YCH
THE TECHIE “YOUNG CHINESE HUNK”

BY: CLIVE CHOO
Introduction

“We have to develop new strengths to differentiate ourselves from other logistics hubs, and take bold steps to cope with the reality of a tight labour market. But most fundamentally, technology is transforming supply chains. Advances in sensors, and robotics, and cloud computing and big data, will allow logistics companies to overcome many of our current constraints and grow.”

Mr Tharman Shanmugaratnam, Deputy Prime Minister and Coordinating Minister for Economic and Social Policies, speaking at YCH’s 60th anniversary dinner (MediaCorp News, 2015).

In the YCH Group’s 60th anniversary dinner, YCH’s Executive Chairman, Dr Robert Yap (Robert) told the 500-odd guests that his vision for the organisation is to be a number one supply chain partner and to create a “logistics superhighway”. As suggested by Mr Tharman above, it would be imperative for logistics companies to overcome current industry’s constraints which include a tight labour market in Singapore. It appears that Robert’s vision if achieved will not only tackle the manpower issue but also be able to differentiate YCH from their competitors. On the back of this aspiration to create the “logistics superhighway”, YCH announced that its new corporate headquarters, labelled as the “Supply Chain City”, would be completed in Jurong West by 2016. While YCH is preparing itself to realise “The Logistics Superhighway” - through integrating the physical, information & financial flows in the Supply Chain,” there are some valid concerns. First, how much other competitors and stakeholders will be willing to collaborate and contribute to the formation of an integrated system within the “logistics superhighway” model? Second, is YCH bearing too much risk in view of the large internal resources and long-term commitment needed to engage in such large investments which include the setting up of the ‘Supply Chain City’ and a training school? Third and going forward, will the volatility in the price of oil hamper the use of technologies for the emerging economies in the Asia-Pacific? That is, YCH’s customers located in these countries may not adapt to new technologies. As such, Robert needs to consider the volatile external environment and the risk of over committing resources in building the “logistics superhighway”. In the final analysis, is it possible for Robert to achieve his vision and in doing so, redefine this age-old industry?

A brief YCH history

YCH was started in 1955 by Dr Robert Yap’s father, Mr Yap Chwee Hock. YCH has evolved over the past 60 years to become a leading technology-based supply chain management company with a turnover of over S$250 million. Appendix A shows the key milestones of YCH over the years. YCH has established its presence in 50 cities across 12 countries throughout the Asia-Pacific, providing logistics solutions to renowned MNCs such as Dell, Motorola, LVMH, Samsung, Unilever and ExxonMobil. YCH’s awards and accolades underscore their capabilities in applying technologies and knowledge-based solutions to a diverse range of industries. Appendix B shows lists of accolades that YCH has won so far.

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1 YCH is the acronym for Yap Chwee Hock.
These awards have affirmed YCH’s reputation in exploiting information technology (IT), electronic data interchange (EDI), application programming interface (API) and web services in creating values for themselves as well as for stakeholders in the entire supply chain industry.

Business and technology are inextricably interdependent today, even more so in the foreseeable future. Technology is becoming increasingly important as a strategic driver for any type of business or organisation, giving them the ability to adapt, innovate and gain a competitive advantage. Technology can create value in an organisation and ultimately drive business success. Companies such as YCH serve as real-world case studies of how technology is built into the backbone of the organisation, and their High Performance Supply Chain Nerve Centre using innovative technologies such as RFID is a prime example of that.

Practice Professor Steven Miller, Singapore Management University
(YCH New Release, 2015)

In developing the Asian markets, YCHees are highly capable of understanding the market, customers’ infrastructures and the idiosyncrasies of the host countries. Local governments are highly impressed with YCH’s work ethics, enterprising talent and contributions to the industry.

The entire group of companies boasts a 4,000 headcount globally that shares a strong entrepreneurial and innovativeness culture. One of YCH’s capabilities is in its applications of RFID (Radio Frequency Identification) technology for different logistic requirements. The culture of excellence in quality is also evident. The above competencies support the organisation’s mission which is “to provide supply chain solutions utilising innovative technologies.”

The Logistics Superhighway

Our mission is to build the logistics superhighway. From the very beginning, we realised that logistics is made up of three critical flows. The first is the physical flow of goods, such as the movement of cargo from one point to another. The second is the information flow, such as the inventory numbers and related data tagged to the goods. Finally, there is the financial flow. We do not actually transact the financial flows, but we trigger them when we deal with our customers and their hundreds of suppliers. The true integration of the three flows will bring us beyond logistics, beyond supply chain management. This is realising our vision of a true logistics superhighway.

