Cities Net Opportunities 2008
Emerging Markets

Internet use and demand for online services

Based on a survey by ***Illuminas***

INTRODUCTION

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Information and Communication Technology (ICT) has already fueled growth and increased productivity in many countries and cities. As convergence around Internet networks gains momentum, the potential benefits expand rapidly in scope and magnitude … and the stakes rise: countries and cities that take advantage of this window of opportunity have a chance to accelerate growth and even leapfrog currently more advanced countries and cities; but laggards will be left further and further behind in terms of national and regional competitiveness.

The potential benefits of IP connectivity fall in two basic categories: (i) economic benefits include productivity gains (e.g., through reduced transaction costs, scalability and fast, reliable information flows) and innovation enabling (e.g., through online collaboration tools, *wikis*, etc.); and (ii) social benefits include: extensive access to education and other information resources; provision of government and health services on-line; expanded citizen participation; and a wider range of entertainment options.

Cities Net Opportunities is a study *designed* to gain insights on Internet use and on current and future demand for online services in urban areas in Emerging Markets. The baseline study was carried out in 2007 and a more limited follow-up was conducted in the summer of 2008 (to "take the pulse" a year later). The 2007 study consisted of two parallel surveys -- for citizens and business -- while in 2008 only citizens were surveyed. The study documents the stage of maturity in the use of the Internet in emerging market cities as well as the rapid pace at which Internet use is becoming a feature of everyday life.

We hope this study contributes to the debate about how ICT and Internet can improve the standards of living of citizens and business in emerging markets.

This note summarizing the results of the survey conducted by Illuminas for Cisco, was written by Enrique Rueda-Sabater and Felipe Lamus, Cisco - Emerging Markets

MAIN FINDINGS

> *"The study was designed to provide insights, not definite statistics. It offers original, first-hand information based on interviews with citizens and business in 24 cities of different sizes across six emerging countries"*

- Awareness of the Internet and of its benefits is virtually universal—without difference across countries: Businesses have seen the Internet improve sales, customer satisfaction and productivity. Citizens generally believe that Internet access improves people's lives.

- Skills foremost and then accessibility and cost are seen as the barriers to greater use of the Internet by both citizens and businesses.

- The people with a PC at home access the Internet more frequently than those who use one at work or at an Internet café. This shows that to improve the frequency and use of the Internet, the PC at home seems to be a key factor.

- Citizens generally do not feel that access via mobile phones will satisfy their connectivity needs.

- Citizens 'thirst' for online services regardless of their experience using the Internet:
  - Those that already use online services expect to continue using and potentially expand their use and many consider these online services to be worth paying for.
  - Those not currently using the Internet and those who do so infrequently expect to use online services in the future nearly to the same degree as now-regular users.
  - Citizens have even greater interest in (and willingness to pay for) new value added-services like education or healthcare than online version of transactions.

- Businesses see major potential for expanding their use of the Internet for eCommerce but show more limited interest in expanding online interaction with governments.

- Businesses — and particularly citizens — feel that the government should be doing more to provide information and services online.

- There is a clamor from citizens and businesses across cities for a more active involvement by Government to promote Internet access and provide infrastructure.

FOCUS OF THE STUDY

The focus on cities reflects their role as spearheads for technology adoption. Accelerating adoption of ICT in cities will make them more competitive globally, but will also make it easier for them to contribute to the spread of technology to the rest of the country. This study is meant as a contribution to the discussion of effective interventions and to spur debate among authorities, opinion leaders and public opinion on the potential role of ICT and networks in their city—for both social and economic purposes.

While some key factors behind ICT adoption tend to be under the primary influence of national governments, other factors that come well under the purview of municipal or metropolitan governments can make a significant difference. Both national and local government broadband strategies are necessary to take advantage of the opportunity that IP networks offer and the urgency not to miss gaining advantage from the early stages of Web 2.0.

Because of population density, cities are also where connectivity spreads faster and, hence, where early indications of demand (present and future) for online services can be observed. This can not only help city government establish priorities for online service deployment but can provide national governments with clear indications of what the rest of the country's population might want — and potentially expect — in terms of online service offerings.

The study was designed to provide insights, not definite statistics. It offers original, first-hand information based on interviews with citizens and business in 24 cities of different sizes across six emerging countries. Because of the relative consistency of patterns, we believe that its insights are broadly representative of the situation in many other emerging countries, at least, in Latin America and Eastern Europe.

The six countries that the study covers are: Argentina, Brazil, Mexico, Poland, Russia and South Africa. In each country two major cities and two other smaller cities were included, and two parallel surveys were conducted in each city. One thousand citizens were interviewed per country for the first study, while the second survey included interviews with 300 businesses per country. Field work was roughly simultaneous across countries and was completed by late 2007. In the summer of 2008, a follow-up survey was conducted among citizens in six select cities across Brazil, Mexico and Russia these results provide a more dynamic sense of Internet use among emerging market citizens (*see appendix for the distribution of interviews*).

Within the overall goal of understanding current patterns of Internet use and potential trends for the future, more specific goals of the study were to:

- Understand the online interaction between and among governments, businesses and citizens
- Assess current use of Internet services and the demand for future broadband services as well as the willingness to pay for these online services
- Identify obstacles to improved connectivity and service delivery to citizens
- Understand perceptions of the Internet and of government roles in making it widely available

APPRECIATION OF INTERNET BENEFITS

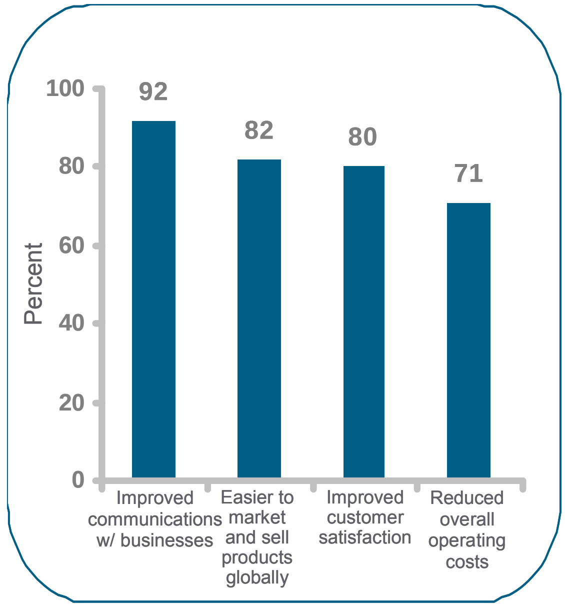
Businesses

Virtually all businesses use the Internet and most citizens are aware of it. They both view it as a positive force in both economic and social terms ... that has already had good effects and is expected to produce more. These findings are very consistent across countries and types of cities.

