

Learning, Upgrading, and Innovation in the Telecommunications Industry in Vietnam: A Rent Management Analysis

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ABSTRACT

This paper analyzes the industrial success of the telecommunications industry in Vietnam using developmental rent management analysis (DRMA). The empirical evidence for this study is primarily based on 42 semi-structured interviews with government officials, firm managers, suppliers, workers, and industry experts from 2010 to 2012. DRMA suggests that the industry's success was based on a number of rent management factors that corrected certain market failures and encouraged significant effort for learning and technology adoption. These factors were fundamentally based on: (1) favorable political supports for rent creation from the state, (2) an effective structure of rent allocation and implementation, and (3) credible incentives and pressures that encouraged industrial upgrading. While each factor by itself was insufficient to ensure the success of the industry, their synthesis was such that Vietnamese telecom operators, in particular Viettel Group, were motivated and compelled to rapidly expand their industrial capability through technical learning and upgrading.

JEL Codes: B5, O14, O33, O38, O53

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1. Introduction

The claim in the mainstream literature on development, rents, and rent-seeking is that to achieve good outcomes, there should be no rents or rent-seeking¹ (Buchanan, Tollison, & Tullock, 1980; Krueger, 1974; Posner, 1975; Tullock, 1967). More problematic is the assertion, which is widely spread by donor agencies, that development failures in poor countries are due to the pervasive nature of rents and rent-seeking (Coolidge & Rose-Ackerman, 1999; Mauro, 1997). For example, donors' conditionalities in many poor countries are often meant to curb rents and rent-seeking on grounds that they necessarily undermine development outcomes. One country where that last argument has been advanced is Vietnam. Vietnamese experts and specialist frequently attribute Vietnam's development challenges to rents and rent-seeking. The warning from Work Bank 2002 Development Report is representative:

[Vietnam] may fail to remove the obstacles in its reform path, let the vested interests capture government transfers to offset their inefficiencies, and see an unhealthy relationship develop between enterprises. . .and government officials. A weak macroeconomic situation, slower growth, increased inequality and generalised corruption could be the outcomes (World Bank, 2002, p. 4).

An emerging body of literature is beginning to challenge this narrow neoclassical analysis on rents and rent-seeking. Research on the topic by institutional economists such as Khan and Jomo (2000b), North et. al. (2007), Chang and Cheema (2002), and Booth and

¹ This is not to be confused with rent outcome. In the Krueger–Posner argument, rent outcome is a negative deadweight loss.

Golooba-Mutebi (2012) provide evidences and insights that certain type of rents can be value-enhancing and rent seeking can produce good outcomes. “In a world where learning and innovation have to be rewarded, distributive conflicts dealt with, where incentives have to be created to deal with asymmetric information and where scarce natural resources have to be conserved, many types of rents are socially desirable” (Khan & Jomo, 2000a, p. 8). This is because, not only is rent-seeking ubiquitous in developing countries policy makers are constantly influenced by and under pressure from rent seekers (Khan, 2000a; Medema, 1991). In many cases, politicians even receive some of the rents they create and, indeed, require these rents to maintain political stability and the ruling coalition (Cowen, Glazer, & McMillan, 1994; Khan, 2000a, 2000b). However, even in cases of corruption, rent-seeking does not necessarily produce unproductive outcomes, and the benefits of rent policy are not necessarily destroyed (Khan, 2011; Khan & Blankenburg, 2009).

This paper is situated within this emerging literature. It argues that rents are better understood as a policy instrument that could either be damaging or developmental depending on the rent management mechanism, defined as the configuration of politics, institutions, and industry organization² that produce the rent outcomes. In applying the DRMA framework articulated in Ngo (2013a), this paper analyzes the industrial success of the telecommunications industry in Vietnam. The purpose of this analysis is to identify the configuration of rent management that drives the industrial upgrading and capability-building of this industry, and how the Vietnamese government’s management of rents has contributed to learning efforts and the rapid pace of industrialization in the sector. This paper suggests that the success of the telecommunications industry is based on a number of rent management factors that corrected

² In this paper, industry organization is defined as the structure of market competition and internal organization of firms affecting responses to different types of rents.

certain market constraints and encouraged significant effort for learning and technology adoption. The following are some of the notable factors.

First, there was strong political will to develop the telecom industry in order upgrade the infrastructure for Vietnam's industrialization. Second, as the case study of Viettel highlights, the role of informality in rent creation and allocation—the Ministry of Defense (MoD) provided military resources to Viettel as rents—in motivating Viettel leaders to measure up to VNPT. Third, while market competition by itself could not help operators overcome market failures in land, infrastructure, or capital that constrained the development of the industry, especially in its early stages, it was value-enhancing in that it forced capability-building and upgrading among the operators. Finally, pressure of liberalization of the telecom market was an effective time horizon factor for Viettel and VNPT to learn more and enhance their competitive edge while the Vietnamese market was still relatively free from foreign competition. The empirical research is based on data collected during three fieldwork sessions, which total an 8-months period: December 2010, April–October 2011, and June 2012. The fieldwork yielded 42 semi-structured interviews with government officials, firm managers, suppliers, workers, and industry experts, each lasting between one and three hours.

This paper makes three distinct contributions to the literature. First, it provides empirical evidence to support the analytical view that rents can be growth-enhancing under the correct configuration of political, institutional, and industry-wide conditions. Second, by assessing the industrial development of the telecommunications industry, this paper adds to the literature on how technological adaptation and innovation take place in an emerging economy. These findings underscore the need to re-examine how economic actors and a state collaborate through formal and informal institutions to boost industrial upgrading in developing countries. Finally, this paper

adds to the scholarship of Vietnam's industrial development from a political-economic perspective.

2. Summary of the DRMA Framework

The central utility of the DRMA framework is to help observe how the three sets of factors—politics, institutions, and industry organizations—affect the *incentives and pressures* that ensure firms' efforts toward acquiring technical and organizational capability through inductive analysis of case studies. This is based on the premise that successful rent management primarily depends on the formal and informal political and institutional arrangements that produce incentives and pressure for learning and upgrading. In this context, while rents are created for a variety of purposes, the rent outcome, whether good or bad, depends on the configuration of these three factors that, in many respects, have important informal elements. In essence, DRMA enables a broader understanding of the political, institutional, and industrial factors at play in the process of economic development, including its technological dimension.

The developmental rent management analysis uses four analytical steps. The first step identifies the type of rent involved, whether it is monopoly, learning, redistributive, or innovative. The second step establishes the potential incentives and effects created by the rent. The third step analyzes the configuration of politics, institutions, and industry organizations that produce the actual rent outcomes. This configuration is known as a rent management mechanism. The fourth step looks at how firms and industries transform as a result. Figure 1 maps the steps in order. Together, these four steps constitute the DRMA framework.

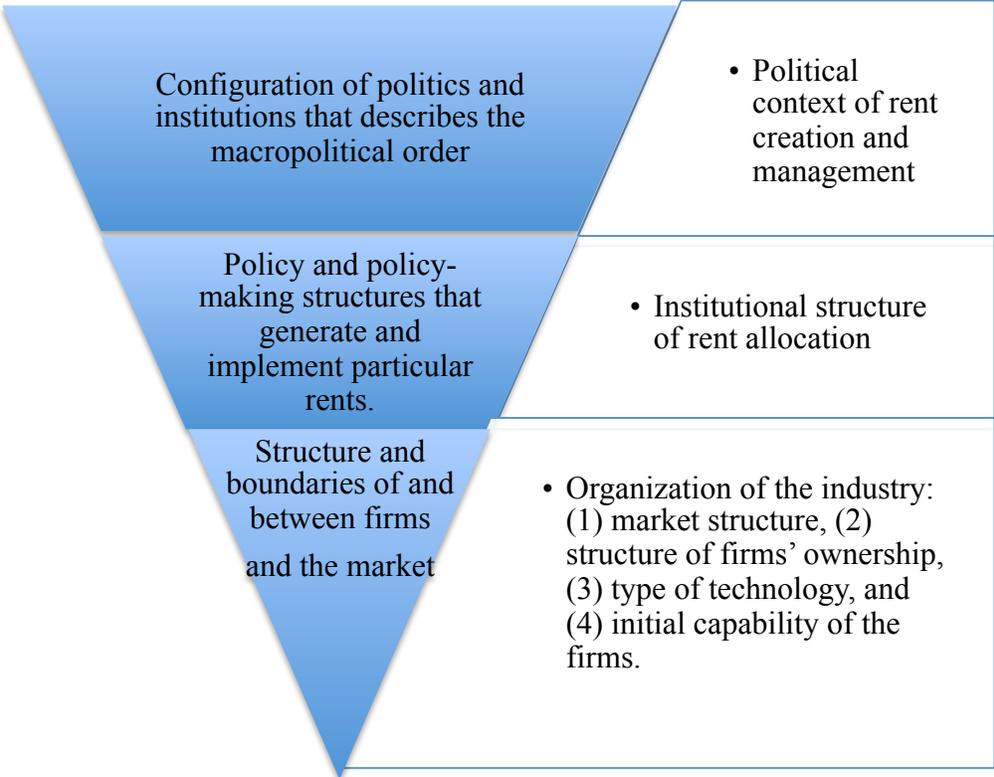
Figure 1: The DRMA Framework



Source: Ngo (2013a)

