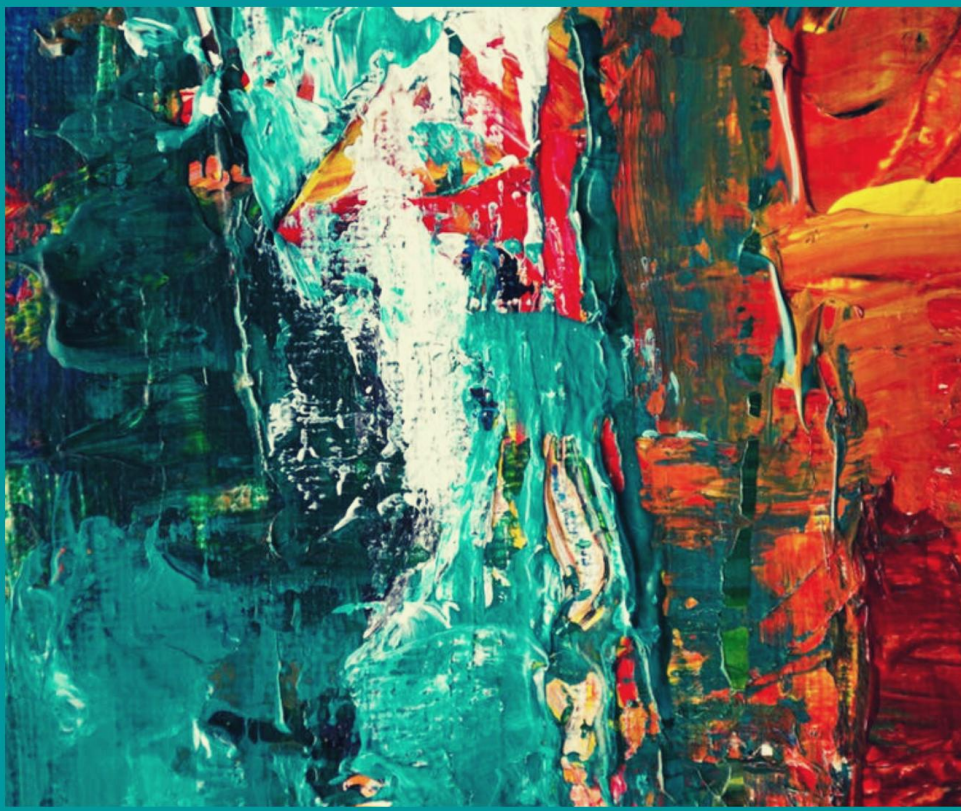
TAMAL DATTA CHAUDHURI



UNDERSTANDING A COMPANY FOR VALUE INVESTING

Business Efficiency, Business Effectiveness, Innovativeness, Sustainability

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Understanding a Company for Value Investing

Business Efficiency, Business Effectiveness, Innovativeness, Sustainability

Tamal Datta Chaudhuri
Calcutta Business School, India

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ISBN: 978-605-7736-91-8 (e-Book)
KSP Books 2020

Understanding a Company for Value Investing: *Business Efficiency, Business Effectiveness, Innovativeness, Sustainability*

Author: ***Tamal Datta Chaudhuri***

Calcutta Business School, Diamond Harbor Road, Bishnupur -743503, South 24 Paraganas, West Bengal, India.

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Preface

Teaching courses on Financial Management, Security Analysis and Portfolio Management, Corporate Finance and Critical Analysis of Organizations requires reference to profit and loss accounts and balance sheets of companies. The last course that I have been teaching over the years also refers to qualitative traits of companies like strategy, vision and leadership qualities. Reading annual reports of companies is essential to appreciate the above mentioned courses and in Calcutta Business School we inculcate this habit among our students. This also helps in delivering lectures in Marketing, Operations Management and Human Resource Management. It is very difficult to develop appreciation of a company, if a student does not read annual reports of companies.

Tracking performance of companies over time requires metrics of measurement, and the book emphasizes throughout the need for such metrics. The book divides the

performance of companies under the heads of business efficiency, business effectiveness, innovativeness and sustainability and metrics under each of the heads are defined. Even to understand qualitative traits of companies, metrics are defined.

The book emphasizes the utility of management concepts like BCG Matrix and Balanced Scorecard in understanding companies. Concepts of Transient Advantage, Blue Ocean Strategy and Porter's Five Forces are discussed in the book and their role in understanding companies. It is reiterated that so long as a company is in existence, there must be customers and the company must be delivering value. A company has various activities and they are all interwined together in harmony. Only when the harmony breaks, companies face complications. Business cycles and associated ups and downs will be there in sales and profitability. However, continuity is ensured by management response, and this also determines the quality of a company.

The book covers performance of medium and small scale enterprises through a sample study. The purpose is to highlight the relationship between innovativeness, productivity, nature of industry, size, skill sets and access to technology. These factors are also true for companies of larger size, and some of my research papers have dealt with these aspects.

After reading the book, I hope the reader gets some idea as to how to perceive a company.

T.D. Chaudhuri
May 20, 2020

For the Students of Management

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Introduction

The purpose of this book is to provide a framework for understanding a company. I provide further purpose by using the word "Value Investing", which can mean either, or all of five different things namely

i. Acquiring shares of a company for financial gains, both through dividends and/or through capital gains arising out of future price appreciation.

ii. Lending money to a company, either directly, or by subscription to debentures such that there is timely payment of interest and repayment of interest.

iii. Acquiring a company such that gains arise from complementarity, scale economies, upstream/downstream integration and market size enhancement.

iv. Spending time in a company, working, leading to personal upliftment through training, exposure, portfolio of tasks handled, and interacting with co-workers.

v. Being a partner in a company that has high corporate governance standards, invests in CSR activities and/or is involved in sustainable ventures.

There are many books on principles of stock selection and fixed investments and the book that is most referred is Security Analysis (1930) by Benjamin Graham and David Dodd. They speak extensively on fundamental performance of companies and the indicators to watch out for value investing. For understanding companies, some of the books that I have found useful are In Search of Excellence (1982) by Thomas J. Peters and Robert H. Waterman, Built to Last (1994) by Jim Collins and Jerry Porras, Blue Ocean Strategy (2005) by W Chan Kim and Renne Mauborgne, The End of Competitive Advantage (2013) by Rita Gunther McGrath and 3 Box Strategy (2016) by Vijay Govindrajan. These books draw their views from observing companies over time and look at their historic background and growth process. A recent book titled Strategy Beyond the Hockey Stick (2018) by Chris Bradley, Martin Hirt and SvenSmit provides a yet interesting approach to understanding performance of companies. By evaluating companies on the basis of economic profit, they identify that whatever be the strategic decisions taken by a company for maintaining competitive advantage, it is the dynamics of different sectors that play a crucial role in shaping the future of a company. They advance the hypothesis that in the overall scheme of things, companies tend to be myopic in their approach and put too much emphasis on self-belief while designing business plans and strategic plans. The book demonstrates that many of the plans may not be successful, not because they are ill-conceived, but because the sector is overall not positioned well.

In the literature, the emphasis has been on understanding the fundamentals of companies and their functioning. While financial performance has been the main focus, leadership,

strategy, work environment, product diversification, technology etc. have also been seriously looked into. Research has demonstrated why some companies tend to survive in the long run and also why companies can go through ups and downs, not because of business cycles, but due to internal functioning. The need for realignment with markets, use of appropriate technology, identifying markets for products, continuous search for markets, upgradation of the skills of the employees, creating a happy workplace for improved productivity, encouraging innovativeness have been the subject matter of research. The studies have focused on both qualitative and quantitative factors.

There is also a literature on the extent and effect of innovation on company performance. Studies have distinguished between innovating companies and non-innovating companies. The reasons cited for innovation include

a) Staying ahead of the competition through increased efficiency

b) Accessing global markets

c) Growth

d) Taking advantage of the demographic composition of the customer base and their expectations

e) Creation of an environment conducive for exchange of ideas from different minds and encouraging group thinking and team work.

f) Attracting the best talent

g) Pursuing business collaborations

In this book, I provide a methodology through metrics which measure factors that are important for understanding a company. If factors affecting performance cannot be quantified, then the analysis becomes subjective and very company specific. Any individual would not have access to the internal functioning of a company and also may not understand what to look for. Many also do not have the

patience or the time to sift through annual reports. The balance sheet and the profit and loss account in the public domain is all that is available for public use. The book relies on balance sheet and profit and loss account entries (along with the notes to accounts) to help the reader understand a company.

Chapter 1 titled **"A Company is not a Company"** brings out the various facets of a company. A company is not just an entity that produces a product or service, or is a brand, or employs people, or whose stocks are traded in the stock market. It is an entity which has to be understood in terms of what value it is delivering in the market, the consumers it is targeting, its organizational structure, its people, its technology, its marketing, its branding, its market position, its adaptability to market changes, its ways of handling disputes, its recruitment and training process, its retention policies, its R&D capabilities and the need for such research etc. A company should be understood as a living entity which eats and breathes, but never sleeps. It is a collection of people, ideas, processes, machines, raw materials, frenzied activities, delivery deadlines, customer feedback and realignment, market survey, continuous innovation, exploiting opportunities for growth, arranging finances to make things happen, looking at suppliers for seamless delivery of raw materials, talking to stockists, whole sellers and retailers, and maintaining delivery schedules.

Chapter 2 deals with **"Various Approaches to Evaluating a Company"**. There are certain frameworks available in the management literature which can be a starting point for understanding a company. The approaches are different, giving a partial view of companies, but are nonetheless useful. The reader can use the frameworks to understand

a) What is the product mix of the companies and how each of the products is positioned? This will help in

prioritization of efforts and allocation of scarce financial resources.

b) The extent of competition that the company faces and in which products. This will help the company to formulate appropriate strategy.

c) That exploration of markets is essential for survival in the market place

d) The financial position of a company

e) Forward looking efforts of the management

f) The importance of strategy

Chapter 3 titled **"Business Efficiency, Business Effectiveness, Innovativeness and Sustainability"** lays out various metrics for evaluating companies and classifies them under four heads. By business efficiency we mean how efficient is the company in converting inputs into output, thus generating sufficient surplus for reinvestment and distribution to the shareholders. This category includes short term indicators and is flow based. The metrics for measuring business effectiveness combine short term and long term variables and indicates medium to long term stability of an organization. It is a reflection of the stability of the business/sector they are in and how well they have been able to exploit the situation to grow.

National Knowledge Commission (NKC), Government of India (2007) defines Innovation as "… a process by which varying degrees of measurable value enhancement is planned and achieved, in any commercial activity. This process may be breakthrough or incremental, and it may occur systematically in a company or sporadically; it may be achieved by:

- introducing new or improved goods or services and/or

- implementing new or improved operational processes and/or

- implementing new or improved organizational/ managerial processesin order to improve market share, competitiveness and quality, while reducing costs."

The literature has considered three types of innovation namely process innovation, marketing innovation and product innovation and examined their impact on competitiveness, output and productivity. This chapter lays out different metrics for measuring innovativeness.

The purpose of the category of sustainability is to identify variables that indicate whether the company can sustain itself in the long run. For this the company has to create an eco-system within the organization which takes the company's objective beyond profit maximization. The metrics in this category that one can use are the P/E ratio, ratio of training & development expenses to sales, volatility of share prices etc.

Chapter 4 titled **"How does a Company Grow?"** starts with understanding the factors behind generic growth of a company. The other factors that are discussed are innovation, growth in existing products in existing markets due to improved operational efficiency, growth with existing products in new markets through marketing innovation, growth through development of new product or services and focus on sustainable growth.

A company can be evaluated either in terms of its orientation, or in terms of whether it is creating value, or both. Companies having long term orientation creates the confidence that they there for the long run. While profitability will always remain the driving force and the principal objective, there is always a trade-off between short term and long term profitability. The nature of business decides this trade-off and it is adaptability that makes a company survive in the long run. However, how do we know that a company has long term orientation? How can we tell that a company creates value? In Chapter 5 titled

"Long Term Orientation and Value Creation" we explain these two terms and provide metrics for measurement. For assessing long term orientation we focus on

1. Innovation – R & D expenses/Sales and Marketing Expenses to Sales
2. Increase in Net Fixed Assets
3. Sales growth
4. $\Delta Y/\Delta K$ – Incremental Output (Y) Capital (K) ratio
5. P/E multiple
6. Ability to attract external funds – Increase in long term borrowings

For value creation we consider the following metrics:

1. Economic Profit
2. Returns on Retained Earnings (RORE)
3. Free cash flow/Sales – economic moat
4. Returns on Invested Capital – ROIC
5. Returns on Assets
6. Asset Turnover Ratio

Chapter 6 titled **"Leadership, Strategy, Innovativeness and Economic Moats"** gives an outline of some other factors that affect the performance of a company. Certain questions are asked and are the subject matter of current research of the author. While innovativeness and economic moats can be measured, the chapter provides ways to measure leadership and strategy.

A company belongs to a sector/industry, the sector is part of the domestic economy and the domestic economy is part of the global economy. In today's globalized environment, any shock in any part of the world, gets transmitted very quickly to other parts of the world. The recent COVID 19 pandemic is a classic example to today's globalized environment. The worldwide effects of oil price shocks and the global financial crisis of 2008 are some other examples. While internal factors are important for successful operation of companies, industry specific developments and domestic

macroeconomic developments also shape the functioning of companies. Chapter 7 titled **"Global Conditions, the Domestic Macroeconomy, Industry Outlook and Company Performance – The Interconnectedness Examined"** brings out these relationships through stock price movements, movements in stock market indices, and other market indices. It also brings out that market orientation is an important aspect of understanding companies.

The literature has emphasized on the innovative abilities of Micro, Small & Medium Enterprises (MSMEs) and attributed this to their size, scale of operations, flexibility and low overheads. These units have been found to be adaptive, quick to respond to market changes and their success has been due to their innovativeness. Chapter 8 titled **"Innovativeness, Skill Intensity and Growth – A Study of MSMEs"** is based on a sample study of MSME units in the state of West Bengal. It focuses on the extent of innovation, spread of innovation, type of innovation undertaken, assesses whether the innovation varied depending on the location, sector, size, and skill availability and tries to understand the sources of innovation for the a sample set of firms. A part of the study also looks into the constraints these units face, both overall, and also for innovation.

1 A company is not a company

Type of product/service

A company produces a physical product or delivers a service (See Box 1.2a & 1.2b). Examples of physical products would be steel, shaving cream, generators, cars, electric heaters and detergents. Services would include investment banking, mobile telephony, audit services, consultancy, and logistics.

A close look at the two boxes will reveal that within the category of products and services, a company can produce a range of products, or offer a range of services. Box 1.2a provides an overview of products that, Hindustan Unilever, an FMCG company, produces. The products range from detergent, ladies cream, dishwashing soap, tea, ice cream and ketchup. Box 1.2b gives the range of services of an Entertainment & Media company, Sun TV Network Ltd.

Lux – Body Soap	Fair & Lovely – Fairness Cream
Dove – Luxury Soap	Vim – Kitchen Cleaner
Sunsilk – Hair Shampoo	Brooke Bond – Tea
Knorr – Soup	Kwality – Ice cream
Domex – Bathroom Cleaner	Surf Excel – Washing Powder

Box 1.1a. *Physical Products of an FMCG company like Hindustan Unilever (HUL)*

Producing and Broadcasting Satellite Television Content
Radio FM programs in all South Indian Languages
Regional TV channels in South India
News Dailies
Direct to Home (DTH) Services
Film Production

Box 1.1b. *Services provided by Sun TV Network*

What is a company?

A student of management needs to develop insight into functioning of companies. This is independent of whether the student decides to work for a corporate, or join the family business, or starts his/her independent enterprise. Specifically, profitability, scale of operations, organizational structure, product mix, industry scenario, employee composition, corporate governance standards, ownership pattern and innovativeness are some of the areas that has to be analyzed to understand a company and also its extent of competitiveness for long term existence. Any company in operation must be producing some product, or delivering some service, which has value. A student needs to understand how the company generates this value, continues to survive, and be in operation year after year. The understanding has to be deep enough to develop appreciation of companies.

In the beginning of their book titled "In Search of Excellence", Thomas J Peters and Robert H Waterman, Jr. refer to a series of pipes painted by the Belgian painter Rene Magritte carrying the caption *Cecin'est pas une pipe* (This is not a pipe). It is interesting to ponder on why an artist would

use such a caption on a painting of a pipe, and say it is not a pipe. It is also interesting why the authors of the above mentioned book refer to this painting in their attempt in identifying traits of successful companies.

