

# The Power of Emerging Economies:

A Global Business Paradigm Shift in the Telecommunication Industry

By

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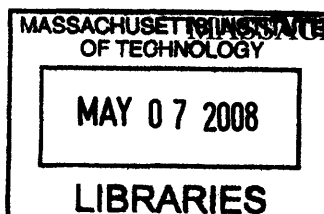
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# **The Power of Emerging Economies:**

## **A Global Business Paradigm Shift in the Telecommunication Industry**

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### Abstract

When geographers study the world and its features, distance is one of the basic measures they use to describe the patterns they observe. Distance is, however, an elastic concept. Physical distance has played the dominant role in the world's geo-politics, global economy and international trade in last centuries. But in recent times – the impact of physical distance has been diminished and transformed by the effect and advancement of IT & Telecommunication technology. Physical distance has been transformed into virtual distance. Communication from one end of the world to other has become – “Just a click away in a computer or a few finger tips in our cell phone.”

The focus of this thesis is on two closely related sets of questions. – (I) “How is the state of telecommunication technology in emerging countries changing? How does this technological advancement affect the productivity and international competitiveness of these economies? (II) How does this telecommunication industry development in emerging economies shifting the overall global business paradigm of the telecommunication industry and is this shift permanent or temporary?

In this thesis, I will first focus on the background of world telecommunication industry and the market segmentation based on: (I) Key Economic Indicator of Telecom industry (ARPU - Average revenue per user) and (II) Technology. I will then analyze the recent development of world telecommunication industry and conduct case studies on eight global telecom operators (Vodafone, AT&T, Telenor, SingTel, China Mobile, Orascom, America Movil, and Reliance). This analysis will focus on the present situation of global telecom industry, worldwide investment in this sector, market tier & user segments, and buying power of the emerging economies. At this point, I will introduce and examine whether the business models being developed in these emerging economies are likely to impact the global economy. To do so, I will apply Porter's competitive advantage of nation analysis and Lessard's Globalization RAT's (Relevant, Appropriable & Transferable) test. Finally, I will conclude my research by illustrating – the evolving global telecom user triangle model and highlight a few key issues for global telecom operators to consider for their future business growth and sustainability.

Thesis Supervisor: **Professor. Donald R. Lessard**

Title : *EPOCH Foundation Professor of International Management & Global Strategy*

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Rehan A Asad  
January 2008  
MIT, Boston  
Massachusetts, USA

THIS THESIS IS SINCERELY DEDICATED TO  
IN MEMORY OF  
MY MATERNAL & PATERNAL GRANDPARENTS

# PART I. Thesis Outline

## Chapter 1

### Introduction: Executive Summary

---

*"You see, wire telegraph is a kind of a very, very long cat. You pull his tail in New York and his head is meowing in Los Angeles. Do you understand this? The telephone & radio technology operates exactly the same way: you send signals here, they receive them there. The only difference is that there is no cat." ~ Albert Einstein*

In the 20<sup>th</sup> century, communication is regarded as a basic human right regardless of one's race, religion, ethnicity or demography. Besides the invention of electricity, no other technology touched human beings in the way telecommunication technology did. Currently, total world population is around 6.2 billion and half of this – around 3.1 billion people are connected by telecommunication technology. By 2015, it is expected that majority of the world population will be connected with one another through telecommunication technology. Not only is this industry immense, it also is one of the most globally-integrated of all industries as the result of the forces illustrated in Figure 1.1 below which follows Yip's Model<sup>1</sup> of globalization.

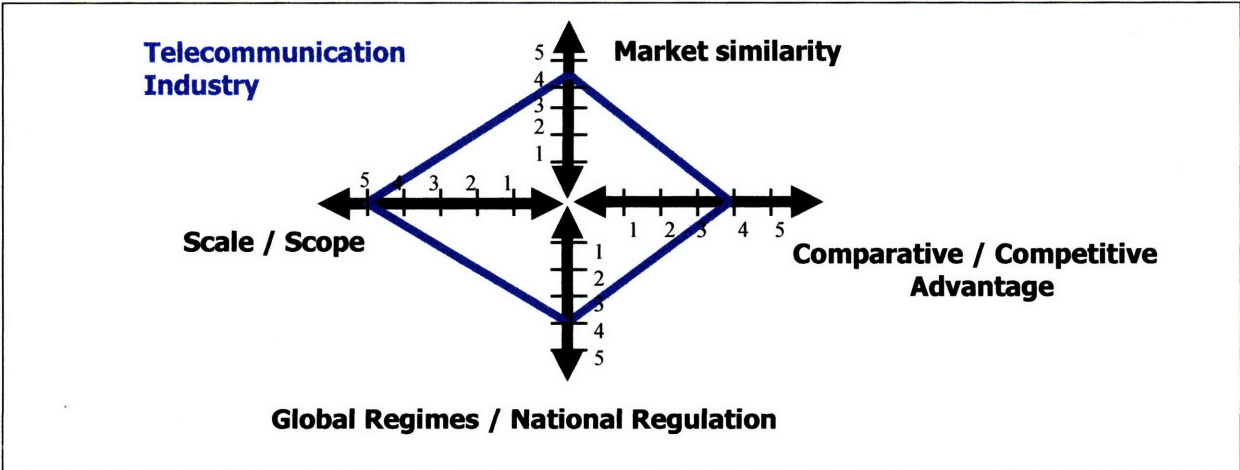


Figure 1.1: The Global nature of the Telecommunications Industry

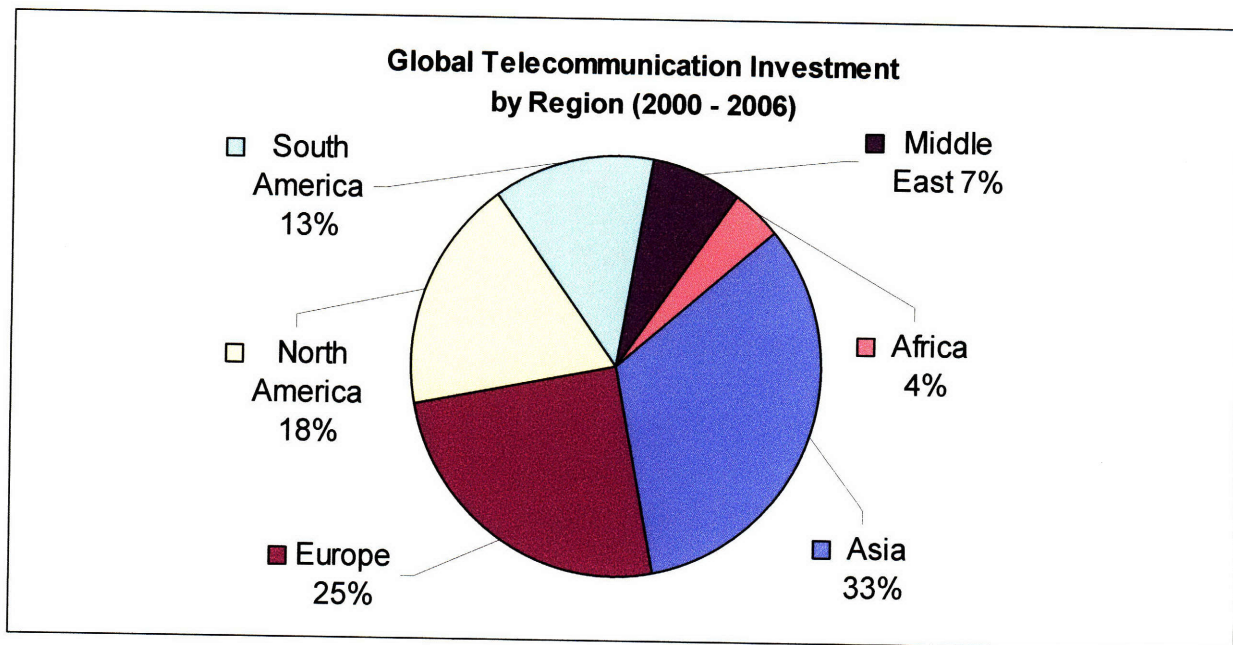
<sup>1</sup> Reference of Yip (1992) – *Total Global Strategy*, as described in Lessard (2003)



Yip model, often referred to as the globalization diamond, illustrates that the telecommunication industry is a global industry; by virtue of: “very large *scale of economies*, global *market similarity*, national & international *regulation that are quite “friendly” to globalization* and quite widely dispersed *knowledge advantage*.”

Since the invention of telephony in 1876 by *Alexander Graham Bell* – the telecommunication industry has gone through several phases. The first phase of 100 years of telecom industry was entirely based on fixed (wireline) telecom network. During 1970’s – the first generation of mobile / cellular / wireless technology was invented by the *Bell lab* and *AT&T lab*. In 1983, AT&T launched the first analog mobile service in North America. During last 10 -15 years, telecommunication industry, in particular wireless communication has evolved by leaps and bounds.

In the recent past – during last 5 to 7 years, the world has witnessed a paradigm shift in global telecommunication business [Figure 1.2]. More than 60 % of global investment for telecom industry went to developing countries and around 76 % of growth of this sector is coming from emerging economies. These emerging economies are spread out around the world from Asia to Africa to Middle East to South America to Russian Peninsula. These developing countries and their emerging economies are playing a pivotal role in today’s globalized world economy.



**Figure 1.2: Global Telecom Investment by Region (2000 – 2006) <sup>2</sup>**

One could justifiably argue that these emerging economies are developing at this fascinating rapid pace primarily - due to lack of prior development, low teledensity, very poor supporting ICT infrastructure and unstable macro economic conditions. Secondly, as the telecommunication market condition of the developed economies reached a certain saturation level, so it could not grow any more at a rapid pace. That's why the world is witnessing a shift of investment towards emerging economies.

Both these observations are true and valid. However, it could also be noted that - more than 75 % of world population is living in these emerging economies. Both macro and micro economic conditions of these emerging countries are improving; buying power of the emerging market is increasing significantly. These countries are not only deploying and benefiting by utilizing the latest technology, but also they are developing innovative new

<sup>2</sup> Source: ITU (International Telecommunication Union) Global ICT Report 2006

technologies for the whole world. As a result, a paradigm shift in global business arena has become more visible in recent times. Whether – this shift is permanent or temporary; we do not know yet. However, one thing is very clear that – it is happening and global economy is transforming.

In this thesis, at first, I will analyze the background of world telecommunication industry and the market segmentation based on (I) Key Economic Indicator of Telecom industry (ARPU - Average revenue per user) and (II) Technology [Chapter -2]. Afterwards, I will focus on the recent development of world telecommunication industry [Chapter – 3] and conduct case studies on eight global telecom operators (Vodafone, AT&T, America Movil, SingTel, Telenor, Orascom, Reliance Communication – India and China Mobile) [Chapter – 4]. This analysis will focus on global investments in this sector, market tier and user structure / category, buying power of the emerging economy, etc. At this point, I will introduce and examine whether the business models being developed in these emerging economies are likely to impact the global economy. To do this, I will apply Porter's competitive advantage of nations analysis and Lessard's Globalization RAT's (Relevant, Appropriable, and Transferable) test. [Chapter – 5]. Finally, I will conclude my research by describing the global telecom user triangle and essential issues for global telecom operators - for their future business growth and sustainability. [Chapter – 6]

## **Part I. Thesis Outline**

### **Chapter 1. Introduction: Executive Summary**

## **Part II. Background**

### **Chapter 2. History and the global telecom industry**

- Context of the industry
- Market Segmentation
  - ARPU (Average Revenue Per User)
  - Technology

## **Part III . Analysis**

### **Chapter 3. Market Analysis**

- Industry User Structure
- Buying Power
- User Triangle Pyramid

### **Chapter 4. Case Study (Global Telecom Operator)**

- |                 |           |                |            |
|-----------------|-----------|----------------|------------|
| - Vodafone      | - AT&T    | - Telenor      | - Orascom  |
| - America Movil | - SingTel | - China Mobile | - Reliance |

## **Part IV . Analysis**

### **Chapter 5. Model Analysis**

- Porter's Industry Analysis
- Lessard's RAT's Test

## **Part V. Conclusion**

### **Chapter 6. Conclusion & Global Outlook**

- Global Business Paradigm Shift - Permanent or Temporary ?

Table 1: Contents Structure of the Thesis

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## **PART II. Background**

### **Chapter 2**

#### **Global Telecom Industry History**

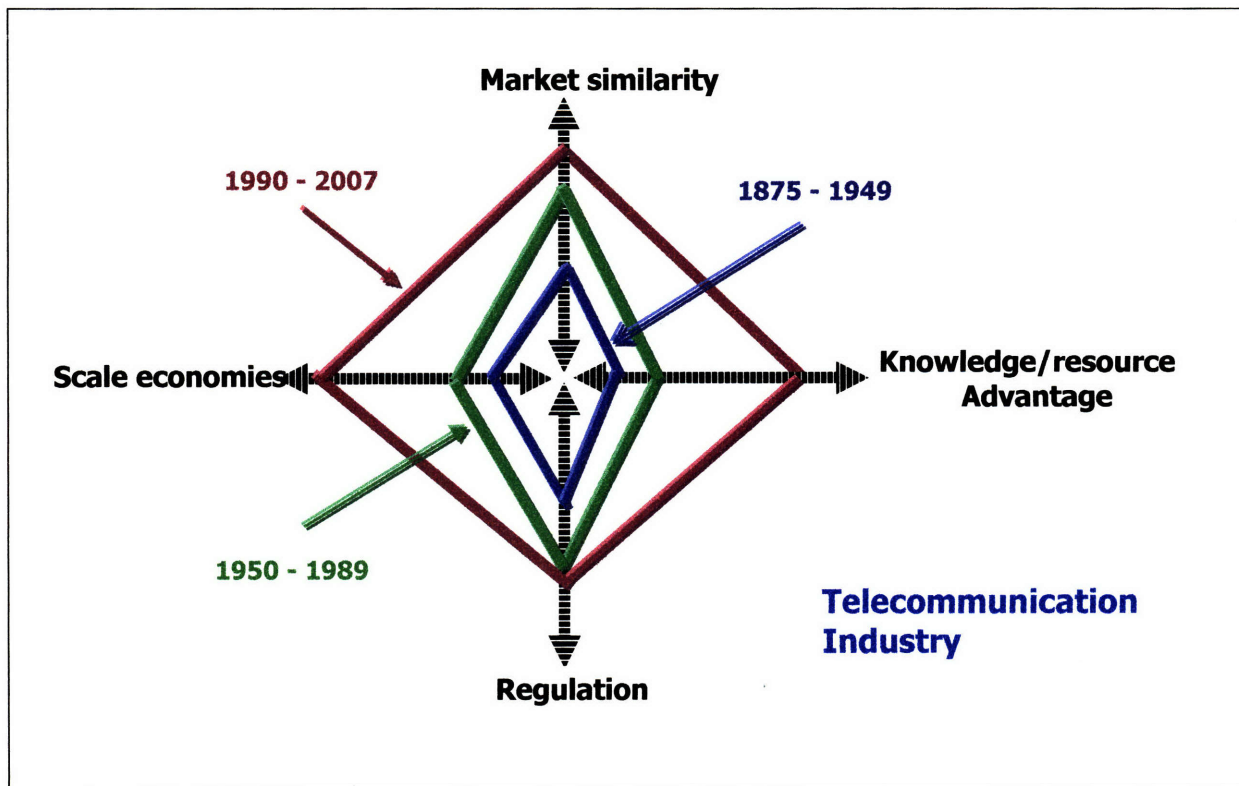
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On March 10<sup>th</sup> 1876, the first successful bi-directional telephone call was made by Alexander Graham Bell in Boston, USA. Since then, telecom industry has passed through several phases. First phase of 100 years (1880 -1980) of this industry was solely based on fixed (wireline) telephony using twisted copper pair cable. During this period of time telephone was mostly a sign of status. It was an item mostly used by officials and the wealthy during its early lifespan. Even if the general population in developed countries who had the opportunity to have a telephone line during 60's, 70's and 80's – it came with a hefty price tag.

During early 80's - AT&T in USA, NTT DoCoMo in Japan, Batelco in Bahrain and Nordic Communication in Norway, Sweden, Finland and Denmark launched the first commercial analog mobile service. For first 10 years US (AMPS), European (NMT450 / GSM) and Japanese (PDC) telecom companies individually developed and used their own analog mobile communication system. During late 80's to early 90's the worldwide telecom industry started transforming their communication system from analog to digital technology and GSM (Global System for Mobile Communication) technology led by the European countries became the dominating global standard for mobile telecommunication. Since mid 90's - till today, global telecom industry – in particular mobile telecom industry has been growing in

leaps and bounds due to low cost, ease of use and common global standard. Figure 1.3 uses Yip's Model<sup>3</sup> to illustrate how over the years the size, the depth & global integration of this industry have evolved by virtue of: “*scale of economies, global market similarity, reduced national & international regulation.*”



**Figure 2.1: The Evolving Internationalization of Telecommunication Industry**

## 2.1 Telecommunication Technology History:

There are primarily two methods – in which telecommunication services has been provided worldwide to the end users since its birth around 150 years ago.

