Huawei Technologies Corporation: from local dominance to global challenge?

Brian Low
School of Marketing and International Business, University of Western Sydney, Penrith South, Australia

Abstract

Purpose – The paper aims to identify the challenges faced by Huawei Technologies, China’s biggest telecommunications equipment manufacturer, as it makes the transition from an indigenously-owned business to a potentially competitive global giant.

Design/methodology/approach – This is an inductive, interpretative case study complimented by hands-on experience with the industry.

Findings – The paper finds that Huawei lies at a crossroads in a transitional telecommunication sector that is no longer isolated from global reforms and advancement. Through internationalisation the company has learned to compete by adjusting their mechanisms, learning instruments and focus.

Originality/value – The paper is useful for practitioners in that it shows how indigenous companies in latecomer industrialising countries like China can overcome the late mover position in some of the advanced markets they have entered. For academics it highlights the role of government in helping to construct competitive indigenous firms that could take on global giants.

Keywords China, Transition management, Telecommunication equipment

Paper type Case study

Huawei: a sleeping giant awakes?

Huawei was established in 1988 in Shenzhen, Guangdong as a private enterprise during the peak of China’s economic reforms and technological advancement. The company had a humble beginning, and began by selling imported telephone call switches before manufacturing them. It grew rapidly by focusing on the relatively poor Chinese rural regions ignored by larger companies, making and selling low-end, low-margin switches and access equipment. Its product line has since expanded to include high-margin optical network, data communications networks, wireless networks, handsets and terminals (see www.huawei.cn).

It is now the largest telecom vendor in China, with reported 2004 sales of US$5.58 billion. This represents an increase of 81 per cent compared to 2001 sales of US$3.08 billion (see Table I). This growth has been achieved at a time when global telecommunication giants like Alcatel and Lucent were experiencing a sales decline, and Motorola experienced minimal growth. Significantly, Huawei’s international sales grew from US$330 million (or 10.7 per cent of total sales) in 2001 to US$2.28 billion (or 41 per cent of total sales) in 2004, a growth of more than 590 per cent (see Table I).

Huawei’s foray into international markets was initially limited to developing countries in South-East Asia, Central Asia and Latin America. The company then sought international growth into Middle Eastern nations, before turning their attention to developed nations, including the UK, USA, Sweden and The Netherlands. It has also established 32 worldwide branch offices, and eight regional headquarters, with established research institutes in Dallas (USA), Bangalore (India), Stockholm (Sweden), Moscow (Russia), Beijing and Shanghai in China.

In 2002, Huawei launched FutureWei, the company’s wholly-owned US subsidiary, underscoring the company’s commitment to international business and long-term investment in the North American market. The company has also actively participated in global research and development (R&D) and marketing alliances with US, European, and Japanese telecommunication giants.

Huawei’s internationalisation has been achieved through a two pronged strategic approach emphasising price competitiveness and value-added technology products. The company is now the world’s second largest-supplier of advanced digital subscriber lines, the primary conduit for the world’s broadband connections. U-SYS, Huawei’s end to end Next Generation Network (NGN) solution is currently the leading option for carriers around the world, and was ranked No. 1 in the global market in 2004 by Dittberner, a research and consulting firm. It remains a leading global player in switching and optical network products, and is aggressively pursuing growth in datacom and wireless network.

By all accounts, Huawei’s growth and progress has confounded its critics. Huawei is now a potential global telecommunications player to be reckoned with. In keeping abreast with international benchmarks, the company is transforming its management by actively cooperating with world-class management and consultancy companies such as IBM, Hay Group, KPMG and PwC (see www.huawei.cn).

Collectively, these developments have contributed to Huawei’s increasing global market profile. “Making the World Listen” is how one journalist (Dolven, 2004) writing in the Far Eastern Economic Review, captures Huawei’s
transition from an unknown local, indigenous Chinese telecommunications company to a potential, global telecommunication giant.

Despite this impressive growth, global market, institutional and technical challenges are likely to confront Huawei over the next five to ten years. China’s World Trade Organization (WTO) agreement would lead to greater liberalisation of the Chinese telecommunications market, making it increasingly difficult for China’s central government to limit market access of international competitors. Local carriers and primarily state-owned enterprises such as China Telecom, China Mobile, China Unicom and China Netcom are also coming under increasing pressure from the global financial community for greater transparency and accountability. Local preferences for Huawei’s products and services may not last. State procurement contracts for these state-owned carriers may not continue, and their position will also be weakened by telecommunications reforms and China’s WTO commitments, which is likely to lead to a stronger presence for global carriers.

