

# Growth Economies

## The Vision

The growth of mobile subscribers worldwide over the past decade has been phenomenal, now estimated at more than 4 billion users, with two-thirds of that number located in developing nations. This means that the impact of modern mobile computer technology on society is reaching beyond the richest countries of the world where mobile telephony was first introduced, to the poorest countries where its potential impact is much greater. These changes are only now being fully realized.

From rural areas where dirt roads, no telephones, and lack of electricity once meant that farmers were out of touch with upcoming weather conditions or market prices, to urban areas where thousands of people live in jobless poverty with little to no hope of improving their condition, the introduction of the mobile phone has meant greater access to locally relevant information and education. Mobile health information specifically is an area of incredible potential. In some areas of the world a mobile phone has become a vital tool for survival and increased quality of life, enabling services such as general health education, notifications of a new sickness outbreak, or providing instructions on how to treat an ill family member.

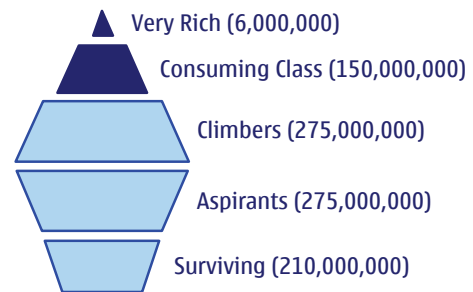
Many of the world's poorest countries are also the fastest growing, and the recent broad adoption of mobile phones is shrinking the information-gap between economic classes. It turns out that mobile technology is not only contributing to the incredible growth of these economies, but also enhancing the prospects that all parts of society will be able to participate in that growth. In fact, the World Bank has found that an extra 10 mobile phones per 100 people boosts Gross Domestic Product (GDP) growth by 0.8 percent in the typical developing country.

As a global leader in technology, Nokia has both the resources as well as the responsibility to contribute to raising the quality of life for its customers around the world. Nokia currently has more than 1.1 billion users of its phones, many of whom are living in developing nations. By making a significant investment in these countries, Nokia hopes to improve the way of life for literally millions of people. Introducing affordable mobile phones created with growing economies in mind, launching services geared towards helping small and micro-businesses survive and thrive, and having on-the-ground researchers studying ways that mobile phones can be used as computers, all help improve everyday life in areas such as education and healthcare.

Finding ways in which people can better use mobile technology is an integral part of Nokia's mission and a principal focus of its research efforts in growth economies. Researchers spend much of their time trying to zero in on the factors that hinder, and enable, economic prosperity and well-being. From this research, novel and innovative new services are being created, focused specifically on solving real-world problems of those living in developing nations.

### Bottom up innovation

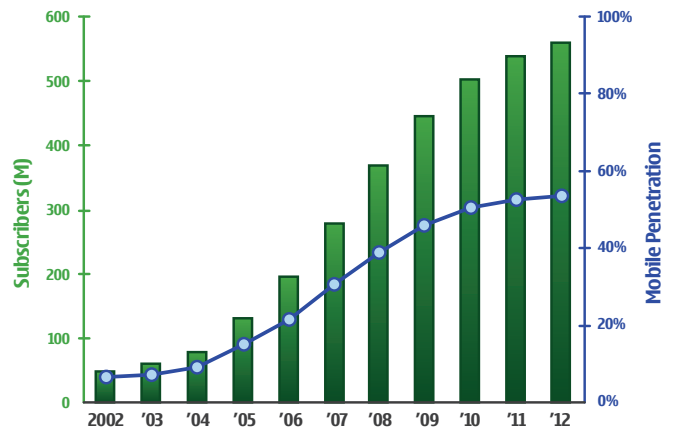
The Indian consumer is divided into five distinct classes. The real innovations are happening below the tip of the socio-economic iceberg (at the base of the economic stack), as only consumers in the top two tiers want offerings with the same attributes as in developed countries.



Source: Forrester Research

### African mobile subscribers skyrocketing

Africa has been one of the fastest growing mobile markets in the world for the past 2-3 years. Though inhibited by factors such as widespread poverty, illiteracy, corruption and excessive taxation, mobile penetration rates continue to rise throughout Africa, reaching an estimated 512MM subscribers by 2012.



Source: Blycroft Publishing

# The Work

A true foundation of health and financial services has to be established before the poorest people in developing nations can escape their endless cycle of poverty. Nokia is working on several projects aimed at providing these core services to millions of impoverished people around the world. This in turn helps them manage their money and payments better, stay healthy through better education, and assists medical authorities in fighting the spread of disease through improved communication systems.

## Micro Payments

Micropayments make it economically feasible to charge small amounts, even over time in installment, so merchants can afford to spread out the cost of a product for those who may not have enough money to buy a relatively expensive item. Incremental payments like this are common in the developed world, but have been virtually impossible to manage in emerging economies up until now. A trial being done by Nokia in Maharashtra, India enables rural customers to pay for their mobile phones in 25 equal weekly installments of 100 Rupees (\$2 USD). This service is perfect for many subscribers in rural markets where by spreading the costs over several months, they can get a mobile phone, which in turn empowers them to communicate in new ways and improve their lifestyle.

