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4.1 Rationale of the Study

Though Business Intelligence as a concept is an age old idea, the practical implementation of BUSINESS INTELLIGENCE and identifying the same at application level is yet a process being mastered. In fact, there is no single method, which can be used as a fail proof approach. The BUSINESS INTELLIGENCE projects can at the most follow the - so called – Industry Best Practices as a guide line.

The complexity of BUSINESS INTELLIGENCE initiative can be mapped to various issues:

- It demands the right blend of Technology and Functional knowledge
- The projects involve a huge cost, before one can see the result
- Decision Making Process changes, asking for Change Management
- Technological advancement at rapid pace changes the approach
- Globalization and High Growth demands for scope change
- Market Dynamics may also force the changes in the initial scope
- Priorities and Feasibility may contradict, leading to failure
- Risk Mitigation Process may not be correctly understood
- The Need Analysis may not be adequately done

The research is targeted to identify such issues and hence to identify the satisfaction level of the Users of Post implementation Business Intelligence Application.

This research is also aimed at defining Vertical and/or Domain Specific templates for BUSINESS INTELLIGENCE Initiative Scope. This would serve as a guideline to identify different applications of BUSINESS INTELLIGENCE and for the Industry Vertical and/or Management domain in India and global which will help different corporate to have better hold on their business.
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4.2 Statement of Problem

Business Intelligence is a process for increasing the competitive advantage of a business by intelligent use of available data in decision making. Understanding the Application of Most powerful technological tool that is Business Intelligence and analyzing the conditions of the business organizations, post implementation in different Industry verticals like Automobile Manufacturing, FMCG, Logistics and Retail. Applying and analyzing the Application of Business Intelligence is the essence of maintaining profitability of any business organization. Therefore the statement of the problem under the study that has been selected is: “A COMPARATIVE STUDY ON APPLICATION OF BUSINESS INTELLIGENCE IN CORPORATE SECTOR IN INDIA AND GLOBAL”
‘Data Rich & Information Poor’ is a generic issue identified across various vertical of the industry irrespective of the size strata it belongs to. Every year – year by year – a huge set of valuable Business Data is generated. Unfortunately, this Business Data is not actually converted to meaningful information which can give a valuable Business Insight across varied Business Processes.

**Business Intelligence is the answer to this issue:**

Though Business Intelligence Initiatives can actually have a good ROI – the organizations are still reluctant to implement & that for valid reasons. Implementing Business Intelligence is a Resource Intensive Exercise, apart from demanding for a Change Management in Overall Work Culture and approaches taken to implement Informed Business Decisions. Hence it is highly important to manage and mitigate the risk of possible failure.

Fortunately – Over a period of time – the Process for Implementing Business Intelligence in an Organization has matured. In fact, we have Structured Models which can be followed in order to minimize the risk of failure.

This study will help to identify the satisfaction level of Business intelligent Applications Users in specific selected Industry verticals on specific Management domains.
Motivation for Research

Motivation for research to add value to the corporate:

The motivation to do research on Satisfaction level of the Users of application of one of the most powerful technology tool - Business Intelligence in corporate sector in India and global, which works as a magic wand for top management of corporate sector. It helps top management to take informed decision to drive their business. It gives 360 degree vision to the business including all management domains like Finance, Marketing, Operation and Human Resource. Key performance Indicators of the Business can be easily tracked with the help of Business Intelligence. And hence to identify the gaps in Business Intelligence application at technological and functional level to satisfy the end User 100%.

Motivation for research to add value at personal level

- To add value to my current job profile as I do Marketing of Technology Products and solutions
- To give an edge to my Career in Education field and the knowledge which I deliver to the Post graduating students of Gujarat Technological University, Pune University and other students as well as Techno-functional faculty
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4.5 Comprehensive Objective of the Study

The main objective of the study are:

1. To identify Critical Success Factors, defining Key performance Indicators and to identify, and compare Satisfaction level of Business Intelligence users (Post Implementation ), derive benefits of applications of Business Intelligence in different Industry Verticals like following in Indian and Global Corporate:
   - Automobile Manufacturing Industry
   - Fast Moving Consumer Goods (FMCG) Industry
   - Logistics Industry
   - Retail Industry

2. To identify and compare Applications of Business Intelligence in selected companies from different industry verticals in management domains as listed below:
   - Strategic
   - Marketing
   - Operations

3. To Identify that does Business intelligence Application does enable the top management of different industry vertical to make informed decision with right information, in right format on right time.
4.6 Some Assumptions

Some assumptions made during the research are:

- Business Intelligence Initiatives is generally never a closed ended project but a continuous process.

- Business Intelligence Implementation experiences a basic inertia from within the Organization & this may be attributed to the Risk Of Failure.

- Required Change Management is in direct proportion with the degree of functional area covered, during the Business Intelligence Implementation.

- The Organization has basic Operational Data in place – before jumping onto Business Intelligence Initiatives.
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4.7 Broader Hypothesis of the Study

The Hypothesis formulated under the study is as follows:

✓ Business Intelligence Application in Indian corporate is still in nascent stage as compare to Global corporate scenario.