My understanding of the above can be summarized as "a company is not a company". A company is not just an entity that produces a product or service, or is a brand, or employs people, or whose stocks are traded in the stock market. It is an entity which has to be understood in terms of what value it is delivering in the market, the consumers it is targeting, its organizational structure, its people, its technology, its marketing, its branding, its market position, its adaptability to market changes, its ways of handling disputes, its recruitment and training process, its retention policies, its R & D capabilities and the need for such research etc. A company should be understood as a living entity which eats and breathes, but never sleeps. It is a collection of people, ideas, processes, machines, raw materials, frenzied activities, delivery deadlines, customer feedback and realignment, market survey, continuous innovation, exploiting opportunities for growth, arranging finances to make things happen, looking at suppliers for seamless delivery of raw materials, talking to stockists, whole sellers and retailers, and maintaining delivery schedules.

Maybe, now one gets an idea that a company, which is there in the market, cannot be dismissed as a "bad company" or a "good company". All companies are good as they are capable of undertaking a series of activities to create value for customers. If a company has a customer, it must be good. It can be large or small, but that is a matter of scale of operations.

What makes a company?

There are so many things that make a company. The following Figure 1.1 depicts the various attributes that make

a company. We will discuss each of these and leave detailed discussions for later chapters.

PRODUCT AND PRICE	TECHNOLOGY	RAW MATERIALS
HUMAN RESOURCES VISION	TRAINING AND DEVELOPMENT COMPETITOR ANALYSIS	EMPLOYEE RETENTION STRATEGY BUSINESS PLAN
MARKET RESEARCH	MARKETING	PRODUCT SUPPORT
LOGISTICS	RESEARCH & DEVELOPMENT	INNOVATION
CUSTOMER	SOURCES OF FINANCE & AND PRICING	COMPLIANCE

Figure 1.1. *Various Aspects of a Company*

Product/service, price, technology, raw materials

Every company has an end product or service to deliver. Otherwise there is no purpose for the company. It requires raw materials to produce the product or deliver the service and there is a technology which converts raw materials to output. A car has steel, plastic, rubber, glass, forged iron, human labor etc. combined through technology. Soap has chemicals, human labor combined through technology. Further, each product or service has to have a price. Otherwise, the raw materials cannot be paid for and there will be no surplus left to put back in the company for expansion.

There are products and services which are available for free. Like the air we breathe and the roads we use as pedestrians. These are free goods and pricing them is difficult. Such goods and services are provided by the state and are produced with tax payer's money.

Human resources, training and development, employee retention

A very important part of a company is its people. It requires talent, skill, hard work, commitment of the work force to convert inputs into output and keep the company functioning. Without human resources, a company cannot function. For improved efficiency, the human resources need to be trained and upgraded. Further, besides their salary, they need to be incentivized to remain with the company and keep delivering. Thus, every company needs a strong and effective retention policy. Performance bonuses, ESOPs, profit sharing are many such incentives that are used for retention of human resources. It must be understood that to train an employee to perform requires time and money. It also takes time for an employee to get used to the environment and culture of an organization.

Our people form the core of our operations. We invest in employee welfare and happiness to drive performance excellence. Our work culture ensures safety, health, competency enhancement and overall well-being of our employees. Harmonious presence among our neighboring communities bears a testimony to the value we place in community development initiatives, while partnering with them in their growth story. We believe in building long-term, transparent and trust based relationships with our partners, while adhering to applicable norms and corporate ethics. We also invest in building our partners' capacities and sharing knowledge with them.

Box 1.3.2. *What the Annual Report for 2017 of Tata Steel, a premier steel producing company in India and the world, states about human resources*

Vision, competitor analysis, strategy, business plan

Every company has a Vision which outlines what the company wants to be and where it wants to go. Besides purpose, there has to be direction in which the company wants to move. Every student dreams of what they want to

be and they have a vision of their future. Similarly, a company also has a vision.

In order to move according to the vision, a company has to have a strategy. This is a serious concept and should not be confused with business plan or annual plan. A strategy is not a collection of business plans. Business plans can be defined, once the strategy is in place. A strategy is a non-imitable sequence of interrelated activities of a firm which is difficult to imitate, and is not a sum of parts. It is difficult to understand and cannot be adopted by parts and be successful. A successful strategy is not about achieving targets. It is a way of doing things.

Vision
To enhance global healthcare through innovative and affordable biopharmaceuticals for patients, partners and healthcare systems across the globe.

Mission
To be an integrated biotechnology enterprise of global distinction.
Essential to this mission is excellence in: intellectual asset creation through discovery, research and development state-of-the-art manufacturing capabilities, internationally benchmarked quality and regulatory systems, new medical insight through disease specific clinical research, customer relationship through outstanding products and services, human resource development through training, mentoring and empowering, management of research and business partnerships.

Box 1.3.3a. *The vision and mission statements of Biocon Ltd., a premier bio pharma company in India*

Growing the core, evolving the portfolio and developing channels are at the heart of our strategy to deliver long-term, compounding growth and sustainable value creation.

Box 1.3.3b. *Strategy statement of Hindustan Unilever Ltd.*

Market research, marketing, product support, logistics

A company zeroes in on a product or service after conducting detailed market research about demand,

location, availability of raw materials, infrastructure and other elements. Once the product/service is identified, ways of marketing the product has to be decided upon. We have seen advertisement of products, looked at sales promotion methods, discounts, TV commercials etc. Product support is an important area and relates to the various processes that should be in place for getting the product from the design desks to the stores. This involves a whole area of logistics which makes the product available to the customer. Product support also includes after sales support.

Research & development, innovation

To remain competitive, a company must innovate. This can be product innovation, process innovation, or marketing innovation. To withstand competition, to stay ahead of the competition, a company has to devote resources for research and development. This enables the company to remain in the market by reducing costs, keeping the customers engaged through new features and superior performance and also expand by discovering new channels of marketing and also new markets.

The company has adopted Industry 4.0. They have selected the ThingWorx Internet of Things (IoT) platform for rapid application enablement, connectivity, machine learning capabilities, Augmented Reality (AR), and integration with leading device cloud offerings.
The ThingWorx platform will: – Leverage Industry 4.0 technologies – artificial intelligence and machine learning technologies to reduce product failures – Reduce downtime caused by unplanned events by sending breaking news alerts of the errors to the proper parties and predicting the amount of time until a system fails – Improve the quality of products by providing a full digital reporting of the products produced – Reduce delays in decision making by enabling team members with real-time detailed data and creating dynamic visualizations of the status of the production systems – Identify trouble spots within the facility by observing real-time data on the factory floor with AR, providing a bird's eye view Digitization of Services.

Box 1.3.5a: *Innovation in Bharat Forge*

1990 – Biocon scales up its in-house research program based on proprietary solid substrate fermentation technology
1994 – Biocon establishes Syngene International Pvt. Ltd. As a custom research company
1996 – Biocon leverages its technology platform to enter biopharmaceuticals and statins
2000 – Bocon establishes Clinigene, India's first Clinical research Organization
2001- Biocon's proprietary bioreactor, PlaFractor, granted worldwide patent
2003 – Biocon is the first company worldwise to develop human insulin on a Pichia expression system
2006 – Biocon inaugurates Biocon Park, a biotechnology hub in Karnataka, India. Biocon Launches India's first anti-cancer drug, BIOMAb EGFR
2007 – Biocon launches its Nephrology Division
2017 – US FDA accepts Biologics License Application for Mylan and Biocon's proposed BiosimilarPegfilgrastim for review US FDA accepts Biologics License Application for Mylan and Biocon's proposed BiosimilarTrastuzumab
2018 – The European Commission approves the sale of biosimilar Insulin Glargine

Box 1.3.5b. *Research & Development in Biocon Ltd.*

Customer

According to Peter Drucker, the purpose of business is to create a customer. We have heard of phrases like customer is king. Without a customer there cannot be a product. Every company fights in the market to either retain a customer or create a customer. According to Blue Ocean Strategy, there are three classes of non-customers, and a company should try and convert them into customers. These consist of people who are sitting on the fence and with no loyalty, people who have not heard about the product, and people who do not like the product. They have to be converted to customers.

Sources and pricing of financial resources

The entire activity of producing a product or service requires money. Machinery has to be purchased, a space has to be located, raw materials have to be procured, people

have to be engaged and expenditure on product promotion and advertisement has to be made. All of it requires money. This is a very important for every company and there are three aspects to it. The first is the source of funds. The second is the method of raising funds. The third is the pricing of these funds. Sources of funds include friends and family, angel investors, venture capital funds, banks, financial institutions and the financial market. While the others are negotiated between parties concerned, to raise funds from the financial market requires instruments like equity and debentures. These are negotiable instruments and are listed in stock exchanges. The source of the funds decides whether a financial instrument will be required for raising funds. While raising money from the market by way of equity is raising risk capital and the subscribers will be part owners of the company, debentures require a fixed interest to be paid and subscription to these debentures depends on the credit worthiness of the company. For this, debentures need to be credit rated. Box 1.3.7 provides an example of a NCD issue with the characteristics.

Next comes the cost at which funds are to be raised. This is quite an involved exercise and requires the help of financial experts. For equity, price per share has to be fixed. For debentures, the rate of interest on the instrument (coupon rate) and the tenure needs to be determined. Further, the timing of payment of the coupon viz. yearly, half yearly, quarterly has to be fixed also.

Issuer	SREI Infrastructure Finance Limited
Issue Type	Secured Redeemable Non-Convertible Debentures
Issue Period	Issue Opens: Tuesday, April 09, 2019
	Issue Closes: Thursday, May 09, 2019
Coupon Rate	10.75% p.a– payable half yearly
Issue Type	Secured Redeemable Non-Convertible Debentures
Issue Size	Base Issue of Rs.100 Crore with an option to retain
	Oversubscription up to Rs.400 Crore aggregating upto

	Tranche I Issue Size of Rs.500 Crore
Face Value	Rs.1000 per NCD
Credit Rating	BWR AA+ (Outlook Stable) by Brickworks

Box 1.3.7. *Structure of an NCD issue*

Compliance

Every company needs to comply with rules and regulations of the country. On one hand there are laws related to insurance, environment, taxes and duties, employee's provident fund and sexual harassment in work place. On the other hand there are disclosures required by Companies Act, stock exchanges and the central bank relating to foreign exchange transactions. There could be binding clauses related to technical collaborations and also disclosures related to shareholders' interest.

The reader can now appreciate why the title of this chapter is "A Company is not a Company". Each of the eighteen items shown in Figure 1 can be elaborated in detail and can form chapters by themselves. The objective here was to demonstrate that a company represents a large number of interlinked activities which are important in their own way. If any aspect malfunctions, it can cause considerable harm to the functioning of the company.

2 Various approaches to evaluating a company

Introduction

The are certain frameworks available in the management literature which can be a starting point for understanding a company. The approaches are different, giving a partial view of companies, but are nonetheless useful. In this chapter we will have a discussion on these frameworks and see what we can learn about companies with their help.

The reader can use the frameworks to understand

a) What is the product mix of the companies and how each of the products is positioned? This will help in prioritization of efforts and allocation of scarce financial resources.

b) The extent of competition that the company faces and in which products. This will help the company to formulate appropriate strategy.

c) That exploration of markets is essential for survival in the market place

d) The financial position of a company

e) Forward looking efforts of the management

f) The importance of strategy

g) That the demographic composition of the customer base is changing and so are their expectations

Framework 1 – The BCG Matrix

The first framework that we will discuss is the BCG Matrix (Table 2.1). The matrix splits the product profile of companies into four categories in terms of market growth and market share. Consider a product of a company whose market growth rate is high and the market share of the company in the market is also high. This implies that the company is a leader in the market for this product, which is also getting increased acceptance. Such a product is a Star product and all efforts of a company will be focused on this product. A company can get identified with this product and at time times the name and the brand merge. An example would be Parachute Oil, cocoanut hair oil, of Marico Industries.

A product that is a Cash Cow, sustains a company's cash flow, and is an old established product of the company. The market growth rate of the product is not high, but it is the largest player. An example would be Boroline of G D Pharmaceuticals. Products that are growing very fast in the market, but the company is a new entrant in this segment and has a low market share, are Question Marks for the company. The choice is whether to ride the growth and try to increase market share, or to withdraw from the market being a late entrant. The small car by Tata Motors, Nano, is an example. Divisions of companies that are Dogs should be shut down.

The BCG matrix provides an understanding of companies through their product profile. It gauges success in terms of positioning of products and suggests possible strategies for growth. Products are the face of a company, and a company is known by its products.

Market Share / Market Growth	High	Low
High	STAR	?
Low	CASH COW	DOG

Figure 2.1. *The BCG matrix*

Framework 2 - The Ansoff Matrix

It is possible to get clarity on the path of growth and survival of a company through the Ansoff Matrix. The matrix divides the frame into four zones along products and markets. New and existing products are mapped against new and existing markets. If a company is with existing products in existing markets, and if it continues to survive and remain profitable, it must be focused on business efficiency, business processes and smarter way of doing things. If a company wants to push existing products in new markets, it has to be through marketing innovation. Introduction of new products in existing markets can be a result of product innovation. Introducing new products in new markets is exploratory in nature and would combine both product and marketing innovation.

The matrix enables understanding a company's potential for long run sustainability and gives insight into innovativeness of the company. A company is always looking at opportunities for space where it can operate and be profitable. The matrix provides a simple conceptual structure for companies that innovativeness is important, and depending on the strength of the company, it needs to

focus on either product innovation, or process innovation, or marketing innovation, or a combination of these. If a company is not innovative, it may not survive in the long run.

Markets / Products	Existing	New
Existing	Market Penetration	Market Development
New	Product Development	Diversification

Figure 2.2. *The Ansoff matrix*

Framework 3 – Porter's Five Forces

The third way for understanding a company is present in Porter's Five Forces framework. For competitive advantage, Porter (1985) has mentioned five elements namely

1. Threat of new entry
2. Competitive rivalry
3. Buyers' power
4. Supplier's power
5. Threat of substitution

Clearly, understanding a company requires understanding of how a company is managing threats of new entrants, handling competition, controlling both buyers and suppliers, and also looking at features of substitute products. Each company's products have to be different from others, and cater to specific needs of the customers. This requires continuous monitoring of market conditions, identifying needs of customers, entering the market early and take leadership position, develop a unique delivery chain and also be continuously innovative.

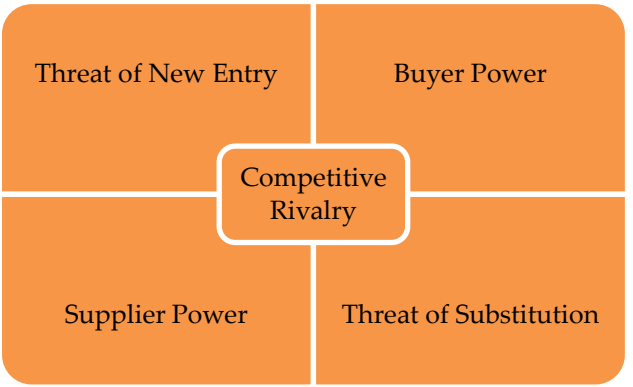

Figure 2.3. *Porter's five forces*
Source: Image from the web

To handle threat of entry, the company should operate at a scale where there are economies of scale, cost advantages and also technological edge. It should have ring fenced its operations and business processes such that it will be difficult for a new entrant to imitate. This has to be addressed by process innovation and also customer loyalty through marketing innovation. Business processes have to be such that there is continuous flow of information regarding the supply chain of raw materials and sourcing alternatives. Use of ICT is of great importance and so is use of data analytics tools.

Framework 4 – 7-S of McKinsey

The McKinsey 7-S framework has seven interdependent factors which can be categorized as either "hard" or "soft" elements. The Hard elements are Strategy, Structure and System. The Soft elements are Shared values, Skills, Style and Staff. Both the Hard and the Soft elements are important for a company, are interlinked, and the framework clearly indicates that these are the things that make a company. A company needs a strategy to begin with, which includes marketing strategy, financial strategy, HR strategy,

operational strategy, IT strategy etc. It requires human beings and their skill sets. It develops a style over time, inculcates values within the people, and at the same time needs processes and systems for support.

Note that it is difficult to quantify all the seven factors, but they are crucial to the functioning of a company. The interlinkages are important and Figure 2.2 is drawn accordingly. Strategy defines what kind of staff will be required with what skill sets and will operate within which structure. The systems and shared values will also help in framing strategy, as for success of a strategy, complete understanding and commitment is necessary. Innovation in a company is a result of the environment. The latter needs to be created for excellence and will attract the necessary people with appropriate skill sets. System of functioning of a company creates values and a distinctive style. These values, if not shared across the organization, cannot generate harmony. Operating on the efficiency frontier for a company requires faith and belief that the strategy will work. This creates style and also modifies people to work in harmony.

