Hopewell Holdings: Implications for Success in Asia's Independent Power Markets

by

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Abstract

This thesis analyzes the implications of Hopewell Holdings' success for the future of independent power in Asia. Led by renowned Chairman Gordon Wu, the company has compiled an impressive record for "pioneering" privately financed power projects in Asia where other developers have refused to take the risk. Ironically, Hopewell is not a major European or North American independent power company, but a Hong Kong property developer which has recently converted its operations to provide mega-infrastructure projects.

Hopewell's unanticipated success has captured the attention of independent power experts worldwide. Analysts estimate that Asia will spend nearly $450 Billion during the next decade to expand its power generation resources. With western markets depressed from over capacity and the prospects of deregulation, Asia has been viewed as a key element of future industry earnings growth. However, global independent power producers have had limited success in establishing a foothold in the region. In contrast, Hopewell has developed the first two privately financed power ventures in both China and the Philippines, and has acquired the largest market share of private power in Asia.

While political, legal and bureaucratic factors are frequently cited for failures to crack the Asian market, Hopewell's success indicates that alternative strategies may be needed for current market conditions. Though "connections" are sometimes cited as Hopewell's primary strength, this thesis reveals that a number of core capabilities and business models differentiate Hopewell from its competitors. Through an analysis of the company and its market place, this thesis identifies implications for Hopewell's continued success and the improved positioning of its competitors.

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ABBREVIATIONS

ABB	Asea Brown Boveri
AES	Applied Energy Services
BERTS	Bangkok Elevated Road & Rail Transport System
BOO	Build Own Operate
BOOT	Build Own Operate Transfer
BOT	Build Operate Transfer
BTO	Build Transfer Operate
CEPA	Consolidated Electric Power Asia
EDF	Electricite De France
EGAT	The Electricity Generating Authority of Thailand
EPC	Engineering Procurement & Construction
GSZ	Guangzhou-Shenzen-Zhouhai Superhighway
GW	Gigawatt
IPP	Independent Power Producer
IRR	Internal Rate of Return
LOU	Letter of Understanding
MOEP	Ministry of Electric Power
MW	Megawatt
PPA	Power Purchase Agreement
PURPA	Public Utilities Regulatory Policies Act
YTL	Yeo Tiong Lay Corp.

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Chapter 1

Introduction

This thesis analyzes the implications of Hopewell Holdings' success for the future of independent power in Asia. Led by its founder Gordon Wu, the company has pioneered privately financed power projects in regions where project and country risks were previously thought to be prohibitive. Hopewell's success has perplexed and frustrated many of its competitors given that it is not an established independent power developer but a Hong Kong real estate developer which has recently shifted its strategy to mega-infrastructure projects.

With the largest share of the Asian independent power market, Hopewell's success has captured the attention of independent power experts worldwide. Analysts project that Asia will invest nearly $450 Billion in power generation over the next decade with approximately 25% of that amount coming from private power.[1] Having built the first two privately financed power ventures in both China and the Philippines, Hopewell's strategies may hold the key to this substantial market opportunity.

Hopewell's success is of particular interest given that traditional players in the IPP industry have had difficulties gaining a foothold in Asian. While some of these difficulties are clearly due to political, legal, and bureaucratic impediments, Hopewell's success indicates that market deficiencies are not solely responsible for the failure of western firms. While "connections" or "guanxi" are sometimes cited as Hopewell's competitive advantage, a more detailed analysis reveals that Hopewell has developed particular business models and capabilities uniquely suited for the Asian marketplace.

Until the early 1990's, international markets held limited attention for independent power developers given the risks involved and the opportunities available in western markets. In the United States, the Public Utilities Regulatory Policies Act of 1978 essentially spawned an entire new industry opportunity by mandating that public utilities purchase power from independent power producers (IPP's) provided they could meet the utilities' avoided costs.[2] PURPA and subsequent changes resulted in significant opportunities for private developers such that over half of new generation sources in the US are now provided by IPP's versus public utilities. Deregulation initiatives in Western Europe, including UK's privatization of state run utility boards by 1990, further enhanced IPP market opportunities.

By the early 1990's, a combination of economic and regulatory changes in western economies led most major power companies to seek new sources of earnings growth in

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[1] Sara Khalili and Claire Hunte, "Power Players", Infrastructure Finance, Dec.-Jan., 1995, p. 21.

[2] Avoided cost is the cost a utility would have incurred had it chosen to provide the same additional capacity on its own.

international markets. Most notably excess capacity and a significant drop in new demand in North America and Western Europe left utilities, power developers, and technical firms with limited opportunities for continued domestic growth. This was compounded by the fact that deregulation efforts in the US and UK further increased long term competitive pressures such that the prospects for future earnings growth remained slim even after the industries had worked off their excess capacity.

Meanwhile, by the end of the 1980's and early 1990's international markets had started to play a major role in world power development. Sharp increases in power demand from developing economies coupled with a lack of capital, equipment and expertise to achieve capacity expansion had created a significant outlet for the resources and capabilities of stagnant western power companies. Prospects for international growth were enhanced as governments of developing economies, in their efforts to attract resources from developed economies, took significant steps towards privatizing their power sectors.

Asia in particular has captured the attention of international power development firms given its size and growth potential. As the fastest growing region in the world , Asian economies are expected by some analysts to account for 60% of all new energy development in the next decade.[3] Even though Asia has made impressive gains in its generating capacity, serious shortfalls exist in most developing countries. It is estimated that power shortfalls curtail 30% of industrial activity in parts of China and that approximately 120 Million Chinese are without electricity.[4]

While Asia appears to provide a key to future earnings growth, the initial experience of many western firms has been disappointing so far. Many ventures have been proposed and even negotiated. However, relatively few have moved through the financing stage and on to construction. Moreover, of the firms who have succeeded in closing deals, many of them do not return to the same country after their painful initial experiences.[5] In China in particular there is a perception that you can do business, but you don't make any money.[6]

Nevertheless, western firms continue to jump into the market for Asian power development. IPP subsidiaries are being formed from every element of the value chain including financiers, fuel companies, operators, constructors, and equipment suppliers indicating among other things, that the Asia presents a different range of market opportunities compared to western economies where Utilities and IPP's dominate the market for new capacity. Between January of 1994, and July of 1995, the number of firms

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[3] Peter Evans, Lecture, MIT, February 26,1996.

[4] ---"Electrifying China", Business China, Economic Intelligence Unit, Power Supplement, Spring 1995, p. 1-2.

[5] Len Devanna, ComEnergy, Vice President, Systems, Planning and Development, personal communication, May 26, 1996.

[6] Rudiger Dornbusch, Lecture, MIT Sloan School, March 6, 1996.

tracked by McGraw Hill who were active in China has risen from 26 to 54, those active in India had risen from 16 to 43, and the number of firms active in the Philippines had increased from 14 to 30.[7]

With so many firms entering the market coupled with the slow nature of project development, competition has increased beyond normal expectations. The recent solicitation for the first phase of Thailand's 3500 Megawatt (MW) Electric Generating Authority of Thailand (EGAT) project received responses from 35 bidders, while China's solicitation for its 700 MW Laibin B plant received 42 bidders.[8] Clearly, this type of competition cannot sustain the current number of players active in Asia.

The large numbers of participants coupled with significant economies of scale and the slow pace of project deal formation imply that the Asian IPP market may consolidate to a relatively few large players, accompanied by the withdrawal, failure or acquisition of many existing firms and subsidiaries. This has led firms and analysts to confront several obvious questions which include:

- Who will the eventual winners be in the race for Asian market share?
- Will it be the companies with the size, global presence and technology that analysts prescribe?[9]
- What are the other capabilities which might prove essential for sustainable competitive advantage in this sector?

Industry literature has focused on four primary success factors including access to capital, entrepreneurship, market presence and technical capabilities. However, if the key to the Asian market place is so straightforward, one must ask why the majority of western firms had such difficulty thus far, while a few select firms have been successful. Though bureaucracy and red tape are often stated as reasons for failure, a few firms such as Hopewell Holdings and Applied Energy Services (AES) have made headway in the Asian environment . Are these firms simply stronger with respect to current success factors? Are "connections" the key to their success? Or are there other qualities or strategies that make them stronger candidates in the Asian market?

This thesis attempts to answer such questions by illuminating the capabilities and strategies employed by Hopewell Holdings which have enabled the company to become the leading independent power developer in Asia.[10] The outline of the thesis is as follows:

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[7] McGraw-Hill Inc., 155 Independent Power Companies, July, 1995.

[8] "BOT or Not To Be", Business China, Economic Intelligence Unit, March 18, 1996, p. 6-7.

[9] Donald Marier, "The Market Challenge", Independent Energy, December 1995, p. 2-6.

[10] Sara Khalili, "Power Players", Infrastructure Finance, December/January 1995, p. 21.

Chapter two begins with an analysis of Hopewell Holdings, its origins, characteristics, the vision of its founder Gordon Wu, and its transition from a Hong Kong real estate developer to a regional provider of mega- infrastructure projects in Asia.

Chapter Three outlines the industry in which Hopewell operates. It discusses the origins of private power in the United States, the transition of private power markets over the last decade and the emergence of Asia at the forefront of IPP activity. The industry value chain is reviewed, industry groups and success factors are identified and the market share of each of the industry groups including Hopewell is characterized. Finally the chapter raises the question as to whether Hopewell has developed new business models for private power in Asia.

Chapter Four analyses Hopewell's market and project models, and identifies how Hopewell differs itself from established independent power companies. In particular Hopewell's high risk high return strategy is analyzed along with the capabilities required to implement such a strategy. A comparison of project financial internal rates of return is made using both established business models and the Hopewell business models.

Chapter Five summarizes Hopewell's business models, identifies environments where they will be successful and not successful, and discusses sustainability of Hopewell's strategies. The chapter concludes with implications and recommendations for the continued market leadership of Hopewell and the improved positioning of its international competitors in Asia.

Chapter 2

Hopewell Holdings Ltd.

Hopewell Holdings' success has surprised many experts in the infrastructure and development industries because it does not share in the traditional roots of its competitors, especially those who develop mega-infrastructure projects. Traditionally, it takes many years to build construction and development capabilities required for such large scale construction and development. However, Hopewell has managed to convert its Hong Kong real estate operations to mega-infrastructure development in a relatively short time. To some degree there is a sense that traditional players have been short changed by a company which really does not have the experience necessary to undertake such projects. One industry executive has pointedly noted, "We keep wondering how long its going to last."[1]

The following analysis of Hopewell's origins affords the basis for understanding how Hopewell could vault ahead of the competition and just how different it is from established developers of mega-infrastructure. A review of Hopewell's past provides a basis for future discussion and understanding of Hopewell's current capabilities and unique business models for private power development. A central element to this analysis is the history and personality of Hopewell's founder Gordon Y. S. Wu and his impact on the firm's strategies and long term vision.

Hopewell's Origins as a Hong Kong Real Estate Developer

Hopewell Holdings evolved from the aspirations of Gordon Wu who grew up in Hong Kong and graduated from Princeton in 1958. While earning his degree in Civil Engineering, Wu was markedly impressed with state of infrastructure in the United States, particularly the roads, bridges and high rise buildings of New Jersey and New York City.[2] He was equally impressed with accounts of pioneers like the Vanderbilts and Harrimans who built the U.S. railroads during the 19th century. A guiding force for Wu's early ventures was Rockefeller, who said that in the future, the money will be in real estate. The cultural optimism of the 950's clearly influenced Mr. Wu who left the US with a desire to make a million dollars and the belief that with money 'you have selective power: you can afford to make mistakes, you have that extra margin for safety'.[3]

Upon graduation from college, Wu returned home to Hong Kong where he set out to make his fortune. He first worked for a local architect-engineer for two years followed by another two years with the government's works department. Together, these positions earned him a spot on the government's list of accredited architects and enabled him to lay

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[1]Fred Marsh, Manager of Marketing and Business Development, Bechtel Power Corporation, Hong Kong, personal communication, July 12, 1994

[2] Thomas Pyle, "The New Jersey Turnpike of China", Public Works Financing, February 1994, p. 17-18.

[3] Simon Holberton, "Profile:Gordon Wu", Financial Times, May 5, 1992.

plans for a company of his own.[4] Wu still maintains a drafting table and plenty of blueprints in his office indicating his hands on approach to his business.

In 1962, Gordon Wu took the first of many entrepreneurial steps and convinced his father that they should go into real estate. Keeping Rockefeller in mind, Wu not only recognized that significant amounts of money could be made in real estate but also that when people earn more money they tend to spend it on housing . Such was the case of Hong Kong in the 1960's. Incomes were rising, and the prices of apartments were rising but the costs of land remained low. Wu convinced his family that they could buy land cheap, develop it and sell apartments at a profit.

The Vertically Integrated Company

The Wu Family business soon branched into full scale property development. Gordon Wu believed that he could make a difference by creating a vertically integrated company which combined planning, design and construction with the traditional real estate business. Wu envisioned that a considerable cost and time savings could be achieved by cutting out layers in the development process, a philosophy still employed today in Hopewell's mega-projects. Wu's vision proved correct and in the next seven years the Wu family 'made a lot of money' in what Gordon Wu considers the 'forerunner of Hopewell Holdings'. The company's primary business was residential housing, though it occasionally developed office space as well.

Hopewell Holdings was soon formed out of an unplanned turn of events. Gordon Wu's father retired from business in 1969, leaving Gordon on his own with 'absolutely no money'.[5] However, Wu soon developed a plan to continue his business by securing a bank loan based on a letter of guarantee from his father. He succeeded in obtaining a HK$15 million loan from the Hongkong Bank. Coincidentally, the loan officer at the time was William Purves, now the Chairman of Hongkong Bank. (In 1986, Purves was to approve Gordon Wu's loan to take up rights in Hopewell's HK 5.2 Billion rights issue prior to Wu even approaching the Hongkong Bank).[6] Wu promptly invested this money back into real estate. In 1972 he took his operations public with three friends who had earlier joined him as investors. Hopewell Holdings was created with Gordon Wu obtaining a 27% stake in the company.[7]

Between 1962 and 1995, Gordon Wu and his companies compiled a stellar record of accomplishments while overcoming an unusual series of crisis. The company completed development of over forty seven major building projects. However, bank runs in 1965, the cultural revolution in China in 1966, and the stock market collapse in 1973 all nearly put Gordon Wu into bankruptcy. With each setback Gordon Wu was able to

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[4] Ibid.

[5] Baldinger, Pamela, "Guangdong's Rockefeller", China Business Review, Jan-Feb 1993, p.38-41.

[6] Holberton.

[7] Baldinger, p. 38-41.

survive because in each case he was able to convince his bankers that his plans to survive would work. Wu's shrewd sense of what bankers require is frequently cited as a key to his success in good times as well as bad.

A Shift in Strategy to Infrastructure

Hopewell is now in the process of a major shift in corporate strategy from property investment and development to major infrastructure development and investment. According to Mr. Wu, this shift was prompted by an error in judgment regarding the rapid escalation of Hong Kong real estate prices in 1979. Wu believed that the real estate market functioned on the laws of supply and demand, and location. He thought the Hong Kong market was overheated and unsustainable and therefore began to seek elsewhere for opportunities . Today, Wu acknowledges that he overlooked one critical factor in 1979, the continued growth in personal income, which now plays a central role in Hopewell's grand infrastructure scheme throughout Asia. Hopewell plans to ensure a major stake in real estate and property rights adjacent to infrastructure projects in China and Thailand.[8]

Hopewell's first step in its new strategic course was its move into China. Deng Xiaoping's 1978 announcement to open up China coincided perfectly with Hopewell's predicament. According to Wu, ' China had opened the door and I thought it must present better opportunities than Hong Kong.' Upon arrival in China, Wu claims to have noticed the opportunity for infrastructure immediately. He saw the similarities between China and the United States in the 19th century when the government had no money to develop roads, bridges, railways and canals. Like the stories of the great U.S. expansion through the efforts of Vanderbilts and Harrimans, Wu thought that China would have to rely on private developers to expand its infrastructure. [9]

The company soon embarked on a plan that would radically change its character from a respected Hong Kong property developer to an international pioneer of infrastructure mega-projects. Hopewell's first foray into China was the 1200 room China Hotel in Goungzhou City which was completed 1983. Wu claimed the facility to be the most successful hotel in China in terms of earnings as of 1993.[10]

The China Hotel led to Hopewell's next China venture and entry into the power market. During the Hotel's construction, Hopewell was repeatedly hit by blackouts which gave Gordon Wu the idea of selling electricity. That idea led to the start of construction of the 700 MW Shajiao 'B' power station in 1985, adjacent to the Hotel. Hopewell completed the project eleven months ahead of schedule in 1987, and has recently completed a second stage project called Shajiao 'C' which will supply 1980 MW of power. This initial use of project staging has been replicated in many of Hopewell's infrastructure ventures and appears to be an important element of its market and project strategies.

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[8] Holberton, Simon, "Profile:Gorndon Wu", Financial Times, May 5, 1992.

[9] Ibid.

[10] Ibid.