- (I) Wireline or Fixed Telecommunication Network
- (II) Wireless or Mobile / Cellular Telecommunication Network

<sup>3</sup> Adapted by Lessard (Frameworks 2003) from Yip's (1992) Globalization Model

## **2.2 Fixed Telephony:**

Since the first telephone call in 1876, till recent past – copper based twisted pair cable was the one and only medium of telecommunication around the world. Still a major part of the world uses the same old copper cables to provide fixed line phone services. During last 20 years, different alternatives of copper cables have been invented. In recent past, in different parts of world - different technologies have been deployed to provide the fixed telephone service; based on mainly optical fiber and DSL/ADSL cable. From the functionality point of view beside pure voice call, fixed telephone service can also provide internet connectivity and some rich applications, such as call conference, voice mail, caller identification, etc.

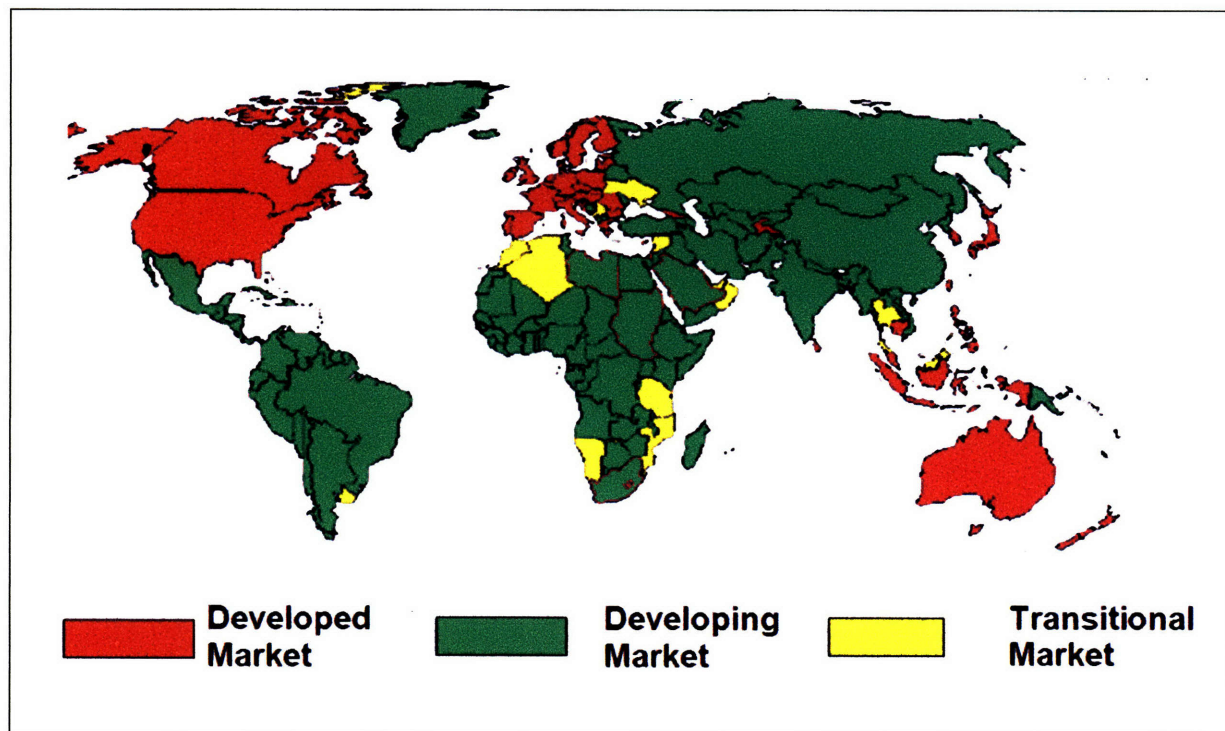
## **2.3 Mobile Telephony:**

In accordance with the name – the core beauty and benefit of mobile telephony or wireless communication is the mobility. In contrast with the fixed telephony – no physical connectivity is required for mobile telephony. The communication between the end user devices and service providers takes place over the air interface. Thus, to build and operate mobile telecommunication network requires much less time. The capital expenditure is comparatively lower than that of a fixed telecom network. So, very fast network roll out capability, lower investment, higher return - made mobile telephony very attractive to the potential investors and telco's. First ten years (1980 -1990) of mobile telephony was based on analog technology and several standards (AMPS, NMT, PDC) were used in different parts of the world. Afterwards, mobile telephony transformed to digital technology. GSM & CDMA based technology was the key standard used worldwide. In early 2000, 3<sup>rd</sup> generation of mobile telephony started evolving and GSM based solution became the dominant global standard.



## 2.4 Current Status of Global Telecom Markets:

At present, half of the world population - around 3.2 billion out of 6.1 billion people are connected by the telecommunication technology (both fixed and wireless). However, there is a significant gap of teledensity around the world in between the developed countries and developing countries. But, this gap is shrinking quite rapidly and mobile telecommunication is playing a pivotal role in narrowing this gap. The following picture illustrates current situation of global telecom industry.

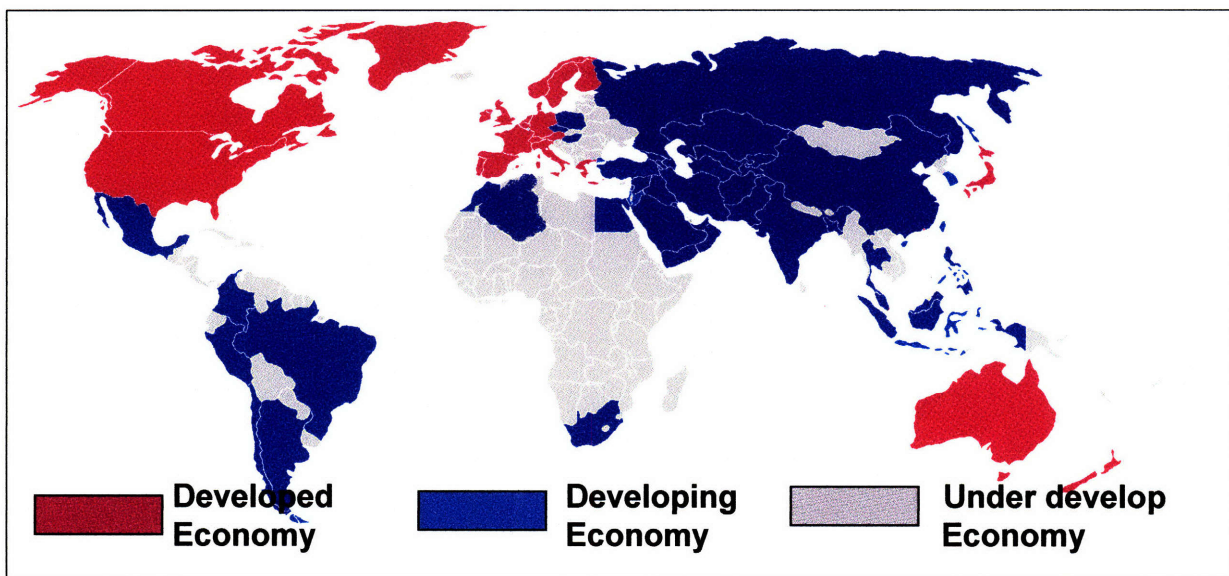


**Figure 2.2: Different Market Segments of Global Telecom Industry**

Like most other technology based industry, telecommunication industry is quite capital intensive. Macro economic condition, buying power of end user, existence of supporting industry - play key roles in the advancement of telecom industry. Based on (a) technology adaptability, (b) revenue earning, (c) penetration rate and (d) related industries & factor conditions - current global telecommunication market could be divided into following different segmentations:

## 2.5 Emerging Economies:

The term *emerging markets* originally coined in the 1980s by the World Bank economist *Antoine van Agtmae*. The term is commonly used to describe business and market activity in industrializing or emerging regions of the world. “*Emerging markets*” is sometimes loosely used as a replacement for *emerging economies*, but really signifies a business phenomenon that is not fully described by or constrained to geography or economic strength; such countries are considered to be in a transitional phase between developing and developed status. Examples of emerging markets include China, India, Mexico, Brazil, much of Southeast Asia, countries in Eastern Europe, the Middle East and parts of South America.



**Figure 2.3: Current Global Economic situation (Developed Vs Developing Vs Under-develop)**

It is difficult to make an exact list of emerging (or developed) markets; the best guides tend to be investment information sources like ISI Emerging Markets and The Economist or market index makers (such as Morgan Stanley Capital International). List of Countries with Emerging Economy: China, India, Russia, Brazil, Argentina, Bangladesh, Egypt, Indonesia, Korea, Mexico, Nigeria, Pakistan, Philippines, South Africa, Turkey, Vietnam, etc.

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## PART III. ANALYSIS

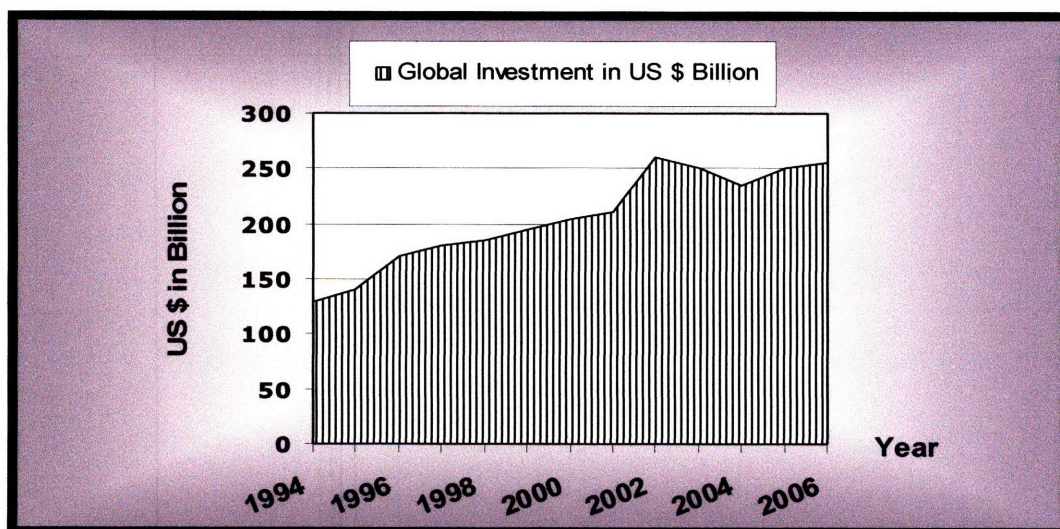
### Chapter 3

### Market Analysis

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Since 2000, ITU (International Telecommunication Union) in cooperation with UN (United Nations) has been publishing World Telecommunication / ICT Development report. ITU has long been involved in measuring the availability of telecommunication infrastructure worldwide. Recently, ITU also started measuring direct and indirect socio-economic impacts of ICT development. Based on the ITU 2006 report, GSM organization 2007 databook, UN global report 2007 and few other industry relevant reports - I here-by try to observe and present the current trend of world telecommunication industry as per the following criteria: (a) Global Investment in telecommunication industry (b) Worldwide Telecom Subscribers Analysis and (c) Buying Power of end users around the world (Developed Economy Vs Emerging Economy).



**Figure 3.1: Global Investment in Telecommunication Industry (1994 -2004) <sup>4</sup>**

<sup>4</sup> Source: ITU (International Telecommunication Union) Global ICT Report 2006

### 3.1 Global Investment in Telecommunication Industry:

Since early 90's – IT and Telecommunication industry have started developing at rapid pace. In particular, during the last decade global telecommunication industry was one of the most heavily invested business segments worldwide. (Figure 2.1)

During 90's, the majority of global telecom investment was focused in developed countries (such as: USA, Eastern (Western?) Europe and Japan). However, in recent times - the emerging markets account for an increasing share of global telecom investment. Dynamic expansion and development of supporting industry in emerging markets, led by mainland China and India, followed by Russian peninsula, Asia Pacific and South America - is dramatically changing the global telecom industry landscape. During last 5 years, more than 70% of global investment in telecom industry went to emerging economies; such as China, India, Mexico, Brazil, Russia, Indonesia, etc (Please refer to figure 2.2)

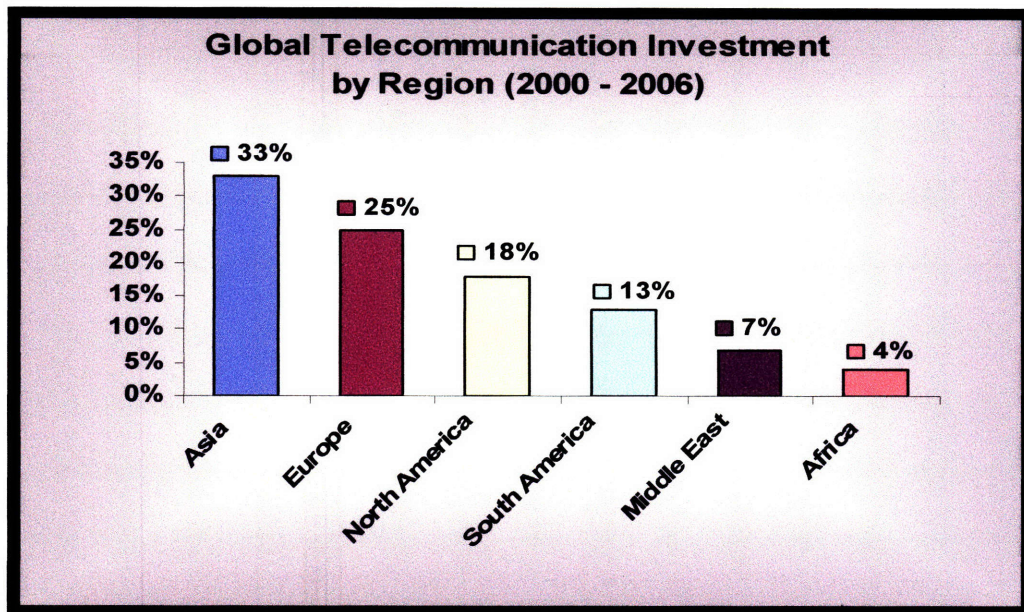


Figure 3.2: Regional Investment in Telecom Industry (2000 – 2006) <sup>5</sup>

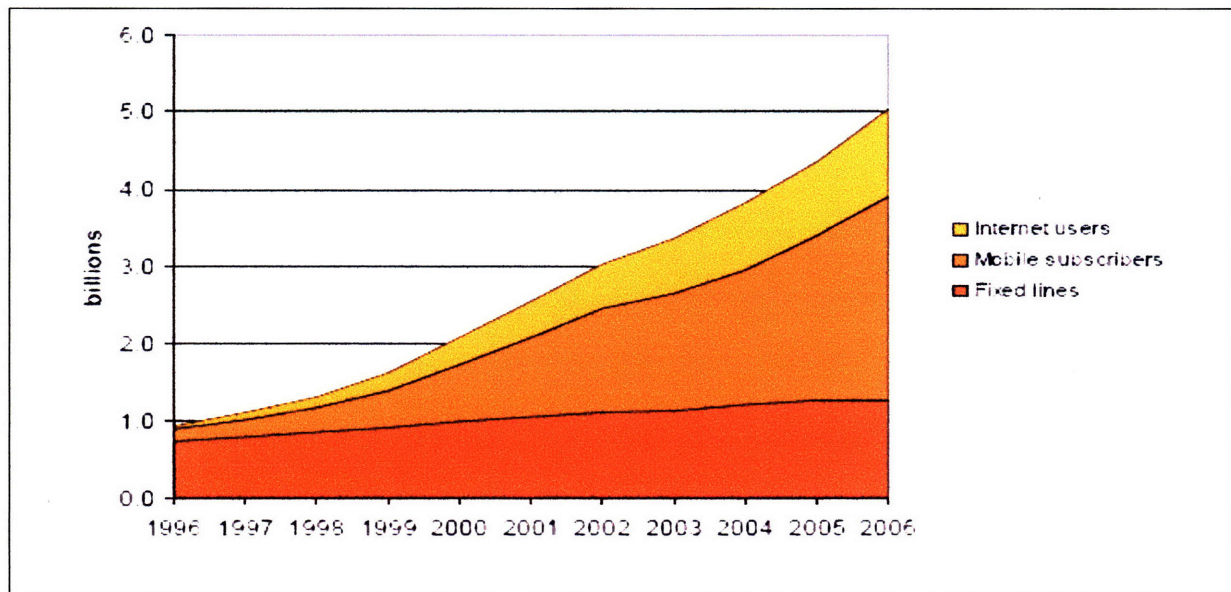
<sup>5</sup> Source: GSM .Org 2007 Report & ITU (International Telecommunication Union) Global ICT Report 2006

This is clearly visible in Figure 2.2, led by mainland China and India, Asia is the main driving force behind the explosive growth of world telecom industry, followed by South America and Middle East. Even in 25% growth of Europe, Russia and the surrounding emerging economies (Kazakhstan, Uzbekistan, Georgia, Lithuania, etc) are the main contributors.

