

# 総説

## Indonesian Printing Industry Trends, Current Technology and Future Development

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### Abstract

The objectives of this project are to introduce Indonesian Printing Industry, from business opportunity, trend, technology and development. In this project, there were 3 sections of explanation also with SWOT Analysis. Currently, Indonesian Printing Industry was growth significantly in all sectors since the last of 10 years. Investor make many investments in this in technology and high tech printing machinery. Unfortunately the growth in the technology sector and the machinery is not balanced with the human resources that support the growth of technology and machinery. Indonesian printing industries lack of competent human resources that expert in this industry. Since Indonesian Government concerning in this industry, they give chance to many school and university create kind of program that support this industry. This project describing about Indonesian Printing Industry needs, development and business opportunity briefly. Based on the survey result, the industry needs competent human resources is first priority. At Indonesia, education for printing in bachelor degree or management level is rare, here education degree for printing only vocational degree (high school and diploma) which their program prepared for operator and executants. Now for managerial level is highly needed in order to balance the growth of technology in printing. Here we established some strategies in order to increase the quality of Indonesian Human Resources in printing business, and future development description.

**Keywords:** printing, printing industry, human resources, printing education

この論文の目的は、インドネシアの印刷産業を、ビジネスチャンス、トレンド、技術、そして開発という点から紹介することである。論文では、SWOT分析を用いて3つの内容を説明した。現在、インドネシアの印刷産業はここ最近10年間、あらゆる分野で大きな成長を遂げた。投資家は、技術分野とハイテク印刷機械に多くの投資を行っている。残念ながら、技術分野と機械における成長は、それらを支える人的資源とのバランスが取れていない。インドネシアの印刷産業には、専門的知識を有する競争力のある人材が不足しているのである。インドネシア政府は、多くの学校や大学に印刷作業を支援するようなプログラムを作る機会を与えている。この論文では、インドネシアの印刷産業のニーズや開発状況、ビジネスチャンスについて簡潔に述べているが、調査結果によれば、印刷作業のニーズとして、競争力のある人的資源の優先度が最も高い。インドネシアでは、大学或いは管理者レベルでの印刷向けの教育はまれであり、専門学校でオペレータや実務者向けにプログラムが用意されているだけである。印刷の技術発展とのバランスをとるためには、管理者レベル向けの教育が非常に必要である。ここでは、印刷ビジネスにおけるインドネシアの人的資源の質を高めるための幾つかの戦略と将来の展望について述べた。

## 1. INTRODUCTION

Printing in Indonesia was introduced by Dutch

Colonial in 16<sup>th</sup> century. The oldest newspaper in Indonesia begin on 1615, named "Memories der Nieuwe" by handwriting, then on 1688 Jan Pieterzoon Coen Dutch Colonial General Governor for Indonesia, ordered the first news paper printing machine from Netherland

Since this year, printing industry at Indonesia growth with Dutch Colonialism influenced until Indonesian Independence Day on 1945. Since 1945, the first National Newspaper born, named "*Kedaulatan Rakyat*", and still exist until now. Graphic industries are:

1. Industry that designs, develops, manufactures, and introduces products that contain or relate to sentences and images to bring information, ideas and feelings.
2. The product was used for the purpose of learning, entertainment, motivational, commercial, etc.

Now Indonesian Printing Industry was developed since last 10 years, this industry growth at 2012 increase 5.3%, higher than 2011 growth at 4.7% (Bisnis Indonesia, 2012). For the future, printing industry at Indonesia have good prosperity because the growth of printing industry have high dependency with Indonesian Economic Growth, around 6.3% - 6.5% (BPS, 2011). Indonesian printing industry growth could be watched and analyzed from printing machine import value that achieve 40% growth (Bisnis Indonesia, 2012). In 2010 until 2011 noted US\$280 Million, then in 2011 - 2012 also achieve 40% for printing machine request from foreign (Bisnis Indonesia, 2012). The growth of printing industry is the impact of Indonesian Economic Growth. Also the growth of Printing Industry at Indonesia equal with paper consumption at this industry. According APKI data base, Indonesian paper industry capacity achieve 12.5 million ton per year with domestic consumption around 7 million ton or 60%-65% per year (Bisnis Indonesia, 2012). In include newspaper paper, commercial paper and advertising board.

The data show about Printing Industry at Indonesia still has good prosperity in the future. Every human being use printing product daily. However, although the printing industry at Indonesia growth, technology also growth, but for printing education business still cannot equal with industry need. Indonesian printing education still under international standardization, we need upgrade it in order to make equal with Indonesian printing industry need. We do many surveys and research in order to find the best strategy for upgrade human resource in this industry. We believe although many companies have high tech technology in printing house,

but their human resource didn't well support, it will useless.

Investment increase since in the last 10 years but not balance with the increase of competency human resources. The impact is many high techs printing machine come to Indonesia, but not efficient and optimum for the business value. Sometimes the investment become cost center for the company. It happened because they don't have supported and matched human resources for their machinery.

