Chapter 7: Discussions

The main aim of this chapter is to discuss the academic and managerial implications of the survey field study and case studies presented, showing its overall contribution to the existing body of knowledge (section 7.2 and 7.3).

This thesis primarily focusses on how can consumer products companies continue to compete in this digital age. It starts with presenting the theory on evolving drivers of competitive advantage for a firm that touches on supply chain management theory and performance measures. Enterprise Information Systems like ERP and CRM have become vital part of most organizations in managing business transactions and have given that information driven competitive edge. Then comes the era of Internet that transforms the way consumers and businesses think, operate and transact.

It is evident from theory that there is a rapid adoption of digital technologies by consumers and their evolving shopping behaviours are transforming e-commerce into an essential element of success in consumer products industry. Theory clearly demonstrates that to win over digital consumers, consumer products manufacturers need to build strong digital capabilities to drive engagement and conversion across the entire path to purchase. Indeed, the benefits of an investment in e-commerce include not only a larger share of the relatively small but fast-growing online markets in many consumer product categories, but also a greater influence over traditional channel (retail and distribution network) sales.

The thesis also presents the burgeoning rate at which data is growing in this world because of adoption of digital technologies. Big Data is a result of this enormous amount of information flow in this global economy. Gaining granular level information on customer purchases, preferences and behaviour is the key to competitive advantage in this digital age. When it comes to granular knowledge of customer, online intermediaries like Amazon and large retailers like Walmart, have an edge due to the sheer nature of their business. And research has shown that they make use of this information and analytics to not just to tailor their offerings to individual customers,
but are potentially edging towards information asymmetry driven individual price discrimination. On the other side, traditional consumer product companies in India due to their business model mix sales channels missed out on this important aspect of competitive advantage in this digital age.

This thesis set out on a study of traditional consumer product businesses in India to assess their analytics maturity and customer knowledge measure sufficiency in gaining a competitive edge and compare their ability to do so against online intermediaries and businesses with strong digital presence. It is evident from the triangulation of findings from the field survey and case studies that traditional business fall short on customer knowledge measure and analytics maturity.

As a key take-away from the findings of this thesis Traditional Businesses should start by recognizing that data about customers and about their context is the foundation of customer centricity. Customer relationships develop over time along multiple interactions across various channels. These interactions are essentially being an exchange of data and information. Today’s technology enables and accelerates interactions between companies and consumers and each interaction becomes a seamless extension of their previous interaction, allowing each customer’s journey to continue where it left off; enabling customers to use the channel of their choice for each step along the journey, including product research, product comparison, buying and paying; and giving customers access to all the promotions, discounts and loyalty points they have acquired, regardless of channel.

Thus, it becomes inevitable for traditional businesses to get equipped to face information driven competition, with online intermediaries and with peers in the industry. The next section presents the recommendations for traditional businesses given where they stand in this information game. The findings of the study also provide a compelling rationale to construct a conceptual framework for analytics driven competitive advantage called “Analytics Edge” for the traditional businesses in India. This framework is also in keeping with the Government of India run initiatives on “Digital India”.
The Government of India launched “Digital India and “Make in India” programmes that has actively come out for solutions that will help traditional businesses and SMEs\(^1\) (Small Medium Enterprises). Digital India will provide enhanced accessibility of technology and Internet while Make in India will help in local product manufacturing. The technology centric framework laid by the Government will also provide cloud-based platforms for SMEs. All this is assisting the growth of small and traditional businesses to participate in e-Commerce (CII report, 2016).

Such Government run initiatives for modernization are primarily focusing on improving and sustaining the e-Commerce sector. As per the CII report (2016) on e-commerce in India, “the Digital India project aims to offer online government services that will have mobile phone as the backbone for its delivery. The programme will give a strong boost to the e-Commerce market by bringing Internet and broadband to remote corners of the country, which is expected to give a rise to an increase in trade and efficiency. e-Commerce industry has been directly impacting the MSMEs in India and has a favourable cascading effect on other industries. It is helping connect small merchants with customers across India. The long-term impact of this on the economy would be-increase in employment, growth in export revenue, better products and services to customer”.

7.1 Recommendations and Contribution of this Research

As emphasized multiple times in this thesis, in this technology-obsessed age of commerce, the traditional multi-channel approach is being replaced by a more forceful, customer-driven approach in which companies do not just know each customer, but respond dynamically to various customer interactions that are a result of constant re-evaluation by customers on what they want to buy and from whom they want to buy it. There are multiple devices through which customers buy and interact. They are a)

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\(^1\) SME by the definition, for manufacturers to be classified as an SME in India- the limit for investment in Plant and Machinery should be between INR 25 Lacs to INR 5 Crores for Small segment and INR 5 Crores to 10 Crores for Medium Segment. Source- http://www.dcmsme.gov.in/ssiindia/definition_msme.htm
Company provided online web site, b) Mobile applications c) Traditional Channels such as Large Format Retailers and smaller retailers in mom and pop shops.

