Chapter One

Assessment of Training Needs in Commercial Printing Industry
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1.1 Introduction

The Indian printing industry is one of the fastest growing industries in the world which is providing book printing and design services to the USA & UK. It has taken steps to improve and adopted new technologies to deliver the best printed products on time with the lowest cost. Due to Privatization Indian economy is getting stronger day by day and helping the Indian print industry to modernize by investing in the latest of technology.

With reference to increasing competition and shortage of skilled employees in commercial printing industry force to printing firm owners to consider human resources as a strategic necessity of printing industry. In an attempt to hire and retain employees, printing firm owners need to provide training that allows employees to maintain a competent skill set as the industry continues to rapidly advance.

Printing firm owners need to determine when their employees require training and what the content of that training should be. However, assessing employees in commercial printing industry need for training can be a difficult task. It requires a thorough understanding of organizational needs and careful measurement of employee’s knowledge and skills, making training needs assessment a critical step in the training process.

It has long been recognized that training should fit the needs of both the organization and individual employees. This requires assessment of the need for training at an organizational and an individual employee level of analysis.

The stages of skill acquisition provide training needs assessment with the basis for examining commercial printing industry employees to determine areas of competency deficiencies, and then providing training that addresses those specific deficiencies.

The results of the needs assessment was then used to provide training that was customized to the level of skill acquisition of each individual trainee.
1.2 Assessment of Training Needs Overview

Printing is a process for reproducing text and images, typically with ink on paper using a printing press. Different techniques and printing equipments are employed for each printing practices. The emergence of the retail revolution and growing education across the country is acting as a fuel to the growth of the printing industry.

Continual change is an obvious thing in the modern economic life. Trade barriers are reducing and new markets are opening up. Due to the competition in printing industries the demand for skilled workers is rising day by day. Advanced methods of communication are sending information to all parts of the globe with progressively greater speed and ease.¹

Human resource management literature identifies and provides several approaches to training employees. Skills, knowledge and abilities can be imparted through the use of new technologies and adapting to innovative training methods. With the increasing globalization and trade liberalization surrounded by severe competition, firms in the print-media industry are gradually renewing and re-focusing their attention on training and development. The commercial printing industry which is a unit of the media industry and a subset of the knowledge-intensive sector has understood the strategic importance of employee training. As a result, most of these print-media firms have ecognized employee training as a crucial determinant of sustained organizational performance.²

Competencies and skills are empirically very important issues in today’s environment such as education, business organization, and practitioner groups in human resource management. Employees with outdated skills may run a high risk of becoming


unemployed, training workers is often referred to as a mechanism that can lower this risk by expanding or refreshing skills. Therefore, Skill development is becoming an important part of individual growth.³

Training Needs Assessment (TNA) is the method of determining if a training need exists and, if it does, what training is required to fill the gap. TNA identifies the accurate levels of the present situation in the target surveys, interview, observation, secondary data and/or workshop. The gap between the present status and desired status may indicate problems that in turn can be translated into a training need. Training can reduce the gap, enhance the knowledge and skills of the participant. The data on the present status are vital to the evaluation or impact survey in the latter part of the training cycle. These shall serve as the baseline data. The following are some techniques for acquiring such data. These may be applied independently or in combination.

Training Needs = Desired Capability – Current capability of the Participants

TNA helps the organization and trainers to get the factual data and plan an effective training program to bring out a change and improve the quality and productivity as per the business goals and objectives of the organization. Assessments can be formal (using survey and interview techniques) or informal (asking some questions of those involved).⁴

1.3 Printing Industry Overview

Printing has been started in the western countries with Johannes Gutenberg and has undergone heavy technological change since then, with methods becoming cheaper


and more efficient. These developments led to widespread literacy, with newspapers, books and magazines becoming available to the masses.5

In a period characterized by expanding markets, national consolidation, and social changes, print culture picked up momentum as the nineteenth century turned into the twentieth. Books, magazines, and newspapers were produced on a quicker and cheaper basis to fulfill the hunger of large number of readers.

