

**A Study of Company-Initiated Training  
in US and Swedish Printing Firms  
Relative to Prepress, Press, and Finishing Operations**

By

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requirements for the degree of Master of Science  
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## **Dedication**

*For Eva Hedman*

*The very best mother.*

*And Staffan Hedman*

*The very best father.*

Jonas Hedman

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## Abstract

Company-initiated training has become an increasingly important activity in printing firms because of the digital revolution in the industry which started in the mid 1980's. Previously, almost every step in prepress, press and finishing was analog, but today the workflow can be 100 percent digital until the information reaches the paper on the press. The computer is the principal part of the workflow, and it is essential for a printing firm to continuously train its workforce in the new technologies in order to develop the company's human resources, and thereby to improve the workflow and even ultimately to ensure the company's survival. This thesis seeks to determine (1) *why* printing companies provide company-initiated training in prepress, press and finishing, (2) *what sort of* training they provide their employees with, (3) *how successful they are*, and (4) *how important* they think company-initiated training is in general. In addition, one of the purposes of this thesis is to note if there are any differences in company-initiated training between US and Swedish printing firms.

A survey of 13 questions was developed and e-mailed to 10 US printers and 10 Swedish printers of different types and sizes. The data from the survey was analyzed for overall frequency and was then used to test this thesis' four hypotheses.

Hypothesis I: Company-initiated training contributes to improved worker *morale*;

Hypothesis II: Company-initiated training contributes to improved worker *retention*;

Hypothesis III: Company-initiated training contributes to improved *productivity*;

Hypothesis IV: Company-initiated training contributes to reduced *absenteeism*.

The printing companies were asked to rate how company-initiated training impacts morale, retention, productivity and absenteeism respectively. The rating scale was 0 to 5 where 0 equals “no impact” and 5 equals “highest impact.” Seven types of company-initiated training were given: on-the job training (employee-to-employee), internal courses, off-site seminars, certification programs, consultant’s help, manufacturer/supplier training programs, on-line courses and “other (specify).” An average rating for each one of the hypotheses was calculated in order to determine the relative significance of company-initiated training on morale, retention, productivity and absenteeism as judged by printing executives.

The results of the survey determined that three of the four hypotheses tested in the course of this work received substantial support. 19 of 20 companies answered that they do provide company-initiated training (CIT).

Hypothesis I, CIT contributes to improved worker *morale*, scored the average 3.87.

Hypothesis II, CIT contributes to improved worker *retention*, scored the average 3.16, and Hypothesis III, CIT contributes to improve *productivity*, scored 3.89. Hypothesis IV, CIT contributes to reduced *absenteeism*, scored the average 1.79, indicating low support for this hypothesis (Table 1).

The results of this survey determine that printing companies are aware of the importance of company-initiated training, regardless of their type or size, and consider it important in prepress, press and finishing. Prepress is the area that has changed most since the digital revolution, and this is the area that the companies consider CIT most important (average

rating 4.78 of 5). However, CIT in the press room is considered important too (average rating 4.31 of 5), while CIT in finishing is considered less important (ave. rating 3.68 of 5).

<i>Type of Company-Initiated Training</i>	<i>#</i>	<i>Morale</i>	<i>Retention</i>	<i>Product.</i>	<i>Absent.</i>
On-the job Training (empl.-to-empl.)	18	3.55	3.00	3.94	1.83
Internal Courses	12	3.58	2.58	3.91	2.08
Off-site Seminars	16	3.93	2.75	3.50	1.75
Certification Programs	4	4.25	3.50	4.25	2.50
Consultant's Help	10	3.60	2.70	3.50	1.50
Manufacturer/Supplier Training Program	14	3.71	3.21	3.85	1.57
On-line Courses (via Internet)	6	3.33	2.50	3.16	1.33
Other	1	5.00	5.00	5.00	0.00
# = Number of Companies					
<i>Average Rating (0-5)</i>		<i>3.87</i>	<i>3.16</i>	<i>3.89</i>	<i>1.79</i>

Table 1. Results of the question, “Does CIT impact morale, retention, productivity and absenteeism?”.

Regarding the differences between US and Swedish printers, the results of the survey indicate one significant difference: *retention*. US printers consider that CIT has a higher impact on retention than Swedish printers do. One reason could be that there are more printing companies in the US which means more competition and the employees have more job options. If a company does not provide CIT, the employee goes to a company that does provide it and that gives the person the opportunity to grow with the company. This difference regarding retention warrants further study of why CIT is considered more important in US printers compared with Swedish printers. A further study could include a larger number of companies in the survey and could focus more indepth on how CIT impacts morale, retention, productivity and absenteeism specifically in prepress, press and finishing.

# **Chapter 1**

## **Introduction**

Since the mid 1980's, company-initiated training has become an increasingly important activity in printing firms because of the digital revolution in the industry. Until the mid 1980's almost every step in prepress, press and finishing was analog, but today the workflow can be 100 percent digital until the information reaches the paper on the press. The computer is the principal part of the workflow, and it is essential for a printing firm to continuously train its workforce in order to develop the company's human resources, and thereby to improve the workflow and even ultimately to ensure the company's viability.

For more than hundred years, people working with printing started as apprentices at a young age. They learned the profession by watching and doing it together with a professional and after thousands of hours they got their license. Until the digital revolution the graphic arts industry actually included several different professions: typographer, engraver, color separator, camera operator, press operator, etc.<sup>1</sup>

All those professions were analog jobs, the development of the equipment was slow, and when an apprentice finally became certified, he or she did not need much more training. The job was static because the technology was also static. Today the workflow is digital,

and most of the old professions mentioned above are gone. One person can do the work that it previously required many people.

Some of the major steps in the digital revolution of the printing industry are:

- In 1984, Apple introduced the Macintosh computer and the desktop publishing era began.<sup>2</sup>
- In 1985, Adobe introduced the PostScript page description language. The raster image processor (RIP) was born, and page assembly became computerized.<sup>3</sup>
- In 1989, Autologic demonstrated its first computer-to-plate system.<sup>4</sup>
- In 1991, Heidelberg and Presstek introduced the GTO-DI press with the first platemaking on press.<sup>5</sup>
- In 1991, the first real digital color proofing machine was presented: the Kodak Approval.<sup>6</sup>
- In 1993, digital color presses from Indigo and Xeikon allowed short runs of plain-paper color printing. This became the start of a new segment in printing, short runs.<sup>7</sup>
- In 1993, variable data printing software for color and images became a reality.<sup>8</sup>
- In 1995, the Cooperation for the Integration of Prepress, Press and Postpress (CIP3) ([www.cip4.org](http://www.cip4.org)) was founded which later was succeeded by the International Cooperation for the Integration of Processes in Prepress, Press and Postpress (CIP4; [www.cip4.org](http://www.cip4.org)). CIP4 works to develop its job definition format (JDF) based workflow to include prepress, press, finishing and distribution. A digital job ticket with all of the technical information of a particular job follows the job from prepress to distribution ([www.cip4.org](http://www.cip4.org)).

These are all examples of digital technology that make company-initiated training necessary for printing firms in order to streamline their workflow, to have smooth operations and even ultimately to remain in business.

### **1.1 Problem Statement**

The graphic arts industry of today is highly digitized and has complex workflows; equipment and software are developed, modified or changed constantly. Company-initiated training is essential for printing firms in order to develop their workforce so as to achieve the benefits of the new technologies. It is important for all kinds and sizes of printing firms to continuously train their workforce. However, the writer's experience indicates that it is especially important for small printing companies (less than 15 employees) to provide company-initiated training. In a small firm, employees often must perform several different jobs, so training and cross-training become essential. In the end it is all about productivity and profit for a company. In order to be more productive, company-initiated training can be a tool to improve retention and morale, reduce absenteeism, and motivate the workforce.

This thesis seeks to determine (1) *why* printing companies provide company-initiated training in prepress, press, and finishing, (2) *what sort* of training they provide their employees with, (3) *how successful they are*, and (4) *how important* they think company-initiated training is in general. In addition, one of the purposes of this thesis is to note if there are any differences in company-initiated training between US and Swedish printing firms.

## **1.2 Research Objectives**

During the last 15 years company-initiated training has been an important factor for printing firms seeking to follow the development of digital technology. The purpose of this study is to determine what the printing firms' objectives are with regard to company-initiated training: what type of training they think gives the best results, how much money they spend on it, how successful they are and what other advantages devolve from it.

## **1.3 Reasons for Interest**

Company-initiated training in printing firms is an important issue in today's digital environment where new versions of machines and software occur frequently. There are few studies done in this area, according to Frank Romano<sup>9</sup>, industry expert which is one reason for this thesis. Another is that the writer has investigated this topic in the past and continues to be interested in learning whether company-initiated training achieves its objectives. The Swedish Graphic Companies' Federation<sup>10</sup> and the Graphic Arts Technical Foundation<sup>11</sup> (GATF) are also interested in this area and have expressed interest in the findings of this thesis.

#### **1.4 Definition of the Title**

The title of the thesis is *A Study of Company-Initiated Training in US and Swedish Printing Firms Relative to Prepress, Press, and Finishing Operations*. This is a basic study of the different types of company-initiated training done by US and Swedish printing firms. It is not a statistical study because only a limited number of companies are surveyed (20). The title also indicates that the study is focused on production—prepress, press and finishing—not on sales or other non-production departments. The surveyed companies were selected within defined groups with regard to types and sizes (Appendix A).

## Endnotes for Chapter 1

<sup>1</sup>F. J. Romano (personal communication, July 9, 2003).

<sup>2</sup>Romano, F. J., & Romano, R. M. (Eds.). (1998) *The GATF Encyclopedia of Graphic Communications*. (Vol. 1, pp. 920). Pittsburgh: GATF Press.

<sup>3</sup>Romano, F. J., & Romano, R. M. (Eds.). (1998) *The GATF Encyclopedia of Graphic Communications*. (Vol. 1, pp. xxxvii). Pittsburgh: GATF Press.

<sup>4</sup>Romano, F. J., & R. Richard, M. (Eds.). (1998) *The GATF Encyclopedia of Graphic Communications*. (Vol. 1, pp. 925). Pittsburgh: GATF Press.

<sup>5</sup>Romano, F. J., & Romano, R. M. (Eds.). (1998) *The GATF Encyclopedia of Graphic Communications*. (Vol. 1, pp. 929). Pittsburgh: GATF Press.

<sup>6</sup>F. J. Romano (personal communication, July 17, 2003).

<sup>7</sup>Romano, F. J., & Romano, R. M. (Eds.). (1998) *The GATF Encyclopedia of Graphic Communications*. (Vol. 1, pp. xxxvii). Pittsburgh: GATF Press.

<sup>8</sup>F. J. Romano (personal communication, July 17, 2003).

<sup>9</sup>F. J. Romano (personal communication, December 12, 2002).

<sup>10</sup>H. Danielson (personal communication, December 30, 2002).

<sup>11</sup>G. Ryan (personal communication, January 14, 2003).

## Chapter 2

### Theoretical Basis of the Study

Company-initiated training in printing firms has become an important and necessary factor since the digital revolution began in the mid 1980's. Since that time the, entire workflow process has changed from analog to digital, and multi-skilled employees with computer knowledge have become a very important factor. A definition of company-initiated training is necessary in order to better understand and follow this report:

*Company-initiated training is the act or process of providing employees with knowledge, skill, and competence in selected areas.* An example is providing an employee with the opportunity to gain deeper and broader knowledge about color management systems.

Company-initiated training also implies helping workers develop a particular skill or group of skills. An example is teaching employees how to operate new machines and to use new software. Company-initiated training seeks to develop a multi-skilled workforce and empowers employees to rotate jobs and to take responsibility for producing quality jobs.

Robert B. Reich in his book, *I'll Be Short*, writes about how computers, the Internet and digital technology have fundamentally changed old job categories into a vast array of new niches. He posits that education and training has become the single most important public investment in the future—first in school, but then throughout a person's

career—and has become the norm for many people.<sup>1</sup> This is also a theory that Noel M. Tichy in his book, *The Cycle of Leadership*, establishes regarding leadership: “The world has definitely changed. Markets are truly global. Intangibles carry premium value. New technologies create new capabilities every day.”<sup>2</sup>

Company-initiated training is also an issue when it comes to motivation and to keeping an employee in the long term. The lack of retention is a leading indicator of employees’ dissatisfaction and if an employee leaves the company it takes about four times his/her salary to replace him/her and about one year for the replacements to become as productive as the ones who left, according to an article in *Inplant Graphics* by Bob Neubauer.<sup>3</sup> Bob Neubauer is the editor of the magazine *Inplant Graphics*.

Association for Graphic Arts Training (AGAT; [www.agatweb.org](http://www.agatweb.org)) is an organization founded in 1987 and is comprised of more than 100 graphic arts trainers and educators from all sectors of the graphic communications industry in the US. AGAT is dedicated to providing a top-notch yearly conference, training resources and networking opportunities specific to the needs of the membership. The AGAT mission is to increase the productivity of member companies through effective, efficient education and training with support from suppliers, educational institutions, associations and foundations, and consultants. The association was founded in response to two emerging business trends confronting the graphic arts industry. First, the skill level of current employees must

increase to enable them to manage and operate the rapidly advancing technologies that drive productivity. Second, the future labor pool is shrinking. Future employees will require even more advanced training than the present-day workforce just to maintain current levels of productivity.<sup>4</sup>

The Graphic Arts Technical Association (GATF; [www.gatf.org](http://www.gatf.org)) has arranged training programs and workshops for more than 75 years and organizes 22 different workshops multiple times every year (with a total of around 60). The focus is on orientation (2 programs), prepress (7 programs), press operations (6 programs), and production operations (7 programs). They also offer several conferences each year, along with custom training, seminars, webinars, and a series of training curriculums (including binding and finishing, even though GATF does not teach a workshop on it) which schools and printing companies use to develop their own structured internal training. Says James Workman, director of GATF's training department:

The number of training programs has increased since the mid 1980's and the main reason is the digital revolution in the industry. It was a major change and companies had many training concerns, including training on new software, that we responded to. Most recently, we have seen interest in color management and PDF courses. Over the longer term, however, I expect prepress programs for printers to decline as prepress becomes increasingly streamlined and customers take on more and more responsibility. During the last 2–3 years the number of companies participating in our training programs has diminished somewhat due to the poor economy. We now see companies beginning to come back for training as the economy looks more hopeful.<sup>5</sup>

Printing Industries of America (PIA) is a trade association which serves commercial printers, electronic imaging companies, etc. with programs, services, and an environment that help them operate their businesses profitably. From December 2002 to February 2003 PIA sent out two surveys with questions about employee training and human resource support: “Strategic and Operating Practices Assessment,” and “Employee Training.” The surveyed companies are all located in the US and Canada and include sheet fed offset printers, web offset printers, gravure printers, and a few newspaper and packaging printers. The surveys determined that training and education for employees was most common in production/technical area (35%) followed by sales/customer service (32%) and management (12%). 48% of the companies that completed the survey budget their employee training, and 2.92% of the total payroll cost during the last year was devoted to training and education programs.<sup>6</sup> The surveys also determined that in-house training was the type of training that the companies spend most money on for all employees: \$11,264 (33.15%), followed by PIA/GATF programs \$3,781.95 (23.03%).<sup>7</sup> Appendix A includes the full results the these two surveys.

Rochester Institute of Technology’s (RIT) Printing Industry Center<sup>8</sup> has offered seminars and workshops for printing companies for over 50 years. Popular workshops of today are in digital prepress and workflows, print production technologies and imaging software.

RITs training specialist Ken Posman says:

Over the years traditional press related programs have been the most popular. Recently, with the advent of digital printing, prepress and workflow issues have also become popular. Binding and finishing are

the least popular. During the last three years we have seen a decline in program enrollments due to economic issues, as well as travel issues. While enrollment is down we still try and add new programs if we feel there is a need. Digital technologies have brought about many new programs over the past years.<sup>9</sup>

Quad/Graphics is a one of the largest printing companies in the US and has more than 11,000 employees at printing plants and sales offices across the US and around the world. They offer two main training programs, a Corporate Training Program and an Operator In Training (OIT) Program. Quad/Graphics started its OIT program in 1999 and has increased the OIT program during the last two years.<sup>10</sup>

Several Swedish studies have been done in this area that confirm company-initiated training is essential today. One of them, entitled *The Need of Competence in Graphic Arts*,<sup>11</sup> maps out the need for technical competence in the Swedish graphic arts industry. This study, done in 1999, is based on a survey sent to 66 companies. Of the 20 different areas that were included, *developing of own products* and *computer skills in general and in the graphic arts in particular* were the ones that were considered as most important regarding company-initiated training.

In 1999, the Swedish Graphic Companies' Federation (GFF) also published a technology forecast, *Graphic Companies in the Media Industry – What do we do now?*,<sup>12</sup> in which they predict electronic e-commerce and database knowledge will become important issues in the graphic arts industry. Relating to competence the forecast identifies four essential areas, and two of them are computer knowledge and knowledge about how to use digital data:

The knowledge about the technique is in general better in printing firms compared to advertising agencies, design bureaus and photographers. However, the development of digital design tools and digital cameras is fast and it is important that the knowledge continuously updates.<sup>13</sup>

Another Swedish report within this topic is *New Values in the World of eGutenberg* in which the technical changes in the printing industry are discussed. Digital technology, the Internet and globalization have changed the workflow and created new possibilities, and the printing industry has more and more become a part of the information technology industry.<sup>14</sup> The report also describes the consequences of these changes, and the kind of knowledge the industry needs.

## **2.1 Summary of the Theoretical Study**

These studies emphasize the printing industry's need for company-initiated training that resulted from the digital revolution. The technical development of the industry is rapid and continuous, and it is necessary to train the workforce to be more multi-skilled and to be up to date with the latest technology. That is the milieu on which this thesis is

based—that the digital revolution has created new and different jobs in which the computer is a principal part and for which employees need to be multiskilled. Printing companies need to continuously train their workforce in order to develop the company's human resources, to streamline the workflow and even ultimately to ensure the company's viability.

