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**DMX TECHNOLOGIES :  
ASSESSING THE RISKS AMIDST RAPID EXPANSION**

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*Foo See Liang*

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*At the end of 2002, Mr Giang Phung, the chief executive of DMX Technologies, was assessing the opportunities and the risk exposures of the company he established. The company had made significant progress in establishing its presence in the market, building customer base and expanding into regional markets.*

*The company started operation in 2000 providing network solutions. It instituted the existing core management in early 2001. Focusing on developing its proprietary e-solutions, the company was founded on the philosophy that it should be capable of selecting the best products from different vendors and integrating these into its own value-added software solutions for the benefit of its clients.*

*A strong management team gave Phung the assurance that the company was able to meet the challenges ahead as many of the members were the key persons from similar established companies. Its three core business areas in Network Infrastructure Development, Enterprise Consultation and Implementation and Network Security were expanding.*

*Amidst all these exciting developments, there were concerns about the risk exposures associated with rapid regional expansion. Despite its healthy revenue, the company required a substantial cash infusion to fund its R&D efforts and ambitious regional expansion plan. The proposed IPO that aimed to raise S\$9.4 million would benefit those two endeavours.*

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*Associate Professor Foo See Liang prepared this case with assistance from Research Associate Chung Sang Pok. The case is based on DMX Technologies IPO prospectus dated 9 December 2002 and other publicly available sources. As the case is not intended to illustrate either effective or ineffective practices or policies, the information presented reflects the author's interpretation of events and serves merely to provide opportunities for class discussion.*

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At the end of 2002, Mr Giang Phung, the chief executive of DMX Technologies, was assessing the opportunities and the possible pitfalls of the company he established. Having been in business for two years, the company had made significant progress in establishing its presence in the market, building customer base and expanding into regional markets. Phung was confident that his company was at "the threshold of a very exciting phase of development".

The company started operation in 2000 providing network solutions. It instituted the existing core management in early 2001. Focusing on developing its proprietary e-solutions, the company was founded on the philosophy that it should be capable of selecting the best products from different vendors and integrating these into its own value added software solutions for the benefit of its clients.

A strong management team gave Phung the assurance that the company was able to meet the challenges ahead as many of the members were once the veterans from other similar established companies.

Its three core business areas were expanding:

- (i) D-net - Internet-based networking infrastructure consulting services, systems design, and delivery.
- (ii) D-soft - Business software system architecture design, implementation, and delivery.
- (iii) D-secure - Network security assessment, planning, design and implementation.

Amidst all these exciting developments, Phung was concerned about the risk exposures associated with rapid regional expansion. For example, business operating in China was subject to different codes of law. Payment on receivables in PRC could normally stretch for 90 days before the first payment could be processed through import/export firms. Businesses in China were also vulnerable to bad debt. Despite its healthy revenue, the company required a substantial cash infusion to fund its R&D efforts and ambitious regional expansion plan. The proposed IPO that aimed to raise S\$9.4 million would benefit these two endeavours.<sup>1</sup>

## BRIEF HISTORY AND RECENT DEVELOPMENTS

DMX Technologies Group Limited was incorporated under Bermuda laws on 29 October 2001 as an exempted company with limited liability.

A Vietnamese refugee turned technopreneur with a first class electrical engineering degree from University of Western Australia, the CEO was at the helm of the company aspiring to be the preferred system integrator in Asia. When offered an opportunity to pursue the PhD programme, he chose a job instead as a network specialist at Telstra, Australia's telecommunication giant. He joined network integrator Datacraft Asia in 1993, then rose to become the chief technologist. The company became the largest network system integrator during the Internet boom in the 1990s, with revenue more than US\$500 million a year.

Phung made a proposal to Datacraft to switch the business model from single to multiple vendors but the company turned it down.<sup>2</sup> Later, he left the company for Skynet Consultant, a computer product seller. He was convinced that the more viable and sustainable business model for his company should be based on choosing the best technology to fit the customers' needs and developing complementary technologies. He soon transformed Skynet into an architect of network systems and changed its name to DMX Technologies (DMX).