During the last two centuries vigorous industrialization had propelled the economies of North America, Western Europe and Japan into a dominant position in terms of their share of world output. But in recent times, since mid 90's these economies have seen steady erosion from the peak they attained during the 1970s. The emerging economies are developing by leaps and bounds. These dynamic economies are changing the world economic order as they industrialize, improve their infrastructure and rapidly develop their service sectors. In general, it is expected that by 2050, they will account for almost 78% of global growth. This projection uses realistic assumptions of annual growth rates of 5.3% to 2050, well below those posted in recent decades by the economies of developing Asia at over 7.5%. Growth at that pace is not sustainable over the long term – as economies mature, they inevitably lose some of their initial momentum. Within the emerging markets, four economies – Brazil, Russia, India and mainland China – collectively known as the BRIC economies, have become the focus of particular attention in global economy. These countries, followed by N11 (next eleven) – Bangladesh, Egypt, Indonesia, Iran, Korea, Mexico, Nigeria, Pakistan, Philippines, Turkey and Vietnam are transforming the existing patterns of global economic activity and shifting the paradigm of international trade and global investment flows.

### 3.2 World Wide Telecom Subscriber Analysis:

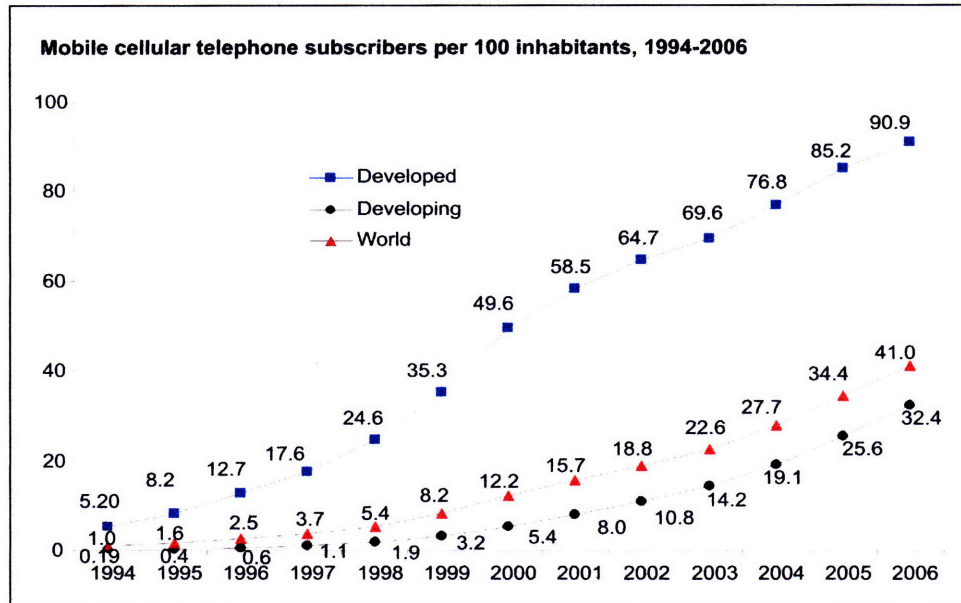
By the end of 2007, the telecommunication industry had experienced continuous buoyant growth, as well as rapid progress in policy and technology development, resulting in an increasingly competitive and networked world. At present, total population of the world (UN Report 2007) is 6.3 billion and there are a total of nearly 4.3 billion mobile and fixed-line subscribers worldwide. This includes 1.27 billion fixed-line subscribers and 3.2 billion mobile subscribers (66 % of whom are located in developing countries).



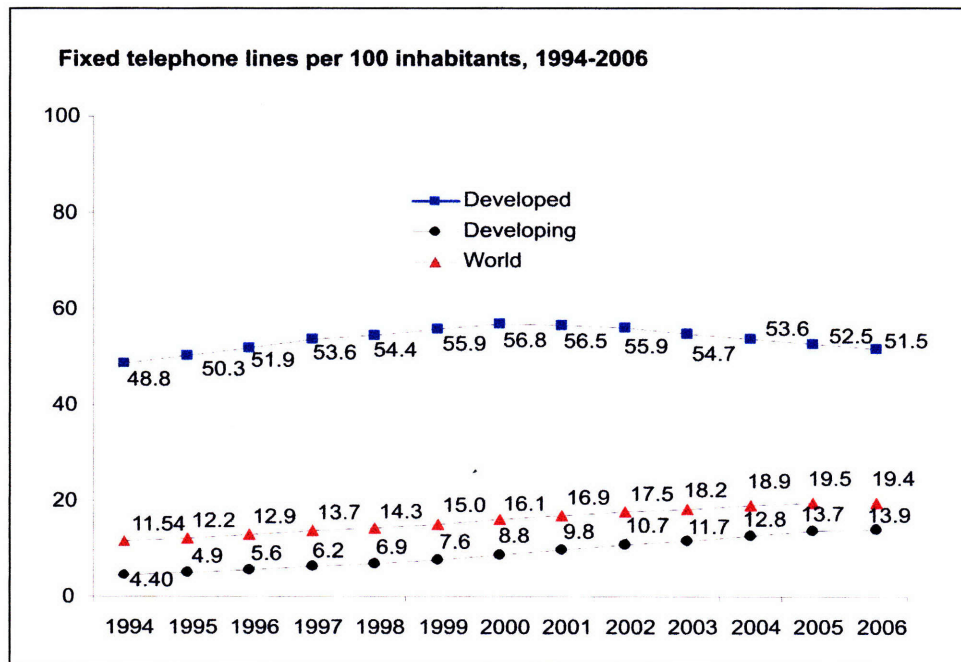
**Figure 3.3: Worldwide Telecom & Internet Subscriber Growth (1996 – 2006)<sup>6</sup>**

It is true and encouraging that worldwide digital divide has been reduced. ITU statistics show that over the last ten years, the digital divide between the developing and the developed countries has been shrinking in terms of fixed telephone lines and mobile subscribers. Phenomenal growth rates in the mobile sector particularly, have been able to reduce the gap that separates the developed from the developing countries from 27 in 1994, to 4 in 2004. The fixed line gap has been reduced from 11 to 4 during the same period.

<sup>6</sup> Source: ITU (International Telecommunication Union) Global ICT Report 2006



**Figure 3.4: Worldwide Mobile Subscriber Growth<sup>7</sup>**



**Figure 3.5: Worldwide Fixed Subscriber Growth<sup>8</sup>**

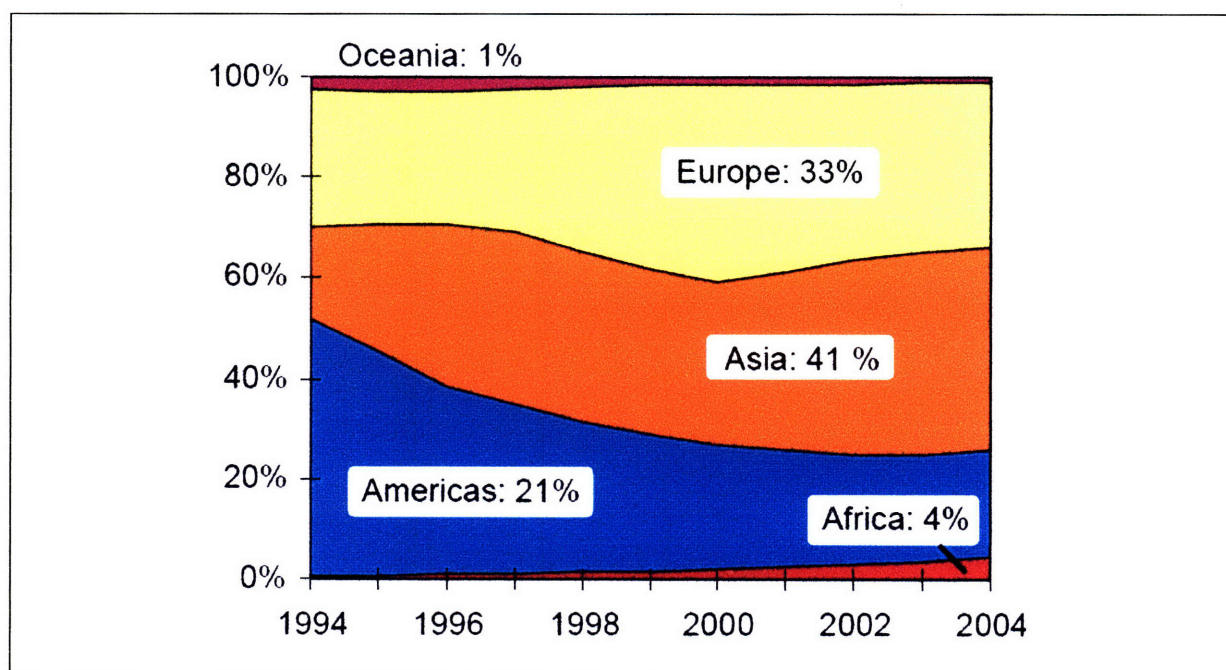
<sup>7</sup> Source: ITU (International Telecommunication Union) Global ICT Report 2006

<sup>8</sup> Source: ITU (International Telecommunication Union) Global ICT Report 2006



### 3.3 Mobile / Cellular Subscriber Growth:

Mobile cellular's intrinsic advantages - mobility, personal identity and low cost – are the key contributing factors for the global success in the telecom industry. The mobile cellular sector has shown phenomenal growth over the past five years, with the number of mobile cellular subscribers still increasing rapidly today. There have been more mobile subscribers than fixed telephone lines since 2002, and by the end of 2007, the world counted some 3.1 billion mobile cellular subscribers, or 50 (%) percent of the world's population. In contrast, there are 1.2 billion fixed telephone lines, corresponding to a penetration rate of 19 (%) percent.

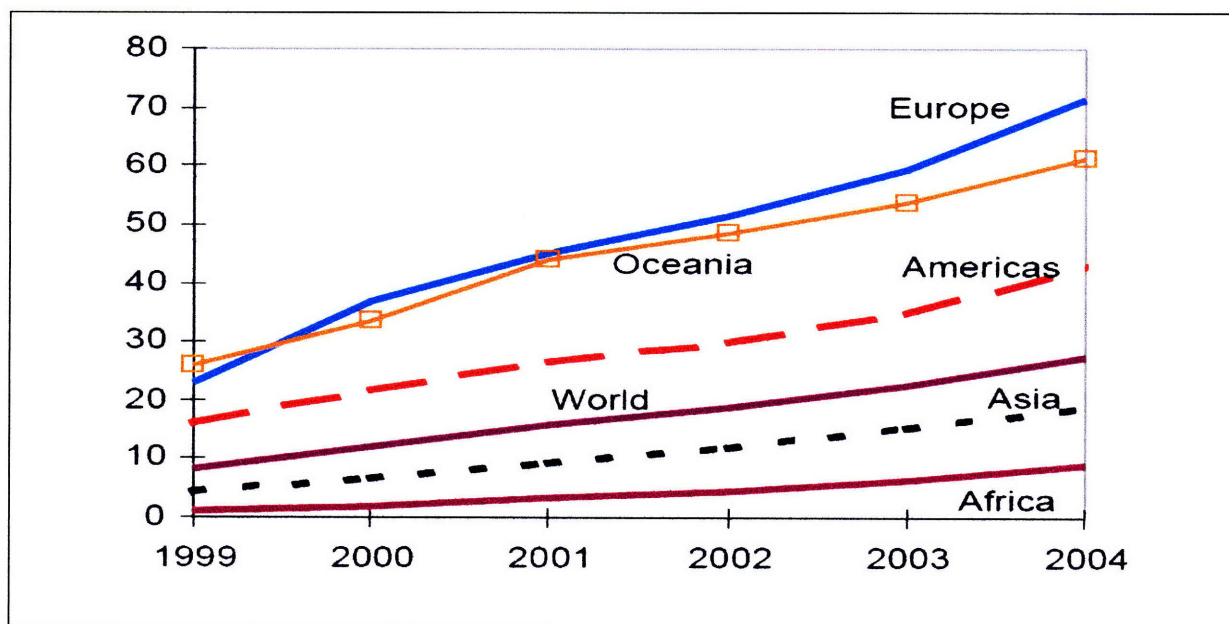


**Figure 3.6: Distribution of Mobile Subscriber by Region (1994 – 2004)<sup>9</sup>**

In recent times, more than 70 percent of mobile subscribers can be found in Asia and in emerging countries. In 2002, Asia overtook Europe as the region with the largest share of mobile subscribers in the world. By the end of 2004, the overwhelming majority (166) of countries in the world had more mobile than fixed subscribers.

<sup>9</sup> GSM Organization, ITU and UN ICT Report 2006

Both Cambodia and Finland were amongst the first countries in the world to have more mobile than fixed subscribers. Today's group of countries where fixed lines still outnumber mobile subscribers includes such countries as Canada, Egypt and Ethiopia. The main reasons for mobile growth have been the introduction of prepaid services, rapid network deployment, and a highly competitive environment. Prepaid has become the predominant payment method in the developing countries and the choice of nearly every second mobile subscribers in the world. Prepaid services, which in Africa make up almost 90 percent of the entire market, allow operators to reduce risks and offer services to clients that may not qualify for a monthly subscription. They also offer subscribers better control of their telecommunication spending.



**Figure 3.7: Distribution Changes of Mobile / Cellular Subscribers by Region (1999 – 2004)<sup>10</sup>**

While on average almost one in three of the world's citizens is a mobile subscriber, there are major regional differences. Indeed, despite the rapid growth in all of the world's regions and particularly in the developing countries, major differences in penetration levels

<sup>10</sup> GSM Organization, ITU and UN ICT Report 2006

persist. In 2004, Europe's mobile penetration rate stood at 71 percent, almost twice the penetration rate of the Americas (43 percent), and nearly four times the penetration rate of Asia (19 percent). Europe had almost eight times the penetration rate of Africa, where less than one out of ten people subscribe to a mobile service. These figures certainly highlight that access to, and use of, mobile services remain unevenly distributed between developed markets (high penetration) and emerging markets (low penetration). At the same time, they also highlight potential market opportunities and scope for business growth in different regions, particularly in emerging economies.