Dr Robert Yap, Chairman of YCH

Essentially, the vision encompasses the view that the company’s day-to-day operation should be concentrated on integration of the three pillars – physical, information and financial flow. Physical flow refers to the basic logistical point-to-point movement of actual goods. Information flow includes all the information exchanged between YCH clients and operational partners. Thus, shipment dates, delivery requests and inventory details are examples of vital information flows within the business processes. Finally, the financial flow is the last but vital key in YCH’s ability to unlock its “logistics superhighway”. The concept behind the financial flow is YCH’s patented Zero Inventory Model (ZIM). In addition to ZIM, financial hedging and securitising of inventories and assets are also major parts of the financial flow. Through implementing this financial flow, YCH is

2 Each employee was addressed as “YCHee” to reflect the close bond among colleagues.
acting almost as a bank because it takes over the trade financing and receivables financing of suppliers.

The “logistics superhighway” project can be challenging to accomplish for one important factor. That is, it is not simply an internal project that is within the power of the organisation to realise. The “logistics superhighway” model requires the participation of industry-wide logistics companies. It entails integration of competitors’ activities relating to the three pillars. It will be a project that requires a shift in paradigm on how industry players compete or rather how they will need to collaborate-and-compete to achieve mutual goals for all.

Capabilities Development and YCH Strategy
In congruent with its corporate mission, YCH has begun to expand into areas outside the major cities of China and India. These are second-tier and third-tier regions deemed to provide vast manufacturing and logistics opportunities following the increasing influence of these two large Asian economies. At the heart of YCH’s expansion strategy is the use of Information Technology (IT) in process optimisation and innovative solutions. To leverage technologies, YCH’s clients must also be technologically compatible so that supply chain activities can be streamlined. However with the downward trending of the oil prices recently, economics (business activities) as a whole had slowed down. An example of what YCH’s clients have to do to match up with YCH’s technologies (such as in RFID application) is the adaptation of computer systems, real-time tracking software, RFID readers and transmitters. Technology-based solutions are deemed unjustifiable due to high fixed and implementation costs that are not driven down in tandem with oil prices. That is, even though YCH may have the capabilities to leverage technologies, clients and industry partners may not be ready to adapt similar technologies when their lower business profit will mean it will take a much longer time to recover the cost of adopting the technologies.

Nevertheless, Robert believes in building capabilities that tap on technology when providing solutions to clients. He has created three areas of capabilities as part of his firm’s strategy. These are namely, talent and human capital, networks and infrastructure, and innovation. These three pillars of strength are instrumental in cultivating YCH’s IT-enabled innovation culture over the years. As a result, YCH can become more competitive in this industry even as the entry barrier is rather low.

As for competition, YCH competes at the last stage of customers’ RFQs³ with large companies such as Schenker and DHL. Direct competition is not as apparent due to YCH’s high degree of customisation covering a comprehensive array of services. These services include an integrated end-to-end supply chain management (SCM) using its unique 7PL™ (i.e., 3PL⁴ + 4PL™) strategy.⁵ Still, it

³ RFQ, a term commonly used in the industry, refers to “request for quotation.” In this context, RFQs are bidding invitations sent from potential customers to YCH.
⁴ 3PL refers to 3rd party logistics, which encompasses warehousing, transportation, and freight management.
⁵ 4PL and 7PL are the trademarks of Accenture and YCH respectively. Accenture describes 4PL as “an integrator that assembles the resources, capabilities, and technology of its own organisation and other organisations to design, build and run comprehensive supply chain solutions.” See Appendix C on 7PL. and IT-enabled core solution.
appears to be a daunting task to exploit technologies to be an industry leader within this competitive and volatile environment.

