

ESTABLISHMENT OF THE ADVANCED PRINTING TECHNOLOGY CENTRE AT HONG KONG INSTITUTE OF VOCATIONAL EDUCATION (KWUN TONG)

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Abstract: This paper describes an industry and academic partnership initiative at Hong Kong Institute of Vocational Education (Kwun Tong). The project includes the establishment of the Advanced Printing Technology Centre at the Institute using a US\$1.1 million funding from the Government. The Centre has set up a state-of-the-art digital printing production environment with equipment connected together using high-speed computer network. Generous support has been obtained from equipment manufacturers, which have installed about US\$2.3 million worth of advanced equipment at the Centre. This initiative has created a 3-way winning situation for the students, the industry, and the equipment manufacturers. The students can acquire hands-on experience in using the advanced printing equipment, the printing industry can send its personnel to the Centre to receive training, and finally the manufacturers can use the Centre to showcase their latest products. This kind of establishment creates a partnership model that benefits all parties concerned and the model can be extended to other industries as well.

INTRODUCTION

Innovation and technology support initiatives have been implemented in many countries around the world. These government programmes typically provide financial assistance to tertiary institutions, trade associations, and non-profit organisations to develop innovative products and services with the objective that these innovations will contribute to the economic prosperity of the local economy. This paper describes the establishment of the Advanced Printing Technology Centre (APTEC) at Hong Kong Institute of Vocational Education (Kwun Tong) using a grant of US\$1.1 million from the Innovation and Technology Fund. The Fund is an initiative administered by the Industry Department of the Government of the Hong Kong Special Administrative Region with the prime objective to support the development of new technology and its application in industry. The Centre has received generous support from major equipment suppliers - it is equipped with US\$2.3 million worth of latest digital printing equipment, which are provided by the suppliers on a consignment basis. Using these equipment and the money from the Fund, the Centre has set up a multi-vendor digital printing production environment with equipment connected together using high-speed computer network.

PRINTING INDUSTRY IN HONG KONG

Hong Kong is one of the four largest printing and publishing centres of the world. In particular, Hong Kong's printing industry is well acclaimed for its quality, quick delivery, competitive pricing and ability to cope with short run printing jobs. To maintain this leading position, the industry is keen in upgrading itself through continued investment in advanced machinery and equipment. In fact, Hong Kong's printers installed the world's 2nd and 3rd ten-colour offset printing presses, which costed more than US\$2.5 million each. Apart from the local printing establishments, the industry also attracted major foreign investment, which reached US\$295 million in 1996.

Despite the willingness of the printing industry to invest heavily in capital equipment, Hong Kong is

slower than other neighbouring Asian countries in moving to the new era of digital technology. For example, in 1999, the world wide installation of computer-to-plate (CTP) equipment, a major component of digital printing, was over 3,000, whereas in Hong Kong, there was less than 10 CTP equipment installed. One may find high-end computer graphics equipment running in local printing companies, but in most cases, the equipment are not linked up in a well-defined network of workflow. The major reasons for this phenomenon are:

- 1) The digital printing technology is still evolving very quickly and the equipment can become obsolete in a short period.
- 2) There are different industry standards, and connectivity of the equipment manufactured by different suppliers is still a problem.
- 3) There is a lack of knowledge and expertise among the business executives and technical professionals in the local printing industry to manage a "digital printing factory".

BACKGROUND ON THE ESTABLISHMENT OF APTEC

The Hong Kong Printers Association (HKPA), which was established in 1939, is the oldest and largest printing association in Hong Kong. For many years, the Association has been very actively in supporting vocational education and promoting technology development. Recently the Association recognises the threat of fierce competition from the neighbouring countries and also the benefit of adopting the digital technology to the printing business. They approached the Printing Department of the Hong Kong Institute of Vocational Education (Kwun Tong), IVE(KT), regarding a collaboration to establish a technology transfer centre in the areas of electronic publishing and digital printing at the Institute. The Institute is the only education institution in Hong Kong that offers post-secondary vocational education in the printing discipline. And in recent years, the academic programme has been revamped in order to satisfy the changing manpower needs of the printing industry. The Institute's management agreed to co-operate with the Association because it believes that it is important to support the printing industry to educate its workforce concerning this new technology. Moreover, by having the technology transfer center at the Institute, the academic staff can acquire the latest information on the development of digital printing and the students can have the opportunity to learn using the new equipment. A proposal was submitted to the Industry Department and in mid 1999, a grant of US\$1.1 million was approved by the government to establish the Advanced Printing Technology Centre at IVE(KT).

