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INFORMATION ECONOMY REPORT 2010

ICTs, Enterprises and Poverty Alleviation

EXECUTIVE SUMMARY

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The world is witnessing a new dawn with regard to the potential of information and communication technologies (ICTs) to contribute in the fight against poverty. For the first time, there are now realistic opportunities for inhabitants of remote locations in low-income countries to get connected via ICTs. Farmers, fishermen as well as entrepreneurs in urban areas are rapidly adopting mobile phones as a key tool to advance their commercial activities, and some poor people are finding new livelihoods on the back of this trend. Against this background, the *Information Economy Report 2010* focuses on the nexus of ICTs, enterprises and poverty alleviation. Whereas the knowledge base needs to grow considerably, the evidence presented in this Report suggests that more attention should be given by policymakers and other stakeholders to this new set of opportunities.

The Report is organized into five chapters. Chapter I introduces a conceptual framework for the analysis that follows. Chapter II reviews recent connectivity and affordability trends to gauge the degree of access and uptake of different ICTs among the poor. Chapter III turns to the role of the poor in the production of ICT goods and services (the ICT sector). In chapter IV, the focus shifts to the use of ICT by enterprises, with emphasis on those that matter most for poor people, namely small and micro-enterprises in urban and rural areas. Finally, chapter V presents the main policy implications from the analysis.

Chapter I: Exploring the link between poverty, ICTs and enterprises

Reducing extreme poverty lies at the heart of the United Nations' efforts to promote development. Progress in this area has been uneven and every avenue towards poverty alleviation needs to be continuously re-examined. Even if the target of cutting the 1995 global poverty in half by 2015 is met, almost 1 billion people are likely to remain in extreme poverty by that year. In absolute terms, the largest numbers of people living on less than $1.25 per day are in Asia, followed by Africa. In relative terms, however, the incidence of poverty is the highest in sub-Saharan Africa, where more than half of the population are below the poverty line, according to the World Bank. Most of the world's poor live in rural areas, and their livelihoods include subsistence farming, wage labour and production for sale. Many work in the informal sector.

Sustained and equitable growth is necessary for making substantial progress in reducing poverty. Consequently, enterprises play a crucial role. They can help reduce poverty in two main ways: (a) through direct income generation and diversified livelihood opportunities; and (b) through more secure employment opportunities. From a poverty reduction perspective, it is important to focus attention on enterprises which have the greatest involvement of the poor – typically small and micro-enterprises. *Subsistence-based enterprises* support the livelihoods of the poor pushed into economic activity by the lack of other income-generating opportunities. They form the majority of enterprises in low-income countries, and most are in rural areas making use of natural resource inputs (e.g. farming and fishing). There are also *growth-oriented enterprises* among poor communities. Earnings from such activities become an important source of income, especially for those who have climbed above the poverty line.

Poverty has an important informational dimension. Poor people often lack access to information that is vital to their lives and livelihoods, including weather reports, market prices and income-earning opportunities. Such lack of information adds to the vulnerability of the people concerned. In terms of livelihood strategies, information plays a dual role: (a) informing and strengthening the short-term decision-making capacity of the poor themselves; and (b) informing and strengthening the longer-term decision-making capacity of intermediaries that facilitate, assist or represent the poor. The contribution of ICTs to poverty reduction through enterprise lies in their power to give poor women and men access to improved information and better communications to help them build livelihood assets. The introduction of ICTs in the enterprise sector can contribute to productivity growth, innovation, economic transformation and, ultimately, improved standards of living.

Meanwhile, the ICT landscape is rapidly changing. For the first time, affordable connectivity is becoming a reality even for people and enterprises located in

remote areas of low-income countries. While this is creating new possibilities to reduce poverty, more research is needed to understand how the new roles of ICTs may affect poor communities. There are no guarantees that improved access to ICTs leads to poverty reduction. Information accessed through ICTs has to be relevant and appropriately presented to benefit the poor, reflecting the needs, skills and capabilities of the latter. Policy efforts to enhance affordable access to ICTs thus need to be complemented with broader strategies to foster the development of adequate content and to raise the capabilities of the users.