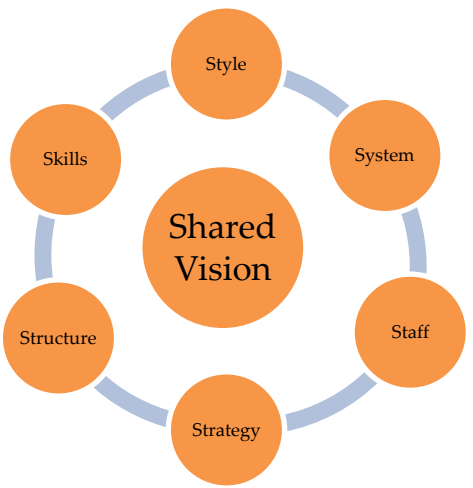

Figure 2.4. *7S McKinsey framework*
Source: Image from the web

Framework 5 – SWOT Analysis

A company can be understood by analyzing its Strengths, its Weaknesses, market Opportunities that it can exploit, and the Threats it faces. These four factors can place a company in perspective, and the various relevant questions in each area is presented in Table 2.3. Seeking answers to these questions on a continuous basis is the task of the management and handling these with care is the mark of a successful organization.

To begin with we need to understand

- What product/service is the company selling?
- What processes are in place to sell the product?
- Who are the customers?
- What would be the mode of delivery of the product to the customers?
- What are the financial requirements to produce and sell this product?

For a SWOT analysis, it is important to have data. This is required to estimate the size of the market and also the internal capabilities. The data and its analysis can show, on real time basis how the products of the company are doing in the market.

Next comes seeking answers to the questions laid out in Table 2.3. Analyzing unique selling points is important to identify the customer base and understand their needs. Exploring new markets and forging new alliances helps in market expansion and also technology upgradation. Financial leverage is important to withstand market competition and business downswings. Flexibility in management style is crucial for fast adoption of new ideas, products and technology. Retention of skilled manpower is essential for continuity of plans and success of business strategy.

All the questions point to traits of an organization and the external environment it faces. The SWOT framework does a good job in bringing many of the facets in one place.

What are your Strengths?	**What are your Weaknesses?**
• What is your unique selling proposition? • Why do your customers like your product? • What is it that you do better than others? • How well can you study market movements? • What are the skill sets of your people? • How motivating is the top management? • What financial leverage do you enjoy?	• What factors are limiting the size of your market? • What internal processes are limiting your expansion efforts? • How motivating is the top management and whether they have clarity in the strategy they have adopted? • What is the extent of financial leverage? • Why are sales falling? • Why are talented people leaving?
What are your Opportunities?	**What are your Threats?**
• How good are you in understanding market trends? • How good are you in exploring new markets? • How nimble is the organization in adopting new technology and new ideas? • How open is the top management to new ideas? • What partnerships can you forge, both for domestic operations and international markets?	• How good is your competition? • Is adoption and absorption of new technology a problem, given the current skill set? • Are their adverse reports in the social media? • Are quality and after sales service inadequate? • Are new products dislodging your products? • Are new substitutes cheaper?

Figure 2.5. *SWOT matrix*

Framework 6 – Balanced Score Card

The Balanced Score Card developed by Kaplan & Norton (1992) is another way of understanding a company. It is a framework aimed at managers who can evaluate the performance of the company on four broad parameters namely operational efficiency, customer perception, shareholder perception and learning for growth. It is like a dashboard which gives a quick idea about the organization, not only based on financials, but also on qualitative factors like employee satisfaction and internal processes and systems. The balanced score card of a company brings together various metrics of evaluating a company and comes up with a comprehensive score.

Figure 2.3 gives an overall idea of the various components of the balanced score card. It is balanced as it does not depend solely on financials or operational efficiency. It has forward looking elements like innovativeness and also highlights the importance of human resources.

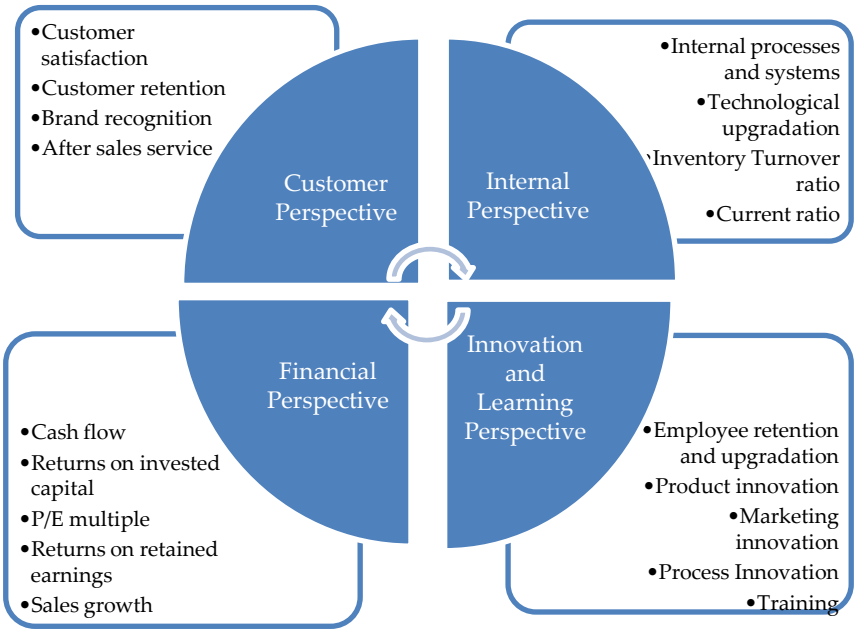

Figure 2.6. *The balanced score card*
Source: Image from the web

The figure above attempts to provide some details of the four perspectives. The financial perspective lists some metrics which helps the shareholder understand the functioning of the company. While cash flow provides cushion from shocks, sales growth indicates the presence of a market and also can mean increase in competitive share. The P/E multiple provides information to the shareholders about the future growth potential of the company. The internal perspective on the other hand includes metrics which throw light on the efficient functioning of the company. This includes reduction in waste, better input management, and also technological efficiency. Customer perspective is of great importance as market size depends on customer perception, and this depends on value delivered. Porter (1996) provides a tradeoff between price and value delivered

where he emphasizes that in products where there is very little value addition, competition will be the fiercest there. In value added products and services, prices are not a major concern. The position of the company is secure in such products. This leads to the fourth perspective namely innovation and learning perspective. According to the authors, any organization has to continuously learn and upgrade its employees. Otherwise, there cannot be innovation. Without innovation, a company is doomed for failure or little growth. As Mary Gunter McGrath (2013) has observed, competitive advantage is transient. To be a leader, one has to be innovative. To achieve this the organization has to foster a culture that supports innovation and growth, and there is a need for organizational alignment, employee motivation, executive leadership, and communication.

Framework 7 – External Factor Evaluation Matrix (EFEM)

We have already observed that in SWOT analysis, opportunities and threats need to be analyzed. These constitute the EFEM. The external factors would include i) social, cultural, demographic, and environmental variables; ii) economic variables; and iii) political, government, business trends, and legal variables. Achieving continued success in the market place would involve understanding demographic shifts in the customer base and the social and cultural practices of the countries. This is true of companies who go transnational where they have to interact and understand the local social practices. Every product may not be suitable for all cultures. Understanding economic variables would mean among others, assessing the competition, barriers to entry, growth of the economy, rate of inflation, exchange rates, stock market trends and economies of scale. To do business, it is essential to

understand the legal practices and enforceability of contracts. Every country has its own set of rules, and they need to be clearly understood. Government rules and regulations define the business environment, and they have to be complied with.

Each of the factors needs to be evaluated on a scale of 1 to 4. They then would be aggregated and averaged to arrive at a composite score. The composite score cannot be less than 1 and cannot be greater than 4. If the score is tracked over time, then the impact of external factors on competitiveness of a company can be evaluated.

Framework 8 – Competitive Profile Matrix (CPM)

A typical CPM is shown in Table 2.4. Critical success factors are listed and weights are attached. The rating of a company by each of the factors, multiplied by the weights and added, will give a score. This score can then be compared with the scores of competitors.

		Walt Disney		Warner Bros		Universal	
Critical success factors	Weight	Rating 1-4	Score	Rating 1-4	Score	Rating 1-4	Score
Advertising	.12	4	.48	4	.48	3	.36
Market share	.10	3	.30	4	.40	2	.20
Financial position	.10	4	.40	3	.30	2	.20
Management	.08	3	.24	3	.24	3	.24
Global expansion	.10	4	.40	4	.40	4	.40
Technology	.15	3	.45	4	.60	3	.45
Customer's loyalty	.10	3	.30	3	.30	2	.20
Brand awareness	.15	4	.60	4	.60	3	.45
Creativity	.10	4	.40	4	.40	4	.40
Total	1.00		3.57		3.72		2.90

Figure 2.7. *Competitive profile matrix*

Framework 9 – GE McKinsey Matrix

Another framework for evaluating companies is through the GE McKinsey Matrix. Here, a company is positioned as per the industry attractiveness and the company's competitive position in the industry. Table 2.5 gives an example of the matrix.

Competitive Position / Industry Strength	High	Medium	Low
High	Safe Investment and Growth	Safe Investment and Growth	Prudent Investment
Medium	Safe Investment and Growth	Prudent Investment	Divest and Exit
Low	Prudent Investment	Divest and Exit	Divest and Exit

Figure 2.5. *Competitive position & industry strength*

The business model of a company can be predicted from the matrix. A company in a high growth industry and in high to medium competitive position should consolidate their position further and invest. Again companies in a low growth industry having low competitive position should exit the business. In medium growth industries, companies should have a careful strategy for investment. It is possible that the near term prospects are bleak in view of new products, new technologies, new customer base or government policies. The strategy for investment should be geared towards marketing innovation and/or product innovation. Industry slowdown can be due to product cycle

maturity, demographic reasons, technological changes and/or government policies. On the other hand if a company cannot compete due to scale diseconomies, lack of qualified human resources, high licensing fees etc., they should quit the business.

3 Business efficiency, business effectiveness, innovativeness and sustainability

Introduction

The previous chapter gave alternative approaches for understanding a company. The approaches are not mutually exclusive, but are complementary, and the logic of each of the approaches have merit. Further, the chapter also defined some metrics for evaluation. In this chapter, we will focus exclusively on metrics for understanding a company, as without measurable yardsticks it is difficult to track a company over time, and also compare between companies belonging to the same sector. The reader can refer to the discussions in Anca Draghici, Anca-Diana Popescu, Luminita Maria Gogan (2014), Robert S. Kaplan and David P. Norton, (1992), Donald W. Beard and Gregory G. Dess, (1981), Jeffrey S. Conant, Michael P. Mokwa, P. Rajan Varadarajan (1990) and Kim Cameron (1986).

I have divided the metrics under four broad heads namely:

A. Business Efficiency
B. Business Effectiveness
C. Innovativeness
D. Sustainability

Business efficiency

By business efficiency we mean how efficient is the company in converting inputs into output, thus generating sufficient surplus for reinvestment and distribution to the shareholders. Gross Profit margin (GPM), Net Profit Margin (NPM) and profit per employee would reflect operational efficiency. Inventory turnover ratio is an indicator of efficiency as it has to do with processes and systems. Current ratio indicates short term balance between current liabilities and current assets and thus ensures liquidity support to the firm. Any imbalance here can spill over to long term liabilities and disturb the asset liability balance. For companies with outstanding long term debt, the interest coverage ratio shows, in the short run, whether the company can service its long term debt obligations and continue operations. If a company defaults on its long run obligations, then its short term borrowings can get adversely affected. This category includes short term indicators and is flow based.

a. Gross profit margin
b. Net profit margin
c. Current ratio
d. Interest coverage ratio
e. Inventory turnover ratio
f. Profit per employee

Business effectiveness

The metrics in this category combine short term and long term variables and indicates medium to long term stability

of an organization. It is a reflection of the stability of the business/sector they are in and how well they have been able to exploit the situation to grow. The indicators and their implications are given below.

a. Growth in sales: indicates growth of the sector and the company

b. Growth in employment: indicates real growth and not nominal growth

c. Growth in plant & Machinery: indicates real growth and good future prospects

d. Growth funded by fresh equity, Retained Earnings, Fresh debt: ability to access external funds is an indicator of the trust and faith of stakeholders and the firm's prospects of continuity

e. Returns on net worth: an indicator with history in the denominator. It is a flow variable (net income) divided by a stock variable (net worth).

f. Asset turnover ratio: an indicator of productivity with again a stock flow combination. Its increase speaks well for the prospects of the company.

g. % Free float: a higher value indicates public faith and more accountability leading to professionalism

h. Dividend pay out ratio: consistency in dividend payout over time shows operational stability

There are certain indicators of business effectiveness, which are qualitative in nature, and difficult to measure. These include

i. % Achievement in goals/targets set in the beginning: objective oriented organization.

j. Specific mission: clarity

k. Specific vision: long term view

l. Values and objectives: value based organizations enjoy shareholder faith

m. Professional company or owner driven company: professional driven company has external shareholder value creation in mind and is more stable. It also is driven by experts and thus tends to be efficient.

Innovativeness

Why does a company innovate? Broadly speaking, according to the literature, companies innovate

a) To stay ahead of the competition through increased efficiency

b) To access global markets

c) To grow

d) As the demographic composition of the customer base is changing and so are their expectations

e) As it creates an environment conducive for exchange of ideas from different minds. It helps in group thinking and team work.

f) As they can attract the best talent

g) As business collaborations require innovation.

National Knowledge Commission (NKC), Government of India (2007) defines Innovation as "… a process by which varying degrees of measurable value enhancement is planned and achieved, in any commercial activity. This process may be breakthrough or incremental, and it may occur systematically in a company or sporadically; it may be achieved by:

- introducing new or improved goods or services and/or

- implementing new or improved operational processes and/or

- implementing new or improved organizational/ managerial processes in order to improve market share, competitiveness and quality, while reducing costs."

The literature has considered three types of innovation namely process innovation, marketing innovation and product innovation and examined their impact on competitiveness, output and productivity. The metrics that can be considered to measure innovativeness are

a. Ratio of R&D Exp to sales: direct focus on innovativeness

b. Ratio of R&D Exp to total expenses: direct focus on innovativeness

c. Incremental output capital ratio (Δ Sales/Δ Capital): indicate process innovation and impact of adoption of appropriate technology

d. Marketing expenses/Total expenses: marketing innovation

e. Company sales/Industry sales: competitive position as a result of all product, process and marketing innovation

Certain qualitative variables can also represent innovativeness like

f. Market innovation: expansion of markets

g. Process innovation: adoption of new technology

h. Product innovation: bringing new products to the market

i. Technological collaboration: pushing the possibility frontier

j. Marketing colaboration: creating new markets, new channels

k. Mergers and/or acquisitions: marketing innovation, creating synergies

Sustainability

The purpose of this category is to identify variables that indicate whether the company can sustain itself in the long run. For this the company has to create an eco-system within the organization which takes the company's objective

beyond profit maximization. The metrics in this category that one can use are

a. P/E ratio– outsiders see long term value
b. P/BVPS ratio – market price versus intrinsic value
c. Ratio of training & Dev exp to sales
d. Ratio of training & Dev exp to total expenses
e. Ratio of CSR Expenses to sales: readiness of the company to sacrifice profit for long term sustainability
f. Company D/E / Industry D/E – financial sustainability
g. Returns on retained earnings: this is elaborated elsewhere in the book
h. Volatility of share prices: stable companies have low volatility of share prices

In this chapter we have tried to provide the reader with measurable metrics for understanding a company. In the spirit of the book where we perceive a company as an entity that creates value, this chapter provides both static and dynamic indices to measure performance. The purpose is not only in measurement, but also in providing a framework as to what can go wrong and where to look for solutions.

4 How does a company grow?

Introduction

A company has to grow to survive and remain competitive. The basic source of growth comes from population growth and that is how the market expands. At a micro level, a firm can grow by exploiting market opportunities, but the overall size of the market can only grow through growth in population. Growth in income and living standards can lead to expansion of market size, but this also generates demand for new products. So companies have to grow not only in their own business line, but also need to innovate to cater to the changing needs. This chapter provides an idea about how a company can grow, and more importantly to understand the sources of growth.

Generic growth

The growth rate, g, of a company can be defined as the growth rate in sales, X.

So $g = (X_t - X_{t-1})/X_{t-1}$ where t is time.

Or

$g = [(X_t - X_{t-1})/I_{t-1}] * [I_{t-1}/X_{t-1}]$, where I_{t-1} is the level of investment in period t-1.

The first component on the right hand side is the incremental output capital ratio, assuming price of the final good is constant between two periods. If we assume that the company does not borrow during this period and also that investment in the previous period affects output in the current period, then the second component is the proportion of sales that the company retains for reinvestment in period t-1, or the propensity to save. So, the growth rate of a company is a function of the propensity to save and technology.

The assumption behind this generic growth is that, given the technology and the propensity to save, the market is growing and there is no dearth of demand. This implies growth in a growing market. The company could also be able to maintain its market share.

Growth through innovation

A company can grow in a stagnant market by outcompeting others, or can grow in a growing market and increase market share. Both assume improved operational efficiency and can happen due to process innovation or marketing innovation or both. This will get reflected in the incremental output capital ratio and also in R&D expenditure.

