

DIGITAL ECONOMY

The importance of ICT in society's needs: An empirical approach through Maslow's lens¹

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The aim of the Watch is to point out the importance of ICT in developing and emerging countries from a demand-side perspective. We find that having a cell phone and internet access are gaining importance among individuals' basic needs. Younger people consider ICT-related needs more basic than older people do. In addition, economic development matters when technology is not widely implemented.

1. Introduction

The development of Information and Communication Technologies (ICT) has strong potential to transform economies and societies in several ways, such as reducing information and transaction costs, creating new collaborative models to increase the efficiency of workers, promoting innovation, and improving education and access to basic services. Innovation seems to be everywhere in the lives of consumers, in industry and service production processes, as well as in public sector tasks. However, while we observe dramatic changes in people's lives, it is difficult to find any effect in productivity statistics. The same happened when computers were brought into society massively (Griliches, 1994; Brynjolfsson and Yang, 1996; Triplett, 1999; and Jorgenson, 2001) and this phenomenon, known as the Solow Paradox (1987), had already been observed in the boost from information technology.

Researchers argue about why macroeconomic statistics are not showing increases in productivity that point to a new industrial revolution. Our hypothesis is that the effects of the current revolution on the economy might be reflected more on the demand-side rather than the supply-side. In addition to the arguments of mismeasurement of GDP growth and weak investment since the financial crisis, the impact of the digital economy is hard to measure using traditional indicators from the supply-side, such as productivity growth.² Most of the welfare gain from digital services on the internet is overlooked by traditional approaches, which only rely on monetary expenditure. The current system of GDP accounting has rigidities when it comes to free services. If a service lacks a price, then there is no standard way to estimate its worth in terms of money. However, consequences associated with ICT affect not only the productivity of individuals as workers (labour suppliers), but also as consumers by changing their welfare levels (i.e. demand for goods and services and quality of life). With smartphones and free apps everywhere, there are so many

1: We thank Hicham Ganga for his comments and assistance.

2: Although some effects should appear, the way to measure this is not clear yet, partly due to the "mis-measurement hypothesis" (Feldstein, 2015, and Davies, 2016).

free services, which create problems for the GDP accounting.³ We argue that the effects of this revolution might be reflected in the demand-side more than in the supply-side. It does not matter how important the services are, nor how much they have improved over time. Any improvement in the quality of search services is not a contribution to GDP because this is a measure of total production and not of a society's welfare. In order to capture the economic magnitude of current innovations, we suggest focussing on demand-side measures for free goods, such as the consumer welfare derived from internet services that reflects qualitative improvement in user experiences.

Given the substantial fluctuations in medium-term Total Factor Productivity (TFP) growth and the likelihood that forecasts are confounded, it would not be surprising if revisions to expectations about future productivity growth are a source of significant aggregate-demand shocks (Crafts and Mills, 2017). Many of the tasks that individuals perform on a regular basis, such as thinking about what to buy (recommender systems), asking for health advice, booking a trip or paying taxes, are carried out in a dramatically different manner using internet applications. However, how to measure the impact of these elements in terms of productivity and its relationship with GDP is still complex.⁴

In order to test for this mechanism, this study focuses on the demand-side from the point of view of the individual as a consumer and analyses the relative position of two indicators that relate to the digital economy (having Internet access and owning a cell phone) in the context of consumer needs for 34 developing countries. We rely on microdata from the Pew Research Center in 2014 to shed some light on the welfare impact of ICT in society by scaling to a country-level perspective. We control for this assessment performed by different generations of consumers since ICT adoption shows a differentiated pattern among younger consumers (associated with the term “digital natives”) and older consumers (“digital immigrants”) in developed countries like Spain (Alonso and Arellano, 2015, Arellano and García, 2017).

The rest of the paper is organized as follows. Section 2 shows how Internet and cell phone usage fit into Maslow's pyramid and explores the evidence across countries of the importance of technology adoption in these societies according to age. Section 3 analyses the relationship between ICT needs and economic development. Section 4 concludes.

3: “Free” consumer entertainment and information from the internet, largely supported by advertising revenues, has had a major impact on consumer behavior. Some economists believe that measured gross domestic product (GDP) growth is badly underestimated because GDP excludes online entertainment (Brynjolfsson and Oh, 2012; Greenstein, 2017; Ito, 2013; Aepfel, 2015; and Nakamura et al., 2016).