Businesses have already seen a major impact using the Internet in their daily operations. A very large majority of businesses report positive impact from Internet use, as an effective marketing tool and to improve customer satisfaction. The Internet has allowed them to reach out to global markets (through improved communications) and at the same time has helped them to reduce costs.

"Businesses and citizens have seen the positive impact of the internet in their operations and their lives"

Internet's Impact on My Business

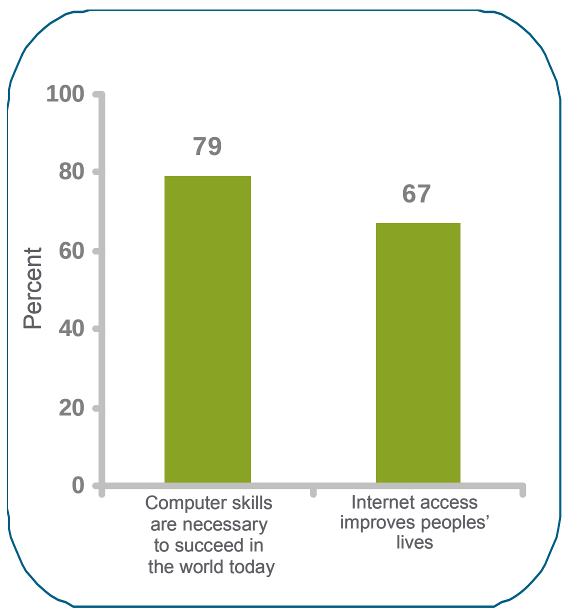


Citizens

Citizens perceive the Internet as something that has a positive impact on the welfare of the population. Two thirds of the survey respondents agreed or strongly agreed that Internet access is good for people's lives.

An even larger majority is convinced that the computer skills needed to use the Internet effectively are an important ingredient for success in life. Together with the findings on skills as a barrier to use the Internet (see below), this points to an important potential intervention by governments.

Citizens' Perceptions about Technology & Internet Access

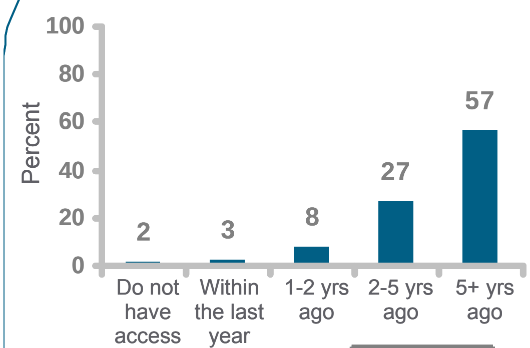


FROM INTERNET AWARENESS TO INTERNET USAGE

Internet usage is not a recent phenomenon in emerging markets cities. Virtually all businesses and the majority of people surveyed in emerging market cities not only use the Internet — but have been doing so for several years.

Both citizens and business are Internet veterans ... their responses strongly suggest and envisage their connectivity to play an increasing role in their life and activities—not only connecting with greater intensity but also using a wider range of online services.

Business: First Time Internet Access was Gained

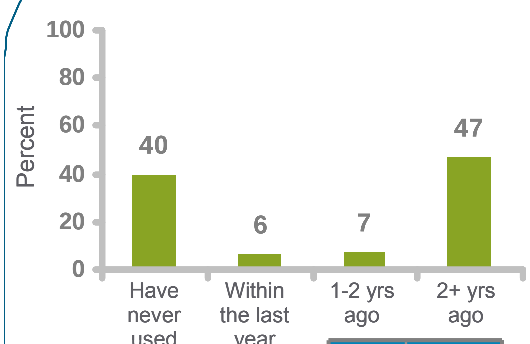


	5+ Years Ago
Very Small Companies	37%
Small Companies	47%
Medium Companies	62%
Large Companies	79%

Businesses

More than half of all businesses have been using Internet for over five years and 84% for more than two years. Only a small proportion of very small companies does not yet have access to the Internet. The larger the size of the company, the longer they have been using the Internet. Most large companies started using the Internet over five years ago but over one-third of even very small companies have been using it for more than five years.

Citizens: First Time Internet was Used



	Non Users	Internet Users
Average Age	44	35
Gender (% female)	58%	49%
Employment (% Employed)	57%	68%
Completed Higher Ed.	11%	33%

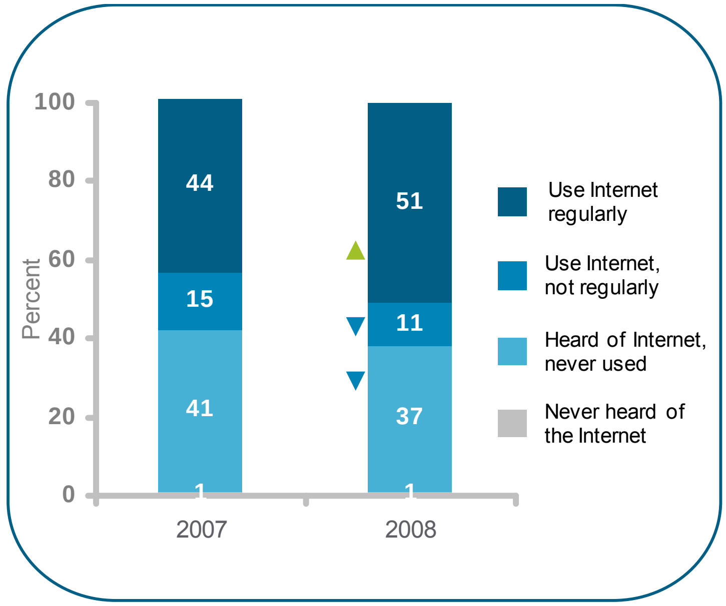
Citizens

The study was designed to ensure that we were able to obtain insights from different groups of citizens from the perspective of their use of Internet users.