Growth through innovation will also cover product innovation. In this the company is creating a market for a new product. Here the company need not worry about price competition. Porter (1995) draws a trade-off between price and quality delivered. He shows that companies operating in a red ocean has to be continuously price competitive to

survive and grow. Whereas for new products, price competition is not relevant.

There is a rich literature on the impact of innovativeness on firm growth and sustainability. Drucker (1985) has discussed at length seven sources for innovative opportunity. Four of them are internal to the company and three of them are external to the company. The internal reasons for innovation are the unexpected, the incongruity, the process need and changes in industry structure. The external reasons are demographics, changes in perception and emergence of new knowledge. Christensen *et al.* (2004) and Tellis (2013) are some important books which deal with different aspects of innovation and their impact on firm value.

Growth as depicted by the Ansoff matrix

A company can grow in existing products in existing markets and success would depend upon improved operational efficiency. Growth with existing products in new markets can happen by discovering new geographical areas for sale and consequent

i.) direct exports

ii.) appointment of agents for sale in those markets

iii.) supplying in those markets through production licensing arrangements

iv.) acquisition of production units in those markets

v.) setting up own production facilities there

Companies can grow by introducing new products in existing markets. This is product innovation. If we look at the trade-off diagram in Porter (1995), we can see that here pricing is not an issue so long as value is being delivered. This edge remains for a while till such time other producers start imitating. The strategy definition of Porter rests on this

where the processes are so interlinked that it will be almost impossible to imitate this business model.

Then there are new products in new markets which is a combination of product innovation and marketing innovation.

With globalization, production facilities are spread all over the world and a lot of licensed work is carried on by producers. This ranges from manufacturing, to services, to contract research. A company can grow through widening of markets through collaborations, technology licensing, patent protection etc.

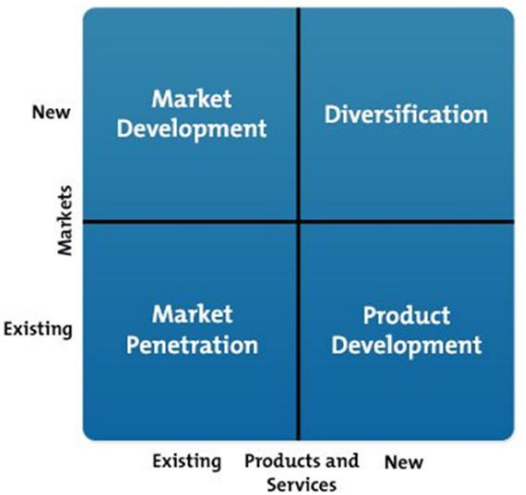

Figure 4.1. *The Ansoff matrix*
Source: Image from the web

Growth through development of new product or services

This is pure product innovation and creation of a market. Before the product was introduced, it was not conceived that a market for such a product could exist. Examples of such products are discussed in Kim & Mauborgne (2005). Uber,

Amazon, Facebook, Twitter, Zoom, WhatsApp are also examples of such products.

In order to grow, Kim & Mauborgne (2005) emphasize that companies need to understand the non-customers. They classify non-customers into three groups namely those who are sitting on the fence with options of other products, those who are unaware of the product of the company, and those customers who are aware of the product, but dislike the product.

McGrath (2013), while elaborating on the concept of Transient Competitive Advantage, focuses on the combination of internal stability and external agility. An opportunity portfolio is constructed in an uncertain world where two kinds of uncertainty are highlighted. These are "Technical and Execution Uncertainty" and "Market and Organizational Uncertainty". In a product profile where both of these are low, the prospects of growth are low and the focus is on efficiency. One cannot achieve breakthrough results from such products. On the other hand, "Stepping Stones" are described as those efforts by companies which try to strategize to take advantage of a probable market for products for which the technology is not yet there. It is an evolving area for both products and technology and execution. The book, however, emphasizes that the core of a company has to be strong to move to launching new products and their positioning.

Sustainable growth

Upon thorough examination of companies of repute, Collins & Porras (1997) arrive at factors for sustainable growth. These are

a. Organizing Arrangements which include organizing structure, policies and procedures, systems, rewards and incentives, ownership structure and general business strategy;

b. Social Factors such as company's style of functioning, cultural practices, atmosphere, group dynamics;

c. Physical Setting such as geographical location, plant and office layout;

d. Technology and its appropriateness, regular updations, advanced job configurations;

e. Leadership style, family based or professional management, transition systems, leadership selection process and criteria;

f. Products and Services and their market position. Were there product failures? Did the company play in the existing market or did it introduce new products. Did the company discover new markets?

g. Presence of Vision, Mission, Core Values, Purpose, Goals;

h. Financial performance;

i. Market Environment and the changes, industry structure, government regulations.

The Three Box Solution by Govindrajan (2016) provides a strategic approach to creating new businesses, while optimizing on the existing one. The reasons for focusing on the current business is obvious as it provides the necessary elements for continuity in the immediate future. Plus, there are less unknowns in this approach. Delving into new businesses requires resources to be diverted to unknown territories. Falling into success traps is easy and comforting. However, organizations that do not innovate and continuously learn, will perish. It will be swimming in the red ocean. While emphasizing on managing the present and creating the future, Govindrajan (2016) also equally emphasizes on forgetting the past. It is not possible to create a successful future path, unless we can get out of our approaches and thoughts that brought success in the past.

5 Long term orientation and value creation

Introduction

A company can be evaluated either in terms of its orientation, or in terms of whether it is creating value, or both. Companies having long term orientation creates the confidence that they are there for the long run. While profitability will always remain the driving force and the principal objective, there is always a trade-off between short term and long term profitability. The nature of business decides this trade-off and it is adaptability that makes a company survive in the long run. However, how do we know that a company has long term orientation? How can we tell that a company creates value? In this section we will explain these two terms and provide metrics for measurement.

Long term orientation

The following are the metrics for assessing long term orientation.

1. Innovation – R&D expenses/Sales and Marketing Expenses to Sales
2. Increase in Net Fixed Assets
3. Sales growth
4. ΔY/ΔK – Incremental Output (Y) Capital (K) ratio
5. P/E multiple
6. Ability to attract external funds – Increase in long term borrowings

Innovation – R&D expenses/sales

A company that innovates through investment in Research and Development (R & D) is a thinking company. It is evaluating the competition, assessing market growth and reorienting itself well in advance to outcompete the other players. Such a company has an eye for novelty and is trying to bring a new flavor to the customers. It is not a run of the mill company doing the same thing over and over again. It reinvents and repositions itself time and again.

Increase in Net Fixed Assets (NFA)

Increase in NFA implies capacity expansion, and an expanding company has long term orientation. It also signifies that it is operating in a growing market. Increase in NFA embodies new technology in new machinery, and with it comes improved productivity.

Sales growth

A consequence of increase in NFA is growth in sales, and a growing company generates confidence in stakeholders. The latter includes lenders, shareholders, customers, vendors and employees. Sales growth generates confidence of the management and enables innovation. It gives the flexibility to think differently and experiment with ideas.

ΔY/ΔK

This is the ratio of increase in Sales (ΔY) to increase in NFA (ΔK). It is the incremental output capital ratio indicating productivity of capital. This can be the result of improved technology embedded in new machines or improved processes. A company which can achieve increase in this ratio over the years is a forward looking organization with long term orientation.

P/E multiple

This ratio is used by stock market players to evaluate investment options. The inverse of this ratio indicates returns from holding the stock and low multiples are generally preferred over high multiples. High P/E ratios are indicative of future growth potentials of companies and high price in relation to current earnings discounts this future growth. Investors keep paying high price for stocks of companies that have long term prospects, expecting further appreciation.

Ability to attract external funds – Increase in long term borrowings

Lenders of long term funds are banks or financial institutions that have strong appraisal teams. They have systems of assessment and only lend when the companies (borrowers) pass the risk assessment tests. Since such lending are for long periods, and are to be serviced from future cash flows, this can be taken as a proxy for long term orientation of companies.

Value creation

We now turn to the meaning of creation of value. In order to understand whether long term orientation creates value, we need to have metrics to measure value and then map

them to the metrics of long term orientation. The following metrics are considered to represent value.

1. Economic Profit
2. Returns on Retained Earnings (RORE)
3. Free cash flow/Sales – economic moat
4. Returns on Invested Capital – ROIC
5. Returns on Assets
6. Asset Turnover Ratio

Economic profit

Economic profit is arrived at after subtracting the opportunity cost of capital from operating profit. Operating profit divided by capital employed gives the return from capital employed. By subtracting the opportunity cost of capital from this, we arrive at the rate of economic profit. This, multiplied by capital employed, gives the level of economic profit. Being profitable is not enough. A company has to earn also the opportunity cost of capital or the "hurdle rate". If we take out interest earnings and arrive at profit after tax, then the latter should cover the cost of equity.

RORE

One of the many principles of investment outlined by Warren Buffett is "Returns on Retained Earnings" (RORE). Over a 5 year period it is calculated as

$$\frac{\{(\text{Retained earnings in period t} + 5) - (\text{Retained earnings in period t})\}}{\text{Sum of retained earnings in period t to period t} + 5} * 100$$

According to Buffett, if this return exceeds 15%, then the company shares are attractive to buy. Of course, there are other principles that also need to be taken into account. This, by itself, is not enough.

Retained Earnings (RE) is the amount from PAT that is retained by the company after distribution of dividend to the

shareholders. This RE is to be used for the purpose of reinvestment in the activities of the company which will enhance shareholder value in the future. Thus, instead of paying the entire PAT to the shareholders, a part is retained for gain to the shareholders in future. Clearly, the shareholders would agree to forego a part of the PAT if they are convinced that the company would be able to utilize these funds in a way that would generate returns higher than what they would have been able to generate by themselves, if they had received it as dividend.

An indicator for efficient utilization of RE is RORE. If the RE is invested efficiently each year, then it would generate increased PAT each year. Thus, even if we assume a small growth in dividends, RE would rise. The question is whether the growth in RE significantly large as a % of aggregate RE over the period.

It is an interesting ratio and needs elaboration. If the RE each year is not used efficiently and is kept in the form of cash balances by the company, clearly it is inefficient as it would earn only the bank savings rate. If the company speculates with this money in the stock market, then disaster is imminent. So only if it used for productive purposes can we say that shareholders may agree to forego dividends.

Take an extreme example

- where no dividend is paid
- the entire PAT is retained
- the company does not either borrow long term, or raise fresh equity from the market
- the entire PAT goes for fresh fixed asset acquisition
- the ratio between PAT and production (α) is constant.

Then RORE looks like

$$\frac{\{(\text{PAT in period } t+5) - (\text{PAT in period } t)\}}{\text{Increase in fixed assets in period t to period t+5}} * 100 \quad (1)$$

or

$$\frac{\alpha\{(\text{output in period } t+5) - (\text{output in period } t)\}}{\text{Increase in fixed assets in period t to period t+5}} * 100 \quad (2)$$

Expression (1) is a standard ratio and is the incremental returns to fixed assets. Expression (2) has an economic interpretation and is the incremental output capital ratio. Both (1) and (2) show how efficiently fixed assets are being used in production or how productive is the physical capital.

RORE is a nice intuitive ratio and provides an indicator to shareholders about the effective utilization of RE. It is certainly an efficiency indicator and a good benchmark for share acquisition.

6 Leadership, strategy, innovativeness and economic moats

Introduction

This chapter puts forward some questions related to understanding companies and is the subject matter of current research work by the author.

Leadership

The literature has emphasized on many qualitative factors that contribute to the successful operations of a company. Some of these are leadership quality, customer focus, work place environment, innovativeness, employees with entrepreneurial mind set, transparency, collaborative environment, clear vision, core ideology and organizational culture. In the balanced score card approach to measuring the standing of a company, many of the components of Customer Perspective, Internal Business Perspective, and Innovation and Learning Perspective are qualitative in nature. The analysis in Built to Last is based on attaching grades to the factors, as they are not quantifiable. The body

of research has thus been based on intensive in-house study of specific companies for identifying distinguishing characteristics. They have been questionnaire based, and most of the information is not available in the public domain.

How does one measure organizational structure, leadership, values, work environment etc.? The purpose of our research in this area is to find proxy variables of the qualitative traits of companies from their published annual reports and then explore some hypotheses relating these traits to indicators of performance. The questions that we ask are

1. If we assume that good leadership gets reflected in (1 – free float %) indicating control, then can we relate this to P/E, volatility in stock returns, sales growth, competitive position, ability to consistently raise external resources, innovativeness?
2. If market perceives a company to be in good hands through the P/E ratio, then can we relate P/E to volatility in returns, sales growth, competitive position, ability to consistently raise external resources, innovativeness?
3. If good leadership gets reflected through consistent sales growth and improving/retain competitive position, then does it correlate with innovativeness?
4. If employee expenses/sales [(human resource sustainability (HRS)] reflect focus on human resources, then does it lead to innovativeness, improved GPM, better ROI, ROCE, Asset Turnover Ratio, Inventory Turnover Ratio?
5. Does HRS lead to higher P/E and lower volatility of stock returns?
6. Does HRS correlate with size and age?

Strategy

Porter (1996) defines what strategy is. It has elements of marketing strategy, innovation strategy, financial strategy,

HR strategy and also operational strategy. In today's digitalized world, use of the IT platform is also part of strategy. If we focus on marketing strategy, then this includes advertising, marketing and sales and distribution. The questions that we ask in our research work are

1. Does marketing strategy have anything to do with size – do large companies spend more on advertising. Is it true that smaller companies cannot afford to advertise?
2. Does marketing strategy have anything to do with age – is it true that new companies advertise more rather than older companies because the latter have already established their brand?
3. Which marketing strategy has generated economic profit the most?
4. The difference $[(\Delta Y/\Delta K)_{t+5} - (\Delta Y/\Delta K)_t]$ represents improvement in productivity. This can be due to either technological improvements, or innovations, or both. Innovations include marketing innovation also, and the latter is a result of marketing strategy which gets reflected in either increase in advertising expenses, marketing expenses or sales and distribution expenses. Increase in productivity would get reflected in growth in sales, or in profit margins, or both.

Our research focuses on mapping $[(\Delta Y/\Delta K)_{t+5} - (\Delta Y/\Delta K)_t]$ against each of the constituents of marketing strategy, growth in sales, and profit margins.

Innovativeness

DattaChaudhuri (2018), Jhunjhunwala & DattaChaudhuri (2020) have extensively dealt with this aspect with respect to Indian companies. We have used measures like ratio of Research and Development expenses to Sales and Marketing Expenses to Sales to evaluate the extent of innovativeness. The influence of industry specific characteristics, skill intensity, information, size, age etc. has been examined. In a

recent paper, DattaChaudhuri, Nath & Sarkar (2020) examines whether Free Cash Flow leads to Innovation and did Free Cash Flow cause improvement in productivity?

Economic moats

Dorsey (2004) explains that economic moats protect a company from adverse market conditions and they enjoy investor confidence. Free Cash Flow is taken to represent economic moat. The questions that we are examining in our current research work are

1. Do economic moats reduce volatility?
2. Do economic moats encourage innovation?
3. Do economic moats help in growth?
4. Does shareholding pattern have an effect on size of economic moats?
5. Does size matter for economic moat?
6. Does leverage matter for economic moat?
7. Does the market perceive the importance of economic moat?
8. Do economic moats help in securing strong competitive position?
9. Do economic moats affect Returns on Retained Earnings?
10. Are economic moats different, industry-wise?

7 Global conditions, the domestic macroeconomy, industry outlook and company performance – The interconnectedness examined

Introduction

Business efficiency, business effectiveness, innovativeness and sustainability of companies depend on both internal and external factors. Internal factors include use of appropriate technology, skilled human resources, managerial effectiveness and leadership. External factors would be domestic macroeconomic conditions, policy environment, age, taste and preferences of the customer base and global economic conditions. In this chapter, we will provide a framework to examine the relationship between performances of companies in relation to external factors like the performance of the sector within which they belong, domestic macroeconomic conditions, and the global economic environment. Portfolio composition and its realignment has to take into consideration these external factors.

For our purpose, we will use stock prices and stock market indices to understand a company. Our contention is

that stock prices include within them all the information that is required to understand the fundamental position of a company. If the fundamentals of a company are good, they will get reflected in the stock prices. If the future prospects of a company are good, they will get reflected in stock prices. Stock prices of companies also get affected by the industry outlook and overall market sentiment. The latter, in turn, gets affected by global market sentiment. At an analytical level, attempts have been made in Ghosh & DattaChaudhuri (2019) to discern the effects of global and domestic market sentiment on stock prices. In this chapter, we will provide a diagrammatic approach.