Numerous smaller logistic companies prefer to work independently rather to collaborate for synergistic benefits. As a result, each logistics company focuses on serving their respective clients to the best of their abilities without seriously considering how to collaborate with other industry players (or even competitors) on a win-win basis. For example, each shopping centre or office building employs different logistic companies (and trucks) to operate in their premises. That is, each store manages its own supply chain independently through their respective logistic partner. As part of the process to build the “logistics superhighway”, YCH should potentially consolidate all these supply chain activities of each store by collaborating with store owners’ logistic firms. By doing so, the number of trucks cluttering in the business districts and tourist precincts will be reduced. Mr Tharman Shanmugaratnam, Deputy Prime Minister and Coordinating Minister for Economic and Social Policies spoke at the YCH’s 60th anniversary on October 22nd, 2015:

*Every day in Singapore, there are an estimated 4,000 trucks performing more than 20,000 delivery trips and taking up an estimated 25 per cent of road space along Orchard Road. Many different trucks are delivering small amounts of cargo and small amounts of goods to the same location. It not only means more manpower than necessary, it also means bottlenecks along the roads outside the malls.*

In line with the above, YCH has developed what is called the “last-mile” partnership strategy. In the latter, YCH will partner with smaller logistic SMEs to optimise their distribution routes. In doing so and to the surprise of many, YCH has unselfishly imparted good SCM practices to help these smaller companies to become more capable in this industry.

YCH’s last mile partnership strategy will be useful in integrating the numerous logistic companies for this purpose. If well implemented, the traffic congestion problems can be solved while increasing the efficiency of delivery to shops in the crowded shopping belt in the heart of Singapore. Mr Steven Goh, Executive Director of the Orchard Road Business Association added:

*This will definitely help to reduce congestion, at the same time reduce the carbon footprint, and improve productivity of the logistics industry.*

*(Channel News Asia, 2015)*

**Enablers of YCH’s Core Competencies**

An important impetus to YCH’s outstanding growth over the years is Robert’s approach in exploiting technologies, embracing innovation and managing talent. Rather than innovating randomly, innovation in YCH is strategic in nature. Robert believes that to grow the firm, innovative solutions such as the use of the advanced IT systems and the application of the RFID technology are crucial. He said:

*I nnovation gives a more sustainable and strategic approach in enhancing a company’s value propositions and deliverables over the long term.*
Innovative Solutions
Information technology (IT) continues to play a crucial role in the logistics and SCM industry. YCH is known for its networks and infrastructures besides quality and innovation. For example, YCH is able to generate IT-enabled innovative processes and solutions in three highly-complex industries. These are namely, electronics, chemical & healthcare, and consumer goods. YCH offers customised 7PL end-to-end SCM solutions with the use of various technologies including the RFID technology. Each SCM solution can work independently while at the same time having the ability to scale and grow with the client’s business. YCH’s solutions has created value in many related industry value chains such as from manufacturers and intellectual property (IP) owners to resellers and customers (for finished products); and from consumers back to original equipment manufacturers (for spares and returns).

Cross-functional teams are formed to combine the expertise of employees to come up with new innovative ideas. The abundance of innovation from YCH’s in-house IT unit even resulted in a spin-off IT subsidiary called Y3 Technologies, which has developed all the supply chain solutions. Therefore, it is apparent that YCH has a strong capacity to innovate by exploiting IT (Teo, Ranganathan, Srivastava, & Loo, 2007). This capacity is reinforced by the open innovation culture within the company, including giving innovation awards to employees and organising “planning retreats”.

Network and Infrastructure
YCH has developed state-of-the-art logistics infrastructures and strategic networks of assets and expertise by leveraging special economic zones (SEZs) – these included free trade zones, export processing zones, bonded logistics parks, airport logistics parks, etc. in countries that YCH operates in. It has been able to create an in-depth network in each and every major market in the Asia-Pacific region. As such, YCH optimises customers’ SCM capabilities and enables its customers to be more competitive. YCH continues to commit to the best-in-class practices to achieve productivity and peace of mind for their clients and partners. Appendix D shows the conceptual model of YCH’s IT-enabled solutions.

YCH has built general packet radio services (GPRS) capability into its supply chain system which has helped to cut down turnaround time for each delivery transaction, shortened the whole business cycle, and ensured that information is updated instantly. The main aim of investing in wireless technologies is to provide better services to customers. One of the wireless applications used by YCH is the electronic proof of delivery (ePOD). This is an electronic acknowledgement system to confirm delivery of items, similar to the delivery order. Customers only need to key in the item code, ID and PIN on any GPRS mobile phone to acknowledge items delivered to them.