It has become inevitable for consumer product companies to know customer’s personal profiles, including devices, services and content purchases. Customers when they interact with a channel of purchase desire that provider be able to offer very relevant recommendations (e.g., offerings and promotions) that would be valuable for them.

In short, **an omni-channel approach** echoes an appropriate response to the new customer model and increasingly dynamic behaviour of customers’. It is a thorough customer-driven approach, which takes advantage of the product company’s full knowledge of each customer, and applies it to every interaction with that customer.

In addition to recommending an omni-channel approach this research contributes a readily implementable framework called- ‘**Analytics Edge Framework**’, as shown in figure 7.1 that can be adopted by traditional businesses to set them on the information driven competitive advantage path. This framework has been devised on the themes identified by this research that are a) **customer knowledge measure** and b) **customer analytics measure**.

The left-hand side pane of the adoption framework (figure 7.1) illustrates Omni-Channel commerce and Customer Knowledge Measure and the right-hand side pane explains the Customer Analytics Measure.
Omni-Channel Commerce

Stores

E-Commerce

Social Media

Mobile

Customer Analytics Measure

Use Predictive Analytics and Machine Learning Algorithms

Analytics Subjects

- Segment customers using clustering techniques for targeted offerings
- Apply Association rules to understand customer spending and other behaviour to arrive at market basket analysis for up-selling and cross-selling of products
- Use time-series models to predict superstar customers and products
- Use regression techniques to compute Customer Lifetime Value to arrive at Customer Focus Strategy

Descriptive Analytics using Data Visualization Tools

Visually Analyse

- Customers
- Sales
- Pricing
- Channels
- Products
- Costs

Analytics Subjects

- Transition to data-driven organization from intuition to evidence based decision making
- Visually observe sales and analyse the tail and head of the distribution and identify superstar products.
- Observe percentage growth in customer and product wise revenues.
- Observe customer wise buying behaviour across channels.
- Observe trends in rate of increase and decline in growth of each product.
- Observe percentage increase and decrease in cost of supporting each product and customer.
- Observe the sales trends during different pricing mechanisms like promotions, offers and discounts.

How to achieve Omni-channel strategy?

- Increase presence in social media for marketing, branding and customer feedback management.
- Invest in company owned web-store front (E-Commerce) if the business model permits.
- Invest in business solutions that will integrate the transactions of brick and mortar stores and e-commerce.
- Invest in mobile applications for increased customer interactions, loyalty, engagements with your products and offers - to capture customer search, likes, trials and subjective feedback.
- Invest in business solutions to collect customer purchases data from the multi-tier distribution network.

Figure 7.1: Analytics Edge Framework for Traditional Businesses in India
7.1.1 Customer Knowledge Measure Framework

Customers expect a seamless and consistent shopping experience even when they cross channels, like buying an item online and picking it up at a physical store, or buying an item online and then returning it to a physical store. For them, it’s just one brand; although behind the scenes it may be a different story, especially when each channel has a unique set of business processes and infrastructure.

Therefore, it is important for consumer product companies to have their presence in digital channels like online e-commerce, mobile applications and social media in addition to traditional brick and mortar stores.

Omnichannel commerce can be defined as an intersection of retail channels, payments, financial services, mobility, location services, social media, marketing services, data and analytics. It is the answer to how consumers will shop and pay in this digital age. Shoppers today expect a converged buying experience: seamless and consistent interactions with brands whether they are at home, on the go, in the store or in the social media. In this aspect of providing a seamless customer experience, understanding customers’ new expectations is the key.

In addition to being present in digital channels and investing in online, mobile and social media, to transform their transactions into true customer relationships and improve upon ‘Customer Knowledge Measure’, consumer product companies need to enact the following using technology (see table 7.1):

Table 7.1: Customer facing action areas

<table>
<thead>
<tr>
<th>1. Know them</th>
<th>3. Enable them</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Show them you Know them</td>
<td>4. Value them</td>
</tr>
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</table>

1. **Know them**: The consumer product companies must first ask themselves, ‘how well we know and recognize a customer from her/his part purchases to enable personalized interactions across channels?‘ The consumer product businesses must measure the customer knowledge metric regularly and work towards knowing their customers to the core to tailor their interactions to individual customers.