We will start with the influence of global market forces on the Indian economy and Figure 1 provides some information regarding this. Different global market indices are shown in different colors and Dow Jones Industrial Average (yellow), Frankfurt Dax (red), Bovespa (pink), Nikkei 225 (black), Strait Times (dark green), Hang Seng (purple) and Ftse 100 (light green) are plotted against Nifty 50 (blue) over a specific time period. It is expected that different global indices will reflect market sentiment in their own countries, and the figure covers market sentiment in the US, Europe, Japan, Hong Kong, Singapore and Brazil. They have been plotted along with Nifty 50, the index of stock market sentiment in India.

Stock markets reflect the macroeconomic condition of an economy, the savings level, the risk perception of the population and also their risk appetite. Any change in the rate of inflation, the rate of unemployment, productivity of industry and agro climatic conditions get reflected in stock market sentiment. In todays globalized environment, changes in stock market sentiment gets transmitted to other countries very quickly, and this is reflected in Figure 7.1. If we look at the global financial crisis of 2008, we can observe that all the world stock market indices fell simultaneously

and fast. The rate of recovery was, however, different for different countries depending on the macroeconomic stance that they took.

Economies world over react to the US economic outlook, and Figure 7.2 shows the movement in Nifty along with the Dow Jones Industrial Average (DJIA). The data covers the period where the whole world is feeling the impact of the Corona virus. Nifty (blue) and DJIA (red) has moved together and has crashed together with billions of dollars leaving the Indian market for covering positions in the US market and elsewhere.

Figure 7.1. *Movement in country wise stock market indices*
Source: Metastock

To gauge the economic environment, it is equally important to understand how volatility in the rest of the world transmits to the domestic economy. Figure 7.3 plots the implied volatility index in to US market through the CBOE Volatility Index (blue) against the implied volatility index, India VIX (red), in India. Implied volatility is derived from the options market, and it is an indicator of market fear. Market sentiment and implied volatility are inversely related. Thus, when markets are in a bear grip, the implied volatility indicator rises. When implied volatility in one

economy spills over to other economies, it is of concern and has to be factored in investment decisions. Figure 7.3 shows that CBOE VIX and India VIX tend to move together, showing the vulnerability of the Indian economy to shocks to the US economy.

We now move over to domestic macroeconomic conditions and for that we look at market capitalization (MC) defined as Σip_iq_i where p_i is the price of the ith stock on a given date and q_i is the number of paid up equity shares of the company. If we write it as the following,

$$MC = pq$$
then
$$dMC = pdq + qdp$$

MC of the stock market as a whole can increase in three ways. First, if the number of listed companies rises; second, if the existing companies in the economy raise additional equity capital

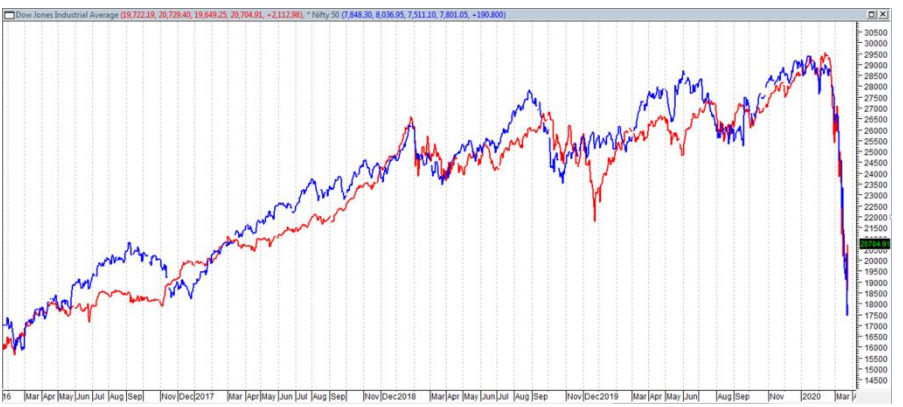

Figure 7.2. *Movement in nifty and Dow Jones industrial average*
Source: Metastock

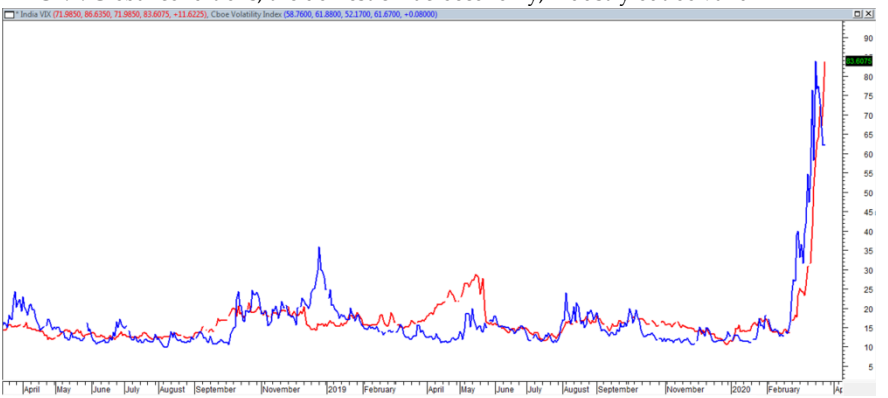

Figure 7.3. *Movement in CBOE VIX and India VIX*
Source: Metastock

from the market by issue of fresh shares; and third if the share prices of the existing listed stocks go up. The first two reasons are signs of a growing economy and represents increased economic activity. The third implies increased activity, but through increased allocation of household and corporate savings to the stock market. The latter can also be due to funds inflow through FIIs which are foreign savings.

If increase in MC is through fresh issue of shares, then it implies capital formation which will lead to growth in the Gross Domestic Product (GDP). Thus the ratio MC/GDP will first rise, but then fall or remain steady, with the multiplier-accelerator fully working itself out. However, if the ratio MC/GDP continues to rise, then after some time there will be a separation between fundamentals and speculative action. At any point of time, for a given level of GDP, there is a level of savings which gets allocated among different instruments. If MC/GDP continues to rise, it would imply that savings in other instruments are getting liquidated and are moving to the stock market. It may also happen that, for reasons we will discuss later, more and more FII funds are entering the Indian market. This is often interpreted as the robustness of growth of the Indian economy or expectations of future

growth potential of the economy. The common investor should stay away from such logic and not get swayed by market sentiment. The basic lesson is that if the ratio MC/GDP rises too much, it is time to liquidate ones holding in stocks and not pump fresh savings into the market.

At the company level we define the Index of Speculation as

$$\text{IOS} = \frac{\text{MCij/Xij}}{\text{MCi/Xi}}$$

where

MCij and Xij are the market capitalization and value of output of the jth company in the ith industry respectively. MCi and Xi are the market capitalization and value of output of the ith industry to which this jth company belongs.

The ratio thus indicates the stock market activity of a particular scrip in relation to its output vis a vis that of the industry to which it belongs. If IOS is greater than one, we would say that the company's share price is showing signs of speculative activity as it is more buoyant not only in relation to its fundamentals, but also with respect to the industry as a whole.

Another way of looking at the ratio is to define it as

$$\text{IOS} = \frac{\text{MCij/MCi}}{\text{Xij/Xi}}$$

Defined in this way, the ratio shows the competitive position of the company in the denominator in terms of its fundamentals and the numerator indicates its share in market capitalization. Again, if IOS is greater than one, it implies that the stock market perception of this company is

more than in proportion to its competitive position in the industry. This would suggest overvaluation. It can also be said that if this ratio is significantly less than one, then it would indicate undervaluation of the company.

Thus, while MC/GDP gives an idea about the financial sector development of the economy, IOS gives the relative position of the company in the industry and speculative bubbles, if any. Understanding a company for portfolio formation requires evaluating this ratio and finding out whether a stock is overvalued or undervalued. IOS also builds a bridge between a company and the industry. We will dwell on this relationship later.

In the stock market, stocks are classified by their market capitalization and we have large cap stocks, mid cap stocks and small cap stocks. To represent the class of stocks as a whole, we have BSE mid cap index, BSE small cap index and Sensex stands for the large cap index. Market sentiment is broken down segment wise, and it would be interesting to see how an individual stock moves with the segment specific index as well as overall market sentiment. First, we will look at how the segments move with overall market sentiment, and this is shown in Figure 7.4. It is interesting to observe that whereas Sensex (blue) has a upward sloping trend from 2017, that of the mid cap index (green) and small cap index (red) are downward sloping.

Figure 7.4. *Movement in sensex, mid cap index and small cap index*
Source: Metastock

Small cap stocks are speculative in nature and mid cap stocks are those that are aspiring to be large cap stocks someday. Small cap stocks are of companies that are small in size and medium size companies have larger size of operations. The figure shows that the indices at times tend to move together, but there are times they move in opposite direction. It is quite reasonable to say that funds flow into large cap stocks first and then trickle down to midcap, and then small cap stocks. This represents market perception and a company can be evaluated from which segment is belong to.

As mentioned in the beginning, this chapter is about understanding a company from the perspective of the stock market. The contention is that stock prices not only the present functioning of a company, but also its future prospects. It is not fundamental analysis, but provides an alternative perspective. For example, free cash flow of a company forms part of fundamental analysis of a company. However, stock analysts look at free cash flow as economic moat, and gives great importance to this variable for stock selection.

We have till now focused on global factors and the domestic macro economy that can affect the fortunes of a company. We now turn to stock market indices that reflect different industries to which various companies belong. Figure 7.5 provides information on performance of various industries over time, as represented through stock market indices. The various colors representing the sectors are healthcare (light green), capital goods (dark brown), IT (light brown), FMCG (purple), bank (dark green), auto (red), oil and gas (black), metal (blue) and consumer durable (pink).

Figure 7.5. *Movement in sectoral indices in India*
Source: Metastock

In the figure, we have considered a long period starting from 2008. As we can see, with the 2008 global financial crisis, all the sectors in India collapsed. However, when recovery took place, it was backed by government spending in India. Sectors like metal, capital goods and oil & gas led the recovery process. As the government spending was reduced, these sectors slowed down. The metal sector has not recovered significantly after that.

Let us now look at a closer history, which covers the recent effects of the corona virus. This is shown in Figure 7.6.

Figure 7.6. *Recent movements in sectoral indices in India*
Source: Metastock

Starting from middle of February 2020, all sectoral indices have collapsed. This looks similar to the pattern observed during the global financial crisis. Sectoral indices are made up of stock prices of individual companies belonging to the sector which have relatively high market capitalization in the sector, and which are more liquid. However, prior to the impact of the virus, the Indian economy has shown signs of slowing down, and the auto sector slowed down significantly as is reflected in the fall in this sectoral index. So has been the case with the metal sector and the capital goods sector over a significant period of time. These indices also reflect the change in the industrial structure of India. Understanding a company has to be done with respect to the industry to which it belongs, and a study of the sectoral indices do reflect the prospect of the industry.

Just to demonstrate that sectors differ from each other, in Figure 7.7 we present two sectors, auto (red) and IT (blue) sectoral indices in India. The figure shows that they had dissimilar patterns. While the Indian auto industry caters to the domestic market, the Indian IT industry revenue is mostly generated from the world market. Portfolio

construction has to keep this market orientation of sectors in mind.

Figure 7.7. *Movement in auto and IT sectoral indices in India*
Source: Metastock

In the following figures, we present stock price movements of a few companies, along with their sectoral indices and overall market sentiment. It has to be kept in mind that many companies belong to the sectoral indices also, and hence we may observe similar movements. We have tried to consider companies that do not belong to the sectoral index.

In Figure 7.8, we consider stock prices of two companies Petronet LNG (black) and Oil and Natural Gas Commission (ONGC) (green), along with the Oil & Gas Index (Red) and the overall market sentiment (blue). All of them have fallen since mid-February 2020, but ONGC stock prices has been falling before that. Prices of Petronet LNG has been rising, even when ONGC prices were falling. So, belonging to the same sector, two stock prices can behave differently, providing some indication of their market position and fundamentals.

Figure 7.9 provides information on two companies Hindustan Unilever Co. Ltd. (black) and Marico (green). Both belong to the FMCG sector (red). Overall market

sentiment is given in blue. Not all the time have the company stock prices followed the sectoral index, or overall market sentiment. If this happens in the upswing of company stock prices, in the presence of fall in market sentiment or sectoral index, these companies are worth looking at for portfolio purposes.

The reader can conduct many such exercises and here we provide a couple of examples. The relation between global events, domestic macroeconomic developments and sectoral outlook shape the fortunes of a company.

Figure 7.8. *Movement of oil and gas sector index and stock prices of companies in the sector*
Source: Metastock

Figure 7.9. *Movement of FMCG index and stock prices of companies in the sector*

8 Innovativeness, skill intensity and growth – A study of MSMEs

Introduction

As per latest data available from MSME Annual Report 2014-15, Government of India, the Micro, Small and Medium Enterprises (MSME) sector in India, consisting of around 489 lakh working enterprises, with market value of fixed assets worth Rs.1363701 crore, and employing around 1114 lakh people, is of significant size and has emerged as a dynamic and vibrant sector. It has not only provided employment, but has helped in reducing regional economic imbalances through industrialization of rural and backward areas. They are complementary to large industrial enterprises as low cost ancillary units. By providing means of livelihood to many, the MSME sector has contributed to the socio economic growth of the Indian economy. The gross value of output of this sector is around Rs.1809976 crore and contributes around 38 per cent to India's GDP. The state of West Bengal in India ranks second

highest among all states in India with around 36.64 lakh MSMEs employing around 85.78 lakh people.

The literature has emphasized on the innovative abilities of the MSME units and attributed this to their size, scale of operations, flexibility and low overheads. These units have been found to be adaptive, quick to respond to market changes and their success has been due to their innovativeness. This report is based on a sample study of MSME units in the state of West Bengal. It focuses on the extent of innovation, spread of innovation, type of innovation undertaken, assess whether the innovation varied depending on the location, sector, size, and skill availability and understand the sources of innovation for the a sample set of firms. A part of the study also looks into the constraints these units face, both overall, and also for innovation. This study is based on primary data collected from a ground level survey, with a structured questionnaire. The survey was conducted with the help of officials of District Industries Centers (DICs) of different districts in the State of West Bengal, which are the nodal agencies for the growth of the MSME sector in India.

This chapter is based on a sample of 217 MSME units spread over 4 districts of the state of West Bengal. Of all the districts in the state of West Bengal, manufacturing units in the MSME sector are mostly located in these four districts. The district wise distribution of the sampled units is given in Table 8.1.

Table 8.1. *District wise distribution of units surveyed*

District	Count
Howrah	50
South 24 Parganas	73
Burdwan	50
Nadia and North 24 Parganas	44
Total	217

According to the provisions of Micro, Small & Medium Enterprises Development (MSMED) Act, 2006, of Government of India, the definitions of the different size classes are as under:

Manufacturing Sector	
Enterprises	Investment in plant & machinery (X)
Micro Enterprises	X < = Rs. 25 lakh
Small Enterprises	Rs.25 lakh < X < = Rs. 5 crore
Medium Enterprises	Rs. 5 crore < X < = Rs. 10 crore
Service Sector	
Enterprises	Investment in equipment (X)
Micro Enterprises	X < = Rs.10 lakh
Small Enterprises	Rs.10 lakh < X < = Rs.2 crore
Medium Enterprises	Rs. 2 crore < X < = Rs. 5 crore

Given the above definition, the size wise distribution of the units in the sample is given in Table 8.2.

Table 8.2. *Size wise distribution of units surveyed*

Size	Count
Micro	85
Small	111
Medium	21
Total	217

Combining the above two tables gives us the district wise size wise distribution of the sample set of units and this is shown in Table 8.3. The four districts are evenly represented in the sample while the representation of medium scale units are on the lower side compared to the other two size classes.

This also reflects the paucity of medium scale units in the state.

Table 8.3. *Size wise district wise distribution*

District	Size			Total
	Micro	Small	Medium	
Howrah	13	26	11	50
South 24 Parganas	49	22	2	73
Burdwan	6	38	6	50
Nadia & North 24 Parganas	17	25	2	44
Total	85	111	21	217

One aspect of any sample study is that the sample constituents should be representative in nature. Table 8.4, depicting the industry wise district wise distribution of the sample units, as per ASI 2 digit classification, bears this out. Howrah district has a long history of industrialization and it had been home to many manufacturing units. Similarly, the units in Burdwan district are also mostly manufacturing units being mainly from the Durgapur and Asansol area, which is the home of the Duragpur Steel Plant and numerous ancillary units. The coal belt of Ranigunge is also nearby. It is thus also not surprising that the total number of small and medium units from the manufacturing sector are mostly from these two districts. Small and micro textile units, mainly denim, are concentrated in South 24 Paraganas.