Regrettably, the growth of ICT availability has not been matched by an equally rapid expansion in knowledge concerning how ICTs impact on development and poverty. Far more needs to be understood about the emerging new roles and impacts of ICTs in poor communities. As few empirical studies have looked specifically at this question, the evidence base remains weak. By placing the spotlight on this area, this Report points to the need for more attention in terms of research and policy analysis to help identify the best ways forward in order to seize maximum development gains from the new ICT landscape.

The Report highlights two main roles for ICTs as they are mediated through enterprise. First, ICTs can give rise to activities that did not previously exist, involving the production of new goods or services. Secondly, access to ICTs can change the way existing activities are undertaken, leading potentially to increased revenues, lower costs and improved quality. The report thus distinguishes between the production (chapter III) and use (chapter IV) of ICTs by enterprises. Before turning to those two aspects of ICTs, enterprises and poverty, chapter II reviews the extent to which enterprises in different countries currently enjoy affordable access to different ICTs.

Chapter II: Trends in connectivity and affordability

In order to assess the scope for ICTs in the enterprise sector to contribute to reducing poverty, a natural starting point is to consider the extent to which enterprises have access to different ICTs. The analysis shows that the connectivity situation varies greatly by country. In addition, the cost of using different ICTs also differs, with obvious implications for enterprise use.

Access to most ICTs continues to grow in poor countries, but at very different rates depending on the technology. Growth also varies by region and income level. Access to fixed telephone lines in the poorest countries is extremely low and almost negligible in rural areas. By contrast, mobile access deepens each year as networks extend to more of the formerly unreachable. After a radio or a television set, the next most likely ICT device found in poor households is a mobile phone. According to data from the International Telecommunication Union (ITU), average global mobile penetration stood at 68 subscriptions per 100 inhabitants at the end of 2009. It is expected that the total number of mobile subscriptions will reach 5 billion in 2010. Penetration in both developed and transition economies now exceeds 100 subscriptions per 100 inhabitants while in developing countries it stood at 58. In the LDCs, there are now on average more than 25 subscriptions per 100 inhabitants.

In rural areas, increased access to mobile phones and associated applications and services may have a particularly important impact on poverty. Rural populations in low-income economies often lack access to fixed telephony. While mobile penetration in rural areas is rising, it is still low in some least developed countries (LDCs). In fact, at the end of 2008, almost half of the rural population in the LDCs was still not covered by a mobile signal. Thus, despite improvements, there is still scope for further expansion of mobile coverage in areas where many poor people live. Some LDCs (e.g. Liberia and the United Republic of Tanzania) have been more successful than others in raising the level of mobile penetration, partly as a result of more competitive wireless markets. In these cases, the reach of mobiles appears to extend to those defined as living in poverty.

Increased ubiquity of mobiles is creating new opportunities for ICTs in the enterprise sector to contribute to development and to reduce poverty. On the back of more widespread mobile connectivity, a wealth of non-voice applications and services has sprung up, including text and picture messaging, Internet access and money transfer services. Mobile-money services are of particular importance for entrepreneurs that are operating in locations with limited banking services. They have also been found to be far cheaper than both formal banks and informal options, especially for low value transactions.

Penetration rates are considerably lower in the case of most ICTs other than mobile phones.

For example, personal computer (PC) use in low-income countries is extremely low and virtually negligible in rural areas. Furthermore, limited coverage of fixed telecommunications, electrification and PC ownership has seriously inhibited fixed Internet access and use in these countries. In addition, the Internet has skill prerequisites (notably literacy) for its use that many of the poor do not possess. UNCTAD data show that Internet use is also limited among micro-enterprises. For example, in Azerbaijan, Egypt, Jordan, Lesotho and Mexico, less than 1 in 10 micro-enterprises uses the Internet, and less than 1 in 25 has a web presence. In the case of broadband subscriptions, ITU data point to a massive gap between developed and developing countries, and in LDCs, fixed broadband barely exists. A person in a developed country is on average over 600 times more likely to have access to fixed broadband than someone living in an LDC.