While the Chinese telecommunications market is growing, it is still smaller than the markets of the trading blocs in which global telecommunications giants like Motorola, Nortel, Siemens and Alcatel are located. While Huawei sales figures look impressive, they are well short of the sales of these organisations (see Table II). Further, while Huawei has made great strides in research and development, investments in R&D represent only a small fraction of its total sales revenue compared to global telecommunication giants like Motorola, Nokia and Alcatel (see Table II). For instance, Huawei’s R&D spending in 2004 amounted to US$480 million, compared to US$5 billion and US$8 billion for Nokia and Motorola respectively. In a sector where future growth and expansion is heavily dependent on R&D, this could severely limit Huawei’s ability to compete globally and profitably.

While Huawei has a strong national identity, it is seeking international expansion at a time when global telecommunication giants have already established their global brands in major trading blocs. History has also not been kind to a nation’s attempt at constructing a globally competitive firm which can challenge global players, especially at the point at which the degree of unevenness of business capability has never been greater (Nolan, 2001). At the beginning of 2004, after three years of market uncertainty, global telecommunication giants are competing more aggressively and creatively for a share of the global market, which includes China. Huawei’s challenges in both China and global markets are considerable.

**China’s telecommunication policies: what positions to take?**

Historically, this sector has been closely overseen and tightly controlled by the central government through the Ministry of Information Industry (MII). It remains so despite an outward commitment to reforms by MII. These reforms were driven by a number of different, and, at times, apparently contradictory concerns (Low, 2005) which is not surprising since such reforms are captive to a number of interest groups. Allowing further reforms and competition would mean the difficult task of confronting vested interests in the telecommunications sector.

Rather than stepping back and letting the market operate, reforms continue to have an ideological overture, given the need to maintain control of a strategic interest in this sector. As Chen Jingqiao, the director of China’s MII’s Institute of Telecom Policy put it:

> The current set-up, though not perfect, reflects three unique conditions in China: government-run corporations will remain the main driver for the national economy, serious disparity in local markets [among the major carriers and telecommunication equipment manufacturers], and telecom reform must proceed in step with the economic system which is also controlled by the government.

It is, however, apparent that as the telecommunications sector is transformed from a centrally controlled sector to semi-capitalist industry, China’s central government is increasingly facing pressures to hasten the pace, and indeed the transparency of transformation, given its WTO commitments. China will have to open more doors to foreign investment despite the nation’s preoccupation with economic nationalism. Starved of limited access to global telecommunications technology, equity and markets, indigenous firms like Huawei and Zhongxing (see www.zte.cn) have been actively participating in global R&D, technical and marketing alliances and processes.

The nation’s desire to become a tier four telecommunications superpower also implies a greater need for and urgency to mobilise global resources, activities and connections in order to realise this ambition. As Jinpei Cheng, China’s vice minister of science and technology eloquently put it:

**Table II Huawei’s R&D compared with competitors: 2001-2004**

<table>
<thead>
<tr>
<th>Telecom manufacturer</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sales</td>
<td>R&amp;D</td>
<td>% of sales</td>
<td>R&amp;D</td>
</tr>
<tr>
<td>Huawei</td>
<td>3.08</td>
<td>0.34</td>
<td>11.0</td>
<td>2.67</td>
</tr>
<tr>
<td>Motorola</td>
<td>30.0</td>
<td>4.3</td>
<td>14.3</td>
<td>26.7</td>
</tr>
<tr>
<td>Nokia</td>
<td>27.8</td>
<td>2.7</td>
<td>9.7</td>
<td>30.8</td>
</tr>
<tr>
<td>Alcatel</td>
<td>22.6</td>
<td>2.9</td>
<td>12.8</td>
<td>17.4</td>
</tr>
<tr>
<td>Lucent</td>
<td>21.3</td>
<td>3.5</td>
<td>16.4</td>
<td>12.3</td>
</tr>
</tbody>
</table>