## Endnotes for Chapter 2

<sup>1</sup>Reich, Robert B. (2002). *I'll Be Short—Essentials for a Decent Working Society*.

(pp. 87). Boston: Alfred A. Beacon Press.

<sup>2</sup>Tichy, N. M., with N. Cardwell (2002). *The Cycle of Leadership—How Great Leaders*

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<sup>3</sup>Neubauer, B. (December 2002). Growing Despite Cutbacks: *Inplant Graphics*, 52,

(#12), 52, 54, 56.

<sup>4</sup>Bense, B. (ed), Association for Graphic Arts Training (AGAT). *What is AGAT?*

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<sup>5</sup>J. Workman (personal communication, August 4, 2003) also verified this.

<sup>6</sup>Kodey, S. (February 2002). Strategic and Operating Practices Assessment. Alexandria,

VA: Printing Industries of America (PIA).

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<sup>10</sup>Quad/Graphics Inc. Retrieved July 24, 2003 from <http://www.qg.com/index.asp?l=work>

<sup>11</sup>Danielson, H. (1999). *Kompetensbehovet i grafiska sektorn*. (The Need of Competence in Graphic Arts). (pp. 3). Stockholm: The Education Association of Media & Information Technology issues. (In Swedish).

<sup>12</sup>Erlandson, S., Hedberg, H., & Karlsson O. (Eds.). (September 1999). *Grafiska företag i mediabranschen – vad gör vi nu?* (Graphic Companies in the Media Industry—What do we do now?). (pp. 41). Stockholm: Swedish Graphic Companies' Federations Technology Forecast. (In Swedish).

<sup>13</sup>Erlandson, S., Hedberg, H., & Karlsson O. (Eds.). (September 1999). *Grafiska företag i mediabranschen – vad gör vi nu?* (Graphic Companies in the Media Industry—What do we do now?). (pp. 44). Stockholm: Swedish Graphic Companies' Federations Technology Forecast. (In Swedish).

<sup>14</sup>Erlandson, S., & Hedberg, H. (March 2001). *Nya värden i e-Gutenbergs värld*. (New Values in the World of eGutenberg). (pp. 9). Stockholm: Swedish Graphic Companies' Federation. (In Swedish).

## Chapter 3

### Review of Literature in the Field

There are a limited number of books, written works and studies in the area of company-initiated training in printing firms, but there is a great deal written in related areas, such as labor, lean production, manufacturing, and training workforces in general. One of America's foremost political economists is Robert B. Reich who served in three national administrations, most recently as the Secretary of Labor during the Clinton administration. Reich is also an author and university professor at Brandeis's University in Waltham, MA. *The Work of Nations*,<sup>1</sup> *The Future of Success*,<sup>2</sup> and *I'll Be Short* are three of his books. In the latter he writes about how important education and learning are throughout one's entire career:

Education isn't just a nice thing to do to the extent we can afford it. It's the single most important public investment in our future. Lifelong learning—beginning in early childhood and extending all the way through a person's career—has become the norm for all our people. The thing about the twenty-first-century economy that distinguishes it most sharply from the economy that preceded it is the central importance of people's minds, and skills. 'Human capital' is the asset that matters most.<sup>3</sup>

These words can be seen as an admonition to firms to invest in training their workforce, especially during tough economic times, for it is knowledge and skills that will drive the 21st century's economy.

Reich also writes that jobs in the old mass-production economy came in a few standard varieties (research, production, sales, clerical, managerial, professional), but establishes that this system has become fragmented. “Computers, the Internet, and digital commerce have exploded the old job categories into a vast array of new niches, creating a kaleidoscope of ways to make a living.”<sup>4</sup> The digital revolution of the printing industry is an example of this explosion, where the workforce needs continuous training to be up to date with software and new technology in order to meet the demands of the industry.

Reich writes that for most of the century, education beyond twelfth grade was a luxury. In the 21st century most young people also need at least two years of critical skills beyond the typical high school curriculum—technical skills, thinking skills, on-the-job learning skills:

In the old economy that dominated the twentieth century, profits and productivity gains depended on making more and more of the same thing. Large numbers of production workers were needed to undertake relatively routine tasks. Those workers did not, in general, require much education. In the new economy of the twenty-first century, by contrast, businesses depend largely on innovation. To stay competitive, they have to generate products and services that are better or cheaper than those of their rivals, and they must innovate faster than their rivals.<sup>5</sup>

Another related area to company-initiated training is leadership, and in *The Cycle of Leadership* Noel M. Tichy among other topics covers company-initiated training from a leadership point of view. His primary message is that winning organizations are teaching organizations where everybody teaches and everybody learns; practices, processes, and values all promote teaching. The learning starts at the top and the CEO must assume the role of head teacher and set the direction. But it can not be one-way learning, it must be interactive and the leader must be able to learn from the workforce, according to Tichy. Learners at all levels should also be teachers, and this should create a self-reinforcing environment where the teaching organizations are interesting, fun, enjoyable places to work because they engage the minds of the workers and allow them to contribute to a winning team. This, in turn, is what leads directly to the delivery of outstanding results. “A leader is given stewardship over assets, in the form of people, capital, information, and technology. His/her job is to make them more valuable and to keep making them more valuable into the future.”<sup>6</sup>

Tichy holds that to create organizations that get smarter and more aligned every day requires an interactive teaching/learning process that is not based on hierarchical teaching—it is a process of mutual exploration and exchange during which both the “teacher” and “learner” become smarter. It is a  $1+1=3$  situation. Today, it is more important than ever that leaders build the teaching organization:

One reason is that we are in a post-industrial era. Knowledge, human enthusiasm and brainpower have replaced physical plants and equipment as the critical assets in competitive markets. More than ever before, the

abilities of the people in a company, and how effectively those abilities are used, are the keys that determine whether a company wins or loses.<sup>7</sup>

Tichy believes that for young companies in a stage of hypergrowth, teaching is an absolute necessity. “Not only must the people streaming in the door be assimilated into the company and directed to meaningful work, but also cadres of new managers must be developed.”<sup>8</sup> It is the routine gathering and sharing of information and ideas that allow teaching organizations to be faster and smarter than their competitors: “Teaching organizations are better at collecting information and getting it to the people who can use it.”<sup>9</sup>

It could be difficult for a small company to see the usefulness of using interactive learning in order to be more profitable in the short term, but it is important: “Especially in young companies, so many things need to get done seemingly all at once, it is easy for leaders to fall into the trap of thinking that planning ahead and building for the future is an incredible luxury. It is not. It is an absolute necessity.”<sup>10</sup>

The Swedish Graphic Companies’ Federation has published several booklets in which the need of technical competence in the Swedish graphic arts industry is studied and evaluated. In *The Need of Competence in Graphic Arts* the general need for competence in the graphic arts industry and how to obtain it through college education and company-initiated training programs are discussed. Two of the most important areas regarding education and training of the workforce stated in the booklet are *developing of own products* and *computer skills in general and graphic arts in particular*.<sup>11</sup>

In the booklet *New Values in the World of eGutenberg*,<sup>12</sup> the development of digital technology and the Internet and how the changes wrought through globalization are discussed. All these parameters require continuous training of the workforce in order to compete and to be profitable in the long term.

### **3.1 Discussion of the Literature in the Field**

Regarding the digital revolution, the literature review reveals that company-initiated training in printing firms is an important issue. It is essential for a printing firm to continuously train its workforce in order to develop the company's human resources, and thereby to improve the workflow and even ultimately to ensure the company's viability. The literature anticipates that most of the printing firms do provide company-initiated training, and that is what this study is based on. Most of the survey questions are based on the answer "yes, we do provide company-initiated training in prepress, press and/or finishing." A possible outcome is that most of them do it in the prepress department, less in the press room and even less in the finishing department. According to the literature, the digital revolution has mainly taken part in the first half of the production workflow, that is until the digital data reaches the paper on the press, and it is in this area, in prepress, computer skilled and multi-skilled employees are most needed.

### Endnotes for Chapter 3

<sup>1</sup>Reich, Robert B. (1991). *The Work of Nations – Preparing Ourselves for 21st-Century Capitalism*. New York: Alfred A. Knopf.

<sup>2</sup>Reich, Robert B. (2001). *The Future of Success*. New York: Alfred A. Knopf.

<sup>3</sup>Reich, Robert B. (2002). *I'll Be Short—Essentials for a Decent Working Society*. (pp. 65). Boston: Alfred A. Beacon Press.

<sup>4</sup>Reich, Robert B. (2002). *I'll Be Short—Essentials for a Decent Working Society*. (pp. 71). Boston: Alfred A. Beacon Press.

<sup>5</sup>Reich, Robert B. (2002). *I'll Be Short—Essentials for a Decent Working Society*. (pp. 79). Boston: Alfred A. Beacon Press.

<sup>6</sup>Tichy, Noel M., with Nancy Cardwell (2002). *The Cycle of Leadership—How Great Leaders Teach Their Companies to Win*. (pp. 5). New York: HarperBusiness.

<sup>7</sup>Tichy, Noel M., with Nancy Cardwell (2002). *The Cycle of Leadership—How Great Leaders Teach Their Companies to Win*. (pp. 12). New York: HarperBusiness.

<sup>8</sup>Tichy, Noel M., with Nancy Cardwell (2002). *The Cycle of Leadership—How Great Leaders Teach Their Companies to Win*. (pp. 14). New York: HarperBusiness.

<sup>9</sup>Tichy, Noel M., with Nancy Cardwell (2002). *The Cycle of Leadership—How Great Leaders Teach Their Companies to Win*. (pp. 15). New York: HarperBusiness.

<sup>10</sup>Tichy, Noel M., with Nancy Cardwell (2002). *The Cycle of Leadership—How Great Leaders Teach Their Companies to Win*. (pp. 18). New York: HarperBusiness.

<sup>11</sup>Danielson, Hans. (1999). *Kompetensbehovet i grafiska sektorn*. (The Need of Competence in Graphic Arts). (pp. 23). Stockholm: The Education Association of Media & Information Technology issues. (In Swedish).

<sup>12</sup>Erlandson, Sverker, & Hedberg, Hasse (March 2001). *Nya värden i e-Gutenbergs värld*. (New Values in the World of eGutenberg). (pp. 15). Stockholm: Swedish Graphic Companies' Federation. (In Swedish).

## Chapter 4

### The Hypotheses

The purpose of the study is to determine *if* printing companies provide company-initiated training in prepress, press and finishing, *why* they do it, and *what type* of training they provide their employees with. This thesis also seeks to determine *how successful they are*, and *how important* they think company-initiated training is in general. To determine the answers, a survey was sent to printing companies of different types and sizes: offset printers, digital printers, newspapers and packaging printers.

The survey provides data that can be used to characterize attitudes among printing industry executives about the effectiveness of company-initiated training.

The survey data supports these 4 hypotheses:

Hypothesis I: Company-initiated training contributes to improved worker *morale*;

Hypothesis II: Company-initiated training contributes to improved worker *retention*;

Hypothesis III: Company-initiated training contributes to improved *productivity*;

Hypothesis IV: Company-initiated training contributes to reduced *absenteeism*.

Indication of whether the hypotheses are supported or not will be based on the sample responses from the 20 companies surveyed. This thesis will not attempt to make statistically valid claims for the entire industry population.

## Chapter 5

### Methodology

The objective of this thesis was to study the kind of company-initiated training commercial printing firms provide for their employees. The study includes printing firms of various sizes and types in the US and Sweden. A survey was sent to the printing firms and included questions that seek to determine three things: 1) *Do* printing firms provide company-initiated training in prepress, press and finishing; 2) *What type* of training do they provide for their employees; and 3) Are they successful.

#### 5.1 Surveyed Printing Companies

First a list of 20 printing companies was selected, 10 US printers and 10 Swedish printers. In order to get information from different sizes and types of printers the following kinds of firms were chosen from each country:

- 2 large offset printers (>50 employees)
- 2 medium offset printers (25–50 employees)
- 2 small offset printers (<25 employees)
- 2 digital printers (25–50 employees)
- 1 newspaper printer (approximately 200 employees)
- 1 packaging printer (approximately 200 employees)

The Swedish firms were chosen first, and then, regarding the number of employees, American firms were selected to match them as closely as possible in each category (see above). This was to secure as high a level of similarity as possible in order to compare the results from the firms in each category. The Swedish firms were chosen from industry expert Hans Danielson's private list of Swedish printing companies,<sup>1</sup> and complementary information was taken from the Swedish Graphic Companies' Federation website (<http://www.grafiska.se>). The US firms were selected from the *2003 Printing & Graphic Arts Directory*.<sup>2</sup>

## **5.2 Cover Letter for the Survey**

The purpose of the cover letter was to briefly inform the recipients what the study was about, what they were expected to do (answer the survey), and how they would benefit. A person was identified at each firm as being the appropriate recipient of the survey, and the cover letter was then personally addressed to him/her. It was clearly explained that their participation was important because only a relatively small number of companies was surveyed. The letter also stated that they would receive a copy of the final report when it was finished. The letter was short and formulated to be easy to read quickly. It was not formulated as a question *if* the person wanted to answer the survey, each recipient was asked directly to complete the survey and fax it back to the author. The tone and content of the letter closely followed recommendations from *Constructing Effective Questionnaires*,<sup>3</sup> by Robert A. Peterson.

### **5.3 Survey of the Printing Companies**

The first draft of the survey had 52 questions (six pages) about prepress, press and finishing. The number of questions was finally reduced to 13 (three pages) multiple choice questions to make the survey as easy to complete as possible. The book *Constructing Effective Questionnaires*<sup>4</sup> was referenced in creating the questions. The final survey and cover letter, are contained in Appendix B (English version) and Appendix C (Swedish version). The survey also explained the purpose of the study and defined what company-initiated training is to make it easier for the company to answer the questions properly. Before the survey was sent to the companies, the first draft was tested on a company and read by faculty members of Rochester Institute of Technology's School of Print Media to ensure that the questions were clear.

### **5.4 Distribution**

First, each company was called to identify the CEO or the production manager and to learn his/her e-mail address. Then an e-mail was sent to these individuals to alert them to the fact that a survey was coming. The survey (compiled in Microsoft Word, designed in QuarkXPress and then converted to a PDF file) in PDF format was then personalized with the name of the receiver and finally distributed by e-mail. Two days later a phone call was made to check that the e-mail was received and as a reminder. When the survey was completed, the company was asked to fax it to RIT. Some of the companies gave the answers over the phone, and a few e-mailed the answers back. In several cases, a phone

call was made after the completed survey was received to check some answers that were unclear. Some of these phone calls led to interesting discussions about company-initiated training and related areas.

### 5.5 Questions in the Survey

The first two questions, name of the company and name and position of the person who answered the survey, were included in case there was a need to check some of the information provided. Address, phone number, number of employees and revenue were checked in the *2003 Printing & Graphic Arts Directory*<sup>5</sup> and on the Swedish Graphic Companies' Federation's website (<http://www.grafiska.se>). In some cases this information was missing and the information was received by asking the companies by phone. However, these questions were not put in the survey. The 13 questions in the survey with author's comments follow:

1) Does your company *provide* employees with company-initiated training in prepress, press, and/or finishing? (Check one)

Yes     No    If, Yes, check all that apply:  Prepress     Press     Finishing

(If No, go to question #11)

Comment: \_\_\_\_\_

*Comment: The purpose of the question is to find out if the company provides company-initiated training. And, if yes, in what departments.*

2) *Why* does your company provide employees with company-initiated training in prepress, press, and/or finishing? (Check all that apply)

- To multi-skill the employees
- To reduce turnover
- To increase efficiency
- To improve morale
- Other (please specify) \_\_\_\_\_

*Comment: The purpose of the question is to find out why the firm provides company-initiated training.*

3) *How* does your company budget company-initiated training? (Check one)

- Planned annual budget
- Ad hoc, "as needed"
- Other (please specify) \_\_\_\_\_

*Comment: The purpose of the question is to find out how they budget their company-initiated training.*

4) Approximately, *how much* does your company spend on company-initiated training in prepress, press and/or finishing per employee per year? (Check one)

- \$0–\$500
- \$501–\$1,000
- \$1,001–\$2,000
- \$2,001–\$5,000
- More than \$5,000

*Comment: The purpose of the question is to find out how much money the firm spends on company-initiated training.*

5) *Which* company-initiated training does your company provide for its employees?