Over the next two years from 2001, DMX doubled its staff strength, hiring more ex-Datacraft staff, many of whom had left the company when its business plunged.<sup>3</sup> Having 10 years of working experience in IT, Phung was able to rope in IT specialists and others with extensive business development and marketing experience in the Asia-Pacific region, in particular, People's Republic of China. The strong customer goodwill and database developed when Phung was with Datacraft meant that DMX did not need to start from scratch. As of late 2002, more than 80 percent of the staff at DMX Technologies were ex-Datacraft employees.<sup>4</sup>

The Asian financial crisis in the mid-1990s severely affected the business of Datacraft as major financial institutions curtailed capital expenditure. Some of

1 Of the S\$9.4 million the company proposed to raise, \$2 million was to be spent on potential acquisitions if opportunities arose. Another S\$2 million was meant for expansion in China and Malaysia. S\$1.0 million was for R&D and the rest for working capital requirements. (Source: DMX Technologies. IPO prospectus) (2002, December 9)

2 Leong Chan Teik. Once a Viet refugee, now a high flyer. (2002, December 8). *The Straits Times*.

3 *ibid.*

4 Leong Chan Teik. Once a Viet refugee, now a high flyer. (2002, December 8). *The Straits Times*.

its major customers were forced into liquidation. Datacraft was a high-flying tech counter until the second half of 2001 when profit warnings, bad debts in China and investigations by the Commercial Affairs Department adversely affected the stock price.<sup>5</sup>

Determined on a business model different from that of Datacraft, Phung ardently believed in developing DMX's own proprietary solutions. Since 1997, Phung had forged research alliances with other organisations. The outcome of this endeavour was the development of three proprietary solutions: D-net, D-secure and D-soft. Patent applications were lodged in 2000 and 2001. The company commenced its R&D activities in the Financial Year 2001.

DMX Technologies continued to expand operations in PRC. It won a series of projects from telco customers in Suzhou, Hainan, Fujian, Swatow, Zhejiang, Ningbo, Anhui and Hubei.

## **THE INDUSTRY OVERVIEW AND BUSINESS PROSPECTS**

The Internet revolution started in the 90s had completely changed the landscape for many businesses. To take advantage of the e-commerce brought about by the Internet revolution, businesses needed sound models, reliable information and supporting IT infrastructure.

As IT infrastructure continued to develop and improve, particularly the broadband technology which facilitated the delivery of multimedia content at faster speed, companies were eager to get on the broadband wagon to leverage on what new technology had to offer. Traditional content providers such as cable television operators and utilities companies were also trying to exploit their respective cable and utilities networks to deliver broadband content. At the same time broadband Internet access had also gained increased acceptance among Internet users.

Many enterprises had since become increasingly dependent on the use of IT as a competitive tool. In particular, the Internet enabled enterprises operating in different locations to link up, exchange and share data. The Internet, however, posed continual security challenges, such as keeping computer viruses at bay and preventing unauthorised access.

The acquisition, development and implementation of network solutions had become more complex due to the rapid and continual changes in IT. DMX believed that this 'second wave of Internet commerce' presented significant opportunities to system architects as it was able to design, build and develop network solutions which were suitable to the unique business needs of different enterprises.

The prospects for the company's most promising market, China, remained bright in 2002. There were 6 giant telecom operators in the PRC in 2002, namely, China Telecom, China Netcom, China Mobile, China Unicom, China Railcom and China Satellite with a combined potential capital expenditure in excess of US\$20 billion forming part of the huge market for broadband data streaming. In addition, there were more than 100 cable TV operators constituting a large market for DMX's services. The increase in graphic, video and gaming applications on the web was expected to fuel growth of broadband spending.

DMX's industry was characterised by rapid technological changes. Failure to respond successfully to these technological developments, or not to respond in a timely or cost-effective manner, would adversely affect the company's business and operating results.

## **THE BUSINESS STRATEGY**

DMX aimed to build strong business relationships with leading technology vendors in their own area of specialisations. These would also enhance its capability in selecting the best-of-breed software and hardware technology to meet customers' needs.

DMX business strategy consisted of a two-pronged approach:

- (1) It provided network solutions to service providers to upgrade their IT infrastructure so as to enable them to provide good quality and substantial content through the Internet. Depending on their requirements, DMX would design a new network system or upgrade their existing network system.
- (2) It also provided enterprises with specially tailored IT solutions and services to enable them to use the Internet as a competitive business

<sup>5</sup> Ven Sreenivasan, Datacraft under probe by Commercial Affairs Department, (2002, August 23), *Business Times Singapore*.

tool and to exploit the business opportunities it offered.

With Asia a growing market, Phung thought that with an experienced team that understood the business needs of service providers and enterprises, DMX was well positioned to ride on the second wave of the Internet revolution.

Traditionally, vendors focused on the installation and maintenance of network solutions and training services to build and develop networks. They tended to provide only standard set solutions for customers despite the fact that each customer had different business requirements and concerns. In particular, network integrators tended to focus on putting networking hardware together whereas system integrators tended to focus on providing software solutions. Such standard technology was often geared towards the requirements of the US market which might not be compatible with the needs of the Asian market.