Analytically, step three requires the most important and substantive analysis within the DRMA framework. This step covers three levels of rent management mechanisms, as shown in Figure 2. The highest level analyzes the configuration of politics and institutions that describe the macro-political order; namely, the political context of rent creation and management. The second level assesses the policy and policy-making structure that generates and implements particular rents; namely, the institutional structure of rent allocation. The third level studies the structure of and boundaries between the firms and the market that create incentives and pressures for efforts, as well as the implications of the organization of the industry.

Figure 2: Analytical Hierarchy of the DRMA Framework



Source: Ngo (2013a)

Table 1 illustrates the DRMA four-step approach in greater detail.

Table 1: Details of the DRMA Four-Step Approach

Step 1: Identify the Type of Rent	Step 2: Identify Incentives and Opportunities that the Rent Creates	Step 3: Analyze the Configuration of Factors Describing the Rent Management Context	Step 4: Assess the Outcomes of the Rents
Monopoly Innovative Learning Redistributive	Ask: Are developmental or damaging incentives created by the rent?	<p>1. Political Context: the configuration of politics and institutions that describe the macro-political order for the rent.</p> <p>2. Institutional Structure of Rent Allocation: the formal and informal policy and policy-making structures that create and implement the rent.</p> <p>3. Industry Organization: market structure, structure of firms' ownership, type of technology, and initial capability of the firms.</p>	Identify the outcomes Analyze how outcomes emerge given the configuration of rent management

Source: Ngo (2013a)

In the next section, this paper applies the DRMA framework to the telecommunications industry in Vietnam and assesses how the three factors of rent management affected the structure of incentives and pressures that ensured effort in learning, upgrading, and innovation.

3. Industrial Upgrading in the Telecommunications Industry

Until the late 1980s, the telecommunications industry in Vietnam was characterized by strict state regulations and a state-run monopolistic market, which led to tight control of all telecom services. Mobile phone service was non-existent. The year 1986 marked the start of the Doi Moi reform programs, the gradual privatization (locally called equitization) of some state-

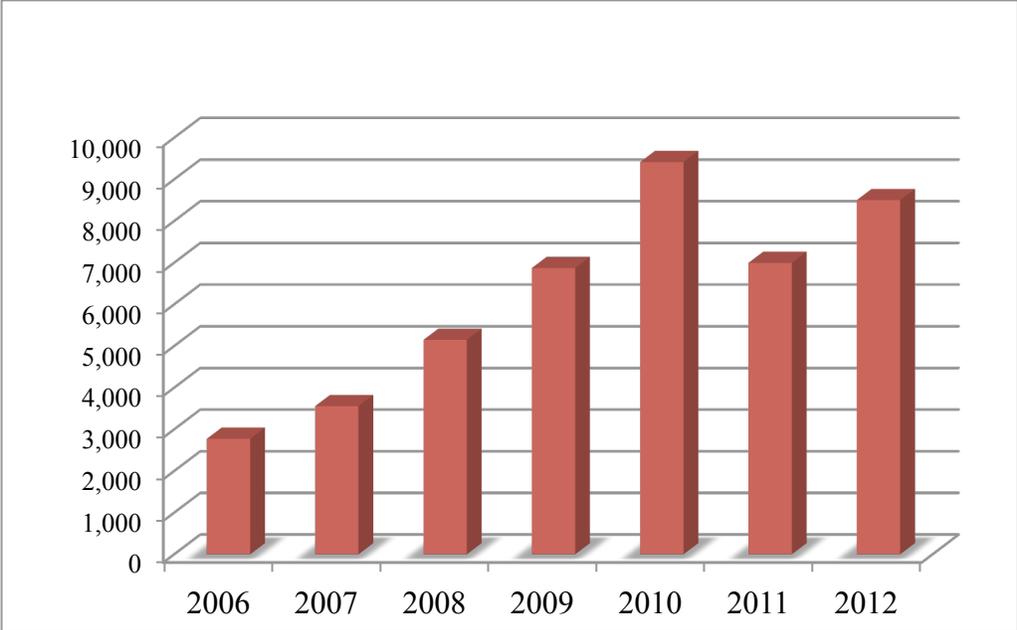
owned enterprises (SOEs), the corporatization of other SOEs, and a gradual liberalization in the telecom sector. During this period, the state-run Directorate General of Posts and Telecommunications was the sole public telecommunications provider in Vietnam. In 1992, Decree 115/HDBT changed the Directorate General into the General Company of Posts and Telecommunications (VNPT), an SOE that was given the state monopoly for operating the national telecommunications network.

In 1995, Vietnam joined the Association of Southeast Asian Nations (ASEAN) and normalized its trade relations with the United States. This eventually led Vietnam to sign a bilateral trade agreement (BTA) with the United States in 2001. The US–Vietnam BTA contained an important telecommunications provision, which set the agenda to gradually liberalize the Vietnamese telecommunications industry. The Vietnamese government officially abolished VNPT’s monopoly in 1995 by opening the sector to competition for all telecom services. This event started a period of rapid development for the industry with considerable technological upgrading and learning. In the same year, Sweden’s Comvik Group, a financially and technologically powerful telecom company, signed a business cooperation contract (BCC)³ with VNPT, forming MobiFone, the first mobile phone provider in Vietnam. This cooperation marked a milestone in the industry’s development, because foreign investors and foreign mobile phone providers made their official presence in Vietnam’s telecom industry (Thuy-Nga, 2010). MobiFone has consistently been the leader in mobile phone service since its inception.

³ A BCC is a written agreement between a foreign investor and a Vietnamese partner in which the parties agree to cooperate to undertake certain business activities in Vietnam and to share the revenue or profits arising from such activities. No separate legal entity or company is established, and there is no limitation on liability for participants (Allens, Arthur, & Robinson, 2010).

Figure 3 demonstrates the impressive growth in revenue of the telecom sector in Vietnam since 2006, including mobile phone service, landline phone service, and Internet service.

Figure 3: Total Revenue of the Telecom Sector in Vietnam Between 2006 and 2012 (in USD millions)



Source: Data compiled from MIC (2011, 2012)

Table 2 highlights the high growth rate of revenue in the telecom sector between 2006 and 2012. As can be seen in the table, total revenue from landline phone, mobile phone, and Internet services grew rapidly from 2006 to 2010. Total revenue declined in 2011 but increased once again in 2012.