## Micro-Entrepreneurship

The majority of enterprises in the developing world have ten or fewer employees, and are the main contributors of employment for the poor. Hence micro-entrepreneurs form the backbone of economies in these regions, and their development is crucial for socio-economic improvement in emerging markets. Studies have shown the value of mobile phones in facilitating the functions of micro-enterprises through activities such as improved access to customers, operations and logistics. Nokia Research Center is working on several pilot projects to assist micro-entrepreneurs with mobile services that can improve their businesses.

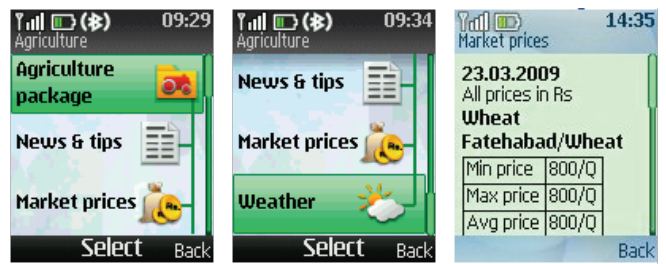
## Nokia Money

Nokia recently announced a new mobile financial service called Nokia Money, which offers consumers with a mobile device access to basic financial services. In many countries it's common for people to have very limited or no access to basic financial services. For example, current estimates are that only one in five Africans have bank accounts. Uniting the strengths of the mobile and financial services industries will change the way people around the world can manage their money in the future.

Nokia Money has been designed to be used on the most basic mobile phones supporting just SMS text messages or voice. It will be accessible 24 hours a day, enabling payments to individuals, as well as paying merchants for goods and services, paying utility bills, or recharging prepaid mobile accounts.

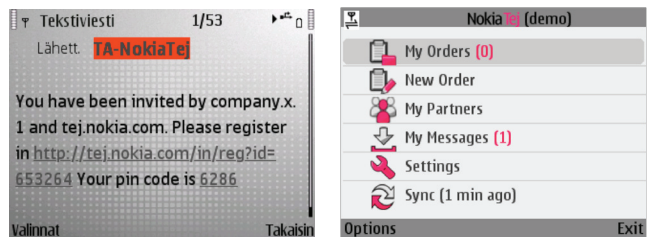
Rural consumers will particularly benefit from money transfers and, for urban dwellers, mobile money means more security, as well as more convenient payments and purchases. Millions of people in developing economies will be able to manage their financial needs for the first time, which will hopefully lead to many opportunities for micro-economies to flourish. Nokia Money is planned to be rolled out to selected markets in 2010.

## Life Tools



Nokia Life Tools is a range of services which include Agriculture, Education and Entertainment services designed specially for the consumers in small towns and rural areas of the emerging markets. The service provides timely and relevant information customized to the user's location and personal preferences directly on their mobile phones.

## Nokia Tej



Nokia Tej is a mobile order and supply chain management solution for companies in emerging markets working in a communication intensive and networked business environment, such as the textile industry in India. Nokia provides the solution as a zero-maintenance hosted service so the business and its partners have more time to focus on growing their core business. By streamlining communications it enhances orders, distribution and the sales management process by reducing the amount of paper work and improving the flow of information within business networks.

## Health Radar

Research investigating the disease burden of developing countries has shown that the majority of deaths and disabilities in the world's poorest nations are due to communicable diseases. To improve the containment of these diseases, experts in the medical field have called attention to the need for quickly and accurately tracking diseases. Nokia HealthRadar is a Nokia Research Center project created to address this need, developed in India together with Manipal University.

A highly customized mobile service, HealthRadar enables real time reporting and analysis of information captured in the field, helping medical authorities in their efforts to mitigate the negative impact of disease on the population. The use of paper based data collection practices result in delayed detection of trends in the spread of infectious diseases, sometimes by months. Through speeding up data collection and subsequent analysis of the data, the aim of the HealthRadar technology is early detection of and rapid response to communicable diseases such as malaria or typhoid.

The system works by enabling rural health centers to collect basic information about the spread of diseases, from flu to malaria, in their local area, using a basic mobile phone. Data from the grassroots level is aggregated on a central server, to be subsequently analyzed and accessed by district, state, and national level authorities. Mobile phones are also used to disseminate information about disease dispersion patterns to key stakeholders in the disease surveillance ecosystem.

A Health Radar pilot is currently live in India with over 20 primary health centers in a malaria prone area, covering a region of more than one million citizens. Additional applications for the service platform, such as augmented health services are currently being explored.