By 1993, China would make up approximately 60-70 percent of Hopewell's project portfolio with Hong Kong consisting of no more than 20 percent. Moreover, Hopewell had undertaken the most talked about projects in Asia. They include the Goungzou-Shenzen-Zhouhai (GSZ) Superhighway in China, the Bangkok Elevated Road & Rail Transport System (BERTS) in Thailand, and development of numerous power plants in China, the Philippines and Indonesia. Hopewell jumped out in front of major international competitors who were constrained by their inability to provide corporate finance or acquire multilateral project finance given the country and project risks involved. Hopewell, circumvented these issues by risking its own balance sheet to finance many of its projects and notably its Shajiao B, Shajiao C, GSZ, and BERTS projects have all been financed without guarantees from multilateral agencies.[11]

Hopewell's High Risk Approach

Hopewell's approach is unusual in that it focuses on pioneering projects with risks its competitors often refuse to consider. This is strategy is clearly evident in the companies early experiences in both China and the Philippines. Hopewell was willing to accept the risks of those countries when most firms felt the economic and political conditions were far too uncertain. According to Fred Marsh of Bechtel Power, "Hopewell was willing to do business in the Philippines while the G.E. Capitals of the world refused to take the risk".[12]

Hopewell's high risk appetite and the aggressive attitude of its founder have continued to play an important role in Hopewell's follow on projects throughout Asia. The GSZ and BERTS projects involve so many legal, political and economic issues that most firms would not be willing to undertake them on a privately financed basis. Nevertheless, Gordon Wu relishes the challenge, disparaging the success of his fellow Hong Kong tycoons who continue to make fortunes in Hong Kong property development and has noted, 'That's for every Tom, Dick, Harry and Trump. I want to go into infrastructure'.[13]

While Hopewell may have shifted its strategy from property development to infrastructure, it did not change the core elements of Gordon Wu's original development philosophy. Vertical integration continues to be a central theme to Hopewell's development activities in contrast to many of its competitors. After using Costains, a major European Contractor, as construction manager on the Shajiao B power station, Hopewell's subsidiaries have managed the majority of Hopewell's follow on power ventures. Project staging, close ties with bankers and political leaders, the use of additional forms of compensation such as property rights, and the pursuit of visionary high risk projects continue to be hallmarks of Hopewell's reputation.

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[11] Hiro Iizuka, A Comparative Study of BOT in Developing Asian Economies, Masters Thesis, MIT Department of Civil and Environmental Engineering, May 1994, p. 173-174.

[12] Fred Marsh, Manager of Marketing and Business Development, Bechtel Power Corporation, Hong Kong, personal communication, July 12, 1994.

[13] Edward Gargan, "Building Asia's Roads and Power", New York Times, Wednesday, August 17, 1994, p. D2.

The Impact on Corporate Operations

The company's strategic shift has resulted in considerable transformation in operational and financial characteristics. The chart below provides a summary of these changes, and helps illustrate why Hopewell's competitors might feel shortchanged by Hopewell's success given that firms typically require decades to develop infrastructure skills for the magnitude of Hopewell's projects. The chart also helps illuminate reasons why Hopewell may be experiencing recent difficulties in its transportation projects in China and Thailand.

Exhibit 1.1 Summary of Operations[14]

Previous Operations - Real Estate	Current Operations - Infrastructure
1. Property development	1. Infrastructure development
2. Operations concentrated in Hong Kong	2. Operations throughout Asia
3. Each project concentrated in a small location	3. Projects spread over wide areas
4. No Foreign Exchange Risks	4. Foreign Exchange Risks
5. Similar nature of each project	5. Wide-variety of unique projects
6. Vertical steel reinforced concrete structures	6. Wide variety of earthworks and structures
7. Possible to utilize the same teams of sub-contractors from project to project	7. New set of sub-contractors per project
8. One legal system	8. Many legal systems
9. Relatively quick turnover of working capital	9. Dependent on long term fixed capital
10. Limited technical challenges	10. Large technical challenges
11. Finite cost control	11. Cost control is difficult because each project is unique
12. Limited variation in project duration	12. More prone to delays
13. Relatively shallow managerial depth required	13. Substantial depth of management skills required

Hopewell's New Corporate Structure

Hopewell's new corporate structure is shown below and depicts the breadth of Hopewell's infrastructure and development activities. Of primary concern to this analysis is Consolidated Electric Power Asia Ltd. (CEPA), which was formed in 1993 to spin off Hopewell's power generation activities from the parent company. With regard to power generation ventures, this paper shall refer to Hopewell rather than CEPA given that Hopewell controls all of CEPA's activities.

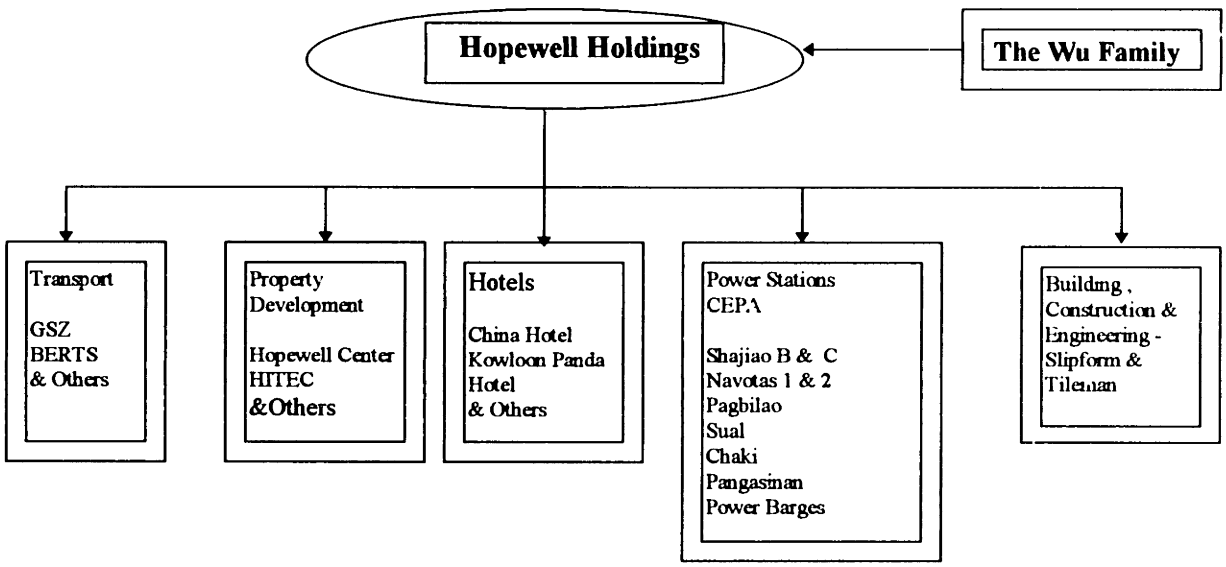
The primary motivation for the CEPA spin off was so Hopewell could raise additional capital for its infrastructure investment program.[15] Up to that point, and since then, Hopewell has been conducting large asset sales of it Hong Kong property holdings

[14] Michael Green, Hopewell Holdings Ltd, S.G. Warburg Research Analyst Report, November 16, 1993, p. 21.

[15] Michael Green, p. 1.

to satisfy a significant capital budgeting deficit. The CEPA offering was a much needed success. Underwriters sold the issue as a way for foreign investors to get a stake in power projects in China which had become a popular investment theme given Hopewell's early successes and that the Chinese had yet to set limits on rates of return. The popularity of the initial CEPA offering was underscored by its pricing which yielded a price-earnings multiple of 39 times. The offering was oversubscribed by 43 times and rose 20% in its first day of trading.[16] While difficulties in the China market along with recent delays on power projects have depressed CEPA's share price, the timing of the CEPA offering may again exemplify Gordon Wu's ability to capitalize on first mover advantages in financing much the way he has capitalized on first mover advantages to develop projects in the Philippines and China.

Exhibit 1.2 Hopewell's Corporate Structure



The Grand Strategy

Not surprisingly, Gordon Wu's plans do not end with large power plants, the GSZ and BERTS. In the power sector, Hopewell currently has plans for massive power stations of 10,560 MW in India and 5,280 MW in Pakistan, and about 20 additional potential power projects in China. Hopewell is seeking to employ a cookie cutter approach to its plant construction by using a standardized 660 MW plant which will give the company significant cost savings over its competitors.

Wu also envisions extending his GSZ superhighway system from the Pearl River delta deep into China's interior up to Chongching. This would allow Hopewell to capture container traffic which currently moves slowly down the Yangtze river on boats to Shanghai and divert it by truck to Hong Kong. Revenues from these projects along with real estate and property development rights could yield Wu and Hopewell billions.[17]

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[16]Reinhardt, Bill, "Hopewell's Asia Power Play", Public Works Financing, February 1994, Page 15.
[17] Ibid.

Chapter 3

Analysis of The Independent Power Industry

This assessment of the independent power industry attempts to provide the context of Hopewell Holdings' success through an understanding of the industry in which it operates. The analysis leads to a discussion of whether Hopewell maintains unique business models for the IPP industry and whether those models are sustainable for the future. The chapter approaches these issues through: 1) a review of the independent power industry's evolution; 2) examination of the industry value chain and industry success factors; 3) analysis of five industry groups, the implications of their global market shares, and discussion of whether Hopewell's success points to new models for competition in Asia.

Evolution of the Independent Power Industry

Prior to the late 1970's, the global electric power generation industry had settled into relative equilibrium where the rules for ownership, financing and development were fairly standardized. In developed economies, regulated public or state run utilities monopolized ownership of electric industry assets. Capacity expansions were achieved through traditional sources of corporate finance and constructed by large engineer power constructors and equipment suppliers. Developing economies operated in similar fashion with the exception that utilities were more likely to be state run, multilateral lending institutions and government coffers played a major role in financing, and state run construction firms also played a greater role in project development.

In the last two decades significant changes in the ownership, financing and development of electric industry assets have occurred. In many countries, independent power producers (IPP's) may now own, finance and develop generation facilities, and in some cases they may own distribution and transmission assets as well. In developed economies much of this has been driven by the need for greater industry competition to reduce electricity prices. In developing economies this has been motivated by a need for greater financial, managerial, and technical assistance to expand power sectors where electricity shortages seriously constrain economic growth.

Deregulation Begins in the United States

Independent power as a major source of electricity for public utilities first arose in the United States.[1] While limited forms of private power have existed around the globe for many decades, unfavorable changes in the electric power industry during the 1970's prompted the U.S. make wholesale changes in its electric power sector. Economically, electricity prices had risen dramatically as a result of increased fuel, construction and operating costs in the 1970's. Technologically, efficiency improvements in power

[1] Karl G. Jechoutek, and Ranjit Lamech of the World Bank, "Balance Sheet Support", Independent Energy, January/February 1996, p. 38.

generation technology had significantly diminished since the 1960's, and could not longer compensate for rising input costs as they had in the past.[2]

The Public Utilities Regulatory Policies Act (PUPA) of 1978, was the watershed event that precipitated the entry of a host of non-utility providers of electricity. PUPA changed the structure of the industry by mandating that utilities purchase independently produced power at the utilities' full avoided cost.[3] As a result, small companies were able to enter the power production business with little equity because they were able to finance new plant development against long term contracts signed with the utilities. This industry transformation was further enhanced by stagnant cost reviews of state Public Utility Commissions in the 1980's which denied utilities the ability to recoup certain investment costs from customers. The combination of these events made utilities hesitant to add new capacity on their own while forcing them to accept non-utility sources of power to fulfill new capacity requirements.

Prior to 1979, production of electricity by non-utilities in the US and abroad was a small and diminishing segment of the electric power industry. In the US, non-utility electricity generating capacity was primarily owned by industrial corporations for their own use. Non-utility capacity remained stagnate at about 19 GW through the 1970's out of a total capacity of 342 GW in 1970, and 598 GW in 1979, marking a declining market share of 5.5% to 3%. However, as a result of regulatory and legislative changes, non-utility capacity rose to 6% by 1991, or roughly 48 GW out of 788 GW total capacity, and more importantly non-utilities produced about 9% of electricity generated in 1991. [4] Independent generators have contributed more than half of net new capacity additions over the last 10 years.

Privatization Expands Abroad

While private power may have got its strongest start in the United States, many other countries have since equaled or surpassed the United States in their privatization efforts. The United Kingdom privatized its twelve regional electric companies by 1990, marking a significant achievement for private power. Chile completely privatized its generation, transmission and distribution systems by 1990, Argentina privatized most of its generation sources, and Peru has privatized much of its distribution network. Many other countries have taken similar steps mostly to provide privatization opportunities in the generation sector.

Privatizations in developed countries have mostly occurred to make the power sector more competitive and efficient. However, privatizations in developing economies

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[2] The Changing Structure of the Electric Power Industry 1970-1991, Energy Information Agency, March 1993, p. 3-7.

[3] Avoided cost is the cost utilities would have incurred had they chosen to provide the same additional capacity on their own.

[4] The Changing Structure of the Electric Power Industry 1970-1991, Energy Information Agency, March 1993, p. 3-7.

have occurred largely as a means to make up for investment shortfalls and ease political and economic tension resulting from chronic power shortages. A classic example of this is the Philippines who's daily power brown outs resulted in the government terminating the National Power Corporation's monopoly of electricity generation in 1987, thereby allowing private parties to build and sell electricity to its state sponsored utility.

One effect of the global privatization movement over the last two decades is that in many respects it has spawned a new industry of companies geared towards private power development. Many companies have been formed from scratch, some have grown out of construction, fuel or equipment firms, while others evolved as subsidiaries of existing state or public owned power companies and utilities. Cogentrix of North Carolina, an independent power developer which focuses on technological and operational expertise, is a prime example of a relatively new industry player. Destec which developed power projects for its parent Dow Chemical Company, is an example of a power developer which grew out of previous non regulated experience. Southern California Edison's Mission Energy exemplifies a subsidiary of a major public utility which was formed for the purpose of pursuing global private power opportunities. And even state sponsored utilities such as Electricite de France, have formed their own divisions to capture global private power revenues.

The Shift to Developing Economies in the Late 1980's and 1990's

A combination of factors led the industry to significantly shift its attention to less developed countries starting in the late 1980's. Western economies had experienced a considerable slowdown in new capacity requirements and in some cases over-capacity. Meanwhile power shortages in developing economies continued to worsen as rapid growth in countries such as China and Thailand had not been accompanied by sufficient growth in their electric power sectors. Finally, Hopewell Holdings' project financing breakthroughs in China and the Philippines demonstrated that privately financed power projects could be a viable means of developing power projects in economies whose risks were previously thought to be prohibitive for such types of investment.

With these changes in the global power environment, western power companies soon came to view opportunities in developing countries and as the key to their future. A typical perspective of many western companies could by summarized Electricity de France's statement: "EDF sees international markets as its only avenue to growth because its mission in France - electrifying the country is complete."[5]

To accommodate this perspective many western governments have taken significant steps to encouraged their power industries to take part in this growth. In the United States, The Energy Policy Act of 1992 made it easier for non regulated subsidiaries of pubic utilities to invest abroad. Additionally, the U.S. Department of Energy and U.S. Exim Bank have substantially increased their budgets to assist in exporting U.S. power development capabilities through trade negotiations and export financing.

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[5] Thomas Lippman, "World markets Open to U.S. Utilities", The Washington Post, April 20, 1993, p. D3.

Developing economies have responded by making considerable changes in investment regulations and industry structure to encourage greater international private participation in their power sectors. One of the more impressive examples is that of China which has made significant investment policy, organizational and regulatory changes to this end. Chief among these changes include opportunities for wholly owned foreign ventures to build, own and operate power plants in China. Considerable efforts have also been made to decentralize the procedures for project development. Whereas the central government used to control all aspects of project development, it is now only concerned with technical and economic feasibility, and final approval for large power projects. The burden of financing and developing projects has been shifted to the provincial and local authorities and approval of small scale projects in the 50 MW range can be achieved at the provincial or local level.[6] On the regulatory side, the Ministry of Electric Power is now focused on overall coordination of the industry and has left many of the regulatory issues up to regional and local power companies. [7]

Global Slowdowns, Competition and the Prospects for Consolidation

A combination of events in the early 1990's put a damper on IPP opportunities. Domestic markets in developed economies continued their slowdown while domestic projects became increasingly larger, more complex and difficult to finance. Meanwhile, international projects offered opportunities that smaller less capitalized companies could not take advantage of and that larger companies could not finance due to project risks and burdensome approval processes of host countries. Finally, some host governments added additional restrictions in response to excessive profits made on early BOT ventures. China, the largest international market, set a 12% cap on project rates of return effectively putting large scale development activity, including 50 proposed power plant deals, on hold.[8] The cap was later raised to 15%, however this return has not been sufficient for most developers given the amount of risk involved. [9]

Depressed markets combined with an increase in market participants has led to significantly greater competition within the industry. This is most readily observed in the overwhelming responses to tenders for international projects. Thirty five companies responded to the Electricity Generating Authority of Thailand's (EGAT) 1994 Request For Proposal to develop the first 1000 MW stage of its 3500 MW independent power program. Forty two companies have recently bid for the rights to develop the 700 MW Laibin B power plant in Guangxi, China.

Increased competition and the global slowdown has led many industry analysts to predict significant industry transformation and consolidation. Many believe that this

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[6] John Anderson, "A New Vision", Independent Energy, January/February, 1996, p. 47.

[7] ---U.S. Embassy, Beijing, China, "China-Electric Industry Profile", Market Reports, National Trade Data Base, 21 October 1994.

[8] Carl Goldstein, "Beyond China", Far Eastern Economic Review, May 12, 1994, p. 61.

[9] Kari Huus, "Gridlock Anyone?", Far Eastern Economic Review, November 10, 1994, p. 56-58.

activity will result in the survival of a number of large, well capitalized industry players, many of which will be publicly traded.[10] The forces which are believed to be driving this consolidation include a need for; 1) larger financial assets to support the increasing costs of project development; 2) larger balance sheets to achieve a competitive cost of capital by allowing companies to corporate finance versus project finance large new projects; 3) increasing the scope of firm's capabilities such that they can provide a full range of power development services to customers around the world: and, 4) through increased size, the ability to obtain greater market presence and influence in international markets which hold the bulk of future industry earnings.