(Check all that apply)

- On-the job Training (employee-to-employee)
- Internal Courses
- Off-site Seminars
- Certification Programs
- Consultant's Help
- Manufacturer/Supplier Training Program
- On-line Courses (via Internet)
- Other (please specify) \_\_\_\_\_

*Comment: The purpose of the question is to find out what types of company-initiated training the company provides.*

6) Please rate only those choices that you checked in question #5 regarding how they impact *Morale*. (0 = no impact, 5 = highest impact)

• On-the job Training (employee-to-employee)	0	1	2	3	4	5
• Internal Courses	0	1	2	3	4	5
• Off-site Seminars	0	1	2	3	4	5
• Certification Programs	0	1	2	3	4	5
• Consultant's Help	0	1	2	3	4	5
• Manufacturer/Supplier Training Program	0	1	2	3	4	5
• On-line Courses (via Internet)	0	1	2	3	4	5
• Other (please specify) _____	0	1	2	3	4	5

*Comment: The purpose of this question, and question #7, #8, and #9 is to learn how each company views the impact of company-initiated training on morale, retention, productivity, and absenteeism respectively.*

7) Please rate only those choices that you checked in question #5 regarding how they impact *Retention*. (0 = no impact, 5 = highest impact)

• On-the job Training (employee-to-employee)	0	1	2	3	4	5
• Internal Courses	0	1	2	3	4	5

• Off-site Seminars	0	1	2	3	4	5
• Certification Programs	0	1	2	3	4	5
• Consultant's Help	0	1	2	3	4	5
• Manufacturer/Supplier Training Program	0	1	2	3	4	5
• On-line Courses (via Internet)	0	1	2	3	4	5
• Other (please specify) _____	0	1	2	3	4	5

8) Please rate only those choices that you checked in question #5 regarding how they impact *Productivity*. (0 = no impact, 5 = highest impact)

• On-the job Training (employee-to-employee)	0	1	2	3	4	5
• Internal Courses	0	1	2	3	4	5
• Off-site Seminars	0	1	2	3	4	5
• Certification Programs	0	1	2	3	4	5
• Consultant's Help	0	1	2	3	4	5
• Manufacturer/Supplier Training Program	0	1	2	3	4	5
• On-line Courses (via Internet)	0	1	2	3	4	5
• Other (please specify) _____	0	1	2	3	4	5

9) Please rate only those choices that you checked in question #5 regarding how they impact *Absenteeism*. (0 = no impact, 5 = highest impact)

• On-the job Training (employee-to-employee)	0	1	2	3	4	5
• Internal Courses	0	1	2	3	4	5

• Off-site Seminars	0	1	2	3	4	5
• Certification Programs	0	1	2	3	4	5
• Consultant's Help	0	1	2	3	4	5
• Manufacturer/Supplier Training Program	0	1	2	3	4	5
• On-line Courses (via Internet)	0	1	2	3	4	5
• Other (please specify) _____	0	1	2	3	4	5

10) Please rate the importance of company-initiated training and education in the following three production areas. (0 = not important, 5 = very important)

• Prepres	0	1	2	3	4	5
• Press	0	1	2	3	4	5
• Finishing	0	1	2	3	4	5

*Comment: The purpose of the question is to find out how important the company thinks company-initiated training is in each of these three areas, whether or not the company actually has company-initiated training in all three areas.*

*Survey Completed if you answered yes on question #1.*

11) Does your company *plan to start* company-initiated training in prepress, press, and/or finishing? (Check one)

Yes    No   (If No, survey is completed)

*Comment: Question #11, #12, and #13 will only be answered if the company does not provide company-initiated training. The purpose of the questions is to see if the company plans to start offering it, and if it does, when and in what department(s).*

12) *When* does your company plan to start company-initiated training? (Check one)

- Within the next 6 months
- Within next year
- Within the next 2 years or later

13) *In what department(s)* does your company plan to start company-initiated training?

(Check all that apply)

- Prepress
- Press
- Finishing
- Other (please specify) \_\_\_\_\_

## **5.6 Data Analysis**

All data will be put into an Excel spread sheet in order to get an overview of the answers, question by question, and to see parallels and tendencies between the different categories of companies: large, medium and small offset printers, digital printers, newspaper printers and packaging printers (Appendix D). Each company was assigned an abbreviation in order to identify its type and size (Table 2).

Company						
ULOP	US Large Offset Printer					
SLOP	Swedish Large Offset Printer					
UMOP	US Medium Offset Printer					
SMOP	Swedish Medium Offset Printer					
USOP	US Small Offset Printer					
SSOP	Swedish Small Offset Printer					
UDP	US Digital Printer					
SDP	Swedish Digital Printer					
UNP	US Newspaper Printer					
SNP	Swedish Newspaper Printer					
UPP	US Packaging Printer					
SPP	Swedish Packaging Printer					

Table 2. Company abbreviations used in the thesis.

All questions require multiple choice responses with some questions only requiring one answer and some several. On several questions, the responses depend on how many of the choices apply to the specific company. See Table 3 for an example. The following two questions (#5 and #6) are samples of the data compilation needed for an analysis to be done.

5. Which company-initiated training does your company provide for its employees?  
(Check all that apply)

- A. On-the job Training (employee-to-employee)
- B. Internal Courses
- C. Off-site Seminars
- D. Certification Program
- E. Consultant's Help
- F. Manufacturer/Supplier Training Program
- G. On-line Courses (via Internet)
- H. Other (please specify)

Q5										
Company		<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>G</i>	<i>H</i>	
C1	ULOP#1	x		x	x		x		x	
C2	ULOP#2	x		x		x	x	x		
C3	SLOP#1	x	x	x	x			x		
C4	SLOP#2	x	x	x	x	x	x			
C5	UMOP#1	x		x				x		
C6	UMOP#2	x	x	x			x	x		
C7	SMOP#1	x					x			
C8	SMOP#2	x	x			x				
C9	USOP#1	x		x		x	x			
C10	USOP#2	x	x	x						
C11	SSOP#1	x		x		x				
C12	SSOP#2	x	x	x		x	x			
C13	UDP#1	x				x	x			
C14	UDP#2	Do not provide company-initiated training.								
C15	SDP#1	x	x	x		x	x	x		
C16	SDP#2	x	x	x			x			
C17	UNP	x	x	x			x	x		
C18	SNP		x	x		x	x			
C19	UPP	x	x	x	x		x			
C20	SPP	x	x	x		x	x			
<i>Number of Companies</i>		18	12	16	4	10	14	6	1	
<i>Average Rating</i>		95%	63%	84%	21%	53%	74%	32%	1%	

Table 3. Summary of responses to Question 5 which is shown above (based on the 19 companies that answered).

The responses have been counted in order to determine the frequency of each choice and then converted to a percentage or average (Table 3). All the data has been analyzed by using tables and graphs. A sample of the graphs can be referenced in the conclusion (7.2). The data was treated with the strictest confidence and this research report includes only data and findings in aggregate form. No company will be identifiable from the information published.

6. Please rate only those choices that you checked in question #5 regarding how they impact *Morale*. (0 = no impact, 5 = highest impact)

A. On-the job Training (employee-to-employee)	0	1	2	3	4	5
B. Internal Courses	0	1	2	3	4	5
C. Off-site Seminars	0	1	2	3	4	5
D. Certification Programs	0	1	2	3	4	5
E. Consultant's Help	0	1	2	3	4	5
F. Manufacturer/Supplier Training Program	0	1	2	3	4	5
G. On-line Courses (via Internet)	0	1	2	3	4	5
H. Other (please specify) _____	0	1	2	3	4	5

Q6										
Company		<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>G</i>	<i>H</i>	
C1	ULOP#1	4		4	5		3		5	
C2	ULOP#2	4		5		3	4	4		
C3	SLOP#1	3	3	3	3			3		
C4	SLOP#2	3	4	3	5	5	4			
C5	UMOP#1	4		5				3		
C6	UMOP#2	3	3	5			4	4		
C7	SMOP#1	5					4			
C8	SMOP#2	4	4			3				
C9	USOP#1	4		4		4	5			
C10	USOP#2	4	3	5						
C11	SSOP#1	5		4		3				
C12	SSOP#2	3	5	4		5	5			
C13	UDP#1	3				4	4			
C14	UDP#2	Do not provide company-initiated training.								
C15	SDP#1	2	3	4		3	3	3		
C16	SDP#2	3	4	4			1			
C17	UNP	4	3	4			4	3		
C18	SNP		3	2		3	3			
C19	UPP	3	4	4	4		4			
C20	SPP	3	4	3		3	4			
<i>Number of Companies</i>		18	12	16	4	10	14	6	1	
<i>Average Rating</i>		3.55	3.58	3.93	4.25	3.60	3.71	3.33	5.00	

Table 4. Summary of responses to Question number 6 which is shown above.

An average rating of the answers of each of the four hypothesis questions was calculated (see example in table 4) to determine the relative significance of the hypothesis.

## Endnotes for Chapter 5

<sup>1</sup>H. Danielson (personal communication, December 30, 2002).

<sup>2</sup>Barnes, C. (Ed). (2003). *The 2003 Printing & Graphic Arts Directory* (5th Edition).  
Alexandria, VA: C. Barnes & Co., Compass Capital Partners.

<sup>3</sup>Peterson, R. A. (2000). *Constructing Effective Questionnaires*. (pp. 103–104). Kansas  
City, MO: Sage Publications, Inc.

<sup>4</sup>Peterson, R. A. (2000). *Constructing Effective Questionnaires*. (pp. 26). Kansas City,  
MO: Sage Publications, Inc.

<sup>5</sup>Barnes, C. (Ed). (2003). *The 2003 Printing & Graphic Arts Directory* (5th Edition).  
Alexandria, VA: C. Barnes & Co., Compass Capital Partners.

## Chapter 6

### Results

This thesis seeks to determine (1) *why* printing companies provide company-initiated training in prepress, press, and finishing, (2) *what sort* of training they provide their employees with, (3) *how successful they are*, and (4) *how important* they think company-initiated training is in general.

The study shows that almost all surveyed companies do provide training. The two biggest reasons to provide company-initiated training are to multi-skill the employees and to increase efficiency (1). The answers from the survey also show that on-the job training (employee-to-employee) and off-site seminars are the two most common types of company-initiated training (2). Manufacturer/supplier training program, on-the job training and internal courses are the categories that got the highest rating and can be considered the most successful ones (3). The results of the survey also show that the companies have the opinion that company-initiated training is most important in prepress, followed closely by press with finishing in third place.

Here follow answers of all questions asked in the survey (Appendix E provides detailed answers in table form, question by question, company by company.):

1. 95% of the printing companies (19 of 20) provide their employees with company-initiated training in prepress, press and/or finishing. 95% of the companies provide company-initiated training in prepress, 90% do it in press and 60% in finishing.

2. Why do the companies provide their employees with company-initiated training in prepress, press and/or finishing? (They can check more than one alternative.)

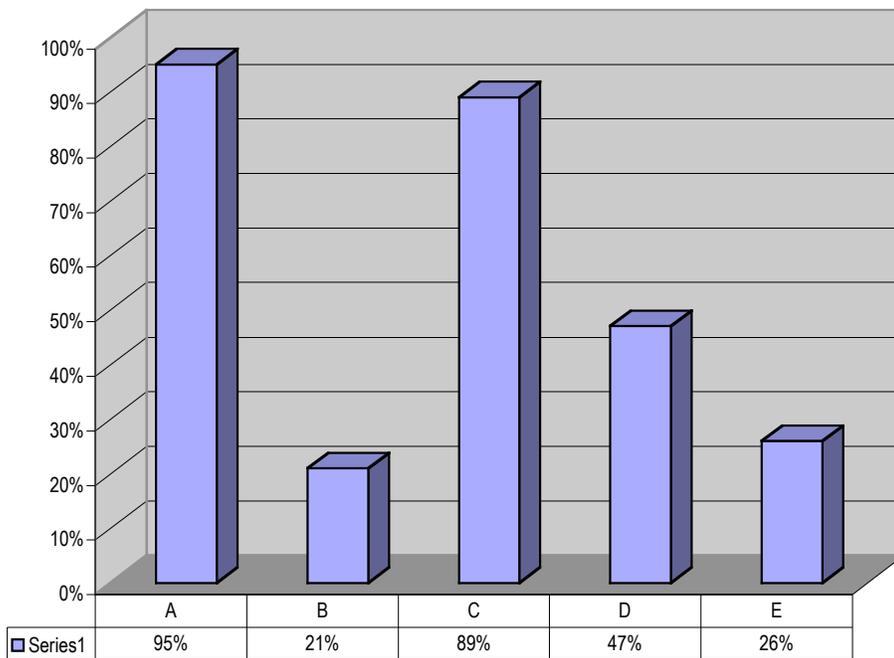


Figure 1. Reasons why printing companies provide company-initiated training.

- A. To multi-skill its employees (19/20 = 19 of 20 companies answered yes)
- B. To reduce turnover (4/19)
- C. To increase efficiency (17/19)
- D. To improve morale (9/19)
- E. Other company-initiated training (5/19)

3. How does the printing companies budget company-initiated training?

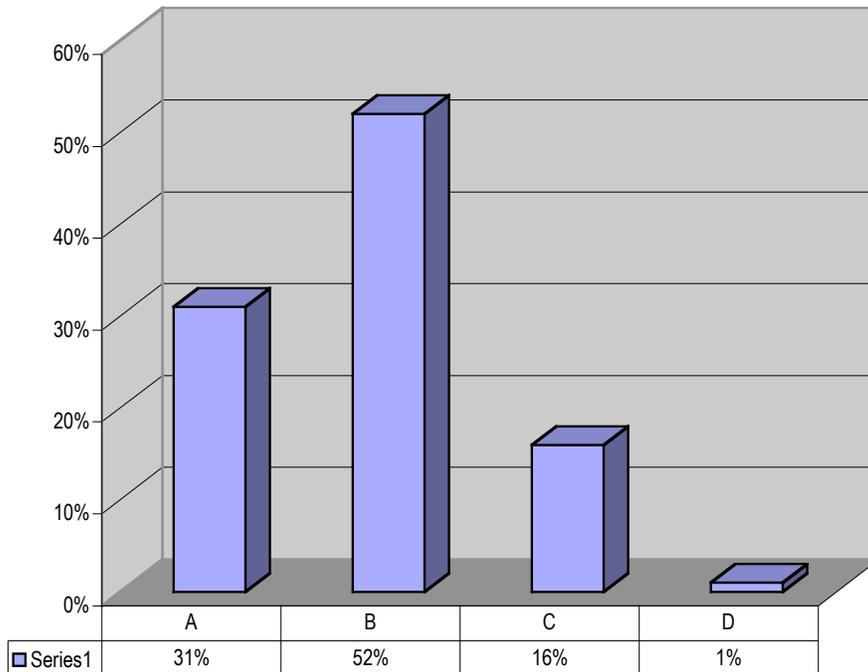


Figure 2. How the printing companies budget company-initiated training.

- A. The companies plan it in their annual budget (6/19 = 6 of 19 answered)
- B. Plan it when needed, “ad hoc” (10/19)
- C. Another way (3/19)
- D. Do not provide company-initiated training (1/20)

4. How much does the printing companies spend on company-initiated training?

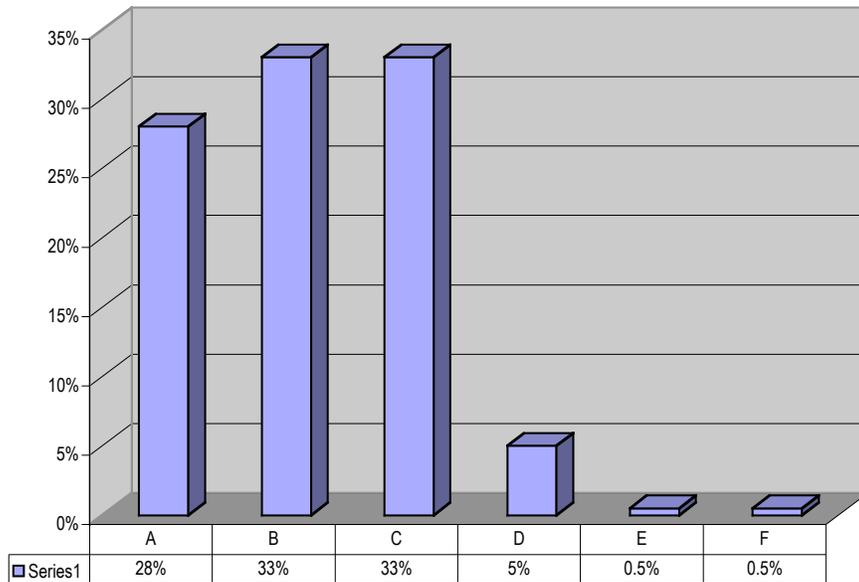


Figure 3: How much the printing companies spend on company-initiated training.

- A. \$0–\$500 per employee per year (5/18 = 5 of 18 companies answered)
- B. \$501–\$1,000 per employee per year (6/18)
- C. \$1,001–\$2,000 per employee per year (6/18)
- D. \$2,001–\$5,000 per employee per year (1/18)
- E. The information is confidential (1/19)
- F. Do not provide company-initiated training (1/20)

5. Which type of company-initiated training do the companies provide for their employees? (They can check more than one alternative.)

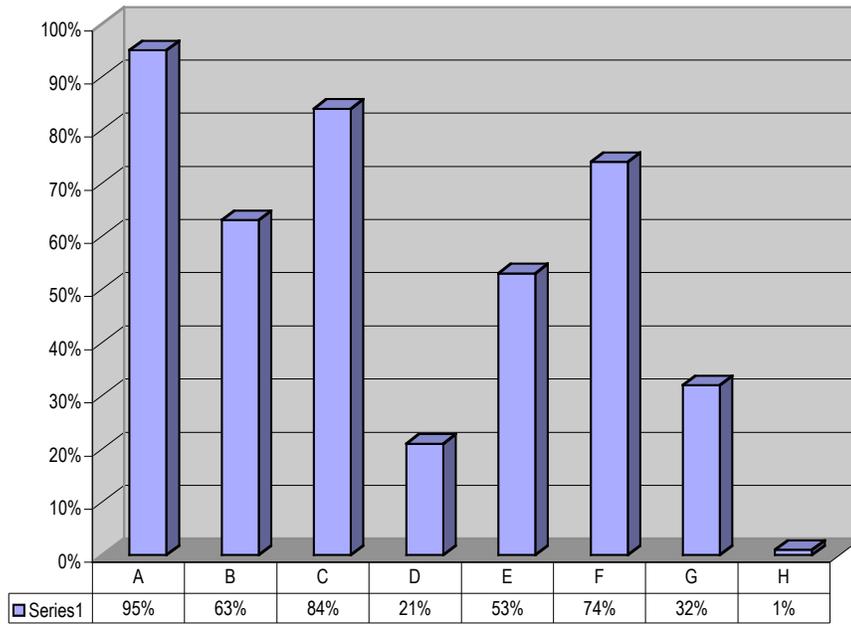


Figure 4: What type of company-initiated training the printing companies provide.