Table 8.4. *Industry wise district wise distribution of units (aggregate)*

Description	District					Total
	Code digit 2	Howrah	South 24 Paraganas	Burdwan	Nadia	
Manufacture of food products	10	1	9	7	9	26
Manufacture of beverages	11	0	1	2	0	3
Manufacture of textiles	13	5	0	0	4	9
Manufacture of wearing apparel	14	2	27	0	3	32
Manufacture of leather	15	0	1	0	0	1

Manufacture of wood and products of wood and cork, except furniture	16	1	1	0	2	4
Manufacture of paper and paper products	17	1	0	0	1	2
Printing and reproduction of recorded media	18	0	0	0	1	1
Manufacture of chemicals and chemical products	20	1	3	3	2	9
Manufacture of pharmaceuticals, medicinal chemical and botanical products	21	0	0	0	1	1
Manufacture of rubber and plastic products	22	11	6	4	4	25
Manufacture of other non-metallic mineral products	23	0	2	18	3	23
Manufacture of basic metals	24	3	4	3	0	10
Manufacture of fabricated metal products, except machinery and equipment	25	8	1	6	3	18
Manufacture of computer, electronic and optical products	26	1	0	0	0	1
Manufacture of electrical equipment	27	3	10	1	1	15
Manufacture of machinery and equipment n.e.c.	28	10	2	2	0	14
Manufacture of other transport equipment	30	1	0	0	0	1
Manufacture of furniture	31	0	2	0	2	4
Other manufacturing	32	1	3	0	6	10
Electricity, gas, steam and air conditioning supply	35	1	0	2	0	3
Waste collection, treatment and disposal activities; materials recovery	38	0	0	0	1	1

Retail trade, except of motor vehicles and motorcycles	47	0	0	0	1	1
Information service activities	63	0	0	2	0	2
	99	0	1	0	0	1
	Total	50	73	50	44	217

The sample covers quite a large number of industries, and this distribution is good for identifying sectors where innovation takes place. It indicates strong presence of manufacturing units producing non-electrical machinery, rubber and plastic products, non-metallic mineral products, and fabricated metal products (except machinery and equipment) in the districts of Howrah and Burdwan. Units manufacturing wearing apparel (mainly denim) and electrical products are concentrated in South 24 Paraganas.

Evidence of extent and type on innovation

Table 8.5 provides an overall idea of the number of firms that have innovated, and those who have not innovated, industry wise. Of the total number of 217 units, 180 units stated that they have innovated, and only 37 units did not innovate. This innovation has been across industries.

Table 8.5. *Industry wise distribution of total innovation*

Description	Code digit 2	Innovation		Total
		Yes	No	
Manufacture of food products	10	18	8	26
Manufacture of beverages	11	2	1	3
Manufacture of textiles	13	6	3	9
Manufacture of wearing apparel	14	29	3	32
Manufacture of leather and related products	15	0	1	1
Manufacture of wood and products of wood and cork, except furniture	16	3	1	4
Manufacture of paper and paper products	17	1	1	2
Printing and reproduction of recorded media	18	0	1	1
Manufacture of chemicals and chemical products	20	9	0	9

Manufacture of pharmaceuticals, medicinal chemical and botanical products	21	0	1	1
Manufacture of rubber and plastic products	22	21	4	25
Manufacture of other non-metallic mineral products	23	18	5	23
Manufacture of basic metals	24	9	1	10
Manufacture of fabricated metal products, except machinery and equipment	25	15	3	18
Manufacture of computer, electronic and optical products	26	1	0	1
Manufacture of electrical equipment	27	14	1	15
Manufacture of machinery and equipment n.e.c.	28	14	0	14
Manufacture of other transport equipment	30	1	0	1
Manufacture of furniture	31	3	1	4
Other manufacturing	32	9	1	10
Electricity, gas, steam and air conditioning supply	35	3	0	3
Waste collection, treatment and disposal activities; materials recovery	38	1	0	1
Retail trade, except of motor vehicles and motorcycles	47	1	0	1
Information service activities	63	1	1	2
	99	1	0	1
	Total	180	37	217

If we take size wise distribution of innovation, then as shown in Table 8.6, the medium scale units have, proportionately, innovated more. The number of units not innovating is concentrated more in the micro and small scale sector. As against 90% of the firms innovating in the medium scale sector, the figure for the micro and small scale sector is around 82%.

Table 8.6. *Size wise distribution of total innovation*

Size	Innovation		Total
	Yes	No	
Micro	70	15	85
Small	91	20	111
Medium	19	2	21
Total	180	37	217

Information on district-wise innovation is given in Table 8.7.

Table 8.7. *District wise total innovation*

Zone	Innovation		Total
	Yes	No	
Howrah	44	6	50
South 24 Parganas	69	4	73
Burdwan	39	11	50
Nadia	28	16	44
Total	180	37	217

South 24 Paraganas leads in innovating firms, and given their strong presence in the apparel sector, the innovation is mostly in this segment. Firms in Howrah and Burdwan have also innovated, but in Nadia the extent of innovation has been less.

In this study, we asked the firms about the nature of the innovation undertaken. Specifically, we asked whether they had undertaken product innovation, and/or process innovation, and/or market innovation. Their response is given in Table 8.8. On an aggregate level, the extent of firms engaged in product innovation is more.

Table 8.8. *Distribution of types of innovation*

Type of Innovation	Innovation		Total
	Yes	No	
Product	142	75	217
Process	127	90	217
Marketing	124	93	217

Table 8.9 classifies type of innovation with nature of industry. We observe that manufacture of wearing apparel has gone in relatively more for product and marketing innovation, as compared to process innovation. Whereas, units involved in manufacture of chemicals and chemical

products have gone in more for process innovation. Units involved in manufacture of rubber and plastic products, manufacture of other non-metallic mineral products, manufacture of basic metals, manufacture of fabricated metal products, except machinery and equipment, manufacture of electrical equipment and manufacture of machinery and equipment n.e.c. have all undertaken all the three types of innovation. Interestingly, manufacture of other non-metallic mineral products has not seen much of marketing innovation. Electricity, gas, steam and air conditioning supply units have gone more for process innovation.

Table 8.9. *Industry wise distribution of types of innovation*

Description	Code digit 2	Product		Process		Marketing		Total
		Yes	No	Yes	No	Yes	No	
Manufacture of food products	10	14	12	14	12	12	14	26
Manufacture of beverages	11	1	2	1	2	2	1	3
Manufacture of textiles	13	5	4	3	6	4	5	9
Manufacture of wearing apparel	14	23	9	12	20	18	14	32
Manufacture of leather and related products	15	0	1	0	1	0	1	1
Manufacture of wood and products of wood and cork, except furniture	16	2	2	3	1	1	3	4
Manufacture of paper and paper products	17	1	1	1	1	1	1	2
Printing and reproduction of recorded media	18	0	1	0	1	0	1	1
Manufacture of chemicals and chemical products	20	6	3	8	1	6	3	9
Manufacture of pharmaceuticals,	21	0	1	0	1	0	1	1

medicinal chemical and botanical products								
Manufacture of rubber and plastic products	22	18	7	18	7	17	8	25
Manufacture of other non-metallic mineral products	23	16	7	15	8	6	17	23
Manufacture of basic metals	24	7	3	5	5	7	3	10
Manufacture of fabricated metal products, except machinery and equipment	25	12	6	11	7	10	8	18
Manufacture of computer, electronic and optical products	26	1	0	1	0	1	0	1
Manufacture of electrical equipment	27	10	5	9	6	12	3	15
Manufacture of machinery and equipment n.e.c.	28	10	4	11	3	13	1	14
Manufacture of other transport equipment	30	1	0	1	0	1	0	1
Manufacture of furniture	31	3	1	2	2	1	3	4
Other manufacturing	32	8	2	7	3	7	3	10
Electricity, gas, steam and air conditioning supply	35	1	2	3	0	1	2	3
Waste collection, treatment and disposal activities; materials recovery	38	0	1	0	1	1	0	1
Retail trade, except of motor vehicles and motorcycles	47	1	0	1	0	1	0	1
Information service activities	63	1	1	0	2	1	1	2
	99	1	0	1	0	1	0	1
	Total	142	75	127	90	124	93	217

Moving on to size wise and type of innovation mapping, it may be observed from Table 8.10 that medium scale units have gone in more for process and marketing innovation, rather than product innovation. A reason could be that they have tie ups with larger units and the end product specification is made by the larger firms leaving little room for product innovation. For the small and micro units who are selling mostly end products, the data shows that small units are more into product and process innovation, whereas micro units are more involved in product innovation. Table 8.10 is interesting as it indicates the nature of the products produced and end product user. For medium units, process and marketing is relatively important for improving profit margin. For small units, profitability depends relatively more on both novel products and processes. Whereas, for micro units, the market may not be clearly defined, and markets are created through innovations in products. The products are not standardized as those of the medium and small units.

Table 8.10. *Size wise distribution of types of innovation*

Size	Product		Process		Marketing	No	Total
	Yes	No	Yes	No	Yes		
Micro	63	30	45	48	51	40	85
Small	74	37	71	40	64	47	111
Medium	10	11	14	7	15	6	21
NA	5	3	3	5	6	2	8
Total	142	75	127	90	124	93	217

From the responses to the questionnaire, the evidence on innovation is shown by way of a Venn diagram in Figure 8.1. From the sample, only a relatively small percentage of firms (17.05%) did not innovate at all and 35% of the firms was involved in all three types of innovation. It is interesting to observe that there were few firms which did both process and market innovation. This is correct as these two types of

innovation are disjoint. If there is process innovation, then in essence the product has also undergone some change. Thus we observe there are more firms that have undertaken both product and process innovation and product and marketing innovation. This is one of the observations that leads us to believe that the respondents have understood and answered the questions correctly and validates the sample constituents.

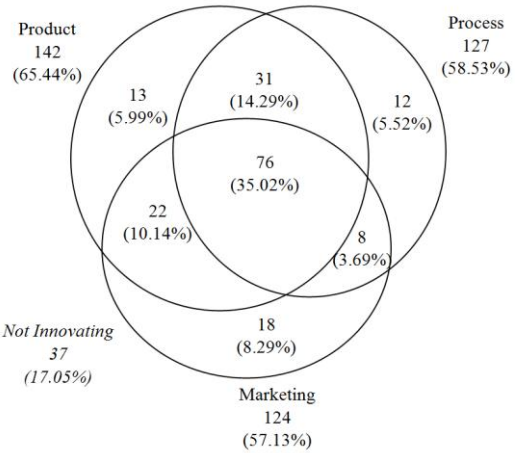

Figure 8.1. *Venn diagram of types of innovation*

The literature has related innovation to availability of skilled manpower and also education. Table 8.11 relates skill set of the sampled units to their innovativeness and maps this across various sizes. From the table, the following observations can be made:

1. Across all sizes, "no innovation" is associated with low skill levels present in the units. This finding is consistent as innovativeness requires some extent of skill and training.
2. The skill sets in the medium scale units were moderate to high. This follows from 1.
3. The skill sets in the micro and small units were low to moderate.

4. While product innovation required relatively high skill sets, process only required low to moderate skill sets. The latter is not consistent as process innovation requires skill. For example, the medium scale units required moderate skill sets for process innovation.
5. Only marketing innovation required moderate to high skill. As the product and the process was standardized, it was marketing skills that could make the units survive.
6. Medium scale units, whether undertaking only marketing innovation or process and marketing innovation or all three kinds of innovation, had moderate to high skill sets.
7. Some non-innovating firms did have moderate to high skilled manpower. It is possible that at the time of conducting the survey, they were not engaged in any form of innovation.

The observations made above from the sample do strengthen the link between skill and innovation.

Table 8.11. *Type of innovation, skill set and size*

Size	Micro			Small			Medium			Total
Skill	low	Moderate	High	Low	Moderate	High	Low	Moderate	High	
No	7	5	3	10	8	2	1	0	1	37
Product Only	4	0	6	0	1	2	0	0	0	13
Process Only	2	0	1	3	3	1	0	2	0	12
Marketing Only	3	4	1	1	2	2	1	1	3	18
Product & Process	4	5	3	8	6	3	2	0	0	31
Product & Marketing	2	1	7	3	6	3	0	0	0	22
Process & Marketing	0	1	0	0	2	3	0	0	2	8
Product, Process & Marketing	8	10	8	15	10	17	0	6	2	76
Total		85			111			21		217

Once we have established the relation between type of innovation, skill set and size of firm and given our

distribution of units across different districts, Table 8.12 maps type of innovation against size and space. As Howrah district has more medium scale units, more manufacturing units, and also relatively better skilled workers, they have undertaken all three types of innovation. In small scale units, Burdwan has more units involved relatively more in product and process innovation. The mainly micro and small denim producing units in South 24 Paraganas have gone for all three types of innovation. These are small units and are flexible enough to adjust to market needs.

Table 8.12. *Types of innovation - Size wise spatial distribution*

Size	Micro				Small				Medium				Total
District / Innovation	Howrah	South 24 parganas	Burdwan& other	Nadia & North 24 Parganas	Howrah	South 24 parganas	Burdwan& other	Nadia & North 24 Parganas	Howrah	South 24 parganas	Burdwan& other	Nadia & North 24 Parganas	
No	2	3	3	7	3	1	8	8	1	0	0	1	37
Product Only	0	8	0	2	1	1	0	1	0	0	0	0	13
Process Only	0	2	0	1	0	0	5	2	1	0	1	0	12
Marketing Only	2	2	0	4	1	0	3	1	3	0	2	0	18
Product & Process	1	8	2	1	0	1	10	6	0	0	1	1	31
Product & Marketing	1	8	1	0	1	8	3	0	0	0	0	0	22
Process & Marketing	1	0	0	0	4	1	0	0	2	0	0	0	8
Product, Process & Marketing	6	18	0	2	16	10	9	7	4	2	2	0	76
Total		85				111				21			217

If we aggregate the industries in our sample from 2 digit classification to Primary, Manufacturing and others, then Table 8.13 permits us to map them against size, space and type of innovation. We can observe that the manufacturing

sector is relatively stronger in terms of product, process and marketing innovation as compared to the primary sector.

Table 8.13. *Size, space and type of innovation of different sectors*

			Sector			
			Primary	Manufacturing	Other	Total
Size	Micro	Yes	33	27	10	70
		No	8	4	3	15
	Small	Yes	21	61	9	91
		No	10	10	0	20
	Medium	Yes	5	13	1	19
		No	1	1	0	2
Districts	Howrah	Yes	7	34	3	44
		No	3	3	0	6
	South 24 Parganas	Yes	36	27	6	69
		No	3	1	0	4
	Burdwan& other	Yes	5	31	3	39
		No	4	6	1	11
	Nadia & North 24 Parganas	Yes	11	9	8	28
		No	9	5	2	16
Types of Innovation	Product	Yes	46	80	16	142
		No	32	36	7	75
	Process	Yes	34	78	15	127
		No	44	38	8	90
	Marketing	Yes	38	72	14	124
		No	40	44	9	93
Total			78	116	23	217

Information, skill & innovation

To understand why MSMEs units innovate/or do not innovate, it is important to ascertain the sources of information of these units on advances in technology in their respective fields. On one hand, it is possible that these small industrial units do not innovate because they have no information on the advances in technology that have taken place in their area. No institution has come forward to enlighten them in this regard. On the other hand, given the

availability of information in the internet, one could presume that the units would gather sufficient information on their own. The government needs to ascertain whether the plans and schemes that they have initiated, are getting delivered in a proper fashion. Given the government's effort towards dissemination of technical education through engineering colleges and IITs, this project tries to bring out the real picture at the ground level. It is expected that the results presented in this section will help the policy makers in optimal intervention. However, discussions with a few entrepreneurs revealed that there is not much help that these units have received from engineering and research institutes. The government of West Bengal is trying to get the various stakeholders together, with the help of DICs, in this regard - but this movement has not led to any perceptible effect yet.

It is also true that absorption and execution of technical knowledge depends on the distribution of skill in the units. Thus, innovativeness and sources of information for innovation, has to be understood together with the skill intensity of the units. This chapter covers all the three areas for the units that have been surveyed.

Table 8.14 gives the distribution of sources of innovation for all the units. We can observe that 25 units did not have access to any information. We have also seen in the previous tables, that out of 217 units, 37 units did not innovate at all during the period of the study. It is possible that some of these units did not innovate as they had no information. However, there will be 12 units who did not innovate, in spite of having information.

Of the various sources of information, mostly information on technological advances has been sourced by the company themselves or has been procured from qualified engineers. It is thus a very micro oriented result and does not reflect systematic institutional intervention. Machinery suppliers

have helped with providing information on updated machinery and innovation has taken shape.

Table 8.14. *Sources of information for innovation*

Technology Source	No. of Units
None	25
In House	97
Local Market	6
Machinery Suppliers	11
Qualified Engineers	72
Foreign Sources	6
Total	217

Table 8.15 indicates three things. First, lack of information was mostly in the case of micro or small units. Second, micro and small units depended mostly on in-house information for innovation. Third, the role of qualified engineers was more in medium and small units. These results are expected as micro units do not have the wherewithal to approach institutions for help and have to depend on in house expertise. Medium scale units require the help of qualified engineers as their scale of operations are large. The small scale units seeking the help of qualified engineers are the ones that are aspiring for growth.

