TECHPAL

Prepared by Ngo Quy Nham

Senior Lecturer of Management

Foreign Trade University, Vietnam

Email: nhamnq@ftu.edu.vn

Mobile: (84)9040063835

After reading the report for trial production of the company's breakthrough electronic devices – electronic mouse trap and the sales report of the gas leak detectors, Techpal CEO – Mr. Vu Ngoc Dinh was thinking about the company's development perspective in the coming years.

Gas leak detectors via telecommunication have marked its footprint in Vietnam market with the sales of approximately 10,000 units; especially, a recently-signed contract for exporting 10,000 units to Europe. The trial of the automatic electronic mouse trap has proven effective; furthermore, a positive market research foresees a promising market for this product in Vietnam.

TECHPAL'S HISTORY

Techpal Company was established in early 2010 by Mr. Vu Ngoc Dinh, who was a fresh graduate from the University of Transports and Communication and his friends. The distinguished feature of this team was that they were all players participating in Robocon Vietnam Competition 2006. Robocon Vietnam Competition was a prestigious national competition among technical universities in Vietnam sponsored by Toyota. Competing teams must be able to synchronize technologies from different areas such as: embedded software, mechanics, automation and especially electronics to design robots competent to act upon requests. Though Mr. Dinh, together with his team, was not successful in the competition, that period helped him to gain valuable knowledge, ignite passion, and skills in designing, manufacturing electronic circuits, monitoring, automatic systems, etc. After graduation, Dinh and his teammates formed a research team and joined design projects for several companies.

In 2008, they started up with a small electronic device store which focused in developing electronic devices and selling electronic accessories to some research institutions and companies in demand. The positive performance has motivated Dinh and three friends to set up Techpal with initial capital of VND 800mil (or USD 45,000 respectively) and Dinh was the main shareholder and the CEO of the company. The goal of the founders was to develop civil

electronic products for Vietnam market, as well as expand to foreign countries. After establishment, Techpal's revenue increased rapidly from USD 100,000 in 2010 to USD 250,000 and approximately USD 500,000 in 2012 – a year of multiple difficulties for Vietnam's economy.

Techpal's main businesses are comprised of three areas:

(1) importing and supplying electronic spare parts for research institutes and domestic electronics assembly enterprises;

(2) producing and selling technological products such as LED boards, gas leak alarms;

(3) provide customers with research and development services.

Of all the revenue, 60% come from the supply of electronic spare parts to research institutes, manufacturing companies, 25% are from other electronic devices such as LED boards, gas leak detectors, and the remaining is contributed by the research and development services for customers.

VIETNAM'S ELECTRONICS INDUSTRY AND SPECIFIC ELECTRONICS DEVICES SEGMENT S

Electronics is the second top industry achieving highest export turnover in Vietnam. The export turnover of mobile phones and phone accessories achieved USD 12.7 billion, increased 101.6%; electronics, computers and spare parts reached USD 7.9 billion. Vietnamese electronics has been exported to 50 countries, but the added value is low as most of the materials are imported and assembled. The industry's manufacturing capacity greatly depends on foreign direct investment (FDI) enterprises with: over 30% of number of companies, nearly 90% of capital, 90% of export turnover and around 80% of domestic market share. Some popular products including office computers, telecommunication and other electronic devices are mainly manufactured by FDI enterprises.

As estimated by Vietnam Electronics Association, of approximately 10,000 electronics enterprises in Vietnam, the number of manufacturing companies is around 600. Most of local electronic businesses are small and medium enterprises with the scope of several million USD per company. Thus, domestic electronic companies have outdated technology, mainly focus on assembling simple products (Eg: Television, disc readers, electronic rice cooks, refrigerators, air-conditioners etc.) and providing warranty, repairing services. Meanwhile, many imported full-box electronic products have lower price than domestically assembled ones do. Besides, Vietnamese enterprises primarily developed products for domestic assumption, which leads to small scale, low revenue and lack of investment for new technology. It could be said that local

electronics enterprises were in a difficult position to compete with foreign brands in all market segments.

The production of electronics components and spare parts has not yet been developed to meet the demands of domestic assembly. Indeed, the local electronics companies imported more than 90% of electronics components used. By specializing in simple assembly, the added value of Vietnamese human resource in electronic devices account for 5 – 10%.