At the same time, the use of mobile phones to access the Internet is growing rapidly and may eventually become more prevalent in developing countries than in developed countries. In East Africa, for example, Internet access via mobile phones now far exceeds fixed Internet subscriptions. This underscores the potential for mobile phones to transform Internet use in the developing world. While costs of Internet-enabled handsets and mobile Internet user charges need to come down further, and while the range of services available needs to widen, the potential is apparent. With some encouragement, mobile Internet is likely to emerge as a useful tool also for the poor and for micro-enterprises.

Though a growing number of people are gaining access to ICTs, particularly mobile, usage is sometimes constrained by high prices, particularly for the poor. This inhibits the full development of ICTs as poverty reduction tools. In the case of mobile telephony, there are wide variations in usage costs across developing countries. The most affordable usage charges can be observed in South Asia. India, for example, has some of the lowest "prepaid" prices. Wholesale termination costs in India (as well as in other South Asian nations) are among the lowest in the world and service taxes are far below those in many other developing countries. India has also been a pioneer in reducing operational and investment costs which contribute to lower prices. Revenues are generated using low tariffs but high volume. As a result, an Indian subscriber spends much more time talking on the mobile than his/her counterpart in many other developing countries. From the perspective of low-income users, it would be desirable if the South Asian model spread also to other low-income economies.

Lack of electricity is another barrier to ICT take-up for the poor, particularly in rural areas. This is less of a problem for ICTs that use batteries (such as radio) or mobile handsets, which can be recharged using car batteries. However, it poses a challenge for computers. ICT access will remain restricted, particularly among the poor and small and micro-enterprises in rural areas until solutions are found for providing stable and affordable electricity.

Chapter III: The ICT sector and the poor

The ICT sector represents a significant part of the world economy. In some developing countries, it accounts for more than 10 per cent of business sector value added. Production of ICT goods and services can contribute through various channels to poverty reduction. The ICT sector can offer jobs and income-generating opportunities and, in some cases, create entirely new livelihoods. Moreover, a vibrant ICT sector is important to facilitate and sustain more widespread use throughout the rest of an economy. Nonetheless, few studies have examined the contribution of ICT production to development, livelihoods and poverty reduction. This chapter seeks to shed some new light on these issues.

Available evidence does not permit a full assessment of the impact on all aspects of the livelihoods of poor people. However, it suggests that the scope for the ICT sector to contribute to poverty alleviation depends on the nature of activities involved. For most low-income countries, telecommunication services may be the part of the ICT sector offering the greatest opportunities for employment creation. By contrast, ICT manufacturing is characterized by high concentration of global production and exports, significant economies of scale and high barriers to market entry for new countries and companies. Its contributions to poverty alleviation are mainly confined to those countries – mainly in Asia – that have successfully managed to develop an internationally competitive ICT industry.

Within some of these economies, the impact appears to have been substantial, however. In China, the world's largest exporter of ICT goods, the expansion of ICT manufacturing now employs millions of migrant workers, who transfer significant funds from urban

to rural areas. Entry barriers for new workers to join low-end manufacturing and assembly activities are typically low. Second-order effects are also likely to have played a role, for example, through increased spending by ICT manufacturing workers, with trickle-down effects on local enterprises. New income-generating opportunities are likely to have improved the financial assets of both the workers and their families. In addition, working in ICT-manufacturing enterprises may have offered opportunities for learning and skills upgrading, thus also developing human capital assets. However, examples of discrimination, excessive overtime, low wages and exposure to health, safety and environmental risks have also been observed, with negative consequences for the people concerned. More research is required to obtain a better picture of the full effects of ICT manufacturing on poverty.