Talent and Human Capital
Another core competency of YCH is in the strong corporate family-like culture that emphasises on developing talent and human capital. Every YCHee is given equal opportunities to take on
responsibilities and grow with the company. Senior positions are not confined to family members. For example, Robert has relinquished his CEO role (YCH, 2016) to Mr Bennett Neo who was hired through external recruitment. The focus on talent has allowed YCH to attract the best from the industry. It signals to YCHees that the organisation values talent and they can fulfil their career aspirations internally. Various awards such as the prestigious “RISE Award” and other forms of motivating recognition are given to deserving YCHees.

YCH has a strong learning and knowledge-driven culture due to YCH’s strong emphasis on education and training. Dr Robert Yap, the chairman of YCH believed in developing individuals to realise their potential as part of the company’s philosophy. His efforts to cultivate a knowledge-based environment earned the company the National Training Award in 1994 and Corporate HR Award in 1997, to name a few. YCH’s quarterly internal newsletters, aptly named “Happenings” serves to keep everyone informed of the different events occurring within or even outside of YCH.

“Happenings” helps in communicating the organisation’s vision and broad objectives to the YCHees. Robert believes in helping the employees to reach their potential even outside of the organisation. An ex-employee, Mr Paul Lim (The Edge Singapore, 2015) has impressed Robert enough to get his approval to strike out on his own to embark on an e-commerce business. Within the firm, Robert raises the expectation in performance standard over time. At the same time, YCH gives each employee constant opportunities for learning and skills development through various OJT (on-the-job) trainings and external courses to enhance their job proficiency and productivity levels (YCH Happening, 2011, p.12).

**Challenges Ahead**

As suggested by Mr Tharman Shanmugaratnam that the use of technologies could transform the industry and be more competitive at the same time. It remains to be seen how much the smaller logistic companies will buy into such a notion. Also, how technologies can breach existing bottlenecks such as the difficulties and obstacles at customs checkpoints whereby long clearance time is observed due to increased border security? Increased border security means that goods will have to be scanned carefully and in more detailed fashion. This will slow down the entire logistic process. Hence, even though YCH can expedite the other parts of the logistic process, border clearance forms the bottleneck. The bottleneck in border clearance can potentially nullify the benefits of time-savings from the use of technologies.

A new CEO who is not a family member has been selected and installed and Robert, who is the chairman of YCH is delighted to make this decision. The family-like organisational culture is best maintained when the owner was also the management. However, Robert will have to consider how

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6 YCH’s actions were based on four core company values which defined its corporate philosophy. “RISE” is the acronym for these values.
- Reliability: is the company’s assurance of professionalism.
- Integrity: is the company’s uncompromised commitment to its business activities.
- Sincerity: is the company’s genuine care in the welfare of its clients and staff.
- Enterprise: is the company’s innovative spirit in meeting new challenges through dynamically achieving its corporate goals.
best to separate his ownership and management roles so that the new management can take over effectively. He definitely wants his children to join the business “if they like it”. Robert said, “The firm will be led by whoever is best to run the business” (Chee, 2014, p. A14) Currently, Robert and his two siblings are among the top eight executives.

As YCH expands into the Asia-Pacific region, YCH continues to innovate through the use of information technology and other cutting-edge technologies. In this connection, it is crucial to maintain the technology-innovation culture among all overseas employees so that there will be a consistent approach to uphold quality.

According to Robert:

_We need to address the scalability issue through the use of innovative IT solutions, human capital development and stringent management processes (BizQ, 2011, p.24)._

Indeed, ‘The Enterprise Award’ is a major recognition from the Singapore business community towards YCH’s tremendous growth over the past 60 years. Additionally, the Award firmly attests to its success in driving key corporate values and competencies throughout the organisation that strongly values teamwork and knowledge-sharing. In addition, an entrepreneurial, risk-taking culture has been cultivated. The company’s corporate philosophy “RISE” has helped the company to achieve supply chain excellence through a comprehensive Asia-Pacific network and award-winning, proprietary SCM solutions. Initiatives such as these have placed YCH well ahead of competition in the supply chain industry within Asia. Still, the organisation’s vision of building the “logistics superhighway” is noble and futuristic but appears to be laden with apparent roadblocks. Only time will tell how the ‘Young Chinese Hunk’ will be able to leverage its technological prowess and other new knowledge such as drones, cloud computing and big data to achieve its vision and in the process, redefine this industry.
End-of-Case Questions

Question 1
What are YCH’s key internal resources and capabilities?

Question 2
What are YCH’s core competencies?

Question 3
Perform a SWOT analysis to understand YCH’s environmental situation, strengths and weaknesses.