- A. On-the job training, internal courses (18/19 = 18 of 19 companies answered)
- B. Internal courses (12/19)
- C. Off-site seminars (16/19)
- D. Certification programs (4/19)
- E. Consultant's help (10/19)
- F. Manufacturer/supplier training program (14/19)
- G. On-line courses, via Internet (6/19)
- H. Other type of company-initiated training (1/19)

6. How does company-initiated training impact Morale on a scale from 0 to 5?

(0 = no impact, 5 = highest impact)

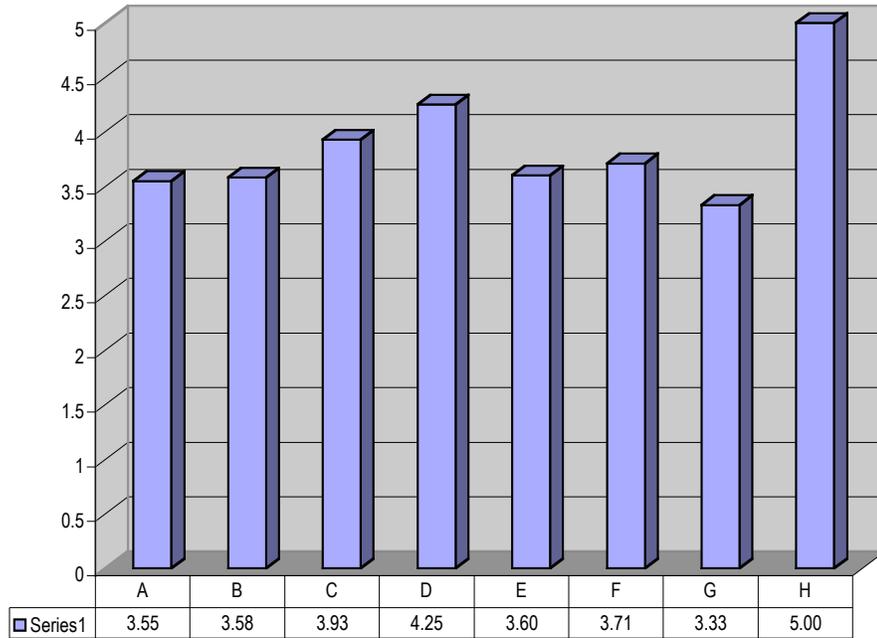


Figure 5: How company-initiated training impacts morale.

- A. On-the job Training, employee-to-employee (18/19 = 18 of 19 companies answered)
- B. Internal Courses (12/19)
- C. Off-site Seminars (16/19)
- D. Certification Programs (4/19)
- E. Consultant's Help (10/19)
- F. Manufacturer/Supplier Training Program (14/19)
- G. On-line Courses, via Internet (6/19)
- H. Other company-initiated training (1/19)

7. How does company-initiated training impact Retention on a scale from 0 to 5?

(0 = no impact, 5 = highest impact)

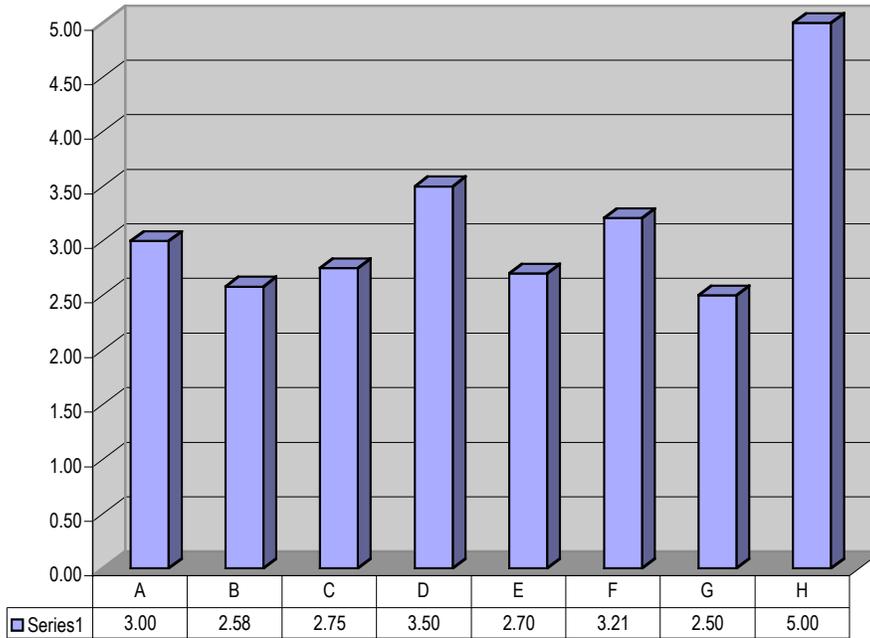


Figure 6: How company-initiated training impacts retention.

- A. On-the job Training, employee-to-employee (18/19 = 18 of 19 companies answered)
- B. Internal Courses (12/19)
- C. Off-site Seminars (16/19)
- D. Certification Programs (4/19)
- E. Consultant's Help (10/19)
- F. Manufacturer/Supplier Training Program (14/19)
- G. On-line Courses, via Internet (6/19)
- H. Other company-initiated training (1/19)

8. How does company-initiated training impact Productivity on a scale from 0 to 5?

(0 = no impact, 5 = highest impact)

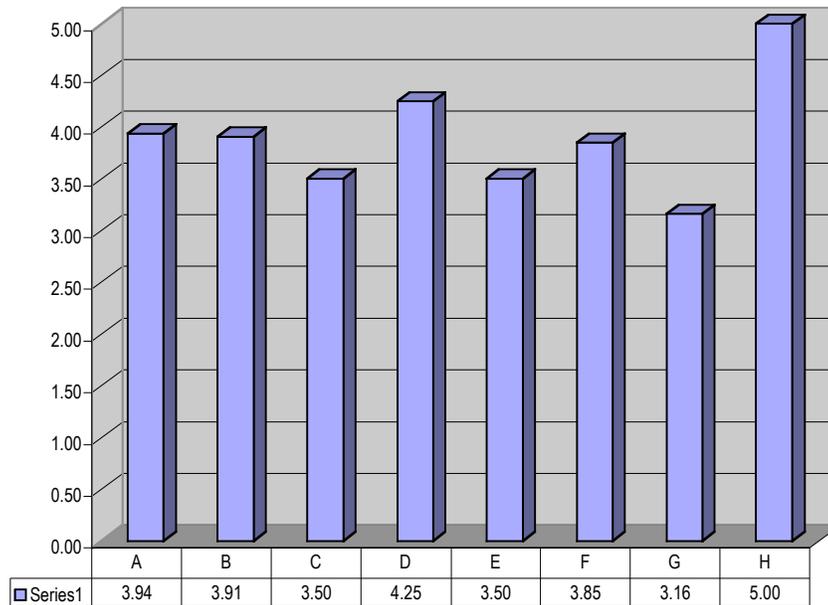


Figure 7: How company-initiated training impacts productivity.

A. On-the job Training, employee-to-employee (18/19 = 18 of 19 companies answered)

B. Internal Courses (12/19)

C. Off-site Seminars (16/19)

D. Certification Programs (4/19)

E. Consultant's Help (10/19)

F. Manufacturer/Supplier Training Program (14/19)

G. On-line Courses, via Internet (6/19)

H. Other company-initiated training (1/19)

9. How does company-initiated training impact Absenteeism on a scale from 0 to 5?

(0 = no impact, 5 = highest impact)

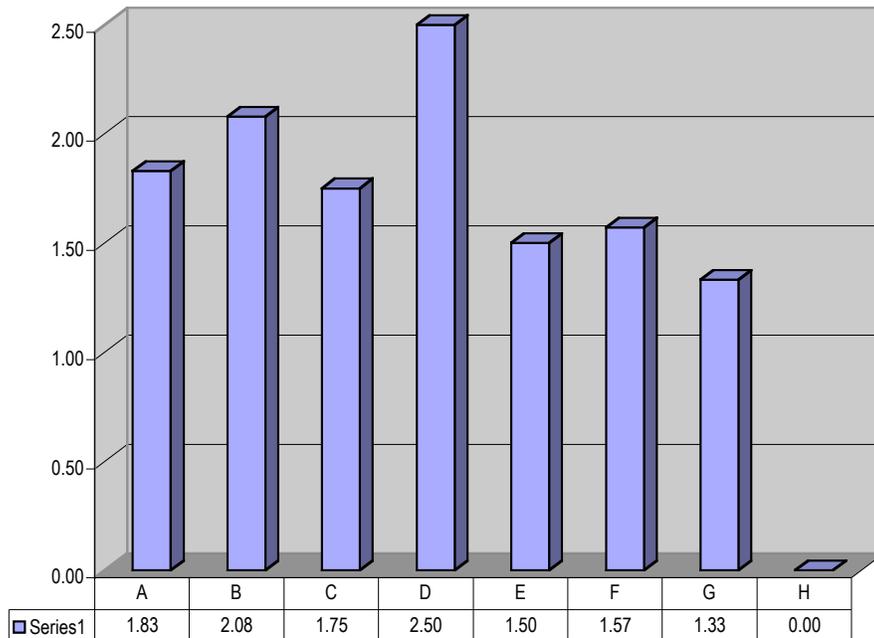


Figure 8: How company-initiated training impacts absenteeism.

- A. On-the job Training, employee-to-employee (18/19 = 18 of 19 companies answered)
- B. Internal Courses (12/19)
- C. Off-site Seminars (16/19)
- D. Certification Programs (4/19)
- E. Consultant's Help (10/19)
- F. Manufacturer/Supplier Training Program (14/19)
- G. On-line Courses, via Internet (6/19)
- H. Other company-initiated training (1/19)

10. How important do the printing companies think company-initiated training is in prepress, press and finishing on a scale from 0 to 5? (Regardless if they do provide it or not. 0 = no impact, 5 = highest impact)

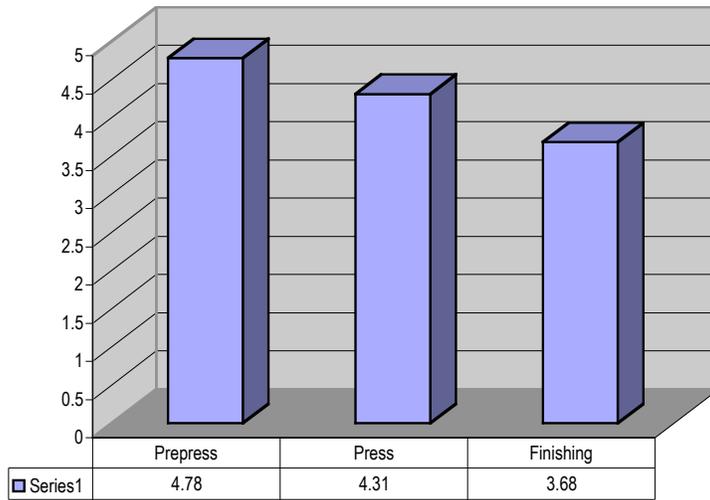


Figure 9: How important the printing companies think company-initiated training is in prepress, press and finishing. *Note:* The bar graph show the average (all 20 companies answered the question).

11. One company (5%) does not provide company-initiated training, and does not plan to start it.

## **Chapter 7**

### **Summary and Conclusions**

#### **7.1 Summary**

Company-initiated training has become an increasingly important activity in printing firms because of the digital revolution in the printing industry since the mid 1980's. It is an essential part especially for prepress and press operators, but also in the finishing department since the digital technology now is incorporated into the entire workflow: prepress, press and finishing.

##### ***7.1.1 How Many Printing Firms Provide Company-Initiated Training***

The companies were asked if they provide company-initiated training (CIT) and, if yes, in what department(s). The results of the survey determines that 95 percent of the companies (19 of 20) provide their employees with some kind of company-initiated training in prepress, press and/or finishing. The surveyed companies are of different types and sizes and only one company, a small US digital printer with 9 employees, answered that they do not provide any training. Their employees learn from each other, but the company does not give the workforce any free time for that. The reasons why they do not provide any training are that they do not have time and money and do not see the need for it. This is a short term outlook and this study determined that training is essential to develop the company's

human resources, and thereby to improve the workflow and even ultimately to ensure the company's viability in the long term. The results are presented in Table 5.

Q1				<i>Pre-press</i>	<i>Press</i>	<i>Finishing</i>
Company		<i>Yes</i>	<i>No</i>			
C1	ULOP#1	x		x	x	x
C2	ULOP#2	x		x	x	x
C3	SLOP#1	x		x	x	x
C4	SLOP#2	x		x	x	
C5	UMOP#1	x		x	x	x
C6	UMOP#2	x		x	x	x
C7	SMOP#1	x		x		
C8	SMOP#2	x		x	x	
C9	USOP#1	x		x	x	x
C10	USOP#2	x		x	x	x
C11	SSOP#1	x		x	x	x
C12	SSOP#2	x		x	x	
C13	UDP#1	x		x	x	x
C14	UDP#2		x			
C15	SDP#1	x		x	x	x
C16	SDP#2	x		x	x	
C17	UNP	x		x	x	
C18	SNP	x		x	x	
C19	UPP	x		x	x	x
C20	SPP	x		x	x	x
<i>Number of Companies</i>		19	1	19	18	12
<i>Percent of Companies</i>		95%	5%	95%	90%	60%

Table 5. Number of Companies Which Provide Company-Initiated Training.

95 percent of the companies (19 of 20) provide company-initiated training in prepress, 90 percent in press and 60 percent in finishing. Six of the companies made a comment on the question *In what department(s) does your company provide company-initiated training:* “Especially in prepress because that is where the biggest technique development is” (Swedish large offset printer with 80 employees).<sup>1</sup> “Especially in prepress, new softwares” (Swedish large offset printer with 52 employees).<sup>2</sup> “We can do better. We

have recently designated one person for a training program” (US medium offset printer).<sup>3</sup>

“Company-initiated training is especially important in prepress” (Swedish digital printer).<sup>4</sup> “We also provide a lot of teambuilding which is as important as company-initiated training in the production steps in order to multi-skill the workforce and increase efficiency” (Swedish newspaper printer).<sup>5</sup>

- 3 of 4 large offset printers checked that they provide CIT in all three departments, prepress, press and finishing. The fourth checked prepress and press.
- 2 of 4 medium offset printers checked that they provide CIT in all three departments. The third provides it only in prepress and the fourth in prepress and press.
- 3 of 4 small offset printers checked that they provide CIT in all three departments. The fourth checked prepress and press.
- 2 of 4 digital printers checked that they provide CIT in all three departments. The third checked prepress and press and the fourth does not provide CIT at all.
- Both newspaper printers provide CIT in prepress and press but not in finishing because newspaper printers do not have regular finishing as in offset (it is highly automated).
- Both packaging printers provide CIT in all three departments.

The companies were also asked how important they thought company-initiated training is regardless if they provide it in prepress, press and/or finishing. The answers showed that they consider company-initiated training most important in prepress which got the average rate 4.78 (96%), on a scale from 0 to 5, followed by press 4.31 (86%) and finishing 3.68 (74%).

One would assume that large companies should provide CIT in all three departments and small companies maybe only in prepress and press because the large ones have more money and more employees compared to small companies. However, no such conclusions can be drawn from the results of this study: large companies as well as small companies provide CIT in prepress, press and finishing and there is no particular tendency according to the size of the companies.

It is well known that prepress requires CIT, but the study also indicate that CIT is frequently provided for press operators.

### 7.1.2 Why the Printing Firms Provide Company-Initiated Training

There are many advantages of company-initiated training and the question *Why does your company provide employees with company-initiated training?* had five options of which the companies could check one or several. The result, shown in figure 10, was:

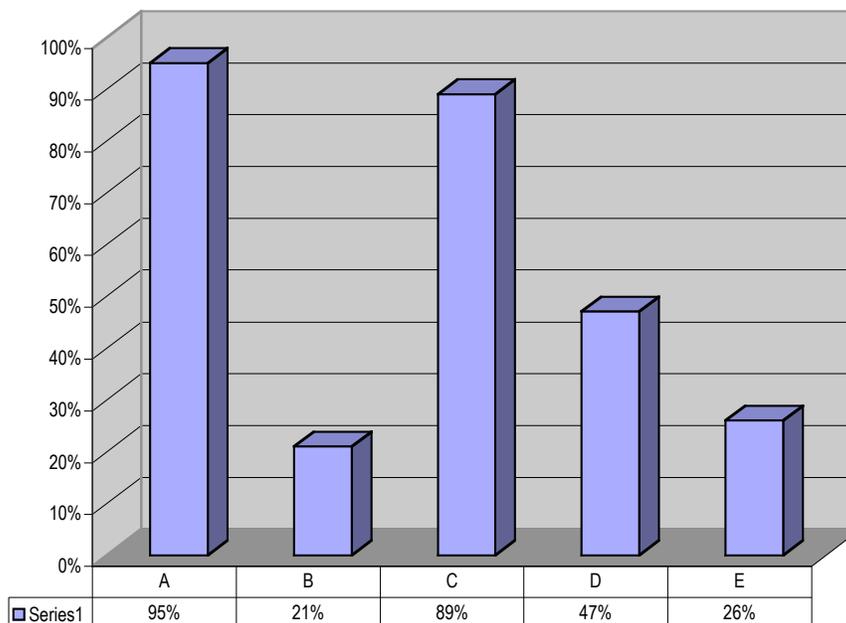


Figure 10. Why the printing firms provide company-initiated training.