4: From a historical perspective, the relationship between estimated trends in total factor productivity growth and subsequent outcomes does not appear to be a good indicator (Crafts and Mills, 2017). They show that by looking at American trend TFP growth in the business sector, one would have missed all the major episodes from 1967 to 2016. It argues that in the past, trend growth estimates have not been a good guide to future medium-term outcomes, and ‘techno-optimists’ should not be put off by time-series econometrics. Also, Gordon (2016) shows that the burst of productivity growth between 1994 and 2014 (often attributed to the internet) has ended in a period of extremely low productivity growth.

2. The role of internet in society through Maslow's lens

The idea of relative utility was presented by Maslow (1943) when defining his theory of human motivation using a list of the basic needs of adults. Using a pyramid structure, the base comprises physiological needs, those relating to homeostasis and preferential choices among foods. Once physiological needs are satisfied, safety needs come to the fore. Safety needs relate to emergencies and disorder levels in the context of the individual (family / society). A third level refers to needs associated with love, affection and belongingness. A fourth level in the hierarchy is represented by needs for esteem, and finally there are those associated with self-actualization, such as creativity, morality and desires for self-fulfilment. In terms of consumption, welfare gains derived from consuming certain good and services, such as internet access and having a cell phone, can be placed in this pyramid as well.

Data

In order to assess the importance of ICT among people's needs, it is necessary to establish a relative ranking among such needs and Maslow's categories. We use information provided by the Spring 2014 Survey data about Global Attitudes & Trends (Pew Research Center) which includes information for 34 developing countries and more than 35,000 adults on the importance of certain basic items. The database includes a weighting for any interviewed adult to present a realistic picture of the society in each country that is included in the survey.

This dataset also includes information on internet access, cell phone ownership, and car and home ownership, among other options. The question of interest is as follows: "Some people say the following things are important to them. On a scale of 0 to 10, how important is each thing to you personally, where 0 means not important at all and 10 means very important." The answer to each option is independent of the rest, and the value can be repeated for several options. The full range of options is in Table 1 and they are linked to the basic needs defined by Maslow (1943).

Table 1 Options and basic needs

Options in the question	Basic Need associated with Maslow's pyramid
To have a fulfilling job	safety
To be able to travel	self-actualization
To have internet access	-
To own a cell phone	-
To have free time for yourself	self-actualization
To help other people who are in need	esteem
To own your own home	safety
To have a good education for your children	love and affection
To own your own car	-
To have money for old age	safety
To have good health	physiological
To be safe from crime	safety

Source: BBVA Research, Pew Research Center and Maslow (1943)

The subset of countries with complete information (in alphabetical order) includes: Argentina, Bangladesh, Brazil, Chile, China, Colombia, Egypt, El Salvador, Ghana, India, Indonesia, Jordan, Kenya, Lebanon, Malaysia, Mexico, Nicaragua, Nigeria, Pakistan, Palestinian territories, Peru, Philippines, Poland, Russia, Senegal, South Africa, Tanzania, Thailand, Tunisia, Turkey, Uganda, Ukraine, Venezuela and Vietnam.

Following Maslow's philosophy, we order the average individual assessments for these countries for all the items reported. Our empirical approximation to Maslow's pyramid is presented in Figure 1. The result confirms the importance of physiological issues, love and affection, and safety needs as priorities for people, who place these at the base of the pyramid. In contrast, having internet access, travelling, as well as owning a car and a cell phone are at the top of the pyramid.

Figure 1 Empirical approximation to Maslow's pyramid



Source: BBVA Research, Pew Research Center and Maslow (1943)

