Role of Business Technologies in the Outperformance of Select Firms

Mahesh Chandra Joshi [1], Gaurav Gupta[2], Deepak Bansal [3]

[1]*Associate Professor, Directorate of Online Education, Manipal University, Jaipur, India*
[2]*Assistant Professor, Amity University, Greater Noida, Uttar Pradesh, India*
[3]*Associate Professor and Head of MBA Department, IILM, Greater Noida, India*

Corresponding author : mcjahd@gmail.com

Abstract

Since the onset of Industrial Revolution in Europe and United States, Technology became integral part of production and business. Started in 1712 the pace of research and innovation has become multifold. Started with technologies like Spinning Jenny, Newcomen steam engine, Locomotive, Telegraph communications, Photograph, Printing Machines the progressive journey included technologies and products like Electricity, Automobile, phonograph, Airplane, Antibiotics, Atomic Power, Insecticides, Computers, Internet, Cloud, Robots, Artificial intelligence, Big Data and many more to count. Technologies have significant influence on the business and society. According to economic historian Paul Bairoch (1750) Third World (Asia, Africa, Latin America) had GNP (PPP) in billions of US dollars* 495 while First World (Western Europe, Northern America, Japan, Singapore and South Korea) had GNP (PPP) in billions of US dollars 155. In the year 1990, it reached to GNP (PPP) in billions of US dollars 7640 and 19210 respectively. Empirical studies show that apart from Liberalization, Privatization and Globalization (LPG), technological advances have influenced business throughout the world and lead to mass production, mass marketing and automation. On one hand it has helped many firms including Indian to outperform on financial fronts but created challenges and threats for small firms. It has also resulted in to ethical and environmental concerns especially for Third World. Those Indian firms who relies on technologies have high market value like Reliance Jio ($65 Billion/2020), Honda Cars India Ltd. (HCIL), Grofers ($1 Billion), Paytm ($16 Billion), Flipkart ($37.6 Billion). These companies have explored opportunities with the help of Emerging Technologies and many are close to financial outperformance.

Keywords*: Industrial revolution, Technological advances, Outperform, Emerging technologies*

1. Introduction:

Today our society on one hand have all products and services necessary for human life while on the other hand markets are flooded with newer products, services and technologies to improve standard of life. This is because human needs are limited but wants and wishes are unlimited. The journey of human from manual to machine is very interesting. Since "Industrial Revolution" which began at Great Britain further contributed by other nations such as France and United Stated in 1712.

Industrial revolution is considered as turning point in the history as it shifted importance form man to machine and resulted into great technology of that time such as Electricity, Motor Engine, Textile Units, Steel Plants, Hydro Power Projects, Steam Engine, Clock, Printing Press etc. Researchers and scientists have never stopped afterwards and have given superior technology to the society including Antibiotics, Computers, Internet, Telephone & Mobile Technology which are few to name.

Today it is evident that out of three components, Technology which comes under Resources is the most prominent for any organization. Technologies have significant influence on the business and society. According to economic historian Paul Bairoch (1750) Third World (Asia, Africa, Latin America) had GNP (PPP) in billions of US dollars* 495 while First World (Western Europe, Northern America, Japan, Singapore and South Korea) had GNP (PPP) in billions of US dollars 155. In the year 1990, it reached to GNP (PPP) in billions of US dollars 7640 and 19210 respectively.

Business organizations are sum of people, process and resources. Technology comes under the resource head which plays significant role in the success and growth of organization. If we study last two decades, we will find that business has become turbulent and it is becoming difficult for firms to survive. Gone are the days when firms like Kodak (founded in 1888, US), Murphy (founded in 1929, Britain), Sony (founded in 1946, Japan), Ford (founded in 1903, US), Xerox (founded in 1906, US), Nokia (founded in 1865, Finland) were offering same product portfolio for decades and were front runner in the market. Later new entrants captured the market who offered better products and technologies to the consumers. Those who ignored technological development and innovations became extinct in the market.

The aim of this paper is to identify new technologies and to discuss successful application of few emerging technologies in the business and trade. This is Descriptive Research in which cases study of industry leaders from different fields have included. The study is based on secondary data and attempts to highlight some of the technologies which have become integral part of the business. It explains technology in brief and their application in general. Out of various technologies, four most popular and effective technologies were identified based on Review of Literature and empirical basis. To elucidate their role, leading firms from different sectors have been identified and explored in brief about their performance and uses of technologies. The financial performance of these firms proves that emerging technology is a key factor in the successful operations of these firms.