- A. To multi-skill its employees (19/20 = 19 of 20 firms answered)
- B. To reduce turnover (4/20)
- C. To increase efficiency (17/20)
- D. To improve morale (9/20)
- E. Other reasons (5/20)

To multi-skill the employees and to increase efficiency were the two most important factors in providing company-initiated training. Six of the companies made a comment on the question why they provide company-initiated training: “To reduce the cost of poor quality”

(US large offset printer).<sup>6</sup> “Do more with fewer employees” (US large offset printer).<sup>7</sup> “Because some areas get slow (scanning for instance)” (US medium offset printer).<sup>8</sup> “Learn how to help customers the best way possible, especially the ones who use software but have had no training in its use” (Swedish small offset printer).<sup>9</sup> “Increase flexibility” (Swedish packaging printer).<sup>10</sup> “We do not have any problem with high turnover, it is more like the opposite—the turnover is too low” (Swedish newspaper printer).<sup>11</sup>

### ***7.1.3 How the Firms Budget Company-Initiated Training***

If printing firms provide company-initiated training, one would expect that they budget for it in the annual budget, showing that they consider training essential to long term productivity and profits. The question *How does your company budget company-initiated training?* has three choices, and the result is illustrated in Figure 11:

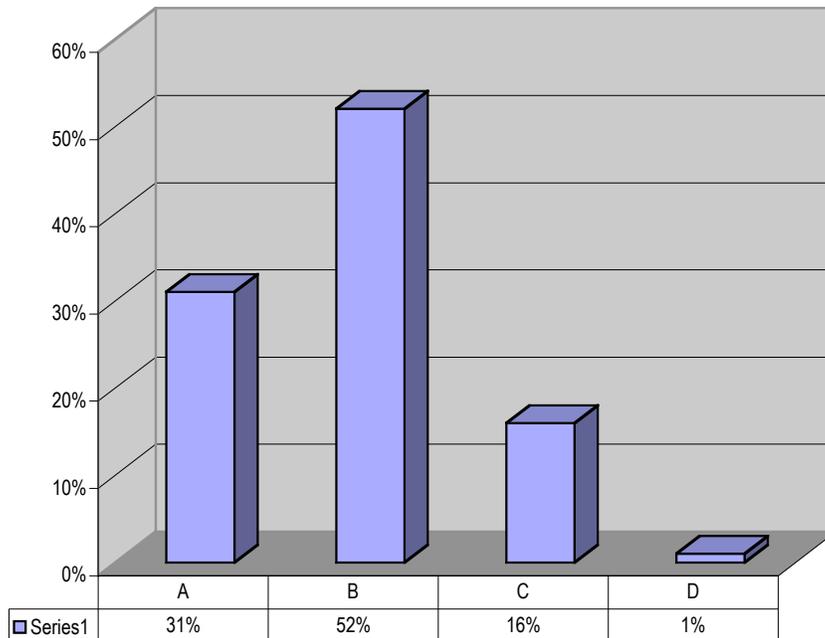


Figure 11. How the printing firms budget company-initiated training.

- A. The companies plan it in their annual budget (6 of 19 = 6 of 19 firms answered)
- B. Plan it when needed, “ad hoc” (10/19)
- C. Other (3/19)
- D. Do not provide company-initiated training (1/20)

Only 31% of the companies answered that company-initiated training is a part of their annual budget. 52% answered that they budget it “when needed” and 16% answered “Other.” The latter includes the following comments: “Part of normal activities” (US large offset printer).<sup>12</sup> “Part of cost of doing business” (US digital printer).<sup>13</sup> “On the job” (US newspaper printer).<sup>14</sup> The latter response could probably be understood as “ad hoc” approached to budgeting training for company-initiated training.

### 7.1.4 How Much the Firms Spend on Company-Initiated Training

In order to see how much the printing firms spend on company-initiated training they were asked how much they spend on training per employee per year. Five categories were given and the result was as follows (Table 6):

Q4						
Company		A	B	C	D	E
C1	ULOP#1	x				
C2	ULOP#2	x				
C3	SLOP#1			x		
C4	SLOP#2		x			
C5	UMOP#1		x			
C6	UMOP#2	x				
C7	SMOP#1			x		
C8	SMOP#2			x		
C9	USOP#1		x			
C10	USOP#2		x			
C11	SSOP#1				x	
C12	SSOP#2			x		
C13	UDP#1		x			
C14	UDP#2	Do not provide company-initiated training.				
C15	SDP#1			x		
C16	SDP#2	x				
C17	UNP	Confidential (1%).				
C18	SNP		x			
C19	UPP			x		
C20	SPP	x				
<i>Number of Companies</i>		5	6	6	1	0
<i>Percent of Companies</i>		28%	33%	33%	5%	0%

Table 6. How much the printing companies spend on company-initiated training.

- A. \$0–\$500 per employee per year (5/18 = 5 of 18 firms answered)
- B. \$501–\$1,000 per employee per year (6/18)
- C. \$1,001–\$2,000 per employee per year (6/18)
- D. \$2,001–\$5,000 per employee per year (1/18)
- E. More than \$5,001 (0/19)

*Note:* One firm said the information was confidential and one does not provide company-initiated training.

28% of the companies spend up to \$500 per year per employee, 33% spend between \$501 and \$1,000, 33% spend \$1,001 to \$2,000 and 5% spend \$2,001–\$5,000. None of the surveyed companies spend more than \$5,000 per employee per year. One company (0.5%) did not want to give out the information and one company (0.5%) does not provide company-initiated training at all.

- 2 of the 4 large offset printers checked that they spend up to \$500 on CIT, the third checked \$501–\$1,000 and the fourth \$1,001–\$2,000.
- 1 of the 4 medium offset printers checked that they spend up to \$500, 1 checked \$501–\$1,000, and two companies answered that they spend \$1,001–\$2,000 per employee per year.
- 2 of the 4 small offset printers checked that they spend \$501–\$1,000, one checked \$1,001–\$2,000, and one \$2,001–\$5,000.
- 1 of the 4 digital printers checked that they spend up to \$500 per employee per year, one checked \$501–\$1,000 and one \$1,001–\$2,000. The fourth does not provide CIT at all.
- One of the newspaper printers checked that they spend up to \$500 per employee per year, and the other one said the information was confidential.
- 1 of the 2 packaging printers checked that they spend up to \$500 per year per employee, and the other one checked \$1,001–\$2,000.

The most interesting indication here is that small offset printers is the category that spends the most money on CIT per employee. This category of 4 printing companies has an average number of employees of 10 and the approximately average amount of money they spend on CIT per employee per year is \$1,375, compared to \$687 for the large offset

category which has an average number of employees of 68 (Figure 12). The small offset printers only have a few employees who need to be skilled to solve any kind of problem that can appear because it is likely that they do not have any specialists closeby to ask. They need to solve the problem fast in order to lose as little production time as possible. Large companies usually have employees who only work with problem solving and are not directly a part of the production team. Large offset printers have more employees and can usually not afford to train all of them. They also have better opportunities to learn from each other; they are more flexible and can interact more with each other.

*Average Amount of Money the Firms Spend on Company-Initiated Training (Figure 12).*

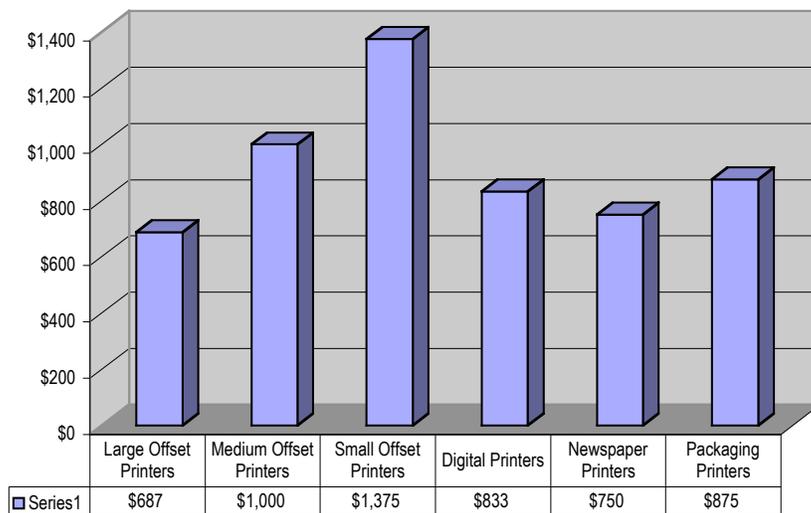


Figure 12. Average amount of money the firms spend on CIT per employee per year.

### 7.1.5 Which Company-Initiated Training the Companies Provide

There are a number of different types of company-initiated training and seven choices plus the option “other” were chosen for the question *Which company-initiated training does your company provide for its employees?*

Q5										
Company		<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>G</i>	<i>H</i>	
C1	ULOP#1	x		x	x		x		x	
C2	ULOP#2	x		x		x	x	x		
C3	SLOP#1	x	x	x	x			x		
C4	SLOP#2	x	x	x	x	x	x			
C5	UMOP#1	x		x				x		
C6	UMOP#2	x	x	x			x	x		
C7	SMOP#1	x					x			
C8	SMOP#2	x	x			x				
C9	USOP#1	x		x		x	x			
C10	USOP#2	x	x	x						
C11	SSOP#1	x		x		x				
C12	SSOP#2	x	x	x		x	x			
C13	UDP#1	x				x	x			
C14	UDP#2	Do not provide company-initiated training.								
C15	SDP#1	x	x	x		x	x	x		
C16	SDP#2	x	x	x			x			
C17	UNP	x	x	x			x	x		
C18	SNP		x	x		x	x			
C19	UPP	x	x	x	x		x			
C20	SPP	x	x	x		x	x			
<i>Number of Companies</i>		18	12	16	4	10	14	6	1	
<i>Average Rating</i>		95%	63%	84%	21%	53%	74%	32%	1%	

Table 7. What type of company-initiated training the companies provide.

- A. On-the job Training, employee-to-employee (18/19 = 18 of 19 companies answered)
- B. Internal Courses (12/19)
- C. Off-site Seminars (16/19)
- D. Certification Programs (4/19)
- E. Consultant’s Help (10/19)
- F. Manufacturer/Supplier Training Program (14/19)
- G. On-line Courses, via Internet (6/19)
- H. Other type of Company-Initiated Training (1/19)

The results of the survey show that on-the job training (95%) and off-site seminars (84%) are the most popular type of CIT followed by manufacturer/supplier training program (74%) and internal courses (63%). One company also checked “other” with the comment “in-house” which can be understood as on-the job training.

A summary of the many different types of training methods each category of company checked show that there are differences between companies with many employees compared to companies with just a few employees (Appendix D):

- *Large offset printers*: 21 of 28 choices checked (average # of employees: 68).
- *Medium offset printers*: 12 of 28 choices checked (average # of employees: 35).
- *Small offset printers*: 15 of 28 choices checked (average # of employees: 10).
- *Digital printers*: 13 of 28 choices checked (average # of employees: 30).
- *Newspaper printers*: 9 of 28 choices checked (average # of employees: 216).
- *Packaging printers*: 10 of 28 choices checked (average # of employees: 213).

This shows a tendency that the large printers, with an average number of 68 employees, provide more different types of CIT than the companies with fewer employees. The exception is newspaper printers (average number of 216 employees) and the packaging printers (213) which checked the lowest number of different types of CIT in all categories.

### ***7.1.6 Negative Comments about Company-Initiated Training***

It is important for a company to continuously train its workforce in order to develop the company's human resources, and thereby to improve the workflow and even ultimately to ensure the company's viability. However, there are also negative aspects of company-initiated training seen from a production manager's/plant owner's point of view. These are comments from two of the surveyed companies' representatives:

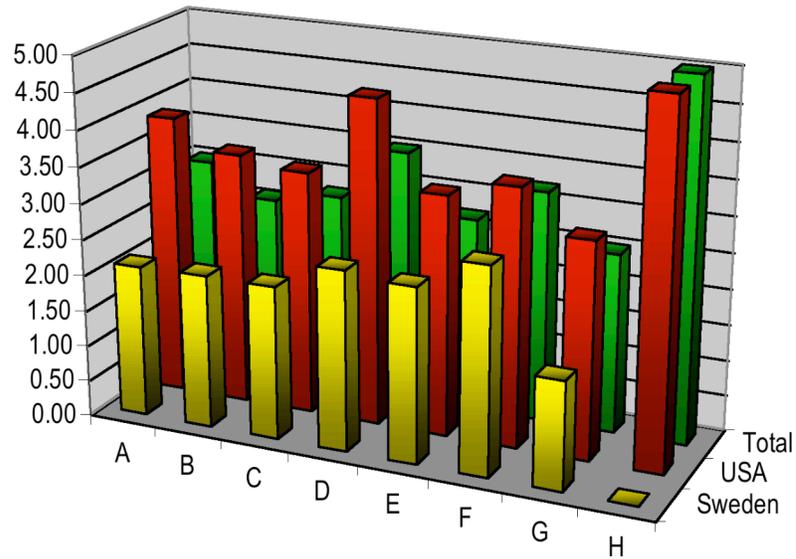
The first one manages a small Swedish offset plant with 14 employees: "Off-site seminars and certification programs, where the employees meet like-minded employees from other companies, can sometimes result in that they find out that their salary is lower than the salaries of others with similar jobs, and that could cause a problem."<sup>15</sup>

The second company to reflect a negative aspect of company-initiated training is a Swedish digital printer with 28 employees:

We are hesitant to pay for employees to participate in off-site seminars because you never know when the employee will quit and go to another company. I guess company-initiated training is not as prioritized as it should, because the production is so intensive. Training of the workforce is something that shows results in the long term and that is why it is hard to measure the effectiveness of it.<sup>16</sup>

### ***7.1.7 US Printers vs Swedish Printers***

The United States has a population of 288 million (288,368,698)<sup>17</sup> and 1,113,120 of these (0.4%) work in 45,181 graphic arts companies (2002)<sup>18</sup> which means the average number of employees per company is 24.<sup>19</sup> Sweden has a population of 9 million (8,946,304 [March 2003])<sup>20</sup> and 40,000 of these (0.4%) work in 4,000 graphic companies which means the average number of employees is 10.<sup>21</sup> These numbers determine that the total number of employees in the graphic arts industry is proportionately the same in the two countries, *but the average number of employees are much higher in the US compare to Sweden*. The results of the survey show no significant differences between the two countries as to whether company-initiated training impacts morale, productivity and absenteeism, *but it does impact retention*. The following graph (Figure 13) shows the average rating from the 10 US printers and the 10 Swedish printers where they indicated how much impact they thought company-initiated training has on retention (see also figure 14, 15, 16 and 17 for comparison with morale, productivity and absenteeism).



	A	B	C	D	E	F	G	H
Sweden	2.11	2.13	2.13	2.50	2.43	2.86	1.50	0.00
USA	3.89	3.50	3.38	4.50	3.33	3.57	3.00	5.00
Total	3.00	2.58	2.75	3.50	2.70	3.21	2.50	5.00

Figure 13. How company-initiated training impacts *Retention* in the US and Sweden respectively.

- A. On-the job Training, empl-to-empl. (18/19 = 18 of 19 companies do provide this type of CIT)
- B. Internal Courses (12/19)
- C. Off-site Seminars (16/19)
- D. Certification Programs (4/19)
- E. Consultant’s Help (10/19)
- F. Manufacturer/Supplier Training Program (14/19)
- G. On-line Courses, via Internet (6/19)
- H. Other type of Company-Initiated Training (1/19)

Figure 13 shows a clear difference between US and Swedish printers according to how much they think company-initiated training impacts retention. The average rate of the Swedish printers, all 8 examples of company-initiated training included (A–H), is 1.96 and 3.77 for the US printers. However, the result of choice H, “other type of CIT,” is a little biased (one single US company selected a 5), and with this number eliminated, the average rate is 3.15 for US, still indication a difference. One reason could be that there are more

printing companies in the US which means more competition, giving employees more options. If the company does not provide company-initiated training, the employees go to a company that does provide it and thus enables the person to grow with the company.

## **7.2 Conclusions**

The main purpose for a company to provide company-initiated training is to be more profitable. However, there are also a number of other advantages such as the reduced costs of poor quality, increased motivation, recognition, improved retention and morale, reduced absenteeism, and higher productivity. This study is focused on the latter advantages, and the results of the survey provide data that can be used to characterize attitudes among printing industry executives about the effectiveness of company-initiated training.

Their survey data support these 4 hypotheses:

H I: Company-initiated training contributes to improved worker *morale*;

H II: Company-initiated training contributes to improved worker *retention*;

H III: Company-initiated training contributes to improved *productivity*;

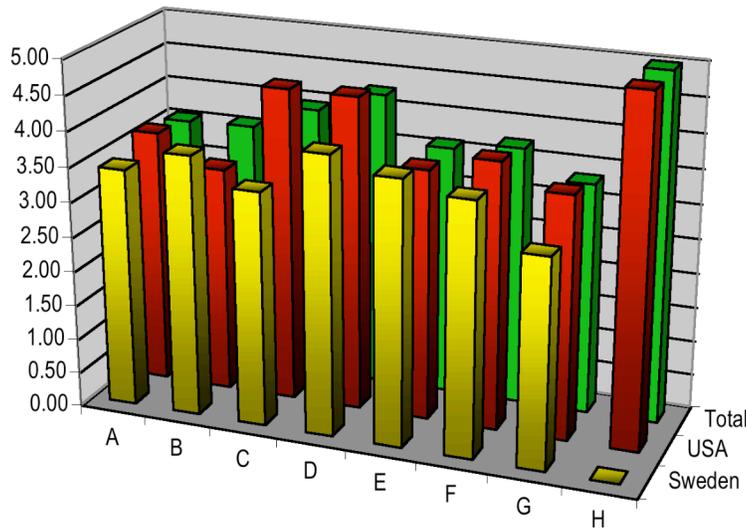
H IV: Company-initiated training contributes to reduced *absenteeism*.

### ***7.2.1 Hypothesis I: Company-Initiated Training Contributes to Improved Worker Morale***

If employees are full of optimism, happy and enjoy their job, they do a better job which means that they take more responsibility for producing the output right the first time.

Morale is important because it affects co-workers, the company itself and most important of all—the customer. The question is: Does company-initiated training contribute to improved worker morale?

The surveyed companies were asked to rate how company-initiated training impacts *morale* on a scale from 0 to 5. Seven choices were given plus the option “other (specify).” In Figure 14 the average results for the 10 Swedish and 10 US printing companies are displayed as well as the total.



	A	B	C	D	E	F	G	H
Sweden	3.44	3.75	3.37	4.00	3.80	3.63	3.00	0.00
USA	3.66	3.25	4.50	4.50	3.60	3.83	3.50	5.00
Total	3.55	3.58	3.93	4.25	3.60	3.71	3.33	5.00

Figure 14. How company-initiated training impacts *Morale*.

