9/70 companies or 13% which have been using Prescriptive Analytics as their operational tools.

Table no 5 The Distribution of the Respondents according to the Type of Analytics Solution Deployed

Type of Analytics Solution	No. of Companies	Percentage (%)
Descriptive Analytics	40	57
Predictive Analytics	21	30
Prescriptive Analytics	9	13
Others	0	0

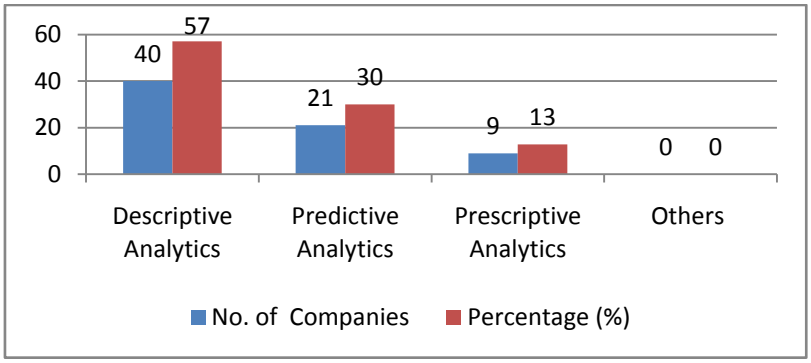

Figure no 5 TheGraphical Distribution of the Respondents according to the Type of Analytics Solution Deployed

Results have shown that most of the companies nowadays are using Descriptive Analytics, Predictive Analytics and Prescriptive Analytics. Descriptive Analytics was used by these companies in Standard Reporting, Ad Hoc Reporting, Query and Drilldown Analysis. While Predictive Analytics were used to develop and

implement and Alerts, Simulation, Forecasting and Predictive Modeling, and the Prescriptive Analytical tool was used to enable Optimization and Stochastic Optimization.

IV. Conclusion

It be inferred that analytics is commonly used in Standard Reporting, information system visualization through dashboards. Most of the companies are using dashboard since it can be shared using an online application/information system or visible through a shared file. The researcher recommends that further studies should be conducted such as how the analytics solution impacted the companies' efficiency and conducting empirical analysis on customer retention, sales increase, and conversion. Business and organizational leaders should invest in technology and analytical solution in order to keep track and maintain its business competitive advantage, and provide a well-informed decisions for the company. The researcher recommends conducting empirical study on how these tools helped these companies in building the future company goals to improve its competitive advantage, customer conversion and managing overall performance.

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