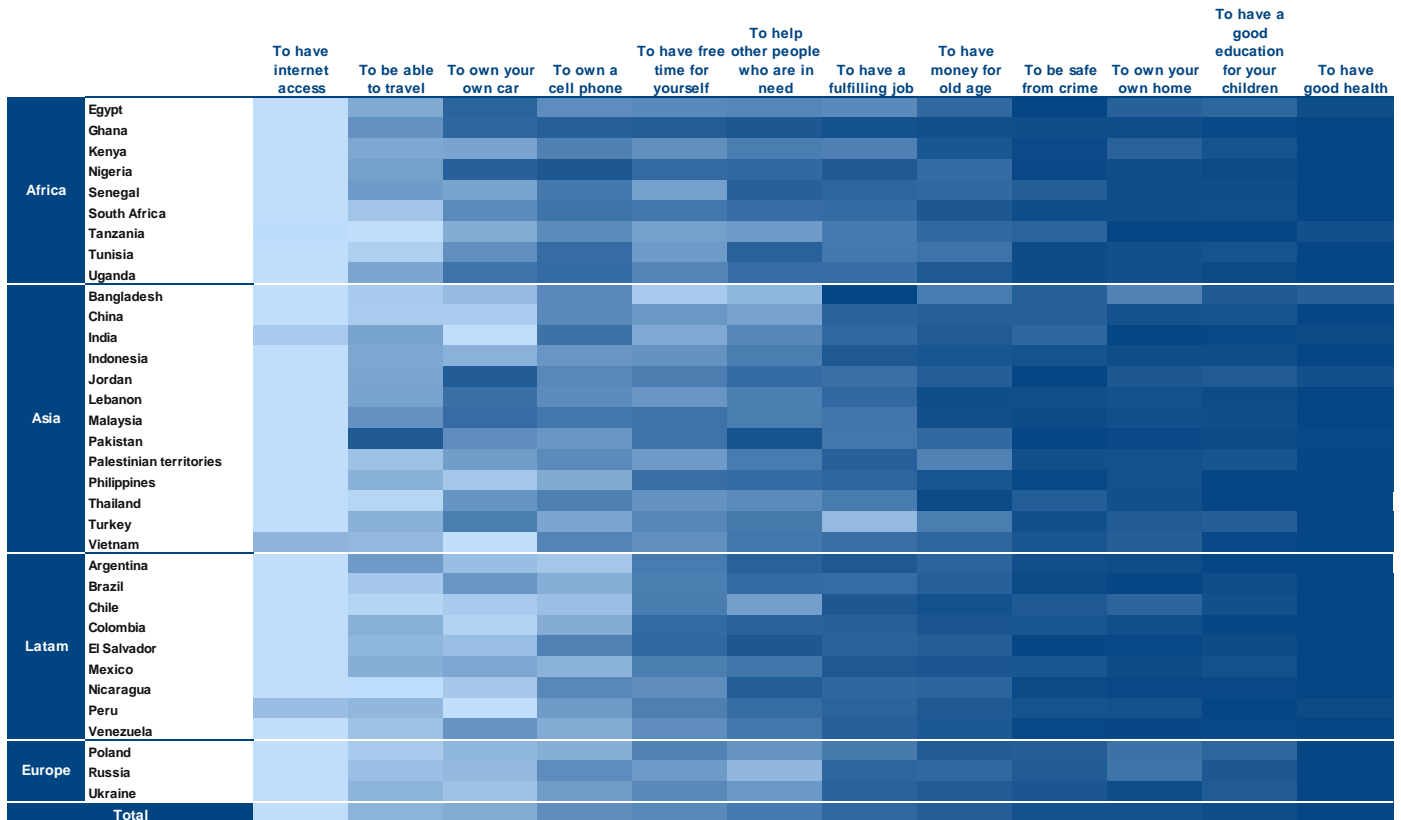
3. Is there a change in the near future? Evidence across countries

The results presented previously in the form of a Maslow pyramid are disaggregated by country. There is a remarkable heterogeneity in the answers of the individuals that varies across countries. Thus, we normalize the original values in order to reduce country-specific heterogeneity in the ordering of preferences and present comparable figures among countries. For each country i , we calculate the weighted average of each option, based on the representativeness of each individual in the country. Afterwards, we take the maximum and the minimum values (M_i and m_i , respectively). For every option/need x_i , we normalize the value according to the following formula:

$$t_i = \frac{M_i - x_i}{M_i - m_i}$$

The normalized figures belong to the interval [0, 1]. Values of t_i near 0 imply that the option x_i is very important for the individual, so the option is located near the base of Maslow's pyramid (darkest blue colour). Values of t_i near 1 represent a less critical option which is nearer to the top of the Maslow's pyramid (lightest blue colour). Table 2 shows the results in terms of a heat map where results are comparable across countries and needs.

Table 2 Heat map: Needs assessment across countries



Source: BBVA Research, Pew Research Center and Maslow (1943)

The results show that there are some commonalities in countries' preferences. A common pattern is that health issues are the most important ones and having internet access is the least important need among the available choices. As expected, other issues such as being safe from crime and your children having a good education belong to the base of the pyramid. The remaining options are allocated on different levels depending on aggregated consumer preferences. In order to compare results across countries, we conduct a twofold analysis based on the overall assessment of each item and its relative position in the Maslow pyramid.