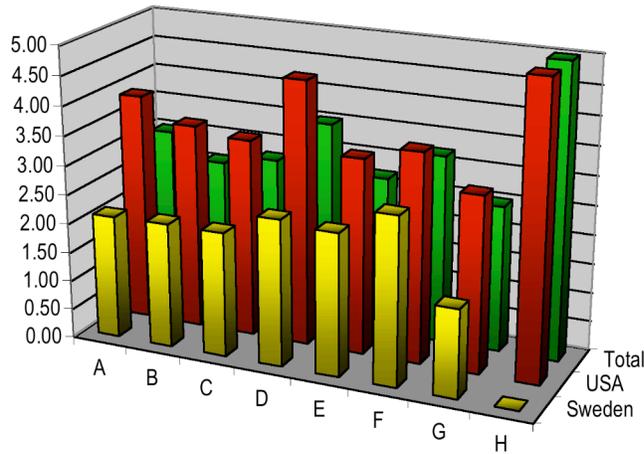
- A. On-the job Training, empl-to-empl. (18/19 = 18 of 19 companies provide this type of CIT)
- B. Internal Courses (12/19)
- C. Off-site Seminars (16/19)
- D. Certification Programs (4/19)
- E. Consultant’s Help (10/19)
- F. Manufacturer/Supplier Training Program (14/19)
- G. On-line Courses, via Internet (6/19)
- H. Other type of Company-Initiated Training (1/19)

The total average rate, regardless of type of company-initiated training, is 3.87. Certification programs (D: 4.25), off-site seminars (C: 3.93) and manufacturer/supplier training programs (F: 3.71) are the types of company-initiated training that got the highest average rates. Only one company checked “other” (without specifying the specific training) and rated it a 5. Without counting this 5, the average is 3.24. Only 4 companies selected certification programs. With that background the writer considers off-site seminars (16 times) and manufacturer/supplier training (14 times) the two most popular types of company-initiated training according to how it impacts morale. The average rate 3.87 shows that the surveyed printing companies consider company-initiated training has a significant impact on morale. With the 5 on “other” excluded, the average is 3.25 which supports hypothesis I: *company-initiated training contributes to improved worker morale.*

### ***7.2.2 Hypothesis II: Company-Initiated Training Contributes to Improved Worker Retention***

All companies have some employee turnover. It is important to renew parts of the workforce once in a while in order to infuse new thinking into the company, but constant turnover is not good. The question is: is company-initiated training a motivating factor that contributes to workers’ staying and growing with the company, or is it something the workers take advantage of to improve their skills and then try to find a better position in another company? The surveyed companies were asked to rate how company-initiated training impacts *retention* on a scale from 0 to 5. Seven choices were given plus the

option “other (specify).” In figure 15 the average results for the 10 Swedish and 10 US printing companies are displayed as well as the total.



	A	B	C	D	E	F	G	H
Sweden	2.11	2.13	2.13	2.50	2.43	2.86	1.50	0.00
USA	3.89	3.50	3.38	4.50	3.33	3.57	3.00	5.00
Total	3.00	2.58	2.75	3.50	2.70	3.21	2.50	5.00

Figure 15. How company-initiated training impacts *Retention*.

- A. On-the job Training, empl-to-empl. (18/19 = 18 of 19 companies provide this type of CIT)
- B. Internal Courses (12/19)
- C. Off-site Seminars (16/19)
- D. Certification Programs (4/19)
- E. Consultant’s Help (10/19)
- F. Manufacturer/Supplier Training Program (14/19)
- G. On-line Courses, via Internet (6/19)
- H. Other type of Company-Initiated Training (1/19)

The overall average rate for the 20 companies, irrespective of type of company-initiated training, is 3.16. The types of company-initiated training that got the highest average rate was a single rate of 5 on “other” (H) with no specification. Without counting the 5, the average is 2.53. After that follows certification programs (D: 3.50), manufacturer/supplier training programs (F: 3.21) and on-the job training (A: 3.00). Only 4 companies rated certification programs. With that background the writer considers manufacturer/supplier

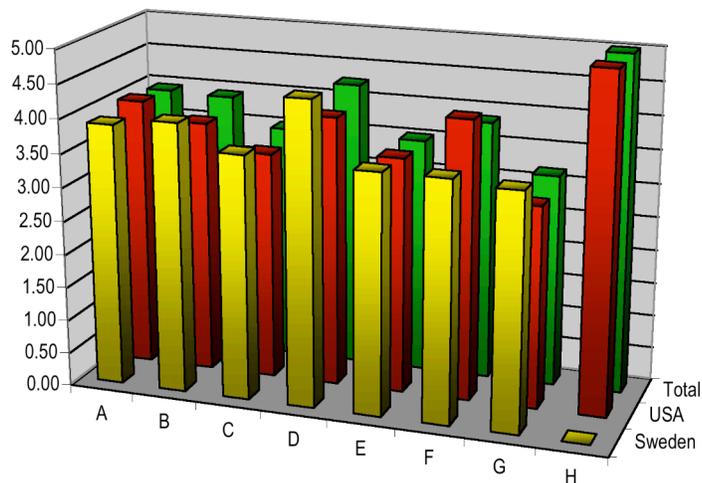
training programs (14 times) and on-the job training (18 times) the two most popular ones according to how company-initiated training impacts retention.

10 US printers and 10 Swedish printers were selected irrespective of geography. With regards to retention, one of the US medium offset printers with 40 employees, situated in a town with a population of 348,000, said that because there are few printers in small towns, there is less competition making it easier to keep the employees. You can invest in company-initiated training with little risk that the employee will take his/her new knowledge and go to a competitor. With regard to big cities where there are more printing companies and more competition, employees have more job options making it more difficult for companies to keep their employees for a long time. This loss of employees is costly because according to Bob Neubauer it takes four times their salary to replace them and about one year for replacement to become as productive as the one who left.<sup>22</sup>

The average rate 3.16 indicates that company-initiated training has an impact on retention. However, with the biased 5 (on the choice “other type of CIT”) excluded, the average is 2.53 which shows that the surveyed companies have a mixed opinion regarding whether company-initiated training impacts retention. Since the average rate is over 2.5 the writer considers that as a support of hypothesis II: *company-initiated training contributes to improved worker retention.*

### 7.2.3 Hypothesis III: CIT Contributes to Improve Productivity

Productivity is the main purpose of company-initiating training—a company must be profitable if it is to survive in the long term. How does company-initiated training impact productivity? Will employees be more efficient and do a better job if the company provides company-initiated training? The surveyed companies were asked to rate how company-initiated training impacts productivity on a scale from 0 to 5. Seven choices were given plus the option “other (specify).” In Figure 16 the average results for the 10 Swedish and 10 US printing companies are displayed as well as the total.



	A	B	C	D	E	F	G	H
Sweden	3.89	4.00	3.63	4.50	3.57	3.57	3.50	0.00
USA	4.00	3.75	3.38	4.00	3.50	4.14	3.00	5.00
Total	3.94	3.91	3.50	4.25	3.50	3.85	3.16	5.00

Figure 16. How company-initiated training impacts *Productivity*.

- A. On-the job Training, empl-to-empl. (18/19 = 18 of 19 companies provide this type of CIT)
- B. Internal Courses (12/19)
- C. Off-site Seminars (16/19)
- D. Certification Programs (4/19)
- E. Consultant’s Help (10/19)
- F. Manufacturer/Supplier Training Program (14/19)
- G. On-line Courses, via Internet (6/19)
- H. Other type of Company-Initiated Training (1/19)

The total average rate for the 20 printing companies, irrespective of type of company-initiated training, is 3.89. Certification program (D: 4.25), on-the job training (A; 3.94), internal courses (B: 3.91) and manufacturer/supplier training program (F: 3.85) are the most interesting rates. One company rated a 5 on “other” (without specifying the specific company-initiated training). Without counting this 5, the average is 3.26. Only 4 companies selected certification programs. With that background the writer consider on-the job training (18 times), internal courses (12 times) and manufacturer/supplier training program (14 times) as the most popular ones according to how company-initiated training impacts productivity.

The average rate 3.89 shows that the surveyed printing companies think company-initiated training has an impact on productivity. With the 5 on “other type of CIT” excluded, the average is 3.26, and the writer considers that as a support of hypothesis III since it is more than 50%: *company-initiated training contributes to improved productivity.*

#### ***7.2.4 Hypothesis IV: CIT Contributes to Reduced Absenteeism***

Absenteeism is something that affects morale, retention and especially productivity. If a worker has high absenteeism it can hurt morale and lower other workers’ interest in staying with the company. Absenteeism will most certainly affect the productivity. The question is if this is considered a problem in printing firms.

The surveyed companies were asked to rate how company-initiated training impacts *Absenteeism* on a scale from 0 to 5. Seven choices were given plus the option “other (specify).” In Figure 17 the average results for the 10 Swedish and 10 US printing companies are displayed as well as the total.

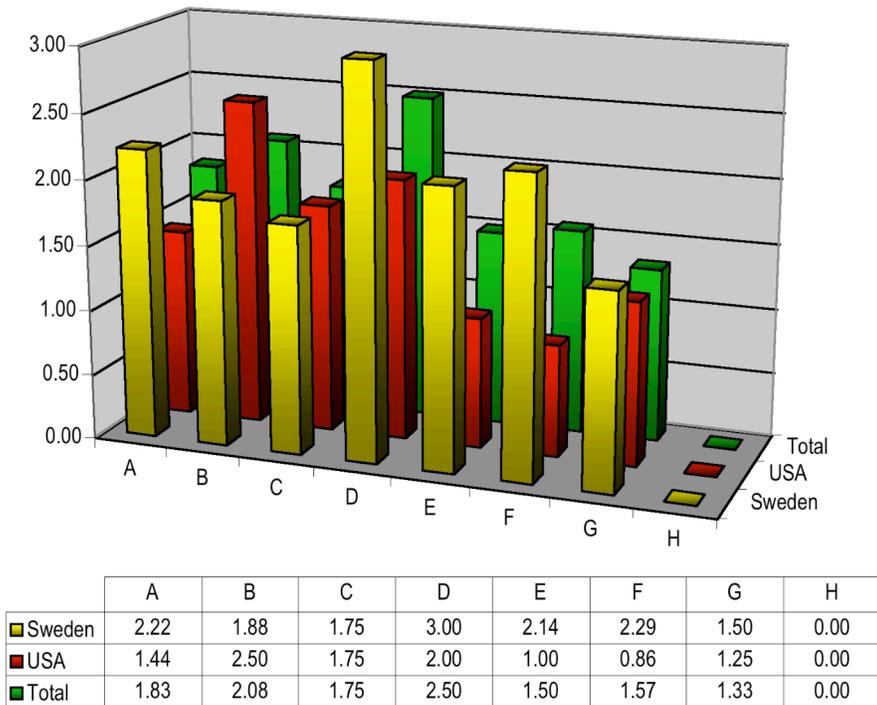


Figure 17. How company-initiated training impacts *Absenteeism*.

- A. On-the job Training, empl-to-empl. (18/19 = 18 of 19 companies provide this type of CIT)
- B. Internal Courses (12/19)
- C. Off-site Seminars (16/19)
- D. Certification Programs (4/19)
- E. Consultant’s Help (10/19)
- F. Manufacturer/Supplier Training Program (14/19)
- G. On-line Courses, via Internet (6/19)
- H. Other type of Company-Initiated Training (1/19)

The total average rate, irrespective of type of company-initiated training, is 1.79.

Certification programs (D: 2.50) and internal courses (B: 2.08) got the highest average score, but the overall average rate is similar regardless of type of company-initiated training.

The average rate 1.79 shows that the surveyed printing companies do not consider that company-initiated training has a big impact on absenteeism, and the writer considers

hypothesis IV not supported: *company-initiated training does not contribute to reduced absenteeism.*

### 7.2.5 Result of the Hypothesis

The results of the survey (displayed in Figure 18) determine that three of the four hypotheses are supported (average rate in parenthesis):

Company-initiated training contributes to improved worker *Morale* (avg. 3.87 of 5).

Company-initiated training contributes to improved worker *Retention* (avg. 3.16 of 5).

Company-initiated training contributes to improved *Productivity* (avg. 3.89 of 5).

Company-initiated training *does not* contribute to reduced *Absenteeism* (avg. 1.79 of 5).

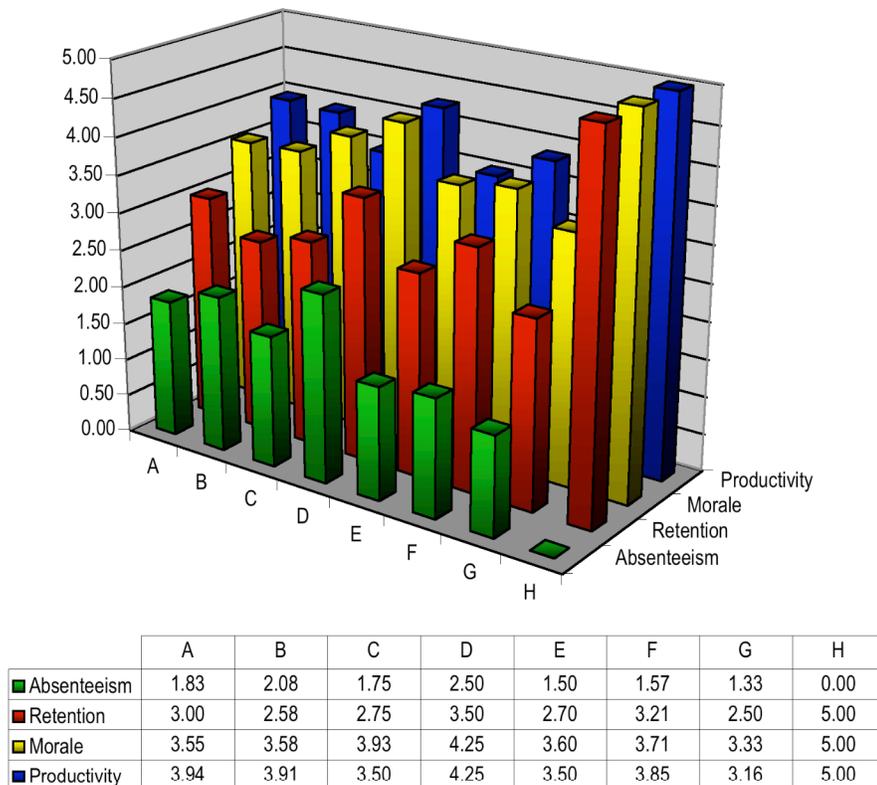


Figure 18. How company-initiated training impacts *Absenteesm*, *Retention*, *Morale* and *Productivity*.

- A. On-the job Training, empl-to-empl. (18/19 = 18 of 19 companies do provide this type of CIT)
- B. Internal Courses (12/19)
- C. Off-site Seminars (16/19)
- D. Certification Programs (4/19)
- E. Consultant's Help (10/19)
- F. Manufacturer/Supplier Training Program (14/19)
- G. On-line Courses, via Internet (6/19)
- H. Other type of Company-Initiated Training (1/19)

### **7.3 Recommendations for Further Investigation**

This is a basic study of the different types of company-initiated training done by selected US and Swedish printing firms. It is not a statistical study because only a limited number of companies were surveyed (20). This study seeks to answer how company-initiated training impacts morale, retention, productivity and absenteeism in printing production in general (prepress, press and finishing). A further study could include a larger number of companies (at least 50) and could focus more indepth on how company-initiated training impacts morale, retention, productivity and absenteeism specifically in prepress, press and finishing. Naturally other areas that company-initiated training possibly impacts can be investigated, such as motivation and recognition. This leads into another track where the employees themselves could be asked the questions in order to see company-initiated training from another point of view, especially in the area of retention and absenteeism but also in the other areas mentioned above. In this study only the companies' representatives were asked. This study includes a comparison between US and Swedish printing firms, and a further investigation could cover comparisons with other countries, such as the US and Japan or the US and a few European countries.

Other questions to include in a further investigation are:

- How do the printing companies validate the training? (Is it effective?)
- Do printing firms have a form of recognition/awards program for outstanding employees?
- ISO certification. How are training initiatives incorporated into ISO certification efforts?
- Needs assessment? How do companies determine and then prioritize training needs?
- Is an "after-training" evaluation done to determine whether training objectives have been met?

## Endnotes for Chapter 7

<sup>1</sup>Swedish large offset printer with 80 employees and a revenue of \$11.6 million.

<sup>2</sup>Swedish large offset printer with 52 employees and a revenue of \$4.9 million.

<sup>3</sup>US medium offset printer with 45 employees and a revenue of \$4.3 million.

<sup>4</sup>Swedish digital printer with 30 employees and a revenue of \$3.3 million.

<sup>5</sup>Swedish newspaper printer with 250 employees and a revenue of \$47.0 million.

<sup>6</sup>US large offset printer with 115 employees and a revenue of \$14.0 million.

<sup>7</sup>US large offset printer with 60 employees and a revenue of \$6.4 million.

<sup>8</sup>US medium offset printer with 45 employees and a revenue of \$4.3 million.

<sup>9</sup>Swedish small offset printer with 14 employees and a revenue of \$1.3 million.

<sup>10</sup>Swedish packaging printer with 177 employees and a revenue of \$43.8 million.

<sup>11</sup>Swedish newspaper printer with 250 employees and a revenue of \$47.0 million.

<sup>12</sup>US large offset printer with 115 employees and a revenue of \$14 million.

<sup>13</sup>US digital printer with 55 employees and a revenue of \$15 million.

<sup>14</sup>US newspaper printer with 83 employees.

<sup>15</sup>Swedish small offset printer with 14 employees and a revenue of \$1.3 million.

<sup>16</sup>Swedish digital printer with 28 employees and a revenue of \$3.8 million.

<sup>17</sup>The Infoplease.com company. Retrieved July 31, 2003 from

<http://www.infoplease.com/ipa/A0004997.html>

<sup>18</sup>General commercial printers, quick printers, magazine printers, newspaper printers, book printers, financial and legal printers, screen printers, thermography printers, business forms printers, label and wrapper printers, tag, ticket and tape printers and other forms of printers (greeting card, packaging etc). It also includes prepress services, trade binding, *but not* paper mills.