The picture that emerges from the 2007 survey—and is confirmed by the 2008 survey is one of increasing polarization of citizens from a connectivity perspective: Internet users are younger, and have had more formal education. Most of them have been using the Internet for at least two years. Those who have never used the Internet are more likely to be female and less likely to be employed.

We were interested not only on whether citizens used the Internet or not and we specifically sought to understand the perspective and situation of people at three different stages of the relationship with the Internet: regular usage depending on whether: they use the Internet regularly; they use it, but infrequently; or they are not currently using the Internet.

Citizens: Internet Use in Metro Areas *(Quotas Applied)*



As described below, many results from the survey are particularly interesting when analyzed from this perspective. In carrying out a quick re-survey in 2008 we also wanted to explore how the composition of these three groups is changing—as a potential leading indicator of demand for Internet services.

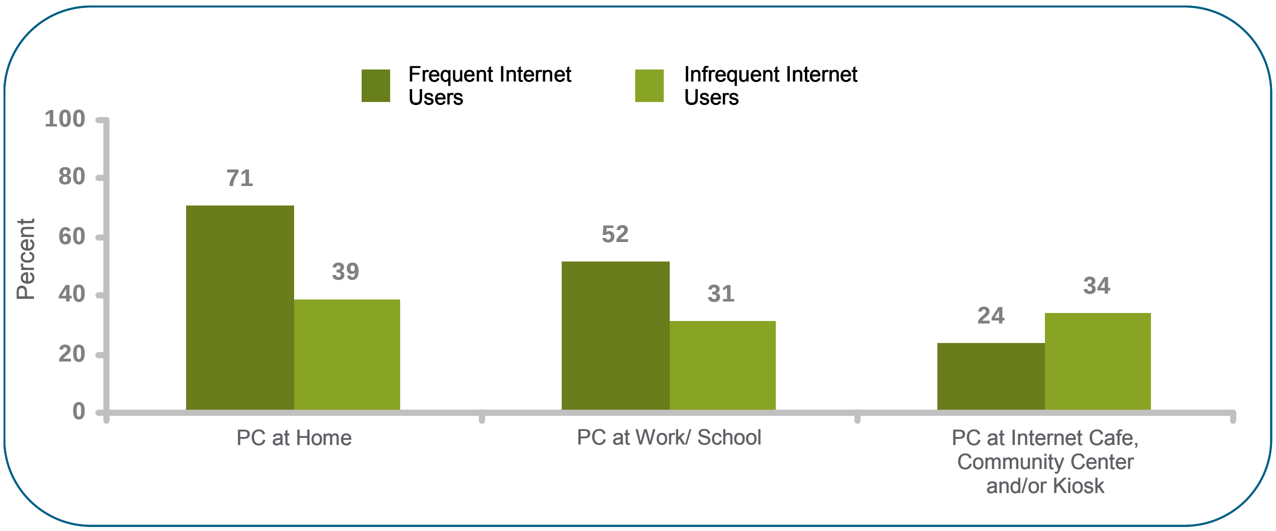
Insights worth highlighting in this regard:

- The proportion of people who use the Internet regularly appears to be growing quickly as people become familiar with the Internet and its potential they use it more frequently.
- The proportion of people who do not use the Internet is falling across the cities included in the two surveys, but not as fast … possibly suggesting that some of the barriers to Internet use (see below) remain significant hurdles for certain segments of the population.
- Infrequent users appear to represent a transition stage which is becoming less and less necessary as people go from not using Internet to becoming regular users.

HOW PEOPLE CONNECT TO THE INTERNET

The survey underscores a very significant characteristic that differentiates regular and infrequent Internet users. Frequent users are much more likely to connect to the Internet with a PC at home and at work or school. Conversely, infrequent Internet users tend to rely more on shared PCs in Internet cafes or community centers. This distinction is consistent with a view of these public Internet access centers as a valuable stepping stone—they allow people to become familiar with the Internet and they pave the way towards more regular and rewarding connectivity.

Citizens: Internet Access Points Used

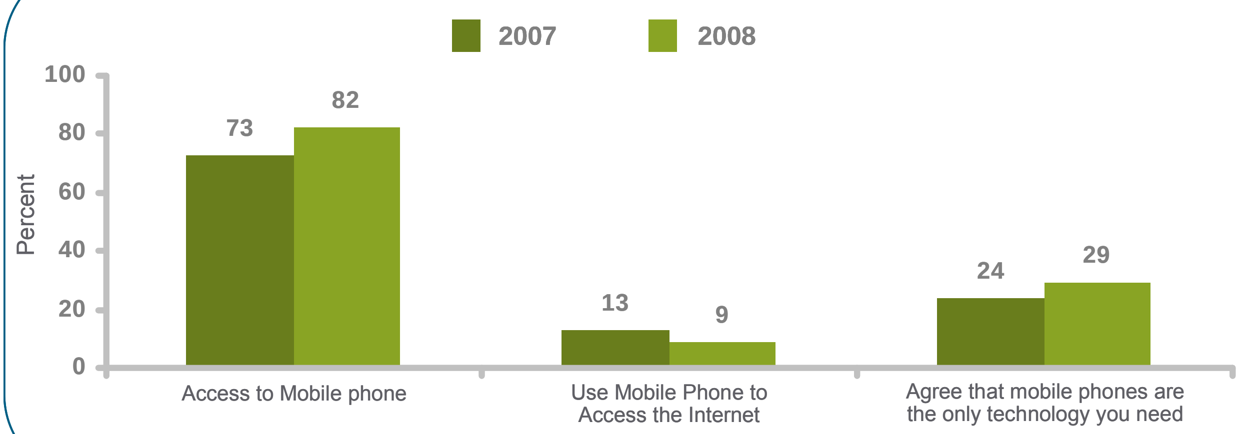


The continued importance of public Internet access centers is consistent with data showing that in virtually all emerging markets today the number of Internet users is significantly higher than the number of Internet subscribers. As the comparison between our 2007 and 2008 surveys indicate, people are moving on from this stage as fast as possible: to be a frequent, interactive Internet user, people need to have a private dedicated connection for Internet access—preferably at home.