Question 4
Based on the SWOT analysis, what strategic actions will you suggest to YCH to exploit its resources and capabilities going forward?

Question 5
Do you think YCH can realise its vision? Why yes or why not?
Appendix A

Key Milestones of YCH

1955: Founded by Mr. Yap Chwee Hock as a small local passenger transportation company in Singapore, it was named Yap Chwee Hock Transport and General Contractors. The company was the main contractor to transport labourers from the Public Utilities Board (PUB) and British soldiers to and from their workplaces.

1977: In the 1970s, the company faced its first crisis when it lost its main business contract of ferrying the PUB workers, and with the set-up of Singapore’s Bus Service (SBS), the company was left with 103 empty trucks with hardly any passengers.

Refusing to give up and leave its workers jobless, the late Mr Yap Chwee Hock roped in his oldest son (the current Chairman of YCH Group), Robert, to join the company and help salvage the business. Freshly graduated from the then University of Singapore with a Bachelor of Business Administration degree, Robert saw new opportunities to turn the company around by leveraging the growing trade activities of the Singapore Ports. That marked the start of the company’s venture into the cargo transportation business.

It then grew rapidly to include extended logistics services such as freight and warehousing management. Together with the company’s change in direction, its name was changed to Yap Chwee Hock Transport Pte Ltd, and that marked the company’s new suite of services.

1983: It acquired a warehousing company, Regional Forwarding & Warehousing Management Pte Ltd, which became an important step for YCH in the formation of its Total Logistics concept in the early years. Later, it incorporated YCH Shipping Private Limited and Regional Insurance Private Limited. That has allowed YCH to provide insurance brokerage services.

1987: YCH developed a “partnership” strategy – Your Partner in Total Logistics™ – to provide a fully integrated total logistics service. It was the first company in Singapore to do this, and its early success led to many partnerships been forged with world-class MNCs (Multi-National Corporations).

1988: It established its first overseas operations with the set-up of YCH Logistics (Malaysia) Sdn Bhd. As of 2012, the Malaysian subsidiary services the complex supply chain requirements of global MNC customers such as Dell, Samsung, B Braun, Diageo and Dutch Lady.

Building on this strong foundation, YCH began its forays into the region and started exploiting IT by developing proprietary applications to integrate the various logistics services. This pioneering effort has paved the way for the company to develop a solid logistics network with state-of-the-art DistriParks.

1990s: The 1990s marked the organisation’s transformation into a Supply Chain Management (SCM) company, as it embarked on providing award-winning solutions for its MNC clientele. Accompanied by another rebranding effort, the company decided to use YCH as its global name, with the mantra of growing and going with its customers where they want to be.
In 1995, as part of YCH’s active corporate social responsibility approach, particularly in the area of grooming supply chain and logistics talents, the Group offered an annual Logistics Management Study Award and created the first Yap Chwee Hock Logistics Endowment Fund to finance outstanding students from the National University of Singapore (NUS) to promote study and research in logistics.

In the same year, it announced plans to invest S$25 million to develop its Singapore DistriPark into the largest automated warehouse in Singapore. As of early 2012, this Automated storage and retrieval system (ASRS) was recognised as one of the most successful and large-scale operations across the Asia-Pacific region, housing a 33-meter high automated racking system with 27,000 pallets and a handling throughput of 300 pallets per hour.

YCH Group also launched a new logo to replace its 40-year old logo as part of the company’s efforts to reflect its latest dynamism. The new YCH logo embodied a new dynamism that grew out of its corporate philosophy of rising to the challenge of exceeding customer expectations in an ever-changing world. In conjunction with its 40th Anniversary, the Group also launched its new slogan - Going Where You Want To Be™, as a reflection of the company’s goals to grow in partnership with its MNC clientele’s regionalisation plans.

**2005:** YCH celebrated its golden jubilee at the Ritz-Carlton Millenia with the launch of its new branding programme. That included the unveiling of an enhanced logo and a new tagline “where supplychain connects™”, that better reflected the Group’s activities and direction going forward. The Group also raised funds through a fund raising drive for the Community Chest, in aid of educational programmes for the needy as well as topping up the YCH Endowment Fund to the National University of Singapore. Its efforts won YCH the Corporate Gold Award at the Community Chest Awards Presentation Ceremony 2006.