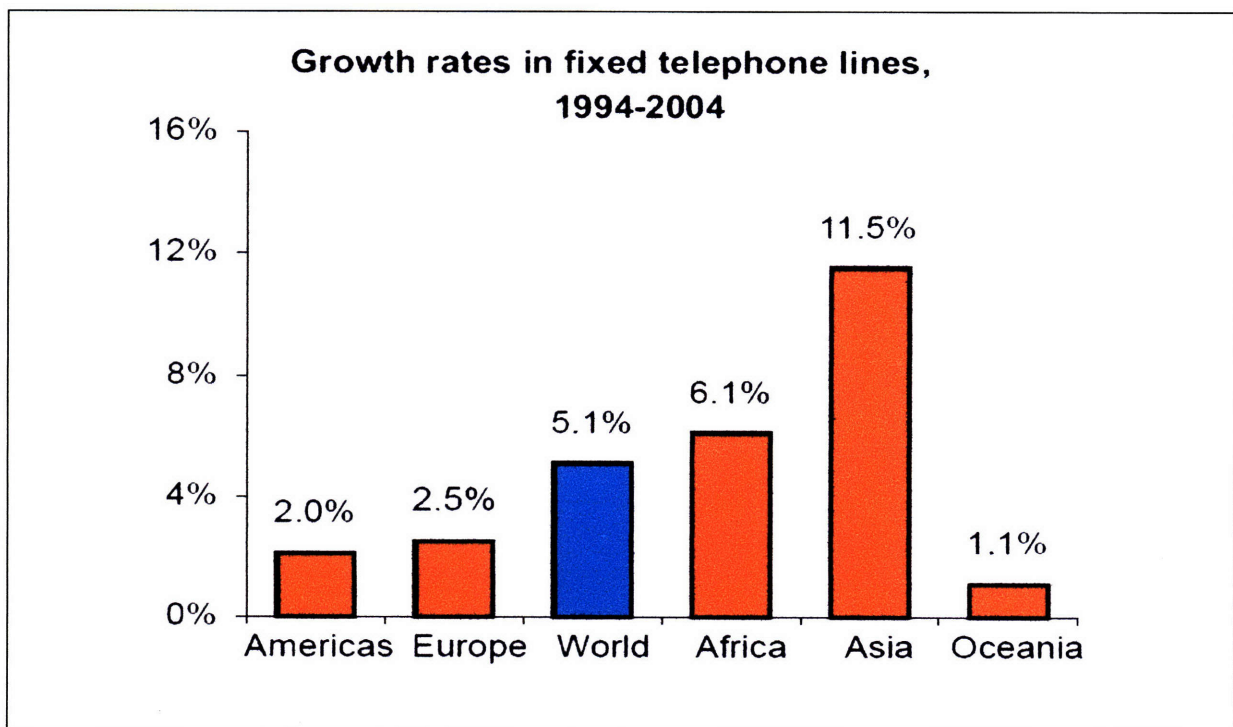
<b>Technology wise</b>	<b>2006</b>	<b>2007 (Q3)</b>
<b>Total</b>	<b>2,704,222,021</b>	<b>2,948,357,080</b>
GSM (2G + 2.5G)	2,171,078,511	2,377,790,703
WCDMA (3G)	96,885,300	131,240,644
WCDMA HSPA (3G)	1,284,154	4,987,178
TDMA	20,385,864	12,126,883
PDC (Japan)	32,065,081	23,481,602
iDEN	25,645,317	27,078,771
Analog	3,099,347	2,021,415
CDMA One	21,081,130	15,551,230
CDMA2000 1X	282,674,906	288,503,817
CDMA2000 1xEV-DO	50,024,921	65,405,731

Table 2: Worldwide Mobile Subscribers Distribution by Technology <sup>11</sup>

<sup>11</sup> GSM Organization World Telecom Report 2007

### 3.4 Fixed Network Subscriber Growth:

The fixed Telephony industry has more than 100 years of history. The overall trend of fixed telephony growth for last decade (1994 – 2006) is one of relatively slow growth, particularly compared to mobile telephony. Globally, fixed lines have grown by an average of 5.1 percent a year since 1994 and growth has stood clearly below the world average in the Americas and Europe.



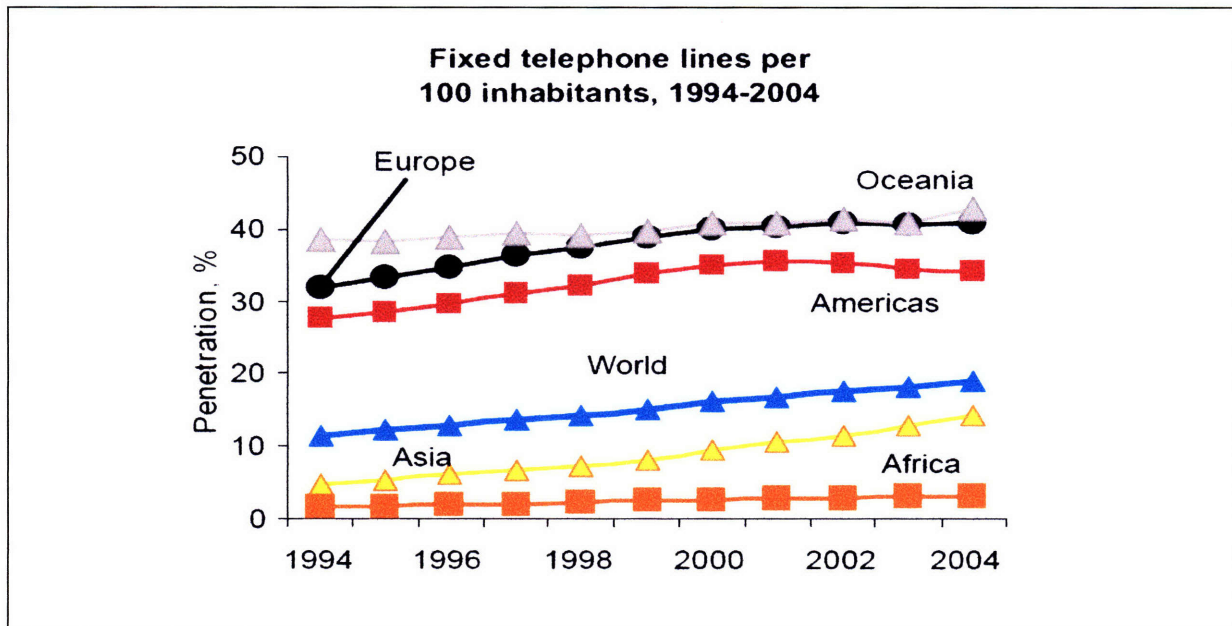
**Figure 3.8: Worldwide Fixed Telephone – Growth Rate by Region (1994 – 2004)** <sup>12</sup>

Several challenging trends in the past years have contributed to this overall stagnant development in the fixed line market. Most dominant among them is the phenomenal growth of the mobile cellular sector, which has opened up the way for fixed-to-mobile substitution (FMS). FMS may take different forms, is not always clearly measurable (without household surveys), and interpretations and predictions about its scale and impact vary. Although the

<sup>12</sup> Source: ITU Global ICT Report 2006

relatively stable number of fixed lines in the developed world suggests that few users are actually ‘cutting the cord’, a recent EU commissioned survey suggests that some new European users are going ‘straight to mobile’. According to the 2004 survey

*“An increasing number of households have one or more mobile phones without owning any fixed line: while the average of households without any fixed line is 15%, this proportion reaches 33% in Finland and Portugal”*. FMS seems to be an even greater issue in the low and lower-income regions, where much higher mobile growth rates show that the mobile phone has become the number one voice communication technology. Other factors threatening fixed line operators’ revenues are the entry of cable and Television (TV) companies into the telephony and broadband market, as well as the Voice over Internet Protocol (VoIP) market. Since VoIP requires large amounts of bandwidth, it only provides a threat in regions where broadband penetration is significant.

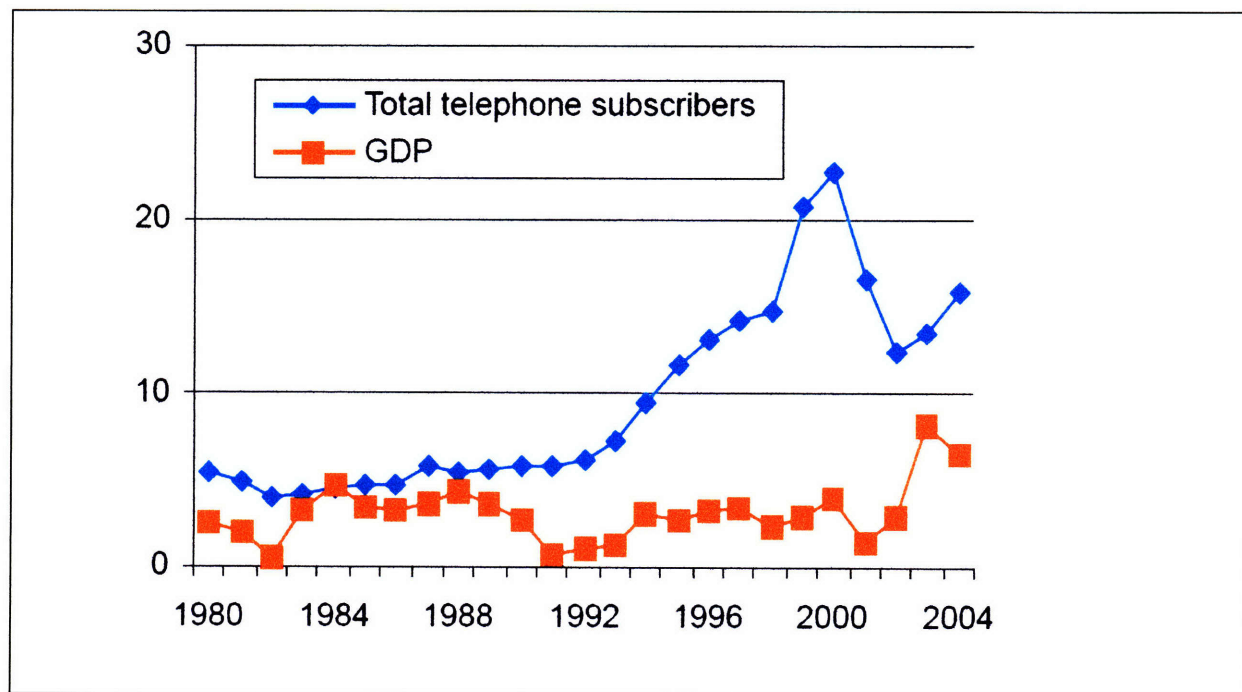


**Figure 3.9: Fixed Telephone Penetration Rate (1994 – 2004)**<sup>13</sup>

<sup>13</sup> International Telecom Union Report 2004

In a number of countries, including Canada, France, Italy and the United States, the number of fixed telephone lines has actually been decreasing over the last few years. Limited growth is to some extent linked to the fact that some countries have reached saturation levels. Regional comparisons clearly show that high penetration levels are matched with low growth rates, whereas low-penetration regions such as Asia and Africa show above-average growth rates. Although higher growth rates in the emerging economy have to some extent narrowed the digital divide in fixed lines, a comparison of 2004 penetration levels shows that major differences remain.

While there is an obvious link between a country's income level (as measured by its Gross Domestic Product (GDP) per capita) and its teledensity, the status of economic development does not seem to have an impact on the ratio of fixed to mobile subscribers.



**Figure 3.10: World Annual GDP Vs Annual Increase of Teledensity (Fixed + Mobile)<sup>14</sup>**

<sup>14</sup> UN & ITU Data Book 2006

### 3.5 Buying Power of End Users in Telecom Industry (Rise of Emerging Economy)

The difference in buying power is quite clearly visible between developed economy and emerging economy from a high level point of view. There is a significant difference on monthly spending between these two regions. On an average, end user ARPU (Average Revenue per User) in America is around \$50, in Western Europe around \$35, in Japan around \$80 and in Australia around \$50. In general, end user those who are located in developed country spend around \$ 40 to \$ 60. In contrast, end user (ARPU) at emerging economy spends much less than that of developed economy; around \$10 to \$20 per subscriber.

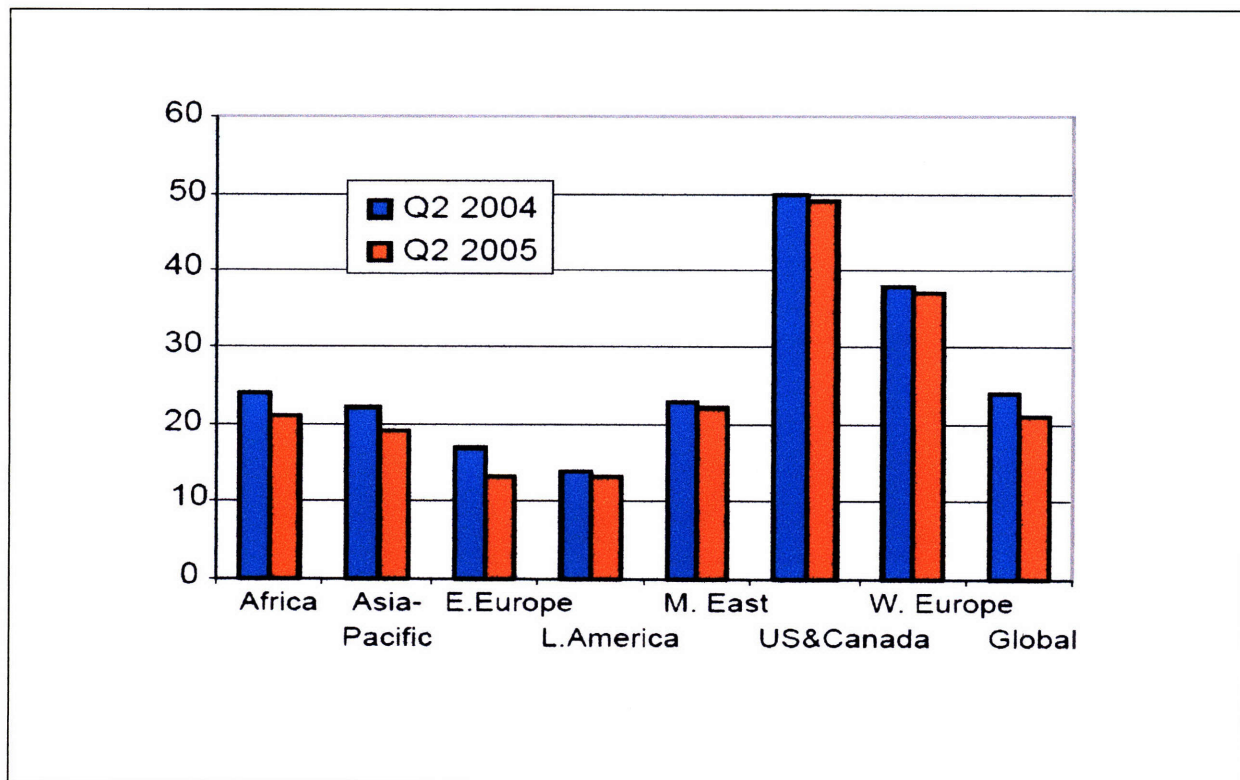


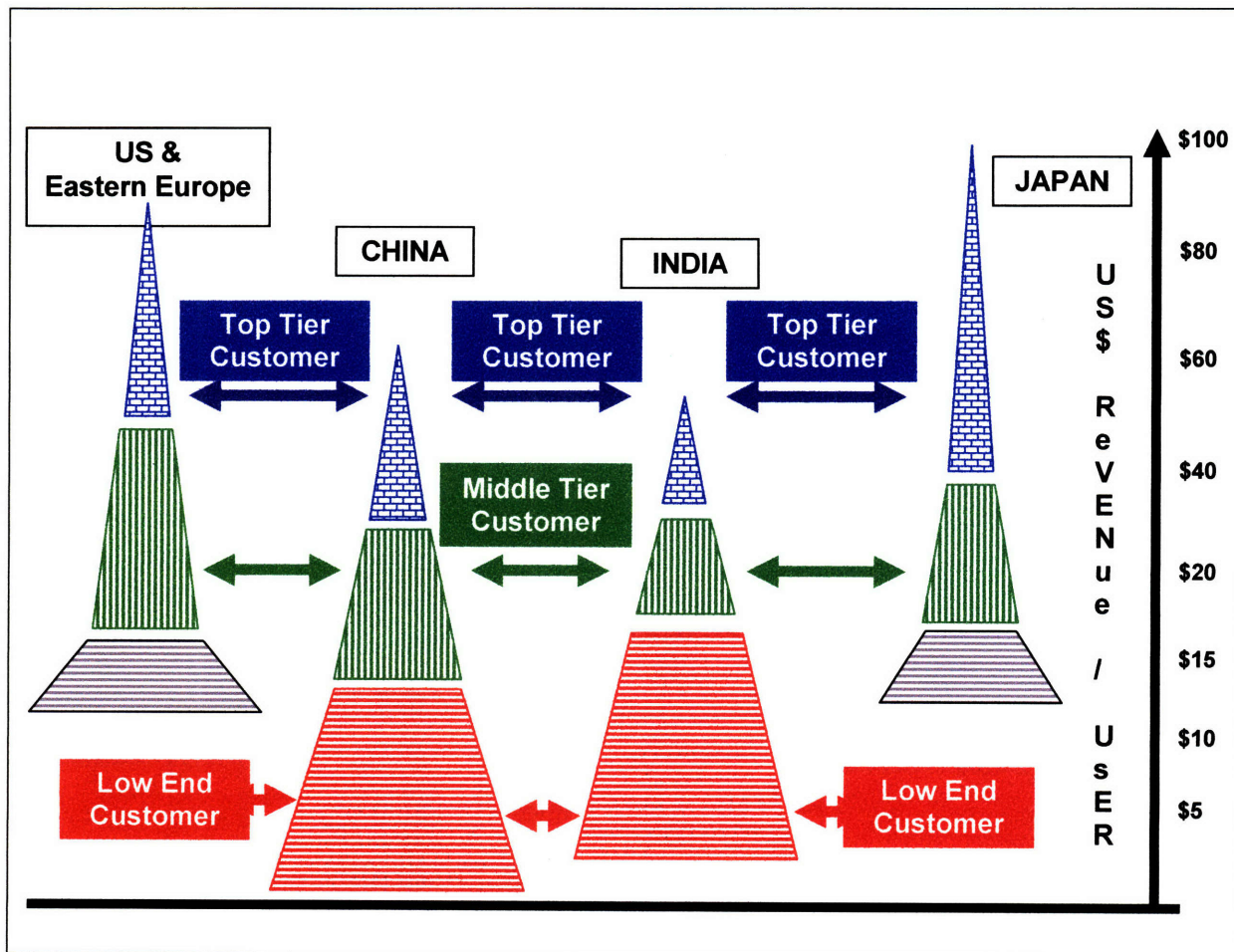
Figure 3.11: ARPU (Average Revenue per User) Distribution of Global Telecom Industry <sup>15</sup>

<sup>15</sup> GSM Organization, ITU and UN ICT Report 2006

### 3.6 Global Telecom User Triangle Pyramid:

Depending on the buying power and ARPU (Average Revenue per User) expenditure – world telecommunication market could be divided into three tiers.