2. **Show them you Know them**: It is important to show the customer that you know them by providing personalized offers and target product promotions (through say e-coupons/mobile coupons) to individual consumers.
3. Enable them:

- Provide the same consistent shopping experience to customers across all channels of sales.
- Ease of navigation across online and mobile applications and frictionless transactions.
- A social media presence for customers to express their opinions, recommendations and insights.

4. Value them:

- Reward your customers for loyalty.
- Getting the best deals and saving money - Grant the customer complete flexibility to configure their online/offline basket to get the best deals to save money.

In conclusion, instead of multiple channels, this thesis recommends an omni-channel strategy adoption for consumer products companies, as omni-channel is a single channel with multiple touch points—delivering a completely seamless and consistent experience for customers.

7.1.2 Customer Analytics Measure Framework

Analytics can be used only when there is sufficient data about customer. Therefore, companies should invest in technology and the ‘Customer Knowledge Measure Framework’ to increase their customer knowledge. The application of analytics on customer data for competitive edge, is explained in the Analytics Edge Framework (Figure 7.1). The framework illustrates two levels of application of Analytics: a) Level-1 Descriptive Analytics using Data Visualization Tools b) Level 2- Use Predictive Analytics and Machine Learning Algorithms

Analytics Level 1- Descriptive Analytics using Data Visualization Tools:

![Visual Analysis of Customer data](image-url)
Advantages of data visualization and descriptive analytics are already mentioned earlier in this thesis. Some of the analytics subjects that can be covered using Descriptive Analytics are (see figure 7.2) are as follows:

- Visually observe sales and analyse the tail and head of the distribution and identify superstar products.
- Observe percentage growth in customer and product wise revenue
- Observe customer wise buying behavior across channels
- Observe trends in rate of increase and decline in growth of each product.
- Observe percentage increase and decrease in cost of supporting each product and customer
- Observe the sales trends during different pricing mechanisms like promotions, offers and discounts.

Analytics Level 2: Use Predictive Analytics and Machine Learning Algorithms

Advantages of predictive analytics and machine learning algorithms are already mentioned earlier in this thesis. Some of the analytics subjects that can be covered using Predictive Analytics and Machine Learning are as follows:

- Segment customers using clustering techniques for targeted offerings.
- Apply Association rules to understand customer spending and other behavior to arrive at market basket analysis for up-selling and cross-selling of products.
- Use time-series models to predict superstar customers and products
- Use regression techniques to compute Customer Lifetime Value to arrive at Customer Focus Strategy

To summarize, this thesis recommends that traditional consumer product companies in India invest in an **omni-channel strategy** and implement the **Analytics Edge framework** to become a true **customer centric organization** in this digital age and get the information driven edge against its competitors.

**7.2 Academic Implications**

The academic implications of this thesis can be viewed from a methodology as well as theory development point of view. From a methodological perspective, this research is first of its
kind in using mixed method triangulation research in the context of Indian consumer goods businesses and Big Data Analytics.

This design is used when a researcher wants to directly compare quantitative statistical results with qualitative findings or to validate or expand quantitative results with qualitative data. Triangulation reduces the deficiencies of a single-source driven research. Both qualitative and quantitative sources complement and verify one another, which lessens the impact of bias leading to richer and more comprehensive information.

Factor- isolating questions ask, “What is this?” These questions name and describe factors or variables of interest to the researcher. “What is the extent of use of analytics in your organization to serve your customers better?” would be included in this category of questions. The most appropriate research design to answer these questions would be descriptive. Descriptive studies are designed to gain more information about characteristics of a topic of interest. Descriptive level research is most appropriate when very little research is available on the top. A case study design further helps in depth understanding of a phenomenon through detailed information.

The advantage to descriptive level research is that the researcher can collect a large amount of data, however, even though there is breadth of data, it tends to lack depth for the sample. On the other hand, case study research provides depth and richness of data, but lacks breadth since it is limited to one person or event. Hence, this study employs a triangulation of both the methods to answer the research questions effectively.

The study triangulates the analysis of data collected from 85 consumer products companies with the qualitative insights from three rigorous case studies and comes with interpretation that adds to the body of knowledge of the literature in the areas of Big Data Analytics and Competitive Advantage. The research also provides evidence on the current state of capabilities on Customer Analytics and Customer Knowledge measure at traditional consumer goods companies in India. The thesis contributes to the theory of competitive advantage and Big Data Analytics by providing a framework called ‘Analytics Edge’, that can be adopted by the consumer product companies in India that follow the convention methods of approaching customers.
7.3 Managerial Implications

The results of this study have several important implications for business managers. The extent of technology driven innovation and growth of companies that is visible today was never as before. Companies across the world whether in business-to-business or business-to-consumer segment are focusing on technology driven edge for securing competitive advantage.