According to Phung,

*We believe our position in the value chain is higher than that of a traditional integrator. The key to building and developing an effective network lies in understanding the business needs of our customers. Our system architects provide comprehensive solutions to the business and network requirements of our customers by designing specific network solutions for them. Such comprehensive solutions are developed through the integration of our D-net, D-secure and D-soft application solutions into a package to match the needs of our customers.<sup>6</sup>*

DMX believed that individual enterprises had their unique business needs. It was therefore essential for its system architects to define specific needs of customers. Based on their business requirements, the system architects would design

customised solutions to fulfil customers' needs. Such customised solutions were developed comprehensively through the integration of D-net, D-secure and D-soft services into a package.

Phung then elaborated on the strength of his company:

*For each project that we undertake, a project manager whom we termed the system architect, is appointed to manage the project. He seeks to understand the business requirements of the customer, and then designs the network solutions together with the technical specialists from our respective D-net, D-secure and D-soft application solutions teams. After that, he presents an integrated solution to the customer. Our distinctive capabilities lie in our intellectual capital and a customer-driven mindset in service quality to stay ahead of competitors.<sup>7</sup>*

## **ORGANISATION STRUCTURE, MANAGEMENT AND STAFF**

DMX was organised by the following functions:

- Infrastructure
- Security
- Business applications
- Business development
- R&D
- Administration

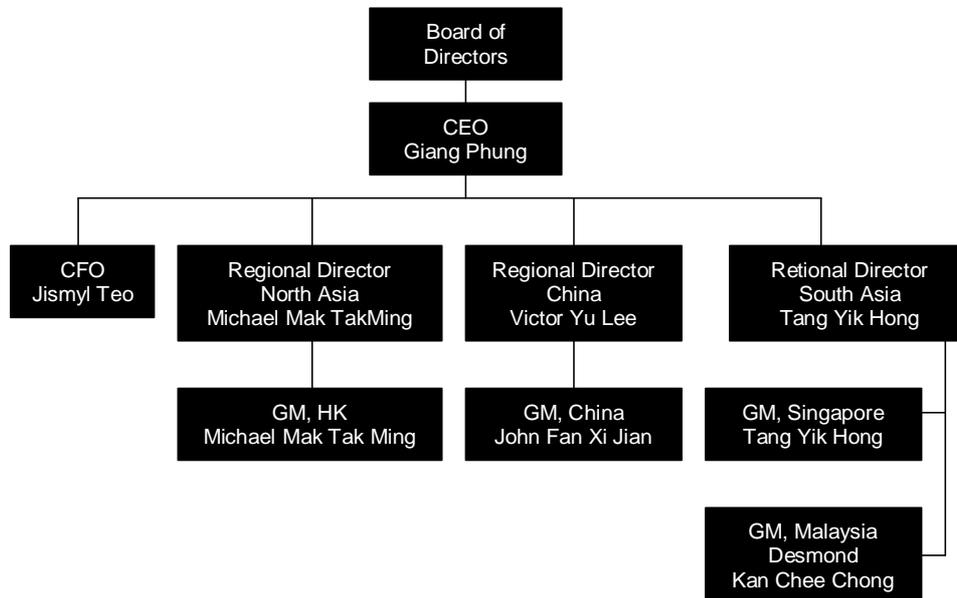
The Board of Directors was responsible for overall management and the day-to-day operations were entrusted to the executive officers.

There were three sub-committees under the board: audit committee, remuneration committee and nominating committee. All the non-executive and independent directors had been in the IT business for many years and several of them had worked in multinational companies.

<sup>6</sup> IPO launch presentation transcript. Retrieved August 10, 2003, from [www.dmx.com.hk/english/index.html](http://www.dmx.com.hk/english/index.html)

<sup>7</sup> IPO prospectus, (2002, December 9). p.68.

Members of the Board of Directors are as follows:



Source: DMX Technologies Group Limited. (2002). IPO Prospectus dated 9 December, 2002, p.83.

**Directors (For details of their qualifications and experience, please refer to Exhibit 1)**

Chairman	Emmy Wu
Chief Executive Officer	Giang Phung
Chief Financial Officer	Jismyl Teo Chor Khin
Executive Director, Global Gartech Services Co. (China) Ltd	Jim Cheong Chung Wah
Independent Director	Foo Meng Tong
General Manager, Asia Pacific, Sybase Corporation	Mark Wang Yat -Yee

The by-laws provided that the Board of Directors would consist of not less than two directors. No director was appointed for fixed terms and one-third of the directors were required to retire at every annual general meeting. Hence, the maximum term for each director was three years. Mr Foo Meng Tong headed the audit committee which comprised the chairman, Mr Mark Wang and Mr Emmy Wu. The audit committee performed the functions of reviewing the audit plans prepared by the external auditor and its audit report, reviewing the financial statements of the company before submission to the Board, nominating and reappointing the external auditor and examining related parties' transactions.