**Table I Huawei’s sales: 2001-2004**

<table>
<thead>
<tr>
<th>Sales by markets: (in US$ billion)</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total sales</td>
<td>3.08</td>
<td>2.67</td>
<td>3.83</td>
<td>5.58</td>
</tr>
<tr>
<td>Chinese</td>
<td>2.75</td>
<td>2.15</td>
<td>2.78</td>
<td>3.30</td>
</tr>
<tr>
<td>Foreign</td>
<td>0.33</td>
<td>0.52</td>
<td>1.05</td>
<td>2.28</td>
</tr>
<tr>
<td>Foreign as % of total sales</td>
<td>10.7</td>
<td>19.5</td>
<td>27.4</td>
<td>40.9</td>
</tr>
</tbody>
</table>

Source: Huawei’s 2004 Financial Highlights Report

Note: *US$ billion

Source: Company reports
China is still in the tier-four rank of scientifically marginal nations, whereas the United States and Japan are tier-one science superpowers. We hope to reach the next tier, to become a “strong nation” in basic research in the coming 20 years.

China’s central government has, and will continue to play a central role in generating high rates of equity investment and stimulating technical progress through alliances, mergers and acquisitions. Together with the nation’s business leaders, they have, and will continue to rely heavily on global telecommunication giants like Motorola, Nokia, Alcatel and Siemens to seed the country with technical design and research facilities. They see these giants as a catalyst for moving China up a few rungs on the R&D ladder. Huge concessions have already been made to these US and European telecommunication giants, and more concessions are likely.

These concessions do not mean the end of state-led industrial telecommunication policies aimed at constructing large, globally competitive indigenous firms like Huawei. For instance, Huawei continues to receive plenty of state support, including soft loans to help with their international expansion. China Development Bank (CDB), the biggest state policy bank recently extended a credit facility of US$10 billion to help overseas customers fund the purchase of Huawei’s products. A similar deal has been struck between Huawei and Sinosure, the Chinese government insurance company, for export credit financing operations in order to help Telemar Norte Leste SA, Brazil’s biggest telecommunications operator, finance the purchase of equipment from Huawei.

MII has also continued to encourage local Chinese operators like China Telecom and China Mobile to purchase telecommunications equipment from Chinese manufacturers, notably from Huawei, ZTE (Zhongxing), Datang and Great Dragon. Such government support and protection of local equipment manufacturers is not unusual, with the practice also existing in Canada with Nortel, Siemens in Germany, Marconi in the UK, Alcatel in France, and Lucent in the USA.

China has therefore reacted to local and global telecommunication reforms and their conflicting demands in different, and at time, conflicting ways. This is not unusual since it reflects the competing interests and dynamics of a partly, centrally-controlled and semi-capitalist telecommunications sector. China, and Huawei in particular, will however come under intense pressures to rethink these demands as it seeks to better align strategic choices with global market dynamics.

For Huawei, the key question in moving into the twenty-first century is competing in not one, but two governance structures – one local and the other global. Locally, Huawei has, and should continue to benefit enormously from the central government’s policy of building and protecting a potentially, globally competitive indigenous firm. This however is not consistent with the company’s desire to transform itself into a global telecommunications giant, capable of challenging existing global companies. These strategic choices are not necessarily mutually exclusive. As Deng Xiaoping, one of China’s great leader famously remarked:

You must not think that if we have elements of a market economy we shall be taking the capitalist road. Both a planned economy and a market economy is necessary.

Continuing strong local growth – all eyes on China?

China remains one of the few global telecommunication equipment markets that offer substantial growth opportunities. In 2004, the equipment market was worth approximately US$130 billion, compared with US$120 billion in 2003, an increase of more than 8 per cent (see ChinaNex.com). Besides Japan’s NTTDocomo, China Telecom is one of the largest carriers in Asia Pacific, with capital expenditure spending amounting to US$6.8 billions in 2004. This spending will be maintained for 2005 (see www.chinatelecom.cn).

China also has one of the world’s largest telecommunications networks, and is also the largest producer of handsets. In 2004, the country produced 240 million mobile phones, the most in the world. Production is expected to climb in 2005, on increasing investment from both domestic and foreign firms.