LED Devices Segments

In contrast with Vietnam's electronics industry in general, the market for LED devices such as LED displays, LED lamp system was dominated by local companies. Among the reasons is that LED-applied products cannot be manufactured in mass, but need to be customized to customers' purposes and demands. This segment has witnessed strong growth in the last five years thanks to the booming of advertisement via billboards of fast-moving-consumer-goods enterprises, restaurants, hotels, shops, urban centers, etc. Accordingly, it draws great attentions of many small and medium enterprises. Seemingly, every street in Hanoi and Ho Chi Minh City appear several companies or stores providing LED board, light design and installation services. Therefore, there exists pricing competition in products with low sophistication and differentiation. However, for products requiring higher complexity, embedded software as a monitoring system, the competition was less intensive because fewer enterprises could meet the requirements.

Companies operating in this sector must also import nearly all the components for installation. The main sources for importing accessories are from China and regional countries. Several companies emphasizing on quality like Techpal often imported from developed nations such as America, Japan, etc.

Household Gas Alarm Segment

In recent years, household gas alarms/detectors have appeared and attracted home consumers' interest in Vietnam consumer electronics market. There has been an intensive competition between domestic and foreign electronics manufacturers.

Lifepro Vietnam is one of the first Vietnam electronics manufacturers specializing in producing gas detector. Lifepro gas alarm named L168 GA series is one of the best devices made in Vietnam. Gia Bao is another established company operating in the field of supply and installation of security equipment and electronics products. With Lifesafety brand name, Gia Bao security

and electronics equipment has become very preferred and been widely known to consumers. There are many popular gas alarm series in Vietnam market; however, through market research, most customers choose Gia Bao gas alarm branded GB-269 because of good quality, reasonable price and long-term warranty.

Besides Vietnamese brands, the market also witnesses the competition of well-known brands imported from China, Taiwan, Japan, Korea, etc. Korean and Japanese devices are high quality; however, their prices are high as well. Therefore, Chinese and Taiwanese products with more competitive prices are more preferable to most of Vietnamese consumers. Among imported gas alarm products, Gas Guardsman brand name is the most preferable. Guardsman gas detecting products have eight series, namely GS 202, GS 712, GS 101L, GS 713, GS 269, GS 8290, LX-GS and SG-2008C. GS 202 and GS 713 series are the most preferable thanks to their good quality and suitable price. All products are usual functions and they cannot connect with mobile phone or phone line.

THE DEVELOPMENT STRATEGY

Since the very first day of operation, Techpal has oriented its strategy to develop applied electronic products which are useful and suitable to Vietnam market. Mr. Dinh – Techpal CEO shared that the main objective of the Company in the current period is not profit, but the existence and development of the enterprise. The focusing point Techpal's policy is to introduce Vietnamese products to the market with reasonable quality and competitive price.

In early period, Techpal concentrated on consulting and providing civil electronic and automated components used in industry. Company's target customers are technology, telecommunication enterprises, electronics technology research institutes, and electronics laboratories in universities. Techpal's frequent and major customer is Viettel and its member units. Unlike its competitors whose business is based on made-in-China products, Techpal focuses on importing components from companies originating from developed countries such as Texas Instrument, Royal Tek, MicroChip, Simcom, etc. in order to ensure the quality and prestige in their business. Currently, this business accounts for 60% of the Company's total revenue. The contribution may decrease but still remain a high proportion (around 50%) in the following years.

Techpal also provides technical consulting services aiming at upgrading manufacturing machines and equipment (focusing on electronic components) to textile and footwear companies. Textile and footwear are currently two important industries of Vietnam with export turnover up to USD 17 billion and over USD 7 billion respectively in 2012. Techpal's targeted customers are

companies having old machinery systems need to be upgraded; the company will provide alternative solutions. This customer segment accounts for major proportion in textile and footwear industries.