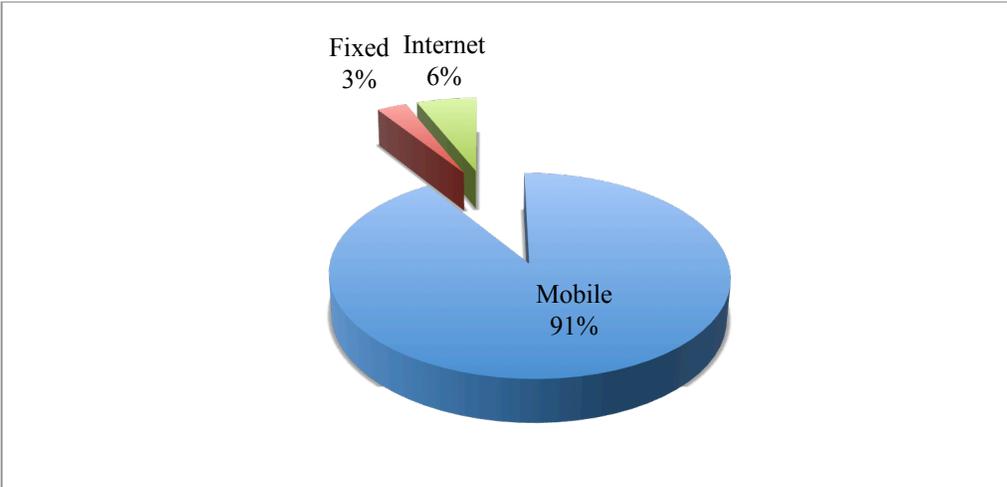
Table 2: Industry’s Total Revenue and Growth Rate, 2006–2012 (in USD millions)

Year	2006	2007	2008	2009	2010	2011	2012
Total Revenue	2769	3553	5144	6868	9411	6992	8499
Growth by % year-on-year	Base year	28	44	33	37	-27	21.5

Source: Author’s own calculation based on data from MIC (2011, 2012)

In 2009, the first 3G phone service was launched by VinaPhone. By 2012, there were four major 3G providers—VinaPhone, MobiFone (both under VNPT), Viettel, and Vietnamobile—and Vietnam’s telecommunications sector continues to expand. Figure 4 highlights the market share for each type of telecom service in the Vietnamese market, and shows that the mobile market is the country’s most dynamic telecom sector. It had an average growth rate of 80.6 percent between 2005 and 2010, and reached 153.7 million subscribers by the end of 2010.

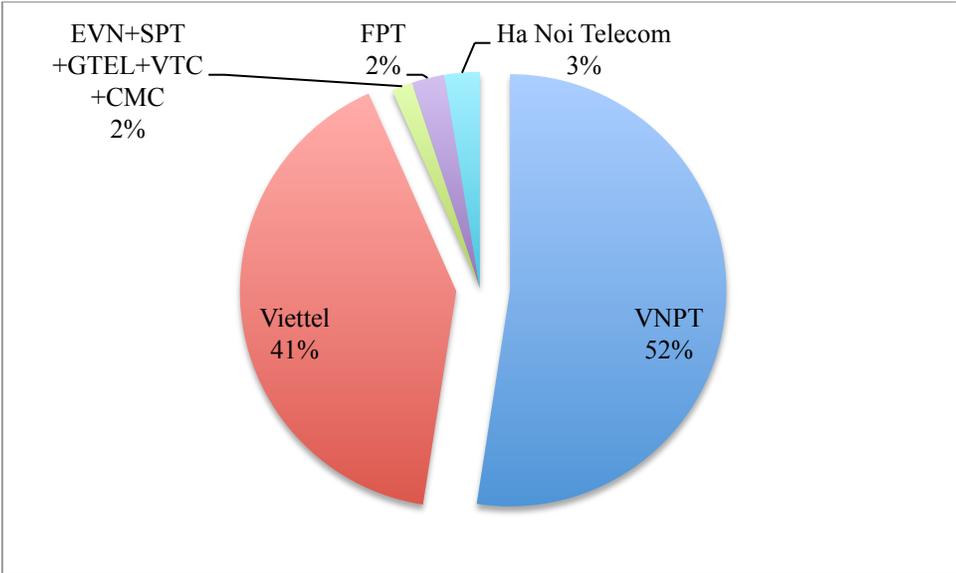
Figure 4: Market Share by Types of Services in 2012



Source: MIC (2012)

Figure 5 illustrates the market shares of the major telecom providers in all of the telecom segments in 2012. It demonstrates that together Viettel and VNPT have more than 93 percent of the market share.

Figure 5: Market Share of Operators in all Telecom Segments



Source: MIC (2012). CMC is CMC Telecom. EVN is Electricity of Vietnam Telecom. FPT is FPT Corporation. GTEL is GTel Mobile Joint Stock Company. SPT is Saigon Postel. VNPT is Vietnam Post and Telematics. VTC is Vietnam Television Corporation.

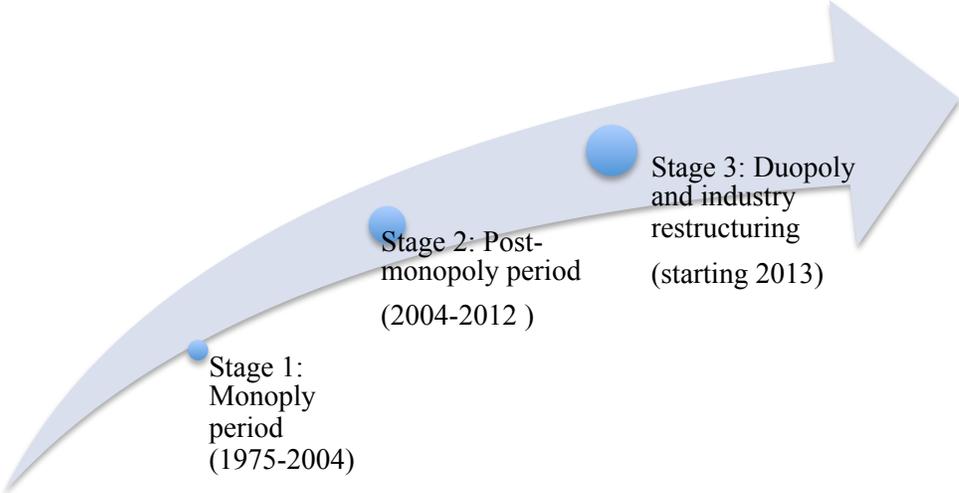
The telecommunications industry provides a unique case of industrial success in Vietnam because of its rapid growth rate and transformation. In just a little more than 15 years, the industry has transformed from a monopolistic industry dominated by one state-owned enterprise, VNPT, to a diversified market with nine mobile phone operators in 2011⁴ and a sustained average growth rate of 35.5 percent per year between 2006 and 2010, as reported by the Ministry of Information and Communications (MIC) (2011).

Conceptually, this author divides the development of the telecom industry into three stages, as seen in Figure 6. In the first stage, which was between 1975 and 2004, the industry consisted of just VNPT, which held a monopoly. The launch of S-Fone in 2003 and Viettel’s

⁴ There were seven operators as of early 2013.

mobile phone service in 2004 marked the beginning of the second stage—the post-monopoly period—which lasted until 2012. Major industrial learning and upgrading took place during this period. The third stage, which began in 2013, has already seen significant change in the telecom industry, including a merger between Electricity of Vietnam Telecom and Viettel, and the departure of three out of the four foreign partners from Vietnam’s mobile phone market. This paper primarily focuses on the first and second stages of the industry’s development.

Figure 6: Stages of Vietnam’s Telecom Industry Development



Note: The monopoly is VNPT. The duopoly is VNPT and Viettel.

4. Failure of Monopoly Rents

VNPT was the first telecom service provider in Vietnam, and remains the dominant state-owned enterprise in all telecom segments except marine-based services. In 2010, VNPT, with chartered capital of VND 72,237 billion (USD 13.4 billion), operated largely in mobile phone,

landline phone, Internet services, and IT services. VNPT owns the two dominant cellular companies MobiFone and VinaPhone.

Up until 1995, VNPT inherited substantial monopoly rent from the government. This was largely due to VNPT being a unit of the Vietnamese government during its central planning period; for security purposes, there was considerable political acceptance to retain the monopolist under state ownership (interview with MIC official, 2011). As a result, there was no political pressure or institutional mechanisms that compelled effort from VNPT to industrialize. Consequently, VNPT exercised tremendous monopolistic power and reaped enormous profits from a lucrative market that held no competition. Meanwhile, it only slowly upgraded its infrastructure and management abilities, since it had little incentive to do either (interview, 2011).

An example of the underdeveloped telecom infrastructure and service during this period is that in the late 1990s, on average, it took VNPT up to one month to install a fixed phone line for a business or household in large Vietnamese cities such as Ho Chi Minh City or Hanoi (interview, 2011). In addition, their tariff rates were very high, making phone service inaccessible for the majority of the population, and prices of mobile phones made it nearly impossible to buy a phone of any kind. In 1999, Vietnam's average national income was less than VND 2.08 million (USD 100) per year. In that same year, a mobile phone handset could cost more than that. Furthermore, the cost per-minute of mobile phone service was VND 3,000–4,000 (USD 15–20 cents), an amount that was approximately half of the daily wage of government employees in Ho Chi Minh City.

