Economic Benefits of 3G for Different Countries Worldwide

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[1] Executive Summary

The free flow of information and communication is paramount to the progress of society. Today, 3G technologies (i.e. UMTS, CDMA2000®) are viewed as essential elements for advancing socio-economic development for countries worldwide.

Globally, 3G technologies benefit entire countries by supporting the proliferation of information, enabling citizens to access vital communication services and promoting the development of technology advancements. It is estimated that mobile broadband usage will grow exponentially over the next three years, delivering the Internet and a plethora of other compelling services to more than 1.3 billion people globally by 2012.[1]

The expansion of 3G networks, devices and services in countries around the world is enhancing quality of life and providing expanded economic opportunities, both in the public and private sectors. The expansion of economic opportunities results in increased competition, the development of innovative new services for consumers and greater productivity for enterprises by workers.

Furthermore, 3G is improving the lives of underserved citizens, bridging the "digital divide" that exists in certain regions of the world, particularly in developing countries where teledensity and Internet penetration are low. Access to 3G mobile connectivity helps to address these concerns by delivering essential and richer communication services (i.e. financial, healthcare, education, etc.) that benefit people at *every* tier of society.

In this paper, we explore how countries are using advanced mobile technology to enable the aspirations of their citizens and facilitate new growth opportunities in the business sector. Our goal is to provide readers with valuable insights into the many benefits that 3G provides to countries around the world.

[2] Extending Information & Communication Services

Today, 3G networks play a vital role in expanding access to essential communication (voice) and value-added information (data) services. To stay competitive in the global economy, countries are adopting 3G to improve their overall level of teledensity (including broadband Internet penetration). Increases in teledensity, in turn lead to complementary benefits in the form of enhanced gross domestic product (GDP) and job creation opportunities in the telecommunications sector.

Economic studies indicate that for every one percent increase in a country's broadband Internet penetration, GDP per capita increases by roughly 10 percent (USD), and a one percent increase in mobile penetration results in a GDP per capita increase of roughly five percent (USD).[2] Moreover, direct investments in communication technology development are strongly correlated with increased job creation. Research data from Criterion

[1] *Wireless Intelligence,* 2008.
[2] Michael Minges, TMG Telecom, and ITU World Telecommunications Database Statistics*, 2003.*

Economics indicates that for every additional $1 million (USD) invested in telecommunications in the U.S., 18 new jobs are created. [3]

Today's 3G networks allow mobile operators to affordably address the growing global demand for low-latency broadband services, a demand that is not being met by existing fixed-line networks. In addition, 3G, which has the advantage of being backwards-compatible with legacy networks, provides increased network capacity and other efficiency enhancements that enable operators to deliver more competitive mobile broadband services, while ultimately reducing their investments in both CapEx and OpEx.

3G network infrastructure, applications and services are enabling the much-anticipated convergence of mobile communications, computing and consumer electronics. New types of connected devices and services are redefining market sectors including healthcare, education, and entertainment to name a few. Multimode 3G solutions enable access to multiple types of networks; stimulating the progression of ever more advanced service solutions and creating ever-richer user experiences for consumers.

Furthermore, the growing proliferation of 3G devices and the ever expanding industry ecosphere is creating economies of scale that lead to lower total cost of network ownership for operators and makes mobile connectivity more affordable and practical. The benefits of having affordable access to mobile broadband devices and services extend to a country's institutions, businesses and mass market segments. For instance, expanded opportunities for growth and profitability in the business sector made possible by 3G leads to a trickle down effect that benefits a country's general population. In the next section, we will explore citizens utilizing 3G devices and how they enjoy increasingly higher levels of service convenience, safety and productivity.

[3] Enhancing Quality of Life

An estimated 3.43 billion people globally depend on mobile services as an integral part of their daily life.[4] As countries increase the adoption of 3G technologies, the public demand for richer mobile services continues to grow. In the stories that follow, we briefly explore some popular, 3G-enabled service offerings and examine how these services are enhancing quality of life for people around the world.

3G mobile communication services are redefining the way people communicate on a daily basis. Mobile communications can be categorized as ***ubiquitous*** (anytime, anywhere and anyplace); ***personal*** (MMS, video messaging, post cards, instant messaging, etc.) or ***interactive*** (push-to-talk, video telephony, video sharing).

[3] *Criterion Economics, "The effects of Ubiquitous Broadband Adoption on Jobs, Investment and the U.S. Economy," September 2003.*
[4] *Informa Telecoms & Media*, "Mobile Content & Services 7th"

One example of an *interactive* mobile communications service is KTF's "WorldPhone View" videophone service in South Korea. Another example is Vodacom's "The Grid" service in South Africa, which offers a social networking application enhanced via GPS-enabled location awareness technology. Interactive services like these are distinguished by the convenience, customization and relevance they provide to the user community.

The ability to provide healthcare services to people in isolated locations has traditionally been a daunting task. However, 3G technologies have the potential to help overcome these barriers and address many other healthcare needs as new wireless health services and devices come to market. For instance, wireless health services ranging from medication reminders to remote diagnostic and monitoring services have the potential to both improve and extend life.