Based on the absolute assessment, different patterns relating to technology emerge. We observe that having a cell phone is very important in African countries, such as Kenya, Senegal, South Africa, Tunisia, Uganda, Ghana and Nigeria, and also for several Asian countries such as Thailand, Malaysia and India. The range of the normalized assessment among the countries that value having a cell phone as a very important issue varies from 0.12 in Nigeria (the most important) to 0.39 in Kenya. Conversely, several Latin-American countries (Argentina, Chile, Mexico, Brazil, Colombia and Venezuela) show less dependency on cell phones, placing this option very close to the top of the pyramid. The normalized assessments range from 0.85 in Argentina to 0.67 in Venezuela. Moreover, Poland, Turkey and the Philippines include the cell phone among the most dispensable of needs and all put having a cell phone at

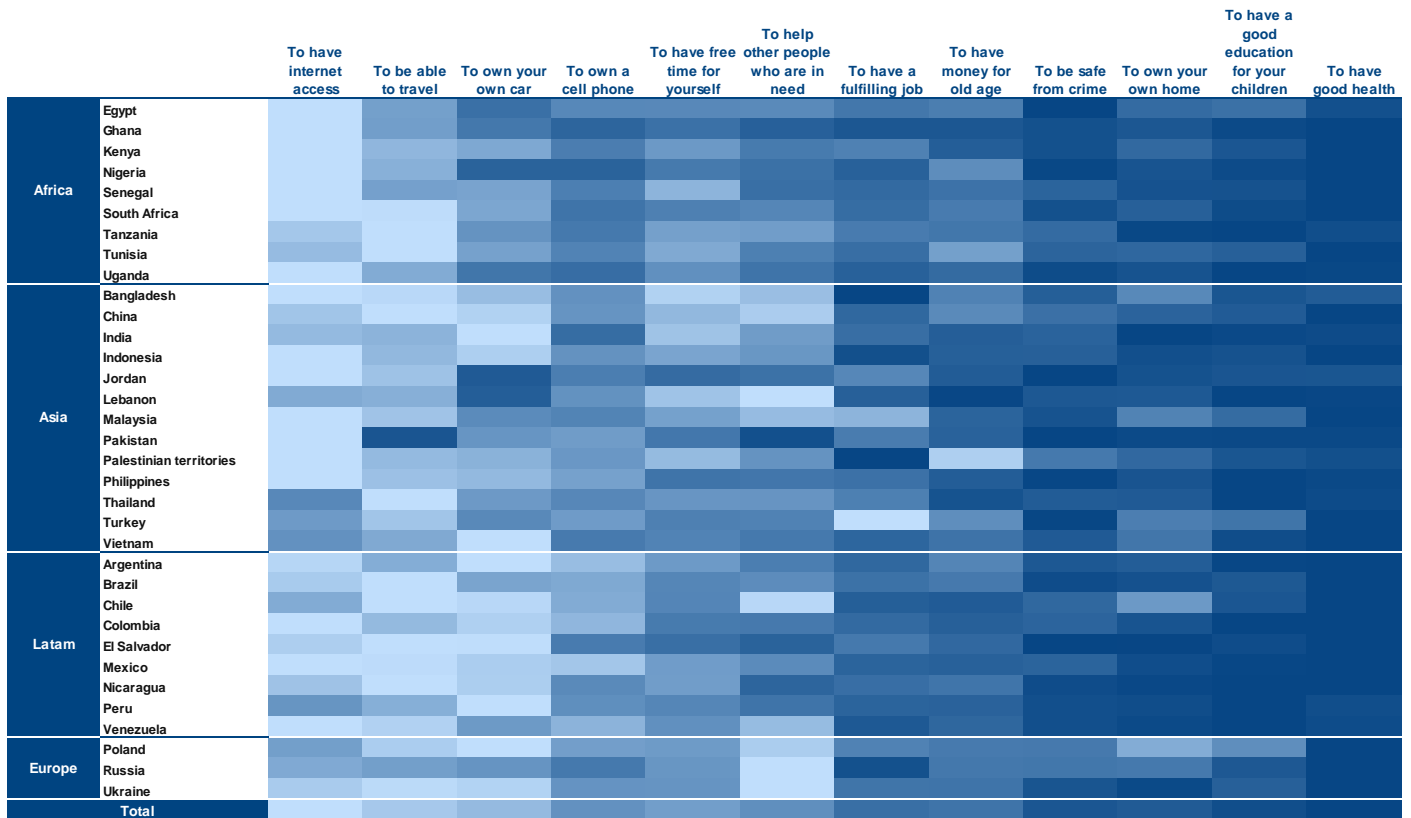
over 0.6 on the scale from 0 to 1. These results point to the existence of regional patterns that might be associated with differences on the supply side, such as the timing of technology adoption in the region, and customer preferences.