The Evidence on Consolidation and Competitive Markets

While the case for consolidation is strong, data indicates that the move towards global consolidation is mixed. Supporting consolidation is the fact that mergers and acquisitions have significantly increased, competitive pressures are increasing as more bidding procedures have been instituted in developing markets, and developers are increasingly able to use public capital markets for power project financing. However, this evidence is balanced by the vast number of new players entering the market, the recent success of large negotiated deal structures, and the shear size of future demand in developing countries. The IPP market is obviously in a state of transition. However, it remains to be seen just how quickly the market will move towards full consolidation and competitive equilibrium.

Clearly, even the largest companies are finding pressure to consolidate. California Energy's recent purchase of Magma Energy in 1995, creating the worlds largest geothermal power company, is a classic example. The acquisition also combined the technical and financial support of parent companies Dow Chemical Co. and Peter Kiewit Sons Inc.. Similarly U.S. Generating's acquisition of J. Makowski in 1994 combined the project development and financial skills of both companies along with the utility and EPC skills of U.S. Generating's giant parent companies Pacific Gas & Electric and Bechtel Group.

However, to some degree such mergers may be motivated by the desire to mimic the initiatives of market leaders rather than a pure strategic intent. Firms may simply be uncertain which global strategies will dominate in the future and want to avoid being left behind. Thus, following the consolidation patterns of market leaders assures firms that can maintain some measures of the status quo.[11] Only time will tell whether these mergers truly yield value in the long term, as long term pressures against consolidation may dissipate some of the values of size and scope. For example, competitive bidding procedures may eventually demand that firms be extremely efficient at one primary value chain function as they do in the U.S. market.

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[10] Thomas O. Loyd Butler, "The Outlook for Independent Power Producers", Institutional Investor, 1993.
[11] Carlos Garcia-Pont and Donald R. Lessard, "Alliance Networks In European Banking", International Financial Services Research Center, MIT Sloan School of Management Discussion Paper No 180-91R, January 1994, p. 6.

New international bidding procedures may actually relieve some of the consolidation pressures in the near term as well. While new bidding procedures in China and Thailand have attracted scores of participants, their success in driving down the price of power project deals may mean that they are soon implemented in many more regions of Asia. If these transparent and competitive bidding procedures catch on, the need to achieve market power and influence through size may be greatly reduced as companies will be able to compete on price versus other factors. Clearly, bidding procedures will not be favored by firms such as Hopewell who rely on the ability to use market influence entrepreneurship to create negotiated project deals.

A mixture of pressures for and against consolidation can be found in the large numbers of new entrants in the IPP industry. The Mcgraw Hill's yearly profile of Independent Power Companies reported on 155 active companies in 1995, versus the 125 companies it reported on in 1994.[12] If the industry was quickly headed towards full consolidation and competitive equilibrium it is unlikely that so many firms would continue to enter the marketplace. However, this influx of companies does not bode well for a future point in time when competitive equilibrium is eventually reached. Additionally, while economies of scale and influence factors remain strong, the pressure to merge, acquire or form other linkages between firms will remain strong.

Prospects for the Future and Projections of Market Demand

While there is considerable concern about competition and consolidation in the IPP industry, projections for global demand are the most powerful factor dampening those concerns. Global Market Demand is expected to be 900 GW over the next decade. Asia is expected to make up half of the amount with 450 GW of demand. Europe and North America will demand 180 GW each while Latin America is expected to require 90 GW.

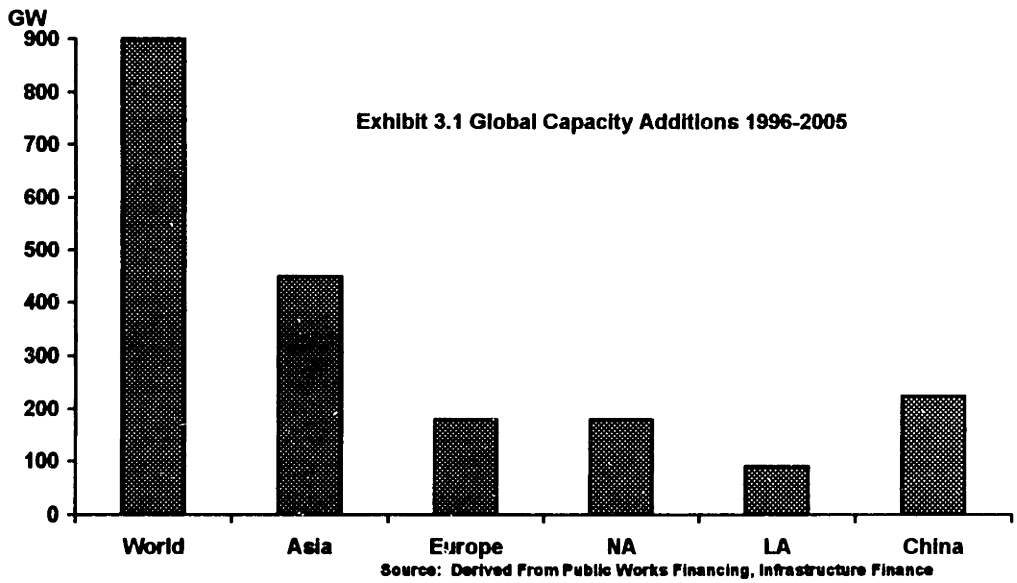


Exhibit 3.1 Global Capacity Additions 1996-2005

Source: Derived From Public Works Financing, Infrastructure Finance

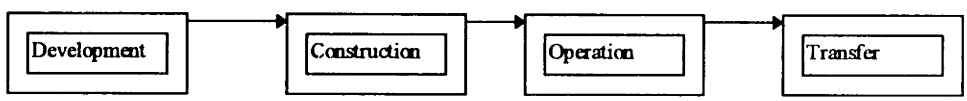
[12] McGraw-Hill Inc., 155 Independent Power Companies, July 1995.

China is clearly the largest target for the IPP community and is estimated by some analysts to demand 225 GW over the next decade. With an industry thumb rule of approximately $1 Billion per GW that amounts to $225 Billion. China's Ministry of Electric Power conservatively estimates that 25% of power funding must come from foreign investors, amounting to nearly $57 Billion in private power opportunities in China in the next decade.[13]

The Industry Value Chain

The industry value chain varies by project and location but the essential elements are somewhat constant throughout the world. The four basic steps are Development, Construction, Operation and sometimes Transfer. If Transfer to the host utility occurs, the post Development phase is often referred to as Build Operate Transfer (BOT), Build Own Operate Transfer (BOOT), or Build Transfer Operate (BTO). If the IPP developer retains the plant, the post development phase is sometimes referred to as Build Own Operate (BOO).

Exhibit 3.3 The Industry Value Chain



Development

Development is the most arduous and complex task of the process. The primary aspects of development are project identification, negotiation, and finance. Development periods vary considerably among projects and to a large degree depend on the projects risks, political factors, and the expertise of the developer and host government. Hopewell's Navotas 1 plant in the Philippines took approximately 18 months from initial proposal through financing, while YTL's (Yeo Tiong Lay) development of the Pasa and Pasir Gudong plants in Malaysia took four years from initial proposal through financing.[14] Company strategies for project development are extremely important as costs can easily run in excess of 10 million dollars for a multi- billion dollar project.[15]

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[13] U.S. Embassy, Beijing, China, "China-Electric Industry Profile", Market Reports, National Trade Data Base, 21 October 1994.

[14] Michael T. Burr, "Building Models", Independant Energy, April, 1995, p. 6-7.

[15] Page, Robert, Coursepack for Corporate Organizations of the Future, MIT Department of Civil and Environmental Engineering, September 1993.

Project identification can be accomplished through a variety of methods. The most common methods are bidding and prospecting. A developer can respond to an invitation to bid such as Thailand's recent EGAT solicitation , or "prospect" for single source opportunities with governments, utilities and private consumers of electric power. While bidding is generally a straightforward process, prospecting can include a range of activities including submission of unsolicited bids or proposals which are then negotiated with the purchasing entity.

Prospecting is generally considered to be more efficient and profitable for those who have the entrepreneurship skills to do it well. By prospecting carefully, a company can substantially increase its "hit ratio", the number of successful project deals divided by those actively pursued, and reduce its development costs.[16] Even if the government decides that it will still have to provide a public tender offer for a project, the government is likely to bend the rules in favor of the prospecting project developer.[17]

By successfully bidding or prospecting for a project it is customary for the utility to sign a Letter Of Understanding (LOU) or equivalent with the developer. The LOU usually specifies the general terms and conditions of the proposed project and includes the pricing structure of the energy to be purchased. Significant negotiations are often required to achieve the LOU and it is not uncommon for projects to fail at this stage.

Following the LOU, a detailed project contract called the Power Purchase Agreement (PPA) is negotiated with the purchasing utility. The PPA includes the rights and obligations of the parties to the agreement including the construction timetables, operating parameters, fuel supply, payment schedules, force majeure and country risk allocations, foreign exchange and performance undertaking by the host. The PPA plays a central role in the financeability of power projects given that lenders will require advance assurance of a reliable revenue stream as the source of debt service. PPA formulation often requires several rounds of negotiations as a number of host government agencies typically must review and approve the proposed agreement.

Financing generally occurs during and after conclusion of PPA negotiations. Typically, much of the proposed financing is covered in the project contract and financial close often occurs soon after the project contract is finalized. Financing sources may include debt and equity contributions from a wide range of sources including development banks, export credit agencies, investment funds, private placements, commercial banks, local banks and holding companies.

A project's financial structure depends on the project's risk and how that risk has been allocated among the project consortium members, host institutions and lenders. Large and complex projects in developing economies typically require equity contributions in the range of 25-40%. Traditionally, project equity contributions were made by lead

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[16] Ibid.

[17] For Hopewell's Navotas 1 project, the Philippine government chose to issue a public tender after Hopwell had been negotiating the project for over 6 months giving a Hopewell the clear advantage.

developers and other interested parties such as large trading companies, wealthy individuals and other institutional investors. However, lenders have recently been pushing for other members in the project value chain such as engineering-procurement and construction(EPC) firms, fuel suppliers, and equipment suppliers to make equity contributions in proportion to the project risks which they can best control.[18]

Construction

Construction is often performed under a "turnkey contract" where the contractor manages both design and construction for a fixed price thereby minimizing risk to the developer. Turnkey contracts are often outsourced to large power engineer constructors who specialize in such work such as Black & Veacht, Raytheon or Foster Wheeler. Increasingly however, the turnkey contractor and the developer may be subsidiaries of the same parent company as in the case of Hopewell Holdings and U.S. Generating.

Construction times vary considerably depending on the size and complexity of the projects. General Electric claims the ability to construct a small gas turbine plant in a matter of 6 months. However, large thermal plants require significantly more time. Medium size 600 MW thermal plants take approximately three years, while larger thermal stations may require five to six years, and hydroelectric stations may take up to a decade.

Operation

Under most PPA's, the development company is granted a concession to operate the plant for a specified time period often in the range of 10 to 25 years. Revenues from plant operation are used to service debt and equity employed for construction. A minimum revenue stream is usually guaranteed by the Power Purchase Agreement in what is known as a "take or pay" arrangement. However, significant additional revenues may be achieved if the developer can increase power purchases above the minimum guaranteed take off level.

Operations and Maintenance is usually undertaken by the developer, its subsidiary, the host utility or an independently contracted operations company. Significant savings can be achieved through proper operations and programmed maintenance. In some cases, especially in less developed economies, additional savings can be achieved by using standardized and simplified plant designs which are easy to maintain and operate.

Transfer

In developing economies, IPP deals frequently require the development company to transfer the plant and any associated assets and improvements back to the utility at the end of the concession period. Transfer may occur on an "as is" basis in which the development company is not responsible for the quality of assets turned over or any costs the utility may incur in order to keep the plant running after the transfer date. However,

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[18] Michael Burr, John Anderson, and Tim Hennagir, "The Power Revolution", Independant Energy, January/February 1996, p. 6-16.

depending on the PPA, the developing company may be required to warranty certain plant functions for a given period of time after transfer occurs.

The Project Structure and Consortium

Formation of a strong project structure among credible consortium members is critical to the success of the project in a number of aspects. Foremost is that strong consortium members with an appropriate risk sharing project structure make the project feasible and bankable. This implies that project risks are allocated to those consortium members most capable of controlling them. Important players include a quality turnkey contractor which can control construction risk, a credible utility or purchasing entity which can control the offtake risk, and the local or international fuel company which will control the fuel risk. Host government guarantees or performance undertakings for the local utility and fuel supplier continue to be essential elements of many project structures especially in less developed economies. A typical project consortium structure is outlined in the diagram below:

Exhibit 3.3 Sample Project Consortium for Private Power Projects in Asia[19]

Consortium Picture From Thomas Pyle Goes Here

Merchant Plants

Merchant plant strategies are an exception to the development process noted above. Merchants are those plants which are developed based on the expectation of future power demand rather than a long term power purchase agreement signed in advance. Because it is difficult to project finance these plants, they are usually undertaken by well capitalized companies who can afford to finance them through internal sources. Merchant

[19] Thomas Pyle, Private Financing of Chines Power, Princeton Pacific Group, February 8, 1994, p. 6.

plant strategies work especially well for multinational fuel companies, who see them as a secure downstream outlet for their oil and gas reserves. As privatization becomes more prevalent over the next decade, merchant plants are expected to play a greater role in satisfying growing world demand.[20]

Success Factors for IPP Development

The importance of different value chain activities varies considerably among projects depending on their location and complexity. In transparent competitive markets, where technical and operational capabilities are commodities, value is most often derived through the ability to competitively finance and negotiate a favorable power purchase agreement. However, in developing markets, the role of entrepreneurship, influence, and some technical capabilities take on a more significant role. The factors most often cited for successful value creation in the IPP market are outlined below:

Access to Capital is often considered the best competitive advantage of power developers.[21] As markets become more competitive and differences in technical and operational capabilities dissipate, the ability to find the lowest cost financing is a primary source of competitive advantage. Companies which can use their own balance sheets or their parent companies to finance equity contributions and raise debt for their projects will have the edge in achieving the lowest cost of capital.[22] Essentially this allows developers to corporate finance instead of project finance their power development ventures. Finally, companies with access to capital will best be able to afford the steep development costs of pursuing a diversified project portfolio. It is estimated that $100 million dollars is required to start a successful IPP business, which does not include the resources to finance the projects. [23]

Market Presence including Reputation and Connections is especially critical in international markets where projects are often negotiated rather than bid competitively. Though industry literature frequently cites access to capital as the most important firm asset, the importance of market presence cannot be underestimated. In China, experts consider guanxi (connections) with local and central level government to be essential for success in capital intensive industries such as power development.[24] The importance of these market presence effects is made clear by Enron's decision to sign up former Secretary of State James A. Baker III and former Commerce Secretary Robert Mosbacher as consultants to their international electric generating business. [25] As nearly 60% of all

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[20] Michael Burr, "Entering The Pipeline", Independant Energy, September 1995, p. 7-8.
[21] Anthony A. Churchill, "Avoiding the Pitfalls in Project Finance and Investment", paper presented at the conference for *Latin American Power and Privatization*, December 6, 1995, p. 6.
[22] Karl G Jechoutek and Ranjit Lamech of the World Bank, "Balance Sheet Support", Independant Energy, January/February 1996, p. 36-40.
[23] Anthony Churchill, p. 6.
[24] "Yes, Emphatically Yes", Business China, Economic Intelligence Unit, September 18, 1995, p. 2.
[25] Thomas Lippman, "An Electrifying Opportunity", Washingtong Post, April 20, 1993, p. D3.

new electric development will take place in developing economies, the importance of market presence and international recognition is sure to grow.

Entrepreneurship including Deal Structuring Capabilities is another decisive element of successful IPP companies. The ability to prospect and proactively create new project opportunities sets a developer apart from those who simply respond to public requests for proposals. Once having identified a prospect, the company's ability to convert that prospect into closed deal may require significant financial, organizational, and cultural entrepreneurship and flexibility. Markets in developing economies often hold unusual barriers to success and the ability to formulate project deals which fit local legal, economic and political constraints is paramount, especially if a host utility is in its early stages of dealing with the private power generation model.[26]

Technical Capabilities which include the engineering, procurement, construction, equipment supply and operations for power plants are often considered to be commodities in competitive markets. However, the risks associated with these functions can be considerably higher in developing economies. The ability to access a turnkey contractor, operations contractor and equipment supplier with experience in controlling such risks can be critical success factor when operating in developing economies. While technical and EPC capabilities have not been considered a core IPP success factor by some analysts, the importance of such skills has gained increasing amounts of attention as the industry has shifted its focus to markets in developing economies.[27]

The success factors discussed above are those most commonly cited in today's literature. However, if these were the only critical success factors we might expect to see more stable market conditions in terms of the type of companies winning power development projects. In contrast, the fragmented nature of IPP industry groups indicate that the core competencies for this industry have yet to be resolved. Nevertheless, the marked success of Hopewell Holdings may indicate that it has latched onto critical success factors which are not considered among current analysis, yet may be a key for future success in the industry.

IPP Industry Groups and Their Market Shares

Who Plays

The IPP Industry is currently fragmented between five major groups which consist of utilities, fuel companies, equipment suppliers, engineering procurement & construction (EPC) companies, and power developers. Because it holds such a large share of the

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[26] Evans, Peter C., "Opening Electric Power Generation To The Private Sector In The Philippines: Policy Origins And Early Experience", MIT Thesis, Department of Urban Studies and Planning, May 28, 1991, p. 67.