VNPT's failure to turn monopoly rents into learning rents so as to acquire industrial upgrading can be explained by the fact that VNPT had little political and institutional pressure

from the government to industrialize. In addition, VNPT, as a state-owned monopolist, obviously benefited from monopolistic profit. Therefore, the market exerted no pressure or incentive for VNPT to upgrade its networks and services. Consequently, there was no value-enhancing rent management mechanism at the political, institutional, or industrial levels to pressure capability-building for the industry as a whole. Indeed, technical upgrading did not take place until 1995, when the government broke VNPT’s monopoly by giving business licenses to S-Fone and Viettel. It was this same year when VNPT signed its first contract with Comvick, which created the first mobile phone service network in Vietnam. Table 3 summarizes the monopoly period using the DRMA framework.

Table 3: DRMA Summary of the Monopoly Period

Player	Type of rents	Incentives created	Factors affecting the rent management mechanism	Rent outcomes
VNPT	- Monopoly rent based on the industry’s historical context - Government subsidized loss-making period (until 1995)	- Unproductive capture of monopoly rents - Limited incentives to improve infrastructure and capability	- Political protection of the monopoly - No clear institutional mechanism to monitor VNPT’s progress - No competition in the market	- High cost and slow speed service - Slow infrastructure and technology upgrading

From a rent management perspective, the ending of VNPT’s monopoly was an important hallmark for the development of the telecom sector because it opened up competition and pressure for capability-building in the industry. Several factors occurred during the post-

monopoly period. First, developmental rent management mechanisms first derived from the political will that introduced market competition among state-owned enterprises. Second, Viettel and its managing ministry, the Ministry of Defense (MoD), played an important role in keeping VNPT in check. In using the MoD's political and military power to lobby against VNPT's anticompetitive behaviors, Viettel successfully forced VNPT to play fair, allowing Viettel and other newcomers a chance to compete in the newly opened market. Third, from an institutional perspective, there were important policy instruments, such as Decree 109, Decision 217, Ordinance 20, and Decree 160, all of which set out the legal framework that bound telecom operators to cooperate and compete fairly. Finally, at the industry level, high profit margins and intense market competition among the operators forced significant effort in learning and upgrading.

5. Informal Learning Rents: The Case of Viettel

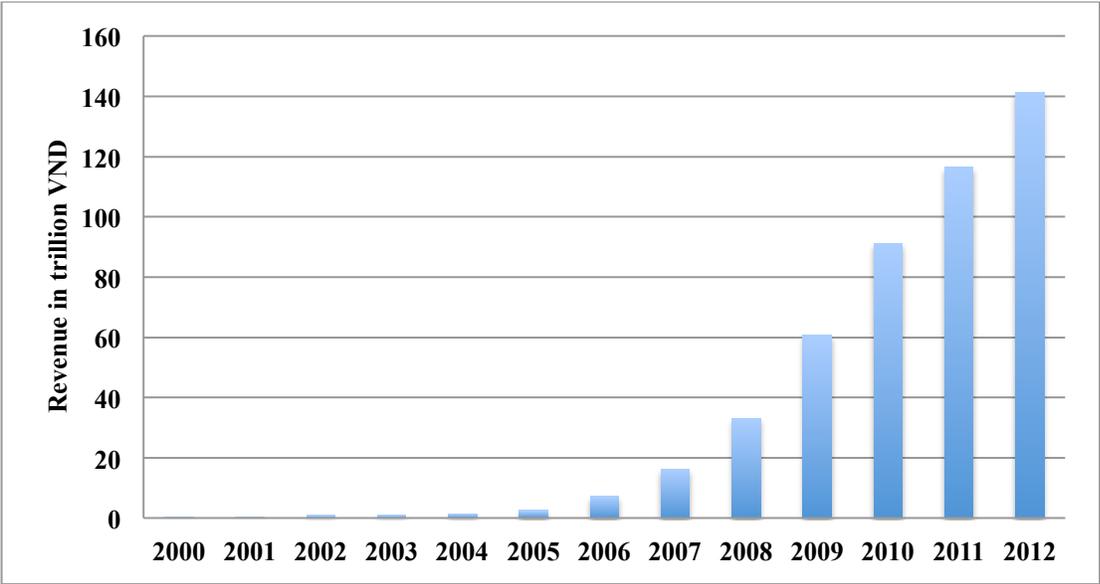
The forerunner of Viettel was Sigelco, a state-owned enterprise, which was established in 1989 as an electronics information and equipment company under the MoD. Sigelco provided services to the military via the military's own telecommunication network. In 1993, Sigelco became Military Electronics Telecommunications Corporation under the trademark Viettel. When the government ended VNPT's monopoly status and called for more operators in the telecommunication sector in 1995, Viettel applied for a license with the promise that it will not depend on the government's finances to develop its new commercial telecom company. In that same year, Viettel was granted a license to provide local and long distance landline service, as

well as mobile and Internet services based on its experience supporting the military (Cheshier, 2010).

After five years of preparation, Viettel officially joined Vietnam's telecom market in 2000 with VoIP long-distance service, and in 2001 with VoIP international service (Cheshier, 2010). In 2002, Viettel became an Internet service provider; in 2003, it offered landline telephone service; and in 2004 it launched its mobile network (Cheshier, 2010). Although Saigon Postel launched its S-Fone mobile network in 2003,⁵ VNPT's monopoly in the mobile service market was only really broken when Viettel created its network, making mobile phone usage popular across Vietnam (Business in Asia, 2010). In 2009, Viettel became a state-owned economic group—a state conglomerate—under Decision 2097/2009/QD-TTg. During this year, its name was changed to Viettel Group. Figure 7 demonstrates Viettel's revenue growth rate between 2000 and 2012.

⁵ VNPT owns a portion of S-Fone.

Figure 7: Viettel Revenue 2000–2012 (in trillion VND)



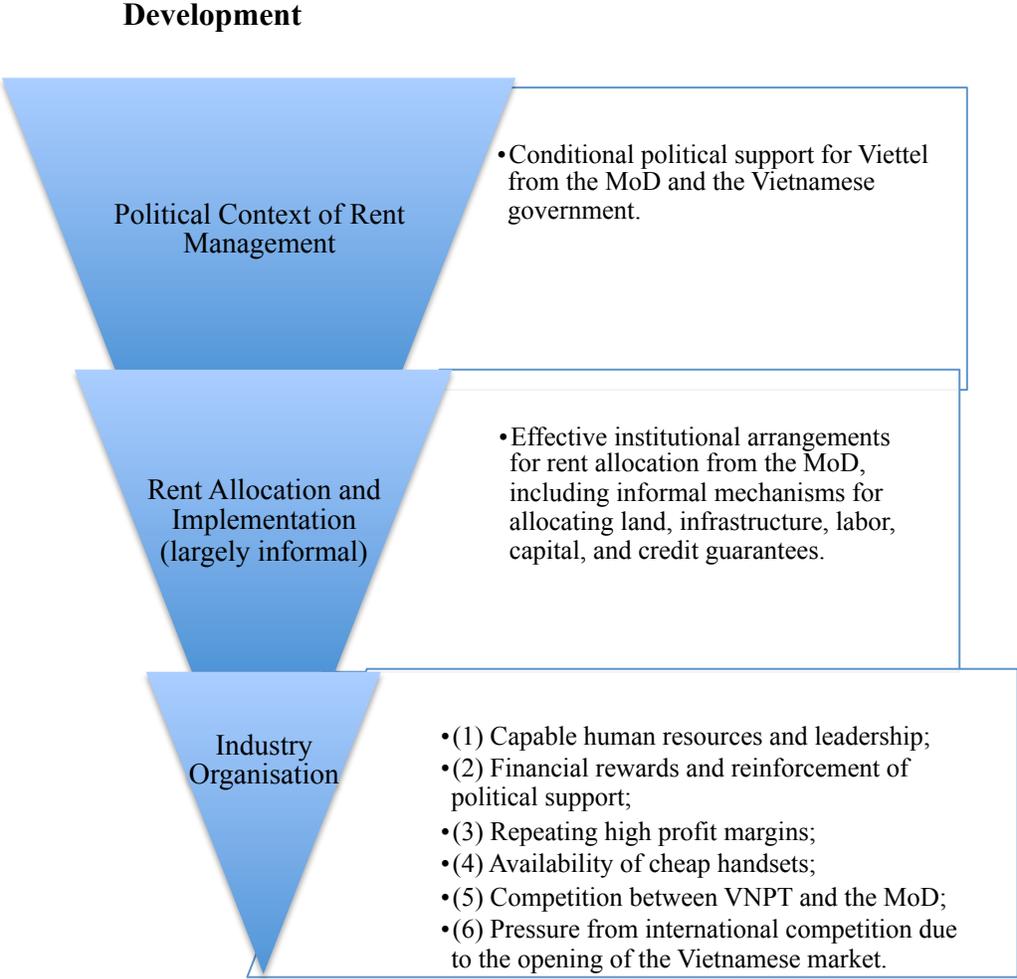
Source: Vietnam Financial Review (2010).