In terms of the cell phone's relative position in Maslow's pyramid, Nigeria is the country that places this need closest to the bottom of the pyramid, which means that this is considered as a very important issue. Having a cell phone is placed on the fifth level out of a total of 12 (the first level is considered as the one for the need that matters most). For people in Nigeria, having a cell phone is more important than being able to travel, having money for old age, having free time for yourself, helping other people who are in need, owning your own car, and having a fulfilling job. Other countries such as Tunisia and Uganda place the cell phone on the sixth level. For Tunisia, having a cell phone is more important than having money for old age. The cell phone is placed on the seventh level of the pyramid for Russia, Tanzania, Bangladesh, China, Thailand and India. For these countries, having a cell phone is more important than having your own car.

A further issue relating to technology is internet access. If we compare it with cell phones, in all surveyed countries except Turkey having a cell phone is more important than having internet access. Moreover, all the countries except four, place internet at the top of the Maslow pyramid, which means that it is the most dispensable need among the twelve options. As for the exceptions, internet access is more important than having a car in India, Vietnam and Peru. In Tanzania, people prefer having internet access to being able to travel.

Given the importance of the rest of the items considered in our empirical pyramid, it is not surprising that internet was assessed as the most dispensable item in most of the countries. Nonetheless, relative to the classical models of innovation diffusion (Kijek and Kijek, 2010), the importance of ICT within individual's needs is heterogeneous and is evolving in society. We wonder whether the previous findings hold if we break the population down into age groups. Alonso and Arellano (2015) point to the importance of age in the adoption and diffusion of ICT, such as internet use, e-commerce and e-banking, for Spain's case. Poushter (2016) also confirms the existence of age gaps in internet usage in many economies, not only in developed countries (such as Italy, France and Japan) but also developing ones (like China, Indonesia and Vietnam in Asia, Kenya and Nigeria in Africa, and Peru, Mexico and Brazil in Latin America). Early adopters (i.e. digital natives or young consumers) may show a different pattern in the classification of needs compared to the late majority and laggards (i.e. older people). Our hypothesis is that internet should be more important for young people or digital natives, than for older people who take more time to adopt a new technology. Table 3 shows the needs allocation in Maslow's pyramid for people aged within the 18 to 24 year-old. For the two needs related to technology, the assessment shows a higher dispersion among countries for both young and old people. We want to highlight how internet and cell phones are gaining importance in Maslow's pyramid when it represents only the assessment of young generations.

Table 3 Heat map among needs and countries (18-24 years old)



Source: BBVA Research, Pew Research Center and Maslow (1943)

A common pattern is that a cell phone is similarly valued for younger people and total population. Differences, after normalizing, are below 10% in 30 countries out of the 34 in the sample. The young people’s assessments range from 0.70 in Chile (less importance for cell phones) to 0.4 in Tunisia. In terms of allocation in Maslow’s pyramid, in half of the countries considered, young people place the need for a cell phone on the sixth (India, Malaysia, Russia, South Africa and Tanzania) and seventh levels (Bangladesh, China, Indonesia, Kenya, Nigeria, Palestinian Territories, Poland, Thailand, Tunisia, Uganda and Ukraine), i.e. closer to the base of the pyramid. The differences in terms of levels of the pyramid between young people and total population are not very significant. There is no difference in 12 countries and in another 21 countries the differences are one or two levels at most. Only young people in Malaysia place cell phones on the sixth level of the pyramid and total population on the ninth (three levels of difference).

Internet access is gaining importance if we focus on young people’s assessments. As we can observe, internet becomes more relevant than many other needs when compared to those of the total population.⁵ The column representing the internet assessment is darker for the younger population and also more heterogeneous among countries than in the general case (Table 2).

5: Figure A.1 in the Appendix shows the results for people over 54 years old. The conclusions for this age group are very similar to the ones for the total population and they are not commented for the sake of brevity.