[27] Burr, Anderson, Henninger, "The Power Revolution", Independent Energy, January/February, 1996, p2.

market, Hopewell Holdings has been split off from EPC companies as a sixth group. A brief description and examples for the groups are as follows:

Power Developers: This group includes power developers whose principal strengths lie in project development and plant operations, even though they may have some project management and technical capabilities. Examples of this group include Sithe Energies and Applied Energy Services (AES).

Engineering Procurement & Construction (EPC) Companies: These are power plant developers who have EPC or technology capabilities which differentiates them from pure power developers. Companies who are subsidiaries of EPC and technology based companies fall in this category. An example of this category would be U.S. Generating whose close parent companies include construction giant Bechtel Group.

Hopewell Holdings: While Hopewell technically fits into the EPC category, Hopewell has been listed separately because its share of the Global IPP market is so large and because it may represent a new type of market player.

Fuel Companies: Examples of this group include Enron Development Corporation, Mobil Power, Amoco Power, Exxon Energy and all the power development entities of fuel companies.

Equipment Companies: These companies are the power project development arms of the major equipment suppliers which includes companies such as GE Capital, ABB Energy Ventures, and Mitsubishi's Dominion Energy.

Utilities: This category includes IPP subsidiaries of all utilities including firms such as Mission Energy of the U.S., Electricite de France International, PowerGen and National Power of the UK, and Tractebel of Belgium.

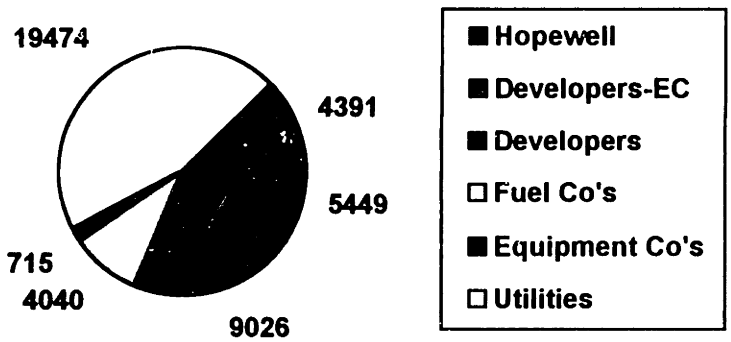
While most of the industry is currently concentrated in strategic groups, there is growing evidence that the pattern of mergers, acquisitions, joint ventures and alliances is obscuring the established differences between those groups. U.S. Generating exemplifies this trend in that it provides linkages between the strategic capabilities of its parent companies utility-Pacific Gas and Electric and EPC firm-Bechtel Group. It is likely that the IPP industry will eventually evolve into strategic blocks based on firm's strategic linkages from its current state of strategic groups which are based on firms own strategic capabilities.[28] However, at this point in time it is still useful to segment the industry by strategic groups.

Where They Play

[28] Nitin Nohria and Carlos Garcia-Pont, "Global Strategic Linkages and Industry Structure", Strategic Management Journal, 1991, Vol 12, p. 105-124.

While independent power is relatively new in many parts of the world, the statistics show interesting trends regarding which industry groups are most active in different locations. Overall, statistics derived for the top 25 IPP companies of 1995, show that approximately 89 percent of the global IPP market is currently captured by Utilities (45 percent) and Developers (44 percent) as shown in Exhibit 3.4. The remaining portion is divided between Fuel Companies (9 percent) and Equipment Suppliers (2 percent).[29] However, it is important to note that these percentages are far from uniform across international markets and that significant differences are observed between market shares in developed and developing economies.

Exhibit 3.4 Global Market Shares of Equity in MW's for the Top 25 IPP's



Western Europe and North American Markets

In Western Europe, the US and Canada, the independent power markets for the top 25 IPP companies are dominated by the Developer and Utilities industry groups. This is not surprising considering how these markets evolved from industries of mature state and public utility monopolies. Noticeably absent are market shares for EPC firms, Fuel Companies and Equipment suppliers whose skills, as previously noted, are considered to be commodities in these markets. Again, the decisive success factors in those western

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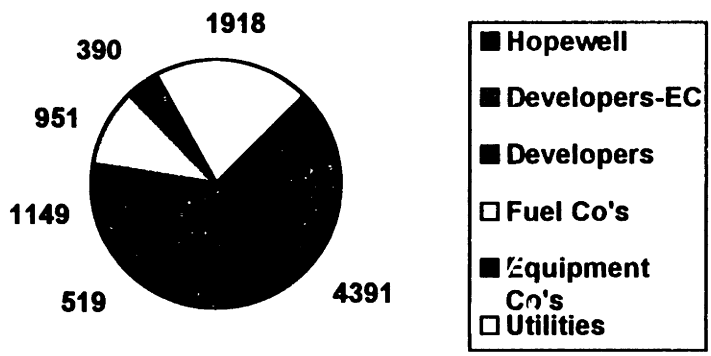
[29] The statistics were derived from Mcgraw Hill's 1995 survey of 155 Independant Power Companies and are based on the 43,095 MW of net equity belonging to the top 25 companies. The statistics do not include net equity from large financial players such as Chrysler Capital, Mitsui or Energy Investor Funds. They also do not include net equity of plants acquired as a result breakup of state monopolies as in the case of UK companies PowerGen and National Power. The statistics do not include a majority of Exxon's net equity of 5911 MW which were primarily developed in a utility hybrid arrangement with China Power & Light of Hong Kong. Total net equity among all 155 companies in the survey equaled 80,817 MW.

markets which are open to competition are the abilities to provide low cost financing and formulate power purchase agreements for competitive markets.

Asian Markets

When the market is narrowed to equity invested in Asian countries the market statistics change dramatically as shown in Exhibits 3.5. In addition to Hopewell's dominant share in these markets, the small market share of Utilities stands out. One might think that the absence of Utilities would be accompanied by an increase in the share of EPC, Fuel or Equipment companies who can mitigate risks which utilities cannot and which have a significant history of work in developing economies. In fact, industry literature has predicted that these type of firms will play a greater for those reasons.[30] However, with the exception of Hopewell, the data surprisingly does not show a significant gain by these groups. The primary beneficiaries other than Hopewell have been pure Power Developers indicating that entrepreneurship and dealmaking skills may be more valuable than the other traditional success factors.

Exhibit 3.5 Market Shares of Equity in MW's for Asia for the Top 25 IPP's



Chinese Markets

Statistics for China help to further clarify the above trend and show a notable absence of both the Top 25 Utilities and EPC firms as of July 1995 (Exhibit 3.6). Though many EPC companies have been undertaking power generation construction for Chinese utilities for decades, as of 1995, they had yet to form notable IPP contracts. The significant presence of Hopewell, Sithe, AES, and Enron suggest that traditional technical expertise may not be a success factor for China at this time. Furthermore, the absence of Utilities suggest that large balance sheets and access to capital alone are not sufficient for market entry. Perhaps it is the ability of firms like Hopewell, Enron, AES and Sithe to combine entrepreneurship, market presence factors, and access to capital which has led to their success.

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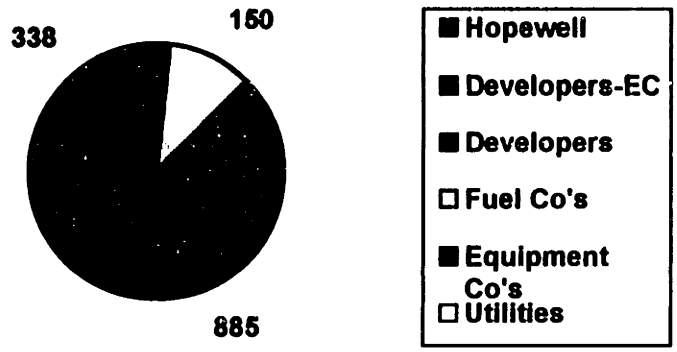
[30] Burr, Anderson, Hennagir, "The Power Revolution", Independent Energy, Jan/Feb 1999, p. 7.

Exhibit 3.6 Market Shares of Equity in MW's for China for the Top 25 IPP's



Implications for Success in Asian Markets

A review of the successful firms in Asia reveals that they all maintain a combination of strengths in the identified industry success factors. For example, Enron Development Corp., Mission Energy, Hopewell Holdings and Sithe Energies all have: 1) significant access to capital, whether it be through internal sources or the ability to tap financial markets; 2) considerable entrepreneurial skills, at least with respect to other players in their industry group; 3) significant international market presence; and 4) the ability to mitigate some form of operational, development, technical or fuel risk.

However, a review of successful firms on the basis of established success factors does not explain Hopewell's overwhelming market share in Asia. Market experts first thought that Hopewell simply struck the Asian market at the right time with the right connections. Yet the company continues to win large IPP deals implying that Hopewell has some form of sustainable competitive advantage.

The task at this point is to define the Hopewell business models and determine where its sustainable competitive advantage lies. Does Hopewell simply score higher on established success factors and have better political connections? Or does Hopewell have capabilities that other companies have yet to duplicate? Gordon Wu has stated that 'There's no doubt we'll become .... the world's largest independent power producer'.[31] Has Wu established a model for success that the rest of the market has yet to realize and how sustainable is that model for the future?

[31] Edward Gargan, "Building Asia's Road and Power", New York Times, August 17, 1994, p. D1.

Exhibit 4.7 Equity Positions for the Top 25 Internationa Power Producers

This data was extrapolated from McGraw Hill's Top 155 Independent Power Companies

Composite World Totals			U.S. And	Western Eur.	Devel. Economy	Asian	China	Pursuing
Company	Background Category	Equity in MW	Canada	Equity in MW	Equity in MW	Equity in MW	Equity in MW	China
National Power UK	Utility	4485	620	3522	323	323	0	
CEPA HK	Developer/RE	4391	0	0	4391	4391	885	yes
Power Gen UK	Utility	3955	0	3928	26	0	0	
Mission	Utility	3463			534	390	0	yes
Enron	Fuel	2638	613	806.25	1183	712	150	yes
AES	Developer	2316	828	726	762	361	58	yes
Sithe	Developer	2045			283	283	283	Big yes
USGen/InterGen	Developer/EC	1909			70	70	0	yes
Destec	Developer	1846			0	0	0	
Southern El Int	Utility	1615			1241	0	0	yes
CMS Gen USA	Developer	1455			508	44	0	little
British Gas	Fuel	1402			239	239	0	little
Cogen Technol USA	Developer	1364			0	0	0	yes
Cogentrix	Developer/EC	996			36	0	0	little
NRG Energy USA	Developer/EC	982			16	0	0	little
Midlands Electr UK	Utility	971	0	825	146	146	0	little
Tractebel of Belgium/C	Utility	928	473	444	11	11	0	little
Elect de France Int.	Utility	898	0	488	410	180	0	yes
Tenaga Nasional-Mal	Utility	879	0	0	879	879	0	little
Dominion Energy	Utility	872	560	0	312	0	0	no
California Energy	Developer/EC	835	386	0	449	449	0	no
Endesa (Chile)	Utility	795	0	0	795	0	0	no
Wheelabrator	Developer/EC	727	727	0	0	0	0	yes
GE Capital	Equipment	715	325	0	390	390	0	yes
Energy Initiatives USA	Utility	633	539	0	94	0	0	yes
		43095			13095	8867	1376	

Equity in MW = In operation or under Construction

Pure IPP Developers

Company	Background Catagory	Equity in MW	Developing Economy Equity MW	Asian Equity MW	China Equity MW
AES	Developer	2316	358	358	55
Sithe	Developer	2045	283	283	283
Destec	Developer	1846	0	0	0
CMS Gen USA	Developer	1455	508	44	0
Cogen Technol USA	Developer	1364	0	0	0
	Developers	9026	1149	685	338

EPC & Technology Companies								
					Developing	Asian	China	Pursuing
	Background	Equity			Economy	Equity	Equity	China
Company	Catagory	in MW			Equity MW	MW	MW	
USGen/InterGen	Developer/EC	1909			70	70	0	yes
Cogentrix	Developer/EC	996			36	0	0	little
NRG Energy USA	Developer/EC	982			16	0	0	little
California Energy	Developer/EC	835			449	449	0	no
Wheelabrator	Developer/EC	727			0	0	0	yes
	Developer/EC	5449			570	519	0	
Hopewell Holdings					Developing	Asian	China	Pursuing
	Background	Equity			Economy	Equity	Equity	China
Company	Catagory	in MW			Equity MW	MW	MW	
CEPA HK	Developer/RE	4391			4391	4391	885	yes
		4391			4391	4391	884.6	
Equipment Suppliers					Developing	Asian	China	Pursuing
	Background	Equity			Economy	Equity	Equity	China
Company	Catagory	in MW			Equity MW	MW	MW	
GE Capital	Equipment	715			390	390	0	yes
		715			390	390	0	
Utilities					Developing	Asian	China	Pursuing
	Background	Equity			Economy	Equity	Equity	China
Company	Catagory	in MW			Equity MW	MW	MW	
National Power UK	Utility	4465			323	323	0	
Power Gen UK	Utility	3955			26	0	0	
Mission	Utility	3463			534	390	0	yes
Southern El Int	Utility	1615			1241	0	0	yes
Midlands Electr UK	Utility	971			146	146	0	little
Tractebel of Belgium	Utility	928			11	0	0	little
Electricite de France	Utility	898			410	180	0	yes
Tenega Nasional-Mal	Utility	879			879	879	0	little
Dominion Energy	Utility	872			312	0	0	no
Endesa (Chile)	Utility	795			795	0	0	no
Energy Initiatives USA	Utility	633			94	0	0	yes
		19474			4770	1918	0	
Fuel Companies					Developing	Asian	China	Pursuing
	Background	Equity			Economy	Equity	Equity	China
Company	Catagory	in MW			Equity MW	MW	MW	
Enron	Fuel	2638			1183	712	150	yes
British Gas	Fuel	1402			239	239	0	little
		4040			1421	951	150	
Several companies are not viewed to have true private power equity and are not included in this analysis.								
They include but are not limited to: China Light & Power, Exxon, Huaneng, Mobil								

Chapter 4

The Market and Project Models of Hopewell Holdings

Introduction

This chapter explores market and project strategy models by which Hopewell achieves competitive advantage in the Asian independent power market. Both models emanate from Hopewell's regional influence, real estate mentality, and vertical integration which were developed through its experience as a Hong Kong property developer and the vision of founder Gordon Wu. Hopewell's abilities are differentiated versions of the standard success factors outlined in chapter 3.

Hopewell's Market Model

Hopewell employs a unique market strategy for two reasons: 1) it is one of the only top firms to combine exceptional strengths in all of the success factors; and, 2) it uses differentiated versions of those success factors which are tailored to the Asian market. Hopewell, like most of the top firms has significant access to capital. However, it is the company's Asian influence model, real estate mentality, and vertical integration which are variations of chapter three's market presence, entrepreneurship and technical success factors which give it an edge.

The Combination of Success Factors

While individual firms may exceed Hopewell's strengths in a single category, Hopewell is one of the few top firms to have significant strengths in each category. The chart below helps to illustrate how Hopewell fares compared to the average of top players in IPP industry groups. Individual companies may vary from the averages but rarely will they achieve top ratings in all four categories. For instance, Mission Energy might achieve 3's in both access to capital and market presence even though its group rating for market presence is only a 2. However, Mission's entrepreneurship compared to Hopewell and Developers is still viewed as a 2, because the company is not believed to have the organizational flexibility and the project creation capabilities of its competitors in Asia. Additionally, while Mission may have technical operation capabilities, it will have to subcontract a turnkey contractor yielding it a 2 in technical capabilities.

The combination of Hopewell's strengths in each success factor yields a number of advantages. First, Hopewell's full service capability means that it need not depend on other partners to move projects forward. This added control gives Hopewell the flexibility to respond to targets of opportunity and to negotiate projects immediately yielding a significant advantage over its competitors. Second, this allows Hopewell to keep its

Exhibit 4.1 Relative Comparison of Industry Group Strengths in Four Success Factors for Independent Power in Asia's Developing Economies

Industry Group	Access to Capital	Market Presence	Entrepreneur ship	Technical Capabilities
Developers	3	2	3	2
Developers -EPC	3	3	2	3
Hopewell Holdings	3	3	3	3
Fuel Companies	3	3	2	2
Equipment Suppliers	3	3	2	3
Utilities	3	2	2	2

Scale: 1 = Moderate, 2 = Strong, 3 = Strongest

Note: These are average ratings; there may be strong or weak players which do not match their group's rating. These are relative ratings; a groups market presence may be very strong but receive a 2 because it is significantly less than that of the strongest groups.

market and project strategies "in-house" because the need to disseminate information to acquire joint venture participation is eliminated. Evidence of the control Hopewell's achieves by this full service capability is shown by Hopewell's 100% ownership of private equity in its power projects as shown in Exhibit 4.4.

Further evidence of Hopewell's success is observed in the merger and acquisition activities of Hopewell's competitors which appears to be designed to acquire Hopewell's range of strategic capabilities. U.S. Generating has been formed from a combination of a power developer- J. Makowski, EPC giant-Bechtel, and the utility-Pacific Gas & Electric. While each of these companies alone cannot provide top ratings in all of the success factors, their linkages will provide 3's in all four categories enabling them to achieve the strategic capabilities for success. This concurs with the theory that the industry is evolving into strategic blocks based on strategic linkages versus strategic groups based on firms own strategic capabilities.[1] Exhibit 4.1 may be a useful predictor of future mergers an acquisitions activity as it point to how firms must combine in order to provide a full range of complementary strategic capabilities (e.g. by combining to maintain 3's in each category).