Viettel’s revenue report for 2011 shows that the company reached pre-tax profits of VND 20 trillion (roughly USD 1 billion) (Van-Oanh, 2012). In 2012, Viettel earned VND 27 trillion (USD 1.3 billion) in pre-tax profits, which is an increase of nearly 15 percent over 2011. In 2013, Viettel became one of the largest and most powerful state-owned business groups in Vietnam and is the only telecom provider that is run by the MoD (Thayer, 2012). Today, Viettel remains 100 percent state-owned under the MoD.

The success of Viettel from a technology importer to an international telecom service provider raises a question as to how this SOE, in less than two decades, transformed from a relatively small military telecom provider to one of the two largest conglomerates in Vietnam’s telecom industry. What is remarkable is that, unlike VNPT, Viettel did not require a joint venture with a foreign partner to help with its business development. In other words, there exists a more telling rent-seeking and rent-management story among Viettel, VNPT, and the state that could

shed light on Viettel’s learning and upgrading success. This paper explains Viettel’s successful industrial upgrading by asking how the three factors of rent management—its political context, rent allocation mechanism, and organization of industry—effected the structure of incentives and pressure that ensured Viettel’s success. Figure 8 outlines these factors in three levels of the rent management analysis. These factors will be discussed in greater depth in the following sections.

Figure 8: The Growth-enhancing Rent Management Mechanism of Viettel’s Industrial



5.1. The Macropolitical Context of Viettel's Development

The relative bargaining power within and between the Communist Party of Vietnam (CPV), state bodies, and SOEs influence the types of rents created and the terms under which they are managed. Viettel's experience and the political dynamics analyzed in this case study underline the validity of this hypothesis. When Viettel was given permission to break VNPT's monopoly, political support was provided *in exchange* for Viettel's commitment to build a successful telecom company without any direct subsidy or financial support from the government. From the point of view of the Vietnamese government, this bargain was highly advantageous, even though it required the government, especially Prime Minister Kiet Van Vo and the MIC, to override VNPT's opposition in order to promote competition within the state sector.

Second, the informal political order underpinning Viettel's success was largely derived from the MoD's unreserved support of Viettel and its political clout in the CPV, the ruling party.⁶ More specifically, the distribution of power that underpinned the support for Viettel was based on two formal institutional arrangements. First, the Vietnam People's Army (VPA)—Viettel's boss—held, and continues to hold, significant political influence within the CPV. The VPA, for example, permanently occupies one of the 14 seats on the Politburo, which is the highest body of CPV. In addition, since 2006, the VPA has had 10.6 percent representation (17 members) on the Central Committee, including chief of the general staff, director and vice director of the General Political Department, deputy ministers, and the commander of the navy

⁶ Thayer (2012) deduced that Vietnam's People's Army's key military leaders are actively involved in internal factional politics within the CPV.

(Thayer, 2012). These numbers and positions highlight the importance of the CPV–VPA relationship.

Finally, the MoD is an autonomous ministry that is largely independent from the Vietnamese government’s monitoring and supervision. One government officer in Ha Noi jokingly observed that the MoD “has its own football field,” meaning that it could do largely whatever it pleases when running its own enterprises as long as it does not upset the CPV. The MoD can create and allocate any number of rents without interference or necessary authorization from the government. For example, at its inception, Viettel was free to use the MoD’s land and telecom infrastructure to develop its long-distance phone network and international phone service. The prime minister would not interfere with Viettel because the MoD has the right to maintain full control over enterprises that operate to serve and protect national security (Thayer, 2012).

In essence, coupled with the government’s support of Viettel, the MoD’s political and autonomous power further enhanced a stable and dependable macropolitical context that fostered Viettel’s successful business development. In return, the profits and revenues from Viettel provided a most important source of income for both state revenue and the MoD. For example, Viettel increased its revenue 1,500 times within 10 years, from VND 43.78 billion (USD 2.1 million) in 1999 to VND 66.71 billion (USD 3.2 billion) in 2009 (Thayer, 2012). Additionally, among the 21 largest state-owned business groups and corporations in 2010, the military-run telecommunications operator contributed the most to the state’s revenue: approximately 21.9 percent of the total pre-tax profit (Intellasia, 2011).

5.2. Rents and the Mechanism of Rent Allocation

This section assesses the second level of the DRMA analytical structure; namely, the formal and informal policy-based rent allocation structure that apportioned rents to Viettel. The MoD provided Viettel with a number of implicit rents in the form of land, labor, access to finance and infrastructure, and indirect financial support in the form of a liability guarantee. From an institutional perspective, many of these rents emerged and were allocated through *informal* mechanisms rather than official government policies. Two important semiformal institutional arrangements were asset transfer and permission to use the military assets. Some of these rents subsequently helped Viettel avoid severe market failures in capital, skilled labor, and outdated technologies.

5.2.1. Land, Infrastructure, and Labor

All telecom infrastructures have large fixed costs and require significant economies of scale. This is because in order to build transmission stations and backbone networks, a provider must either buy or lease land, hire labor to build the infrastructure, and import the technology. Because of these high fixed costs, many mobile phone providers initially rented VNPT's infrastructure, as building their own would have been prohibitively expensive. For Viettel, its major advantage was access to the MoD's land, which are the "military zones" that spread across the country and are readily available for various uses. In addition, the MoD already had transmission stations and backbone and trunk networks in many cities and provinces in order to serve its security needs. Viettel was able to take advantage of all of these resources.

In the beginning, Viettel also avoided labor costs in building infrastructure because the MoD deployed the army to build the fiber cables, transmission stations, and other necessary infrastructures for Viettel's new networks. As the Vietnamese army is highly disciplined, Viettel benefited from a trained and hardworking workforce, saving the provider considerable training time in hiring civilians. Consequently, Viettel's infrastructure was built at a much faster pace and at higher quality as compared to VNPT. In summary, an important part of Viettel's success was the informal rents it received as a result of the MoD's allocations of labor, infrastructure, and land. These resources helped Viettel to develop rapidly in its the early stages.

5.2.2. Sources of Financing

From the perspective of rents and rent-seeking, Viettel also had access to three substantial learning rents from the MoD: the MoD's capital, loans from the military state bank, and credit guarantees. One of my interviewees, a top manager in Viettel, said that in the company's early operation, the MoD provided small amounts of initial capital (not including the military labor and land) of between VND 20.85–41.7 billion (USD 1–2 million). But what then helped Viettel to overcome the financial constraint in Vietnam's underdeveloped credit markets? The same interviewee said that Viettel's first successful strategy to raise capital was in 2001, when it entered the overseas call-servicing market using VoIP. At the time, VNPT charged a very high tariff for international calls.⁷ When Viettel entered the market, it immediately offered services at about half of VNPT's tariffs. Viettel's newer technology and reduced pricing strategy enabled it

⁷ This interviewee also told me that the main reason why VNPT charged a much higher tariff was because it used old technology that made phone calls over a virtual network, which is costly to operate and to maintain.

to quickly gain market share and earn strong profits. The same interviewee explained that the cost to set up a VoIP network from scratch was low, and the profit margin was such that Viettel broke even after only its first month of operation. It was this successful operation that allowed Viettel to raise substantial capital for other investment projects, especially in the mobile phone market.