## Nokia Data Gathering

Nokia Data Gathering is a downloadable software solution for remote data collection – such as in the Nokia HealthRadar project - using a mobile phone. The software enables the transmission of questionnaires and interview results over mobile networks in near real-time. By doing so, it removes the need for physical transportation of documentation and manual data entry, improving survey speed and data accuracy. This enables fast, sound decision-making based on more precise, fresh data.

Because the software has been designed for general use, it can be used for a variety of applications like health administration, as well as agriculture supply/demand tracking, census taking, environmental conservation, emergency services and commercial services such as polling or meter reading. Almost any field data collection that would benefit from accuracy, timeliness or GPS data would be a good match for this system.

Nokia has made the software available to public bodies at no charge. For more information about Nokia Data Gathering visit: <http://www.nokia.com/datagathering>.

## Corporate Social Responsibility/CSR



Shirley Motto is a financial émigré from Zimbabwe who came to work in South Africa to supplement the family income. She uses SMS to stay in touch with her family back home while working abroad.

In 2002, Nokia unveiled a strategy to lower the cost of owning and operating a mobile phone and to bring the benefits of mobile telephony to people in emerging markets. Nokia has continually expanded on that vision by introducing a number of devices and services that aim to bring the power of the Internet to these markets as well.

## The Progress Project



Working with Lonely Planet, Nokia is working to highlight stories where mobile devices are changing lives. The innovations showcased in the Progress project are examples of the benefits gained by using digital communication technologies. They reveal the positive effect on society of using mobile devices to tackle everyday challenges that shape our lives, be they social, environmental or economic.

# The Future

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Though it is tempting to simply assume that eventually growing economies will need many of the same things that developed nations already have, innovation and new services to help the poor and uneducated can't stop because some parts of these economies have crossed into what can be called "middle class." For the vast majority, there are still many problems with accessing just the most basic functionality of what mobile technology provides.

## Power

For instance, for many it still is a daily struggle to get enough electricity to charge their mobile phones. Those living in rural areas or in urban slums simply don't have electricity. This could be addressed by integrating new battery technology, solar recharging, low-power screens and chips, or via devices that automatically go to a standby mode or utilize other ways of charging or saving power that are still being explored. What is a convenience to those in the developed world – long battery life – is a crucial feature for many of those in the developing world.

## Illiteracy

Beyond the physical characteristics of the device is the fact that many of the people using mobiles are illiterate. The UN estimates that nearly 20% of the world population is illiterate – with the vast majority residing in developing nations. Before even basic information services like SMS can be used, more effort needs to be made into creating new user interfaces for those who can't read, and more effort into finding the best ways of teaching literacy with mobile devices.

## Community

Looking at the how mobile technologies affect traditional social structures and society in general is an exciting area that is becoming more important every day. Such rapid technological change in the world is going to inevitably create friction, as well as great opportunities. Finding ways to integrate mobile technologies into traditional social structures in a positive way could play a huge role in community enhancement.

Nokia Research Center is currently investigating how mobile phones would be able to benefit the informal female self-help groups in Africa called "Merry-Go-Rounds". These groups act as a communal bank, taking small contributions from members, and taking turns in using those funds for various individual needs. This type of service could be greatly enhanced with mobile payments and financial services if done correctly.

## Summary

The opportunities to improve the lives of millions of people with new services aimed at growing economies are incredible. Even now thousands of people are taking advantage of simple text services to stay in touch with family, secure good market prices and learn new languages. As time goes by and new technologies become cheaper and accessible by more people, the possibilities for even greater services that truly improve the quality of life are enormous.

## For Further Reading

### Articles and Papers:

Africa Mobile Fact Book 2008:

<http://www.publicsectormarketing.ca/ftp/Africa%20Mobile%20Fact%20Book%202008.pdf>

World Resources Institute: The Next 4 Billion: Market Size and Business Strategy at the Base of the Pyramid:

<http://www.wri.org/publication/the-next-4-billion>

Measuring the Information Society - The ICT Development Index". ITU, 2009:

[http://www.itu.int/ITU-D/ict/publications/idi/2009/material/IDI2009\\_w5.pdf](http://www.itu.int/ITU-D/ict/publications/idi/2009/material/IDI2009_w5.pdf)

The Economist: Special Report on Mobiles in Emerging Economies:

[http://www.economist.com/specialreports/displaystory.cfm?story\\_id=14483896](http://www.economist.com/specialreports/displaystory.cfm?story_id=14483896)

### Websites:

Nokia LifeTools:

<http://europe.nokia.com/explore-services/extras/nokia-life-tools>

Nokia Tej:

<https://tej.nokia.com>

Nokia Corporate Responsibility in Emerging Markets:

<http://www.nokia.com/A4405102>

The Progress Project:

<http://theprogressproject.com/>

Nokia Health Radar

<http://conversations.nokia.com/2009/10/13/nokia-healthradar-chasing-disease-down/>

Nokia Data Gathering:

<http://www.nokia.com/corporate-responsibility/society/nokia-data-gathering/english>

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Connecting People

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