In terms of the normalized assessment, Thailand is the country that values internet access the most (0.44). Furthermore, Turkey and Poland have values under 0.60. By contrast, even young people from some Latin American countries such as Colombia, Mexico and Venezuela still rank internet access at the top of the pyramid. We find similar results for some African countries, such as Egypt, Ghana, Kenya, Senegal, South Africa, Uganda and Nigeria. In Asia, Bangladesh, Indonesia, Jordan, Malaysia, Pakistan, Palestinian territories and the Philippines also rank internet access as the most dispensable need. As for the relative position of internet access compared to other needs considered, internet access leaves the top of the pyramid in 17 countries (it is nearer the base of the pyramid than it is for total population — in four countries — and older consumers). In Poland and Thailand, it is as far down as the eighth level from the top of the pyramid for people over 54 years old. For young people in Poland, having internet access is more important than owning their home. Internet access appears on the ninth level in Ukraine, China, Chile, Lebanon and Turkey. Specifically, young people in Chile, China and Ukraine prefer having internet access to having a car. Surprisingly, the 10th level of the pyramid is reserved for internet access in countries with low per capita income, such as El Salvador, Nicaragua, India, Peru and Vietnam, where this need is more important than having a car or being able to travel.

Technology adoption and economic development

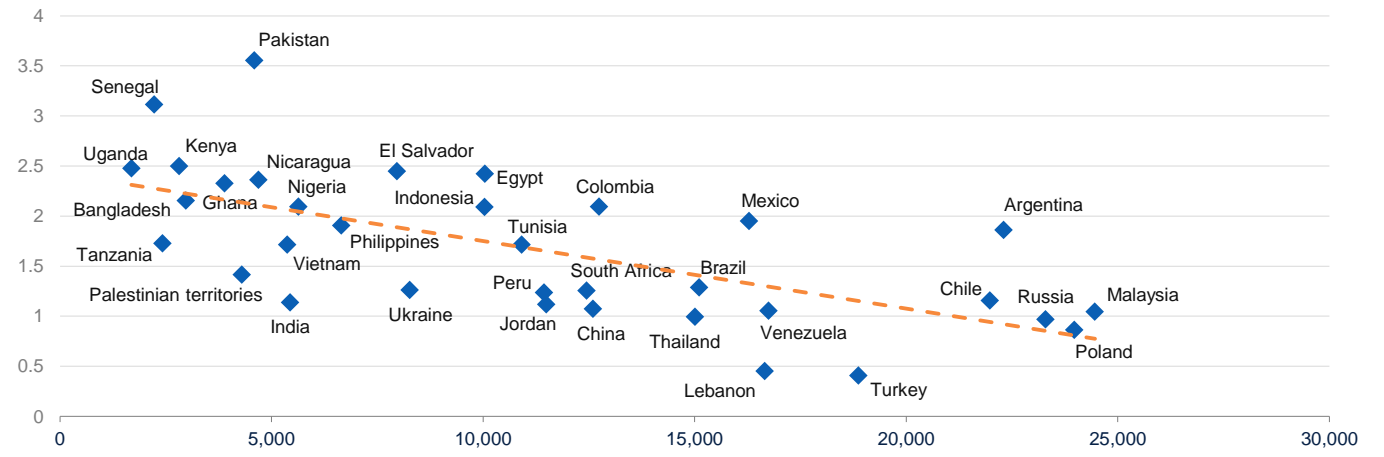
The previous results show that economic development might be an important component in the needs allocation of consumers. Internet access is at an incipient stage of technology adoption compared to the cell phone in this set of countries (Poushter, 2016). In addition, for some countries, internet might still be an expensive technology with a substantial budget constraint. Taking into account the role of younger adults in the adoption of new technologies, we want to analyse the relationship between the significance of internet access among the needs of this group of consumers and the degree of economic development of the societies they belong to, as measured by per capita Gross Domestic Product (GDP p.c.).

Using the normalized version of the assessment of internet access presents limitations for this GDP comparison exercise, since this transformation provides a relative measure within the interval $[0, 1]$. In a large part of the surveyed countries, internet access presents the minimum value and it is not possible to distinguish among countries.

As an alternative to this normalization, we create a new transformation as the difference between the assessments that the individual has good health, the best valued need, and internet access. We can thus prevent the optimistic and pessimistic bias inherent in each country (the main goal of standardization). This distance allows greater variability of results among countries. In terms of interpretation, a small (high) value of the distance reflects internet access as very highly (not very highly) valued within the needs of the society, that is, near (far from) the base of the pyramid.