In addition to giving Viettel its start-up capital, the MoD also supplied loans through its own state bank, the Military Commercial Joint Stock Bank. Thayer (2012) pointed out that in 2003 the bank raised its charter capital,⁸ which enabled it to pledge additional credit for Viettel's large investment projects. Viettel benefited from lower cost financing because lending costs with the Military Commercial Joint Stock Bank were lower than with other commercial banks. These low financing costs were another form of rent that the MoD provided to Viettel, because it lowered costs for Viettel's projects.

Finally, perhaps the most effective financing strategy was that in using the MoD's name, Viettel could delay payments to creditors and vendors. Based on the MoD's reputation and implicit guarantee (and perhaps the implicit suggestion that not playing ball may negatively affect long-term business relationships with the MoD), Viettel convinced its vendors that they should allow delayed payments and accept payments in small installments. The interviewee mentioned above, a top Viettel manager, explained that because the MoD provided a credit guarantee, foreign vendors allowed Viettel to delay its payments for equipment for up to two years after procurement. This delay was a privilege that other operators did not have. It allowed Viettel to expand its operations and to recover the costs of its telecom equipment before

⁸ Charter capital is the amount of capital that all shareholders or members of a company or bank are willing to contribute within a prescribed time limit, as stated in the company's or the bank's charter.

payments even started.

In sum, Viettel benefited from the MoD's supports, which included significant important rents. These rents helped Viettel overcome imperfections in capital, land, and labor markets. Subsequently, they supported Viettel's learning and capability development, and later enhanced Viettel's successful industrial upgrading and expansion.

5.3. The Organization of Viettel and the Telecom Industry

As just discussed, Viettel had access to different informal learning rents within a rent allocation mechanism that helped it accelerate investments, technology acquisition, and learning effort. In this context, the rent management mechanism was within the allocation structure that provided both incentives and capacities to overcome the constraints in land, labor, infrastructure, and capital. In this section, the third level of DRMA—the industry's organization—is analyzed. The focus here is how the organization of the telecom industry affected rent management and helped create appropriate incentives and pressures for high-effort learning. This section identifies five important factors that affected rent outcomes for Viettel: (1) its initial management capability; (2) its access to informal arrangements of financial rewards and political supports; (3) its high-profit margins and the availability of affordable technology; (4) its competition with VNPT; and (5) the credible pressure caused by the market entry of international competitors.

5.3.1. Management Capability

Viettel's technological and managerial capability had three important factors:

knowledgeable and adaptable leaders, appropriate technology, and effective business practices. To explain the first factor, Viettel's two leaders are highly trained in telecom technology and possess an outstanding vision of market orientation. Viettel's general manager Xuan Anh Hoang and deputy general manager Hung Manh Nguyen were both trained in telecommunications engineering in Russia. Nguyen, in addition, earned two masters degrees: one in Business Management at the University of Sydney, Australia, and the other in Economics at the National Economic University, in Hanoi. It is generally agreed among Viettel's managers and business partners whom I interviewed that Xuan's skills in business operations and management are well-balanced with Hung's ability to create successful strategies, including entering the overseas phone service market, targeting low-income subscribers, and using its own 3G dongle to promote 3G service. These two leaders are dynamic, and together with a group of highly qualified senior-level managers, they can adjust quickly to changes in the telecom market and technology.

Second, Viettel's management capability is demonstrated by its strategic vision of market demand coupled with the complementary choice of technology. This proved to be one of the most important factors for the company's early success. When it entered the mobile phone service business, Viettel chose GSM and VoIP technology, while S-Fone chose CDMA technology. GSM technology uses SIM chips, which is now the most widely used technology in Vietnam and in the world. This technology allows subscribers to smoothly switch to different types of phones and phone providers. It also enhances user-friendly data transfer. More importantly, VNPT also uses GSM technology. Viettel's strategic selection of this same technology allows VNPT subscribers to easily switch to the Viettel network without having to buy another mobile phone. This gives Viettel an immediate and overall advantage over S-Fone in the mobile phone market because with CDMA technology, users must buy a new phone each

time they change providers.

Finally, when discussing Viettel leaders' capabilities, all of my interviewees agreed that their leaders employ effective business practices. Viettel leaders boost capacity through ensuring efforts from its employees and by maintaining a high-level of corporate culture. Starting as an SOE many times smaller than VNPT, Viettel has shown its ability to operate like a private enterprise. Viettel maintains high expectations of its employees and often imposes discipline in cases of non-performance. A Viettel employee pointed out to me that Viettel employed, and continues to employ, a corporate culture that stresses loyalty, teamwork, discipline, and integrity in performance. For example, another interviewee told me that he often works until midnight to complete a job and thus not slow down the progress of a project. He does not mind because he feels that he is making a difference to the team and the company. In return for this kind of commitment, Viettel offers at least 20 percent higher salaries than other enterprises in the industry (Van-Oanh, 2013) and provides training to improve expertise and technical skills for select employees.

Another characteristic of Viettel's effective business practice is its ability to reduce costs to the absolute minimum. In fact, cost reduction is consistently one of Viettel's most successful business strategies. For Viettel leaders, lower costs are directly related to higher profits. To reduce costs, Viettel leaders selectively pick the service options that they need from foreign vendors and cut redundant options. A manager at Viettel told me that, on average, Viettel spent half of what VNPT paid to build a transmitting station. This is because while VNPT procured from foreign vendors complete packages with all of the special features, Viettel managers hand-picked what they considered to be the most important features for its customers and negotiated with its foreign vendors for reduced prices based on these customized packages. In doing this,

Viettel managers avoided extra costs by eliminating features that they did not consider important. The same interviewee told me that this procurement strategy continues to fit well with Viettel's business model, in which it targeted subscribers who are largely low- or middle-income workers. These users own simple mobile phones and thus only require inexpensive and basic features.

In summary, Viettel's highly capable managers, who possess clear market vision, make strong technology choices, and employ effective business practices, played a key role in the development of the company and its business success. This important rent management factor is based on the organization's management capability.

5.3.2. Financial Rewards and Reinforcement of Political Support

Financial rewards and political support are two important sources of incentives and pressures, and hence they are important components of the overall rent management mechanism that motivated Viettel to achieve quick success. Is there a financial incentive mechanism for Viettel managers to drive harder for profits? One interviewee said, "Certainly!" He would not reveal how much top managers of Viettel make on a monthly or annual basis, but he explained that all Viettel employees earn a base salary that is high in comparison to other enterprises. In addition, they also receive considerable bonuses for good performance. These arrangements are clearly well known within the firm, but the lack of public access to this information⁹ means that these can be considered only semiformal arrangements. Van-Oanh (2013) reported that to retain high-quality people, Viettel offers its employees numerous benefits, such as higher salaries,

⁹ This is due to the fact that Viettel is an SOE and thus is privileged from nondisclosure of its accounting and finances.

bonuses, cars, and even houses, as well as promotions in terms of official military rank.¹⁰ Van-Oanh (2013) also disclosed that Viettel pays the highest salaries in the industry to its top leaders (including Xuan and Hung) and its technical experts. At the middle- and upper-management levels, Viettel pays its managers and experts a few hundred million VND (approximately USD 10,000 or more) per month (Van-Oanh, 2013). Similarly, the same interviewee who confirmed higher salaries at Viettel also hinted that upper management receives generous bonuses that give them strong incentive to continue earning large profits.

To sustain the MoD's support, Viettel is also under high pressure to generate revenue for the MoD. So far, Viettel has been very successful in doing this, as it is one of the largest revenue generators for both the MoD and the Vietnamese government. In return, Viettel has garnered MoD's political support in many of its strategic expansions in both domestic and foreign markets. This political support provides Viettel with more negotiation power with the MIC, and the government in general, for policies that suit Viettel's interests. For instance, in late 2012, Viettel requested the MIC to increase tariffs for incoming international calls, to extend the first number in a mobile phone by one digit (from 1 to 11 in order to offer more phone numbers), and to give Viettel a license to broadcast television services (Trong-Cam, 2012). Some of these requests, such as the license to broadcast television services, were granted. In the international market, Viettel was the first SOE to receive a license to expand operations abroad. Clearly, Viettel's desire to maintain the MoD's political support through high performance is an important factor that motivates Viettel toward exceptional business performance.