✓ Business Intelligence Application Market Potential is a function of the maturity attain by the transaction System (Enterprise Resource Planning (ERP)) of that market.

✓ Business Intelligence Applications enables Marketing and Operations domains of organization to have critical information on their figure tips and hence they can take informed decision to drive profitability of the business and can have total control of relevant business Processes.

✓ Business Intelligence Applications enables top management of organization to have critical information on their figure tips and hence they can take informed decision to drive profitability of the business and can have total control of the business.

✓ There is no out of box solution for Business Intelligence Implementation but Industry best practices and ready to customize Business Intelligence templates can stream up Business Intelligence initiatives for any corporate.

I am what is
The default, the status quo
I am already accepted, can only be rejected
The burden of proof is on the alternative
I am the null hypothesis
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4.8 Research Design

A research design is a blueprint or a framework for conducting the research project. It details the procedure necessary for obtaining the information needed to structure and/or solve research problems. A research design lays the foundation for conducting the research project. The cross-sectional descriptive research design is used for conducting this research work because this enables the researcher to study the problem at a given point of time of the population of interest.  

To identify the problem, to develop and approach the problem and to formulate an appropriate research design, primary and secondary data has been used. To collect information for the study from consumers, primary research has been used.
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4.9 Research Methodology

4.9.1 Sampling Elements

The study is carried out both at a domestic and international level on the companies which have successfully implemented business intelligence. In this case the targets respondents were selected from the following functional domains of the organization (as shown in table below).

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Industries Covered</th>
<th>No. Of Companies Covered</th>
<th>Management Level Focused</th>
<th>Functional Domains Focused</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Automobile Manufacturing</td>
<td>14</td>
<td>Top Level Management</td>
<td>Strategic Domain</td>
</tr>
<tr>
<td>2</td>
<td>FMCG</td>
<td>14</td>
<td>Sales</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Logistics</td>
<td>14</td>
<td>Marketing</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Retail</td>
<td>14</td>
<td>Operations</td>
<td></td>
</tr>
</tbody>
</table>

**Table: 4.1 Types of Respondents**

4.9.2 Sampling Technique

The researcher has applied multistage sampling and convenient sampling technique which is carried out in various stages. Here Non Probability convenient random sampling technique based on judgment of surveyor has been used for the purpose of data collection. The population elements have been selected on the basis of researcher’s own judgment, the sample have been selected taking into consideration following factors.
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4.9 Research Methodology

- The respondents should be from the companies which should have successfully implemented business intelligence.

- The respondents should be at ease and should have sufficient time for filling the questionnaire (physical or by mail) of the surveyor.

- The respondents should have a sufficient knowledge/usage expertise of the business intelligence in their current companies.

4.9.3 Sampling Design

Geographic Scope of research:

The Geographic Selected Companies from Domestic as well as Global market.

Data collection Method:

Method used for data collection for the research is Primary data collection.

Universe:

The universe of the study consist of Top level Management authorities, Strategic level Sales, Marketing and operation authorities and Tactical level sales, Marketing and Operation authorities and IT head of the Companies from domestic as well as Global market from Logistics, Retail, Automobile and Fast moving Consumer Goods (FMCG) Industry that has implemented or in the process of implementing business Intelligence Technology.
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4.9 Research Methodology

4.9.4 Sample Size

Since the number of Users of Business Intelligence Application in the universe of the study is quite big and as the study is being taken by individual researcher, it may be beyond the capacity of individual researcher to pursue the study on hundred percent enumerative basis. Hence the study has been carried out on the basis of an adequate size of sample Users of Business Intelligence Application, we have taken total 56 Companies which has implemented Business Intelligence Technology.

Companies from 4 different Industry verticals which are:

1. Automobile Manufacturing
2. Fast Moving Consumer Goods (FMCG)
3. Logistics
4. Retail

To ensure a uniform sample selection the data has been collected equally i.e. Total 14 companies from each industry vertical including 7 companies form domestic market and 7 from international market which has implemented Business Intelligence as shown in following table.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Industries Covered</th>
<th>No. Of Companies Covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FMCG</td>
<td>14</td>
</tr>
<tr>
<td>2</td>
<td>Automobile Manufacturing</td>
<td>14</td>
</tr>
<tr>
<td>3</td>
<td>Retail</td>
<td>14</td>
</tr>
<tr>
<td>4</td>
<td>Logistics</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>

Table: 4.2 Industries Covered
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4.9 Research Methodology

4.9.5 Sample Unit

The companies which have implemented business intelligence are the primary unit of analysis. The responses from these companies strategic level management have been collected through the questionnaire method. In all companies the respondents have been people from strategic management level and Middle Management level.

4.9.6 Data Source

Secondary data has been collected from the libraries of various educational institute like Saurashtra University, IIMA, PARAM Institute of Management and research. The data has also been collected from various journals, Magazines, proceedings of the seminars, conferences, internet etc...

Structured questionnaire was used as instrument for collecting the primary data. Looking into the nature of study of the questionnaire mostly contains closed ended questions. The responses were recorded and measured by using nominal scale. To collect qualitative information certain observations were made and data collected was noted. The data collected was thus qualitative and quantitative in nature. The Questionnaire was pre tested before final use. Some senior professional associated with the business intelligence technology also evaluated the questionnaire.