Figure 2 shows a negative relationship between the distance of Internet access and good health, and GDP p.c. The assessment made by these younger consumers of this variable may be considered a good signal for the degree of economic development in these countries.

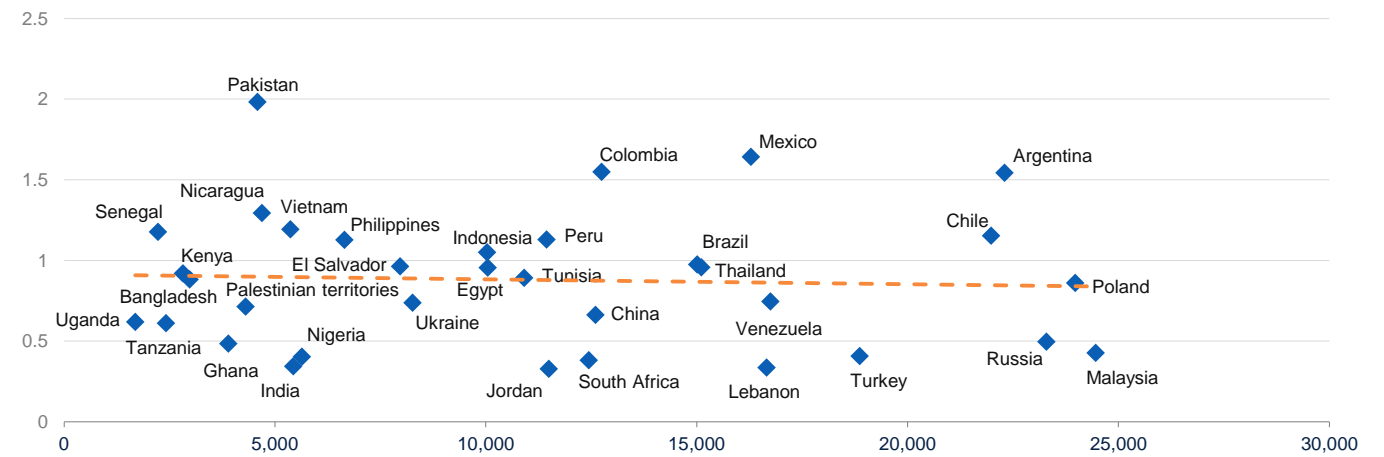
Figure 2 Assessment of internet access and GDP p.c. for people aged 18 to 24 (constant USD, PPP- adjusted)



Source: BBVA Research, IMF and Pew Research Center

Following a similar process for internet access, the distance in terms of assessment for younger individuals between owning a cell phone and having good health is calculated. The result presented for internet access contrasts with that obtained for the cell phone (Figure 3). Differences in the assessment of owning a cellular telephone do not show any linear correlation to GDP per capita in the countries.

Figure 3 Assessment of owning a cell phone and GDP p.c. for people aged 18 to 24 (constant USD, PPP- adjusted)



Source: BBVA Research, IMF and Pew Research Center

A potential explanation is associated with the different level of maturity in the adoption process of ICT, cell phone and internet. The technology development associated with cellular telephony is at a stage of expansion that is more advanced than that of internet access. Therefore the differences in the assessment of this group of consumers among countries, who are characterized as early adopters of ICT, are no longer associated with economic development, given the full availability of this technology throughout society.

These results allow us to conclude that the relationship between economic development and ICT seems to be the same as with other types of innovations, such as the telephone, the television and the car. The adoption of new technologies (and their subsequent assessment within the scale of needs) has a direct connection with economic development as long as the technology has expanded far enough to generate a sufficiently large critical mass of adopters who consider this technology as a basic element in their pyramid of needs. At the beginning, technology is expensive and its adoption is linked to income. Once there is a critical mass using the technology, normally among high-income consumers, network scale economies come into play together with more competition from the supply-side and technology becomes popular and more accessible in most cases. A full understanding of the dynamics of ICT from the consumer side can be a powerful tool in the economic valuation process. It is necessary to distinguish among the technologies that are included in ICT depending on their stage of development, as with cell phone and internet access. A relatively robust way to approximate the economic progress of a country versus another is to analyse those technologies that are characterized by the greatest dissimilarities in adoption (and therefore in assessment) within the society (as is happening with internet access in developing countries). This finding confirms the importance of behavioural patterns in adopting new ICTs among younger individuals. As stated in Poushter (2016), internet access is a primary and widespread element in the vast majority of developed economies, but it still has room for improvement in developing countries.