1. Top Tier Customers ( Higher ARPU = \$50 +)
2. Middle Tier Customers (Medium ARPU = \$20 - \$50)
3. Lower Tier Customers (Lower ARPU = \$1 - \$20)



**Figure 3.12: Global Telecom Users Triangle Pyramid (ARPU Expenditure)**

When I looked into these numbers in more detail and conducted a careful analysis of end user characteristics (as per the services and feature they use and the amount they spend) – one very interesting and intriguingly important aspect was discovered. In each and every economy, all three different market tiers do exist.



The percentage of each market tier varies a lot between developed economies and emerging economies. However, when economies of scale are added into the context, financially both markets turned out to be similar; in cases - even with substantial risk factors - emerging markets seem to be more lucrative than that of developed countries.

In recent times, global telecom operators are observing this market trend very closely and depending on scale of economy, number of population – these companies are de-investing or consolidating from developed markets and investing in developing market. (eg. Recently Vodafone global sold their equity and withdrew from Japan, Switzerland and Belgium market. Whereas, during the same time – Vodafone bought and is still investing heavily in emerging economies of Asia-Pacific & Eastern Europe (eg. India, Turkey, Czech Republic).

**Key Findings:**

- Emerging economies are becoming stronger day by day.
- Emerging economies' buying power is increasing substantially.
- Supporting industries in these economies are developing at a rapid pace.
- All three market tiers (High, Medium, Low) do exist in these developing nations.
- Global Companies are getting increasingly interested in emerging economies and investing heavily in these economies even after - knowing the all the risk factors.
- Global telecom equipment vendors are paying much more attention to emerging economies than ever before. They are even developing new products and spending huge amount of their R&D budgets for specific products & services, which are designed specially for emerging markets only.

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## PART III. ANALYSIS

### Chapter 4

#### CASE STUDY – GLOBAL TELECOM OPERATORS

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In this chapter, I will focus on a few (eight) key global, regional and national telecom service providers who are playing a pivotal role in worldwide telecom industry. To understand the global business dynamics of this industry better – following operators have been chosen from different demographics. Global footprints, worldwide market share, total number of subscribers, annual revenue earning and net profit as well as several operational & technological aspects were taken into consideration in choosing these operators. The eight operators are:

1. **Vodafone** – UK-based, global operator with more than 210 million subscribers, having presence in more than 50 countries worldwide through direct equity & partner network. It is the largest telecommunications operator by turnover.
2. **Telenor** – Norway-based, multinational operator, having strong regional presence in Asia Pacific and Russian peninsula with more than 133 million subscriber base.
3. **Orascom** – Egypt-based, the first African multinational operator, with strong presence in Middle East & South East Asia with a very aggressive & innovative business strategy.
4. **SingTel** – Singapore-based, market leading multinational operator in Asia Pacific.
5. **America Movil** – Mexico based, the fastest growing multinational operator in S.America.
6. **AT&T** -The largest telecom operator in US with 100 Million + subscriber base.
7. **Reliance** - One of the largest & technologically most innovative Indian telecom operator.
8. **China Mobile** – China based, world’s largest telecom operator in terms of subscriber numbers (362 Million as of Q3’ 2007).



**Vodafone's Group Plc. Global Operation:**

<b>Country</b>	<b>Percentage of Ownership</b>	<b>Total Number of Subscriber</b>
<b>Western Europe</b>		
Germany	100.00 %	32,541
Italy	76.90 %	22,407
Spain	100.00 %	15,473
UK	100.00 %	17,959
Ireland	100.00 %	2,217
Portugal	100.00 %	4,957
Netherlands	99.90 %	3,892
<b>Eastern Europe</b>		
Albania	99.90 %	1,075
Czech Republic	99.90 %	2,582
Greece	99.80 %	5,346
Hungary	100.00 %	2,212
Malta	100.00 %	3,892
Turkey	99.90 %	15,709
Poland	19.60%	2,617
<b>Asia, Middle East &amp; Africa</b>		
Australia	100.00 %	3431
Egypt	50.10 %	12,186
Fiji	49.00 %	154
Kenya	35.00 %	3,183
South Africa	35.00 %	15,783
India	97.00 %	35,658
New Zealand	100.00 %	2255
<b>Associates &amp; investments</b>		
USA (Verizon)	44.40 %	28,664
Other		21,560
Total No Subscriber		210,413

**Table 4.1: Vodafone's Group Plc. global operations and worldwide subscriber numbers**

**Table 4.2: Vodafone Group Plc. Annual Financial Report (In Million – British Pound £)**

<b>Financial Year</b>	<b>2007</b>	<b>2006</b>	<b>2005</b>	<b>2004</b>
Total Revenue	31,104	29,350	26,678	32,741
Cost of Goods Sold	18,725	17,070	15,800	19,337
Gross Profit	12,379	12,280	10,878	13,404
Operating Income	6,799	7,003	6,373	(5,070)
Net Income	(5,426)	(21,916)	6,410	(9,015)
Free Cash Flow	6,194	6,427	7,847	8,521

(Source: Vodafone Group Annual Report 2007 & Business Week Online)

**Key Findings Regarding Vodafone Group’s Corporate & Global Strategy:**

Vodafone is recognized for its superior customer services and technological innovation. It’s the largest telecom service provider company in the world. When a company becomes as large as Vodafone; typically starts to slow down and become more resistant towards policy change or corporate restructuring. However, Vodafone is just the opposite. Vodafone has not only expanded its business and global footprints at a fascinating rapid pace during last five years, but also restructured the company as necessary. Vodafone also followed the market trends & technology shifts very closely and adopted necessary changes into their corporate strategy. Initially, during early 2000’s Vodafone corporate strategy under the CEO *Mr. Christopher Gent*, was to expand the market footprints in developed market (Europe, USA and Japan). During Mr. Gent’s tenure as CEO, Vodafone began to pursue this goal and succeeded in large scale M&A in those targeted countries, such as: AirTouch (Verizon) in US, Mannesmann (Vodafone DE) in Germany, j-Phone in Japan and a quite a lot more. Till today, the purchase of Germany’s Mannesmann is the largest ever M&A in telecom industry.

In early 2003, Vodafone went through a major corporate restructuring and appointed Mr. Arun Sarin as the new CEO. During 2003, 2004, 2005 – 3G technology was the most talked about technology in telecom industry and Vodafone invested heavily on 3G in developed economy. 3G investment return was not up to the expectation in the whole industry and Vodafone was no exception to that. This happened primarily - due to poor market performance of 3G, ever increasing competitions in developed markets and new opportunities of emerging markets. During May 2006, the executive management of Vodafone group sat down and evaluated – all the new technologies and prospects of further global expansion. During the conference, *Sarin* made it very clear that for future global expansion and business growth:

- Vodafone has to tap into the potential of emerging market for future growth.
- Vodafone has to consolidate its market in (EU, US, Japan)

As a result, Vodafone global sold their 100 % equity of their Japanese operation to softphone and withdrew from Japan market. They also sold 25% of equity of Vodafone's Switzerland and Belgium operation. Whereas, during the same time – Vodafone started investing heavily in emerging economies of Asia-Pacific, Africa and Eastern Europe. Since 2006, Vodafone bought MobiFon. S.A of Romania, Oskar Mobil of Czech Republic, Telsim of Turkey, Vodacom of South Africa and last but not the least, Hutchison Essar of India, which they renamed as Vodafone India.

These market consolidations and new acquisitions proved – the characteristics of a true global company like Vodafone's commitment towards emerging markets and importance of these economies. Recently, Vodafone group announced that they are very happy with the performance of new acquisitions in emerging markets and they will aggressively pursue further M&A and business expansion opportunities in these emerging economies.



telenor

Telenor started its operation in 1855, as a state owned Norwegian Telegraph Company. Telenor was formally known as “Telegrafverket”. Telenor headquarter is located in Oslo, Norway. Till late 90’s Telenor business was focused around Scandinavian regions. Since early 2000’s Telenor started its global expansion with particular focus at Asia Pacific. Later on, they also expanded their business horizon to Eastern Europe and Russian peninsula. In recent times, Telenor has emerged as one of the fastest growing Telecommunications services providers, covering three continents (Nordic, Russia & Eastern Europe and Asia Pacific) and 12 countries with its wireless communication service. Telenor also provides fixed, broadband and terrestrial TV services at Nordic region. As of September’2007, Telenor had 133 Million worldwide mobile & fixed network subscribers. A brief summary of Telenor’s global operation is provided in the table below:

Country	Percentage of Ownership	Total Number of Subscriber
<b>Scandinavian</b>		
Telenor, Norway	100.00 %	1.8 Million
Telenor, Sweden	100.00 %	1.7 Million
Sonofon, Denmark	100.00 %	1.5 Million
<b>Eastern Europe &amp; Russian Peninsula</b>		
VimpelCOM, Russia	29.90 %	50.7 Million
Kyivstar, Ukraine	56.50 %	23.6 Million
Telenor, Serbia	100.00 %	2.9 Million
Pannon, Hungary	100.00 %	3.2 Million
Promonte, Montenegro	100.00 %	0.56 Million
<b>Asia Pacific</b>		
Grameenphone, Bangladesh	62.00 %	15.2 Million
Telenor, Pakistan	100.00 %	4.8 Million
DTAC, Thailand	73.20 %	14 Million
DiGi, Malaysia	49.00 %	6.5 Million
Others		6.54 Million
Total No Subscriber		133 Million

**Table 4.3: Telenor - global operations and worldwide subscriber numbers**



**Table 4.4: Telenor Group's Annual Financial Performance Overview: (In Million \$)**

<b>Financial Year</b>	<b>2006</b>	<b>2005</b>	<b>2004</b>	<b>2003</b>
Total Revenue	17,304	12,647	11,070	10,048
Cost of Goods Sold	4,178	2,689	2,988	2,379
Gross Profit	13,125	9,659	8,381	7,669
Operating Income	3,471	2,327	1,984	1,517
Net Income	3,024	1,452	1,157	866

(Source: Telenor Annual Report, Q3'2007 & Business Week Online)

**Key Findings Regarding Telenor Corporate & Global Strategy:**

- Telenor's corporate strategy is to be the market leader at home base (Nordic Region) and at rapidly growing emerging markets (Russia & Asia Pacific).
- Telenor intends to streamline their mobile & fixed network operations internationally by exploiting the benefits resulting from economies of scale and cross-border synergies.
- Management Control is essential for Telenor to benefit from cross-border synergies, such as scale in global procurements, to develop new services, to implement best practices, to improve operational efficiency and to increase overall profitability.
- Telenor intends to manage their non-strategic investments as financial investments and prefers to exit from international mobile operations where they cannot obtain control over time.



Orascom Telecom Holding S.A.E. ("Orascom Telecom") or ("OTH") was established in 1998 in Egypt and very aggressively expanded its operation regionally to become a major player in the Middle East, African and South East Asian telecommunication market. Orascom Telecom is a subsidiary of Orascom Holding Group, which is the first multinational company of Egypt. Orascom is owned and led by a dynamic leader and one of most influential businessman in Middle East - Mr. Naguib Sawiris OTH is considered as one of most diversified and fastest growing telecom network operators in the Middle East, Africa and South East Asia. Orascom Telecom is operating in seven emerging markets covering a population of 460 millions in total with an average teledensity of 29% only. Orascom Telecom currently operates in - Algeria ("Djezzy"), Egypt ("Mobinil"), Pakistan ("Mobilink"), Iraq ("IRAQna"), Bangladesh ("Banglalink"), Tunisia ("Tunisiana") and Zimbabwe ("Telecel Zimbabwe"). As of September'2007, Orascom had 68.6 Millions subscribers. A brief summary of Orascom operation is provided in the table below:

<b>Country</b>	<b>Percentage of Ownership</b>	<b>Total Number of Subscriber</b>
<b>Middle East, Africa and South East Asia</b>		
Algeria (Djezzy)	96.81 %	12 Millions
Bangladesh (Banglalink)	100.00 %	5.2 millions
Pakistan (Mobilink)	100.00 %	26.5 Millions
Tunisia (Tunisiana)	50.00 %	3.2 Millions
Egypt (Mobinil)	34.66 %	11.9 Millions
Iraq (Iraqna)	100.00 %	2.8 Millions
Hutchison Global (HTIL)	19.3 %	7 Millions
<b>Total No Subscriber</b>		<b>68.6 Million</b>

**Table 4.5: ORASCOM Telecom - global operations and worldwide subscriber numbers**

**Table 4.6: Orascom Telecom – Annual Financial Report: (In Millions – British Pound £)**

<b>Financial Year</b>	<b>2006</b>	<b>2005</b>	<b>2004</b>	<b>2003</b>
Total Revenue	25,326.6	18,730.7	12,183.2	6,476.0
Cost of Goods Sold	8,642.9	6,453.6	3,007.9	1,603.0
Gross Profit	16,683.8	12,227.0	9,175.3	4,873.0
Operating Income	8,196.4	5,761.0	4,253.9	1,490.0
Net Income	4,208.0	3,944.8	1,961.2	711.8

(Source: Orascom Annual Report, 2007 & Business Week Online)

**Key Findings Regarding Orascom Telecom’s Corporate & Global Strategy:**

- Orascom Telecom corporate strategy is to establish itself as the market leader (either number 1 or 2) and be the first mover in emerging markets [even if there are substantial risks involved – eg: Orascom launched first telecom network in Iraq (Iraqna Telecom) within 4 months fall of Saddam].
- Orascom already earned the reputation as a very aggressive telecom company, which is capable of building green-field telecom networks very fast and they have proved to be very effective in M&A, which currently serves 460 Millions people in emerging markets covering South East Asia, Middle East and Africa.
- Orascom sets the short-term and long-term financial goals for each of their subsidiaries individually. If they fulfill their business goals and reach the financial targets – Orascom stays in business in the specific country. If they don’t – Orascom sells the license and gets out of that country pretty quickly.
- Orascom core business focus is on - centralized global procurement through frame agreement, whereas – they strive to be local brand in sales & marketing.



*asia's leading communications company*

In 1879, three years after Alexander Graham Bell invented the telephone, Singapore started a 50 line telephone exchange, the very first phone service in the East. Since then, for last 128 years – SingTel is providing telecom services and has played an integral part in the development of Singapore as a major communications hub in the region. Over the years, SingTel has grown to be a global player with a strong regional heritage. With one of the most extensive and advanced telecommunications infrastructure, the SingTel offers unparalleled reach in Asia Pacific and beyond. SingTel was incorporated in March 1992 and became a public company in October 1993. SingTel’s other major investments in the region include Advanced Info Service (AIS) in Thailand, the Bharti Telecom Group in India, Globe Telecom in the Philippines, Pacific Bangladesh Telecom (PBTL) in Bangladesh, Telkomsel in Indonesia and Warid Telecom in Pakistan. As of June 2007, SingTel has more than 147 million subscribers in eight markets in Asia Pacific. This is the largest mobile customer base in Asia outside of China. A brief summary of SingTel operation is provided in the table below:

<b>Country</b>	<b>Percentage of Ownership</b>	<b>Total Number of Subscribers</b>
<b>Asia Pacific</b>		
Australia (Optus)	100.00 %	6.02 Millions
Bangladesh (Citycell)	45.00 %	1.30 Millions
Hongkong (APT)	20.30 %	Satellite Service
India (Bharti)	30.50 %	44.7 Millions
Indonesia (Telkomsel)	35.00 %	42.8 Millions
Thailand (AIS)	21.40 %	22.7 Millions
Philippines (Globe)	44.50 %	18.1 Millions
Pakistan (Warid)	30.00 %	10.6 Millions
Singapore (SingTel)	100.00 %	1.69 Millions
Total No Subscriber		147.91 Millions

**Table 4.7: SingTel’s - global operations and worldwide subscriber numbers**

**Table 4.8: SingTel's Annual Financial Overview: (In Millions – US \$)**

<b>Financial Year</b>	<b>2007</b>	<b>2006</b>	<b>2005</b>	<b>2004</b>
Total Revenue	9,205.8	9,196.9	8,831.9	8,396.3
Cost of Goods Sold	3,879.0	3,908.0	5,606.0	5,437.1
Gross Profit	5,326.8	5,288.8	3,226.0	2,959.2
Operating Income	1,686.3	1,723.3	1,887.2	1,230.7
Net Income	2,645.2	2,914.3	2,287.9	3,139.4

(Source: SingTel Financial Report, 2007 & Business Week Online)

**Key Findings Regarding SingTel Group's Corporate & Global Strategy:**

- SingTel core corporate strategy is: “To be the regional market leader of Asia Pacific - both from business (number of subscribers, earning & profitability) and technological innovation point of view.”
- SingTel is committed to and very much focused on maintaining the market leadership in local (Singapore) market. Most new technologies and innovative services are being implemented first at SingTel, Singapore. Afterwards, depending on market responsiveness – “go or no go” decision is being made for the implementation of any particular service for rest of the subsidiaries.
- SingTel owns a few satellites and has an extensive intercontinental submarine cable networks. It has direct interconnectivity with more than 100 countries worldwide. SingTel also has offices in 38 major cities throughout US, Europe and Asia Pacific. Because of this vast network infrastructures and global presence, SingTel intends to act as the gateway of emerging markets of Asia to rest of the world.