The audit committee also commissioned and reviewed the findings of internal investigations relating to suspected fraud, irregularity, and non-compliance with laws and regulations which were likely to have substantial impact on the financial position of the company.

DMX placed immense emphasis on its human resources. According to Phung:

*Our future success depends largely upon the continued services of a number of our key management and technical professionals. In our business*

*and our region, personal relationships are critical in obtaining and maintaining client engagements.<sup>8</sup>*

The company did not have any 'key man' insurance policy. Generally, any of its officers or professional staff could terminate his or her employment with the company at any time by providing three months' notice. The loss of the services of these personnel without adequate replacement could have an adverse impact on its business, financial condition and operational results.

DMX also realised that:

*To maintain our competitive position and develop our business, we must train our employees and professionals to ensure that they develop and maintain their technical expertise and business skills to keep pace with continuing changes in IT, evolving industry standards and changing client preferences and the increasingly sophisticated needs of our clients. Our success depends largely on our people. We employ talented IT professionals as our system architects, network designers, software analysts and security consultants. These skilled professionals help us in the design and implementation of our projects in the field.<sup>9</sup>*

Competition for proficient personnel in these disciplines was intense. Phung stressed that the company's continued ability to compete effectively depended on its ability to attract, retain and motivate its employees.

Another challenge for Phung was that:

*Even if we are able to expand our team of highly skilled professionals, the resources required to attract, train, motivate and retain these employees and the compensation that must be paid to them may adversely affect our operating margins.<sup>10</sup>*

To align staff incentives with DMX's corporate goals, staff were rewarded by a share option scheme. The scheme, which formed an integral and important

component of a compensation plan, was designed to reward and retain executive directors and employees whose services were vital to the company's success.

Under DMX's knowledge sharing philosophy, staff were not segregated by geographical location; instead they were deployed anywhere depending on the projects' requirements. Each staff member was empowered to manage the project under the leadership of a project leader. Each month, the project leaders would update the top management on the progress made.

Phung was a strong advocate for staff empowerment and mutual trust in the working environment. He was confident that the professional staff could manage without the close monitoring of the top management. Phung met them in the quarterly seminars. At the end of the day, the ultimate gauge was the customer satisfaction feedback which the company administered on completion of each project.

## CUSTOMERS

DMX Technologies had established an extensive presence with offices located in Hong Kong, Malaysia, Singapore and China, including the cities of Beijing, Shanghai, Guangzhou, Hangzhou, Fuzhou, Xian, and Chengdu. Headquartered in Hong Kong, it will further extend its market coverage in Korea and Thailand.

According to Phung, DMX's competitive advantages were:

- (i) An experienced and proven management team.

The chairman, CEO and key staff had extensive experience and business relationships in the IT industry. Their knowledge and understanding of the networking requirements of the service providers and enterprises in the various countries enabled DMX to successfully penetrate these markets.

- (ii) Strong technical competence and ability to conceptualise and commission unique proprietary solutions.

<sup>8</sup> IPO prospectus, (2002, December 9). p.31

<sup>9</sup> ibid.

<sup>10</sup> ibid.

In areas where off-the-shelf technology did not meet the specific needs and budgets of Asian customers, DMX had the know-how to conceptualise and design products that fulfilled customers' non-standard specifications. By focusing on its R&D capabilities and service quality, DMX aimed to set itself apart from traditional vendors of networking solutions.

The customer portfolio of DMX Technologies covered a diverse group of industries including telecom service providers, internet service providers, cable TV operators, internet data centre operators, banking and finance corporations, and government agencies (See **Exhibit 2**) some of which were immediately recognisable global brand names like Hewlett Packard HK Ltd, Honeywell and PCCW-HKT.

DMX was exposed to the budgeting and expenditure cycle of its customers, particularly enterprises in China which generally began to prepare their annual budget and expenditure plan for the fiscal year only at the start of each calendar year, i.e. in the first quarter of the year. Customers were only able to place their purchase orders from the second quarter onwards. DMX's business was also affected by major Chinese festivals, such as the Chinese New Year holiday, during which many Chinese customers did not accept delivery since they were usually closed for a period of two to three weeks. As a result, more than half of DMX's annual revenue and profit was accounted for in the second half of the year.