In short, there are two important rent management factors that provide significant incentives and pressures for Viettel's industrial success: an institutional structure that ensures

¹⁰ Upgrade in ranking in the military is a high honor and an important source for receiving additional perks.

considerable financial rewards, and credible pressure to generate revenue in exchange for political support from both the MoD and the Vietnamese government.

5.3.3. Competition and Military Pride

Informal rent management factors can be as important as formal ones (Ngo, 2013b). Evidence suggests that informal incentives for learning were at work during Viettel's early days. In this case, military pride played a crucial informal role because it motivated Viettel leaders to end their subordinate position to VNPT. In a series of interviews with Viettel employees, I was told me that in the late 1990s, Viettel leaders were eager to become the equal of VNPT. One interviewee explained that, in the beginning, VNPT leaders and the MIC looked down on Viettel because it was a small company with fairly limited financial resources. Remember, at the time, VNPT was a powerful conglomerate with strong finances and a respected reputation. This bothered Viettel leaders a great deal, and so they were determined to develop and rise as quickly as possible. Fortunately, the market conditions, political support, and the internal support of the MoD (via a number of informal rents) allowed Viettel to quickly develop new capabilities. While market competition and pride between Viettel and VNPT, by themselves, could not help the operators overcome the market failures in land, infrastructure, or capital that constrained the development of the industry, especially in its early stages, competition with VNPT and the MoD's military pride were positive rent management factors that boosted incentives and motivated Viettel to succeed.

5.3.4. Market Incentives

In the late 1990s, the telecom market in Vietnam experienced two important changes that further incentivized learning and upgrading: high profit margins and the supply boom of mobile phones, which caused handset prices to drop drastically. When Viettel entered the telecom market in 1997, there was limited competition (just VNPT) and high tariffs for telecom service. Therefore, the market offered a strong demand for lower cost telecom service and high profit margins. In addition, setup costs for services were relatively low, given the military's infrastructure and labor. Consequently, Viettel quickly earned substantial profits from its operation. These high profits allowed Viettel to make small business mistakes, such as purchasing unnecessary machines and equipment or miscalculating its investment projects, and to learn from them because it could financially recover from such mistakes quickly (interview with a Viettel manager, 2011). In addition, the high rate of return also gave the corporation plenty of room to attempt different strategies and to learn from them without jeopardizing the company's growth. Finally, high profit margins permitted Viettel to quickly regain investment expenditures, to accumulate capital, and, subsequently, to aggressively expand its operation.¹¹ My interviewees from within both the MIC and Viettel observed that this learning opportunity is no longer available to new operators because current market competition is so stiff that investment mistakes, such as S-Fone using CDMA technology, can be fatal.

Another important changes in the market structure were improvements and cost reduction of mobile phones in the early 2000s. When Viettel started to offer cheaper mobile phone service in 2004, it started a major supply boom in mobile phones, and handsets became much more

¹¹ Viettel had to pay dividends to the MoD and taxes to the government, but it was allowed to retain much of its profits for reinvestment.

affordable, especially those imported from China. During this period, for VND 1 million (USD 47), a Vietnamese person could buy a simple mobile phone made in China or South Korea. As mobile phones became substantially cheaper, more functional, and lower in price, a major surge in demand occurred in Viettel's targeted market segment: low-income subscribers. Three interviewees, one who each work for the MIC, Viettel, and VNPT, confirmed this observation by asserting that as prices for mobile phones fell, the Vietnamese demand and usage of mobile phone service rose, thus expanding the telecom market for operators.

In summary, high market demand and profit margins allowed Viettel to make mistakes, to experiment with different strategies, and to learn from these activities. Moreover, the availability of low-cost handsets enabled Viettel to target the low-income market segment and thus expand its market share. These were important factors that affected the rent management mechanism and supported Viettel's success.

5.3.5. Pressure of International Competition

A final important factor at this third level of rent management analysis was the opening of the Vietnamese telecom market to international investors, which was based on Vietnam's commitment to the United States and other trade partners. This factor pressured Viettel to focus on enhancing its competitiveness. A Viettel high-level manager who works directly under Hung told me that Viettel leaders always bear in mind that Viettel is overdue to compete with powerful foreign operators. They recognize that, in perspective, Viettel is a small telecom provider in the region and the world. As Vietnam continues to receive more international investors to its domestic market, Viettel anticipates that in the near future it will be competing with much more

advanced and financially resourceful telecom operators worldwide.

In confronting this pressure, Viettel strategically focuses on boosting its capability. The same interviewee told me that Viettel leaders feel that they had no choice but to build advantage by improving their competitive capability and market presence, both in Vietnam and abroad. Pressure from international competition is one of the main reasons why Viettel has engaged: in vertical linkages (to be more independent of input suppliers); in expanding its international presence, especially in other developing countries; in gaining more international recognition; and in building more international expertise. It should be noted that it is unusual in Vietnam for an SOE, which is heavily protected by the government and its managing ministry, to possess such a realistic and practical market-oriented mentality. The emergence of such a vision may have been helped by Viettel leaders' recognition of the limited time horizon of protection before the inevitable forces of globalization and integration obliged Vietnam to open up in 2012.

5.4. Viettel's Transformation and Rent Outcomes

As the final step of DRMA's four-step approach, this section reviews Viettel's industrial transformation and, therefore, the rent outcomes, especially of the technological dimension. Viettel's successful industrial upgrading and innovation are demonstrated by its continuous investment in R&D, its expansion in telecom device manufacturing, and its capability to produce a variety of gadgets, notably the 3G dongle (a gadget providing wireless data access for a computer).

5.4.1. R&D and Telecom Device Manufacturing

Viettel's industrial upgrading and innovation are seen in its strategic and considerable investment in R&D and manufacturing of other gadgets, such as telecom devices, smart phones, and tablets. In pursuing this strategy, Viettel established an R&D institute in 2009. In 2010, Viettel invested VND 195.95 trillion (USD 9.5 million) to build its first manufacturing plant to produce telecom equipment and other hardware devices. Viettel claims that this plant is one of the most modern production plants in Southeast Asia. By 2011, this plant could produce many types of telecom devices, including mobile phones, Viettel's own branded smart phones (i6 and i9), tablets, all-in-one computers, network infrastructure devices, and military information equipment (Tuoitrenews, 2011). The company reported that this plant can produce up to 5 million 3G dongles, 3 million mobile phones, and 900,000 computers per year¹² (Vietnam Business Forum, 2012). In early 2011, Viettel had roughly 300 engineers, technicians, and experts working at its R&D institute, which was expanding rapidly. Viettel's hiring advertisements were constantly running in the local newspapers for all levels of software and hardware engineers. Also in 2011, Chien Dinh Nguyen, the director of the institute, reported that it had "succeeded in designing and manufacturing 16 sample products for military and civil purposes among 22 products that the institute has been developing" (Van-Oanh, 2012). Figure 9 illustrates two Viettel's low-cost smart phone models currently priced at VND 1,000,000 (USD 47) and VND 900,000 (USD 43), respectively.

¹² Viettel introduced its tablet computer to the public in 2012; as of early 2013, it had not yet officially sold it in the Vietnamese market.

Figure 9: Viettel's Low-Cost Smart Phone Models



Source: Vietteltelecom.vn

As one of the Vietnamese government's strategies is using targeted learning and Schumpeterian rents to promote productive capability-building, the government allows businesses to invest 10 percent of its pre-tax profit into R&D activities. To take advantage of this policy, in 2012, Viettel allocated VND 2.06 trillion (USD 100 million) to its R&D institute, with an ambitious plan to earn VND 20.6 trillion (USD 1 billion) revenue from its R&D and manufacturing activities by 2015. According to Chien Dinh Nguyen, the director of the institute, to meet the new expansion plans, the corporation is looking to increase the number of employees by as many as 10,000–15,000 workers by 2015 (Van-Oanh, 2012). My interviewee at the Ministry of Science and Technology commented that this amount of R&D investment is higher than the overall annual budget the ministry has to promote new technology and investment for the country.