Table 8.15. *Size-wise distribution of sources of information for innovation*

Technology Source / Size of Firm	Micro	Small	Medium	Total
None	12	9	4	25
In House	57	38	5	97
Local Market	4	2	0	6
Machinery Suppliers	3	7	1	11
Qualified Engineers	12	51	9	72
Foreign Sources	0	4	2	6
Total	85	111	21	217

Table 8.16. *District-wise sources of information for innovation*

Technology Source/ District	Howrah	South 24 Paraganas	Burdwan	Nadia	Total
None	3	19	0	3	25
In House	31	45	0	0	97
Local Market	1	5	0	0	6
Machinery Suppliers	0	1	5	5	11
Qualified Engineers	15	0	37	20	72
Foreign Sources	0	3	2	1	6
Total	50	73	50	44	217

We stated at the outset, that of the 4 districts that have been covered in the study, Burdwan and Howrah districts are industrial belts where most of the manufacturing units in West Bengal are located. It is thus not surprising to observe from Table 8.16 that qualified engineers have contributed most in these two areas. Significant in house expertise is observed in Howrah and South 24 Paraganas.

Table 8.17. *Industry wise distribution of source of information*

Code digit 2	None	In-house	Local Market	Machinery Suppliers	Qualified Engineers	Foreign Sources	Total
10	5	7	1	4	9	0	26
11	1	0	0	0	2	0	3
13	1	5	0	0	3	0	9
14	0	28	4	0	0	0	32
15	1	0	0	0	0	0	1
16	1	3	0	0	0	0	4
17	0	1	0	0	0	1	2
18	0	0	0	1	0	0	1
20	2	4	0	0	3	0	9
21	0	0	0	0	1	0	1
22	4	10	0	2	9	0	25
23	2	4	0	2	15	0	23
24	0	5	0	1	3	1	10
25	2	6	1	0	8	1	18
26	0	1	0	0	0	0	1
27	4	6	0	1	3	1	15
28	2	6	0	0	5	1	14
30	0	1	0	0	0	0	1

31	0	2	0	0	2	0	4
32	0	7	0	0	3	0	10
35	0	0	0	0	3	0	3
38	0	0	0	0	1	0	1
47	0	1	0	0	0	0	1
63	0	0	0	0	2	0	2
99	0	0	0	0	0	1	1
Total	25	97	6	11	72	6	217

Table 8.9 classifies type of innovation with nature of industry. It was noted that manufacture of wearing apparel has gone in relatively more for product and marketing innovation, as compared to process innovation. Table 8.17 indicates that these units under 2 digit classification 14, have depended mostly on in house expertise and information. Units involved in manufacture of chemicals and chemical products have gone in more for process innovation. Units involved in manufacture of rubber and plastic products, manufacture of other non-metallic mineral products, manufacture of basic metals, manufacture of fabricated metal products, except machinery and equipment, manufacture of electrical equipment and manufacture of machinery and equipment n.e.c. have all undertaken all the three types of innovation. These are the units that have depended mostly on qualified engineers. Electricity, gas, steam and air conditioning supply units (classification 35) have gone more for process innovation and have depended on qualified engineers.

One of the objectives of the study was to relate innovativeness with skill availability in the industrial units. Skill matters for technological absorption and execution of new methods of production. In this study skill intensity has been defined as ratio of skilled to unskilled manpower. Cluster 1 is defined as low skilled where the ratio of skilled to unskilled manpower is <50%; Cluster 2 is defined as medium skilled where the ratio of skilled to unskilled

manpower is between 50%-70%; Cluster 3 is defined as high skilled where the ratio of skilled to unskilled manpower is >70%. The overall distribution of skill intensity was observed to more or less even among the 217 units (Table 18). We can observe from Table 8.19 that with the exception of wearing apparel, skilled manpower was concentrated in the manufacturing sector. Manufacture of other non-metallic mineral products has a proportionately large number of unskilled labour. This could be because of small size of operations, repetitive in nature, involving low level of technology. Table 8.20, indicates that medium scale units have larger proportion of skilled workers. The micro and small units have relatively low and medium skilled workers.

Table 8.18. *Distribution of skilled manpower*

Skilled Manpower	No. of Units
Low Skilled	77
Moderate Skilled	73
High Skilled	67
Total	217

The district wise distribution of skilled manpower, as shown in Table 8.21, indicates that Howrah has greater concentration of skilled workers than the district of Burdwan. The concentration of wearing apparel in South 24 Paraganas requires relatively higher skilled workers. Units in Nadia have relatively low skilled workers, whereas those in Burdwan have low to middle skill workers. This skill distribution provides some idea about the pattern of industrialisation in the districts represented in the sample.

Table 8.19. *Industry wise distribution of skilled manpower*

Description	Code	Skill Cluster			Total
		Low skilled	Medium skilled	High skilled	
Manufacture of food products	10	18	6	2	26
Manufacture of beverages	11	1	2	0	3
Manufacture of textiles	13	3	4	2	9
Manufacture of wearing apparel	14	9	11	12	32
Manufacture of leather and related products	15	0	0	1	1
Manufacture of wood and products of wood and cork, except furniture	16	2	2	0	4
Manufacture of paper and paper products	17	1	0	1	2
Printing and reproduction of recorded media	18	0	1	0	1
Manufacture of chemicals and chemical products	20	4	4	1	9
Manufacture of pharmaceuticals, medicinal chemical and botanical products	21	1	0	0	1
Manufacture of rubber and plastic products	22	7	14	4	25
Manufacture of other non-metallic mineral products	23	12	5	6	23
Manufacture of basic metals	24	3	3	4	10
Manufacture of fabricated metal products, except machinery and equipment	25	4	7	7	18

Manufacture of computer, electronic and optical products	26	0	0	1	1
Manufacture of electrical equipment	27	2	7	6	15
Manufacture of machinery and equipment n.e.c.	28	3	2	9	14
Manufacture of other transport equipment	30	0	0	1	1
Manufacture of furniture	31	2	1	1	4
Other manufacturing	32	2	3	5	10
Electricity, gas, steam and air conditioning supply	35	1	0	2	3
Waste collection, treatment and disposal activities; materials recovery	38	0	0	1	1
Retail trade, except of motor vehicles and motorcycles	47	1	0	0	1
Information service activities	63	1	1	0	2
	99	0	0	1	1

Table 8.20. *Size wise distribution of skilled manpower*

Size	Skill Level			Total
	Low skilled	Moderate skilled	High skilled	
Micro	30	37	18	85
Small	42	30	39	111
Medium	5	6	10	21
Total	77	73	67	217

Table 8.21. *District wise distribution of skilled manpower*

District	Skill Level			Total
	Low Skilled	Medium Skilled	High Skilled	
Howrah	3	23	24	50
South 24 Parganas	19	21	33	73
Burdwan& others	21	22	7	50
Nadia and North 24 Parganas	34	7	3	44
Total	77	73	67	217

One of the objectives of the study was to relate innovation with skill intensity of the units. Tables 8.22, 8.23 and 8.24 show that units, across all skill intensities, all sizes, and in all the districts have innovated. The state of West Bengal has in recent years taken specific steps to support MSME units in marketing their products, in particular to micro and small units.

If we try to map innovation type with skill intensity, then as shown in Table 8.25, the proportion of skilled manpower is higher in units which have gone for process and product innovation. Units going in for marketing innovation are such units whose technical skill requirement is low.

Table 8.22. *Innovation and skilled manpower*

Skill Level	Innovation		Total
	Yes	No	
Low Skilled	60	17	77
Medium Skilled	66	7	73
High Skilled	62	5	67
Total	192	25	217

Table 8.23. *Innovation and skilled manpower district wise*

Nature of hired manpower/Innovation	District								Total
	Howrah		South 24 Parganas		Burdwan		Nadia		
	Yes	No	Yes	No	Yes	No	Yes	No	
Low Skilled	21	1	34	2	4	2	9	4	77
Medium Skilled	17	1	17	4	22	1	10	1	73
High Skilled	7	3	12	4	18	3	19	1	67
Total	45	5	63	10	44	6	38	6	217

Table 8.24. *Innovation and skilled manpower size wise*

Skill Level	Size of firm						Total
	Micro		Small		Medium		
	Yes	No	Yes	No	Yes	No	
Low Skilled	20	10	36	6	5	0	77
Moderate Skilled	32	5	21	9	5	1	73
High Skilled	16	2	34	5	9	1	67
Total	68	17	91	20	19	2	217

Table 8.25. *Skilled manpower and type of innovation*

Skill Level	Innovation Type					
	Product		Process		Marketing	
	Yes	No	Yes	No	Yes	No
Low Skilled	24	53	29	48	42	35
Medium Skilled	31	42	35	38	29	44
High Skilled	28	39	32	35	21	46
Total	83	134	96	121	92	125

Table 8.26. *Source of information for innovation and skill intensity*

Technology Source/ Skill Intensity	Low skilled	Medium Skilled	High Skilled	Total
None	5	12	8	25
In House	30	31	36	97
Local Market	2	0	4	6
Machinery Suppliers	7	3	1	11
Qualified Engineers	31	27	14	72
Foreign Sources	2	0	4	6
Total	77	73	67	217

Table 8.26 indicates that in house source of information was distributed evenly among units of different skill intensities. However, qualified engineers have contributed more in units with low skill intensity. High skill intensity units have been able to exploit both local market information and foreign source of information more to their advantage.

Information, skill & growth

In the questionnaire, the respondents had been asked to provide data for the past three years. This was a difficult task

and the units could not provide detailed data for three years. Of the 217 units in the sample, only 191 units could provide data for the last two years. On the basis of their responses we have tried to map the information on district-wise, size-wise, industry-wise, innovation type-wise, skill profile-wise, and source of information for innovation-wise distribution of the sampled units with growth of the units over the period 2013-14 and 2014-15. We present the data to understand whether we can combine size, source of innovation, skill profile and type of innovation with growth. The definitions used in the following tables are as under:

1. Zone – Howrah (1), South 24 Paraganas (2), Burdwan (3), Nadia (4)
2. Size – Micro (1), Small (2), Medium (3)
3. Whether innovated: No (0), Only 1 (1), Any 2 (2), All 3 (3)
4. Ratio of skilled to unskilled labour – Cluster 1 low skilled (<50%), Cluster 2 medium skilled (50%-70%), Cluster 3 high skilled (>70%)
5. Sources of innovation – None (0), In-house (1), Local Market (2), Machinery Supplier (3), Qualified Engineers (4), Foreign Sources (5)
6. Growth Cluster = Sales growth – Negative (0), Upto 10% (1), 10%-20% (2), 20%-30% (3), 30%-100% (4), >100% (5)

Zone wise, growth cluster - Innovation mapping

Tables 8.27 to 8.30 show zone wise, the relationship between growth and innovation. In zone 1, we can observe that the mostly, units undertaking all three types of innovation, have experienced some growth. For all the units taken together, the growth rate overall was mostly between 10% to 20%. There are some units that undertook all three

kinds of innovation, but did not grow. There is one unit that did not innovate, but grew. This is where the lag between innovation and its effect on sales growth is reflected.

Table 8.27. *Zone 1 – Growth cluster innovation mapping*

Growth Cluster / Innovation Mapping	No	Only 1	Any 2	All 3	Total
0	0	0	1	1	2
1	0	3	3	10	16
2	0	1	2	6	10
3	1	0	1	5	6
4	0	2	1	3	6
5	0	0	1	0	1
Total	1	6	9	25	41

In zone 2, Table 8.28, where mostly wearing apparel units are located, the growth concentration is in units that have undertaken any 2 or all 3 types of innovation. During the period, of the 66 units in this zone, 50 units have experienced significant growth of 20% or more.

Table 8.28. *Zone 2 – Growth cluster innovation mapping*

Growth Cluster / Innovation Mapping	No	Only 1	Any 2	All 3	Total
0	1	0	3	5	9
1	1	0	3	2	6
2	0	4	2	7	13
3	0	3	10	2	15
4	1	4	7	10	22
5	1	0	0	0	1
Total	4	11	25	26	66

For zone 3, Table 8.29, the growth experience has been a bit different. Innovativeness and growth cannot be correlated. Many innovating units have not grown at all or have grown by less than 20%.

Table 8.29. *Zone 3 – Growth cluster innovation mapping*

Growth Cluster / Innovation Mapping	No	Only 1	Any 2	All 3	Total
0	3	4	5	3	15
1	1	2	5	3	11
2	3	2	2	2	9
3	0	0	1	0	1
4	0	1	2	1	4
5	1	1	0	1	3
Total	8	10	15	10	43

For zone 4, Table 8.30, the number of non-innovating units is large in number, and many have not experienced growth or low growth. This zone is the weakest among the four zones in terms of presence of manufacturing units and also has not innovated to a large extent.

Table 8.30. *Zone 4 – Growth cluster innovation mapping*

Growth Cluster / Innovation Mapping	No	Only 1	Any 2	All 3	Total
0	4	1	0	5	10
1	5	3	3	2	13
2	0	1	3	0	4
3	4	3	1	1	9
4	1	1	0	1	3
5	1	0	1	0	2
Total	15	9	8	9	41

Size wise, growth cluster - Innovation mapping

In this section we look at growth and innovation among units belonging to the micro (1), small (2) and medium (3) scale sector. In the micro sector, Table 8.31, of the 70 units that responded, 56 units have grown by 10% or more and 59 units have innovated in some form. This sector has units who have to really fight it out in the market to survive. They face a lot of hurdles and are not financially strong. They have

to continuously innovate, although it may not be very cutting edge technological advancement. That is why, the units are uniformly distributed between types of innovation.

Table 8.31. *Size 1 – Growth cluster innovation mapping*

Growth Cluster / Innovation Mapping	No	Only 1	Any 2	All 3	Total
0	4	1	4	5	14
1	3	2	2	3	10
2	1	4	4	5	14
3	1	4	6	2	13
4	1	6	4	7	18
5	1	0	0	0	1
Total	11	17	20	22	70

Table 8.32. *Size 2 – Growth cluster innovation mapping*

Growth Cluster / Innovation Mapping	No	Only 1	Any 2	All 3	Total
0	4	3	5	8	20
1	4	3	11	10	28
2	2	3	4	8	17
3	2	2	6	6	16
4	1	3	5	7	15
5	2	0	2	1	6
Total	15	14	33	40	102

In the small scale sector, Table 8.32, the picture is a bit different. Most of the growth is observed in units that have undertaken any 2 or all 3 types of innovation. These are units that innovating to grow, and not innovating to survive. During the period, some units have innovated but not grown. It is possible that we will observe their growth in the next couple of years.

Medium scale units, Table 8.33, are the ones who are financially strong, have access to bank finance, are technically competent, and are in a position to innovate. We can observe that most of the units have innovated and most

of the units have also grown. The growth rate is mostly in the range of 10% to 20%, which is quite good.

Table 8.33. *Size 3 – Growth cluster innovation mapping*

Growth Cluster / Innovation Mapping	No	Only 1	Any 2	All 3	Total
0	0	1	0	1	2
1	0	3	1	4	8
2	1	1	1	2	5
3	1	0	1	0	2
4	0	0	1	1	2
5	0	0	0	0	0
Total	2	5	4	8	19

At every stage of interpreting the tables, the credibility of the data collected needs to be questioned. It appears from the above that the data is quite reflective of what can be expected. The data collection by the field surveyors, under the close supervision of the DIC officials, has been excellent.

Moving away from growth, we now turn to whether innovation led to reduction in labour cost per unit of output, or led to increase in capacity of production. Table 34 shows that some kind of innovation, overall, has been associated with expansion. Although, innovation could be for increased efficiency of production, keeping output constant. This can be observed from Table 8.35 where we have mapped innovation against reduced labour cost. It is interesting to observe that many units without innovating, have reduced labour cost per unit of output.

Table 8.34. *Innovation leading to increased capacity of production or service provision*

Type of innovation	No	Yes	Total
None	26	11	37
Any 1	23	20	43
Any 2	16	45	61
All 3	16	60	76
Total	81	136	217

Type of innovation	No	Yes	Total
None	26	11	37
Any 1	23	20	43
Any 2	16	45	61
All 3	16	60	76
Total	81	136	217

Table 8.35. *Innovation leading to reduced labour cost per unit of output*

Type of innovation	No	Yes	Total
None	25	12	37
Any 1	17	26	43
Any 2	14	47	61
All 3	18	58	76
Total	74	143	217

Type of innovation	No	Yes	Total
None	26	11	37
Any 1	23	20	43
Any 2	16	45	61
All 3	16	60	76
Total	81	136	217

Table 8.36. *Innovation leading to reduced material and /or energy cost*

Type of innovation	No	Yes	Total
None	28	9	37
Any 1	25	18	43
Any 2	16	45	61
All 3	23	53	76
Total	92	125	217

Innovation, skill intensity and growth mapping

In the previous section, we presented the relationship between skill distribution and innovativeness of the sampled units. Here, we link it further to growth. Our objective is to understand that for units that have innovated and grown, whether presence of skill played any role. Overall, Table 8.37 provides the distribution of the units according to their skill intensity and innovativeness. It is interesting to observe that the distribution of the sampled units across skill intensity is almost the same. However, the number of units that have high skill intensity, but have not innovated, is low.