A growing number of developing countries view outsourcing and offshoring of information technology (IT) services and ICT-enabled services as a potential source of employment generation and export revenues. For example, the Government of Kenya has set a target for the number of jobs in the business process outsourcing sector to grow from the current 8,000 to 120,000 by 2020, and the Government of Ghana aims to create 40,000 new such jobs by 2015. While outsourcing and offshoring may contribute to poverty reduction, benefits to the poorer segments of society are not automatic. The main potential contributions to the poor are linked to second-order effects, such as indirect job creation. So far, relatively few countries have succeeded in developing sizable activities in this area, partly due to stringent requirements in terms of infrastructure, quality and costs. The successful cases of India and the Philippines illustrate that most direct and indirect job creation has occurred in a few major urban agglomerations. However, companies in both these countries are beginning to spread activities to second and third tier cities, and some are also considering rural locations. There are interesting developments related to "social outsourcing" – the outsourcing of services to poor communities in developing countries with an explicit aim of poverty alleviation or the achievement of other development objectives – which can contribute to improving the livelihoods of people in rural areas.

The part of the ICT sector with arguably the greatest direct involvement of poor people, and which is spreading rapidly in many low-income countries, is that related to ICT micro-enterprises. There are relatively low barriers to entry into some of the activities conducted in this field, making it possible for people with limited skills to participate. The simplest mobile card selling or vending jobs can typically be conducted by people with few formal skills and capabilities. In the Gambia, for example, disabled street beggars were offered the opportunity to start working for Gamcel, one of the mobile telecom operators. As authorized dealers, rising in the economic stature and earning above average wages, they felt empowered to participate in society. A simple activity as selling mobile subscriptions in this case helped to reduce poverty and improve the livelihoods of the people involved.

The mobile sector is among the most dynamic sources of ICT micro-enterprise. In many parts of the developing world, ecosystems of mobile entrepreneurs have sprung up to serve local demand for mobiles and for associated applications and services. Throughout the developing world, there is a proliferation of shops and market stalls selling used and new mobile phones, kiosks that offer mobile phone applications and content, and activities such as installation, setup and various repair services. Selling airtime or mobile money services on the streets or in shops engages large numbers of people in low-income countries. Such services can play an important role in sustaining the use of ICTs, especially among poor segments of the economy. ICT micro-enterprises in the informal sector often complement enterprises in the formal sector by selling goods and services that are better adapted to low-income consumers. In Ghana, for example, ICT micro-enterprises have played an important role in extending connectivity to remote areas not well covered by the established operators.

However, ICT micro-enterprises are exposed to volatility and risk, and returns on investment are often low, forcing entrepreneurs to draw on other sources of income as well. When considering ICT micro-enterprises as a new source of livelihood, the sustainability of different business models should be kept in mind. By the time a particular technology, intervention or business model has proved successful in one context, its relevance elsewhere may have been overtaken by events. The "village phone" service developed by Grameen Phone in Bangladesh (and replicated in other countries) illustrates this point. While it initially allowed rural women to establish micro-enterprises reselling capacity on mobile phones, the

business model became less sustainable as more and more people had phones of their own.

Coping with changing business environments requires the ability of entrepreneurs to adapt and identify other, sometimes related, opportunities. Thanks to the importance of networks and close interaction with other informal and formal enterprises, the opportunities for ICT micro-enterprises to develop are greater in urban settings. In rural areas, the scope for creating livelihoods around such activities appears to be more limited.

Some ICT-related activities in the informal sector may have negative effects on the livelihoods of the poor. This applies, for example, to activities resulting from e-waste being sent to low-income countries for recycling. Uncontrolled discarding or inappropriate waste management can generate hazardous emissions, with severe impacts on health and environment. There is an urgent need for responsible action on the part of both public and private sectors to ensure that the collection, sorting/dismantling, pre-processing and end-processing in the recycling chain are conducted in a sustainable way.

From a policy perspective, it is necessary to address both the opportunities and the risks associated with an expansion of the ICT sector. As stressed above, given the cross-cutting nature of ICTs, the supply of ICT goods and services has implications for the economy as a whole. A vibrant ICT sector is important not least to facilitate and sustain more widespread use of ICT in enterprises across sectors and industries.

Chapter IV: ICT use by enterprises and poverty alleviation

This chapter reviews the available evidence – which mainly exists in the form of micro-studies from a wide range of countries and industries – to examine how ICT use has affected the performance of enterprises and the livelihoods of the poor. Special attention is given to how different ICTs have helped address the various information and related needs that enterprises face along their sectoral value chains.