The main business attracted major investment of the company is the development, design, and manufacturing of electronic and automation technology based products. Instead of targeting traditional electronic devices, Techpal pays attention to research and introduce products with innovation serving households and enterprises. Techpal has successfully developed its first product kit which is the LED software-embedded monitoring system used to install indoor and outdoor billboards for enterprises. These products require customized designs based on customers' demands due to differences in application and scope. The device is competitive in price and quality compared with other products in the market. In January 2012, Techpal continued to design, manufacture and introduce to the market the gas leak detecting system via telecommunication. At the end of 2012, automatic mouse trap was successfully built and planned to market in 2013. The two latter products target customers who are urban home users.

LED board design and execution

LED board is the first product to be designed and installed by Techpal for customers. Its outstanding feature is the "customization" for each customer under the form of information board, billboards or indoor and outdoor lighting systems with varied sizes and technologies. Thus, Techpal has to execute designs, programming of monitoring softwares, manufacturing and installing of LED electronic boards following customers' specific needs. The product range is diversified including still LED boards, LED Matrix boards, LED Full color monitors, LED Neon Sign and LED Lighting systems, etc. Electronic LED boards, especially LED full color monitors, are used as hi-end electronic information monitors, billboards for financial companies, banks, securities enterprises, hotels, stations, airports, etc. As the device asks for customization based on customers' demand, Techpal has to maintain experienced, skillful, and especially creative technicians. Accordingly, the Company's products are variable, rapidly installed and equal in quality. The price is relatively competitive, 10 – 15% lower than that of competitors thanks to its self-design and direct import from abroad.

Gas Leak Alarms via Cellular/phone Network (GSM)

Techpal's gas leak alarm via cellular/phone network was first introduced in January 2012, and was considered as a breakthrough in Vietnam market. TP-Gas Alarm version 1 includes two series: Home Gas Alarm (TP-Gas Alarm v1.0A) – warning via landline for households with lower cost and Mobile Gas Alarm (TP-Gas Alarm v1.0B) – warning via mobile phones. These

devices allow gas leak alarm upon the leaking of gas to the environment applicable in households and big enterprises working in gas related business. When reaching warning level (concentration of 300 PPM – 300 gas articles/ 1million air articles), the device will automatically warn by alarm, flash, and especially make a phone call to 2 registered telephone numbers of users for fire alarming. This outstanding feature differentiates the product with other imported or similar devices in Vietnam market. The LED monitor attached outside allows users to control the increase and decrease of the gasoline concentration in case of change (Eg: when turn on gas stove). Thanks to the integrated technology, TP-Gas Alarm V1 will automatically stop warning when the gas concentration in the environment falls below alarming level.

Mr. Vu Ngoc Dinh – CEO of Techpal commented about the product:

> *"With 100% domestic research and integrating the components of the world's leading technology companies, alerting technology solutions based on telecommunications and mobile infrastructure (GSM) is a breakthrough in gas leak alarming technology. The equipment is suitable, matches greatly with demands for utility, price and an integrated service to ensure the maximum safety for domestic customers"*

According to many customers and experts in fire prevention, Techpal's products have many preeminent advantages including competitive prices, diversified warning applications, great adaptation to Vietnam's weather conditions. The open technology is expected to provide customers with more utilities in the near future.

Automatic mouse trap

Mouse is among the most popular and bothering animals to Vietnamese families in many cities. In Vietnam, there are three main ways to trap and kill mice: (1) mechanical traps based on traditional experience; (2) adhesive coverings (mainly for small mice); (3) poisoning (mouse toxic). However, the above measures are not effective. Recognizing the practical demands, Techpal has invested in developing mouse traps using electronic sensor technology. When a

mouse enters the trapping area, electronic eyes will sense and activate the doors to close, capture the mouse inside and automatically kill it. The trap is easy to use, safe to human beings and can be reused for many times. Basing on manufacturing, distributing expenses and target profit, the market price is estimated around 15USD, which is reasonable according to a company-led survey among households having mouse related problems.

MARKETING AND SALES

Techpal's products were not sold directly but via distributors, electronics supermarkets and regional agents. Techpal has also reached an agreement with Pico (www.pico.vn) – one of the biggest electronic supermarket networks in Vietnam – to distribute its technological products. That PICO is among the most prestigious electronic supermarket brands in Vietnam also helps to enhance customers' trust in and acceptance to Techpal's products. Also, the company incorporated with distributing agencies to offer direct delivery upon requests from customers. Sales and marketing department plays the critical role in organizing and coordinating distribution network of technological products, directly approaching corporate customers to sell services including design and installation of LED boards, R&D plus selling electronic spare parts by projects.