Table 8.37. *Skill intensity innovation mapping*

Innovation/ Skill Intensity	0% – 50%	50% - 70%	70%	Total
None	18	13	6	37
Only 1	14	13	16	43
Any 2	19	21	21	61
All 3	26	26	24	76
Total	77	73	67	217

Interesting results emerge when we consider the above relationship, growth cluster wise. From Table 8.38, 8.36 units have not grown, in spite of innovation. Their overall skill intensity is on the lower side. From Table 39, we can observe that, irrespective of skill intensity, with some innovation, units have grown by at least 10%. From subsequent Tables 8.40 and 8.41, skill intensity has increased with growth. This tapers off subsequently as shown in Tables 8.42 and 8.43, where the growth clusters are higher, but skill intensity is not increasing.

Table 8.38. *Growth cluster = 0: Skill intensity innovation mapping*

Innovation/ Skill Intensity	0% – 50%	50% - 70%	70%	Total
None	6	2	0	8
Only 1	1	2	2	5
Any 2	3	3	3	9
All 3	8	3	3	14
Total	18	10	8	36

Table 8.39. *Growth cluster = 1: Skill intensity innovation mapping*

Innovation/ Skill Intensity	0% – 50%	50% - 70%	70%	Total
None	4	1	2	7
Only 1	3	3	2	8
Any 2	5	4	5	14
All 3	3	7	7	17
Total	15	15	16	46

Table 8.40. *Growth cluster = 2: Skill intensity innovation mapping*

Innovation/ Skill Intensity	0% – 50%	50% - 70%	70%	Total
None	1	2	1	4
Only 1	2	2	4	8
Any 2	3	3	3	9
All 3	4	5	6	15
Total	10	12	14	36

Table 8.41. *Growth cluster = 3: Skill intensity innovation mapping*

Innovation/ Skill Intensity	0% – 50%	50% - 70%	70%	Total
None	2	2	0	4
Only 1	3	1	2	6
Any 2	3	2	8	13
All 3	1	2	5	8
Total	9	7	15	31

Table 8.42. *Growth cluster = 4: Skill intensity innovation mapping*

Innovation/ Skill Intensity	0% – 50%	50% - 70%	70%	Total
None	1	0	1	2
Only 1	2	3	3	8
Any 2	2	7	1	10
All 3	5	6	4	15
Total	10	16	9	35

Table 8.43. *Growth cluster = 5: Skill intensity innovation mapping*

Innovation/ Skill Intensity	0% – 50%	50% - 70%	70%	Total
None	1	2	0	3
Only 1	1	0	0	1
Any 2	1	0	1	2
All 3	1	0	0	1
Total	4	2	1	7

Constraints for innovation

The previous sections have given us some areas for policy intervention. In this section we look at the various constraints that the units have perceived to be important, in either their day to day functioning or in their innovativeness. We identified fourteen (14) constraints and asked the respondents to rank them in decreasing order of importance, starting from 1 being the most important constraint. The fourteen constraints are listed in Table 8.44 and the average score also has been tabulated. A lower number would indicate that the constraint is important. For all the 217 units, price competition and adequate source of funding came out to be the most important constraints. This was followed by high cost of labour, poor infrastructure, lack of suitable personnel and technological competition. Lack of information dissemination or availability of raw material was not perceived as binding constraints.

Table 8.44. *Constraints for innovation (aggregate)*

Constraints (description)	Constraint Code	Average Score
Limited demand in the local/domestic market	a	7.92
Limited demand in foreign market	b	11.18
Limited availability of suitable new personnel	c	7.95
Availability of raw material	d	8.80
High cost of labour	e	6.63
Technological competition	f	7.41
New entrants in the market with the latest technology	g	7.78
Price competition	h	5.68
Regulatory framework	i	8.63

Lack of fiscal incentives	j	9.36
Difficult access to information technology	k	9.86
Poor infrastructure	l	6.28
Adequate source of funding	m	5.64
Lack of information dissemination	n	9.88

Table 8.45. *Constraints for innovation (district wise)*

		District			
Constraints (description)	Constraint Code	Howrah	South 24 Parganas	Burdwan	Nadia
Limited demand in the local/domestic market	a	6.74	8.84	6.36	9.50
Limited demand in foreign market	b	11.00	10.48	10.94	12.84
Limited availability of suitable new personnel	c	7.42	8.21	6.88	9.36
Availability of raw material	d	6.66	9.38	7.56	11.66
High cost of labour	e	3.94	7.93	4.32	10.14
Technological competition	f	5.36	8.67	4.92	10.50
New entrants in the market with the latest technology	g	5.80	7.86	8.08	9.55
Price competition	h	3.96	6.05	4.42	8.45
Regulatory framework	i	8.26	7.48	7.14	12.64
Lack of fiscal incentives	j	9.90	7.18	9.14	12.61
Difficult access to information technology	k	9.78	6.10	12.48	13.23
Poor infrastructure	l	10.62	4.01	4.88	6.68
Adequate source of funding	m	5.18	4.97	7.96	4.61
Lack of information dissemination	n	11.22	7.08	10.54	12.23

When we look at the constraints, district wise (Table 8.45), we observe that whereas price competition, high cost of labour, technological competition and adequate source of funding were extremely important for Howrah district units, for South 24 Paraganas, poor infrastructure was extremely important. For units in Burdwan district, again price

competition, technological competition and high cost of labour came out as important constraints. For units in Nadia district, it was adequate source of funding which was the binding constraint.

While medium scale units find price competition and high cost of labour as important constraints, micro and small units find poor infrastructure and adequate source of funding as obstacles to any effort in their part to grow. Discussions with the units revealed that although their products were of equal quality, their sustenance in the market were being jeopardized by liquidity constraints.

The response of the units size-wise, as shown in Table 46 indicates that for all size classes of units, price competition was seen as an important threat. In a competitive economy, this is a reality. It is possible that units of smaller size will be driven out of competition by relatively larger units. No social intervention is possible. However, what is doable is that these smaller size units should get their bills cleared quickly. Otherwise, coupled with their weak borrowing status, they will run into liquidity problems.

Table 8.46. *Constraints for innovation (size wise)*

Constraints(description)	Constraint Code	Micro	Small	Medium
Limited demand in the local/domestic market	a	8.13	8.25	7.10
Limited demand in foreign market	b	11.74	10.98	11.38
Limited availability of suitable new personnel	c	8.60	7.88	6.95
Availability of raw material	d	9.99	8.69	6.00
High cost of labour	e	7.17	6.70	4.62
Technological competition	f	8.03	7.09	5.86
New entrants in the market with the latest technology	g	7.45	8.05	6.67
Price competition	h	5.31	5.88	4.76
Regulatory framework	i	8.73	8.65	8.10
Lack of fiscal incentives	j	8.73	9.44	10.48
Difficult access to information	k	9.29	10.41	10.33

technology				
Poor infrastructure	l	5.70	6.04	8.33
Adequate source of funding	m	4.34	6.39	6.19
Lack of information dissemination	n	9.01	10.36	11.33

If we try to relate the constraints to types of innovation, from Table 8.47 we can observe that poor infrastructure, adequate source of funding, price competition and high cost of labour were the major constraints towards innovation. Many of the MSME units in the state of West Bengal are unable to think beyond day to day survival as they find these constraints to be overpowering. Each of the areas that they have pointed out needs social intervention. We have to create a level playing field if we feel that MSME units are important for the Indian economy.

Table 8.47. *Constraints mapped on types of innovation*

		Innovation type					
Constraints (description)	Constraint Code	Product		Process		Marketing	
		Yes	No	Yes	No	Yes	No
Limited demand in the local/domestic market	a	7.99	7.79	7.89	7.96	7.75	8.14
Limited demand in foreign market	b	10.8	11.88	11.07	11.34	10.54	12.04
Limited availability of suitable new personnel	c	8.12	7.64	7.86	8.09	7.86	8.08
Availability of raw material	d	8.83	8.73	8.61	9.07	8.39	9.34
High cost of labour	e	6.86	6.19	6.72	6.49	6.15	7.27
Technological competition	f	7.60	7.07	7.48	7.32	7.38	7.46
New entrants in the market with the latest technology	g	7.67	7.99	7.66	7.94	7.28	8.44
Price competition	h	6.10	4.89	5.96	5.29	5.92	5.37
Regulatory framework	i	8.39	9.07	8.45	8.88	8.45	8.86

Lack of fiscal incentives	j	8.51	10.96	9.01	9.86	8.97	9.88
Difficult access to information technology	k	9.15	11.20	9.49	10.39	9.11	10.86
Poor infrastructure	l	5.68	7.41	6.30	6.24	6.35	6.17
Adequate source of funding	m	5.84	5.25	5.88	5.29	5.46	5.87
Lack of information dissemination	n	9.21	11.13	9.46	10.47	9.48	10.40

References

Bansal, P. (2005). Evolving sustainably: A longitudinal study of corporate sustainable development, *Strategic Management Journal*, 26(3), 197-218. doi. 10.1002/smj.441

Bradley, C., Hart, M., & Smit, S. (2018). *Strategy Beyond the Hockey Stick'*, John Wiley & Sons.

Collins, J.C., & Porras, J.I. (1997). *Built to Last: Successful Habits of Visionary Companies*, Harper Business, New York.

DattaChaudhuri, T., Ghosh, I., & Eram, S. (2016). Application of unsupervised feature selection, machine learning and evolutionary algorithm in predicting stock returns – A study of Indian firms, *The IUP Journal of Financial Risk Management*, 13(3), 20-46.

DattaChaudhuri, T., & Sen, J. (2016). An alternative framework for time series decomposition and forecasting and its relevance for portfolio choice: A comparative study of the Indian consumer durable and small cap sectors, *Journal of Economics Library*, 3(2), 303-326.

DattaChaudhuri, T., & Sen, J. (2016). An investigation of the structural characteristics of the Indian IT sector and the capital

goods sector – An application of the R programming in time series decomposition and forecasting, *Journal of Insurance and Financial Management*, 1(4), 68-130.

DattaChaudhuri, T., & Ghosh, I. (2016). Artificial neural network and time series modeling based approach to forecasting the exchange rate in a multivariate framework, *Journal of Insurance and Financial Management*, 1(5), 15-25.

DattaChaudhuri T, & Sen, J. (2017). A time series analysis-based forecasting framework for the Indian healthcare sector, *Journal of Insurance and Financial Management*, 3(1), 66-94.

DattaChaudhuri T, & Somnath, M. (2019). Different length genetic algorithm-based clustering of Indian stocks for portfolio optimization, *in* J.K. Mandal *et al.* (Eds.), *Advances in Intelligent Computing, Studies in Computational Intelligence*, Springer Nature Singapore Pte Ltd.

DattaChaudhuri, T., & Ghosh, I. (2019). A wavelet approach towards examining dynamic association, causality and spillovers, *International Journal of Data and Network Science*, 3, 23-36. doi. 10.5267/j.ijdns.2018.11.002

DattaChaudhuri, T., Ghosh, I., & Singh, P. (2017). Application of machine learning tools in predictive modeling of pairs trade in Indian stock market, *IUP Journal of Applied Finance*, 23(1), 5-25.

DattaChaudhuri, T. (2017). Report on extent of R&D and innovation in MSMEs in West Bengal: Strategies, Determinants and Effects, Department of Science and Technology, Government of India.

DattaChaudhuri, T., & Ghosh, I. (2018). Fractal investigation and maximal overlap discrete wavelet transformation (MODWT) based machine learning framework for forecasting exchange rates, Studies in Microeconomics, 5(2), 105-131. doi. 10.1177/2321022217724978

DattaChaudhuri, T., & Ghosh, I. (2019). Stock market portfolio construction: A four-stage model based on fractal analysis, *South Asian Journal of Management*, 25(4), 117-149.

Donald, W.B., & Dess, G.G. (1981). Corporate-level strategy, business-level strategy, and firm performance, *The Academy of Management Journal*, 24(4), 663-688. doi. 10.5465/256169

References

Dorsey, P. (2004). *The Five Rules for Successful Stock Investing: Morningstar's Guide to Building Wealth and Winning in the Market*, John Wiley & Sons.

Draghici, A., Popescu, A.D., & Gogan, L.M. (2014). A proposed model for monitoring organizational performance, *Procedia - Social and Behavioral Sciences*, 124, 544-551. doi. 10.1016/j.sbspro.2014.02.518

Drucker, P. (1985). *Innovation and Entrepreneurship*, Harper & Row, New York.

Flammer, C., & Bansal, P. (2017), Does a long term orientation create value? Evidence from regression discontinuity, *Strategic Management Journal*, 38(9), 1827-1847. doi. 10.1002/smj.2629

Govindarajan, V. (2016). *The Three Box Solution: A Strategy for Leading Innovation*, Harvard Business Review Press, Boston

Jeffrey S. Conant, Michael P. Mokwa, P. RajanVaradarajan (1990), Strategic types, distinctive marketing competencies and organizational performance: A multiple measures-based study, *Strategic Management Journal*, 11(5), 365-383. doi. 10.1002/smj.4250110504

Jhunjhunwala, A., & DattaChaudhuri, T. (2020). Innovation, growth and value creation: A study of Indian companies, *International Journal of Business Innovation and Research*, 1(1), 1. doi. 10.1504/IJBIR.2020.10026121

Jhunjhunwala, A., DattaChaudhuri, T., & Bhamrah, G.K. (2019). Value creation by Indian Companies: A comparative study over two time periods, *Turkish Economic Review*, 6(1), 44-61.

Kim, W.C. & Mauborgne, R. (2005). *Blue Ocean Strategy*, Harvard Business School Publishing Corporation.

Kim C. (1986), A study of organizational effectiveness and its predictors, *Management Science*, 32(1), 87-112. doi. 10.1287/mnsc.32.1.87

McGrath, R.G. (2013). *The End of Competitive Advantage. How to Keep Your Strategy Moving as Fast as Your Business*, Harvard Business Review Press.

National Knowledge Commission, Government of India, (2007). Innovation in India.

Porter, M.E. (1985). *Competitive Advantage*, Free Press, New York.

Porter, M. (1986). *What is Strategy?*, Harvard Business Review.

References

Robert S.K., & Norton, D.P. (1992). *The Balanced Scorecard—Measures, that Drive Performance*, Harvard Business Review.

Understanding Innovation, Indian National Innovation Survey: With Special Focus on MSMEs, (2014). DST, Government of India. [Retrieved from].

References

ISBN: 978-605-7736-91-8 (e-Book)
KSP Books 2020

Tamal Datta Chaudhuri

Dr. Tamal Datta Chaudhuri did his BA in Economics from Presidency College, Calcutta and his MSc in Economics from Calcutta University. He joined Calcutta University as Lecturer. Subsequently he did MA and PhD in Economics from the Johns Hopkins University, USA. He was a visiting fellow in the University of Illinois at Urbana Champaign. He has taught in Indian Statistical Institute, Calcutta, IISWBM Calcutta, IIFT Calcutta, IBS Hyderabad and Kolkata and Army Institute of Management, Calcutta. He is currently Dean of Calcutta Business School. Dr. Datta Chaudhuri has many publications in national and international journals. After completing 15 years in full time academics, Dr. Datta Chaudhuri joined the financial sector and has worked in Industrial Reconstruction Bank of India (IRBI), later named Industrial Investment Bank of India (IIBI), for 23 years. He became Chief General Manager in Charge of IIBI. He has worked in the whole gamut of activities of a financial institution like designing financial instruments for raising finance from the market, project appraisal, long term lending, short term fund deployment, investment etc. He gained expertise in stock market operations and technical analysis during his tenure. He sat on all major decision making committees of the institution including the Board and has actively interacted with the Ministry of Finance in various matters. He was also a member on Boards of various companies as a nominee director of IIBI. Dr. Datta Chaudhuri participates actively in the stock market and uses technical analysis extensively for his decisions. He teaches courses like Microeconomics, Macroeconomics, Financial Management, Stock Market Simulation Game, Concepts of Management, Security Analysis and Portfolio Management, Corporate Finance, Financial Derivatives Management, Project Appraisal & Finance and Risk Management in Banks. He actively worked with Dalmia Securities, Kolkata in their derivatives trading desk. He delivers lectures to students on Derivatives Trading in different forum and also PRIMIA, Kolkata Chapter. He has been an invitee to the Salzburg Seminar, Austria.

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e-ISBN
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