Both subsistence-based and growth-oriented enterprises with direct involvement by the poor have the potential to benefit from greater use of ICTs and related services. However, the outcome varies considerably depending on the respective needs and capabilities of the specific enterprises. Judging from available research, the main potential benefits of ICT use are twofold: (a) a reduction in information search and transactions costs; and (b) improved communications within supply chains leading to benefits for individual enterprises and overall improvements in market efficiency.

ICTs are most valued by entrepreneurs when tangible benefits accrue from greater efficiencies – particularly those which relate to supporting two-way information flows with key customers or suppliers. Given that most enterprises in developing countries serve local and regional markets (or work through intermediaries to channel their products to national and foreign markets), such efficiencies are gained primarily through better use of basic business communications. Benefits from mobile phone use are the most frequently cited. ICTs can also strengthen internal information systems for those (predominantly growth-oriented) enterprises that own a PC and are able to make effective use of computer-based applications. There is evidence that ICT use can provide other benefits around the strengthening of social and human capital assets (enhancement of skills, increased self-confidence, participation of women, empowerment, and security against income loss).

The impact of ICT use in subsistence-based agriculture enterprises is particularly relevant. Mobile phones are increasingly used by farmers to obtain relevant information and coordinate activities with other participants in the value chain. Positive effects of cell phones by way of reduced transaction costs and better market prices have been observed, for example, in the cases of grain markets in Niger, dairy farmers in Bhutan and onion traders in Ghana. In some instances, even those who do not themselves use the phone have benefited from better functioning of markets and from information passed on from phone owners.

Some farmers are also beginning to appreciate new mobile service applications. Mobile applications for the delivery of financial transfers are being commercially implemented, with infrastructure and service platforms sufficiently scaled to provide the potential for all types of enterprise to receive money or to make payments. Such services are rapidly taken up by farmers and are used extensively to facilitate trading in rural areas. Mobile solutions for providing micro-insurance, which have only recently begun to emerge, can also contribute in important ways to poverty reduction since farming activities are highly susceptible to weather, price variability and other risks.

When not insured against adverse weather conditions, farmers tend to use as little inputs as possible to minimize the risk of incurring losses. This inevitably results in less productive yields. The practice of mobile solutions is still at an early stage of development, and more evidence is required for assessing its impact on poverty. However, the potential is considerable. In Kenya, for example, within one month of its launch, 9,500 farmers had subscribed to a new weather index insurance scheme and another 40,000 are expected to join.

Solutions based on combinations of different ICTs offer great potential for serving the needs of rural enterprises by leveraging the widespread access to mobile phones and advantages offered by other technologies. Such opportunities are being explored through various initiatives aimed at delivering information via intermediaries, particularly to subsistence-based enterprises in remote areas. This may involve the integration of the Internet with other technologies that are more accessible by subsistence-based enterprises (such as mobile phones or community radio). In Africa, some community radio stations that are connected to the Internet have pioneered a phenomenon known as radio browsing programmes. These programmes provide indirect access for rural enterprises and others to the Internet and broadcast to communities. They help raise awareness of what is available online, allowing people to find new solutions to their varying needs.

Fishing is another natural resource based industry of direct relevance to the poor. A number of typical information market failures can affect traditional fishermen in low-income countries. While at sea, they have limited bargaining power in the market. A lack of knowledge of market prices makes it difficult to identify in which market location they would get the best price. Due to the cost of transportation and perishability of their products, they can only visit one market per day, often ending up selling in their local market. There is convincing evidence, especially from South India, that increased use of mobile phones has helped fishermen address information asymmetries between fishermen, traders and consumers. Interestingly, benefits in the communities studied have extended beyond the individual fishermen who were using the phones, partly as a result of greatly improved functioning of the fish markets more broadly. Better market coordination has resulted in increased profits for the fishermen (with or without phones), lower fish prices for poor consumers, as well as a reduction in the wastage of fish.