The combined total of 532 million fixed and mobile telephone subscribers in 2003 (see www.mii.gov.cn) also made China the largest telecommunications market in the world, a point reinforced by the International Telecommunications Union (ITU) recognition of China as a “telecommunications superpower”. This has now grown to approximately 660 million fixed (315 million) and mobile (345 million) subscribers in 2004.

Not surprisingly, China’s telecommunications market, in particular the equipment sector, is becoming highly competitive. Global telecommunication giants like Motorola, Nokia, Alcatel and Nortel are increasingly focusing their attention on this burgeoning market. This attention comes at a time when capital expenditure spending on telecommunications equipment from mature markets in North America and Europe has slowed considerably, following massive deployment of new systems in the late 1990s.

Despite recent signs of some improvement in western markets, China is now a major location for multinational investment. Many global companies have strategic positions in China, having progressed from initial arms-length export transactions to collaborative R&D, production and marketing relationships (see for instance www.motorola.cn. www.nokia.cn, www.lucent.cn and www.nortel.cn). This includes a network of relationships with central and provincial government authorities, local telecommunications carriers, and competing local equipment manufacturers.

The Chinese market now forms an integral component of the internationalisation plans of the major global companies. This is despite the many cultural, political and regulatory difficulties faced when competing for a share of the Chinese telecommunications market. But economic returns remain a powerful and compelling universal language for these giants. For instance, China is Nokia’s second biggest market after the USA, with sales of US$2.7 billion in 2004, representing approximately 7 per cent of Nokia’s total sales. China accounted for 9 per cent (US$2.8 billion) of Motorola’s 2004 global sales of US$31.3 billion, coming from a high of 14 per cent in 2002.

While home market competition is a serious threat to indigenous companies, and should invoke some reaction from Huawei, the question remains whether taking on global players through expansion into their domestic markets is a logical move. Possibly it would be better for Huawei to defend its local market from encirclement by these giants, hence reinforcing its local successes, especially given China’s
impending WTO commitments. Because China also potentially affords these giants an opportunity to improve their already weakened global position, thus gaining valuable experience in the burgeoning Chinese market, would it not be better for Huawei to minimise this local threat first? Critics have argued that internationalisation for Huawei is one of necessity, not choice. Indeed, would it not make sense in terms of timing, taking on these global telecommunications giants when they are at the most vulnerable, especially with recent ongoing restructuring exercises and capital write-downs? Could Huawei not leverage on their innovative, value-adding products and competitively priced products to maintain local market dominance, and at the same time compete for a share of global markets, including developed nations? With its active and ongoing participation in global technical and marketing alliances, is the company not ready to confront these giants directly, both locally and globally? While the light currently shines brightly on China, it might not be in the near future, especially as the US and European markets recover from the doldrums of the late 1990s and early 2000s. Future growth opportunities thus appear to present themselves for Huawei in international markets, as well as China.

Whither Huawei’s research and development spending?

Huawei’s R&D expenditure has grown steadily from US$340 million in 2001 to US$480 million in 2004, representing growth of more than 41 per cent. As a percentage of total sales revenue, R&D spending has declined from a high of 13.5 per cent in 2002, to 8.6 per cent in 2004. This trend is repeated for Motorola but not Nokia or Alcatel. Significantly, Huawei’s R&D spending in absolute dollar value pales in comparison with these companies (see Table II).

This does not necessarily demonstrate Huawei’s lack of R&D commitment. For example, 48 per cent of its 24,000 employees are engaged in R&D. Its engineers are highly trained, with many holding doctoral qualifications. The company also actively recruits engineers from other telecommunications giants, for example, those displaced due to global restructuring. Huawei’s research and development laboratories are also strategically located not only in China but around the world, with its first site located in Bangalore (India), Asia’s own Silicon Valley.

Collectively, these R&D activities have helped to propel Huawei onto the world stage. Its suite of products including wireless infrastructure, optical networking and datacom products now holds global leadership or challenger positions. While pricing has been its main competitive advantage, the company has now complemented this advantage with a suite of innovative, value-adding products. Within the company, Huawei’s focus on their R&D spending is three-fold.

First, it focuses on developing common build blocks (CBB) based on network convergence. This emphasises mainly non-proprietary solutions, thus assuring their customers that they are working with an industry standard, open operating system. This in turn allows customisation of services. Open standards also ensure global network interoperability, an important purchase attribute among cost-conscious operators when upgrading existing or deploying new network infrastructure.