## BUSINESS DEVELOPMENT AND SALES

DMX sales and marketing team had 25 people as at 30 June 2002; 8 in Hong Kong, 15 in China and 2 in Malaysia.

Phung was satisfied that:

*The business development and sales team comprised the finest sales professionals and experienced marketers who had proven track records in selling and marketing network solutions in the industry. As such, they had established strong client bases in many of these countries from which they can tap for the purposes of promoting the services of our company.<sup>11</sup>*

The bulk of DMX projects came from overseas, in particular, PRC. These transactions could be complex because of different project specifications, regulatory requirements and the involvement of many counter-parties. Highly experienced and skilled professionals, always in short supply, were critical to the success of the business.

DMX created awareness for its solutions and products amongst interested members of the business community through seminars. These seminars were usually conducted with their technology partners and sought to highlight the benefits of adopting DMX's services. The live demonstration of such services was useful in helping seminar participants observe and assess the merits of DMX's services. These seminars also provided a platform to collect industry news and customers' feedback. In addition to the seminars, DMX also carried out the following marketing activities for the purposes of acquiring new customers and selling networking solutions to existing customers.

## DIRECT MARKETING

DMX's sales team engaged in direct marketing to potential and existing customers. They conducted pre-sale presentations that demonstrated the nature and benefits of DMX's proprietary solutions and products and how such services would enhance their operations and management. In particular, the sales team demonstrated how enterprises could take advantage of DMX's solutions to conduct e-Business. The sales team was also trained to address the business concerns and networking requirements of customers.

## LOCAL PARTNERSHIPS

The sales team aimed to build relationships with local system integrators. This enabled DMX to market its services to local system integrators who were familiar with the local markets but did not have the sufficient technical expertise to provide comprehensive solutions catering to the demands of their customers. In this sense, DMX partnered local system integrators to penetrate local markets.

As part of DMX's marketing strategy, it actively participated in relevant trade shows and exhibitions

11 IPO launch presentation transcript. Retrieved August 10, 2003, from <http://www.dmx.com.hk/english/index.html>

in countries in which it operated. At these trade shows, companies were accorded an opportunity to showcase their products by setting up a booth to demonstrate their products. Such trade shows typically attracted the attention of businesses interested in either promoting their IT products and services or in acquiring such products and services.

## TECHNOLOGY PARTNERS

DMX procured the majority of hardware and software from more than 30 technology partners. These included Lucent for network, Symantec for security and Oracle for software. In particular, DMX identified emerging technology and sought to enter into exclusive agreements with the vendors of such emerging technology. DMX could offer them a platform to further their market share and grow together with them. In this regard, DMX had entered into an agreement with the exclusive distributor of Data Storage (a content and storage technology vendor) in Asia to distribute Data Storage products exclusively in China and Malaysia. In addition, DMX had entered into an agreement with Electronic-Safe Asia Ltd (which offered network security technology) to distribute Electronic-Safe products under an exclusive distributorship in China.

The company obtained, through licensing or otherwise, many of the components of its solutions from third parties. Some customer engagement agreements required DMX to indemnify the customers from any losses that they might suffer as a result of claims that DMX infringed on the proprietary rights of third parties.

According to DMX :

*Although we do not believe that the solutions that we develop for clients infringe on any third-party proprietary rights, we cannot assure that third parties will not assert infringement claims on us or our clients in the future or that these claims will not be successful. We could incur substantial costs and diversion of management resources in defending any claims relating to proprietary rights.<sup>12</sup>*

## COMPETITORS

There were relatively low barriers to entry into the network solutions market, hence the competition in IT integration services was intense in Asia. The players included major IT system and software vendors such as IBM and Hewlett-Packard, IT source providers such as Cap Gemini, EDS and AT&T Solutions, e-Services consulting groups such as Accenture, KPMG and PwC, and system integrators such as Datacraft Asia Ltd, Computer & Technologies, Asialfo Holdings Inc., Computer & Technologies Holdings Ltd, Frontline Technologies Corporation Ltd, Stratech System Limited, Aspnetcentre Ltd and NTI International Ltd.

Some of DMX's competitors and potential competitors had longer operating histories, larger client bases, longer relationships with their clients, greater brand or name recognition and significantly greater financial, technical, marketing and public relations resources than DMX. As a result, these competitors might be in a stronger position to respond quickly to new or emerging technologies and changes in client requirements. Current or future competitors might develop or offer services that were comparable or superior at a lower price. They might also develop and promote their products and services more effectively than DMX did.