OBJECTIVES OF THE CENTRE

In order to support the printing industry, the Centre must establish itself as a leader in the field and should operate in a pro-active manner. It has the following objectives:

- 1) To promote the application of the electronic publishing and digital printing workflow to the local printing and publishing industry.
- 2) To educate the personnel in the industry on the migration from traditional manual publishing, prepress and printing operations to the new computer integrated workflow.
- 3) To create a real-life production environment to facilitate the investment decision of the companies in adopting the new technologies.
- 4) To organise tailor-made training programmes for company executives to cope with the impact of the digital technology to their business.
- 5) To promote the transfer of technology and dissemination of information from overseas equipment manufacturers to the local printing industry.

CURRENT DEVELOPMENT

The Centre was established in late 1999 and has 5 professional staff. It is divided into 3 sections: digital photography, electronic publishing, and digital printing. The equipment suppliers have been very supportive and have provided many state-of-the-art digital printing equipment to the Centre. Agreements have been reached with the suppliers that they will replace the equipment with newer models in a 6 - 12 month interval in order to maintain the latest equipment at the Centre. Major supporting companies included:

<u>Company</u>	<u>Equipment/Software</u>
1. Xerox	DocuColor 40 System w/ Splash Server DocuTech DT135 B/W Publishing System DigiPath Software
2. Agfa	Galileo 'S' Platesetter Plate Manager with 2 Bins & Cassette Agfa LithoStar LP150 On Line Processor Apogee Workflow System ADTX RAID System Agfa Sherpa2 Imposition Proofer
3. Dainippon Screen	Cezanne FT-S5000 Digital Proofing System PlateRite 8000 w/ Off Line Processor & Compressor Trueflow Digital Workflow System
4. China Yin King - Purup Eskofot	EskoScan 2024 - LW Scanner (incl. EskoDDS & Perfection NT Kit Register Punch Unit)
5. Scitex	Leaf Cantare Digital Camera Iris 43" Wide Proofer Brisque Workflow System (incl. Improof 750I/F + PDF2GO + Extreme Option and Export PS S/W option) Eversmart Supreme Scanner (incl. Scanner Oil Mounting Station & Eversmart Dot Kit)
6. Heidelberg	Tango iXL Scanner w/ Tango Mount XL LinoColor 6.0

The total value of the equipment at the Centre is about US\$2.3 million.

MANAGEMENT STRUCTURE

A Steering Committee (SC) is formed to establish policies regarding the overall operations and development of the Centre. The SC includes representatives from HKPA, IVE(KT), the Industry Department, academics, and other relevant trade associations. Below the SC is the Management Committee (MC), which includes key executives of HKPA and IVE(KT). It is responsible for the day-to-day management of the Centre and to oversee the implementation of policies and strategies established by the SC. Finally, under the MC is the Administrative Committee (AC), which includes members of the MC and representatives from key supporting equipment manufacturers. The AC is mainly responsible for the formulation of overall administration policies concerning the operation of the Centre and to establish administration procedures to safeguard the interest (e.g., intellectual properties) of the equipment suppliers. By including the equipment suppliers in the AC, it help ensure that the suppliers are involved in the decision making process and smoothen the working relationship between the suppliers and the Centre. The Technical Services Manager is the chief executive of the Centre and he/she is in charge of implementing the policies and strategies of the Centre. Figure 1 shows the management structure of the APTEC.

PERFORMANCE INDICATORS

The success of the project is measured by several performance indicators, including the number of technical visits, technology transfer seminars, training courses and consultancy services provided to the industry. And above all, the most important performance metric is the number of companies that have successfully implemented the digital workflow because of the services they have utilised at the Centre.

BENEFITS TO THE STUDENTS

As digital printing is a rapidly revolving technology, it is very difficult for an education institution to keep up with the latest development in terms of capital investment and staff training. Hence the Centre is an ideal establishment where it will always maintain the latest equipment on the premises. In addition, the suppliers have agreed to offer technical training to the Centre's personnel so that the latter can in term teach the students and professionals in the printing field. The students are the prime beneficiaries of the Centre because they can acquire hands-on experience in using the sophisticated equipment, which will give them a competitive advantage when they enter the job market upon graduation.

BENEFITS TO THE PRINTING INDUSTRY

The printing industry in Hong Kong is currently at the crossroad where important investment decision has to be made regarding the purchase of the advanced digital printing equipment. On one hand they feel it is imperative to move into the "digital era" but on the other hand they are concerned about the lack of properly trained professionals who can master the technology. APTEC can offer the industry training programmes, consultancy and pilot production services. And through a membership subscription programme, member companies may use the Centre's equipment on a trial basis so that they can actually test the performance of the equipment before making procurement decisions.