Small-scale manufacturing and services encompass a wide range of micro and small businesses. Such enterprises can be found in both rural and urban areas and the types of activities performed by them may relate to retail sales, small manufacturing, artisans, taxi driving, household work and other services. As with the examples noted in agriculture and fishing, ICT use among small and micro-enterprises in manufacturing or services in low-income countries is mainly made available through mobile phones. Depending on the nature of activities, such phones may be used to stay in touch with existing suppliers and/or customers, or to find new ones. Micro-enterprises are furthermore likely to gain from new mobile money services. By contrast, relatively few micro-enterprises in low-income countries so far make use of computers and the Internet.

A key challenge is to mitigate the risks of ICT access leading to widening divides and at the same time seize maximum gains from the opportunities that emerge from more widespread use of ICTs in low-income countries. In some cases, enterprises that are non-users of ICTs will be unable to attain full benefit of reduced transaction costs and improvements in communication and may find themselves at a competitive disadvantage. Moreover, while ICT use often leads to beneficial disintermediation, it can sometimes reinforce the market position and power of existing trading intermediaries, whose actions may not impact positively on the livelihoods of the poor. Finally, the role of ICTs might be more limited in local value chain systems (particularly of subsistence-based enterprises) that rely heavily on pre-existing, informal and culturally rooted communication where the exchange of valued information is by means of personal contact. Addressing these challenges requires adequate policy responses.

Chapter V: The policy challenge

This Report is primarily concerned with the potential that ICTs have to enhance livelihoods and opportunities for the poor, and thereby contribute to internationally agreed poverty reduction goals. The relationship between poverty and economic growth is complex. Sustained economic growth is necessary for achieving substantial progress in reducing poverty. However, it cannot overcome poverty on its own. The challenge for policymakers is to identify and facilitate

growth in ways that reduce poverty and inequality, and that empower those in poverty to achieve more sustainable incomes and enhance their livelihoods, as well as achieving macroeconomic gains.

As with other goods and services, increased ICT ownership is likely to be associated with higher levels of income and of other resources and capabilities required for their effective use, such as literacy and education. There is always a risk that ICT adoption increases disparities between more established and better resourced enterprises and those which are less well-endowed. A poverty-focused approach to ICTs and enterprise needs to address this challenge. Policymakers need to identify and facilitate growth in ways that are socially and economically inclusive. They need to support ICT adoption and use at lower levels of economic activity and sophistication if they wish to address the enterprise requirements of the poorest social groups. This means that adequate attention needs to be paid to both subsistence-based and to growth-oriented enterprises. Where market-based solutions can be found, the chances increase that the interventions are sustainable. However, long-term public support is likely to be required to address market failures in the delivery of information or services to subsistence-based enterprises with very low purchasing power.

An important lesson emerging from available research is the need for policies to reflect the diversity of ICTs, enterprises and the poor. ICTs vary in terms of their accessibility to the poor, their functionality and requirements of users. Many people who run micro-enterprises in low-income economies cannot read or write. Therefore, programmes need to make innovative use of voice-based telecommunications interfaces and of proxies such as infomediaries. Moreover, the need for information and other inputs varies depending on the size, industry and market-orientation of enterprises. As a result, so does the extent to which different enterprises may benefit from improved access to certain ICTs. The poor similarly differ in the degree and nature of their poverty, whether they live in urban or rural areas, with regard to literacy and other capabilities, by gender and in terms of the natural and political environment surrounding them. All these factors mean that policy interventions – to be effective and reach intended beneficiaries – must be demand-driven and context-specific.

Many strategies and policy initiatives aimed at reaping development gains from ICTs in the past 15 years have been supply- rather than demand-driven, thus failing to respond effectively to the specific context of diverse communities. This has sometimes involved a centralized, top-down model, with insufficient attention given to the needs and priorities of small-scale enterprises in rural and urban areas. In order to make policies for ICTs and enterprise more effective in the fight against poverty, three points are especially important.