## 2. PRINTING IN INDONESIA

### 2.1 Printing Industry Growth in Indonesian

Together with foreign investment and cooperation business to business or standardization in educational side, hopefully it can make Asian Human Resources Standardization in skills and capability. Today, Indonesian printing industry as one of top 10 Producers, as in **Table 1**, still interactive and profitable business, in many sectors such as packaging, newspaper, book publisher and etc. then for development trend now enter into flexo system. Packaging industry growth almost 7% compare with last year. In the late of 10 years, packaging industry growth in Indonesia around 5% - 6%, this data come from paper manufacture companies. After monetary crisis it increases significantly. Especially go green issue come to Indonesia, this business boost. Now, the Indonesian Ministry of Industry and Trade (2011) records printing house population in Indonesia around 50000 companies. PPGI as an association of graphic and printing in Indonesia, records his members around 26000 as shown in **Table 2**, which 75% located in Java Island (PPGI, 2012) for the scale of company based on Indonesian Ministry of Industry and Trade, 25% big company, 35% medium company and 40% small-micro (SME's) company.

In the midst of global competition, graphics and printing machinery industry in the country was still showing positive growth, current developments in information technology also provides an opportunity to the growth of the printing industry in the country. Based on data from the Central Statistics Agency (BPS), the value of exports of commodities and graphics printed last year recorded 194.18 million U.S. dollars or 47.8 million

Table 1 Indonesian Top 10 Producers of 2012

No	Top 10 Producers
1	Manufacture & Production Oil / Coal
2	Manufacture of motor vehicles and parts
3	Industrial Electronic and Electrical Equipment
4	Food Industry
5	Chemical Industry
6	Industrial Computer / Office Equipment
7	Industrial Iron / Steel
8	Drug Industry
9	Industrial for Industry Equipment
10	Publishing and Printing Industry

Source : BPS (2011)

U.S. dollar surplus. As for the paper industry recorded about 81 industrial units with an installed capacity paper 12.2 million tons of paper per year, although competition machinery industry is still dominated by China, it is optimistic Indonesia able to create a basic technology that can compete with the global industry (Metrotv News, 2012).

Digital printing at Indonesia also growth, in Indonesia there are about 10000 companies graphics or digital printing indoor or plotter, where the 6000 companies member of PPGI Association. Of that amount, 90% is in the form of digital print industry Small and Medium scale Enterprises (SMEs). Although the market is huge, the domestic industry has not seized market opportunities by making their own printing press. Because digital printing machine in the local market are all produced abroad. Only locally made laminating machine, it was small in size.

The businesses in the graphics industry optimistic based industrial printing, publishing and converting next year could grow by 5.3% or better compared with a projected 4.7% this year. Based on research by the world of marketing agencies, graphic industry in the next year could grow to 5.3%. "The optimistic prediction is no exaggeration when we correlate with the economic growth in Indonesia. According to the BPS (2011), economic growth in Indonesia grew 6.5% compared to the third quarter of 2012," Graphic Industry growth in Indonesia on the recent years beyond the 1.6% growth in the world chart. In the midst of the European debt crisis and the weakening US economy, Graphic industry in Asia would grow so fantastic; Indonesia is one country in Asia

Table 2 Indonesia Printing and Media Industry Population

Population	Number
Printing Company	14655
Book Publishers	2017
Media Publisher	1802
Journal Publisher	1562
Graphic Design Company	1203
Repro Company	52
Packaging Company	3165
Paper Company	128
Ink Print Company	60
Graphic Supplier	1380

Source : PPGI (2012)

which has the printing industry's growth chart very good. It spawned many innovative product development, business ideas, creative and promising future of the printing industry perspective more interesting.

Magnitude of graphic industry growth cannot be separated from the high consumption of paper in the country. Based on the Indonesia Pulp and Paper Association (APKI, 2012), paper industry reached 12.5 million tons per year with average domestic consumption reaches 60% - 65% per year. In terms of domestic consumption, industrial growth chart this year likely to be higher than earlier projection of 4.7%. This evident from the data of import graphics industrial printing machines are up to 40% this year to US\$ 392 million compared to imports in 2011 to only US\$280 million.

Fig.1 shows that the development of Indonesian Printing Industry technology, currently still in lithography process, many printing house still focus on technology investment on lithography process with ISO standardization although the limitation of capable human resource still big problem at this industry. Here, many printing house still confidence to make many investments on their company. The impact is that investment for some company become cost center and they decide to bankruptcy because their investment didn't give good payback period. It happens because they didn't prepare their human resource very well. The technology development didn't balance with the development of human resource. For university or other it become good opportunity and challenge to prepare match human resources with printing industry as their needed. The demand of professional human resource in this industry

## 2.2 Printing School Market In Indonesia

The development of printing industry cannot be separated from education of the human resource. Education of graphic in Indonesia needs education in management level while recently technically supported by high school and diploma. For development of printing school in Indonesia we must see the SWOT analysis. SWOT Analysis as shown at Table 3 and Table 4, describe about condition and situation for printing school

market in Indonesia, especially university degree. In fact in Indonesia, many expert people in printing and graphic however they didn't have any appropriate educational background, they expert from field, (experiences), almost of them have educational basic only vocational high school. Only a few people graduated from Polytechnic (Diploma). Learn by doing is good; however they never know any standardization in this field. Learning from Foreign Country, Governmental support