As mergers and acquisitions continue, many companies are likely to acquire strengths in all four success factors thereby eliminating Hopewell's competitive advantage of having strengths in all four categories. However, Hopewell should retain a competitive advantage through its differentiated versions of those success factors for competing in high risk ventures. With the exception of access to capital, Hopewell appears to have differentiated versions of its market presence, entrepreneurship and technical capabilities which will be difficult for its large American and European competitors to duplicate. A relative comparison of these differentiated success factors is shown in Exhibit 4.2. which are discussed in the remainder of this chapter.

[1] Nitin Nohria and Carlos Garcia-Pont, "Global Strategic Linkages and Industry Structure", Strategic Management Journal, 1991, Vol. 12, p. 105-124.

Hopewell's competitive posture dramatically improves when viewed along these differentiated success factors for high risk power ventures. While many of Hopewell's competitors have significant market presence, they do not have the influence capabilities that are tuned to Asian business culture as Hopewell does. Many firms may be entrepreneurial, but few firms with exception of developers such as AES have venture capital style approach needed for high risk power development in Asia. Finally, while many firms have strong technical skills, few companies maintain a vertical integration of development, construction and operations capabilities as does Hopewell.

Exhibit 4.2 Relative Comparison of Industry Group Strengths in Hopewell's Differentiated Success Factors for High Risk Independent Power Ventures in Asia's Developing Economies

Industry Group	Access to Capital	Local Influence Capabilities	Entrepreneurship/ Venture Capital/ Real Estate Mentality Capabilities	Vertical Integration Capabilities
Developers	na	2	3	1
Developers -EPC	na	2	2	2
Hopewell Holdings	na	3	3	3
Fuel Companies	na	2	2	2
Equipment Suppliers	na	2	2	2
Utilities	na	1	1	1

Scale: 1 = Moderate, 2 = Strong, 3 = Strongest

Note: These are average ratings; there may be strong or weak players which do not match their group's rating. These are relative ratings; a groups market presence may be very strong but receive a 2 because it is significantly less than that of the strongest groups.

A Differentiated Market Presence - The Benefits of Regional Influence

The Developer of Choice

Hopewell's market position is unique in that it is the only top IPP player who's roots are in Asia.[2] Hopewell's primary competitors are the large American power development companies such as Mission, AES and Enron.[3] While these Western firms have invested significant resources to establish an Asian presence, it is culturally and physically impossible for them to compensate for the fact that they are not owned by Asian nationals and their home base is not Asia. This yields an inestimable advantage because Hopewell is able to position itself as the developer of choice in Asia. Moreover, the overwhelming majority of Hopewell's assets are located in Asia which implies that Hopewell is unlikely to divest itself of the region should economic conditions turn sour.

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[2] The closest competitor is China Light & Power which is not considered because it developed most of its capacity through its role as a state backed utility. Tenaga Nasional of Malaysia, the 19th largest Global IPP, is the privatized unit of a former state owned utility and is considerable smaller than Hopewell. Huaneng Power International is not considered because most of its capacity is inherited from state sponsored utilities.

[3] Edward Gargan, "Building Road and Power for Asia", New York Times, August 17, 1994 p. D1-D2.

The image of Hopewell's commitment to Asia has been enhanced by its well communicated plans for multiple projects within countries. When entering both China and the Philippines Hopewell indicated that its initial projects would be the first in a series of projects to be pursued those countries. Many of Hopewell's competitors do not have such a well articulated strategy, instead preferring to focus in on one or two projects or pick up project equity positions when the opportunities present themselves. Hopewell is using this same technique in India and Pakistan by pursuing large project which have multiple follow on stages.

Hopewell has further enhanced its reputation through its bold initiatives to solve the continents most glaring infrastructure problems. The BERTS, GSZ, Shajiao and Philippines projects were all market breaking ventures which Western firms were hesitant to undertake. Gordon Wu's willingness to take on such extremely large and risky projects has earned him the confidence of Asia's leaders and rounds heroistic titles such as "Asia's Power Architect", "Guangdong's Rockefeller" or "Asia's Mr. Fixit". [4]

Finally, Hopewell's role as developer of choice is enhanced through its accomplishments. Hopewell has the only significant track record for completing BOT's in developing Asian economies. This reputation for achievement has enhanced Hopewell's relationships with Asia's political and business leaders. The potency of this reputation is evidenced by Hopewell's having been invited to bid on projects as a means to put pressure on other developers. Such was the case in Indonesia when Hopewell was brought in to quickly negotiate the Chaki project as a threat to Mission Energy during the government's stalled negotiations for the Paiton 1 power project.

The Advantages of Being Everywhere

Hopewell's influence strategy shares many of the same advantages early industrial pioneers enjoyed in the United States. Like the Vanderbilts and Harrimans that Gordon Wu has been known to idolize, Hopewell has the advantage of being everywhere.[5] Hopewell is forward and backward integrated to eliminate competitive pressures for resources and markets. The company enjoys significant political influence in Asia's developing economies. Finally, Hopewell maintains a near monopoly position in some areas of Asian infrastructure, especially for power generation in the Philippines.

Not only does Hopewell have the most BOT contracts in Asia, those projects are heavily concentrated. The company has five power projects in the Philippines and four major infrastructure projects concentrated in China outside its home base in Hong Kong. The BERTS project covers a significant portion of Bangkok yielding these same concentration characteristics, and Hopewell is pursuing massive multi- staged projects in Pakistan and India (See Exhibit 4.4).

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[4] Patrick Tyler, "Hong Kong Tycoon's Road to China, New York Times, December 31, 1993, p. D1,D14.
[5] --- "Guangdong's Rockefeller", The China Business Review, January-February, 1993, p. 38-41.

In developing economies, where sources of materials, transportation, and equipment can be problematic, the concentration of operations can lead to significant advantages in terms of buyer power and monopoly control. Moreover, the lack of a well developed legal structure makes the markets more susceptible to monopoly pressures. While some may believe that Gordon Wu simply thinks on a grand scale, it appears that there are significant advantages to this grand scale approach.

Mastering the Rules of The Game

Equally important to the company's influence is that Hopewell is a master of the Asian business style. Wu and his staff understand how Asian leaders think, negotiate, and maneuver in a culture which is generally less trustful of laws than it is of personal contacts. [6] According to Wu, success takes a lot of patience and "a lot of maotai", a telling phrase from the head of Asia's most successful private infrastructure provider.

Thus, Hopewell not only has superior influence, but it may understand how to wield that influence better than its competitors. The advantages of Hopewell's cultural competencies are likely to extend beyond China and Hong Kong. Ethnic Chinese either run or significantly influence the economies and politics of many Asian countries including the Philippines, Thailand, Malaysia, Indonesia and Singapore.

It is important to note that Hopewell is not subject to legislation such as the Corrupt Foreign Practices Act which limits the business tactics of U.S. firms. Granted, U.S. firms are likely to have methods to partially circumvent these rules. However, the Corrupt Foreign Practices Act yields Hopewell and others a significant advantage over the largest pool of power generation developers in the world. [7]

Real Estate Entrepreneurship and The Risk Efficient Game

Hopewell's market strategy in Asia is also unique in that it is the only mega-infrastructure provider to have emerged from real estate development. Gordon Wu's statements and Hopewell's activities indicate that this background significantly influences its current strategy. The most familiar example is Hopewell's emphasis on property rights adjacent to its GSZ and BERTS projects. After having missed much of the 1980's Hong Kong real estate boom for failing to envision the effects of rising wages on land values, Gordon Wu has pledged not to make the same mistake twice.

Hopewell's real estate influence goes far beyond a simple desire to acquire property rights. Successful high rise, commercial and urban developers typically master a series of competencies. These competencies exist to compensate for the inherently risky nature of real estate and the need to for an entrepreneurial capabilities to locate and create projects that will sell. These same qualities are well suited for the high risk nature of

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[6] Min Chen, "Tricks of the China Trade", The China Business Review, March-April 1993, p. 12.

[7] --- "World Markets Open to U.S. Utilities", The Washington Post, April 20, 1993, p. D3.

today's private infrastructure projects in Asia, and include but are not limited to the following:

- Project selection skills: The ability to select a projects and product that will sell to the ultimate consumer, or in the case of infrastructure, that the ultimate consumer desperately requires.

- Speculation skills: The ability to select projects which will appreciate significantly in the future or that will lucrative follow on options. This implies a risk efficient versus a cost effective approach to project selection.

- Entrepreneurship skills: The ability to create opportunities by being the first to see a new market or project possibility. The ability to find innovative solutions to problems that would otherwise put a project or concept on hold. The ability to capture additional project externalities as forms of compensation such as land rights.

- Project Decision Making Capabilities: This refers to the financial and organizational flexibility to change directions quickly, to recognize and drop unproductive prospects and seize targets of opportunities as they develop. This involves the ability to negotiate and allocate equity funds on the spot versus working through bureaucratic home office processes. This quality is particularly important in Asia where CEO's and administrators tend to wield far more individual power than their western counterparts.[8]

- Project Development Skills: After a projects is selected, this is the ability to fashion the project agreements such that they meet the concerns and constraints of communities, government, customers and lenders. This implies excellent negotiation skills, patience and ability to work with varied constituencies.

- Project Financing Skills - The ability to package the project's finances and sell the merits of that package to one's bankers. This may include guarantees that a portion of the project will be bought in advance or the placement of sufficient collateral to acquire project loans. The developer may also be required to show that margins are high enough on the units sold in advance to cover the risk of development of the remaining unsold units.

- Working Capital Management: From a market strategy perspective, the ability to create and select projects which lend themselves to tight overhead control, development and construction costs, and a quick project turnover.

- Building Systems Capabilities: This is the ability to develop building systems which can be applied in mass in order to minimize learning effects, management requirements, and procurement difficulties. This enables the developer to achieve cost

[8] --- Business China, Economic Intelligence Unit, October 24, 1994.

savings through economies of scale, streamlined operations, cheaper building procedures and shorter completion times.

The Evidence on Real Estate Entrepreneurship

If Hopewell applies these competencies to its market strategy for power development, we would expect a noticeable difference in its approach relative to its competitors. This approach would be similar to that of a venture capitalist investor coupled with additional strategies to account for the development and construction phases of the projects. We would not expect Hopewell to use the market strategies of its cost efficient risk averse competitors who have emerged from competitive western markets. The evidence on Hopewell's market approach is as follows:

- Hopewell has demonstrated unique project selection criteria in that its projects have been chosen to provide products that countries desperately need. Hopewell has developed some projects whose contracts are in effect self enforceable because the host governments and utilities cannot afford to have them stopped.

- The company's speculation skills are shown by its ability to foresee exceptional future demand for its projects and the follow on stages of its projects. For example the demand for Shajiao B's electricity has been significantly above its minimum offtake level. Additionally, Hopewell's initial projects in the Philippines and China have essentially led to multiple follow on options (Exhibit 4.4). This is in contrast to Hopewell's competitors which tend to focus on single projects with safe and moderate demand forecasts. Furthermore, the high returns on Hopewell's high risk projects substantiate that Hopewell is employing a risk efficient market approach. This is discussed in detail in the next section. Returns of Hopewell's projects have in cases exceeded 25% which implies that Hopewell is likely to have taken greater risks.

- Hopewell exceptional entrepreneurship skills are shown by its ability to prospect rather than bid most of its projects to date, including the Shajiao, Navotas, BERTS, GSZ and Indonesia projects. Hopewell's potential projects in India and Pakistan are also a product of this prospecting approach. Hopewell is noticeably absent from the 10 finalists out of 42 companies which bid for China's 700 MW Laibin B project which underscores how Hopewell chooses not to spend its development resources.

- Hopewell has also shown excellent entrepreneurship through its creativity in employing alternative sources of compensation for both itself and its host institutions. Hopewell often uses land rights as a means of additional compensation for itself. It has been known to accept greater amounts of local currency as a form of compensation for its host institutions.

- The companies decision making capabilities are evident in its ability to negotiate agreements make decisions in the style of a venture capitalist. Decision making is reportedly conducted among a relatively small number of extremely hardworking

Hopewell executives all of whom share the same floor at Hopewell's headquarters in Hong Kong.[9] This is in contrast to the weighty decision making organizations of many of Hopewell's competitors. Hopewell's ability to shift gears is evidenced by its ability to quickly shift its attention to prospects in Indonesia, India, Pakistan and the Philippines following China's cap on rates of return. Again, similar to a venture capital firm, Hopewell understands the value of cutting ones losses. [10]

- Hopewell's maintains superior overall project development skills. Hopewell reportedly succeeded in its Navotas 1, Philippines contract because it was able to fashion an agreement which met the needs of a wide variety of government parties, while a competitor at the time, Cogentrix, is believed to have failed in part for the same reasons.[11]

- The company has demonstrated substantial financial flexibility and skill in that it has been able to tap a wide variety of financial resources without the massive balance sheets of some of its competitors. This implies that Hopewell has the financial skill required to package high risk projects in a manner its bankers find creditworthy. Additionally, Hopewell was the first company to spin off its active Asian power plants and use this to conduct a private debt placement which amounted to $1.4 Billion.

- So far Hopewell appears to have selected projects which lend themselves to strong control of working capital. First, Hopewell selects projects where it has 100% control of private equity thereby putting the company in complete control of the projects internal finances. Second, Hopewell chooses projects which allow it to use standardized or even used equipment which simplifies construction procedures and allows Hopewell to work for early project completion. Furthermore, Hopewell projects are clustered allowing it to consolidate overhead functions.

- Building Systems Capabilities have also played a major role in Hopewell's success. Hopewell has employed its own Slipform construction technique for much of its concrete structures thereby saving placement time and forming costs. Hopewell was one of the first to employ the concept of using a standardized thermal plant design which could be used throughout its plants in Asia thereby achieving economies of scale in equipment cost, installation and operations.

The Risk Efficient Game

If Hopewell is running a high risk approach it is useful to develop bounds for its risk reward structure. This will show how important high project returns might be. It will also help to illuminate how important Hopewell's strategy and competencies are for this approach.

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[9] Larry Miao, Executive Director, Hopewell Holdings, personal communication, November 16, 1994.
[10] Hopewell's troubled BERTS and GSZ projects may yet prove to be an exception to this characteristic.
[11] Peter Evans, p. 49-69.

To approximate the bounds of their risk reward strategy it is useful to devise a simple game among Hopewell and one of its major competitors Mission Energy. The game assumes two simple outcome possibilities of Good or Bad for each competitor. Upside or Good payoff values are to be calculated based on each companies expected rate of return, probability of achieving Good and Bad results and limits placed on how much money a company can lose if a Bad outcome is achieved. The idea is to show that a company with a high risk high required return approach must target significant upside opportunities.

Hopewell's chances for a Good outcome are a little lower than Mission Energy's chances of Good because Hopewell's contracts and projects are more risky. This is compounded by the fact that Hopewell's expected value when doing Bad will be significantly lower than Mission's when it does poorly. Hopewell's increased riskiness and potential downside values are inferred from a number of factors including: 1) the company has chosen projects with risks that other developers simply have refused to take 2) Hopewell accepts a lesser degree of contract specification than its western competitors, choosing to resolve many matters as a project unfolds versus choosing to negotiate every last project detail in advance in order to insulate itself from every project risk.

Mission's required rate of return is set at 18% based on press reports. Hopewell's required rate of return is set at 23% based upon its stated objective of 20% and press reports indicating a significantly higher return for its projects. We extrapolate the expected value when the outcome is good and can see that Hopewell must target large upside returns if it is to achieve its a 23% rate of return.

Exhibit 4.3 Risk Reward Scenario for Hopewell and Mission For a 1000 MW, $1 Billion Power Plant

Project	Probability of Good Outcome	Value of Good or Target Outcome (PLUG)	Probability of Bad Outcome	Value of Bad Outcome	Expected Value
Hopewell - Case A	.7	350 (35.0%)	.2	- 75	230 (23%)
Hopewell - Case B	.6	433 (43.3%)	.3	-100	230 (23%)
Mission - Case A	.8	228 (22.8%)	.1	-25	180 (18%)
Mission - Case B	.7	271 (27.1%)	.2	- 50	180 (18%)

Notes: Assumes target average return of 23% for Hopewell, 18% for Mission. Case A represents a project with a higher probability of success either by choice of project or tighter contract agreement.

Hopewell has a number of ways to generate possibilities for these enormous upside returns which will soon be discussed in more detail. One way is to set up contractual opportunities for early completion bonuses and revenues. Another way is to set up options for follow on projects, land rights, or other project externalities which may generate large revenues at some future time.

The Options Game

An important element of Hopewell's strategy has been its ability to generate options for future projects. While many companies are developing a specific project or projects in Asia, Hopewell strategy appears to focus on long term plans for projects

which have a higher probability of follow on work. In developing the Navotas plant in the Philippines, Hopewell sought to develop options for a 700 MW San Juan plant in Batangas. The proposal for this plant was included in the letter of intent that Hopewell submitted for the Navotas project in 1988.[12] Further evidence of this strategy is demonstrated by Hopewell's portfolio of projects under operation, construction and development as shown below.