**América Móvil** is the largest telecom network operator

as well as the largest multinational company in Latin America. América Móvil is a publicly traded telecommunications company, founded in Sep'2000 as a result of a spin-off from Telmex. At present, América Móvil provides wireless services to over 137 million and fixed services to more than 3.8 Million subscribers throughout the Americas, covering 16 countries and 770 million people. The company is a venture of a famous Mexican entrepreneur, *Carlos Slim Helu*, the richest person in the world according to Mexican financial wealth with an estimated fortune of US\$67.8 billion. Teledensity (fixed and wireless penetration) in Latin America has increased significantly from 13% (Sep'2000) to 55% (Sep'2007) since América Móvil started its business expansion in this region. On February 25, 2007, it became the biggest corporation in Latin America by market capitalization, surpassing giants like Petrobras. A brief summary of América Móvil operation is provided in the table below:

<b>Country</b>	<b>Percentage of Ownership</b>	<b>Total Number of Subscribers</b>
Mexico (Telcel)	100.00 %	46.1 Million
Argentina (CTI Movil)	100.00 %	11.6 Million
Brazil (Claro)	100.00 %	26.2 Million
Chile (Claro)	100.00 %	2.6 Million
Colombia (Comcel)	99.20 %	20.6 Million
Dominican Republic (Claro)	100.00 %	2.3 Million
Ecuador (Concel)	100.00 %	6.2 Million
El Salvador (Claro)	95.80 %	1.4 Million
Guatemala (Claro)	99.10%	2.9 Million
Honduras (Claro)	100.00 %	0.92 Million
Nicaragua (Claro)	99.30 %	1.4 Million
Paraguay (CTI Movil)	100.00 %	0.44 Million
Peru (Claro)	100.00 %	4.3 Million
Uruguay (CTI Movil)	100.00 %	0.59 Million
United States (Tracfone)	98.20 %	8.5 Million
<b>Total Subscribers</b>		<b>137 million</b>

**Table 4.9: America Movil's - global operations and worldwide subscriber numbers**

**Table 4.10: América Móvil Annual Financial Overview: (In Millions – US \$)**

<b>Financial Year</b>	<b>2006</b>	<b>2005</b>	<b>2004</b>	<b>2003</b>
Total Revenue	21,079.9	17,057.7	13,038.6	8,407.1
Cost of Goods Sold	9,841.0	8,450.8	6,329.9	3,665.9
Gross Profit	11,239.0	8,606.9	6,708.7	4,741.2
Operating Income	5,294.5	3,184.5	2,242.3	1,732.7
Net Income	3,853.5	2,867.2	1,613.1	1,470.4

(Source: América Móvil Financial Report, 2006 & Business Week Online)

**Key Findings Regarding América Movil's Corporate & Global Strategy:**

- América Móvil core corporate strategy is to drive telecommunication growth and wireless penetration rate in Latin America & solidify its market leading position regionally.
- América Móvil already established itself as a very aggressive telecom company, which is very much capable of building brand new green-field telecom networks very fast. It has proved to be very efficient in Merger & Acquisition to provide state of art - next generation telecom services to 770 Millions people in Latin America and Caribbean.
- América Móvil is committed to in building common network platform based on GSM technology (Unlike other telecom service providers in the region, who primarily use CDMA technology) to gain the benefit of cross-borders synergies, such as scale in global procurement, to develop new services, to implement best practices, to improve operational efficiency and to increase overall profitability.



AT&T (American Telephone & Telegraph) was found in 1885. AT&T

is the largest provider of both local and long distance telephone services, wireless service and broadband Internet service in the United States. For the global hosting and application services - AT&T is one of the world market leaders with a huge transatlantic & transpacific intercontinental optical fiber backbone. As of Sep'2007, AT&T has 67.3 Million wireless subscribers and served approximately 25 million fixed line subscribers, 17 million retail business subscribers, and four million enterprise subscribers, for a total of 46 million access lines.

Since its birth, AT&T went through several phases of corporate re-structuring and Merger & Acquisition. At its peak, AT&T employed around one million people. Currently, AT&T is headquartered at San Antonio, Texas and has offices in 20 key markets (both in developed and emerging markets) in 27 countries worldwide. The following picture provides an overview of AT&T's historic re-structuring and Merger & Acquisition phases:

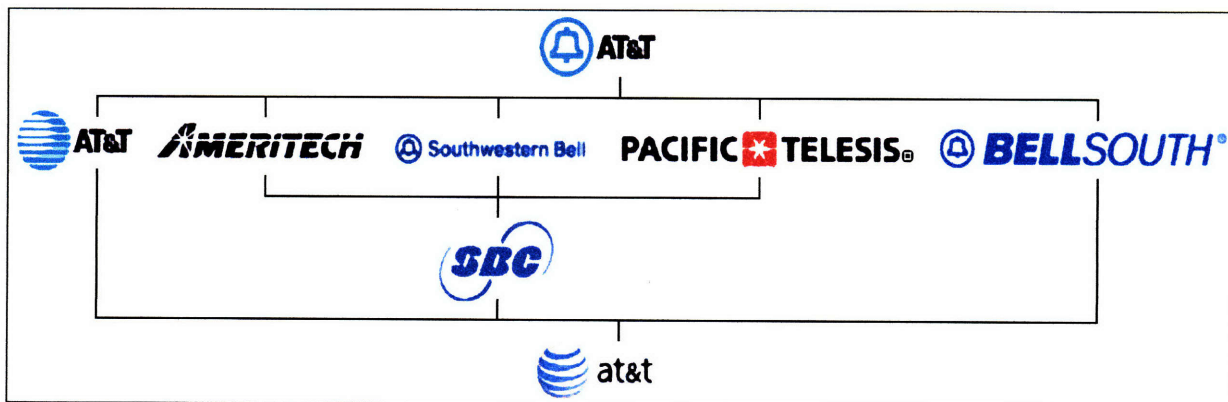


Figure 4.2: Historic Transformation of AT&T <sup>16</sup>

<sup>16</sup> AT&T Online Library – The History of American Telephone & Telegraph



**Table 4.11: AT&T's Annual Financial Performance Overview: (In Millions – US \$)**

<b>Financial Year</b>	<b>2006</b>	<b>2005</b>	<b>2004</b>	<b>2003</b>
Total Revenue	63,055	43,764	40,733	40,498
Cost of Goods Sold	27,120	18,814	17,361	16,857
Gross Profit	35,935	24,950	23,372	23,641
Operating Income	10,640	7,825	5,901	6,284
Net Income	7,356	4,786	5,887	8,505

\* (Source: AT&T Financial Report, 2006 & Business Week Online)

**Key Findings Regarding AT&T Inc. Corporate & Global Strategy:**

- AT&T's core corporate strategy is to be the market leader in USA in every market segment of telecommunication services. (eg: wireless, fixed, enterprise, cable TV, broadband internet)
- AT&T's global strategy is to provide hosting and application services worldwide and be the global market leader in this segment. In recent times, AT&T is paying very particular interest to emerging markets and setting up offices in a few of those markets (eg: Dubai, Singapore, India). AT&T also intends to connect all the major emerging countries with the developed countries through their under sea intercontinental optical fiber cable.
- Even though AT&T is one of the largest telecom companies at home and worldwide by subscriber numbers and market capital; but unlike others (eg: British Telecom or Deutsche Telecom) – AT&T, so far did not show keen interest in buying operating licenses in overseas markets to expand their fixed or mobile business globally.

*“Make the tools of information and communication available to people at an affordable cost. They will overcome the handicaps of illiteracy and lack of mobility... if a telephone call could be made cheaper than a postcard, it would transform every home, empower every Indian, remove every obstacle to opportunity and growth, and tear apart Indian poverty....  
**Dhirubhai H. Ambani, Founder of Reliance Group”***

Reliance Communication was founded in 1999 based on the above mentioned value of Reliance Group founding father Mr. Dhirubhai Ambani. The company is rated among Asia's Six Topmost Valuable Telecom Companies. Reliance Communications is India's foremost truly integrated telecommunications service provider. The Company, with a customer base of over 36 million including close to one million individual overseas retail customers, ranks among the top ten Asian Telecom companies. Reliance Communications' corporate clientele includes 600 Indian and 250 multinational corporations, and over 200 global carriers.

Reliance Communication provides a wide range of telecom services, fixed, mobile and broadband internet. The company has established a pan-Indian, next generation, convergent (voice, data and video) digital network that is capable of supporting best-of-class services spanning the entire value chain, covering over 7500 towns and 300,000 villages throughout India. Reliance Communications owns and operates the world's largest next generation, IP enabled intercontinental undersea connectivity infrastructure, comprising over 150,000 kilometers of fiber optic cable systems in India, USA, Europe, Middle East and the Asia Pacific region.

**Table 4.12: Reliance COM's Annual Financial Overview: (In Millions – Indian Rupee)**

<b>Financial Year</b>	<b>2007</b>	<b>2006</b>	<b>2005</b>	<b>2004</b>
Total Revenue	144,698	-	176.8	-
Cost of Goods Sold	54,437	-	5.5	-
Gross Profit	90,261	-	171.3	-
Operating Income	32,770	-	118.1	-
Net Income	31,279	-	75.4	-

\* (Source: Reliance Communication Financial Report, 2006 & Business Week Online)

**Key Findings Regarding Reliance Communication Corporate & Global Strategy:**

- More than one sixth of world populations (around 1.4 billion) live in India. Average teledensity in India is around 22%. However, this rate of teledensity is unbelievably low in rural India, just around 2.4%. Like many other industry segments, Indian telecom sector has witnessed a phenomenal double digit growth in last 3-5 years, which is still continuing. Reliance Communication is one of the main pioneers behind this growth. At present, Reliance core corporate strategy is to maximize their network coverage through out Indian and establish itself as the market leader of India in all three (mobile, fixed, broadband) market segments.
- Reliance intends to establish itself as the world's leading company to provide "Back Office Business Solution" (at present they are serving 250 multinationals corp.)
- Reliance owns one of the world's largest IP-based (150,000 kilometers) optical fiber network which connects India with US, Europe, Asia and Middle-East. By utilizing this state of the art infrastructure, Reliance wants to establish itself as the world leading International Long distance Voice & Data Carrier (ILVD).



China Mobile is the world's largest telecommunications operator in terms of network scale and subscriber base, providing telecommunications services to all 31 provinces of mainland China. China Mobile Limited (the "Company", together with its subsidiaries, "China Mobile") was incorporated in Hong Kong on 3<sup>rd</sup> September 1997. The Company was listed on the New York Stock Exchange and The Stock Exchange of Hong Kong Limited on 22 October 1997 and 23 October 1997, respectively. As of Nov' 2007, China Mobile provides telecom services to more than 362 Million subscribers.

Since its establishment, China Mobile has been growing rapidly at a double-digit compound annual growth rate in terms of revenue and subscriber growth. According to Chinese Govt. statistical estimates, the value generated by China Mobile amounted to 1.1% of China's GDP for 2003 to 2005. For 2003 to 2005, the national economic demand driven by China Mobile was continuously above 2.2%. The value of China Mobile has effectively driven the macro economy. China Mobile also plays a leading role in accelerating the development of China's telecommunications industry, jointly establishes the prominent position of China's information industry in the global telecommunications industry and enhances the whole industry's competitiveness in the global market.

As of May 31, 2007, 74.46% equity interest of China Mobile Ltd is held by the state through intermediate holding companies. Meanwhile, UK-based Vodafone Group held 3.21% of China Mobile Ltd's. The remaining equity interest of approximately 25.43 % of the Company was held by the public investors.

**Table 4.13: China Mobile Annual Financial Overview: (In Millions – Chinese Yuan ¥)**

<b>Financial Year</b>	<b>2006</b>	<b>2005</b>	<b>2004</b>	<b>2003</b>
Total Revenue	295,358	243,041	192,381	158,604
Cost of Goods Sold	21,234	18,533	15,933	17,782
Gross Profit	273,124	224,508	176,448	140,822
Operating Income	94,782	79,331	63,449	52,022
Net Income	66,026	53,549	41,749	35,556

\* (Source: China Mobile Financial Report, 2006 & Business Week Online)

**Key Findings Regarding China Mobile Corporate & Global Strategy:**

- More than one sixth of the world's population (around 1.5 billion) lives in mainland China. Average teledensity in China is around 25.2%. However, this rate of teledensity is pretty low in rural China, just around 12.5%. Like many other industry segments, Chinese telecom sector has witnessed a phenomenal double digit growth in last 5 – 7 years, which is still continuing. China Mobile is the main pioneer behind this growth. However, many parts of rural China still do not have the access to telecom services. At present, China Mobile's core corporate strategy is to reach these rural populations and to help the country to reduce the digital divide between urban & rural China.
- Since last year, China Mobile started looking for overseas expansion possibility. Very recently, they successfully bought PakTel (Pakistan Telecom) and at present bidding for a few other operators and new licenses in different countries. This year, China Mobile management also expressed their strong intention to pursue global business expansion in emerging markets around Asia, Middle East & Africa.

#### 4.9 Key Findings from Case Study Analysis of Global Telecom Operators

From the forgoing discussions and global market trends, it appears that, at present there are three different types of global-scale telecom business models existing:

- **Truly Global Telecom Service Providers** (Eg: Vodafone)
  - **Global-Regional Telecom Service Providers** (Eg: SingTel, Orascom)
  - **Strong Local Telecom Service Providers** (AT&T, China mobile, Reliance)
- **Truly Global Telecom Service Providers:** (eg: “Vodafone”), These firms seek to be the global market leader in terms of global footprint, subscriber number, total revenue earnings, profitability and net income. For Vodafone, the economic conditions in individual national markets and its overall scale appear to be – equally important. In recent times, along with developed markets - Vodafone is paying very close attention to emerging markets. For example, in last few quarters – Vodafone is de-marketing (eg: Recently Vodafone sold their 100% equity and withdrew from Japanese market. And sold 25% equity stake of its Switzerland and Belgium operation). In contrary, Vodafone is very keen in finding appropriate opportunities in emerging markets currently and when they could find the right ones, they are investing aggressively in buying those new licenses or acquiring existing companies in those markets. (Eg. Vodafone recently bought Hutchison Essar in India, Telsim in Turkey, Oskar in Czech Republic, MobiFon in Romania).

➤ **Global-Regional Telecom Service Providers:** (Eg: SingTel, America Movil, Orascom, Telenor, etc) This group of Global-Regional operators are playing a pivotal role in global expansion of telecom industry and reducing the digital divide in between developed and emerging markets worldwide. SingTel, America Movil, Orascom, Telenor - all of these operators have one thing in common – they are very strong in their own home base. They had generated hefty cash flow from their local operation and have solidified their financial condition before they started their international business expansion. Next thing, which is intriguing and very important, is that – all these Global-Regional groups of operators have tried to expand their business regionally, mostly in emerging markets. Such as, America Movil, for example, is based in Mexico and currently operating in 16 South American countries. They have established themselves as the telecom power house in that region. SingTel is technologically very innovative and financially very strong company. SingTel is based in Singapore and all of their subsidiaries are located around Asia Pacific.