**2007:** YCH received the Secure Trade Partnership acclaim from the Singapore Customs. This accreditation reinforced YCH’s commitment to adopting a total supply chain approach to cargo security. YCH customers in Singapore and the region could be assured of the stringent security measures applied to all YCH DistriParks throughout its comprehensive Asia Pacific network.

**2009:** Taking advantage of the economic slowdown that year, YCH continued its aggressive expansion and long term strategic investments across Asia. It strengthened its Pan-Asian network with the official opening of its Korean office. YCH Korea was armed with a strong focus in international freight forwarding and contract logistics services.

**2010:** It spiced up its supply chain management capabilities in India with the official inauguration of its 525,000 sq feet YCH DistriPark to support manufacturing logistics. It also pioneered true vendor-managed inventory (VMI) operations for MNC manufacturers and suppliers by tapping on the growing potential of SEZs in India. As of 2012, YCH has developed a strong India presence across 53 cities with 11 key satellite hubs, within a short entrance span of three years.

The same year, it also expanded into Vietnam with the joint-development (with Protrade Corporation) of a 6.9 hectare DistriPark in Binh Duong Province. That was part of the Group’s overall strategy to strengthen its regional network.
It also signed MOUs with the Chengdu Government in China to develop an advanced logistics framework for the city, with special 'door-to-door' green trucks to enhance the city's distribution network. This has enabled the Group to optimise distribution routes and goods loading volume so as to alleviate traffic congestion and reduce overall logistics costs and air pollution. The collaboration is a major milestone in realising the organisation’s vision of a Supply Chain City for the growing consumer market in the region.
Appendix B

Awards and Accolades

Illustrating Supply Chain Innovations:
Innovation Award Lova Simulator; Innovation Award Intribution; Innovation Award IntributionPlus; Innovation Award Intribution; Innovation Award Retrogistics; Innovation Award ZIM; Mobile Innovation Award ePOD; eSCM Award; Singapore Innovation Class; Supply Chain Asia “Asian 3PL of the Year”; Top Winner of IDC Enterprise Innovation Awards.

Illustrating Quality standards:
ISO 9002 QMS; Singapore Quality Class; ISO 14001 EMS; ISO 28000.

Illustrating IT training and competencies:
National IT Award; National Training Award; IT Leaders Award; National InfoComm Award For V-Hub; CIO 100 Awards.

Other Recognitions for Business Excellence:
- BA (Singapore Business Awards) Enterprise of the Year Award 2011. YCH was named the winner “for its innovativeness, enterprise and far-sightedness in seizing opportunities to transform itself into one of Asia’s leading integrated logistics and supply chain management companies.” Other aspects that were taken into consideration in this prestigious award include size and scale of network, IT know-how and systems, level of customer service, approach to sustainability and CSR issues, security and risk management capabilities, ability to handle specialized shipments and launch/upgrade of new products and services on an ongoing basis to match market demand.
- YCH Tianjin subsidiary was recognized by the Chinese government as “Tianjin FTZ Top 100 Corporations.” It was ranked 12th out of about 8000 companies. The award recognised YCH for its significant contributions to the zone in terms of revenue, quality of service, volume of goods handled and strong partnership ties with the government. It also won the “Tianjin FTZ and ALP 2010 Work-Safety ‘A’ Class Enterprise awards. The criteria include work safety, facility management, rules and regulations, staff training and operation audits in the warehouse.
- YCH Shanghai won the “2010 Top 100 Enterprise” award in Shanghai, China.
- In the Supply Chain Asia Logistics Awards, it won the Asian 3PL of the Year award for four consecutive years from 2007 to 2010, recognising the Group’s niche and presence in Asia.
- YCH Group emerged as the winner in the category of ‘Most Innovative Use of IT in the Private Sector’ of the 2008 National Infocomm Awards (NIA). The event was organised biennially by the Infocomm Development Authority of Singapore. The win has reflected YCH’s focus on becoming the forerunner in bringing the best practices in radio-frequency identification (RFID) technology implementation and management to all businesses across the region. The technology has helped to achieve new operational efficiencies for YCH in its SCM services and solutions to enable its MNC customers to streamline their business and process flows. The RFID technology was developed based on a need to provide greater visibility of customer assets, connecting the physical world to the information world for businesses to operate real-time.
Appendix C

About 7PL

Traditionally, logistics companies provided freight forwarding, transport or warehouse services in a piecemeal way. Logistics service providers that provide all three services, either through in-house capabilities or by outsourcing, are commonly known as “3PLs.” That is, 3PL service is simply about transporting some goods from point A to point B.