<sup>19</sup>F. J. Romano (e-mail communication, July 30, 2003) also verified this.

<sup>20</sup>SCB International Consulting (the Statistics Sweden's services). Retrieved July 31, 2003 from <http://www.scb.se/statistik/be0101/BE0101tab171kv03.asp>

<sup>21</sup>H. Danielson (personal communication, July 30, 2003) also verified this.

<sup>22</sup>Neubauer, B. (December 2002). Growing Despite Cutbacks: *Inplant Graphics*, 52, (#12), 52, 54, 56.

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## **Appendix A**

### **Two PIA Surveys about Employee Training**

## **Two PIA Surveys About Employee Training**

Printing Industries of America (PIA) is a trade association, and from December 2002 to February 2003 they send out two surveys with questions about employee training and human resource support. The surveyed companies are all located in the US and Canada and include sheet fed offset printers, web offset printers, gravure printers, and a few newspaper and packaging printers. The survey's results were received from Steve Kodey, Manager of Economic and Market Research at PIA.

The first survey had the title *Strategic and Operating Practices Assessment* and was sent to 455 of their member companies. The questions/results were the following:

*1) Do you budget for training and education costs for your employees? (41% answered)*

Yes: 89, No: 95, No answer: 1

*2) Approximately what percent of your total payroll costs in the last year were devoted to training and education programs for your employees? (41% answered)*

Average percentage: 2.92%

Median percentage: 1.00%

3) *Do you have a formal training program for these employees? (41% answered):*

Top Management: 23 (12%)

Administrative: 20 (11%)

Production/Technical: 64 (35%)

Sales/Customer Service: 59 (32%)

4) *Do you have a profit sharing/bonus plan for (69% answered):*

Management Employees: 68%

Sales Employees: 50%

All Employees: 51%

5) *Do you have a formal recognition/awards program for outstanding employees?*

*(41% answered)*

Yes: 21% (39), No: 77% (143), No answer: 2% (3).

6) *Do you participate in a group-buying program to reduce your supply costs?*

*(41% answered)*

Yes: 28% (52), No: 71% (131), No answer: 1% (2).

## **Employee Training**

The second survey had the title *Employee Training* and was sent to 182 printing companies and all of them completed the survey. The question asked was: *For each of the following training categories, please report the amount spent on employee training for all employees in total dollar amounts or as a percentage of overall company payroll.*

<i>Total Training Expenditures</i>	58.99%	\$17,019.51	2.8643%
In House	33.15%	\$11,264.00	2.6026%
PIA/GATF Programs	23.03%	\$3,781.95	0.7122%
Affiliate Programs	11.80%	\$4,135.45	0.6020%
Other Association Programs	12.36%	\$3,101.29	1.0057%
Consultants	11.80%	\$13,291.24	0.9286%
Colleges	3.93%	\$4,334.10	0.3100%
Trade/Tech. Programs	11.24%	\$10,100.86	1.0250%
Internet Programs	3.37%	\$1,467	0.5033%

Average \$ figures and percentages reflect data of responding participants only.

## **Appendix B**

### **English Cover Letter and Survey**



Rochester, NY, June 27, 2003

Dear Sir/Madam!

I am conducting a survey to obtain information about company-initiated training in printing firms.

I would greatly appreciate your completing the enclosed survey and returning it by fax. It will only take a few minutes of your time to answer the questions, and you might find doing so an enjoyable experience.

Please answer every question as well as you can and complete your survey today. Then please fax it to me at 585 475-5336 (RIT). Because only a relatively small number of people are being surveyed, your response is very important to me.

Your answers will, of course, be strictly confidential. When the report is finished I will e-mail you a copy.

Thank you in advance for your time and effort.

Sincerely,

Jonas Hedman  
jsh2205@rit.edu

I am a Swedish graduate student in RIT's School of Print Media. This survey is a part of my thesis in which I am researching the topic of company-initiated training in prepress, press and finishing. Prof. Frank Romano, Prof. Frank Cost, Prof. Barbara Birkett and Mr Hans Danielson are the members of my thesis committee.

Company: \_\_\_\_\_

Your Name and position: \_\_\_\_\_

Rochester, NY, 6/27/03

# Printing Company-Initiated Training – In Prepress, Press and Finishing

This survey is a part of my thesis in which I seek to answer three major questions:

- Do printing companies provide company-initiated training in prepress, press and finishing departments?
- What type of training do they provide for their employees?
- Are they successful?

The main purpose with company-initiated training is to be more profitable. However, there are also other advantages and the purpose of this study is to determine if company-initiated training results in improved retention and morale, reduced absenteeism, and higher productivity.

Because only a relatively small number of companies are being surveyed, your response is very important to me. Your answers will, of course, be strictly confidential. When the report is finished in September I will e-mail you a copy. My hope is to get the answered survey back on **July 3rd, or earlier.**

*Fax the completed survey to 585 475-5336 (RIT).*

*Definition of company-initiated training:* The act or process of providing employees with knowledge, skill, and competence in selected areas. An example is providing an employee with the opportunity to gain deeper and broader knowledge about color management systems.

Company-initiated training implies helping workers develop a particular skill or group of skills. An example is teaching employees how to operate new machines and to use new software, thus developing a multi-skilled work force and empowering employees to rotate jobs and to take responsibility for producing jobs right the first time.

1) Does your company *provide* employees with company-initiated training in prepress, press, and/or finishing?  
(Check one)

- Yes     No    If, Yes, check all that apply:  Prepress     Press     Finishing    (*If No, go to question #11*)

Comment \_\_\_\_\_

2) *Why* does your company provide employees with company-initiated training in prepress, press, and/or finishing?  
(Check all that apply)

- To multi-skill the employees  
 To reduce turnover  
 To increase efficiency  
 To improve morale  
 Other (please specify) \_\_\_\_\_

3) *How* does your company budget company-initiated training? (Check one)

- Planned annual budget  
 Ad hoc, "as needed"  
 Other (please specify) \_\_\_\_\_

4) Approximately, *how much* does your company spend on company-initiated training in prepress, press and/or finishing per employee per year? (Check one)

- \$0–\$500
- \$501–\$1,000
- \$1,001–\$2,000
- \$2,001–\$5,000
- More than \$5,000

5) Which company-initiated training does your company provide for its employees? (Check all that apply)

- On-the job Training (employee-to-employee)
- Internal Courses
- Off-site Seminars
- Certification Programs
- Consultant’s Help
- Manufacturer/Supplier Training Program
- On-line Courses (via Internet)
- Other (please specify) \_\_\_\_\_

6) Please rate only those choices that you checked in question #5 regarding to how they impact Morale.

(0 = no impact, 5 = highest impact)

• On-the job Training (employee-to-employee)	0	1	2	3	4	5
• Internal Courses	0	1	2	3	4	5
• Off-site Seminars	0	1	2	3	4	5
• Certification Programs	0	1	2	3	4	5
• Consultant’s Help	0	1	2	3	4	5
• Manufacturer/Supplier Training Program	0	1	2	3	4	5
• On-line Courses (via Internet)	0	1	2	3	4	5
• Other (please specify) _____	0	1	2	3	4	5

7) Please rate only those choices that you checked in question #5 regarding to how they impact Retention.

(0 = no impact, 5 = highest impact)

• On-the job Training (employee-to-employee)	0	1	2	3	4	5
• Internal Courses	0	1	2	3	4	5
• Off-site Seminars	0	1	2	3	4	5
• Certification Programs	0	1	2	3	4	5
• Consultant’s Help	0	1	2	3	4	5
• Manufacturer/Supplier Training Program	0	1	2	3	4	5
• On-line Courses (via Internet)	0	1	2	3	4	5
• Other (please specify) _____	0	1	2	3	4	5

8) Please rate only those choices that you checked in question #5 regarding to how they impact Productivity.

(0 = no impact, 5 = highest impact)

• On-the job Training (employee-to-employee)	0	1	2	3	4	5
• Internal Courses	0	1	2	3	4	5
• Off-site Seminars	0	1	2	3	4	5
• Certification Programs	0	1	2	3	4	5
• Consultant’s Help	0	1	2	3	4	5
• Manufacturer/Supplier Training Program	0	1	2	3	4	5
• On-line Courses (via Internet)	0	1	2	3	4	5
• Other (please specify) _____	0	1	2	3	4	5

9) Please rate only those choices that you checked in question #5 regarding to how they impact *Absenteeism*.  
(0 = no impact, 5 = highest impact)

• On-the job Training (employee-to-employee)	0	1	2	3	4	5
• Internal Courses	0	1	2	3	4	5
• Off-site Seminars	0	1	2	3	4	5
• Certification Programs	0	1	2	3	4	5
• Consultant's Help	0	1	2	3	4	5
• Manufacturer/Supplier Training Program	0	1	2	3	4	5
• On-line Courses (via Internet)	0	1	2	3	4	5
• Other (please specify) _____	0	1	2	3	4	5

10) Please rate the importance of company-initiated training and education in the following three production areas:  
(0 = not important, 5 = very important)

Prepress	0	1	2	3	4	5
Press	0	1	2	3	4	5
Finishing	0	1	2	3	4	5

*Survey Completed if you answered yes on question #1.*

11) Does your company *plan to start* company-initiated training in prepress, press, and/or finishing? (Check one)

Yes     No    (*If No, survey is completed*)

12) *When* does your company plan to start company-initiated training? (Check one)

- Within the next 6 months
- Within next year
- Within the next 2 years or later

13) *In what department(s)* does your company plan to start company-initiated training? (Check all that apply)

- Prepress
- Press
- Finishing
- Other (please specify) \_\_\_\_\_

***Survey completed.***  
***Fax the 3 pages to 585 475-5336 (RIT – Jonas Hedman).***  
***Thank you for your cooperation!***

Jonas Hedman  
Phone: 585 292-9335  
jsh2205@rit.edu

## **Appendix C**

### **Swedish Cover Letter and Survey**

Rochester, USA, 27 Juni 2003

Namn!

Jag har sammanställt en enkät med frågor om företagsanpassad fortbildning av tryckeripersonal (prepress-personal, tryckare och efterbehandlings-personal) och skulle uppskatta om ni ville skriva ut enkäten, svara på frågorna och faxa svaren till mig. Det tar cirka 5 minuter och era svar kan kanske också vara något ni kan ha nytta av.

Svara på varje fråga så noggrannt som möjligt och gör det om möjligt redan idag! Faxa sedan enkäten med svaren till mig på faxnummer 001 585 475-5336 (RIT).

Din medverkan i den här studien är viktig eftersom endast ett förhållandevis litet antal företag ingår. Ditt svar vill givetvis behandlas strikt konfidentiellt och när rapporten är klar så skickar jag en kopia via e-post.

Tack på förhand för ditt deltagande!

MVH

Jonas Hedman  
jsh2205@rit.edu

Jag läser till en Masters-examen i Print Media på Rochester Institute of Technology (RIT) i USA och den här enkäten är en del av mitt examensarbete där jag studerar företagsanpassad fortbildning på tryckerier.

Hans Danielson, Frank Romano, Frank Cost och Barbara Birkett ingår i projektgruppen.

Företagets namn: \_\_\_\_\_

Rochester, USA, 27 Juni 2003

Ditt namn och position: \_\_\_\_\_

## Företagsanpassad fortbildning av personal inom prepress, tryck och efterbehandling

Den här enkäten ingår i mitt examensarbete i vilket jag söker svar på huvudsakligen tre frågor:

- Fortbildar tryckerier sin personal inom prepress, tryck och efterbehandling?
- Vilken typ av fortbildning genomgår deras anställda?
- Är fortbildningen framgångsrik?

Huvudsyftet med företagsanpassad fortbildning är att i förlängningen göra företaget mer lönsamt. Det finns även andra aspekter och målet med den här studien är att se om en högre nivå av företagsanpassad fortbildning leder till: högre arbetsmoral, effektivare produktion, minskad frånvaro och färre oönskade avgångar.

Den här enkäten är skickad till både svenska och amerikanska tryckerier och eftersom endast ett litet antal företag ingår i studien så är din medverkan viktig. Ditt svar kommer givetvis behandlas strikt konfidentiellt och när rapporten är klar i september så skickar jag en kopia via e-post. Skriv ut enkäten, svara på frågorna så noggrant som möjligt och faxa den ifyllda enkäten till mig på 001 585 475-5336 (RIT). Min förhoppning är att ha den besvarade enkäten *i retur* från dig senast **den 3 juli**.

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*Definition av företagsanpassad fortbildning:* Uppbyggnad och utveckling av anställdas kunskap och kompetens inom specificerade yrkesområden. Ett exempel är att se till att en anställd får möjlighet att skaffa sig djupare och bredare kunskaper inom färgstyrning.

Företagsanpassad fortbildning innebär att hjälpa anställda att utveckla en speciell färdighet eller serie av färdigheter. Ett exempel är att utbilda personal så att de kan sköta en ny maskin eller en ny programvara. Det kan också innebära att träna personal så att de kan hantera flera olika arbetsmoment, jobba på andra platser i produktionen och i större utsträckning göra allt rätt från början.

1) Bedriver ni företagsanpassad fortbildning av er personal inom prepress, tryck och/eller efterbehandling?

(Markera ett alternativ)

Ja  Nej Om Ja, markera alla alternativ som överensstämmer:  Prepress  Tryck  Efterbehandling

(Om Nej, gå till fråga 11)

Kommentar \_\_\_\_\_

2) Varför bedriver ni företagsanpassad fortbildning inom prepress, tryck och/eller efterbehandling?

(Markera alla alternativ som överensstämmer)

- För att bredda de anställdas kunskap
- Minska personalomsättningen
- Öka effektiviteten
- Stärka arbetsmoralen
- Annat (specificera) \_\_\_\_\_

3) *Hur budgeterar ni den företagsanpassade fortbildningen?* (Markera ett alternativ)

- Ingår i den årliga budgeten
- När det blir aktuellt
- Annat (specificera) \_\_\_\_\_

4) Ungefär hur mycket satsar ni på er företagsanpassade fortbildning inom prepress, tryck och/eller efterbehandling per anställd och år? (Markera ett alternativ)

- 0–4.000 kr
- 4.001–8.000 kr
- 8.001–16.000 kr
- 16.001–40.000 kr
- Mer än 40.000 kr

5) *Vilken typ av företagsanpassad fortbildning erbjuder ni er personal?* (Markera alla alternativ som överensstämmer)

- Informell fortbildning i jobbet (personalen lär av varandra)
- Interna kurser på företaget
- Externa seminarier
- Certifikationsprogram
- Konsulthjälp
- Leverantörsutbildning vid köp av utrustning
- On-line-kurser (via Internet)
- Annat (specificera) \_\_\_\_\_

6) Gradera de alternativ ni markerade i fråga 5, gällande hur de påverkat *arbetsmoralen*.

(0 = ingen inverkan, 5 = hög inverkan)

• Informell fortbildning i jobbet (personalen lär av varandra)	0	1	2	3	4	5
• Interna kurser på företaget	0	1	2	3	4	5
• Externa seminarier	0	1	2	3	4	5
• Certifikationsprogram	0	1	2	3	4	5
• Konsulthjälp	0	1	2	3	4	5
• Leverantörsutbildning vid köp av utrustning	0	1	2	3	4	5
• On-line-kurser (via Internet)	0	1	2	3	4	5
• Annat (specificera) _____	0	1	2	3	4	5

7) Gradera de alternativ ni markerade i fråga 5, gällande hur de påverkat antalet *önskade avgångar*.

(0 = ingen inverkan, 5 = hög inverkan)

• Informell fortbildning i jobbet (personalen lär av varandra)	0	1	2	3	4	5
• Interna kurser på företaget	0	1	2	3	4	5
• Externa seminarier	0	1	2	3	4	5
• Certifikationsprogram	0	1	2	3	4	5
• Konsulthjälp	0	1	2	3	4	5
• Leverantörsutbildning vid köp av utrustning	0	1	2	3	4	5
• On-line-kurser (via Internet)	0	1	2	3	4	5
• Annat (specificera) _____	0	1	2	3	4	5

8) Gradera de alternativ ni markerade i fråga 5, gällande hur de påverkat *produktiviteten*.

(0 = ingen inverkan, 5 = hög inverkan)

• Informell utbildning i jobbet (personalen lär av varandra)	0	1	2	3	4	5
• Interna kurser på företaget	0	1	2	3	4	5
• Externa seminarier	0	1	2	3	4	5
• Certifikationsprogram	0	1	2	3	4	5
• Konsult hjälp	0	1	2	3	4	5
• Leverantörsutbildning vid köp av utrustning	0	1	2	3	4	5
• On-line-kurser (via Internet)	0	1	2	3	4	5
• Annat (specificera) _____	0	1	2	3	4	5

9) Gradera de alternativ ni markerade i fråga 5, med utgångspunkt från hur de påverkat *frånvaron*.

(0 = ingen inverkan, 5 = hög inverkan)

• Informell utbildning i jobbet (personalen lär av varandra)	0	1	2	3	4	5
• Interna kurser på företaget	0	1	2	3	4	5
• Externa seminarier	0	1	2	3	4	5
• Certifikationsprogram	0	1	2	3	4	5
• Konsult hjälp	0	1	2	3	4	5
• Leverantörsutbildning vid köp av utrustning	0	1	2	3	4	5
• On-line-kurser (via Internet)	0	1	2	3	4	5
• Annat (specificera) _____	0	1	2	3	4	5

10) Gradera hur viktig den företagsanpassade utbildningen är i de tre produktionsstegen:

(0 = inte viktigt, 5 = väldigt viktigt)

• Prepress	0	1	2	3	4	5
• Tryck	0	1	2	3	4	5
• Efterbehandling	0	1	2	3	4	5

*Enkäten är slutförd om Ni svarat Ja på fråga 1.*

11) Planerar ni att starta företagsanpassad utbildning inom prepress, tryck och/eller efterbehandling?