## FINANCIAL PERFORMANCE

Profit margins from the three business areas varied:

The network infrastructure development business was basically a one-off business with a probable recurrent maintenance element and after sales support attached. After sales maintenance and support can account for 8 percent to 10 percent of contract value per annum. Future upgrading contracts may also be retained. This segment may be relatively more hardware intensive than the other segments. This segment accounted for 85.2 percent of total revenues in FY 2002 with profit margins of 4.7 percent.

The network business application business unit involved the incorporation of business logic within the IT framework. To a large extent, this segment

<sup>12</sup> IPO prospectus, (2002, November 9), p.33.

relied on its trademark D-net e-business solutions, and this accounted for only 4.4 percent of total revenues in FY 2002 with profit margins of 30.1 percent.

Network implementations usually culminated in securing the network against unauthorised access. The D-secure suite addressed these needs with customisable solutions for network security. Its contributions to FY 2002 revenues amounted to 10.4 percent with profit margins of 19 percent.

The North East Asian regions (i.e. China and Hong Kong) accounted for 88.4 percent of total revenues in FY 2002, of which 77 percent came from the PRC. South East Asian regions accounted for 11.6 percent of total revenues in FY 2002, of which 8 percent came from Malaysia.

The company's inventory turnover was on par with the industry's norm of about 45 days. But, it did appear to be inefficient in collecting payments. DMX admitted that due to the liberalisation process in China markets, the IT industry was becoming more competitive. DMX's FY 2002 performance did not compare well with its peers, especially in terms of profit margins. (See **Exhibits 3A** and **3B**.)

## LOOKING AHEAD

Phung believed that DMX would continue to enjoy a healthy growth in the next few years as the 'second wave of Internet commerce' gained momentum.

Although FY 2001 performance did not compare well with its peers especially in terms of profit margins, the company had made much progress in the first half year of 2002 by raising its profit after tax margin to 14.5 percent. The company would also reap rewards from its marketing drive commenced in FY 2000.

As markets in China and Malaysia yielded best profit margins, the company aimed to further expand its core businesses in these countries as well as other Asia Pacific countries such as Korea and Thailand. China, by FY 2001, was the largest market for DMX and accounted for approximately 77 percent of DMX's sales revenue. For its China expansion, Phung planned to establish a wholly owned foreign enterprise in China, bypassing import/export companies for its debt collections.

According to the management's blue print, a key strategic platform in this phase of DMX's development involved supplementing organic growth with joint ventures and acquisitions of companies in related fields.

The management was also considering channelling more resources into new technologies in high growth segments like metro-ethernet and web-based digital TV services to take advantage of the emerging opportunities.

As part of its strategic plan, the company would strive for the development of its proprietary solutions through research and development.<sup>13</sup>

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13 DMX commenced its R & D activities in 2001 and incurred approximately US\$78,000 in such activities in FY 2001. The solutions developed were D-net iBAS series which allowed an end-user to choose the network service he wished to log on and Account Management and Bandwidth Shaping which allowed a service provider to create multiple profiles for the end-users. The company also developed a D-soft EAI Router which acted as an interface between the various software applications of the enterprise and Internet. The company was developing a set of security products specifically to meet the PRC's security product policy.

**EXHIBIT 1****QUALIFICATIONS OF DMX DIRECTORS****Emmy Wu**  
**Chairman**

Emmy Wu has been serving as our Chairman since June 2002. He is responsible for exercising control over the quality and timeliness of the flow of information between the board of Directors and the management of the Group. Mr Wu began his career at the Mitsubishi-Ryoden Group in 1982 where he was senior sales executive. He left the Mitsubishi-Ryoden Group in 1986 to join Data General, initially as account manager, and later as sales and marketing manager. He was subsequently promoted to regional sales and marketing manager for the PRC and Hong Kong. Mr Wu left Data General in 1991 and joined the Datacraft Asia group in a series of positions, including general manager and managing director for Datacraft China Limited, regional director for North Asia of Datacraft Asia Limited, sales director for Datacraft Asia Limited and adviser to Datacraft Japan Limited. Mr Wu is currently the Vice-Chairman of Technology Venture Holdings Limited and has 20 years' experience in doing business in China.