Second, the company has made substantial investments in NGN and wireless technology, especially on third-generation (3G) technologies (a glossary of terms used in this paper can be found in the Appendix), in particular Code Division Multiple Access (CDMA), and China’s own Time Division Synchronous Code Division Multiple Access (TD-SCDMA). While China has not resolved which of the three 3G standards it plans to adopt (WCDMA, CDMA 2000, TD-SCDMA or combinations thereof), and initial tests have been disappointing, there is no doubting the local and global market potential of 3G. Globally, more than 20 pre-commercial exchanges have already been set up for Huawei’s 3G products.

Third, while China-based, cost-effective R&D has given Huawei the competitive edge in developing telecommunications equipment, this has not come at the expense of software development. The company now has four CMM5 certified software research institutes, being three in China and one in India, demonstrating their international commitment and competitiveness in core technologies and top-ranking software development process management.

However, as noted previously, Huawei’s R&D spending pales in comparison with that of global telecommunications giants. In a sector where future growth and expansion is heavily R&D dependent, this could limit Huawei’s ability to compete globally. Limited R&D spending could have major implications for Huawei in presenting a credible challenge to some of the global telecommunications giants. Investment in R&D would have to substantially increase before Huawei can be taken seriously by the global investment and technical community. But Huawei’s R&D investments are intrinsically linked to its ability to generate substantial sales revenue. Unless there is a substantial increase in sales, there is unlikely to be any increase in R&D spending.

Once again, this raises the question: “Is Huawei in a position to challenge international telecommunication giants for a share of the global market, given its comparatively lower R&D spending?” If the company cannot mount a credible challenge, should it or indeed could it ever become a global telecommunication player? To cope with some of the company’s inherent limitations in R&D spending, Huawei has undertaken several initiatives including participation in global R&D, technical joint ventures and marketing alliances. This is examined next.

Alliances, alliances and more alliances?

In a liberalising telecommunication sector, China’s telecommunication manufacturers need to change the way they manage their resource dependence. For Huawei, one key strategic question posed is: “How does liberalisation affect the way in which they form and manage their local and global R&D technical joint ventures, marketing alliances, mergers and acquisitions?” There are of course many reasons for Huawei to actively participate in these processes. They include the need to build its global market capabilities, cope with escalating technology and R&D costs, facilitate easier access to global technology, speed up innovation and product introduction especially in developed nations that have so far proven hard to enter, and to cope with the integration of information and telecommunication technology.

It is also apparent that for China to become a global technological superpower, foreign help is going to be needed. This help is also needed in order to accept the world’s telecommunications standards in China, rather than China imposing their own on the world. Paradoxically, in seeking foreign help to develop and control Chinese-owned technologies such as China’s own 3G TD-SCDMA technology, the country also hopes to cast off one of the biggest fears of global technology companies – that China’s growing crop of smart engineers might pirate intellectual
property in any technology transfer (Kahn, 2004). These ambitions and sentiments are perhaps best reflected in Ms Zhong Qi, the Director General of the Department of Electronics and IT recent remark:

Owning and winning the initiatives in setting industrial standards should be top priorities for domestic manufacturers. MII would help form various industrial alliances among manufacturers to gain the upper hand against foreigners in setting industrial standards.

Echoing a similar sentiment and reinforcing China’s central government role in the “battle over the adoption of 3G standards” proceedings, is Deng Yusong of the Development Research Center of the State Council:

Foreign companies will take 3G licensing as a new opportunity in China, but for JVs to succeed, Chinese operators must also have the desire to work with the foreign partners, and the government has the final say on such attempt.

Significantly, it is amid this backdrop of conflicting technical, political and economic imperatives that Huawei’s global technical, marketing alliances, joint ventures and acquisitions have evolved. For instance, in 2002, it established with NEC its 3G Mobile Internet Open Laboratory in Shanghai (see Table III). Since then the company has also signed a cross-licensing agreement of WCDMA-related products with Nokia. The company then set up a joint venture with Siemens in 2004, specialising in the development, sales and service of TD-SCDMA technologies and products to boost TD-SCDMA commercialisation. More than US$100 million has been invested in this joint-venture, with Huawei contributing 49 per cent and Siemens the remaining 51 per cent.