Viettel's dual focus on R&D and device manufacturing strategically fit its long-term strategy of gradually becoming both a telecom service provider and a telecom device supplier in

domestic and international markets. An interviewee who is a manager at the institute explained that one reason for Viettel's strong focus on R&D and technology production is that by manufacturing its own upstream supplies, Viettel will be in greater control of its operations and be less dependent on suppliers' prices and inputs. It could also add more value to its service and reduce transaction costs using customized service packages that combine Viettel products and services. My interviewee commented that this strategy has proven successful in supporting Viettel's expansion into other developing countries. By using economies of scale, Viettel can produce its products at lower costs, lower its service costs, and increase its value addition, while at the same time expanding the market for both telecom devices and services, thus becoming a one-stop-shop for its subscribers worldwide.

5.4.2. 3G Dongle

One of the most successful products developed by the Viettel R&D institute is the 3G dongle. Having made a substantial investment to develop the 3G phone network,¹³ Viettel realized that it needed to boost demand for 3G service in order to recover its investment. The strategic plan was to develop and manufacture a Viettel dongle in order to provide service at cheaper prices than its competitors, while at the same time to boost demand for Viettel's 3G services. The production of the 3G dongle was also a vital part of Viettel's attempt to integrate vertically within the telecom industry. This vertical integration has not been matched by any of its rivals; for example, VNPT sells imported Chinese 3G dongles to its subscribers. In learning

¹³ Viettel invested in 3G technology because it did not want to lose the 3G market, which was expanding rapidly in Vietnam.

how to make the 3G dongle, Viettel gained new technical and innovative capabilities; hence, new competitive advantages over its competitors.

According to an interviewee who is the team leader of the 3G dongle project, the Viettel R&D institute developed and manufactured the first Viettel 3G dongle at its own Vietnamese plant within eight months. The dongle is 100 percent Vietnamese-made using Viettel hardware. I asked this interviewee: “How did Viettel learn how to make the dongle?” He explained that the entire process included receiving the technology, adapting it to Viettel’s needs, and manufacturing the final 3G dongle. More specifically, Viettel first had to buy the right to use Qualcomm¹⁴ technology to produce the chipset at its Vietnamese plant. With the license, Qualcomm transferred its technology by providing instruction and technical assistance to help Viettel design the chipset for the dongle. During the research and development phase, Qualcomm also provided technical advice and support to Viettel engineers to ensure the product development’s success (ICTNews, 2012). Based on the instructions, Viettel developed each component of the 3G device step-by-step. According to the same interviewee, the most difficult learning curve for his team was to develop the software: the operating system of the dongle. This operating system could not be copied from a prior producer or purchased elsewhere, so Viettel had to develop its own propriety software. He explained that generic dongles sold by other providers do not have such customized features. His team designed the software such that some of the functions on Viettel dongle are available solely to Viettel customers. These functions add more value to Viettel 3G service and help distinguish the Viettel package from other

¹⁴ Qualcomm Incorporated is a US global semiconductor company that designs, manufactures, and markets digital wireless telecommunications products and services. The company has 157 worldwide locations.

competitors. Furthermore, the customized software prevents Viettel customers from using their propriety dongle on MobiFone or VinaPhone 3G networks. Figure 10 shows the final product.

Figure 10: 3G Dongle Made by Viettel



Source: Photo by ICT News (2012)

He also said that there were roughly 50 engineers on the R&D team who worked on this particular project in the eight-month period. At the time of my second fieldwork in 2011, this same manager told me that Viettel's production costs of making their dongle was equivalent to the cost of buying a similar dongle from Chinese manufacturers. Viettel is looking to break even from its investment on the dongle in the next two to three years, or by 2014, at the latest.

5.5. Viettel: Concluding Remarks

Table 4 summarizes Viettel's industrial development using DRMA's four-step approach.

Table 4: DRMA Summary – Viettel’s Successful Industrial Development

Players	Type of rents	Incentives created by the rent	Factors affecting the rent management mechanism	Outcomes
Viettel	Privileged access to land, labor, infrastructure, finance, and credit guarantees	<ul style="list-style-type: none"> - Compensation for market failures in relevant markets - Opportunity to focus on technical learning - Opportunity to concentrate on R&D for strategic growth 	<p><u>First level:</u> Conditional political support for Viettel from the MoD and the Vietnamese government</p> <p><u>Second level:</u> Effective institutional arrangements for rent allocation from the MoD, including informal mechanisms for allocating land, infrastructure, labor, capital, and credit guarantees</p> <p><u>Third level:</u> (1) Capable human resources and leadership (2) Financial rewards and reinforcement of political support (3) High profit margins achieved rapidly (4) Availability of cheap handsets (5) Competition with VNPT and military pride (6) Pressure from international competition due to the opening of the Vietnamese market</p>	<ul style="list-style-type: none"> - Manufacture of 3G dongle achieved - Numerous Viettel-made handsets and telecom devices - Successful expansion to foreign markets

When the Vietnamese government ended VNPT’s monopoly, major technological developments occurred in the telecom industry, ranging from the extension of the backbone network connecting north and south Vietnam, to the development of Vietnamese-manufactured mobile phones and the 3G dongle, to the opening of high-tech production plants and research centers around the country. Viettel is one of the major driving forces of the telecommunications industry’s industrial development. Its success is based on a combination of three rent management factors. First, the political context allowed rent creation while imposing effective incentives and pressures on Viettel to rapidly increase its productivity and competitiveness. Second, there was significant informal rent allocation through mechanisms such as land

allocation, labor policies, and the provision of finance, infrastructure, and credit guarantees. Given the weak land, labor, and credit markets in Vietnam, these measures arguably removed a number of potentially critical market failures and enhanced Viettel's rapid upgrading processes. Third, the telecom industry's organization embedded a number of important and favoring conditions for development.

6. Conclusion

This paper provides empirical evidence to support the analytical view that rents can be developmental and growth-enhancing under the right configuration of conditions that define the relevant rents management system. In the telecommunications industry in Vietnam, this developmental configuration included a strong political commitment to develop the industry; the presence of effective rent allocation; and strong incentives and pressure to enhance profits and capability-building in the firm. The case study of Viettel also highlights the role of informality in rent creation and allocation, such as the MoD providing military resources to Viettel as rents, and that informal motivations were important in driving Viettel leaders to catch up with VNPT. Furthermore, the pressure of forthcoming liberalization in the telecom market set an effective time horizon for Viettel and VNPT to achieve global competitiveness.

This paper also illustrates two different configurations of rent management that can produce very different outcomes. If there are too few factors supporting learning effort at the three levels identified in the rent management analysis, the outcome could be rent capture in the form of monopoly rents and the consequent loss of development opportunities. For instance, in the case of VNPT, the policy created monopoly rent and failed to induce upgrading because it

provided insufficient incentives for VNPT to upgrade at all three levels of rent management. This is because the monopoly rent was granted without sufficient pressure from top political leaders or any disciplining mechanism operated by the state linked to outcomes. There was also no competition in the market at the time to pressure VNPT to upgrade.

Conversely, when all three levels of the factors affecting rent management provide positive support for effort in technology acquisition, even if any level does not work perfectly by itself, an effective rent management mechanism can emerge with sufficient incentives and pressure for technical learning and upgrading. This observation is exemplified by the successful industrial development seen in the telecom industry. The case of Viettel is perhaps the closest to the optimal scenario of rent management for learning and innovation. First, there was clear political will from the top leaders to support the development of the industry and thus the firm; in this case, Viettel. Second, there were informal and formal learning rents provided to the firm. Third, there were strong internal incentives within the firm to enhance profits, pressure from competition with VNPT and the possibility of foreign entry, and sufficient initial capabilities of the firm to upgrade. This combination of factors created an effective rent management mechanism for the industry to industrialize and develop.

Many interviewees who work for Viettel or the MIC are of the opinion that the Viettel experience cannot be repeated because the combination of favorable conditions that allowed Viettel to achieve rapid success are rare and thus cannot be replicated. Nonetheless, although this combination of factors may not repeat in the same manner, policymakers can surely learn from the ways in which Viettel resolved specific market failures, was offered opportunities and incentives, and succeeded in meeting the pressure to raise competitiveness within the context of a specific rent management structure. The telecommunications industry in Vietnam provides an

example of how political bargaining, in addition to institutional and market conditions, can, if the combination is appropriate, achieve high levels of investment, technology adoption, learning, and R&D. Viettel serves as a successful model for developing a global technology player, as well as lessons for the development of other industries in Vietnam and in the developing world.

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