**Giang Phung**  
**Chief Executive Officer**

Giang Phung is our Chief Executive Officer who is responsible for the management of our Group and its financial well-being. He joined our Group in April 2001 and was appointed as our Director in April 2002. Mr Phung worked for Telstra in Australia as a network specialist in 1987. In 1988 he co-founded QPSX Communications Ltd, a company listed in the Australian Stock Exchange, where he was sales manager, Asia until 1993. From 1993 to 2001 he worked for Datacraft Asia Limited as a business manager for telecommunications, vice-president of Datacraft Asia i-Commerce and e-Business Group, and chief technologist for the Datacraft group. Mr Phung holds a Master of Business Administration degree from the University of Louisville, U.S.A., and a First Class Honors degree in Electrical Engineering from the University of Western Australia, Australia. He was a member of various international governing bodies which specify common standard interfaces to be used worldwide in the telecommunications industry, such as the Asynchronous Transfer Mode Forum of the United States, the World-wide Frame Relay Forum, the International Telecommunication Union on Telecommunications Study Group XVIII, and the Institute of Electrical and Electronic Engineering 802.6 standard committee for Metropolitan Area Network.

**Jismyl Teo Chor Khin**  
**Chief Financial Officer**

Jismyl Teo is our Chief Financial Officer, who is responsible for all aspects of financial planning, financial budgeting and control, logistics, human resources, administration and corporate secretarial matters for the Group. She joined our Group in January 2001 and was appointed as our Director in December 2001. Ms Teo worked for Ernst & Whinney as an assistant accountant from January 1984 to June 1985. She joined the Datacraft Asia Group in June 1985 as an accountant, and was promoted to finance and administration manager where she stayed until October 1990. In November 1990, she joined Chin, Lim & Co Pty Ltd as an accountant and left in June 1991 to work for Frigstag Offshore Pte Ltd, Singapore as an accounts and administration manager from January 1992 to November 1992. Ms Teo rejoined the Datacraft Asia group in November 1992 as finance and administration manager and continued to work for them in a series of positions, including regional finance manager, joint company secretary and regional director of operations. She left the Datacraft Asia group in January 2001 to join the TVH group and was assigned the Chief Financial Officer of our Group. Ms Teo is a member of the Institute of Certified Public Accountants of Singapore.

**Jim Cheung Chung Wah**  
**Non-Executive Director**

Jim Cheung Chung Wah has been non-executive Director of DMX since 15 October 2002. Mr Cheung is also an executive director of Global Gartech Services Co. (China) Ltd, a technology provider in the textile and garment industry of China. Mr Cheung has more than 20 years of sales and management experience in Hong Kong and China.

**EXHIBIT 1  
(CONTINUED)**

**QUALIFICATIONS OF DMX DIRECTORS**

**Foo Meng Tong  
Independent Director**

Foo Meng Tong was appointed as an Independent Director of DMX on 12 November 2002. Mr Foo worked in the Economic Development Board (EDB) for a total of 26 years until April 1993. His last appointment at the EDB was the director of its Industry Development Division and the general manager of EDB Investments Pte Ltd. He was also the administrator of the Skills Development Fund from 1980 to 1986. He has served overseas as the regional director of EDB offices in Europe (based in Paris) and in North America (based in New York). Mr Foo was Singapore Ambassador to France with concurrent accreditations to Spain, Portugal and Switzerland between 1994 and 1997.

**Mark Wang Yat-Yee  
Independent Director**

Mark Wang was appointed as an Independent Director of the company on 12 November 2002. Mr Wang is the senior vice president and general manager for the Asia Pacific region for Sybase Corporation where he has served since 2000. Mr Wang graduated with a degree in Applied Mathematics from the Massachusetts Institute of Technology in 1972. Between 1974 and 1977, Mr Wang worked as a technical manager for the Illinois Department of Transportation. He subsequently joined Xerox Corporation as their finance manager from 1977 to 1984. From 1988 to 1992, Mr Wang served as managing director for Central and Southeast Asia of Oracle Corporation. Mr Wang subsequently worked at Digital Equipment Corporation from 1994 to 1995 as the vice president, systems business unit, for the Asia Pacific region. From 1995 to 1998, he was senior vice president and general manager for the Asia Pacific region of Seer Technologies Corporation.