But, in light of the persistence of a large majority of non-Internet users for whom skills are a significant barrier, the findings also suggest that community centers that provide Internet access together with some support for skill development could have a major role to play. They could help a generation of people who grew up without computers (but who still have long active lives in front of them) benefit from connectivity both for private enjoyment and productive contributions.

The barrier posed by lack of access through a PC at home, work or school cannot be remedied with the use of mobile phones (at least not with the kind of devices that are now in the hands of emerging market citizens). Although adoption of mobile phones has increased over time, a very small portion of citizens are currently accessing the Internet through the cell phone.

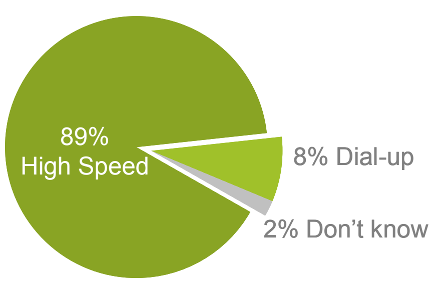
Citizens: Mobile Phone Access, Use & Perceptions



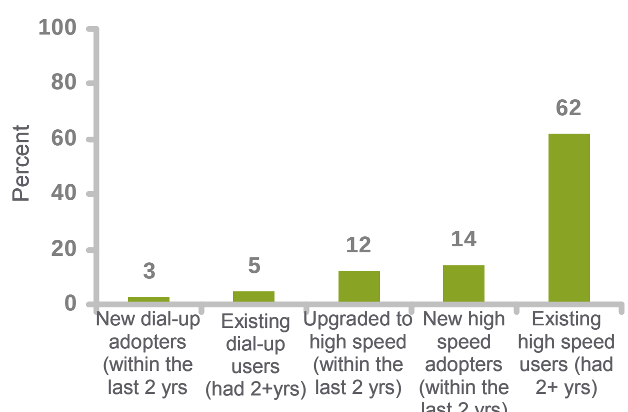
It is worth noting that this response is quite consistent across cities and countries surveyed and generally holds for both the 2007 and 2008 surveys: when asked if mobile phones are all you need to access the Internet, the overwhelming majority of respondents disagree. Preliminary findings from the 2008 survey, however, also suggest that as ‘smart phones’ become less rare in emerging markets for a segment of the population this perception could be changing.

Findings from the 2008 study also indicate that, among people accessing Internet through a PC at home most already report that they connect through broadband. In these emerging market cities, many households appear to have bypassed dial-up and gone straight to broadband connections. With their high-speed connections, increasing numbers of citizens are able to conduct transactions and complex interactions online… as long as the services are available to match their expectations.

Citizens: Home Connection Type^



Citizens: Home Connection Adoption^



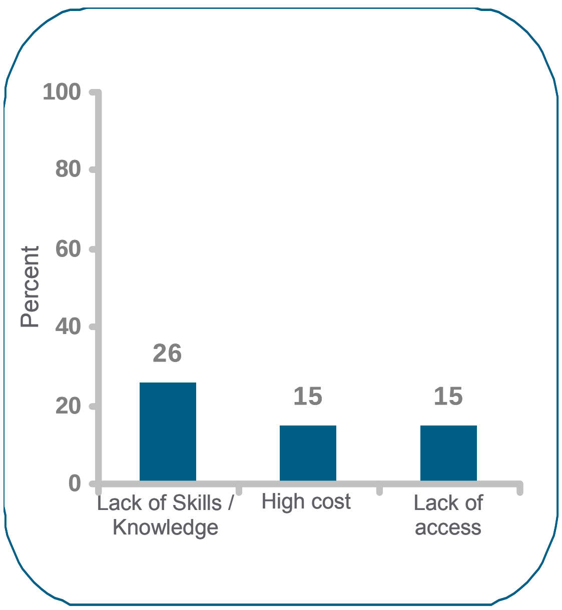
^Data from the 2008 Citizen survey

INTERNET BARRIERS

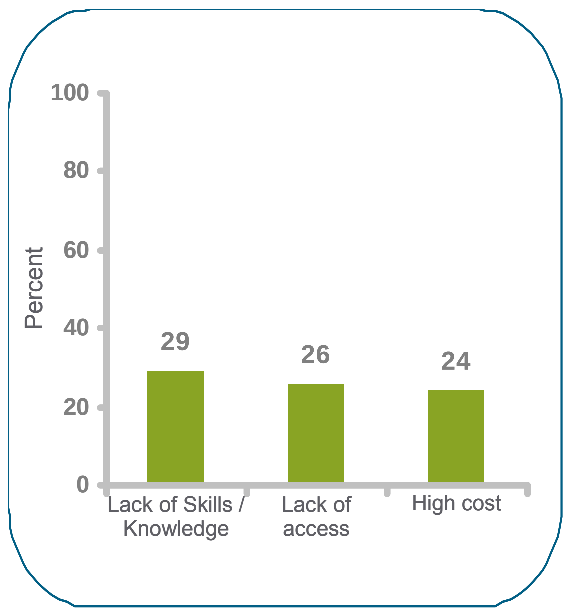
One of the aims of the survey was to gain a better understanding of barriers to Internet access—this would then provide a basis for developing action plans so that governments and public-private partnerships could address them in pursuit of the social and economic benefits that Internet offers.

From all the possible barriers, the top three items identified by citizens and businesses as preventing them from using the Internet (or using it more) were clear-cut: skills, access and cost. While these play out differently for different segments of the population, overall the single most-often mentioned barrier—both for citizens and businesses was “skills”.