➤ **Strong Local Telecom Service Providers:** (eg: AT&T, China Mobile, Reliance Communication India), these are the market leading companies at their respective local markets. China & Indian together account for more than one third of world population. Moreover the teledensity in China and India are pretty low, 25.2 % & 22%. So, both these two markets – still have a huge growth potential. At present, China Mobile and Reliance Communication are primarily focusing developing their local markets. For, AT&T – it's little different. US is one of the most

developed markets, where teledensity is around 81%. However, AT&T believe still local market could grow 8% -12% more. There are lot more opportunities to bring new technologically innovative services in USA. At present, all IP based next generation technologies; enterprise services, global hosting and application services are bringing them substantial revenues. Due to these factor conditions, AT&T intends to focus on developing these new technologies in local market and establish itself as the market leader in all business segments (Wireless, fixed, enterprise, cable TV and broadband) of telecom industry.

**Key Findings:**

From the above analysis of global telecom operators, it is pretty clear that emerging markets are becoming very important in recent times. They are playing a pivotal role in global business expansion plan of Global and Global-Regional telecom service providers. Scale of economies and depth & breath of these emerging markets are crucial for the future business growth & sustainability. Emerging markets have transformed the global business paradigm upside down. So long, these developing markets only followed the trends of developed markets, but now, a paradigm shift is taking place - they are setting the trends for the whole world.



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## **PART IV. The Global Role of Emerging Markets**

### **Chapter 5**

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In this chapter we will explore the extent to which mobile telecoms operators' activities in emerging markets are changing the global paradigm itself. We do so using two complementary frameworks, Porter's 'diamond' of competitiveness that focuses on the components of advantage that (operating in ) a country may have in a global industry and Lessard's RAT's test that addresses the extent to which business models developed in one country effectively travel to others. Taken together, these two frameworks help one to understand which countries are likely to be "generative" in terms of resources and business models in a globally integrated industry such as Telecoms. While there is little question that technologies and business models of the early stages of mobile telephony were developed in advanced countries and later diffused to emerging markets, it appears that this pattern is now being reversed. Not only are developing countries the targets of most telecoms investment, but also they increasingly are the places - where operators develop services and business models that they deploy throughout the world.

In regards to globalization, two questions have preoccupied international business scholars since the beginnings of internationalization, 'what are the benefits for local firms to go international?' and 'what makes it possible for multinational firms to exist?' On the first question, scholars have developed a more or less consensual categorization of the benefits that domestic firms reap by venturing beyond the borders of their countries of origin. These benefits, summarized by Dunning (1998), include access to new markets, and new pools of scarce resources, the possibility to more efficiently exploit the firm's tangible and intangible

assets, and the acquisition of strategic assets. Later, financially minded academics (Agmon and Lessard 1981; Lessard 1982) pointed out that by operating in multiple countries firms could significantly reduce the impact of economic, financial, operational, and political risk relative to the diversification benefits available to purely financial investors.

As stated by, *Lessard, D & Lucea, R* in 'Middle Out Multinational' - International firms expansion has been predominantly portrayed as a phenomenon led by firms located in economically and technologically developed countries in search for new markets, natural resources, knowledge leverage, and/or risk diversification. The general view has been that developed country multinationals were able to overcome these hurdles as a result of possessing better technologies, superior organizational processes, more financial power, or sounder home country institutions than their host country counterparts. During last 10 – 15 years, the emergence of multinational firms from emerging economies challenges the above mentioned classic theories.

In global telecommunication industry, a small but growing number of emerging economies multinational firms have been able to not only to grow their initial business in their home bases but also to expand their business regionally and in cases, became the dominant player & market leaders in different geographic regions. These emerging economies firms' competitive position vis-à-vis developed economies ones significantly improved over time. These firms from emerging economies are playing a pivotal role in expansion of global telecom industry worldwide, which in turns are reducing the digital divide between developed, developing and under developed world. These firms are not only providing telecommunication services to the richest people of the poorest or comparatively poor countries but also to the relatively poor people of the poorest or comparatively countries. *How and why* has this been happening, along with what are the supporting factors which facilitate this to happen – will be discussed in this chapter.

## 5.1 PORTER's Competitive Advantage of Locations Analysis:

The apparent paradox between the globalization of competition and a strong national or regional role in competitive advantage can be resolved by recognizing that the paradigm that governs the competition among locations has shifted from comparative advantage to the broader notion of competitive advantage. The competitive advantage of a location lies in the quality of environment it provides for achieving high and rising level of productivity in a particular field. Porter's competitive advantage of locations highlights four aspects of a national environment that defines the context for growth. Four aspects are as follows:

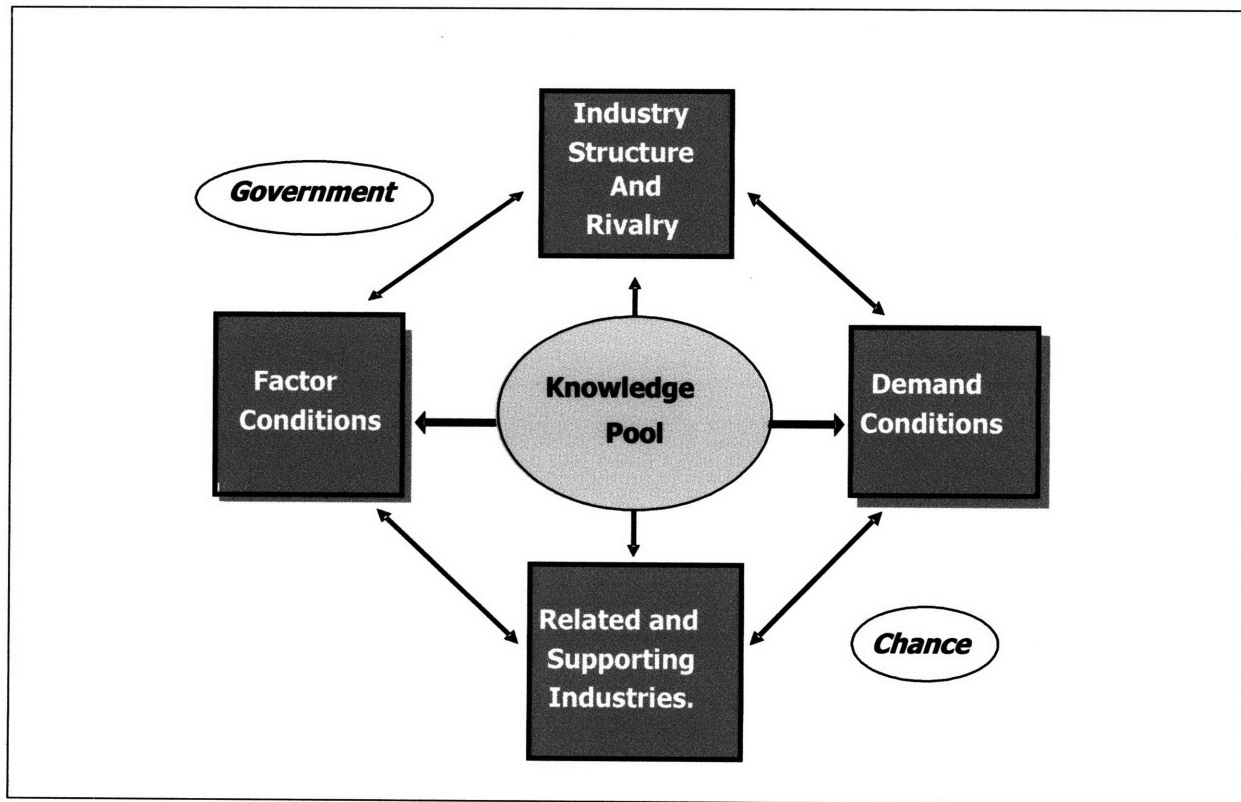
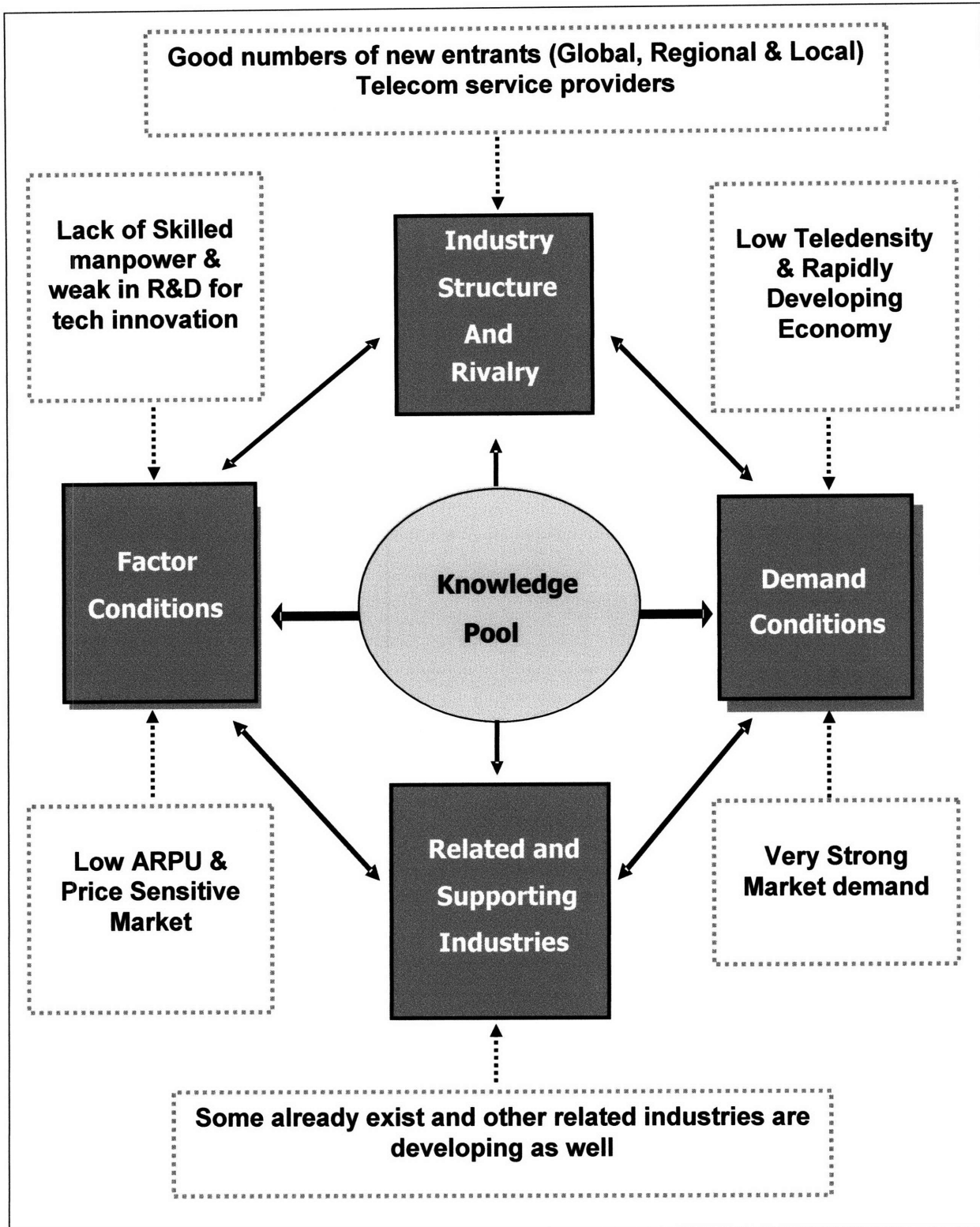


Figure 5.1: Michel Porter's – "The Competitive advantage of Nations"

– The Free Press 1990 –

**Porter's four attributes of nation's competitive advantages are:**

1. **Factor Conditions:** *The nation's position in factor of production, such as skilled labor, capital, physical infrastructure, commercial or administrative infrastructure, natural resources and scientific knowledge - necessary to compete in a given industry.*
2. **Context of Firm Strategy & Rivalry:** *The conditions in the governing nation – how companies are created, organized and managed, and the nature of rivalry. (eg: market development, R&D, tax system, intellectual property rule, etc)*
3. **Related & Supporting Industries:** *The presence or absence of supporting industries and related industries which are required and internationally competitive.*
4. **Demand Condition:** *The nature of home demand for the industry's product & services. Home demand conditions reflect local needs, sophistication levels, purchasing power and even cultural affinities for particular products.*



**Figure 5.2: Michel Porter's "The Competitive advantage of Nations"  
 - In regards to Emerging Markets**

From the above figure 5.2, Porter's competitive advantage model analysis – it is quite clearly evident that emerging markets fulfill almost all the requirements, only exception is factor conditions. At present, in some of the emerging economies – there are lack of skilled man power. Additionally, only few countries of these economies are good in technological R&D. It could be summarized as follows:

- ***Demand Condition:*** Two third of world population, more than 4 billion people currently lives in emerging economies. Day by day – economic conditions of these markets are improving, which is resulting in improvement of buying power. People are getting education and becoming skilled professionals. Besides that, historically these regions are lagging behind in technologies, so the teledensity remained fairly low in past in these countries. Due to all of above mentioned reasons, huge demand condition has been created in emerging markets for telecommunication services.
- ***Related & Supporting Industries:*** Related and supporting industries are rapidly developing in emerging markets. In some markets, already solid IT infrastructure has been built, which not only supporting local demands but also serving back office support centers for the developed nations.
- ***Firm Strategy, Structure & Rivalry:*** Last 5-7 years, a good number of new licenses have been issued by the regulatory authority of emerging nations. Some markets are already quite crowded and some are not. However, due to huge demand condition – still most of service providers in these emerging markets are doing fine. Still not much of rivalry has been witnessed and it is expected - current state of market will remain at least till 2010 to 2015. Afterwards, some market consolidations could be expected.

## **5.2 LESSARD's RAT's TEST:**

The key issue and most important aspect to expand telecommunication business to emerging markets is to investigate all the major attributes of both developed and developing markets and analyze all of their similarities and differences carefully. It is also pivotal to thoughtfully select an appropriate country or region as primary target in which it is possible to gain the most of their advantages.

Chapter 4 – case studies have provided us some very interesting as well as insightful pictures of how the firms in emerging economies are able to achieve and sustain their global competitive position even in the face of limited or waning home country-specific advantages. The idiosyncratic institutional and competitive conditions faced by emerging market firms strongly influence the shape and nature of the initial capability-set developed by these organizations. Under certain conditions, these capabilities may result in a source of international competitive advantage, making geographic expansion into more developed countries a possibility.

Lessard's RAT's (Relevant, Appropriable and Transferable) test examines the global growth possibilities and target market status from the following points:

- R – Similar customers, tastes, appeal?
- R -- Similar channels?
- A – Access to/power with channels, advisors?
- A – Will spillovers be valued?
- T - Have we done it before, does org. support?
- T – Do we have the competencies?



		<b>No</b>	<b>Yes</b>
<b>Platform</b>			
	<b>Yes</b>		
	<b>No</b>		
			<b>RAT's</b>

**Figure 5.3: Combined Chart of RAT's / Platform Analysis<sup>17</sup>**

To stretch and grow the existing business of home country - globally, in particular to emerging markets, companies are required to have a *Strategic Platform* which enables them not only to maintain their competitive advantages but also to reinforce their core competencies. The strategic platform could be defined by the following requirements:

- Countries/locations that strengthen core competencies
- Countries/locations that create or extend virtual diamond
- Countries/locations that facilitate development of capabilities that provides other access

Domestic country conditions play major role on the shape of the initial capability platform developed by a firm. The original capability platform allows emerging market firms to initially compete in their domestic markets. In addition, and to the extent that this capability platform travels well internationally, it will allow firms to expand beyond their country borders.

<sup>17</sup> Donald Lessard, "Managing Global/Regional Integration and Local Responsiveness" – lecture notes for 15.220 – Global Strategy class, 2007, Sloan School of Management, MIT

As stated by, *Lessard. D* in 15.220 – Global Strategy lecture three class notes and *Lessard. D & Lucea. R* in ‘Middle Out Multinational’, three conditions are necessary for this to happen. First, this domestically developed set of capabilities needs to be relevant to customers in other countries. That is, the value proposition that the firm is able to offer to customers in other countries has to be superior, in the aggregate, to other alternatives available these customers. Secondly, these capabilities need to be transferable across borders. This is not a trivial point since some operational processes, technologies and business practices may face strong political, regulatory or cultural barriers that severely constrain their adoption in other countries. Finally, the rents resulting from the exploitation of these capabilities in the foreign country need to be appropriable by the firm.