The Indian Printing Industry has become a great source of employment and a major contributor to the Indian economy. The industry in India has moved from the traditional ink on paper industry to hold ever-increasing range of technologies and fields of expertise. Printing related industries in India contain of some 3,007 printing factories and 1,06,993 unregistered printing presses. These printing factories with greater than 200 employees employ about 1,12,974 people. Overwhelming majority of firms are small and medium enterprises employing some 4,93,007 people. The industry has changed greatly over the last decade. Workflows are becoming fully digital rather than impression based printing. These changes mean that the industry needs skilled labour. The industry faces challenges related to powerful buyers and suppliers. Labour productivity rose considerably in the past few years. This study will describe the current market, employment, technology and other characteristics of the industry and assess performance over the past decade, provide foresight about potential trends in markets, technologies and other variables and discuss the strengths and weaknesses and provide conclusions. 6

The Commercial Printing Industry can be broken into three fundamental segments — Prepress, Press and Finishing & Binding. These segments cover all the aspects of printing and create various processes of workflows and technologies. The prepress


A seminal study on the competitiveness of Indian Printing Industry
segment is the segment in which the content is created, designed, structured, laid out, made ready, and transferred to print. Pre-media section, in which the prepress process is done before the media to be used (e.g. print, electronic) is specified, is now becoming an increasingly dominant part of the pre-press segment, which manages and controls the workflow processes. The press segment is the printing stage in which the created content is either digitally transferred (Computer-to-Plate) or physically transferred (Conventional filming process) from the prepress, and is printed on the press-printing machine. Here, many aspects of reproduction and quality control come into play, color consistency, color reproduction, ink densities, trapping etc. The Finishing & Binding segment is the finishing stage in which the printed matter is cut for dimensions, die-cut for specific shapes, folded, gathered, piled, bound, and made into a finished print product. Shipping, delivering, and storage are other related segments that are not a part of the printing process. The printing industry is one of the oldest industries; in its beginning it had a revolutionary impact on society and other technologies, and it has redefined itself several times since. From Guttenberg inventing the moveable type press to the present day’s robust offset printing presses and high-tech digital printing presses, printing technology has gone through many changes — some rather spectacular. The printing industry can be called as a continual changing industry. The industry is taken up with the onset of the new printing technologies that are displacing the older and better-understood printing processes. More than the printing processes, the most impacted and influenced segment of the printing industry is the pre-press/pre-media segment. Pre-press, including pre-media, is the most prominent segment of the printing industry in terms of technological change. All the processes involved in the pre-media segment are controlled, managed and organized by a workflow that addresses the various necessities of these processes.  

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In printing industry the skilled manpower is used to produce quality products, each person has a very specific and specialized role to perform and contribute to the final result. It has been observed that printing industry always used the latest technology and accepted the innovations to deliver the best quality. The latest technology has raised lot of training requirements for the existing staff.

At present Commercial Printing Industry uses latest states of the art computer, storage devices for storing large amount of data and the most modern communications technologies available in telecom industry and large volumes of data are handled with very sophisticated equipment. The trend in the commercial printing industry has always been to recruit the skilled workmen and enhance their skills by training them. In today’s world, machines are controlled by electronic systems and operators have to monitor the operations. In earlier times these operations were physically carried out by the machine operators.

India has always been using the latest technology available in the world by importing equipments and using a mix of manpower skills and machines to produce optimum products. Due to computerization and modernization of machines, a large number of electronic, computer and electrical engineers from all disciplines have joined the industry which earlier controlled by skilled technicians. With rapid changes in technology in the world, the technological changes in India have faster than could be assimilated by the technicians available and training and retraining have become very important subjects in the printing industry.

Retraining have never been taken very seriously by the printing industry and there are no specializing personnel available in the printing industry, who could organize retraining of manpower in all aspects as mentioned above and the responsibilities for retraining have to be shared now by the proprietors and production managers, who organize retraining for personnel in their respective organizations.

The printing and publishing industry is one of the oldest established industries in India. The commercial printing industry has gone through an interesting revolution. A labour intensive low technology operation is now transformed into a high technology operation. Today, the printing industry operates very differently from those of a decade ago. The conventional printing industry is basically a fairly low skilled and
labour intensive operation. Most tasks were manually driven, time consuming, often painfully and tediously crafted. For example, the print materials had to be typeset and arranged in the appropriate format using “cut and paste” techniques in order to come up with draft copies. Often, several drafts had to be produced before the final product was approved for printing. The workplace tended to be messy with lots of manual “cut and paste” activities. Today, thanks to IT, most prints and type-settings are handled by desktop publishing (DTP) software where many different versions and layouts could be completed on a just-in-time basis before printing. Technological change in the press room area is now facing the most intense impacts of new technology. SMEs involved in commercial printing face three technology options: (1) digitally controlled conventional litho presses; (2) computer to plate (CTP); and (3) direct digital presses.