(Markera ett alternativ)

Ja  Nej (Om svaret är Nej så är enkäten slutförd.)

12) När planerar ni att starta företagsanpassad utbildning inom prepress, tryck och/eller efterbehandling?

(Markera ett alternativ)

- Inom 6 månader  
 Inom 1 år  
 Inom 2 år eller senare

13) Inom vilken/vilka avdelning/ar planerar ni att starta företagsanpassad utbildning? (Markera ett alternativ)

- Prepress  
 Tryck  
 Efterbehandling  
 Annan (specificera) \_\_\_\_\_

***Enkäten är slutförd.***

***Faxa de 3 sidorna på 001 585 475-5336 (RIT – Jonas Hedman)***

***Tack för ditt samarbete!***

## **Appendix D**

### **General Information about the Surveyed Companies**

## General Information About the Surveyed Companies

<i>Company</i>			<i># of Empl.</i>	<i>Revenue</i>
<i>Large Offset Printers (&gt;50 empl.)</i>				
C1	ULOP#1	US Large Offset Printer #1	80	\$12.0
C2	ULOP#2	US Large Offset Printer #2	60	\$6.4
C3	SLOP#1	Swedish Large Offset Printer #1	80	\$11.6
C4	SLOP#2	Swedish Large Offset Printer #2	52	\$4.9
		<i>Average:</i>	<i>68</i>	<i>\$33.9</i>
<i>Medium Offset Printers (25–50 empl.)</i>				
C5	UMOP#1	US Medium Offset Printer #1	45	\$4.3
C6	UMOP#2	US Medium Offset Printer #2	40	\$5.0
C7	SMOP#1	Swedish Medium Offset Printer #1	30	\$1.9
C8	SMOP#2	Swedish Medium Offset Printer #2	26	\$3.3
		<i>Average:</i>	<i>35</i>	<i>\$3.6</i>
<i>Small Offset Printers (&lt;25 empl.)</i>				
C9	USOP#1	US Small Offset Printer #1	8	\$1.2
C10	USOP#2	US Small Offset Printer #2	4.5	Confidential
C11	SSOP#1	Swedish Small Offset Printer #1	14	\$1.3
C12	SSOP#2	Swedish Small Offset Printer #2	14	\$1.9
		<i>Average:</i>	<i>10</i>	<i>\$1.5</i>
<i>Digital Printers</i>				
C13	UDP#1	US Digital Printer #1	55	\$15.0
C14	UDP#2	US Digital Printer #2	9	\$0.9
C15	SDP#1	Swedish Digital Printer #1	30	\$3.3
C16	SDP#2	Swedish Digital Printer #2	28	\$3.8
		<i>Average:</i>	<i>30</i>	<i>\$6.1</i>
<i>Newspaper Printers</i>				
C17	UNP	US Newspaper Printer	83	Confidential
C18	SNP	Swedish Newspaper Printer	350	\$101.8
		<i>Average:</i>	<i>216</i>	<i>\$101.8</i>
<i>Packaging Printers</i>				
C19	UPP	US Packaging Printer	250	\$47.0
C20	SPP	Swedish Packaging Printer	177	\$43.8
		<i>Average:</i>	<i>213</i>	<i>\$45.4</i>

## **Appendix E**

### **Detailed Answers From the Survey in Table Form**

***Detailed Answers From the Survey in Table Form***

Here follows detailed answers of the survey—question by question, company by company:

1) Do the companies *provide* their employees with company-initiated training in prepress, press, and/or finishing? If yes, in what department/departments?

Q1						
Company		<i>Yes</i>	<i>No</i>	<i>A</i>	<i>B</i>	<i>C</i>
C1	ULOP#1	x		x	x	x
C2	ULOP#2	x		x	x	x
C3	SLOP#1	x		x	x	x
C4	SLOP#2	x		x	x	
C5	UMOP#1	x		x	x	x
C6	UMOP#2	x		x	x	x
C7	SMOP#1	x		x		
C8	SMOP#2	x		x	x	
C9	USOP#1	x		x	x	x
C10	USOP#2	x		x	x	x
C11	SSOP#1	x		x	x	x
C12	SSOP#2	x		x	x	
C13	UDP#1	x		x	x	x
C14	UDP#2		x			
C15	SDP#1	x		x	x	x
C16	SDP#2	x		x	x	
C17	UNP	x		x	x	
C18	SNP	x		x	x	
C19	UPP	x		x	x	x
C20	SPP	x		x	x	x
<i>Number of Companies</i>		19	1	19	18	12
<i>Percent of Companies</i>		95%	5%	95%	90%	60%

Table 8. Number of Companies Which Provide Company-Initiated Training.

- A. Prepress
- B. Press
- C. Finishing

2. Why do the companies provide their employees with company-initiated training in prepress, press and/or finishing? (They can check more than one alternative.)

Q2						
Company		A	B	C	D	E
C1	ULOP#1	x		x		x
C2	ULOP#2	x		x		x
C3	SLOP#1	x	x	x	x	
C4	SLOP#2	x		x		
C5	UMOP#1	x		x		x
C6	UMOP#2	x	x	x	x	
C7	SMOP#1	x				
C8	SMOP#2	x		x		
C9	USOP#1	x	x	x	x	
C10	USOP#2	x		x		
C11	SSOP#1	x				x
C12	SSOP#2	x		x	x	
C13	UDP#1	x		x	x	
C14	UDP#2	Do not provide company-initiated training.				
C15	SDP#1	x		x	x	
C16	SDP#2	x		x	x	
C17	UNP	x	x	x	x	
C18	SNP	x		x		
C19	UPP	x		x	x	
C20	SPP	x		x		x
<i>Number of Companies</i>		19	4	17	9	5
<i>Percent of Company</i>		95%	21%	89%	47%	26%

Table 9. Areas where the printing companies provide company-initiated training.

- A. To multi-skill its employees
- B. To reduce turnover
- C. To increase efficiency
- D. To improve morale
- E. Other company-initiated training

3. How do the printing companies budget company-initiated training?

Q3				
Company		<i>A</i>	<i>B</i>	<i>C</i>
C1	ULOP#1			x
C2	ULOP#2		x	
C3	SLOP#1	x		
C4	SLOP#2	x		
C5	UMOP#1		x	
C6	UMOP#2		x	
C7	SMOP#1		x	
C8	SMOP#2		x	
C9	USOP#1		x	
C10	USOP#2		x	
C11	SSOP#1	x		
C12	SSOP#2	x		
C13	UDP#1			x
C14	UDP#2	Do not provide CIT (1%).		
C15	SDP#1		x	
C16	SDP#2		x	
C17	UNP			x
C18	SNP	x		
C19	UPP		x	
C20	SPP	x		
<i>Number of Companies</i>		6	10	3
<i>Percent of Companies</i>		31%	52%	16%

Table 10. How the printing companies budget their company-initiated training.

- A. The companies plan it in their annual budget
- B. Plan it when needed, "ad hoc"
- C. Another way

4. How much do the printing companies spend on company-initiated training?

Q4						
Company		A	B	C	D	E
C1	ULOP#1	x				
C2	ULOP#2	x				
C3	SLOP#1			x		
C4	SLOP#2		x			
C5	UMOP#1		x			
C6	UMOP#2	x				
C7	SMOP#1			x		
C8	SMOP#2			x		
C9	USOP#1		x			
C10	USOP#2		x			
C11	SSOP#1				x	
C12	SSOP#2			x		
C13	UDP#1		x			
C14	UDP#2	Do not provide company-initiated training.				
C15	SDP#1			x		
C16	SDP#2	x				
C17	UNP	Confidential (1%).				
C18	SNP		x			
C19	UPP			x		
C20	SPP	x				
<i>Number of Companies</i>		5	6	6	1	0
<i>Percent of Companies</i>		28%	33%	33%	5%	0%

Table 11. How much the printing companies spend on company-initiated training.

- A. \$0–\$500 per employee per year (5/18 = 5 of 18 companies answered)
- B. \$501–\$1,000 per employee per year (6/18)
- C. \$1,001–\$2,000 per employee per year (6/18)
- D. \$2,001–\$5,000 per employee per year (1/18)
- E. More than \$5,000 per employee per year (0/18)

*Note:* The information is confidential (1/19)

5. Which type of company-initiated training do the companies provide for their employees? (They can check more than one alternative.)

Q5										
Company		A	B	C	D	E	F	G	H	
C1	ULOP#1	x		x	x		x		x	
C2	ULOP#2	x		x		x	x	x		
C3	SLOP#1	x	x	x	x			x		
C4	SLOP#2	x	x	x	x	x	x			
C5	UMOP#1	x		x				x		
C6	UMOP#2	x	x	x			x	x		
C7	SMOP#1	x					x			
C8	SMOP#2	x	x			x				
C9	USOP#1	x		x		x	x			
C10	USOP#2	x	x	x						
C11	SSOP#1	x		x		x				
C12	SSOP#2	x	x	x		x	x			
C13	UDP#1	x				x	x			
C14	UDP#2	Do not provide company-initiated training.								
C15	SDP#1	x	x	x		x	x	x		
C16	SDP#2	x	x	x			x			
C17	UNP	x	x	x			x	x		
C18	SNP		x	x		x	x			
C19	UPP	x	x	x	x		x			
C20	SPP	x	x	x		x	x			
<i>Number of Companies</i>		18	12	16	4	10	14	6	1	
<i>Average Rating</i>		95%	63%	84%	21%	53%	74%	32%	1%	

Table 12. What type of company-initiated training the companies provide.

- A. On-the job Training, employee-to-employee (18/19 = 18 of 19 companies answered)
- B. Internal Courses (12/19)
- C. Off-site Seminars (16/19)
- D. Certification Programs (4/19)
- E. Consultant's Help (10/19)
- F. Manufacturer/Supplier Training Program (14/19)
- G. On-line Courses, via Internet (6/19)
- H. Other Company-Initiated Training (1/19)

6. How does company-initiated training impact Morale on a scale from 0 to 5?

(0 = no impact, 5 = highest impact)

Q6										
Company		A	B	C	D	E	F	G	H	
C1	ULOP#1	4		4	5		3		5	
C2	ULOP#2	4		5		3	4	4		
C3	SLOP#1	3	3	3	3			3		
C4	SLOP#2	3	4	3	5	5	4			
C5	UMOP#1	4		5				3		
C6	UMOP#2	3	3	5			4	4		
C7	SMOP#1	5					4			
C8	SMOP#2	4	4			3				
C9	USOP#1	4		4		4	5			
C10	USOP#2	4	3	5						
C11	SSOP#1	5		4		3				
C12	SSOP#2	3	5	4		5	5			
C13	UDP#1	3				4	4			
C14	UDP#2	Do not provide company-initiated training.								
C15	SDP#1	2	3	4		3	3	3		
C16	SDP#2	3	4	4			1			
C17	UNP	4	3	4			4	3		
C18	SNP		3	2		3	3			
C19	UPP	3	4	4	4		4			
C20	SPP	3	4	3		3	4			
<i>Number of Companies</i>		18	12	16	4	10	14	6	1	
<i>Average Rating</i>		3.55	3.58	3.93	4.25	3.60	3.71	3.33	5.00	

Table 13. How company-initiated training impacts Morale.

- A. On-the job Training, employee-to-employee (18/19 = 18 of 19 companies answered)
- B. Internal Courses (12/19)
- C. Off-site Seminars (16/19)
- D. Certification Programs (4/19)
- E. Consultant's Help (10/19)
- F. Manufacturer/Supplier Training Program (14/19)
- G. On-line Courses, via Internet (6/19)
- H. Other Company-Initiated Training (1/19)

7. How does company-initiated training impact Retention on a scale from 0 to 5?

(0 = no impact, 5 = highest impact)

Q7										
Company		A	B	C	D	E	F	G	H	
C1	ULOP#1	5		5	5		4		5	
C2	ULOP#2	4		1		4	3	3		
C3	SLOP#1	0	0	0	0			0		
C4	SLOP#2	3	3	3	5	4	3			
C5	UMOP#1	4		4				3		
C6	UMOP#2	4	3	4			4	3		
C7	SMOP#1	4					4			
C8	SMOP#2	1	2			4				
C9	USOP#1	5		3		4	4			
C10	USOP#2	4	4	3						
C11	SSOP#1	0		0		0				
C12	SSOP#2	2	3	3		3	3			
C13	UDP#1	2				2	2			
C14	UDP#2	Do not provide company-initiated training.								
C15	SDP#1	3	3	4		3	3	3		
C16	SDP#2	3	3	3			3			
C17	UNP	4	3	3			4	3		
C18	SNP		0	0		0	0			
C19	UPP	3	4	4	4		4			
C20	SPP	3	3	4		3	4			
<i>Number of Companies</i>		18	12	16	4	10	14	6	1	
<i>Average Rating</i>		3.00	2.58	2.75	3.50	2.70	3.21	2.50	5.00	

Table 14. How company-initiated training impacts Retention.

- A. On-the job Training, employee-to-employee (18/19 = 18 of 19 companies answered)
- B. Internal Courses (12/19)
- C. Off-site Seminars (16/19)
- D. Certification Programs (4/19)
- E. Consultant's Help (10/19)
- F. Manufacturer/Supplier Training Program (14/19)
- G. On-line Courses, via Internet (6/19)
- H. Other Company-Initiated Training (1/19)

8. How does company-initiated training impact Productivity on a scale from 0 to 5?

(0 = no impact, 5 = highest impact)

Q8										
Company		A	B	C	D	E	F	G	H	
C1	ULOP#1	5		3	4		4		5	
C2	ULOP#2	4		1		2	4	3		
C3	SLOP#1	4	4	4	4			4		
C4	SLOP#2	4	3	3	5	4	3			
C5	UMOP#1	4		5				3		
C6	UMOP#2	3	3	4			4	3		
C7	SMOP#1	4					4			
C8	SMOP#2	4	4			3				
C9	USOP#1	5		3		4	4			
C10	USOP#2	4	4	3						
C11	SSOP#1	4		4		4				
C12	SSOP#2	4	5	4		4	4			
C13	UDP#1	4				4	4			
C14	UDP#2	Do not provide company-initiated training.								
C15	SDP#1	3	3	3		3	3	3		
C16	SDP#2	4	4	4			4			
C17	UNP	4	4	4			5	3		
C18	SNP		5	3		4	3			
C19	UPP	3	4	4	4		4			
C20	SPP	4	4	4		3	4			
<i>Number of Companies</i>		18	12	16	4	10	14	6	1	
<i>Average Rating</i>		3.94	3.91	3.50	4.25	3.50	3.85	3.16	5.00	

Table 15. How company-initiated training impacts Productivity.

- A. On-the job Training, employee-to-employee (18/19 = 18 of 19 companies answered)
- B. Internal Courses (12/19)
- C. Off-site Seminars (16/19)
- D. Certification Programs (4/19)
- E. Consultant's Help (10/19)
- F. Manufacturer/Supplier Training Program (14/19)
- G. On-line Courses, via Internet (6/19)
- H. Other Company-Initiated Training (1/19)

9. How does company-initiated training impact Absenteeism on a scale from 0 to 5?

(0 = no impact, 5 = highest impact)

Q9									
Company		A	B	C	D	E	F	G	H
C1	ULOP#1	0		0	0		0		0
C2	ULOP#2	0		0		0	0	0	
C3	SLOP#1	2	2	2	2			2	
C4	SLOP#2	2	3	1	4	4	2		
C5	UMOP#1	4		4				3	
C6	UMOP#2	2	2	2			2	2	
C7	SMOP#1	5					5		
C8	SMOP#2	3	3			3			
C9	USOP#1	0		0		0	0		
C10	USOP#2	4	4	4					
C11	SSOP#1	3		3		1			
C12	SSOP#2	2	4	4		4	4		
C13	UDP#1	0				0	0		
C14	UDP#2	Do not provide company-initiated training.							
C15	SDP#1	1	1	1		1	1	1	
C16	SDP#2	0	0	0			0		
C17	UNP	0	0	0			0	0	
C18	SNP		0	0		0	0		
C19	UPP	3	4	4	4		4		
C20	SPP	2	2	3		2	4		
<i>Number of Companies</i>		18	12	16	4	10	14	6	1
<i>Average Rating</i>		1.83	2.08	1.75	2.50	1.50	1.57	1.33	0.00

Table 16. How company-initiated training impacts Absenteeism.

- A. On-the job Training, employee-to-employee (18/19 = 18 of 19 companies answered)
- B. Internal Courses (12/19)
- C. Off-site Seminars (16/19)
- D. Certification Programs (4/19)
- E. Consultant's Help (10/19)
- F. Manufacturer/Supplier Training Program (14/19)
- G. On-line Courses, via Internet (6/19)
- H. Other Company-Initiated Training (1/19)

10. How important do the printing companies think company-initiated training is in prepress, press and finishing on a scale from 0 to 5? (Regardless if they do provide it or not. 0 = no impact, 5 = highest impact)

Q10				
Company		A	B	C
C1	ULOP#1	5	5	5
C2	ULOP#2	5	5	3
C3	SLOP#1	5	3	3
C4	SLOP#2	5	4	3
C5	UMOP#1	5	5	5
C6	UMOP#2	5	5	3
C7	SMOP#1	5	4	3
C8	SMOP#2	4	3	2
C9	USOP#1	5	5	5
C10	USOP#2	5	4	4
C11	SSOP#1	5	5	5
C12	SSOP#2	4	4	2
C13	UDP#1	5	5	5
C14	UDP#2	Do not provide CIT.		
C15	SDP1	4	3	3
C16	SDP2	5	4	3
C17	UNP	5	5	5
C18	SNP	4	5	3
C19	UPP	5	4	4
C20	SPP	5	4	4
<i>Number of Companies</i>		19	19	19
<i>Average Rating</i>		4.78	4.31	3.68

Table 17. How important the companies think company-initiated training is in prepress, press and finishing.

- A. Prepress
- B. Press
- C. Finishing

11. One company (5%) does not provide company-initiated training, and does not plan to start it.