The managerial implications from a business perspective (see section 7.1) from this research are driven by the potential gains that the shift from a traditional way of doing business to a digital ecosystem, powered by Big Data Analytics, in combination with the disruptive character of digital technologies (Kitchin, 2014). The thesis clearly highlights the importance of getting access to granular information of end-customer as the biggest opportunity to gain competitive advantage is making the right offer to the right customer at the right time. Online retailers are thriving in this game of personalization that is helping them retain their customers and grow faster.

Consumers use digital devices like mobile, tablets, laptops etc. to gain information about any product or service, compare prices and try and get the best deal. They also check the quality and price of products in store and buy online from the cheapest available price provider. Being in an age where consumers are so demanding, it has become inevitable for firms to know their customers to the core and act to their(customers’) needs.

The findings of this research clearly indicate that a majority businesses in traditional consumer products in India have not invested in online channels for sales. Neither are they using their existing transaction data residing in their business information systems to gain insights using business analytics. The challenges in gaining access to end-consumer information persists across a majority of them. Given this outcome, the thesis provides a valuable framework called ‘Analytics Edge’ that can be implemented by traditional consumer products firm to overcome their shortcomings around both customer knowledge and analytics measures. The thesis proposes first step towards ‘Analytics Edge’ adoption as a transition towards investment in ‘Omni-channel’ technologies.

Omni-channel commerce can be defined as an intersection of retail channels, payments, financial services, mobility, location services, social media, marketing services, data and analytics. It is the answer to how consumers will shop and pay in this digital age. Shoppers today expect a converged buying experience: seamless and consistent interactions with brands whether they are at home, on the go, in the store or in the social media. In this aspect of
providing a seamless customer experience, understanding customers’ new expectations is the key.

A fully-fledged e-commerce strategy will eventually require an integrated omni-channel approach that includes investments in clicks-and-bricks retailers, pure-play e-tailers, and proprietary online stores (direct-to-customer).

Success in these channels will involve investment that include

a. Investment in e-commerce (company owned) web site.

b. Integration of data across all channels of sales that includes company owned web site, online intermediaries and brick and mortar stores making it an omni-channel platform to get a one unified view of customer

c. A good data visualization tool.

d. Any good open source predictive analytics tools that will help perform machine learning and predictive modeling.

e. Technical manpower resources (preferably in-house) having skills in business analytics.

The potential benefits of the framework include ease of use and clearly identified areas of analysis that will help managers quickly start on data-driven analysis of products, channels, and customers, which is inevitable in this digital world, lest the competition will move ahead. Such an analysis will also enable management with useful insights for effective decision making around customer. The framework also promises quick returns from the investment such as improved brand exposure, stronger customer insights and better customer experience leading to increased customer spend.

7.4 Limitations of the research

This research has extended past research on competitive advantage and big data analytics in many ways by building on past theoretical and empirical studies. Although this research has significant contributions from both theoretical and practical point of views, it also has some limitations, which are described below. The examination of those limitations will assist future researchers to work around them. Firstly, the number of survey companies was limited to 85. Secondly, the research restricted its industry segments to consumer products, while there are other segments in India that involve complex sales and distribution network too.

The research philosophy of pragmatism reinforces the researcher’s choice of mixed methods in this research that can be a subject to interpretation and researcher bias. Other researchers
could identify other structures and mechanisms or delve further into the context and structures to discover more mechanisms and possible outcomes.

The research also only focussed around customer analytics as the key focus area of competitive advantage and developed the research questions and themes on this subject, whereas for different organizations, the priorities keep changing and areas of competitive advantage also keep varying. The thesis limited itself to customer value delivery as the key to surviving and in this disruptive digital world.

7.5 Recommendations for future research

This section presents some interesting directions for future research. Firstly, the research can be extended to test the outcome of the recommended framework called ‘Analytics Edge’. It can be validated through an action research at a select number of Indian consumer products companies, if the transition from conventional means of approaching customer to Omni-Channel approach powered by Customer Analytics did deliver the proposed values. The research outcome can be further tested to compare the value delivered by the framework between different industry segments, such as Apparel vs. Food Products, Apparel vs Consumer Electronics etc.

Secondly, the research objectives and questions of this thesis can be tested with a wider survey sample and using a different research methodology that includes constructs which can be tested for statistical significance. Also, the return on investment from the proposed ‘Analytics Edge’ framework can be a possible research area. The total economic impact of such a framework by running a before and after study and performing statistical significance tests such as paired-t test could be a good extension to this research.