Besides technical joint ventures, Huawei has also actively participated in global marketing, sales and distribution alliances. For instance, in 2003, Huawei developed a $US160 million joint venture with US-based 3Com to manufacture and market low-end routers. The deal allows 3Com to sell Huawei’s computer data routing equipment under 3Com’s name outside of China and Japan. In China and Japan, Huawei products will be sold under the joint venture name Huawei-3Com.

In early 2005, Huawei announced a mutual distribution agreement (MDA) with Marconi U.K. where the two companies will resell parts of each other’s product portfolio. Part of the agreement involves a process wherein they will leverage their respective sales and marketing teams’ capabilities and regional strengths on an account-by-account basis (see Table I). There are now reports that Huawei is seen as one of several suitors over a possible US$1.08 billion takeover of Marconi (Seager, 2005).

The possibility that Marconi may fall to Huawei comes on top of two key, albeit smaller acquisitions of US-based Cognigine and Optimite in 2003. These acquisitions offer Huawei the opportunity to dominate the global optical communication technologies market through Cognigine’s innovative network processor, and Optimite’s Super Dense Wavelength Division Multiplexing (SWDM) technologies. These acquisitions also complement Huawei’s strategic partnership with US-based LightPointe on free space optic (FSO) technology, thus providing Huawei access to the high profit margin, high-end fiber optic market. As Paul Waide of Pacific Epoch, Shanghai, noted in Dolven’s (2004) Far Eastern Economic Review article:

The fact that they’re [Huawei] established in China and have got the foresight to pick up the technology, and possibly tap into sales networks, seems like a good idea to me. It’s not as if they’re going to wipe the floor with their rivals, but they seem to have a good idea on how to tap into foreign markets.

As well as these technical alliances, Huawei has established R&D sites in Sweden, the USA and Russia. Its main research sites are however located in China, in Shenzhen (its corporate head office), Beijing, Nanjing and Shanhai. Huawei’s site location strategy is not unusual, and generally conforms to acceptable global practice. Some of the reasons for the location strategy are the need to keep these sites close to the place where the strategic decisions are made, to protect technology as they develop over time, and to ensure the company’s voice is heard as far as technical and market developments are concerned.

Making China its R&D base also makes perfect sense for Huawei especially when global telecommunication giants are investing heavily in local R&D such as wireless, optical networks and NGN. These reasons however do not detract from the importance of housing some of Huawei’s research sites overseas, given the need to tap into global technological knowledge and to hasten the speed of product commercialisation for global markets.

In summary, Huawei has been an active and willing participant in the global alliance process. Despite its relatively low R&D spending and weak global branding, major telecommunication giants continue to seek out Huawei.

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### Table III Huawei’s major technical alliances, joint ventures, and marketing and distribution agreements

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>October 2002</td>
<td>Set up 3G Mobile Internet Open in Shanghai with NEC (Japan) to create an open platform to support 3G development in China</td>
</tr>
<tr>
<td>October 2002</td>
<td>Signed a strategic agreement with Microsoft (USA) to set up a joint laboratory at Huawei’s head office in Shenzhen, incorporating Microsoft’s strength as a software innovator and Huawei’s telecommunication expertise</td>
</tr>
<tr>
<td>March 2003</td>
<td>Reached agreement with Nokia (Finland) on patent cross-license of WCDMA related technology products, covering the manufacturing and sales of WCDMA infrastructure equipment globally</td>
</tr>
<tr>
<td>March 2003</td>
<td>Committed to a $US160 million joint venture with 3Com (USA) to manufacture and market low-end routers</td>
</tr>
<tr>
<td>April 2003</td>
<td>Signed a strategic partnership agreement with LightPointe (USA) on free space optic (FSO) technology</td>
</tr>
<tr>
<td>July 2003</td>
<td>Partnership agreement with Avici Systems Inc. (USA) in IP market datacom solutions</td>
</tr>
<tr>
<td>03’</td>
<td>Huawei acquired US-based optical communication technologies firms Cognigine and Optimite</td>
</tr>
<tr>
<td>September 2003</td>
<td>Joined forces with Infineon Technologies (Germany) to offer a competitive WCDMA mobile phone platform</td>
</tr>
<tr>
<td>February 2004</td>
<td>Signed and committed to a $US100 million joint venture with Siemens (Germany) to develop, market, and manufacture TD-SCDMA technology</td>
</tr>
<tr>
<td>May 2005</td>
<td>Signed a mutual distribution agreement (MDA) with Marconi (UK) that will allow the two companies to resell parts of each other’s products</td>
</tr>
<tr>
<td>August 2005</td>
<td>Marconi (UK) begins talks with Huawei that could lead to a takeover by Huawei</td>
</tr>
</tbody>
</table>