More significantly, the tasks are now less labour-intensive and the prints are practically error-free and of higher quality. Firms in the printing industry range from small stationery print shops to large commercial printers. Broadly, there are two types of printing operations and products: low-volume customized prints and high volume mass-produced publications. The printing industry has traditionally been a relatively stable branch of industry. It had its own structures; it was relatively independent of other industries and developed its own technology. The technological developments include digital printing, online publishing, short-run color printing, printing on demand, CD-Rom, the internet as well as technological innovations in more traditional printing technology. Research and practice show that the most important changes for the printing industry will be the digitalization of information and the disconnection of information (text and graphics) and printed materials.

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The influence of technology has created demands for trained operator not only in India but all around the world and the market for export of technical and managerial personnel to various countries is also increasing. The quality of education provided by the printing should be at world standard.

The local printers associations, machine manufacturers, educators also have a very major role to play in organizing training and retraining programs and the emphasis should be given on to provide the technical aspects. The printing institutes should frame syllabus which should lay a lot of emphasis on practical training than the theoretical one.

1.4 Indian Printing Industry Overview:

The Indian Printing Industry is well established and presently growing at 12% per annum. According to a report, India is the world’s fastest growing printing market with a 73% rate of growth from 2006-2011. India’s printing market is about US $ 12.0 billion and is forecast to grow to US $ 20.9 billion in few years. The Indian Printing Industry today comprises more than 250,000 big, small and medium printers.

Indian printing industry has gone through a revolutionary transformation in the last 15 years because of liberalization of economy and privatization of the industries. Inflow of investment in buying latest technology and sophisticated machinery has led the industry to modernization. The printing machine market continues to expand and will keep progressing in the years to come. The prospect of printing industry in India is promising because international players of printing industry have started stepping into the market, with the aim of capturing wide and untapped market. The printing industry in India is highly fragmented. Newspapers and magazine publishing section have the large printers apart from a few in package, label and commercial printing. About 77% of the printing houses are family owned.

Printing sector has evolved from a manufacturing industry into a service industry in India. Publishing has come up to the international standards as well. Most of the large printers are found in big cities like Delhi, Kolkata, Mumbai, Bengaluru, Hyderabad
and Chennai. Sivakasi in Southern India has emerged as a commercial printing hub. It accounts for a major share of exports from the Indian Printing Industry.  

1.4 a) Indian Printing Industry Growth potential:

The industry has undergone a revolutionary change in the last 15 years. In 1990, India initiated a process of reforms aimed at shedding protectionism and embracing liberalization of the economy. Privatization was initiated with the aim of integrating the Indian economy with the world economy. This change opened the doors for the Indian Print Industry to modernize, by investing in the latest of technology and machinery.

In recent years, the printing industry in India has seen record levels of growth, owing to liberalized regimes, globalization and progress in automation. The industry has grown leaps and bounds due to the latest technology and machinery, quality standards and production capacities.

The printing industry in India is slowly progressing from the heavy machinery using industry to a more software-centric business. The Indian present printers are well equipped with the latest computer controlled printing machines and flow lines for binding, while state-of-the-art digital technologies are used in pre-press. UV digital printing and inkjet technology are also on the rise in India. The advent of global brands, rising consumerism and growth of the pharmaceutical industry have seen an increase in the scope for package printing. Giving an optimistic outlook of the industry, the package printing sector is growing at the annual rate of 17 percent, commercial printing at a rate of 10-12 percent and digital printing at robust 30 percent.

The digital printing industry is seeing significant transformations with new technologies & applications providing cost-effective and customized solutions. For the predictable future, offset and digital will not only co-exist, but will also complement each other with offset taking the medium-to-longer jobs and digital performing on short-to-medium run lengths.

The booming Indian economy, increasing consumerism, entry of global brands in the country and opening of the sector to foreign investors are bound to offer growth opportunities to the industry.\(^{11}\)

1.1 b) India and its Printing Industry – An Emerging Market

India has consolidated its position as the world’s fourth largest economy, behind the United States, China and Japan, in Purchasing Power Parity (PPP), according to the latest World Development Indicators and has the third largest GDP in the entire continent of Asia. It is also the second largest among emerging nations. (These indicators are based on purchasing power parity.) India is also one of the few markets in the world which offers high prospects for growth and earning potential in practically all areas of business.\(^{12}\)

1.5 Commercial Printing Industry

Commercial printing is a trade involving the preparation of printed materials, such as brochures, books, magazines, announcements, posters, stationery, and similar documents. To get these types of items ready, commercial printers, also known as job


printers, complete a wide range of services, such as binding, graphic design, plate-making, layout, trim and fold, and press production. Other types of printers offer similar services and results, but commercial printers are set apart by the fact that they usually are not specialized and can print tangible copies of most document types. They can produce a variety of materials based on what different clients need because they have a much more comprehensive set of equipment, tools, and applications.