Techpal has also developed its website for online sales (www.techpal.vn). Currently, the system only covers electronics componets/spare parts in order to avoid conflict of interest with intermediate distributors of technological products. The company also utilizes this channel to market and improve customers' awareness and understanding about its products and services. Except for online store, the introduction of Techpal's products and services are careless, weakly logical and unattractive.

It can be said that Techpal has effectively executed public relation channels including workshops, press releases, national competitions, Creativity Day Programs. For example, when the GSM-based-gas leak warning device was first introduced in January 2012, many popular electronic presses in Vietnam post news evaluating the device as an innovative and breakthrough product. Techpal participated and made it to the final round of the prize "Vietnam Talent 2012" held by Vietnam Television Station and Dantri News; won the prize of the contest "Creativity Day" held by World Bank. These programs drew huge attention from communication network and Vietnamese public.

PRODUCTION

Techpal owns a manufacturing workshop managed by several engineers and 20 skilled workers. Its main operation is to produce and install LED boards, LED lighting system for customers. Engineer team is in charge of research, design and monitoring the installation of electronic board system on the spot. Worker team takes responsibility for installing by design under the management of engineers.

Techpal did not make but outsource the manufacturing its technological products to its traditional partner specializing in assembling electronic devices – Thanh Long Company. Thang Long has over 300 workers, manufactures for its own business and offers processing for other enterprises. This company has about USD 2 million of annual revenue. Techpal focuses on market research, designing new products and manufacturing in partner's workshop.

When explaining the reasons for outsourcing of processing other than in-house manufacturing, Dinh told that the outsourcing would allow Techpal to be more flexible. Thanks to outsourcing, Techpal has avoided the pressure of maintaining a large number of workers while the production is still minor and unstable. On the other hand, a manufacturing factory requires huge investment; meanwhile, the Company's financial capital is limited. However, he also acknowledged that the monitoring and maintenance of product quality remains a significant challenge to the company. Furthermore, Techpal takes the risk of processing outsourcing as the typical legal environment, and Vietnam's business culture has not ensured the confidentiality of technology and business privacy. Thus, the Company may consider setting up manufacturing factory in the future.

ORGANIZATION AND HUMAN RESOURCES

Techpal has 40 staffs in which electronics engineers and workers hold the majority, and are allocated to four functional departments: Technology, sales, research and development (R&D), and finance. All managers and engineers are young and born in 198x generation.

The company currently has 14 engineers, mainly work in Technology department and R&D department. Engineer team in R&D department plays the key role in designing technology solutions, monitoring software and LED board technology, researching and developing new technological products, executing trial production. This team is also in charge of coordinating and monitoring the processing outsourcing of its products. From the viewpoint of R&D Manager, the functional concentration will enable engineers to understand technique and technology in different areas – especially in integrating the embedded software, automation, electronics which were developed from robot design technology. The engineer team in Technology department are responsible for organizing, coordinating the installation of LED boards, lighting systems for

customers. These technicians also care about the warranty of installation projects for customers and Techpal products.

The sales activities were managed by Sales Departments with the support from Board of Management. This department is divided into three groups specialized in three different businesses. The first team is responsible for the sales and bidding of projects supplying LED boards and electronic components for organizations. The second team is in charge of developing and coordinating the distribution network of technological products through intermediate partners. The last group holds the business of retailing electronic components, spare parts in Techpal. Three groups provide mutual support for each other. Human resources in Sales department mostly have background in electronic technology and have obtained sales experience through business

Techpal's engineer team members primarily graduated from Hanoi University of Technology and the University of Transports and Communication – two top technical universities regarding high quality technology students in Vietnam. In the past, Techpal recruited mainly through its internship and participants of Robocon Vietnam Competition over years. Techpal's managers believe that Robocon participants have shown their creativity, passion for research; thus, they are appropriate with Techpal's development strategy. After recruitment, these staffs often go through further trainings in research and installation projects. Financial limitations lead to difficulty in offering new staffs, current members as well as managing team the opportunities to join advanced technology training programs and sales skill development programs.