Firstly, policymaking should include careful prior assessment of the needs and experience of the intended beneficiaries. Secondly, policymakers need to recognize and build on (and learn from) the ways in which people (including the poor) and enterprises (including micro-enterprises) appropriate ICTs as they become available, making innovative use of them in ways that suit their business circumstances. The forms that appropriation has taken have often surprised both policymakers and service suppliers – from the extensive adoption of short message service (SMS) and the use of airtime as currency to the rapid take-up of mobile money services in some countries. Thirdly, to address the first two points, policymaking needs to secure the input and engagement of enterprises at all levels, especially those most relevant to the poor, in programme design and implementation. Both subsistence-based and growth-oriented enterprises should be consulted about their requirements and their communications preferences. This increases the likelihood that initiatives lead to the promotion of those services that are of direct and immediate value to the enterprises concerned.

Such tailored policy interventions are needed in several areas, including: (a) enhancing access to ICT infrastructure, especially wireless technology; (b) making ICT access affordable; (c) promoting relevant content and services development; (d) strengthening the ICT sector; and (e) improved links between ICT and enterprise policies and poverty reduction strategies. Content and services need to be delivered in formats that low-income users can readily access and absorb. The rapid growth of mobile access suggests that it would make sense for governments to take a fresh look at how relevant business support services can be delivered using mobile phones.

It is similarly time for development partners to explore how best to exploit this new situation in ways that bring benefits to the poor. New interventions need to be rooted in today's realities – including the needs and circumstances of micro-enterprises and

the communications environment available to them – and in realistic assessment of future prospects. Development partners can support the efforts of national and local governments to achieve positive gains from the use of ICTs by enterprises. Four main areas of support are identified in the Report:

- Support for the integration of ICT and enterprise policies into national development planning processes, including strengthening of the legal and regulatory frameworks for ICTs and enterprise;
- Investment in relevant infrastructure deployment in geographical areas where commercial investments are insufficiently forthcoming, or in technological areas of high potential. This may involve public-private partnerships (PPPs);
- Support for government initiatives in the ICT sector, enterprise and human capacity development; and
- The development of a deeper understanding of the impact of ICTs on enterprise by building a more extensive and more critical evidence base and establishing frameworks for the analysis of national communications environments and needs.

In the past few years, there has been a trend among development partners to "mainstream" their ICT support into broader areas of development policy. In this process, some development agencies have chosen to dismantle dedicated secretariats or expert units for the cross-cutting treatment of ICT for development. This may make it more difficult to implement a demand-driven approach to policymaking, which is likely to require more rather than less technical expertise within development agencies for them to act as effective partners. There is also a risk that the potential of ICTs – particularly as cross-cutting developmental inputs – will be undervalued within development agencies, and that knowledge and experience will be poorly collated and diffused. Development partners need to stay abreast of the rapid developments taking place within the ICT field and to ensure that the potential of ICTs is given adequate attention within their programmes.

Governments and agencies should act not just to improve ICT connectivity but also to raise the capabilities of micro-businesses to make use of ICTs and to foster a business environment which encourages and rewards them for doing so. Enterprise-related ICT policies need to become more fully integrated in national development strategies and in the agreements, such as United Nations Development Assistance Frameworks (UNDAFs), which governments enter into with donors and International Financial Institutions. In a 2009 review by the United Nations Economic Commission for Africa (ECA) of 20 UNDAFs in Africa, however, only two included ICT-related projects.

At the same time, governments and development agencies alone cannot deliver on the promise of ICT for poverty reduction. The private sector is crucially important as the primary source of infrastructure investment and service innovation. Citizens and enterprises have shown themselves to be innovative in appropriating technologies and services to meet their needs. Governments and development actors need to learn from this experience and make interventions that help the private sector and civil society to seize opportunities created by recent technology developments. Successful projects aimed at enhancing the productive use of ICTs by enterprises have often seen the involvement of multiple stakeholders acting in partnerships. A starting point would be to make better use of ICTs, notably mobile applications – in government services targeting economic opportunities among the poor.

With access increasingly reaching poor producers in low-income countries, there are now much better possibilities than before to ensure that ICTs contribute to poverty reduction. It is the shared responsibility of all relevant stakeholders to make the most of the many new opportunities that are emerging. This will require, among other things, that national governments and development partners are well informed before launching new policy interventions and that they work in close collaboration with those partners that can bring the knowledge and experience needed to produce desired outcomes. The findings presented in the *Information Economy Report 2010* will serve as a valuable input in this process.

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