The wireless health industry is only just beginning to gain critical mass but the advent of innovative new 3G wireless-enabled devices and applications that are "always with you" and "always on" holds the potential to transform modern healthcare, eliminating barriers to care and driving costs out of the system.

One case in point is in the province of Phang Nga, located in Thailand. The province includes two remote islands (Koh Panyee and Koh Yoa Yai), which are roughly 45-minutes away from the nearest hospital by boat. Thanks to a collaboration with Thailand's CAT Telecom and Ministry of Public Health, two remote healthcare clinics on the islands are now wirelessly *connected* to the mainland hospital, leveraging the power of 3G mobile broadband to share patient information and facilitate timely remote medical consults.

Two other industries being positively impacted by 3G are financial services and mobile commerce. Mobile financial services made possible by 3G technologies provide a new level of convenience, visibility and safety when it comes to managing finances, no matter what the consumer's socio-economic status may be.

In emerging markets, access to 3G is making convenient and secure banking and payment solutions available to people who previously were unable to obtain traditional banking services. In the Philippines, it is estimated that roughly 68 million citizens are classified as "unbanked."[5] Filipino operator Globe Telecom offers its subscribers (97 percent of whom are prepaid customers) banking, money transfer and mobile wallet services as part of its solution branded as, "G-Cash."

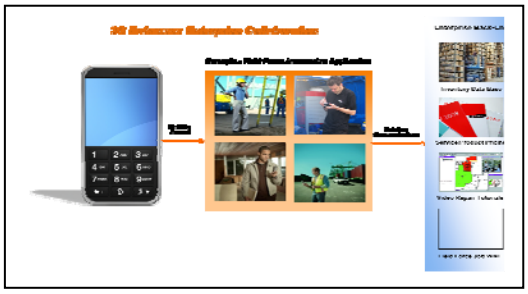
Globe Telecom also reached out to Philippine companies to establish direct deposit services to take place under the G-Cash platform. Today, G-Cash subscribers have the ability to conduct personal finance transactions (deposit paychecks, withdraw cash, check balances, etc.) at more than 6,000 retail outlets nationwide.

5 IE Business School*: "An Overview of The Mobile Phone Banking Industry,"* Feb. 2008.

Globe Telecom also reached out to Philippine companies to establish direct deposit services to take place under the G-Cash platform. Today, G-Cash subscribers have the ability to conduct personal finance transactions (deposit paychecks, withdraw cash, check balances, etc.) at more than 6,000 retail outlets nationwide. Next, we will discuss how 3G deployments create expanded opportunities in the business sector.

[4] Expanding Opportunities in the Business Sector

Recent technology enhancements in 3G airlink-performance (i.e., higher data rates, optimized quality of service (QoS), reduced latency, increased network capacity, etc.) are enabling mobile operators to achieve faster time-to-market with a growing array of innovative new devices, applications and services. These new offerings help stimulate the expansion of the country's telecommunications ecosystem, contributing to industry growth and competitiveness and paving the way for further innovation.



In the workplace, mobile broadband services are providing employees with real-time access to remote desktop enterprise solutions, increasing company response times for customers and leading to increased productivity for workers. For example, employees working offsite with mobile laptops or handheld devices may access company resource management solutions and dynamically collaborate with intra-office systems that link warehouses, suppliers and customer databases. Other new capabilities in the *connected* workplace range from creating sales orders in real-time to automatic inventory re-stocking. Innovative 3G solutions like these are helping enterprises improve their asset and resource management capabilities, streamline their operations and ultimately, achieve significant cost savings.

Some of the latest mobile service offerings couple entertainment services with elements of social networking functionality. One example of an industry collaboration leading to the creation of an innovative new business model is the "Xploaded Music" service offered by South African operator MTN. The service provides a forum for unsigned and independent artists to distribute their music over MTN's 3G network.

Moreover, the service integrates social networking services (blogs, music rating services, live event notices, etc.) into the Xploaded Music site, enhancing artist's exposure as well as the user experience for MTN subscribers. As part of the business model, artists earn royalties from music sales in addition to having access to MTN's mentor program where artists may participate in music industry business courses.

The Xploaded Music site has allowed MTN to become South Africa's largest digital distributor of "local" music. One key indication of the success of the business model is that several other similar services have been introduced to MTN's regional market, thereby creating increased competition and stimulating the implementation of new service innovations.

[5] Conclusion

3G technologies have ushered in a new era of enhanced and expanded access to information and communication that is unprecedented in the history of telecommunications. Countries around the world are experiencing the growing benefits associated with advanced 3G mobile broadband technologies. The deployment of 3G solutions, devices and services enables countries to more rapidly increase teledensity and expand broadband Internet penetration rates nationwide.

Countries adopting 3G have experienced higher levels of GDP per capita and job creation in the telecommunications sector. Moreover 3G expands a country's opportunities in the business sector, contributing to increased competitiveness and promoting innovative new wirelessly enabled businesses and services. Finally, 3G provides the country's citizens with richer, more compelling communications services. Access to convenient, affordable and highly customizable mobile broadband devices and services makes life more productive, secure and meaningful and empowers people to transform the way they live, learn, work and play.