BENEFITS TO THE EQUIPMENT SUPPLIERS

The application of digital printing technology in Hong Kong is slow compared to other printing centres of the world, hence the equipment suppliers are anxious to expand their presence in this market. By providing the equipment at the Centre, the suppliers may use it as a demonstration centre

for their perspective clients. Furthermore, by offering training programmes to the professionals in the printing industry, it will increase their awareness concerning the importance of the technology. Although the equipment at the Centre represents an investment on the part of the suppliers, over the long run, they would be able to recover the cost through the sale of more digital equipment.

CONCLUSION

The establishment of the Centre has created a 3-way winning situation for the students, the printing industry, and the equipment manufacturers. Not only can the industry develop and upgrade their technical know-how in digital printing, students from the Printing Department can also acquire skills and knowledge in using these state-of-the-art equipment, which will definitely improve their competitiveness when they enter the job market. In addition, suppliers may use their equipment at the Centre to educate the industry regarding their products. This kind of establishment creates a partnership model that benefits all parties concerned and the model can be extended to other industries as well.

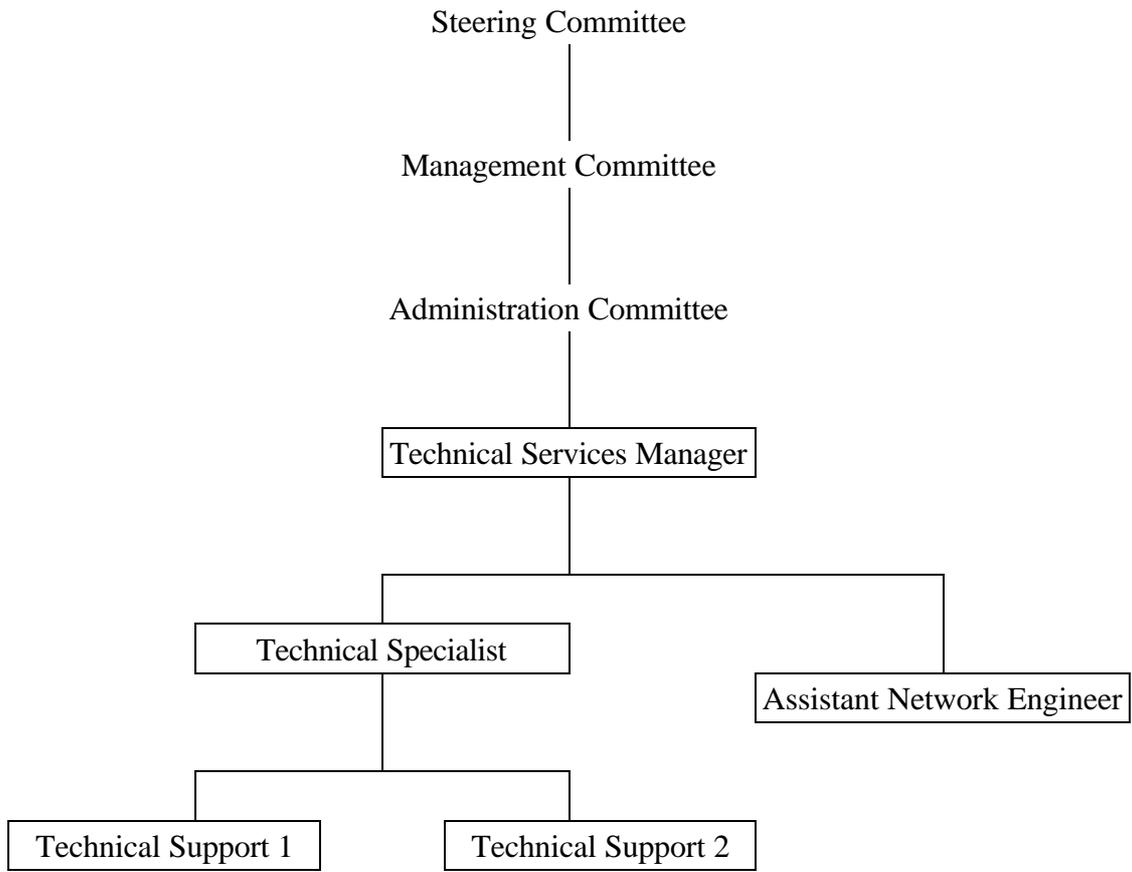


Figure 1 : Management Structure of the Advanced Printing Technology Centre (APTEC)