Exhibit 4.4 Hopewell Holdings' Projects In Asia

Project	Size	Status	% of Private Equity	% of total equity	Comments
China					
Shajiao B	700 MW	Operation	100	50%	
Shajiao C	1980 MW	Operation	100	27%	
Shenzen	4X660 MW	Development	100	50*	
Jiangsu, Qidong	4X660 MW	Development	100	50*	
Shandong, Liaocheng	4X660 MW	Development	100	50*	
Henan, Shouyangshan	2X660 MW	Development	100	50*	
Shandong, Tanfan	2X660 MW	Development	100	50*	
Fujian, Pearl River	2X660 MW	Development	100	50*	
Guangxi	2X660 MW	Development	100	50*	
Philippines					
Navotas I, Manila	210 MW	Operation	100	50.1	
Navotas II, Manila	100 MW	Operation	100	100	
Barge Plants	9X30 MW	Operation	100	100	
Sual, Pangasinan	1320 MW	Construction	100	100	
Pagbilao, Quezon	735 MW	Construction	100	49	
Batangas, Manila	1200 MW	Construction	100	100	
Pangasinan	1000 MW	Development	100	100	
Barge Plants	240 MW	Development	100	100*	
Indonesia					
Chaki	1320 MW	Construction	100	100	Possible Expansion to 4000 MW
India	10560 MW	Development	100	100	Series of Sixteen, 660 MW Units
Pakistan	5280 MW	Development?	100	100	Series of Eight, 660 MW Units

* Indicates expected percent.

All of Hopewell's projects to date have generated follow on projects in the same geographical locations. It is interesting to note that Hopewell's follow on plants are either in the same proximity as early projects or have multiple stages. Navotas helped create options for both Batangas, Pagbilao and Sual. Sual located in Pangasinan has also

[12] Ibid, p. 65.

generated the opportunity for a follow on project in Pangasinan. Shajiao C progressed from Shajiao B. The remaining projects in China, Indonesia, India and Pakistan all involve staging of 660 MW Units. It seems likely that these projects are in themselves creating options for future staged projects in those countries.

Hopewell's portfolio is contrasted to Mission Energy's Asia portfolio shown in Exhibit 4.5. Mission is chosen because it has emerged as one of Hopewell's primary competitors in the Asia. Mission's Asian portfolio demonstrates some elements of optionality mixed with what appears to be elements of sporadic and geographically diverse investments. Mission's Paiton and Meizhou Wan all appear to be part of phased projects. However, only Loy Yang has emerged has having a viable second stage. Mission does not currently identify follow on development plans for Paiton II and Meizhou II. The other projects in India, the Philippines, and China neither appear to be part of a long term strategy to build follow on projects in those locations nor do they appear to have options for multiple follow on stages at the same project site.

Exhibit 4.5 Mission Energy's Projects in Asia

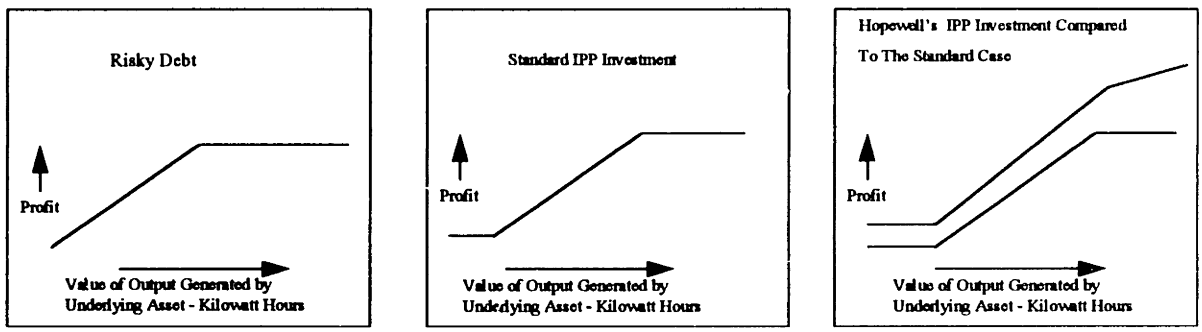
Project	Size	Status	% of Private Equity	% of total equity	Comments
China					
Zhejiang, Ningbo	1320 MW	Development	40% est.	20%	Partners with Semb. & Sing Inv. Corp
Fujian, Meizhou Wan 1	700 MW	Development	40% est.	20%	Partners with Semb., Bechtel & Tati
India					
Jojobera	300 MW	Development	100%	26%	74% Tata Iron & Steel
Indonesia					
Paiton, Phase 1	1200 MW	Construction, 1998	32.5	32.5	32.5% Mitsui, 20% GEPF, 15% PT BatuHP
Philippines					
San Pascual	300 MW	Development	40%	40%	60% Caltex

The vast differences in project equity percentages not only reflect a difference in financing and risk exposure strategies between the two firms. They also infer a difference in the companies ability to plan and execute options. Hopewell's 100% control of private equity makes it easier to plan its strategies in private without having to consult joint venture partners on the feasibility, timing, financing and strategy for project development and options for follow on projects. After the first in a series of projects is underway, 100% equity control also grants Hopewell more flexibility and privacy in developing those follow on projects. Hopewell need not consult a pool of prospective joint venture partners thereby disseminating its plans in the market place. Additionally, Hopewell need not have to coordinate with its joint venture partner to make decisions on the how the project shall be developed. By working alone, Hopewell essentially gains more control on when its follow on option is exercised.

Hopewell's vertical integration adds another layer of maneuverability to this options capability. Without having to take bids for a turnkey contract, Hopewell further constraint information flow about its strategic plans. Thus, this confidentiality increases Hopewell's ability to develop projects that will be relatively free of competition, that will contain options, and will present the flexibility of exercising those options at the desired time.

Option strategies are frequently employed by developers and construction companies given that they can significantly impact project financial payoff profiles. However, given its influence, entrepreneurship and vertical integration capabilities, Hopewell has been able to apply this developer-constructor technique to IPP generation better than other industry player in Asia. Exhibit 4.6 demonstrates how Hopewell's use of options has likely altered the financial payoff profiles of its projects in Asia.

Exhibit 4.6 Comparison of Risky Debt, a Standard IPP Investment, and Hopewell's IPP Investments



IPP projects are sometimes compared to risky debt, where the payoff increase with the amount of electricity generated usually up to maximum plant output level. However, provided the plant is completed on time, there is usually a minimum level of revenues set through a "take or pay" agreement with the host as shown in the "Standard IPP Investment" diagram. Revenue ceilings may also be set at a point prior to maximum output level and there are many other profile alterations that can be made through the project contract.

Hopewell's payoff profile is significantly different from many of its competitors should its various options come through. First as will be discussed later, Hopewell's payoff floor may rise immediately due to early completion bonuses and other additional income from construction operations. However, through options for follow on projects, land rights, the ability to produce extra electricity and other externalities, Hopewell has also has the a ability to steepen its payoff profile. While some of these benefits come as Hopewell is reaching is maximum plant revenue level, others such as options for follow on contracts may be executed during when or after the maximum plant revenue level is reached.

The Benefits of Vertical Integration

Vertical Integration is an essential component of Hopewell's market model. Gordon Wu brought vertical integration to property development in Hong Kong in the 1960's and has emphasized it as a core element of his firms strategy. [13] Hopewell applies vertical integration to all of its development ventures whether it be roads, office towers or power plants.

Vertical integration is essential for Hopewell in that it complements its influence and entrepreneurship capabilities. Vertical integration also allows Hopewell to achieve significant market transaction costs savings. Influence, entrepreneurship and transaction cost factors are particularly important when dealing in high risk venture capital styled markets such as those in Asia.

The Development Process is more Confidential

A critical advantage for Hopewell is the confidentiality that vertical integration provides. Vertical integration decreases the transparency of Hopewell's strategies, cost structure and relationships. Hopewell, need not disseminate project information in order to attract and negotiate with project partners or turnkey contractors. This confidentiality is further enhanced by the use of a small core decision making group. In addition, the lack of outside partners enhances the companies ability to keep the core decision group's size small as fewer people are required to interface with internal contractors than outside contractors.

Confidentiality is especially important given the companies style of influence and entrepreneurship. As Hopewell seeks to win many projects by prospecting and leveraging influence, the confidentiality of such activities is essential both for the host institutions and Hopewell. Confidentiality, allows host institutions to form deals without interference from public interest groups, development institutions or other arms of the government. Confidentiality, also allows Hopewell to shroud its activities from its competitors.

Targets of Opportunity can be seized and created easier

Vertical integration yields Hopewell a mobility advantage which can be particularly useful in Asia. With prospecting still and essential element of Asian IPP's, the ability to respond to new targets of opportunity is enhanced through a full service company. Hopewell need not coordinate with large and often bureaucratic international EPC firms to determine whether a project is feasible, the partner is interested, or the partner has the resources for a new opportunity. Hopewell can simply respond to and create opportunities at will. Vertical integration yields Hopewell the same flexibility that its non integrated IPP counterparts enjoy in the United States where construction risk is not a factor.

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[13] Simon Holberton, "Builder Of The Permanent, Not The Ephemeral", Financial Times, May 5, 1992.

Transaction Costs are Lower

While Transaction costs savings are often achieved at the project level, they are also achieved at the market model level. Considerable time and cost savings are achieved by not having Hopewell tied up negotiating with turnkey contractors and joint venture partners. This allows Hopewell to spend more time prospecting with clients. At the same time, Hopewell does advertise project transaction cost savings as an advantage to its clients. Hopewell, stresses that because it can provide construction services it can provide projects quicker and cheaper than its competitors.

Negotiation Power and The Ability to Deliver

The concentration of most value activities within the company provides Hopewell with increased negotiation power. Host agencies know that the concentration of value chain power within a small executive group allows Hopewell the mobility to seize and drop opportunities at will. This is in contrast to western firms who are more dependent on partners, are more bureaucratic themselves, and may have less flexibility to enter and exit project deliberations. Hopewell's ability to walk away from its China projects after rate of return caps were set demonstrates such flexibility.

Vertical integration increases Hopewell's ability to craft a package which fully addresses customers concerns. Hopewell can position itself as the firm which can provide all the services a customer desires. While most EPC firms where positioning themselves as providers of power plants in the 1980's, Hopewell was positioning itself as a provider of electricity.[14]

The Market Follows

Hopewell is one of the few IPP's who truly provides this vertically integrated capability in large scale power development Asia. IPP's from the United States and Europe typically do not share these capabilities because: 1) they were not compatible with a utility monopolized industry structure; and, 2) privatization occurred during a time when the commodity nature of construction services would not have added value to an Independent Power Developer's skill set. However, recent mergers, acquisitions, joint ventures and other alliances indicate that firms are gearing up duplicate Hopewell's range of capabilities.

4.2 Project Model Strategy - Hopewell's Tactics

Hopewell's project model is designed to extract exceptional profits through its project strategies and construction activities. Similar to Hopewell's market model, the project model is a result of the companies regional influence, Hong Kong real estate mentality and history vertical integration. While many of Hopewell's competitors subcontract their Turnkey contract to others, Hopewell uses this portion of the value chain as another primary source of financial gain.

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[14] Fred Marsh, personal communication July 12, 1994.

Generating Profits Through Construction

High Project Costs

Hopewell's first strategy may be to formulate project agreements whereby it can charge excessive costs. While Hopewell states that its high rates of return are justified by the amount of risk it is assuming, some industry watchers have pondered whether Hopewell is creating project structures which allow it to justify excessive project prices. The company noticeably avoids project work which is competitively bid indicating that average returns are not of interest.

Hopewell's project costs for its more recent coal fired project agreements are noticeably above the industry benchmark of $1Billion per GW. While some of this cost may be due to increased project and country risk factors, it will be interesting to compare future competitively bid projects to those Hopewell prospected.

Exhibit 4.7 Hopewell Holdings' Projects In Asia

Project	Size	Actual Cost in Millions US $	Cost in 1996 Millions US $	Status
China				
Shajiao B	700 MW	526 M		Operation
Shajiao C	1980 MW	1874 M		Operation
Philippines				
Sual, Pangasinan	1320 MW	1,500 M		Construction
Pagbilao, Quezon	735 MW	933 M		Construction
Batangas, Manila	1200 MW			Development
Pangasinan	1000 MW			Development
Indonesia, Chaki	1320 MW	2,000 M		Construction

Construction Cost and Time Savings

As a developer of relatively risky real estate projects in Asia, Hopewell has developed competencies in construction cost and time savings well suited for its environment. Hopewell unfamiliarity with tight quality standards associated with construction in the United State or for U.S. companies may prove to be an advantage. While U.S. competitors may be more accustomed to providing projects with high quality tolerances, Hopewell has been able to focus on providing projects which meet the quality expectations of its local market place.

Examples of Hopewell's capabilities for saving cost and time include:

Cost Saving Philosophy: Gordon Wu personally emphasizes a corporate culture which focuses on low overhead and cost savings. Examples are his claims that his people do not

enjoy luxury offices and that his top people fly coach.[15] Wu also emphasizes a "hard work" philosophy that accompanies his cost conscious mentality.

Mobilization Savings: The company's decision to geographically concentrate it activities is another source of project savings. The company already has major equipment, tool and manpower resources on site which generates significant cost and time savings during the mobilization phase of construction. This is particularly important in developing countries where import restrictions and other barriers can hamper a new contractor's efforts to mobilize project resources.

Economies of Scale: Geographically concentrated projects also yield economies of scale in construction and operation activities. These economies are not only derived from the purchase of manpower, materials and equipment but also how those resources are employed. Significant savings may be achieved by resource leveling between project sites.

Design for Savings: Hopewell's ability to formulate projects which lend themselves to project savings is likely to be stronger than its competitors. Hopewell was the first company to employ used equipment for new plant development in the Philippines. While Hopewell was negotiating a successful Navotas 1 plant based on used equipment, its competitor Cogentrix was failing to negotiate a more expensive project using new equipment. While the incorporation of used equipment was only one cause for success, it underscores Hopewell's willingness to apply creative approaches to achieve its goals. In addition to employing used equipment, Hopewell was one of the first companies to propose a standard "cookie cutter" plant design for large scale power generation in Asia.

Construct for Cost Savings: Anecdotal reports from Hopewell's project sites indicate that Hopewell is using construction methods which are at the borderline of acceptable quality standards. Failure's of the 197 foot pump chamber's walls at Shajiao C, the use of substandard aggregate at Pagbilao, and the failure of condemnation of chimney stack foundations at Shajiao C are indications of Hopewell's willingness to cut construction quality in an attempt to save costs.[16] While many of these particularly examples are likely to increase construction costs, the underscore a construction philosophy which focuses on saving cost and time at the expense of quality.

Staff Incentives: Hopewell also achieves cost savings through large personal bonuses which are promised to staff at all levels to achieve early completion. While these bonuses may undermine project quality, they further substantiate the company's obsession with early project completion.

Construct for Time Savings: Hopewell's use of its propriety "Slipform" construction technique for construction of concrete structures further enhances its ability to achieve construction time savings.

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[15] Gordon Wu, Lecture, Harvard University, November 16, 1994

[16] Michael Green, Hopewell Holdings Ltd., S.G. Warburg Research Analyst Report, November 16, 1993, p. 21-23.

Vertical Integration Savings and Subcontracting to Oneself

Vertical integration obviously provides significant benefits for Hopewell at the construction level. These benefits include the savings associated with decreased transaction costs between different parties in the value chain. However, they also include benefits associated with the lack of transparency in construction operations and the ability to subcontract to oneself.

Hopewell's achieves a sizable savings by not having to negotiate with a Turnkey contractor nor a contractor for civil and site work which is undertaken by its independent subsidiary Tileman. Significant project management time in construction is typically focused on negotiating daily contractual changes and disputes between the owner, prime contractor and subcontractors. In the case of multiple project developers this process can become even more complex. In Hopewell's case, much of this costly process can be eliminated.

The importance of transaction cost savings are magnified in developing Asian economies especially compared to developed economies. Higher project risks in Asian markets make the operations of contracts with joint venture parties and subcontractors more tenuous. The lack of recourse through a well established legal structure compounds those concerns. The ability to substitute intra-party deliberations for inter-party negotiations for daily operations is an advantage Hopewell maintains over many of its competitors.

Perhaps a more important source of savings is achieved through the ability to subcontract to oneself which shields the true project Internal Rates of Return (IRR). Project internal rates of return are calculated based on the profits achieved by the developer. However, those IRR's do not include profits made by subsidiary companies. By flowing excess profits to its construction subsidiary Tileman, Hopewell is able to fit its IRR to the level it desires. This is an extremely effective circumventing IRR limitations in countries like China or minimizing negative attention to high rates of return in most countries.[17]

Subcontracting to oneself has a second order effect on profitability due to its timing. Usually a project will achieve a relatively even earnings and debt repayment schedule over the life of the project up to 15 or 20 years. However, excess profits from construction occur in the early phases of the project. Effectively, the developer is able to use its power development ventures as a way to channel extra amounts of capital to its construction subsidiaries. The public pays for these extra profits either through a higher electricity tariff or by cuts in project quality which result in lower plant safety, reliability and plant residual value.

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[17] ---"Power On", Business China, The Economic Intelligence Unit, May 2, 1994, p. 1-3.

Savings through Early Completion Bonus

Hopewell's savings through early completion bonuses is another corporate characteristic commensurate with its high risk high return approach. Hopewell demands an early completion bonus if a project is completed early and agrees to damages if the project is delivered late. By picking projects which host institutions are desperate to have, Hopewell has greater leverage for negotiating such bonuses.