In addition to 3PL service, an external firm (or YCH itself) can provide value-added services that tap on specific technologies to drastically increase the efficiency in logistic management. This form of value-added service is called “4PLs.” For example, a Pharmaceutical client develops a new drug with a new form of packaging (very different from previous ones) and now, considering how to handle the logistics of moving the new product out of the factory to the firm’s distribution channels. This Pharmaceutical firm can of course engage almost any logistic company to perform a 3PL service. However, this will not be as efficient as compared with what is currently done in other product that applies the RFID technology (and other technologies) for the purpose of shipping and tracking the shipment. A possible 4PL service can be to understand the packaging material and study how to fix the microchip into each drug package. Also, another aspect of a 4PL service will be to design the locations on where to place the chip reader and antennae.

YCH has referred to itself as a 7PL business (a term it has trademarked) because it provides both professional SCM consulting services (through Y3 Technologies), i.e., 4PL and traditional logistics operations which is also referred to as 3PL. As a 7PL (4PL plus 3PL) service provider, YCH offers integrated end-to-end supply chain solutions that leveraged both its knowledge and technology to execute efficient supply chain processes.

Source: *MIS Quarterly Executive, 6*(4), 211-223.
Appendix D

IT-enable Solutions

- “Intribution” is a web-enabled manufacturing logistics solution that is designed to manage the flow of raw materials, information and financial transactions between global suppliers and manufacturers.

- “Intrabution” is a scalable system that manages and streamlines the flow of consumer goods.

- “Retroistics” is a web-enabled solution that is designed to manage the service and returns logistics for customers whose products require after sales parts replacement, warranty returns or servicing.

Source: YCH Group website.
## Appendix E

### Legend Table

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<th>Abbreviations in full</th>
<th>Full Form</th>
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<tr>
<td>SCM</td>
<td>Supply Chain Management</td>
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<tr>
<td>ZIM</td>
<td>Zero Inventory Model</td>
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<tr>
<td>RFID</td>
<td>Radio Frequency Identification</td>
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<td>CEO</td>
<td>Chief Executive Officer</td>
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<td>PUB</td>
<td>Public Utilities Board</td>
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<td>MOU</td>
<td>Memorandum of Understanding</td>
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<td>FTZ</td>
<td>Free Trade Zone</td>
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<td>SEZ</td>
<td>Special Economic Zone</td>
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<td>IDC</td>
<td>International Data Corporation</td>
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<td>MNC</td>
<td>Multi-National Corporation</td>
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<td>ePod</td>
<td>Electronic Proof of delivery</td>
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<td>IT</td>
<td>Information Technology</td>
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<td>VMI</td>
<td>Vendor-managed inventory</td>
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<td>ASRS</td>
<td>Automated storage and retrieval system</td>
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<td>GPRS</td>
<td>General Packet Radio Services</td>
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References


About Nanyang Technopreneurship Case Centre

With funding from both the National Research Foundation of Singapore and Nanyang Technological University, the Nanyang Technopreneurship Case Centre (NTCC) was one of the initiatives of the Nanyang Technopreneurship Centre (NTC) to enhance the quality of entrepreneurship education through the case pedagogy. These are part of NTC’s efforts to foster, promote and nurture enterprising mind-sets, skills and knowledge in entrepreneurship education.

There is a plethora of business cases but a general paucity of cases highlighting the specific problems faced by technopreneurs in growing their ventures. NTCC adds value to Technopreneurship education by developing a pool of cases on technology-based local and international enterprises. Through the cases, NTCC hopes to share the experiences, success stories and challenges faced by entrepreneurs/intrapreneurs in growing their organisations and how they overcome their problems to sustain growth.

The theme of this first compendium is “innovation through technology”. It features Singapore-based and global companies confronting issues and challenges due to technological shifts in the industry and changing market and competitive dynamics; when introducing new products in the marketplace; and in using technology to drive organizational change.

Online versions of these cases are available for complimentary downloads at www.ntc.ntu.edu.sg/ntcc.

Teaching notes are also available to faculty members for use as reference, reading and/or teaching materials in various academic and professional programs. For further information, please contact Ms. Denise Lee (deniseleecw@ntu.edu.sg) and Mr. Wu Chong Chuan (wucc@ntu.edu.sg).

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