Undoubtedly, this is motivated by the prospect of selling their products into the growing Chinese market. But as local and global telecommunication reforms result in more liberalised markets, a perennial problem for Huawei is “How best to manage and redirect their R&D alliances strategies?” What type of R&D fit should they be seeking with whom and why? What constitutes strategic, dynamic technological fit? What are the drivers and facilitators? How much would nationalism impact on their R&D investment decisions? The following quote from Huawei’s 2004 annual report could perhaps throw some light on Huawei’s current and future global alliances’ directions:

Innovation is always an impetus for us to progress. In recent years we have partnered with our international peers … which reflects our willingness for cross-culture cooperation on an agree-to-differ basis.

Global growth strategy for a low-priced challenger – where to next for Huawei?

Unlike many global companies, Chinese companies like Huawei have historically suffered from a mismatch between ambition and resources. Not surprisingly, Huawei therefore stands little chance competing directly with global telecommunication giants like Motorola, Nortel, Alcatel and Siemens, without the benefit of central government sponsored protectionism and support. Despite significant R&D investments and participation in global alliances, Huawei is still perceived as a low-cost, low-margin telecommunication equipment manufacturer. It is still a privately-owned company, does not report its profitability, and while there has been talk of an IPO, this has remained elusive. As Xu Zhijun, president of Huawei’s wireless product line noted:

An IPO is something for Huawei sooner … But at the present time there is no timetable … There is no need for us because its cash flow is strong [since most IPO are financially driven].

Huawei’s competitive advantage remains its low-cost home base. Its engineers cost one-fifth to one-eight of their counterparts in the USA or Europe. Its major and principal customers include local carriers China Telecom, China Mobile and China Unicom. While initially content mainly with selling products to developing countries, the company now has strong aspirations in penetrating the markets of developed nations. Initially marshalling its resources onto a narrow global market is of course not unusual, and is frequently seen as a viable option especially for smaller multinational competitors (Porter, 1996). In the mid- to late 1990s, Huawei saw this niche opportunity by focusing on less developed markets that needed cheap technology.

However, as Huawei and its brand become more established, so is the company’s confidence in pursuing a share of the global market. Its strong domestic base has and should continue to fund the company’s global expansion drive, and provide a much needed revenue source to fund increased R&D investments. Indeed, while the hard-driving expansion of Chinese companies like Huawei around the world are taking business away from the big established vendors through their well-known low prices, they also have a new weapon in “competitive technology” (Rhoads and Hutzler, 2004). Increasingly, Huawei now relishes the prospect to become a global player despite its late entry into the global market and concerns over its profitability.

But for now, Huawei might have to resist this desire for global expansion, which has contributed to restructuring of major global telecommunication giants and capital write-downs. This cautionary note is not without justification. As the influence of telecommunication reforms and China’s WTO commitment grow stronger over coming years, state procurement contracts favouring local carriers will become increasingly open to competition, strengthening the position of global players in the Chinese market. These giants have, and will continue to dominate the global market in the foreseeable future.

Huawei’s investments in China’s 3G markets have not as yet paid dividends. Having poured millions of dollars into 3G research, uncertainty over which of the competing 3G technologies will be adopted, technical failures in recent trial runs, and timing over the award of 3G licences could dampen Huawei’s ambitions.

Like China, Huawei is now at a crossroad, and like many of the global telecommunications giants too, Huawei faces the question of what position it should take along the “local and global marketisation path” continuum. That Huawei needs to grow internationally is not in question. That Huawei will have to directly confront these global giants if the company is to realise its ambitions in becoming a global telecommunication player is also not in question. What is in question is “how, why and when?” A diagrammatic representation of Huawei’s local and international strategy over the years (see Figure 1) should perhaps give some insights into analyzing and articulating some of the strategic choices that need to be made, and the links between these choices, environments, and the company’s performance now and into the future.