2. Literature Review
2.1 Defining Technology

According to Volti (2009), the term "Techne" is accepted widely as to mean "skill"and "art." According to him Technology is well-defined by way of "a system created by humans that uses knowledge and organization to produce objects and techniques for the attainment of specific goals". Emmanuel G. Mesthene's terrific said "we define technology as the organization of knowledge for the achievement of practical purposes." As per Galbraith "Technology means the systematic application of scientific or other organized knowledge to practical tasks." Oxford Dictionary defines technology as "The application of scientific knowledge for practical purposes, especially in industry". Merriam-Webster Dictionary stated the technology as "it as a manner of accomplishing a task especially using technical processes, methods, or knowledge".

In last few decades business and society have come across number of unimaginable, out of box and game changing technologies which we popularly call them as "Emerging Technologies". These "Emerging Technologies" have usage in almost every area such as science, administration, public works and business. Halaweh (2013) acknowledges that any technology that is not being used in a particular circumstance may be classified as an Emerging Technology. Miller et al. (2005) stated that: "A technology is still developing and emerging if this does not yet a "must-have." According to the Business Dictionary, technology is measured to be emerging for the initial

5-10 years of its lifecycle, however Stahl (2011) claims that "technology is emergent for the initial 10-15 years of its lifecycle". These technologies are extremely risky. The only certainty with Emerging Technologies, according to Srinivasan (2008), is the significant degree of ambiguity connected with them. Because Emerging Technologies are based on the research, that are more likely to be marketed at a very high prices as corporations aim to recoup research and growth expenditures, according to Cozzens et al. (2008).

2.2 Business Technology:

The Technologies which play important role in setup, operation and expansion of business are commonly called as "Business Technologies". **Business Technology** is a strategic approach for managing and coordinating enterprise-wide technology management. As technology advances, businesses come across both opportunities and challenges. If an organization can employ and run technology efficiently it will become competitive advantage for the firm while others who face difficulty of non-efficient in execution will face threats because of technological advancements of their competitors.

Business owners can benefit from a wide range of technology. Some technologies are nearly crucial to all businesses, while some others are useful for only specific companies operating in a definite area. All technologies cannot be termed as Business Technologies. Business technology is that kind of technology that is combined directly into the business operation. Now a days Drones are tested for business uses by Amazon. It is suing drones which can fly and deliver to customers at the designated location based on the automated system. Following are major Business Technologies as of now:

2.3 Artificial Intelligence:

Artificial intelligence (AI) is an encouraging field in computer science that deals with creating intelligent machines able to perform tasks that would normally require human intelligence. Norvig and Russell attempted for a technology with 4 types of different approaches viz. Thinking in humanly, thinking in a rational manner, acting very humanly and acting in a rational manner. The existing level of AI meets with first two approaches. It has wide industry application such as smart assistants at online platforms of banks, insurance companies, Self-driving cars, Conversational bots, Recommendations at Google, Flipkart, Amazon & Netflix.

2.4 Big Data Analytics:

Big data is a term that describes large, hard-to-manage high volumes of structured and unstructured data that is encountered by modern businesses. It has six "V" characteristics viz. Volume, Variety, Velocity, Veracity, Value & Variability. Big data can be examined for key understandings that improve results and give direction for making strategic business moves. Over the years, a number of companies have emerged to provide solutions for wrangling massive datasets and understanding the relevant information contained within them.

Big data analytics is an analytic technique for working with a huge amount of data, heterogeneous big data sets that contain structured, semi-structured, and unstructured data, as well as data from many sources and sizes ranging from terabytes to zettabytes. It can be used to model and anticipate future outcomes, as well as improve business intelligence. Through new procedures and sources of data, artificial intelligence (AI), mobile, social, and the Internet of Things (IoT) are boosting data complexity. Some examples of big data sources are sensors, devices, video/audio,

networks, log files, transactional applications, the web, and social media. Some leading players of Big Data Analytics are DISQO, Starburst Data, IBM, Salesforce, Klaviyo, ClouderaIBM, Googlee etc.

2.5 Internet of Things:

The Internet of Things (IoT) is a network of physical objects—"things"—rooted with software, sensors and other type of technologies to attach and exchange the data with other systems and devices over the internet. Medicine, smart manufacturing, power grids, smart cities, logistics, and smart digital supply chains are just a few of the applications. A person with an implant heart monitor, a farm animal implanted with a biochip transponder, or a car with built-in new type of sensors can all be considered "things" in the internet of things.

2.6 Radio Frequency Identification:

"RFID" stands for Radio Frequency Identification, and it may also define as a wireless technology that comprises of two parts: tags and readers. The reader is a device that sends out radio waves and receives the signals from RFID tags through one or more antennas. These tags, which can be passive or active, employ radio waves to broadcast their identify and other information to adjacent readers. It has applications in retail, medical care, tracking, and inventory control, among other things.