These three conditions—which make up the RATs test—will determine whether the original capability platform of any firm can travel well regionally or internationally. It is important to notice that they are country specific. That is, the capability platform of a particular company may pass the RATs test for a given country but not for another. In addition to passing the RATs test, firms soon discover whether internationalization for them is an imperative, a possibility or a distant trap. The most typical case of internationalization being an imperative is that of companies with small domestic markets. As for example, business models of telecommunications companies in Nordic countries (eg: Telenor – described in chapter 4) incorporated, almost from the beginning, a strong international perspective. However, internationalization can also be a trap in those cases where foreign markets require extreme localization. More often, though, the course to follow is more ambiguous and internationalization is a more or less clear option to follow. One of the most obvious sources of ambiguity stems from the uncertainty of properly evaluating foreign market opportunities and the relevance of one’s own capabilities abroad.

The last element of RAT's Test involves the transference of these locally developed new capabilities to the rest of the organization regionally or globally. In order to do so, it is necessary to establish formal and informal processes to evaluate the relevance, transferability and appropriability of the new capabilities to other markets – and indeed, to shape these emerging capabilities so that they will be relevant, appropriable, and transferable -- the RATs test in reverse. Next, it is necessary to integrate these new capabilities in a coherent manner within the original capability platform. And finally, there it is necessary to establish the mechanisms to diffuse these practices to the rest of the organization. It is in this continuous process of capability platform exploitation-enhancement-exploitation that the sustainability of the global or regional firm is built in. It is through this process of capability renewal that multinational firms are able to sustain their competitive advantage at home and abroad.

From the above discussion, it is clearly evident that, this dual attributes analysis provides important information regarding which markets would be suitable for global business expansion. Whether emerging markets have the characteristics and qualities to qualify for telecom business expansion. Using RAT's test, it is also possible to examine the competitive advantage and core competencies of different markets. To conduct the RAT's test for global telecom industry and to understand the possibility of emerging markets, let's assume that developed market (USA, EU & Japan) is the core standard. Based upon that, global telecom markets could be divided into four coherent groups. Each of the markets has three similar attributes, which are the key contributors for global telecommunication industry growth. The results of the above assessments can be combined and plotted as a matrix. Please refer to the following table 5.1 which shows different market segmentations of global telecom industry:

Category	Countries	Attributes and Status
Group 1	Africa	(a) Low Penetration rate but rapidly growing (b) Not Much Related Industry and Poor factor condition (c) IT business condition: weak
Group 2	South & East Asia South America Eastern Europe	(a) Medium Penetration rate and rapidly growing (b) Related Industries are growing (c) IT business condition: weak-moderate
Group 3	Middle East	(a) Medium-High Penetration rate and slowing growth (b) Related Industries are growing (c) IT business condition: moderate
Group 4	China, India, Russia	(a) Medium-Low Penetration rate and rapidly growing (b) Strong related Industries and developing further (c) IT business condition: Strong (growing fast)
Group 5	US, Western Europe, Japan	(a) Extremely High Penetration rate (Saturated) (b) Strong factor condition but shifting to other business (c) IT business condition: Strong

**Table 5.1: Classification of the global telecommunication markets**

It is clearly evident from the table 5.1 and 5.2 that in terms of strategic platforms, market matureness and teledensity - global telecom industry is divided into three major market segments. They are: (I) Developed markets - Group 5 (US, Western Europe and Japan); (II) Emerging markets – Group 2, 3 & 4 (Asia Pacific, Middle East & Eastern Europe) and (III) Under develop markets – Group 1 (Africa). Based upon the market categorization and platform analysis – RAT’s test overview could be summarized as follows:

Category	Group – 1 Africa	Group – 2 South East Asia South America Eastern Europe	Group – 3 Middle East	Group – 4 China India Russia
<b>R – Relevant</b>	No	Not Yet But closing	Yes	Not Yet Fastest Growth
<b>A – Appropriable</b>	Yes With restriction	Yes & Developing	Yes & Developing	Yes
<b>T – Transferable</b>	Yes	Yes	Yes	Yes

**Table 5.2: RAT’s Test result of Global Telecommunication Market**

From the above analysis in table 5.2, it could be highlighted that emerging market of Group 2 & 4, have remarkable market growth potential. All three aspects of RAT’s test (Relevant, Appropriable and Transferable) are somewhat applicable to these two regions. They have large population whose buying power is increasing significantly. Their economic conditions are rapidly improving and relevant supporting industries are developing pretty fast. These regions do have skilled engineers and benefited by affordable labor cost. Group 3 is following behind group 2 & 4 in terms of related industry development and availability of skilled manpower. However, they are trying earnestly to improve this situation. Group – 1 Africa, is also trying to develop their local market but still they are a distant way from group 2, 3 & 4. Group 1 – needs to establish socio-political stability at macro level and develop their supporting industry to be competitive at regional or global level. From the above mentioned discussion, there is no doubt that these emerging economies led by China and India will be the center of attraction for global telecom industry in coming years.

## Global Market Trends:

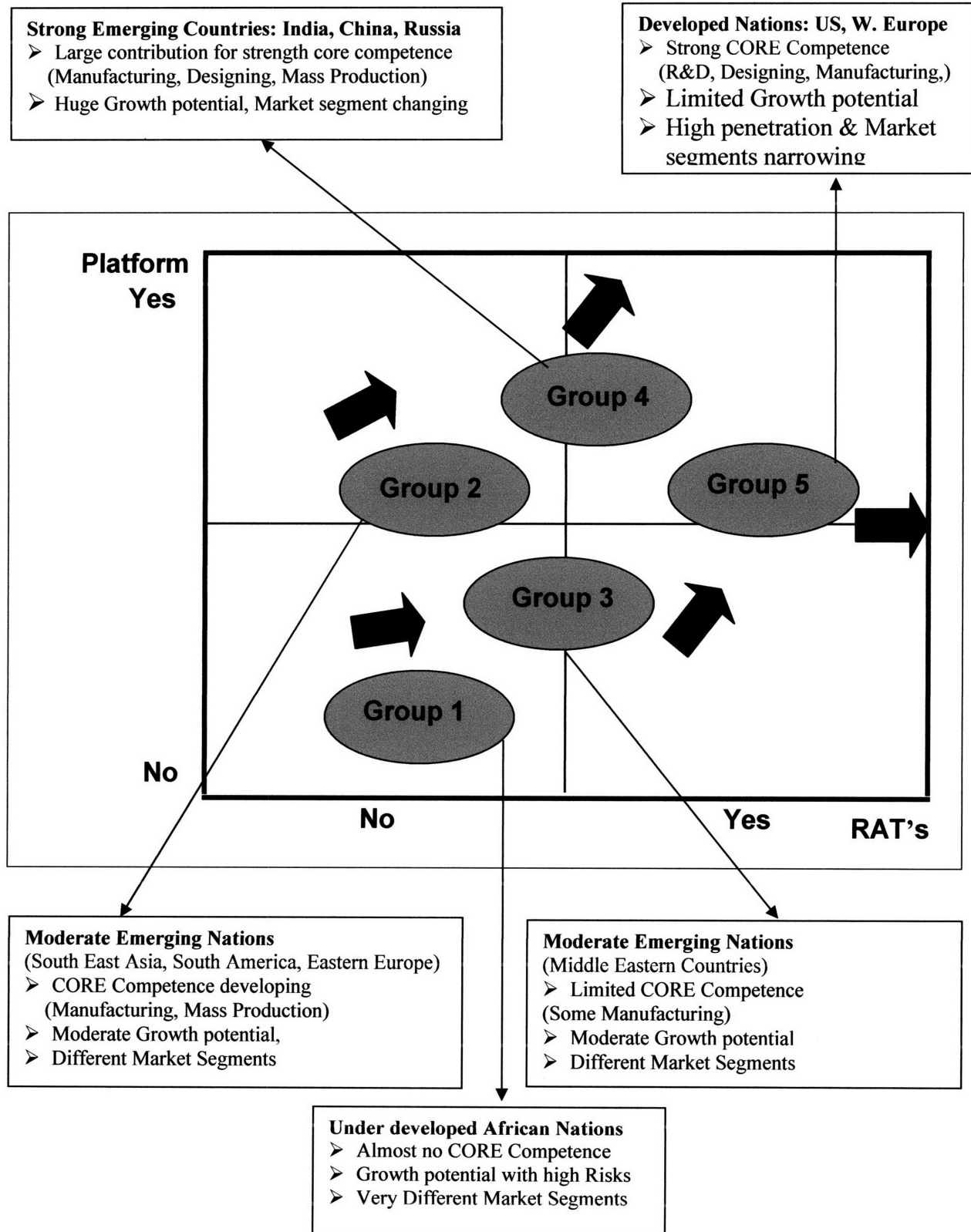


Figure 5.4: RAT's / Platform Analysis of Global Telecommunication Market

Group – 5 (US, Western Europe and Japan) markets have already reached at certain saturation level in terms of teledensity (around 84%) – (Figure 5.4). Strong regulatory conditions, stiff competition & price pressure from new business model service providers (eg: MVNO – skype, Google talk,) and due to merger & de-merger of market leading service providers – these markets are becoming stagnant during last two to three years. These markets are no more the only breeding grounds for new technologies and innovative services. From future financial investment point of view, Group 5 is expected to face strong competition from Group 2 & 4. Service innovation, rapid development and introduction of new applications will be the key factors to grow and sustain the telecommunication business in these developed markets (US, Western Europe and Japan) in coming years.

Especially, from the strategic platforms point of view (figure 5.4), emerging market of Group 2 & 4, have remarkable market potential. They have huge market growth opportunity, rapidly developing economic conditions, increasing market demands, skilled engineers, affordable manpower cost and relevant supporting industry development, etc. Due to all of the above mentioned factor conditions; at present – the fastest development of telecommunication industry is taking place in these regions.

Group – 1 (Africa), there is a huge growth opportunity in these markets. In last two years, world has witnessed a moderate amount of investment in few of the African countries. However, due to poor factor conditions and unstable macro economic & political situation – Group 1 (African) telecommunication markets growth will be comparatively much slower than those of Group 2, 3 or 4.(except few north African countries: Egypt, Algeria, Tunisia).

**Key Findings:**

According to the RAT's test and platform analysis, it is evident that most of the emerging markets are developing at a rapid pace and in some markets (China, India, Russian Peninsula, South East Asia) – already a remarkable business growth is taking place. Excellent factor conditions, skilled manpower, affordable labor cost, rapidly growing demand condition and increase of buying power are resulting in this phenomenal growth of telecom industry in these emerging markets. In summary, it could be concluded that, sheer size of subscriber base, scale of economies and depth & breath of the emerging markets are changing the global telecom industry business paradigm slowly but surely.



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## **PART V. THESIS SUMMARY**

### **Chapter 6**

#### **CONCLUSION**

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The journey of telecommunications, which started on 10<sup>th</sup> March, 1876 by Alexander Graham Bell in Boston, USA, had changed human life forever. Last 150 years of this journey was so innovative, so fascinating. This long journey of telecommunication technology has changed its paths, its forms, and its shapes so many times in history. But every time it changed, - it changed for better. It changed human life for better in so many ways. In the 20<sup>th</sup> century, telecommunication is regarded as one of the basic human rights regardless of one's race, religion, ethnicity or geographic location. Currently – there are around 6.2 billion people in our world and around 4.3 billion people are connected through telecommunication technology. By 2015, it is expected that majority of the world population will be connected with one another, with their loved ones, with the rest of the world thorough telecommunication technology.

In today's globalized world, telecommunication technology is one of the key driving forces which are changing the global economies. Due to advancement of IT & Telecom industry along with some other factors – the barrier between developed markets and emerging markets is shrinking. Emerging economies are developing; in some places this development is happening pretty rapidly & in some – a little slowly but it is happening – for sure.

This economic development in emerging markets is shifting global business paradigm in several ways. At present, more than 75% of world population is living in emerging countries. China (1.57 Billion) and India (1.42 Billion) together account for almost half of world population. These two countries along with other emerging nations are playing a pivotal role in today's world economy. They no longer considered as just consuming nations; but more so as producing nations. During last few years, they have established both light & heavy machinery industries, developed their IT & Telecom infrastructure significantly. Scale of economies and depth & breath of these emerging markets became very crucial for the future business growth & sustainability for any global or multinational company. It is clearly evident that a shift in global economy is taking place and emerging markets have started turning the global business paradigm upside down.

Because of these developments in emerging markets, the economic condition as well as daily livelihood of general population is improving. People in these regions are getting better education and better healthcare. Multinational companies are investing heavily in different sectors of these emerging markets due to huge growth potential and better financial returns. These foreign direct investments are creating lots of new job opportunity in different business sectors. As a result, buying power of these people is increasing significantly. In recent times, global telecom operators are observing this market trend very closely and depending on scale of economy, size of total population – global telecom companies have started consolidating their investment in developed markets (US, Eastern Europe) and aggressively investing in developing markets. (eg: recently Vodafone withdrew from Japanese, Swiss and Belgian markets and entered into Indian, Turkish, South African and Czech Republic markets).

One very important aspect which I found in course of my research work in this thesis is “Market Segmentation” of global telecom industry. (Which has been explained in details in Part III. Chapter 3.5 – User Triangle Pyramid). In general, ARPU (Average Revenue per User) is regarded as the key economic indicator for telecom industry. Based on ARPU earning, scale of economy, institutional governance and political stability – global companies decide on their investment for any specific country or regions. There are mainly three market segments (based on ARPU) existing in today’s telecom industry. (I) Top Tier Customers, who spend \$ 50 + per month. (II) Middle Tier Customers, who spend \$ 20 - \$ 50 and (III) Lower Tier Customers, who spend \$ 1 - \$ 20. During this thesis research, when I looked into these numbers in more details and conducted a careful analysis of end user expenditure (as per services they use and the amount they spend) – one very interesting aspect was discovered. In both developed and emerging economies, all three different market tiers do exist today. Percentage of each market tier varies quite a lot between developed economies and emerging economies. However, when economy of scale is added into the context – financially both these markets turned out to be very close and similar. In cases emerging markets even with substantial risk factors seem to be more lucrative than developed markets.

One other aspect, which I found very insightful during this thesis is, - the future business strategy and growth plan of global and multinational telecom operators. What are these companies thinking in relation to their global operation? Which county or region – they are considering to get involved into? Why are these companies choosing this region of emerging markets – why not others? What would be their business strategy to sustain and grow their business in developed countries? And how they are balancing their investment between developed and emerging markets - considering all the risk factors?

With careful observation and analysis of current global telecom industry market trends, it appears that, at present there are three different types of global-scale telecom business models existing:

- **Truly Global Telecom Service Providers** (eg: Vodafone)
  - **Global-Regional Telecom Service Providers** (eg: SingTel, Orascom)
  - **Strong Local Telecom Service Providers** (eg: AT&T, China mobile, Reliance)
- **Truly Global Telecom Service Providers:** (eg: “Vodafone”), These firms seek to be the global market leader in terms of global footprint, subscriber number, total revenue earnings, profitability and net income. At present, these telecom service providers are consolidating their investment in developed markets very carefully and quite aggressively investing in emerging markets for future growth.
- **Global-Regional Telecom Service Providers:** (eg: SingTel, America Movil, Orascom, Telenor, etc) This group of Global-Regional operators are playing a pivotal role in global expansion of telecom industry and reducing the digital divide between developed and emerging markets worldwide. All of these operators have one thing in common – rather than having their global operation scattered all over the world, they like to concentrate into a specific global region and prefer to establish themselves as the regional power house in that specific region. (eg: America Movil – South America, Orascom – Middle East & South East Asia, SingTel – Asia Pacific, Telenor – Scandinavia, East Asia & Russian Peninsula).

➤ **Strong Local Telecom Service Providers:** (eg: AT&T, China Mobile, Reliance Communication India), these are the market leading companies in their respective local markets. At the moment, they prefer to expand their business locally and establish themselves as the local market leader. China & Indian together account for more than one third of world population. Moreover the teledensity in China and India are pretty low, 25.2 % & 22%. So, both these two markets – still have a huge growth potential and at present, China Mobile & Reliance Communication are primarily focusing on developing their local markets.

Finally, from the above analysis of global telecom operator business models, it is pretty clear that, at present - emerging markets turned out to be the focus market to all three different tiers of global/regional/local telecommunication service providers. Emerging countries with high economic growth potential and established political system will be the prime locations for global investment. Scale of economy and depth & breath of developing markets - are crucial for global, regional and local telecom operators – for future business growth & sustainability.

In summary, it could be concluded that - so long, developing markets of Asia Pacific, Eastern Europe and South America had been following the trends of developed markets (US & Eastern Europe). But now, a paradigm shift is taking place globally and developing markets are setting the trends for the whole world. Is this *paradigm shift* - permanent or temporary? At this point of time – it is not quite clear and we cannot offer a simple “Yes” or “No” answer. However, this much could be asserted that – *Globalization is transforming the world economy, different barriers between developed & developing markets are shrinking and emerging economies are becoming increasingly and significantly more important than ever before in global economy.*

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