Business: Barriers to Using the Internet to its Full Potential



Citizens: Barriers to Using the Internet



The other two barriers -- infrastructure (access) and affordability (cost)—were also seen as significant, but skills were an even greater concern across most of the countries and cities surveyed. This was clear from the 2007 survey and initial findings from the 2008 study confirms that despite the increased frequency in Internet use among citizens, lack of skills remain the primary barrier to using the Internet.

It is striking that skills emerges as the top barrier to Internet use from both the perspective of businesses and citizens.

For businesses, lack of skills is the most frequently mentioned obstacle and this holds across business size. Although cost is seen as a great obstacle by very small businesses, these are also the ones that perceive skill as the highest hurdle for them to make better use of the Internet. The differences in the importance attributed to lack of access is less significant across business size—not surprisingly since it tends to reflect differences in Internet availability across cities.

Business: Barriers to Using the Internet to its Full Potential by Company Size

Percent selecting each barrier among those . . .	Lack of Skills/ Knowledge	Lack of Access	High Cost
Very small companies	34%	15%	20%
Small companies	28%	17%	16%
Medium companies	22%	13%	11%
Large companies	24%	16%	15%

For citizens, while skills emerge as the main barrier overall the picture varies considerably across segments of the population:

- Younger citizens (those under 35) are much more likely to see lack of access as their top barrier while the lack of skills is far ahead of the other barriers for older citizens.
- The role of skills as a barrier is also slightly higher than average for female respondents
- For the better educated citizens, skills are still an issue—but on a par with access and cost.

Citizens: Barriers to Using the Internet by Key Demographic Groups

Percent selecting each barrier among those . . .	Lack of Skills/ Knowledge	Lack of Access	High Cost
Under 35 Yrs Old	24%	34%	26%
Over 35 Yrs Old	32%	22%	22%
Female	31%	23%	23%
Employed	28%	26%	23%
Completed Higher Ed.	22%	22%	21%

SERVICES – TWO VERY DIFFERENT PERSPECTIVES

What do citizens and businesses do when they connect to the Internet? What kind of services, if any, do they use or want to use in the future? The survey shows, that today people and business are using the Internet for communications and information and there is a healthy demand for online services. The types of online services citizens are interested in accessing in the future differ from businesses.

Citizens

The large unmet demand (thirst for the Internet!) is well documented here and affects all kinds of services –with the largest gap on the public service front but very significant also for banking and eCommerce.

Frequency of use is also a good proxy for the extent to which services are used — very likely to be related to using the Internet through PCs at home/work. Citizens who access the Internet frequently are more likely to access information, e-commerce and government services.

The need for information/news (one-way data service) is the primary starting point when people first use the Internet. Easy access at home/work enables citizens to access a variety of services more regularly, potentially moving them towards a two-way exchange.

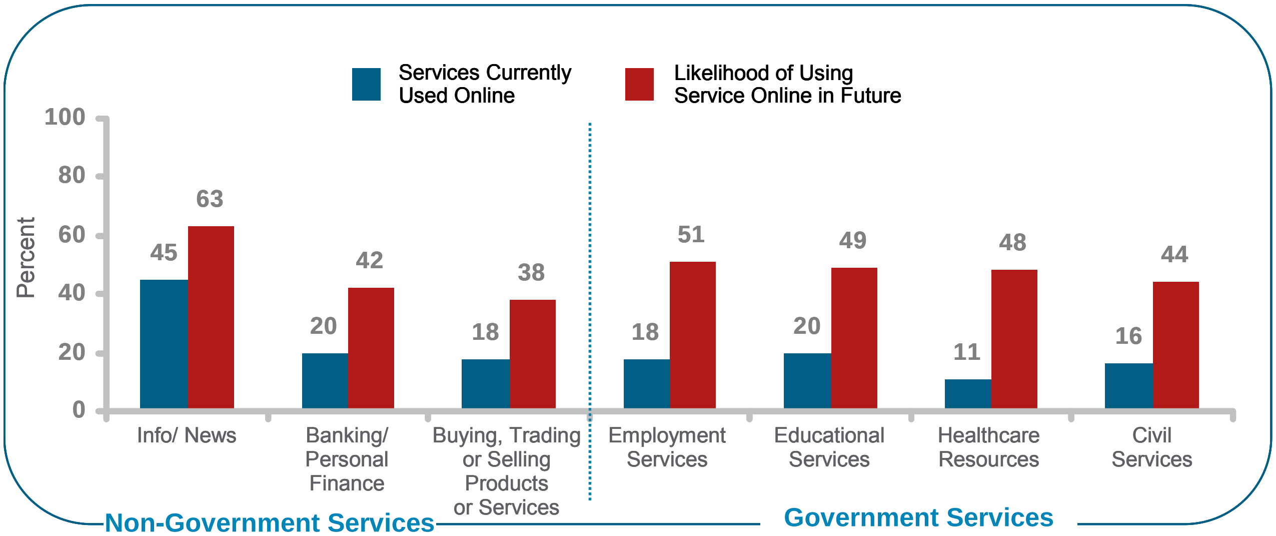
Citizens demonstrate strong expectations of using several types of government online services in the future. This level of interest provides a more interesting story than observed with the business audience.

The survey offered a wealth of insights on this front—all pointing the existence of large unmet demand. Three types of findings are worth highlighting:

1. <u>High future use expectations overall—surprisingly so for government services.</u>

   Regardless of currently usage levels, citizens show an increased likelihood of using all tested services in the future (assuming that access is convenient and reasonably priced). The largest unmet demand (expectation of future use compared to current use) is for government services such as employment, education and healthcare resources.