Source: Summarised from the company web-site, retrieved September 12, 2003, from <http://www.listedcompany.com/ir/dmx/web/show.cgi?head=1&content=directors#1>

**EXHIBIT 2**  
**CUSTOMER PORTFOLIO OF DMX**

<b>Telecom</b>	<b>Banking &amp; Finance</b>
China Telecom Zheijiang	China Merchant Bank
China Telecom Fujian	Wing Heng Bank
China Telecom Shunde	The Prudential Assurance Company Ltd.
China Telecom Anhui	Eagle Star Insurance Group
China Telecom Hubei	United Asia Finance
China Telecom Jiangxi	
China Telecom Hunan	
China Telecom Guangdong	
<b>Government</b>	<b>Internet Service</b>
HongKong Census & Statistics Department	iTelco Communications
HongKong Police	Shanghai WebTV
Hospital Authority Group	Digitel Group
HK ITSD	
<b>Data Centers</b>	<b>Education</b>
Diyixian	Guangdong Huanan Education Institute
Hutchison Global Crossing	The Hong Kong Polytechnic University
Sky Datamann	Vocational Training Council
<b>Utilities</b>	<b>Others</b>
China Light & Power Co. Ltd	British American Tobacco
The HongKong Electric Co. Ltd	Honeywell
Kowloon-Canton Railway Corporation	Hewlett Packard HK
	Automated System Limited

Source: Company web-site, retrieved October 1, 2004, from  
<http://www.dmx.com.hk/ENG/customers.html>

**EXHIBIT 3A**

**COMPANY PROFIT AND LOSS STATEMENT FY 2000/2001  
(TRANSLATED INTO SINGAPORE DOLLARS)**

<b>S\$'000</b>	<b>FY2000</b>	<b>FY2001</b>
Revenue	4,848	28,337
Cost of sales	(3,916)	(20,490)
Gross profit	932	7,847
Other operating income	59	323
Distribution expenses	(657)	(2,272)
Administrative expenses	(360)	(3,269)
Other operating expenses	(1,146)	(508)
Profit/(Loss) from operations	(1,172)	2,121
Finance cost	-	(50)
Profit/(Loss) before tax	(1,172)	2,071
Income tax benefit/(expense)	80	(451)
Profit/(Loss) attributable to shareholders	(1,092)	1,620
EPS (Singapore cents)	(0.55)	0.81

**PRO-FORMA BALANCE SHEET**

	<b>As at 31 December 2001 (Audited) \$'000</b>	<b>As at 30 June 2002 (Unaudited) \$'000</b>
Non current assets		
Property, plant and equipment	1,175	924
Other receivables	1,140	481
	2,315	1,405
Current assets		
Inventories	2,775	424
Trade receivables	14,893	13,869
Other receivables and prepayments	12,001	3,814
Cash and cash equivalents	4,740	10,451
	34,409	28,588
Current liabilities		
Trade payables	11,350	3,630
Other payables	958	1,091
Income tax payable	295	854
Bank borrowings	2,841	1,152
	15,444	6,727
Net current assets	18,965	21,831
	21,280	23,236
Perfoma Shareholders' equity	21,280	23,236

Source: IPO prospectus, (2002, December 9). p.40

**EXHIBIT 3B**  
**FINANCIAL INDICATORS**

Indicators	FY99	FY00	FY01	1H02	FY02F+
Turnover (S\$'000)	1,085	4,848	28,337	24,281	45,521
Profit Before Tax	3	(1,172)	2,071	3,522	5,963
Net Profit	-	(1,092)	1,620	2,936	4,970
Net Profit Margin (%)	-	(22.5)	5.7	12.1	10.9
EPS * (cents)	-	(0.43)	0.64	2.3~	1.95
ROA (%)	-	(42)	4.4	19.6~	16.6
ROE (%)	-	-	7.6	25.2~	21.4

(Financial Year End – 31 December)

\* Using estimated post-invitation share capital of 255 million shares

+ Adjusted for service agreement with Giang Phung and Jismyl Teo

~ Annualised

Source: Phillip Security Research. IPO Research (2002, December 13).

**PEER COMPARISON**

Indicators	<i>DMX Technologies</i>	Frontline	North 22	Asiainfo	Comp &Tech
FY Ending	Dec	Dec	Mar	Dec	Dec
Closing (11/12/02)	S\$0.21	S\$0.11	US\$0.06	US\$5.55	HK\$1.37
Market Cap.	S\$53.55M	S\$86.27M	US\$43M	US\$245M	HK\$374M
PER (x)*	33	7.86	10	26.42	-
P/NTA (x)	1.78	1.01	1.47	1.15	1.07
OPM (%)	7.5	6.94	4.03	5.48	-14.4
PBT Margin (%)	7.3	8.21	4.09	8.24	-12.2
Asset Turnover (x)	0.77	1.16	2.22	0.74	1.14
ROE (%)	7.6	13.75	15.39	6.64	-17.2
Current Ratio (x)	2.2	1.85	2.32	3.92	6
Debt/Equity (x)	0.13	0.105	0.3	0.0003	0.0021

\*EPS are calculated on a trailing basis from their most recently announced results.

Source: Bloomberg, Phillip Security Research (2002, December 13).