An additional impact of the early completion bonuses is that they are not factored into most project IRR calculations. The combination of the bonuses themselves along with the additional charges for early electricity delivery can add to profits significantly above the acceptable rate of return. Hopewell earned approximately $40 million in such savings in its Shajiao B project which raised its estimated IRR from 4-6%. [18]

Early completion is best achieved by "sandbagging" the project schedule. If the company knows it has a reasonable chance of finishing a project in 30 months it will contract for 36 months, and then write subcontract incentives to bring the project in at 30 months. Additional measures such as value engineering, quality cuts, large personal bonuses can also be employed to pressure projects to early completion.

Additional Cash Flow Through Plant Operations

Increased power takeoff is another tactic by which IPP's can achieve greater returns. By negotiating a low plant load factor, the percentage of the day that the plant delivers its maximum output, a company can create a situation in which it can earn additional profits. By operating in excess of the contracted load factor, the company will typically be rewarded with a higher tariff. Most plants in Asia are accustomed to operating at dismally low load factors while proper maintenance and operations techniques will allow plants to operate above 90% as they do in many US plants. [19]

A second source of extra profits through operations is achieved through subcontracting to oneself in the same way one subcontracts for construction services. By overestimating costs a company can bury profits in subsidiaries which will not show up in a projects stated IRR. Hopewell has reportedly employed its operations subsidiary Slipform for all of its plant operations contracts.

Financial Internal Rates of Return for Hopewell's Market and Project Models

The attached calculations in Exhibit 4.8 show different scenarios by which Hopewell can achieve higher rates of returns through the market and project models discussed in this chapter. Specifics of the scenario's are outlined below. These numbers are not actual and are merely used to demonstrate how a company with Hopewell's capabilities might achieve significantly higher returns.

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[18] Ibid.

[19] Ibid.

Scenario 1 is the base case based on the authors projected cash outflows and inflows over the life of Hopewell's 700 MW Pagbilao project in the Philippines.

Scenario 2 assumes a 14% savings from Hopewell's construction operations and a 20% increase in plant operations inflows due to cost cutting techniques and the ability to influence the host to take more output.

Scenario 3 assumes that through and cost efficient construction Hopewell can defer effectively using its loans until later on in the project's construction. Part of these loans may be flowed through to subsidiaries as excess profits to consume the loans.

Scenario 4 assumes the loan movement activity of scenario 3 plus the fact that there is 30% savings on construction activities through early completion bonuses and general construction savings, and 30% extra operational revenues from early completion production income plus increased overall increases in output and operations savings.

Exhibit 4.8 Hopewell Holdings, 770 MW Coal Fired Power Plant, Pagbilao, Philippines

FIRR Calculations, Scenario 1 & 2

Scenario 1= Base Case

Scenario 2= Base Case Plus 14% Construction Savings & 20% Operational Revenue Increases

	Scenario 1, Base Case			Scenario 2, With Adjustments	
	Real FIRR	Adj FIRR		Real FIRR	Adj FIRR
	17.53%	21.64%		24.07%	28.41%
Year	Net	PV Net		Net	PV Net
0	Benifits	Benifits	Adjustment	Benifits	Benifits
1	-75.67	-64.38	20.00	-55.67	-44.87
2	-325.38	-235.56	50.00	-275.38	-178.90
3	-204.31	-125.85	20.40	-183.91	-96.30
4	-141.94	-74.39	14.20	-127.74	-53.91
5	198.29	88.42		237.95	80.94
6	203.99	77.40		244.79	67.11
7	200.80	64.82		240.96	53.25
8	196.53	53.98		235.84	42.00
9	192.20	44.92		230.64	33.11
10	187.78	37.34		225.34	26.07
11	141.27	23.90		169.52	15.81
12	135.60	19.52		162.72	12.23
13	130.26	15.96		156.34	9.47
14	125.10	13.04		150.12	7.33
15	120.50	10.68		144.60	5.69
16	117.63	8.87		141.16	4.48
17	116.24	7.46		139.49	3.57
18	114.93	6.28		137.92	2.84
19	113.69	5.28		136.43	2.27
20	112.54	4.45		135.05	1.81
21	111.46	3.75		133.75	1.44
22	110.45	3.16		132.54	1.15
23	109.53	2.67		131.44	0.92
24	108.68	2.25		130.42	0.74
25	107.91	1.90		129.49	0.59
26	107.21	1.61		128.65	0.47
27	106.59	1.36		127.91	0.38
28	106.04	1.15		127.25	0.30
	NPV	0.00		NPV	0.00

Exhibit 4.8 Hopewell Holdings, 770 MW Coal Fired Power Plant, Pagbilao, Philippines

FIRR Calculations, Scenario 3 & 4

Scenario 3 = Scenario 1 Base Case Plus Moving 100 Million in Cost from yr 2 to yr 4

Scenario 4 = Scenario 3 Plus $40M Early Completion Bonus, 30% Savings on Construction, Plus 30% Extra Operational Revenues

	Scenario 3			Scenario 4	
	Real FIRR	Adj FIRR		Real FIRR	Adj FIRR
	18.27%	22.41%		33.30%	37.97%

Year	Net	PV Net		Net	PV Net
0	Benifits	Benifits	Adjustments	Benifits	Benifits
1	-75.67	-63.98	22.70	-52.97	-39.74
2	-225.38	-161.13	67.61	-157.77	-88.78
3	-204.31	-123.50	61.29	-143.02	-60.38
4	-241.94	-123.66	112.58	-129.36	-40.97
5	198.29	85.69		257.78	61.24
6	203.99	74.54		265.19	47.26
7	200.80	62.04		261.04	34.90
8	196.53	51.34		255.49	25.62
9	192.20	42.45		249.86	18.80
10	187.78	35.07		244.11	13.78
11	141.27	22.31		183.65	7.78
12	135.60	18.10		176.28	5.60
13	130.28	14.71		169.36	4.04
14	125.10	11.94		162.63	2.91
15	120.50	9.73		156.65	2.10
16	117.63	8.03		152.92	1.54
17	116.24	6.71		151.11	1.14
18	114.93	5.61		149.41	0.85
19	113.69	4.69		147.80	0.63
20	112.54	3.93		146.30	0.47
21	111.46	3.29		144.90	0.35
22	110.45	2.75		143.59	0.26
23	109.53	2.31		142.39	0.19
24	108.68	1.94		141.28	0.14
25	107.91	1.63		140.28	0.11
26	107.21	1.37		139.37	0.08
27	106.59	1.15		138.57	0.06
28	106.04	0.97		137.85	0.04
	NPV	0.00		NPV	0.00

Chapter 5

Summary of Hopewell's Models, Their Sustainability and Implications for the Future

Introduction

The objectives of this chapter are: 1) to summarize the characteristics of Hopewell's market and project models; 2) identify environments where these models are likely to be successful and unsuccessful; 3) discuss the models' sustainability; and, 4) to discuss the implications for the future strategic positioning of Hopewell and its competitors.

Summary of Hopewell's Market Model and Project Model Characteristics

The chart below presents an overview of Hopewell's models. The model characteristics are grouped among Hopewell's three broad areas of competitive advantage namely Influence, Real Estate Entrepreneurship, and Vertical Integration. The chart also lists Other Advantages which are equally important in the case of the Market Model.

Figure 5.1 Overview of Hopewell's Market and Project Model Characteristics

Market Model	Project Model
Influence Advantages	**Influence Advantages**
Developer Of Choice - Roots in Asia, Asia's Mr. Fixit	Improves ability to obtain matl's, tools, equip., etc.
Advantages of Being Everywhere	Opportunities to deny competitors materials, tools etc.
Master of Regional Influence Style	
Entrepreneurship/Real Estate Mentality Advantages	**Entrepreneurship/Real Estate Mentality Advantages**
Project Selection Skills	Low Cost/Low WC Philosophy Via Real Estate Roots
Project Development Skills	Staff Incentives for Early Completion
Financial Skills & Dexterity	Building Systems for Time Savings
Working Cap Mangm't Via Real Estate Background	Construct to project requirements vs. international standards
Building Systems Skills	Early Completion Bonus and Income
High Risk High Return Game	
Creation of Options	
Organ'l, Strategic, Fin. Control Via 100% Equity	
Vertical Integration Advantages	**Vertical Integration Advantages**
Ensures Confidentiality of finance and strategy	Capture Savings & Profits in Construction Activities
Helps to seize and create targets of opportunity	Increase Project Costs
Lowers Transaction Costs through value chain	Value Engineering, Short Cuts
Improves Negotiating Power	
Improves ability to craft successful project packages	Subcontracting to Oneself Allows Fitting of IRR
	Capture Profits of Operations Activities
Other Advantages	**Other Advantages**
Combination of Critical Success factors	Construction Techniques

Environments for Advantage and Disadvantage

The concentration of Hopewell's activities in less developed economies infers that there may be environments where the Hopewell model will thrive and those where it will fail to succeed. This inference is supported by the fact that a Hopewell styled company has failed to materialize in competitive markets such as the UK and USA. A review of the characteristics and how they relate to Hopewell and its competitors provides a deeper understanding of the Hopewell strategy. It illuminates how the Hopewell model capitalizes on the strengths and weaknesses of developing markets but fails to address the competitive nature of western private power markets. Additionally, a brief look at Hopewell's troubled transportation projects and recent issues with its power projects may reveal that the Hopewell's strategy has limits even for developing economies.

Environments for Advantage

Hopewell's infrastructure activities have primarily been concentrated in China, the Philippines, Thailand, Indonesia, Pakistan and India. The characteristics of these markets and the manner in which Hopewell and its competitors interact with those traits is as follows:

Higher Risk: Whether it be political, economic, legal or other risks, Hopewell's venture capitalist risk efficient model combined with it influence capabilities appears more likely to succeed in high risk environments than its competitor's traditional cost effective approach. Risky environments ward off many of Hopewell's would be competitors who prefer environments where risks are mitigated by institutional and legal frameworks. Remaining competitors are likely to employ more detailed and drawn out development procedures designed to insulate them against risks thereby increasing transaction costs.

Hopewell's reliance on localized influence over contracts allows it to mitigate macro and micro level risks better than its competitors.[1] This ability to mitigate risks translates into the ability to accept lesser degrees of project specification thereby decreasing transaction costs.[2] Lower transaction costs allow Hopewell to cover more ground quicker than its competitors in seeking project opportunities. This approach decreases Hopewell's transaction costs and provides a larger portfolio of risky projects versus a smaller portfolio of relatively lower risk projects. Hopewell's vertical integration is also likely to give it an advantage over its competitors in high risk environments due to the added control, negotiating power and lower transaction costs associated with it.

Lack of Transparency: Such markets are more susceptible to influence models of behavior. Once a developer has an established presence through its first venture,

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[1] Donald R. Lessard, "Financial Risk Management For Developing Countries: A Policy Overview", Journal of Applied Corporate Finance, Fall 1995, p. 10-12.

[2] Hopewell's Navotas II project agreement was a mere 67 pages long compared to agreements of its competitors which may be hundreds of pages long.

significant first mover advantage can be created through political and economic entrenchment. If a project runs into trouble, an entrenched developer will have a higher probability of mitigating losses and organizing a bail out. Additionally, the developer need not spend as much time focusing on contract specification because influence can be used to work out issues after the development process has commenced. Developers who do not have significant market presence or influence in non-transparent environments will be at a significant disadvantage as they will be forced to cover their project agreements with guarantees and high degrees of contract specification thereby increasing transaction costs.

Lack of Bidding: - Markets which use little or no competitive bidding are more suitable for the Hopewell's model versus that of its cost efficient competitors. The lack of bidding coupled with Hopewell's keen prospecting skills opens up more opportunities for greater entrepreneurial activity as the developer has more leeway to define the project scope versus than a competitive bid where the host institution defines the project scope. Prospecting allows the developer to more opportunities to create non monetary forms of compensation such as land rights. Finally, the lack of bidding allows Hopewell styled companies to outmaneuver their competitors through the use of influence. This is especially true for competitors from the U.S. who are subject to the Corrupt Foreign Practices Act which prohibits bribery, kickbacks and similar forms of compensation.

Environments Where the Project is Desperately Required: While projects of this sort usually coincide with high risk environments, developers who choose to undertake such risk can create several advantages particularly if their influence capabilities are strong. Hopewell's Philippines power projects in the 1980's exemplify this characteristic. While the risks were high, the projects were needed so badly that Hopewell was able to create in effect "self enforceable contracts" because the Philippines government could not afford to interfere with successful project completion. At the same time, Hopewell was likely able to count on its local influence capabilities to mitigate micro level construction, political and economic risks that perhaps the government itself could not control.[3] The self enforceability of Hopewell's contracts can again be inferred by the relative shortness of its project agreements which for Navotas II totaled only 67 pages compared to hundreds of pages for contracts prepared by Hopewell's competitors. Clearly this implies that Hopewell has the confidence that it can work out issues in the future based on its relationship and influence characteristics rather than relying on detailed contract specifications for its security.

High Growth Markets in Developing Economies: Such high are more likely to have unplanned development than low growth markets in developed economies. These markets are more likely to present targets of opportunity resulting from dynamic forces such as the formation of new industrial zones, and changing economic priorities due to rapidly changing political and economic forces. Flexible companies such as Hopewell will have an edge over their more bureaucratic competitors. Vertical integration, organizational and financial agility, entrepreneurship and influence will permit Hopewell to quickly respond

[3] Donald R. Lessard, "Financial Risk Management For Developing Countries: A Policy Overview", Journal of Applied Corporate Finance, Fall 1995, p. 12.

to a host institutions opportunity and quickly formulate a project solution which meets the customers requirements. Such markets also present greater opportunities to create follow on options. Large western international competitors will have more difficulty capturing these benefits as their organizational structures are less able to cope with rapidly changing market conditions.

Markets with High Construction Risk: Such markets are likely to have significantly higher transaction costs between the developer, its partners and turnkey contractor. Vertically integrated companies like Hopewell who maintain 100% ownership of private equity will have transaction cost and time advantages over their competitors. Such markets also require capable Turnkey contractors with local cultural competencies in order to minimize jobsite construction risks. Therefore it is important that the Turnkey contractor component of the vertically integrated company have significant local staffing content and experience. Hopewell's western competitors will have far more difficulty providing this strategic capability.

Similar Culture/Asian Culture: Hopewell's style of influence and management is to a large degree based on relationship power which is a significant factor in the Asia business environment. An important element of this relationship power is based on common cultural roots. Hopewell's influence model is likely to work well in other developing Asian economies where the power of relationships is stronger than the power of institutions. Western developers who are more accustomed to "fair play" and institutional ground rules will have difficulty adapting to Asian business culture.

Environments No Advantage or a Disadvantage Exists

Markets where the Hopewell model has not been successful are for the most part the inverse of developing economies such as the U.S. and U.K.. Transparent markets which regularly employ bidding procedures remove much of a Hopewell styled company's influence and risk efficiency advantages. Competitive markets also do not afford a Hopewell styled company relatively less opportunities to leverage local roots and culture as project award is relatively more focused on price rather than relationships. Low growth markets do not offer as many unplanned opportunities where Hopewell company can capitalized on its entrepreneurial skills, lean management structure, and agility derived from its vertical integration capabilities. Such markets also provide standardized relationships for transactions between developers, constructors and operators such that the transaction cost advantages of maintaining a fully integrated company in competitive markets is reduced. Moreover, vertical integration in competitive markets may be a liability as demands for efficiency drive companies to become specialized in narrow portions of the value chain.

Potential Limits for the Hopewell Models

While Hopewell's business models appear to be well suited for projects in developing economies, difficulties on its transportation projects may show the limitations of its strategies. Delays on both the Bangkok Elevated Rail Transit System and the GSZ Superhighway indicate that even Hopewell's influence capabilities may not be sufficient to overcome the challenges of transportation projects. Hopewell's transportation projects differ from its power projects given their visibility, geographical spread and cross jurisdictional nature. Press reports refer to the ability of any one of a hundred village chiefs being able to hold up progress on the GSZ Superhighway.[4] While other reports refer to Hopewell's five year battle with the Thai government over the details of the BERTS project which were not specified in the original contract.[5]

Interestingly, Hopewell's difficulties on transportation projects do not necessarily imply that alternative strategies of its western competitors may be successful. In fact, it may be that Hopewell simply has not gone far enough in following parts of its own formula for success. Hopewell may not be "local" enough to mitigate project risks associated with its transportation projects and press report site that fact that what Gordon Wu needs in Thailand is 'A strong Thai partner who can smooth over his relationships'.[6]

The case may be somewhat different with respect to recent difficulties with the timeliness of Hopewell's power projects. While reports on the Chaki and Pagbilao projects indicate problems with the host governments failure to perform contract obligations, reports on Pagbilao and Shajiao C also indicate delays purely due to construction operations issues. Combined with previous reports regarding issues of construction timeliness and quality, it may be that Hopewell's entrepreneurial styled organization is experiencing difficulties coping with the large scale management systems required for mega- infrastructure.[7] This issue may be exacerbated by the ever increasing span of control associated with Hopewell's expanding empire of projects.

Sustainability of Hopewell's Competitive Advantages

While Hopewell appears to have significant advantages over its competitors, aspects of these advantages are not sustainable and are either partially or completely replicable. The ease of replication varies between those competitors who are regionally based and those based outside of developing Asian economies. While some advantages may be duplicated more easily with time, influence advantages may become harder to duplicate over time for non-regional companies indicating the advantages of early entry into the Asian market.

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[4] Patrick Tyler, Hong Kong Tycoon's Road to China, The New York Times, Dec. 31, 1993, p. D14.

[5] Paul Sherer, "Italian-Thai Seeks Stake in Transit Project", Asian Wall Street Journal, May 1, 1996, p.1,22.