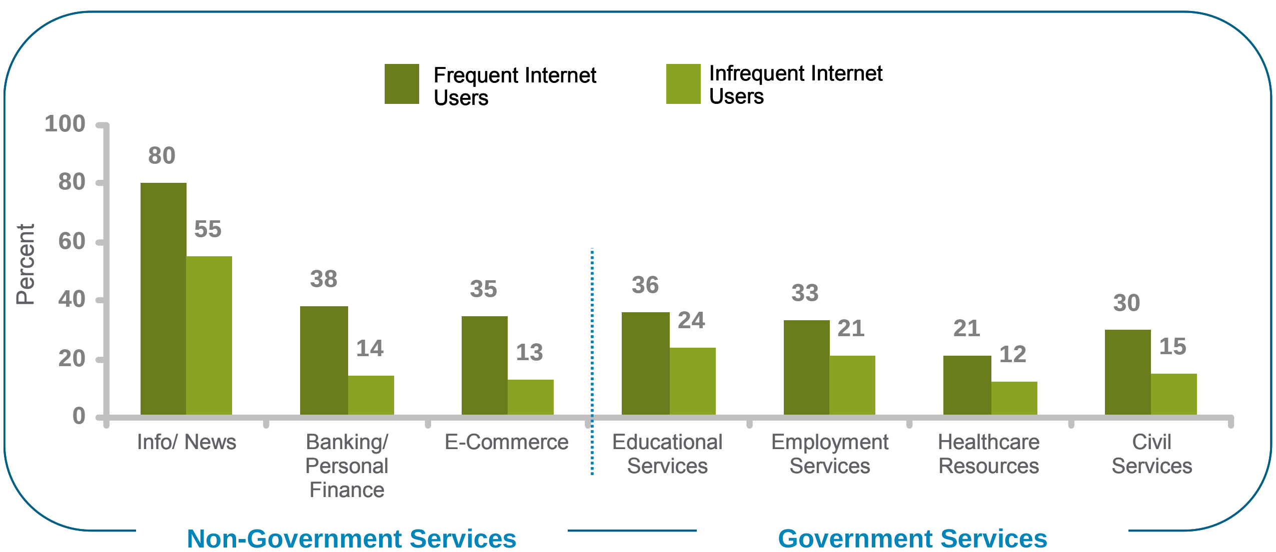
Citizens: Online Services Currently Used and Likely to be Used in the Future



2. <u>Current use of services is closely related to frequency of Internet usage across all types of services.</u>

   As infrequent users move into more frequent usage (as the 2008 survey suggests is already happening) this will be a powerful force for increased demand for online services.

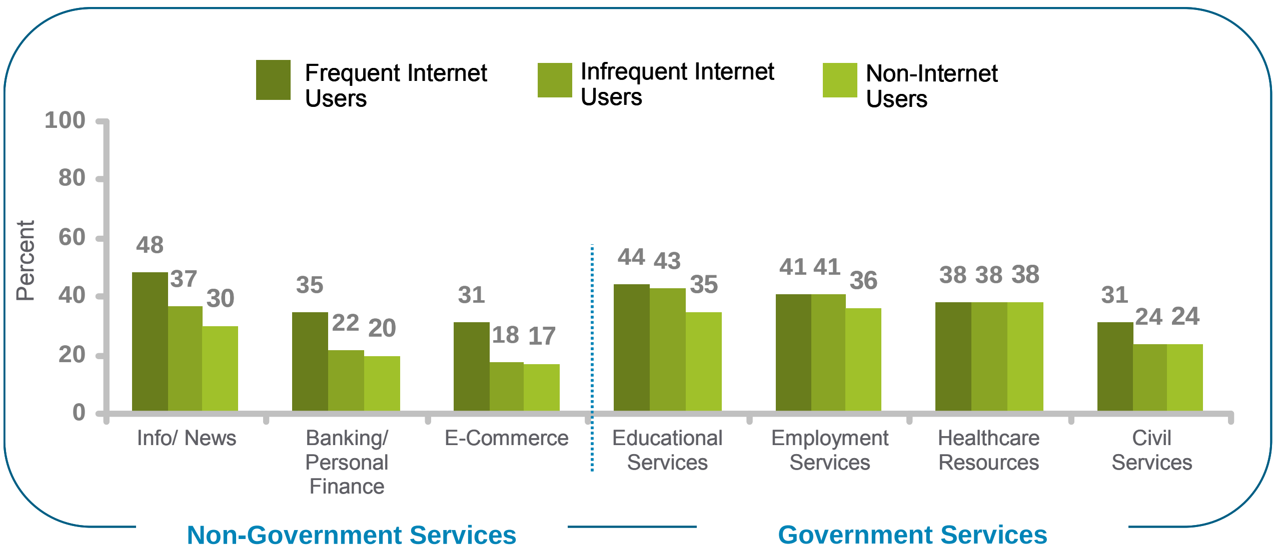
Citizens: Online Services Currently Used By Frequent & Infrequent Internet Users



3. Citizens consider online services worth paying for.

The survey treated "willingness to pay" as an acid test for future Internet demand—given that people tend to see online services as free for the taking. The results suggest that significant proportions of people consider these services to be worth paying for. Even more striking, respondents who are not currently using the Internet are nearly as likely as frequent users to consider these services worth paying for. The willingness to pay overall is particularly high for government services — notably, those that do not represent routine transactions ("civil services") such as education, health and employment.

Citizens: Online Services Worth Paying For By Frequent & Infrequent Internet Users

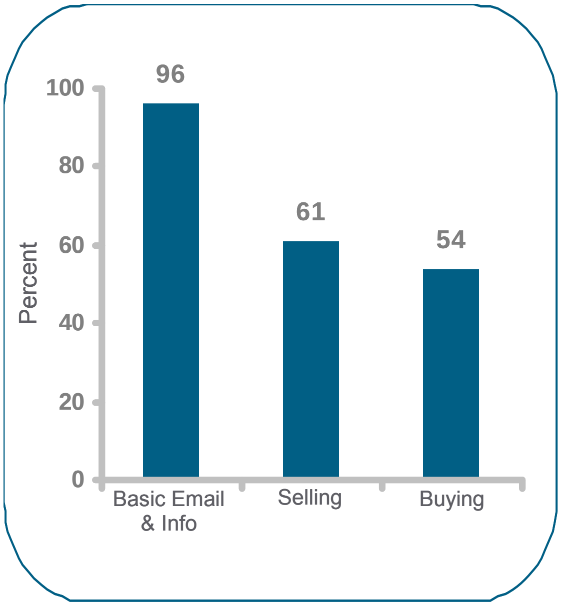


Businesses

Businesses in emerging market cities use the Internet extensively for communications and information and they are experienced in using it for banking and eCommerce. It is in these areas where they expect the largest expansion of their online activities. This suggests that there are major opportunities ahead for service providers and application providers to offer a wider range of options to meet that untapped demand.