3. Select Firms & Their Technological Acumen in Brief:

3.1 Reliance Jio Infocom Ltd :

Reliance Jio Infocom Ltd. was established in the year 2007 by its Promoter and CEO Mr. Mukesh Ambani. The firm deals with Mobile phones, Broadband, Internet services, OTT services and Digital television. The firm is market leader with 35.5 % share of wireless subscribers. Reliance believes "Data is the new oil". Customers can use the company's network connectivity to participate in digital services, manufacturing, agriculture, financial services, healthcare, entertainment, and education, according to the company.
Software which is Mobile based as a service (SaaS), artificial intelligence and automation tools, big data analytics, cloud services, and blockchain, among other things, will be used to power these functionalities.

3.2 Honda Cars India Ltd. (HCIL) :

The brand came to India in 1995 and Honda Cars India Ltd. was established. Today company plans to bring electric cars in India and use of upgraded technology in their new models. Once known as luxury car maker now firm has entered new segments but still its market share is 3.3 %. Analyzing customer feedback quickly is critical for Honda's business success. Honda R&D realized importance of telematics, big data, vehicle diagnostics, biometric sensors, smartphones, and customer surveys. It is also using Google Assistance as technological initiative.

3.3 Grofers:

It was established in the year 2013 and it has 13 % market share as of now. It put technology is at the centre of everything that it does to create the best customer experience. It is using Customer Data Platform (CDP) for 360 view of its customers which helps firm in personalization and segmentation. It is exploring GIS (Geographical Information System) so as to ensure our supply chain and AI for demand forecasting system which ensures the right product is available at the right place.

3.4 Paytm

It was founded in 2010 and has a market share of 14%. It provides consumers, offline merchants, and internet platforms with full-stack payment and financial solutions. It plans to prepare 50 lakh retailers with IoT (Internet of Things) capable devices to launch 'Soundbox' and other payment acceptance options. It has unveiled an artificial intelligence (AI)-based router engine to assist merchants in increasing payment success rates.

3.5 Flipkart

Founded in 2007, this Indian retailer was acquired by Walmart, a global retailer. It has about 32 % market share. Flipkart, the world's largest e-commerce platform, is betting big on IoT-powered devices such as wearables and smart home solutions and is collaborating with major Indian and global brands. The company has been focusing on AI and ML (Machine Learning).

Flipkart India (part of Walmart) reported its revenues for the financial year 2021-22 as Rs 51,176 crore, an 18 per cent jump since the last financial year. During FY21-22 income of Paytm rose 77.5% on a year-on-year (YoY) basis. Grofers is the second-largest online grocery grow its revenue 78.52% from Rs 1,282.3 crore in FY19 to Rs 2,289.2 crore in FY20. For Honda Cars India Ltd. for the financial year ending on 31 March, 2022, It's EBITDA has increased by 1,252.31 % over the previous year. For the financial year ended March 31, 2022, Reliance Jio's consolidated PAT increased by about 23 per cent to Rs 14,854 crore, compared to Rs 12,071 crore in FY21.

It aims to make every decision data-driven and model-driven. By leveraging big data analytics, the experience of social shopping, and its mobile first approach, it hopes to develop brain of human -like competences to sell smarter to its more than 45 million registered buyers who are online. The following table indicates about few successful firms from India and major technologies implemented by them.

Table 1. Revenue of the Firm

Name of Firm	Year of Establishment	Major Technologies in practice/ under process	Sector	Revenue (2020) In INR
Reliance Jio	2007	Artificial Intelligence (AI), Cloud computing, Big data, Machine learning and Blockchain	Telecom	18632 Cr
Honda Cars Ind Ltd. (HCIL)	1995	IOT, Hybrid Technology, Google Assistant, Alexa	Automobiles	10814 Cr
Grofers	2013	HTML5, Google Analytics, hyperlocal mobile platform	Retail	2290 Cr
Paytm	2010	AI, IOT	Banking & Finance	3,186 Cr
Flipkart	2007	Analytics, AI	Retail	34610 Cr

From the above analysis it is evident that firms who relies on technologies have high market value like Reliance Jio ($65 Billion/2020), Honda Cars India Ltd. (HCIL), Grofers ($1 Billion), Paytm ($16 Billion), Flipkart ($37.6 Billion). These companies have explored opportunities with the help of Emerging Technologies and many are close to financial outperformance.

4. Conclusion:

It is evident that upcoming business technologies have strategic role in the growth and survival of firms in India and abroad. These technologies are generating huge revenues to the technology providers. The current estimation for IoT-connected devices stands at 10 billion, with a colossal 1.5 trillion items holding the capacity to connect.

According to Boston Consulting Group, companies will be spending €250 billion on IoT services and products and half of this spending will be in the sectors like manufacturing, transport and utility industries. Developing technology or acquiring it is very costly. Training people and its implementation has its own challenges but to strengthen process and to improve efficiency of people, technologies will remain key for firms in coming time. Firms must continuously work on this front as it a compulsion, not a choice. The only option remains is either in-house development or customization.

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