[6] Ibid

[7] Michael Green, Hopewell Holdings Ltd, S.G. Warburg Research Analyst Report, November 16, 1993, p. 89-91.

Influence

Hopewell's influence capabilities are significant but for the most part can be matched in a number of years. Both regional and non Asian companies can take immediate steps to improve their presence and influence. Such measures would include taking on large, highly visible and risky projects, dedicating high ranking staff to efforts in developing Asian economies, hiring influential personalities as company representatives for Asian projects, and forming linkages with well established Asian firms

The relative influence of Asian and non-Asian firms is likely to vary as time moves forward. In the short term, well capitalized western firms can employ large resource advantages to generate influence capabilities for the Asian private power boom. Regional firms are also gearing up though they may not, on average, have the assets and experience to generate influence levels comparable to Hopewell. However, in the long term, the tides of influence are likely to reverse. As regional developers gain more cross border economic and political clout, host institutions may be less likely to be responsive to the influence patterns of firms outside of Asia. Thus, in the long term, western firms may decrease their competitiveness with respect to influence capabilities.

Asian firms may also continue to have an advantage over non Asian firms due to a cultural reliance on relationships over institutions. As Asian economies grow they may formulate relatively more transparent legal, financial and commercial institutions which foster forms of limited competition. However, Japan and South Korea demonstrate that institutional building geared towards open and competitive markets need not accompany significant economic growth.

In the long run, Hopewell is likely to share its level of influence with several other Asian giants. Though the advantages of Hopewell's pioneering image is likely to remain for many years. Much of this image revolves around its leader Gordon Wu, which implies that Wu must groom a successor with equal personal influence and skill to sustain Hopewell's current capability in this success factor.

Entrepreneurship

Hopewell's entrepreneurial skills are also formidable but to some degree could be matched with time. Anecdotal evidence suggests that some of Hopewell's western competitors are forming small entrepreneurial groups which have the autonomy to pursue and negotiate deals without interference from corporate hierarchy's. However, Hopewell is likely to maintain entrepreneurial advantages over these firms due to its cultural competencies which western firms will have difficulty replicating. While western firms may form strong linkages with local partners to acquire these skills, the inability to have both cultural and entrepreneurial competencies under one roof may prove a hindrance due to increased transaction costs.

In the long run, local competitors should prove to be the most formidable entrepreneurial competitors as they have the cultural competencies, the entrepreneurial traits of Asian business style, and can model their organizations in a Hopewell styled

fashion. However, the absence of other Asian based private power developers from the industries top players indicates that Hopewell has a significant head start in this capability. The sustainability of Hopewell's entrepreneurship capabilities should rely on its ability to refine those skills through its larger amounts of project development experience and the sustaining influence and vision of its founder Gordon Wu.

Vertical Integration

The Vertical Integration advantages appear to be sustainable for several years to come. Both Asian and non Asian competitors are currently developing vertically integrated capabilities allowing them to control all activities in the value chain. However, both groups of competitors are likely to run into problems in building these capabilities.

Non-Asian competitors may have difficulty building the construction and operations elements of their companies. While they can bring in construction divisions or skeletal crews from outside Asia, these approaches may not provide cost and time effective solutions for constructing facilities which meet local quality demands. They may buy local construction companies. However, controlling staff and assets of such companies after acquisition could prove to be problematic. Most likely, non Asian firms will continue to joint venture with local partners for construction activities incurring higher transaction times and costs for construction. These joint ventures also have the problem of providing less confidentiality of construction strategies and costs.

Asian competitors, while capable of more rapidly putting together the construction and development elements of their corporations, will likely have difficulty developing the level of Hopewell's expertise in the near term. Huaneng International, Tenaga Nasional, and New World Development are examples of companies who are building skills to compete with Hopewell. However, they are unlikely to have refined their organizational, financial and technical expertise to Hopewell's level for several years.

In the long run, Hopewell's first mover advantage and 30 year history as a vertically integrated developer of high risk facilities in Asia should provide a significant buffer for several years. Competitors will chisel away at this competitive advantage as the size of market opportunities make it impossible for Hopewell to create a monopoly. Thus, competitors with the same vertical integration capabilities will evolve. However, this first mover advantage should afford Hopewell to become entrenched in several market locations and segments, further refine its capabilities associated with vertical integration, and create a degree of sustainable competitive advantage, albeit to a lesser degree than at present.

Implications For Hopewell To Sustain its Market Leadership

As existing Asian markets move towards greater transparency and competition Hopewell is bound to feel increasing pressure from large western power developers who's

capabilities are honed for such environments. The recent bidding of projects in Thailand and the PRC are initial trials of competitive and transparent procedures which are sure to become more popular with time. Backing for these procedures from the Asian Development Bank and the contingency of multilateral lending agency loans on competitive processes will increase the pressure for developing Asian economies to support such processes. In light of these changes, Hopewell must consider strategies to counter these developments which are unfavorable to its current models for project development.

Hopewell has a number of options to sustain its market leadership in Asia, many of which it appears to be pursuing at this time. These options include efforts to: 1) seek new markets with risk characteristics similar to Hopewell's early projects; 2) create new opportunities in existing markets with risk characteristics of early projects; 3) refine existing capabilities to compete more effectively in existing markets as those markets become more competitive; and, 4) capitalize on first mover advantages, concentration effects and monopoly power in existing markets.

The first two options involve replicating the high risk environment of Hopewell's early projects. By either identifying high risk projects or creating them, Hopewell will be able to limit market competition and Hopefully negotiate projects with favorable risk return profiles. There are a number of methods for accomplishing this objective including:

- Expand to more *riskier regions* of Asia including interior China, India, and Pakistan. These regions are more uncertain than Hopewell's primary existing markets in Guangdong and the Philippines. They share similarities with Guangdong and the Philippines in the mid 1980's, when many developers were unwilling to accept risks in those regions.

- Push the *size frontier* of projects. While many of Hopewell's competitors are eager to take on limited amounts of project equity and in rare cases a whole project, few are willing to enter into a 5,000 or 10,000 MW scheme such as Hopewell has proposed for Pakistan and India. While it remains to be seen whether Hopewell can pull these projects off, the project proposals indicate that Hopewell understands that it must keep one step ahead of the competition by moving to more risky projects as existing markets become more competitive.

The remaining two options for Hopewell involve refining and leveraging existing skills to compete in existing markets. While existing markets may have become more competitive, they still contain more than enough size, risk, and growth for Hopewell to remain the market leader if it takes actions to prepare itself for this competition. Hopewell may be advised to:

- *Enhance management systems for construction and operations activities.* Anecdotal evidence suggests that Hopewell has had difficulties with quality and timeliness issues

on some projects. Hopewell is still relatively new to large scale infrastructure development and may not have the twenty and thirty year heavy construction veterans that many of its competitors have. In this case, Hopewell should consider programs to increase its fold of construction experts. The company may also need to take a look approaches to limit its high management turnover at the construction operations level.

- *Enhance and streamline relationships with suppliers* of equipment, materials, tools and skilled labor. Typically, many construction delays, cost overruns and quality issues in developing countries result from inadequate supply of basic resources. The cost of these shortfalls is magnified for Hopewell due to its high risk high return approach. By streamlining its resource channels, Hopewell may increase its chances of finishing projects early and achieving early completion bonuses and operations revenues. Hopewell may even consider backward integrating into resources channels. In the Philippines for example, this might involve buying an equity position in suppliers of cement and rebar which are often in shortage.[8]

- *Streamline operational relationships between projects* in same and different regions. By automating and "infomating" the construction operations process Hopewell should be able to accomplish significant resource efficiency gains.[9] By networking the resource requirements across projects, Hopewell may be able to improve its resource leveling techniques for optimization of overall manpower, tools and equipment levels. Additionally, this networking should increase the ability to perform bulk purchases of materials, tools, and equipment.

- Continue to *push for a limited portfolio of project regions in Asia in order to diversify country risk* much the way a multinational firm can.[10] Limited diversification should allow Hopewell to corporate finance rather than project finance its power development ventures achieving a cost of capital equal to that of its multinational competitors. Excessive diversification is not recommended as it creates too large a span of control and results in the loss of synergies between projects. Moreover, investors can pursue full diversification objectives on their own more efficiently than having Hopewell undertake this objective for them. By focusing in five or six major regions, Hopewell should be able to sufficiently diversify its market risk, and maintain corporate synergies without extending itself beyond its management capabilities.

- Continue to *strengthen and leverage first and early mover advantages* in Guangdong, China, the Philippines, Thailand and Indonesia by concentrating additional projects in these areas. Advantages to be leveraged and strengthened include influence advantages with local business and government officials, cost advantages from economies of scale, and values associated with pre-mobilization. Hopewell should seek to further entrench itself in these regions so it may strengthen its sources of

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[8] This shortage data is based on the authors experience managing construction projects in the Philippines.
[9] Wanda Orlikowski and Stuart Madnick, Coursepack for Information Systems: From Information Infrastructure to Networked Corporation, MIT Sloan School of Management, Fall 1995.
[10] Lessard, p. 12.

economic and political monopoly power which the company should continue to use to win future projects and drive down the cost of project resources.

- *Maintain the financial integrity of CEPA.* While it may be tempting for Hopewell to cross subsidize its troubled transportation projects with earnings from its power project subsidiary CEPA, the impact of such activity could devastate CEPA's share price and curtail Hopewell's ability to finance its power ventures in the future. Maintaining CEPA's financial integrity appears to be a critical goal for the long term success of Hopewell's power development plans.

- *Groom successors to Gordon Wu* who can grow Hopewell's influence in Asia and maintain the company's entrepreneurial edge and vision. Gordon Wu prides himself on doing new things, maintaining a "Can Do" philosophy, and driving his managers to the same. It appears imperative the Gordon Wu plan carefully for his own succession if Hopewell is to sustain its influence and entrepreneurial advantages in the future.

Implications for Hopewell's Competitors

As Asian governments continue to implement policies to foster more traditional forms of transparent market competition, large western power developers are expected to expand their market share from its relatively small current position. However, the move to competitive markets is sure to take time with step function like improvements and setbacks. For instance, China's initiation of open project bidding has improved the business climate for cost effective firms while India's continued frustration of the Enron Dabhol project agreement is having significant negative impacts for the majority of industry players. Additionally, even if measures of competitive markets where to evolve, there is no guarantee that these markets would be transparent and competitive in a manner similar to western markets.

Asia's unsteady progress towards open markets combined with steadily increasing numbers of new firms in the Asian power market implies that IPP's need to develop new strategies for competing in Asia. The failure of traditional competitive measures thus far has been illustrated by market data presented in chapter three which shows that the most successful firms in Asia's IPP market are Hopewell Holdings and other companies such as AES which have been innovative in their approach to the market. One option for Hopewell's competitors to increase their competitiveness in Asia is to selectively emulate elements of Hopewell's business models commensurate with the firms strategy.

There are several broad categories of capabilities that firms may focus on when developing their capabilities for the Asian IPP market. They include: 1) capabilities that firms should pursue regardless of strategy; 2) capabilities firms should pursue to be the least cost provider; 3) capabilities firms should pursue to become a provider of a differentiated IPP product such as geothermal energy; and, 4) capabilities firms may pursue to become a provider of high risk high return infrastructure as its differentiated

product. Given that Hopewell is the subject of this analysis, we will now focus on items 1 and 4.[11]

Capabilities Regardless of Market and Project Strategy

The recommended capabilities to be developed regardless of strategy are the success factors discussed in chapter three namely access to capital, market presence and reputation, entrepreneurship and deal making skills and ready access to technical capabilities. This paper has discussed the importance of developing strengths in all of these capabilities rather than just one or two. While it may be impossible to develop all of these capabilities in house, firms may develop these capabilities by forming linkages with local partners.

The degree to which firms develop these core capabilities depends on whether or not they intend to pursue a high risk return strategy. For instance, if a firm chooses a high risk strategy, entrepreneurial project development skills must be refined to be able to prospect and propose projects which will fit with the constraints of local government and business concerns. However, if a firm chooses a cost effective low risk low return approach by responding to public solicitations the firm would do better to focus more attention on cost competitiveness skills versus project development skills.

Capabilities for the High Risk High Return Strategy

If a firm chooses the high risk high return approach it might consider the following Hopewell styled elements in developing its capabilities:

Influence - In order to improve market influence, firms can take the obvious steps of assigning high ranking corporate officials and notable international figures to Asian development efforts. However, western firms may never develop influence capabilities comparable to Hopewell or other Asian based competitors. In order to fully access local influence mechanisms and efficiently interface with local business processes firms may be forced to form strong linkages with regional partners to access this capability. Mergers, acquisitions, alliances, joint ventures and cooperative agreements are likely to be a key route for companies to acquire the influence capabilities necessary for successful Asian ventures.[12] In some cases, where the merger, acquisition or other formal linkages with a government backed power development company or utility is impossible, political and economic entrenchment with that entity may be the only avenue to successfully access to strategic capabilities.

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[11] A least cost stratagy might be illuminated by a study of a local Asian firm or an international developer which focuses its efforts on bidding international solicitations. A generic product differentiation strategy might be illuminated through analysis of an IPP which focuses on alternative fuel types or plant sizes such as Magma Energy which develops geothermal power and has large project holdings in the Philippines.

[12] Carlo Garcia-Pont and Donald R. Lessard, " Alliance Networks In European Banking", International Financial Services Research Center, MIT Sloan School of Management Discussion Paper No 180-91R, January 1994, p6.

Entrepreneurship - In order to enhance the firms Entrepreneurship and Deal Making Skills, firms might emulate some of the Hopewell characteristics shown in figure 5.1. The formation of small, flexible autonomous project development groups which have the authority to negotiate deals without interference from parent companies could yield those groups the negotiating power, financial flexibility, and project development flexibility necessary to be successful in a venture capital type approach to the Asian IPP market. By developing prospecting skills it will be easier to drive the market versus responding to public RFP's. By exerting greater control over the location of project development, firms may increase their chances of concentrating power projects regionally, and greater sources of monopoly power can be developed. Again, if developing these skills in house is too costly, the establishment of linkages with other firms may provide the best option. U.S. Generating's acquisition of venture capital styled developer J. Makowski may be viewed as a move to provide linkages for strong entrepreneurial capabilities.

Vertical Integration - To move beyond mere ready access to technical capabilities, the formation or acquisition of Asian based construction and operations subsidiaries could markedly improve a developer's success at closing project deals. This vertical integration would yield greater market power through the flexibility to respond and create new market opportunities and the concentration of negotiation power within a single entity. Moreover, it will be easier for firms to expand project cash flows and capture all of the benefits of development through early completion bonuses, early completion revenues, fitting project rates of return, and capitalization of project externalities such as land rights. The ability to concentrate construction operations may also provide sources of monopoly power for project resources.

Comments on The Mixing Of Strategies

As in many industries, firms may run into difficulties if they mix cost and differentiation strategies in Asian power development. If firms focus on prospecting projects while also responding to public RFP's they may produce mediocre results in both. For instance if a firm prospects for new opportunities using an organization suited for cost effective work, the firms organizational inflexibility may hinder its ability to tailor projects suited to local government and business concerns. Likewise, if a highly entrepreneurial firm such as Hopewell were to bid in response rigidly defined project RFP's, it is doubtful that it will have the streamlined turnkey project organization which can successfully compete in a competition for cost effective project solutions.

Conclusion

This thesis has analyzed Hopewell Holdings' success in Asia's independent power markets and found that Hopewell has developed market and project models uniquely suited for the high risk nature of Asia's market opportunities. These models rely on Hopewell's regional influence, real estate entrepreneurship, and vertical integration capabilities which are differentiated versions of standard industry success factors. At the market level, these capabilities provide increased market power, the ability to seize and create new project opportunities, and take a high risk high return approach which captures

additional benefits from options for follow on projects. At the project level these capabilities allow Hopewell to expand project cash flows and capture all project financial benefits for itself including project externalities such as land rights, market power values for projects resources, or pre-mobilization values for follow on projects.

In both models Hopewell uses regional styled influence, entrepreneurship and vertical integration capabilities to mitigate both macro and micro level projects risks. The combination of these capabilities allows the company to rely on a relationship styled business approach which decreases transaction costs for developing, constructing and operating power projects. Hopewell's entrepreneurship further enhances its ability to mitigate risk as the company can easily cover many projects in a venture capitalist styled approach without getting bogged down in one or two projects. Vertical integration capabilities further enhance risk mitigation in that it concentrates negotiating power within the firm and yields greater control over the project development process.

As Asian markets become increasingly more competitive and transparent both Hopewell and its competitors will be forced to take steps to improve their positioning. The sustainability of Hopewell's position will rely on its ability to continue to find new markets for high risk projects while improving efficiency, capitalizing on entrenchment factors in existing markets, and preparing for the succession of Gordon Wu. At the same time, Hopewell's competitors will need to improve their regional influence capabilities, entrepreneurship, and vertical integration either through internal growth, acquisitions or other strategic linkages which provide strategic capabilities embodied in Hopewell.

Finally, Hopewell must continue to prove that it can achieve rewards high enough for its high risk strategy. Timeliness issues on the Shajiao C and Pagbilao projects may indicate that Hopewell's entrepreneurial organizational structure is having difficulty coping with the large scale systems needed to develop mega-power projects. It remains to be seen whether Hopewell can use its influence capabilities to recoup lost financial benefits on these projects. If Hopewell can continue to achieve high rewards based on its current strategies, this will provide increased incentives for continued Hopewell styled development. If not, a tamed Hopewell combined with a massive need for project equity may provide increased pressure for Asian governments to make their power development processes more transparent, competitive and conducive to traditional patterns of industry competition.

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