In the past, the creative and mechanical aspects of commercial printing were fairly separate. However, digital technology has significantly narrowed the gap between these two sides of the industry. People can print whatever they want with the help of Graphic designers without visiting a commercial printer.

Commercial printing is a business that gets a variety of documents ready for publication. We can print wide range of items by using a commercial printer. Three main processes letterpress, gravure, and offset are in use to do the actual printing, but these companies may use a variety of techniques to get to the point where these processes can start. Anyone can use a commercial printer, but because of their scale and the nature of their operations, it is common for businesses to be primary clients. Over time the commercial printing definition continues to change to accommodate different services and products, but as technology and desktop publishing allow people to complete a variety of projects on their own.13

The specialization of the commercial printing company in printing a particular type of material depends upon the type of printing technology that is put into use by the company. The printing technology has developed to great heights in the recent past and every year some new innovation is being added to even the highest quality commercial printers.

The best types of brochure printers are the commercial digital printers that give great accuracy, clarity and speed of printing. While choosing the commercial printing company to get the brochures printed, it would be a nice idea to check with the

company about the model and company of the printer that is being put to use by them to do the printing job for brochures.

The commercial printing services have also raised the quality of the printing of corporate material by the use of the modern printing technology and the growing competition amongst the printing companies is only proving to be a bane for the corporate.

In the past few years commercial printing has emerged as the largest branch of printing industry. To keep up with the stiff competition most of the commercial printers provide high quality printing. It also allows the customers with stapling, folding, and embossing. Although the cost of commercial printing may be relatively higher than other forms of printing but the quality is certainly unique. 

1.6 Determinants of Training:

The factors influencing the provision of increased training in Indian commercial printing industry that have embarked upon different growth development pathways. The results indicate that organizational change, in the form of major change in production technology and/or new or substantially improved product or process technology, and the introduction of business improvement programmes, are influential, and relatively consistent drivers of increased training in printing industries growth development pathways.

In the few studies that have investigated why organizations train employees, organizational change appears to be a relatively influential factor in the provision of training. The introduction of workplace change, quality initiatives, new technology and product innovation. The central role of organizational change in determining


training in enterprises, with TQM, teamwork, business process reengineering and learning organizations positively associated with higher levels of training.

It is also found that, for organizations claiming a positive link between training and business strategy, the integration of training with business strategy was the most important single factor in driving a wide range of training activities, leading to an across-the-board increase in all forms of organizational training. However, training was triggered by operational matters including the introduction of new forms of work organization and technology, and was a requirement to support the changes that strategies bring.¹⁶

The most frequent factors, significantly associated with increased training provision are: the introduction of major change in production technology and/or innovation and the introduction of business improvement programmes.

1.6 a) The significant determinants of increased training in commercial printing industries include:

- The introduction of major change in production and/or new technology
- Product Innovation
- A documented formal business plan
- The introduction of a business improvement programmes (including Quality Assurance)
- Organizational size

1.7 Skill Enhancement:

Adoption of new technologies in particular is radically changing the industry's workforce. Skills shortages are evident to operate complex new print machinery, High

unemployment and a shortage of skilled talent pool sound like contradictory concerns, yet they are co-existing realities in India. Especially, the growing job market requires new skills and better training.  

### 1.8 Technological Changes:

Productions of goods and services in the world today have been greatly influenced by the systematic application of physical forces through different types of technology. Technology in most organization provided the required forces through various forms by which goods and services were produced. This may be in forms of machine equipment information and communication made up of knowledge, tools, method and system directed to work in specific manner. The state of technology determines the quality and quantity of goods and services produced. Technology is prone to change, and the state of technology have direct link to the relationship between the employer and employee. Technology, labour and capital are interconnected. Some technologies use a lot of labour and some use more of other equipment or capital. Investors prefer or choose the one with lesser price to maximize their profit.  

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