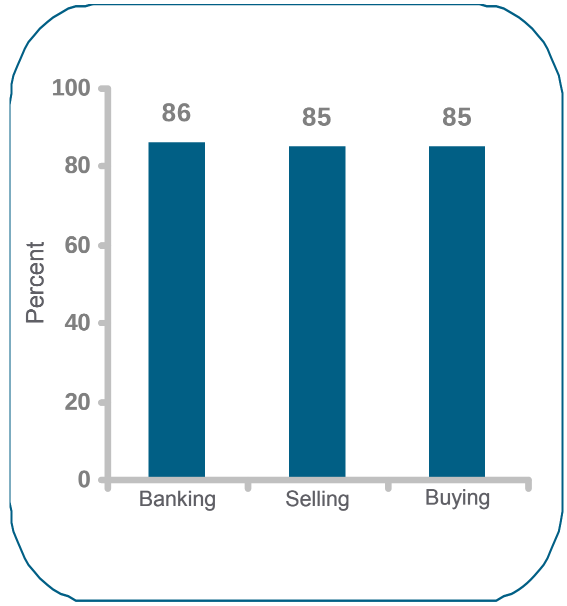
Business: Ways Internet Currently used

(Non-Government)



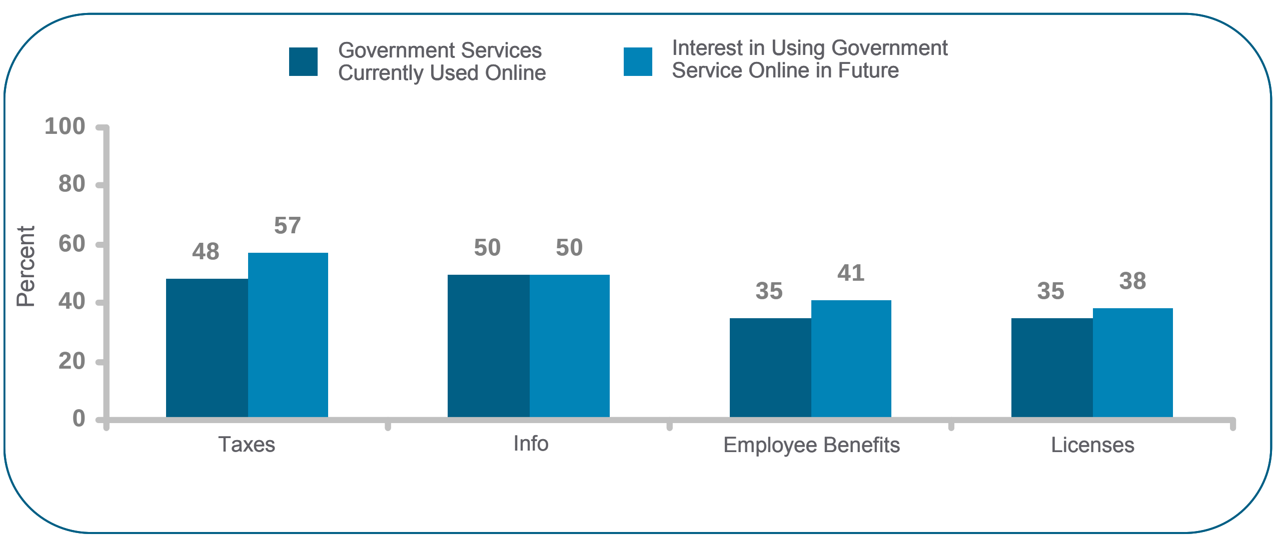
Business: Likely to Use the Internet the Same or More Frequently For…

(Non-Government)



The picture for government services is quite different. While there are already significant usage levels, businesses interviewed did not expect this type of online activity to expand much within the next 12 months. The highest level of interest is around tax payments. The lack of enthusiasm for online government services may simply reflect a pragmatic attitude to the availability of services and skepticism or potentially due to negative experiences with what is available so far (see section on page 14 for more information on expectations of government).

Business: Current Use & Demand For Online Government Services

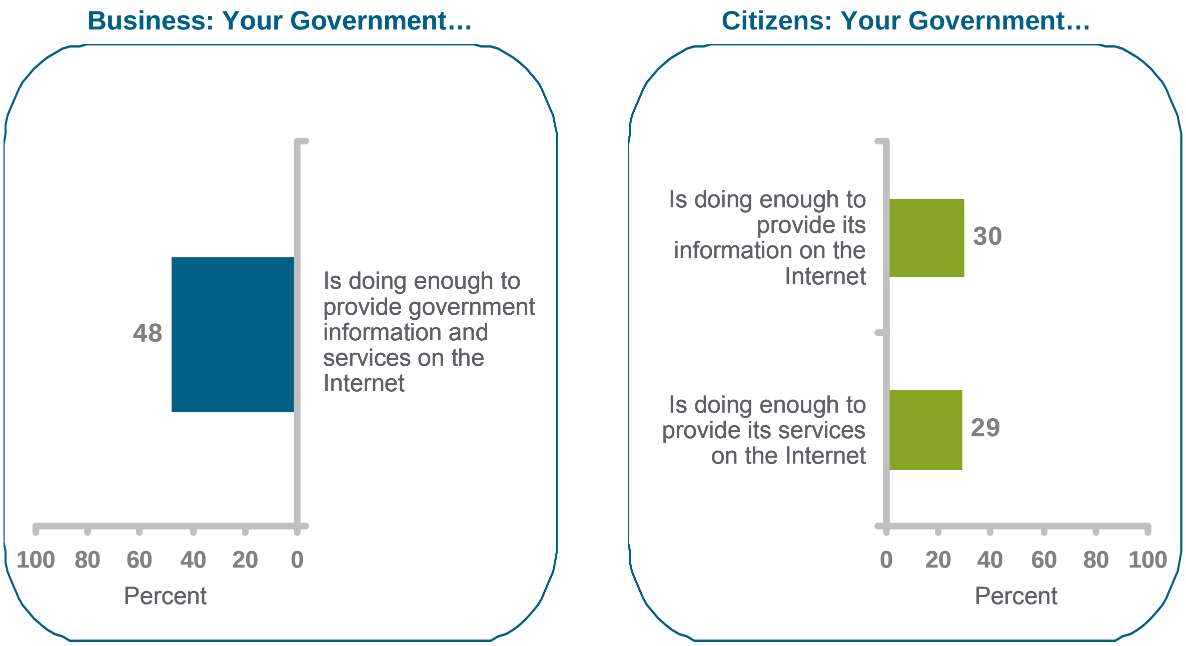


EXPECTATIONS FOR THE ROLE OF GOVERNMENT

Citizens and business alike expect government to do more to facilitate Internet access and provide services online.