Table 3 Strength and Opportunities of Indonesian Printing Industry SWOT Analysis

Strength	Opportunity
1. There are many printing and publishing companies at Indonesia which needs professional human resources for their company in order to implement Printing Standardization such as ISO, DIN, etc. Some of them propose us to provide kind of human resources that match with their needs.	1. Graphic Industries growth significantly, higher than Indonesian Economic Growth, around 5.3% (Bisnis Indonesia Online, 2012)
2. Printing and Publishing Industries at Indonesia always growth and develop although electronic book occur in book market, however Indonesian people still prefer read book use hard copy models. Although newspaper industries in Indonesia stagnant, for book and packaging still sweet like honey. Some of them need professional human resources.	2. Graphic Technical Education for the New College there are three in Indonesia, all located in Jakarta (capital city of Indonesia), Diploma Degree. The material taught in the application print knowledge (operators and technicians) rather than a whole (management, leadership, organization and design engineering and manufacturing to printing companies).
3. There are many new comers in Printing and Publisher Companies, from small scale until big scale	3. In Indonesia has been no formal bachelor -level education that is specific to Graphic, especially for the leader (manager, general manager). The average is still the operator level and the maximum level of supervisor.
4. Human Resources that capable in Industry, Printing and Graphic Engineer, Management, Leadership and Information System are high demand. They prefer their human resources well understand in industry Management and Engineer and Printing Graphic knowledge.	4. Support from Industries, particularly the Printing and Graphic industries are very large, especially for formal education Graphic Techniques, and their need for highly educated workers.
5. There are many supports from National Printing Company.	5. Graphic market opportunities for education are huge. Especially in Central Java. The biggest population for printing company lies on Central Java.
6. There are many supports from printing community.	6. Printing-entrepreneur (entrepreneur who run their business in printing, graphic and media industries) still high potential.
7. There are many establishing networking at Printing and Graphic Industry.	7. We have association that fully support in Graphic and Media Engineering such as ATGMI and Indonesian Printing Community.
8. Joint Cooperation with other printing school/university (regional or foreign) for curriculum, so we have standardization in curriculum determination.	8. None formal Education for Graphic and Printing Engineer.
9. The need of competent human resources in managerial degree in Printing field is high.	9. Printing Industry need kind of human resources who capable and professional in printing-graphic with well understand Printing Standardization.

Table 6 List of Formal Printing and Graphic Education

No	Description	Course (Non Degree)	Vocational High School	Diploma Degree	Bachelor Degree
1	Printing	2	13	4	1
2	Design Graphics	100	59	100	50
3	Communication Media	75	-	37	17

Source: Indonesian Ministry of Education, 2010

Education and Indonesian Department of Industry and Trade is important

- Producing potential and professional human resources which ready to compete with foreign human resources.
- Stimulating new entrepreneur in printing field (printing-entrepreneur) with soft loan and lower interest rate.
- Producing potential and professional human resources which link and match with Industry needed.
- Curriculum based on competency is a must for printing and graphic school.

### 3. RESULT AND DISCUSSIONS

- With the development of communication, technology and competition, customers have more and more choices for media promotion. Printing product still dominant and their first choice rather than other media. Their consideration beside cheap, technology era at Indonesia not well spreading. Internet booming only at big city and focus on Java Island. Other reason Internet Access at Indonesia not stable like foreign country.
- Print quality and cost into consideration. In Offset printing it is not big deal, but for digital printing it gives impact in market. Cheap is favorable although low end quality because for temporary use.
- Competencies of its human resources to be the primary choice in the graphic industry. Printing Education for Bachelor Degree and higher is needed. Vocational is many at Indonesia. Operator level normally came from printing vocational high school or diploma degree, but for leader or managerial level minimum requirement bachelor

degree unfortunately at Indonesia there is no specific bachelor degree in printing. UNISBANK develop this degree however for lecture is limited.

- Labor force field of printing/graphics increased, since printing industry growth significant, the demand for this industry also increase.
- SMEs (small medium enterprise) in printing also growth significantly every year almost 5.7%. Their business from printing broker, digital printing, screen printing until offset printing.

### 4. CONCLUSION

- Printing product is needed every day in human life, for business, packaging, invitation, book, newspaper etc., all printing product that human life always use it. Printing never die, people still have high dependency with printing product.
- Graphics technology continues to evolve at any time.
- Flourishing printing industry in Indonesia, in proven by the using of paper database from pulp and paper manufacture.
- World of work in the printing industry field is wide open, the opportunity still wide open.
- Necessary human resources have competence in the field of engineering graphics, graphics management, and other matters related to the graphics. This is good opportunity to get foreign cooperation to develop this degree in order to fulfill industry demand.
- Human Resource who has good skill and capability is needed.
- Printing Industry at Indonesia still interactive and increase year by year. For foreign investment is wide open in order to improve the quality of human resource and make the printing industry

market become more competitive.

8. High quality printing product become concerned for many Printing Houses, also ISO standardization is a must. Since some national printing company expand their market to International.

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