These poses another challenge when the company starts paying more effort to sell technological products, the middle managing team in sales department, R&D department and technology department get overload. For Technology and R&D departments, they have to manage products based on similar technological backgrounds but with different technologies and equipment. For Sales department, the business include diversified products, services to different target customers while the sales team is limited in terms of number, and sales experience. The setup and monitoring of distribution channels for technological products or branding of a product are new definitions to Techpal sales personnel.

THE FUTURE OF TECHPAL

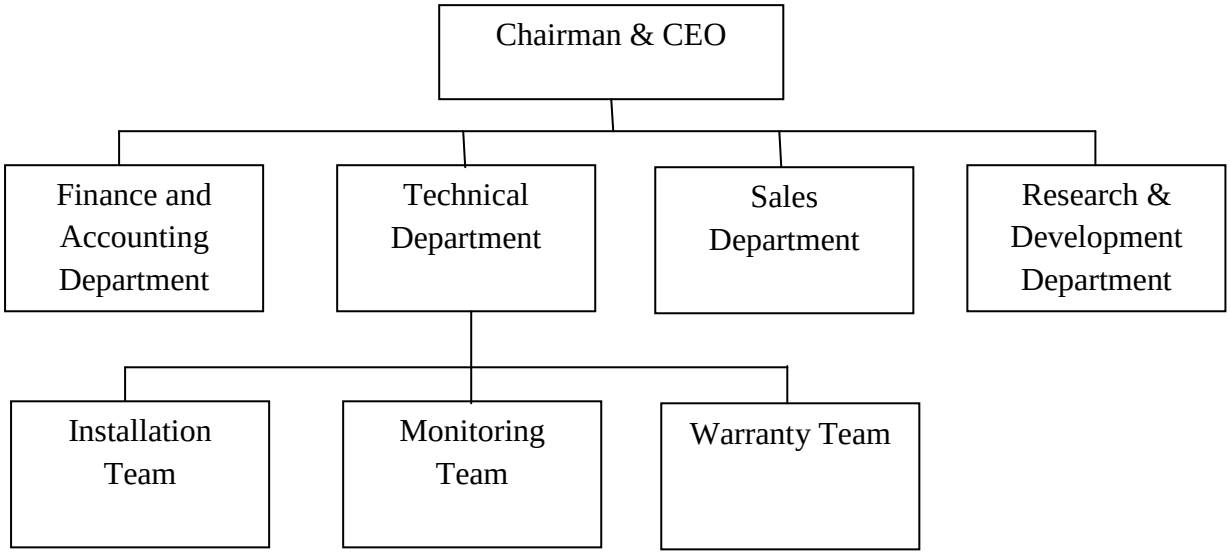
Mr. Vu Ngoc Dinh has drafted series of questions to be discussed in the coming shareholder meeting. The question is whether the company should stop the sales of electronic components/accessories to focus on manufacturing and selling electronic devices with special

applications. The concentration on designing, manufacturing and selling household electronic appliances also poses another issue to the board of management to decide between investment in production facilities to produce and continuance of outsourcing partners to implement the processing while the Company focuses on designing and distributing products. Of no less importance is how the company will be reorganized in order to manage more efficiently while maintain the expected growth from shareholders?

APPENDIX 1:

TECHPAL BUSINESS RESULTS IN THE PERIOD 2010 - 2012

	2010	2011	2012
Total revenue	100,000	250,000	500,000
Cost of Sales	ERROR!	ERROR!	ERROR!
Gross Profit			
Operating Costs			
Sales and Marketing	ERROR!	ERROR!	ERROR!
R&D	ERROR!	ERROR!	ERROR!
Overhead Cost	ERROR!	ERROR!	ERROR!
Total operating costs			
EBIT			
Interest	ERROR!	ERROR!	ERROR!
Pre-tax Income			
Income tax	ERROR!	ERROR!	ERROR!
Net Income	ERROR!	ERROR!	ERROR!

APPENDIX 2:

TECHPAL'S ORGANIZATION STRUCTURE 2012