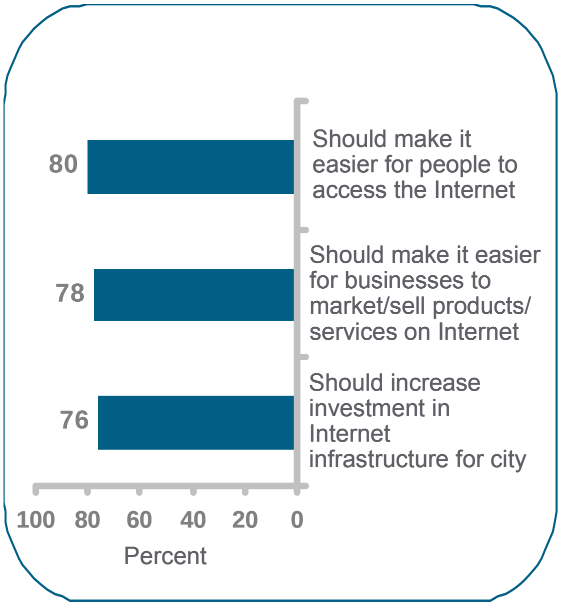
There is a clear desire from citizens and businesses for more active involvement by Government to promote Internet access and use. The overwhelming majority of businesses and citizens think government should have a role in making it easier to access the Internet. In addition, a large majority of businesses suggest that government should make investing in Internet infrastructure more of a priority.

Governments at all levels have three different types of interaction with connectivity and networks. First, they can use that technology to improve internal efficiency of government operations. This is an area that was not covered by the survey. Governments also have a role in developing citizen relationships and facilitating technology adoption; these areas were measured in the 2007 surveys revealed very clear expectations among businesses and citizens.

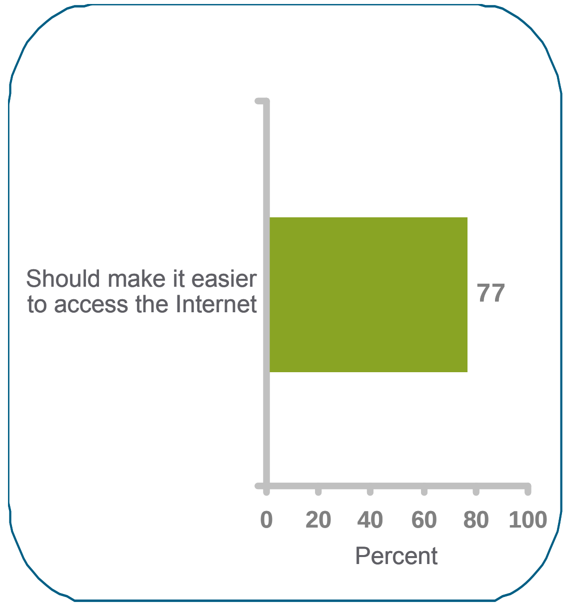


Concerning the government's own online activity, and the services they offer urban inhabitants, only two in five businesses and less than a third of citizens believe that governments are doing enough to make information and services available online. Together with the findings on unmet demand for government services (and willingness to pay for some of them), this amounts to a very strong plea by businesses and citizens for a more proactive online government.

Business: Your Government…



Citizens: Your Government…



Concerning the broader role that governments can play to facilitate technology adoption and, in this case, the spread of connectivity, the message emerging from the survey is equally strong from citizens and businesses.

- Citizens have a clear sense that government should be doing more to facilitate their Internet access — as three-quarters of respondents indicate
- Businesses are also very adamant that the government should play a more active role — facilitating in various ways as well as treating network infrastructure as a higher government priority than they perceive at present. This is quite consistent with their views on the potential business impact of the Internet and should be read as emphasizing the role that connectivity can play in enhancing productivity — and a city's competitiveness.

Appendix

Methodology:

- 30 minute, Telephone and Face-to-Face interviews conducted with citizens and businesses in twenty-four cities in Argentina, Brazil, Mexico, Poland, Russia & South Africa.
- Business: Business people who understand their companies' overall business strategy and operations, financial information, government interactions and the use of technology. Qualified companies represent a variety of different industries and company sizes; all were required to have at least one PC.
- Citizen: Adult citizens who have decision making responsibilities for the household.

2007 Wave: Distribution of Interviews

Country	Total	Tier 1 Cities	Tier 2 Cities
South Africa	Business 300 Citizen 1,031	Greater Johannesburg/ Pretoria Cape Town	Port Elizabeth Pietermaritzburg
Argentina	Business 299 Citizen 1,002	Buenos Aires Córdoba	Mendoza Neuquén
Brazil	Business 300 Citizen 1,003	São Paulo Rio de Janeiro	Fortaleza Manaus
Mexico	Business 300 Citizen 1,001	Mexico City Monterrey	León Aguascalientes
Poland	Business 299 Citizen 999	Warsaw Łódź	Wrocław Szczecin
Russia	Business 301 Citizen 1,003	Moscow St. Petersburg	Novosibirsk Yekaterinburg

2008 Pulse Wave: Distribution of Interviews

Country	Total	Tier 1 Cities	Tier 2 Cities
Brazil	Citizen 563	São Paulo	Fortaleza
Mexico	Citizen 641	Mexico City	Aguascalientes
Russia	Citizen 500	Moscow	Yekaterinburg