Managerial implications and conclusions

Huawei has benefited from China’s central government policy to construct large, indigenous globally competitive firms. Government support such as soft loans has helped local and overseas customers fund the purchase of Huawei’s products. Government-led initiatives in leading tender talks in developing nations have significantly raised the company’s global profile. These policies and actions have provided both a spur and the potential for Huawei to construct successful local and global R&D and technical joint ventures, as well as marketing and distribution alliances. However, major technical, economic, and political challenges confront Huawei in a transitional global telecommunications market.

One of these is continued central government involvement in constructing large indigenous enterprises that can challenge the world, although some critics have argued that Huawei has...
achieved success despite being largely independent of the central government. The second and somewhat paradoxical factor is China’s bureaucracy, which has a tendency to limit the expansion of ambitious, and increasingly entrepreneurial indigenous firms. Third is the perennial question of whether the nation’s, and by inference, Huawei’s aspiration to become a technological super power can be achieved without access to foreign technical and marketing help, and access to the global equity market.

Huawei, like China, lies at a cross road in a transitional telecommunication sector that is no longer isolated from global reforms and advancement. Through internationalisation, the company has learned to compete. By putting themselves up against the best, initially in developing nations and lately in developed nations, they have learned to appreciate the network of global telecommunication giants, their resources and the activities they perform in transforming these resources. Through this process, Huawei has also adjusted their mechanisms, learning instruments, and focus.

By exposing themselves to global markets and dealing with global telecommunications companies, Huawei has also raised their profile. Increasingly, the company is appearing on the radar of the global telecommunications community. It is no longer seen solely as a Chinese telecommunications company, but as a potential global telecommunications giant.

Numerous challenges are now faced by Huawei, as it seeks to make the transition from an indigenous telecommunications business to a potential global telecommunications giant. Unfortunately, this is happening at a time when Huawei needs to be where market growth is. Right now, the action is largely in China.

Case questions

- Can Huawei compete in the global telecommunications market dominated by a select few especially given its limited research and development investment when compared with some of the global telecommunications giants? If yes, why and how? If not, why not?
- “Global telecommunication giants stand to gain more with global telecommunications reforms and liberalisations than Huawei does.” Do you agree or disagree with this statement? Explain your reasons.
- “Huawei’s successes in penetrating the markets of developing nations will not be easily replicated when attempting to penetrate the markets of developed nations.” Do you agree or disagree with this statement? Explain why or why not?
- Is it desirable for China’s central government to actively participate in the construction of Huawei so that the company is in a position to challenge some of the global telecommunication giants? Do you agree? Why or why not?
- Should Huawei seek an Initial Public Offering (IPO) listing as a matter of strategic priority? What are the advantages and disadvantages in seeking this listing?

References


Corresponding author

Brian Low can be contacted at: b.low@uws.edu.au

Appendix. Glossary of terms

- **Third-generation (3G) technology.** This is usually used to describe the next wave of mobile communications. While analog technology represents the first wave of mobile communications technology and digital represents the second (2G), 3G technology will provide more bandwidth for mobile devices.

- **Code division multiple access (CDMA) 2000.** This is a 3G mobile wireless technology. It can support mobile data communications at speeds ranging from 144 Kbps to 2 Mbps. Qualcomm’s CDMA is widely used in the USA.

- **Time division synchronous code division multiple access (TD-SCDMA).** This is China’s homegrown third-generation mobile wireless technology. It competes with the US CDMA2000 system backed by Qualcomm Inc, and Europe WCDMA backed by Ericsson and Nokia. Development started in the late 1990s and is certified by the ITU (International Telecommunications Union) as a 3G (third-generation) standard in 2000.

- **Wideband code division multiple access (WCDMA).** Developed by Ericsson and Nokia, this 3G mobile wireless technology promises much higher data speeds to mobile and wireless devices than commonly offered in today’s market, and has been adopted by 3 and Vodafone in Europe. The input signals are digitised and transmitted in coded, spread-spectrum mode over a broad range of frequencies. A 5 MHz-wide carrier is used compared with 200 kHz-wide carrier for narrowband CDMA.

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