1. Desk Work:

The deskwork involved the following task

Phase I:
- Identifying the research variables
- Identifying the census / sample
- Framing the questions associated with each variable
- Designing the questionnaire
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4.9 Research Methodology

Phase II (After field work):
- Converting the collected feedback in to electronic format
- Analyzing the row data across the defined variables
- Generating graphical analysis out of the same
- Deriving inferences
- Working out possible conclusions

II. Field Work:

Personal Interview technique is used for data collection.
- Personally visiting the pre-defined list of corporate / Telephonic interviews
- Obtaining their feedback based on the questionnaire

4.9.7 Data Preparations

Data preparation begins with preliminary check of the questionnaire for its completeness. The collected data was edited, coded, tabulated, grouped and organized according to the requirement of study and then entered into Statistical package for social sciences (SPSS) for analysis.

4.9.8 Data Analysis & Interpretation

For analyzing the hypothesis, parametric as well as non-parametric test have been used in this research. Chi-square test is used to test the statistical significance of observed association in a cross tabulation and to analyze the data because Pearson Chi-Square is the most common test for significance of relationship between categorical value. Along with the Chi-Square T test is used wherever required for measuring the strength of association between the two variables where sample size is less than 30.
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Data Analysis is presented using two formats:
- Tabular format of presentation
- Graphical format of presentation
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Chapter I:

Conceptual framework of BI

1.1 Introduction to Business Intelligence
   - Meaning of Business Intelligence
   - Definition of Business Intelligence
   - Advance Definition of Business Intelligence
   - Researcher’s Definition of Business Intelligence

1.2 Business Intelligence - History

1.3 Scope of Business Intelligence

1.4 Importance of Business Intelligence

1.5 Challenges related to Business Intelligence

1.6 Ideal Implementation Methodology for Business Intelligence

1.7 Approaches of Business Intelligent

1.8 Critical Success Factor in Business Intelligence Implementation

1.9 Variable affecting BI

1.10 Tools & Techniques used in Business Intelligence Implementation

1.11 Limitation of BI

1.12 Conclusion

Chapter II:

Overview of Industry

2.1 Automobile Manufacturing Industry:
   2.1.1 Automobile Manufacturing - India & global
   2.1.2 Growth drivers of Automobile Manufacturing industry
   2.1.3 Key Players in the Indian Automobile Retail Industry:
   2.1.4 Business Intelligence and Automobile Manufacturing Industry:

2.2 Fast Moving Consumer Goods (FMCG) industry:
   2.2.1 Global Fast Moving Consumer Goods Industry
   2.2.2 India Retail Industry
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4.10 Outline of the Thesis

2.2.3 Growth drivers of Fast Moving Consumer Goods industry
2.2.4 Key Players in the Indian Fast Moving Consumer Goods Industry
2.2.5 Business Intelligence and FMCG Industry

2.3 Logistics industry:
   2.3.1 Logistics industry- India & global
   2.3.2 Brief history of Logistics industry
   2.3.3 Development of Logistics including industry Sales, finance data
   2.3.4 Problem of the industry
   2.3.5 Prospects of the industry
   2.3.6 Business Intelligence and Logistics industry

2.4 Retail industry
   2.4.1 Global Retail Industry
   2.4.2 India Retail Industry
   2.4.3 Value Chain of Retail Market
   2.4.4 Growth across Various Segments
   2.4.5 Growth Drivers of Retail Industry
   2.4.6 Key Players in the Indian Retail Industry
   2.4.7 Challenges in Retail Industry
   2.4.8 Niche focus areas in Retail Industry
   2.4.9 Business Intelligence and Retail Industry

Chapter III:

Review of Existing Literature:

Chapter IV:

Research Methodology:

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Chapter V:
Analysis & interpretation of Data Part - I:
Application of Business Intelligence in Indian and Global companies across different Industry Verticals, Functional Domains & Management Levels.

Chapter VI:
Analysis & interpretation of Data Part - II:
Application of Business Intelligence Technology across Indian and Foreign Companies

Chapter VII:
Summary, Findings and Suggestion

Annexure:
Questionnaire
Bibliography
4.11 Limitation of the Study

Limitations of the study are as follows:

- The research focus is going to be on Management Functions and application aspect of Business Intelligence Technology. Covering Technological aspect will be limited only to technology architecture level. Core technology research will not be covered in the study is one of the limitation.

- Business Intelligence is applicable to various industry verticals like Pharmaceutical, Hospitality, tourism, Healthcare, Banking and Finance and so on but here the research is limited to the application of Business intelligence in industry verticals like Logistics, Retail Industry, Automobile Manufacturing and Fast Moving Consumer Goods (FMCG) Industry.

- The findings and conclusions will depend on the data collected from different employees of different companies which might be biased towards the technology. Which may unable the researcher to give concrete outcome.

- A limited number of sample would be studied and hence the result would not be as accurate as that of population survey.

- Research is geographically limited to corporate from India and few other counties.
IV: Research Methodology

   - By C. R. Kothari
   Wishwa Prakashan