4. Conclusions

This study presents the foundations of an empirical approach, based on the demand-side (i.e. the welfare of individuals), to the digital age effects on an economy. In particular, we study the assessment of two information and communication technologies — cell phone and internet access — compared to certain basic human needs. We take Maslow's pyramid as a reference framework and bolt on some technology-related and other material needs.

We find that cell phone and internet access are gaining importance among individuals' needs in our sample of 34 developing countries. In this analysis, technology needs are compared with basic needs such as health, owning a house, having a good education and being safe from crime among others, as well as with other less critical needs, such as having a car, being able to travel and helping other people who are in need.

Having a cell phone is better valued than internet access for the total aggregated population in most of the countries. Although owning a cell phone is not part of the basic needs suggested by Maslow, we find that it is a very important issue for many people in different countries, especially in Africa. For Tunisia, Nigeria, Uganda and Kenya owning a cell phone is more important than having a fulfilling job. If we compare having a cell phone with having money for old age, the cell phone is more important for Nigeria and Tunisia. Also, for some Asian countries, such as India, Malaysia and Thailand, having a cell phone is a very important need.

Results are very telling when dividing the population into age groups. There are differences in the assessments of ICT-related needs between younger and older people in the societies. In general, younger consumers are associated with the role of early adopters and they rank both having a cell phone and internet access closer to the base of Maslow's pyramid. Based on young people's assessments, having a cell phone is, in most countries, more highly

valued than some basic needs, such as having money for old age, owning a car or a house and having a fulfilling job. In addition, internet access is no longer the most dispensable need. This is a common pattern for most of the countries in our sample.

As happens with many other technologies, we also observe that income is a relevant factor in technology implementation when the technology is not mature in the country. Based on young people's assessments, we do not observe a relationship between having a cell phone and GDP p.c., although there is an inverse relationship when comparing internet access and GDP p.c. Young people in countries with higher income consider internet as a more important need than their counterparts in poorer countries.

At the same time, the level of ICT development also determines the importance of ICT in the needs of the population. An example is Pakistan, which shows low levels of interest in ICT among the population (regardless of age) and poor development of ICT infrastructures. The timing of adoption differs between owning a cell phone and internet access, in favour of the former. The adoption of internet is still irrelevant in several countries in the sample. The different degree of implementation for these two technologies may also explain differences in allocating cell phones and internet among countries.

From the supply point of view, the improvement of ICT creates twofold effects on economic growth: not only ICT producers increase their own TFP, but those sectors that rely on the use of ICT are better off in terms of their efficiency (Jorgenson, 2001). Moreover, we cannot forget other potential effects associated with the creation of new economic activities, especially in the services sector and knowledge-intensive industries. Historically, firms have been seeking profits directly through productivity. However, the massive emergence of start-ups and firms looking for profit only indirectly put the customer as the main target in order to obtain profits in the long run. These start-ups, the ones that use the advances in new digital economy (e.g. internet of things, artificial intelligence) more intensively, look for the best customer experience. Therefore, it makes sense to measure the economic impact of the digital economy from the demand-side rather than the supply-side.

Given the increasing weight of these new firms, the difficulties of measuring the economic impact of new technologies on the supply-side requires changes to the measurement methodology employed, the creation of new paradigms in the way to recover information from main agents (especially firms and workers), as well as alternative views through experience and the "intention to pay" of consumers.

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Appendix

The Appendix focuses on the needs' allocation in Maslow's pyramid for people aged over 54. For internet access and owning a cell phone, Table A.1 shows a higher dispersion among countries. Differences reinforce the existence of heterogeneity in the classification of consumer needs. In terms of options, having internet access belongs to the top of Maslow's pyramid for those individuals above 54 years old, except for in India, Peru and Vietnam, where owning their own car outweighs the position of internet access.

The position of the cell phone is usually nearer the base of the pyramid for younger than for older individuals. The exceptions are to be found in Bangladesh, El Salvador, Nigeria, Pakistan, Peru, Senegal, and Tunisia (same position for both age groups), as well as Turkey and Uganda (one position of difference nearer the base in favour of older individuals). This result suggests timing differences in the adoption of internet access and cellular phones.

A common pattern is that the cell phone is, in general, more highly valued for older than for younger people. Tanzania, Vietnam, Turkey and Peru are the countries where the differences between older and younger people are the highest. Some exceptions where the cell phone is more important for younger than older people are Tunisia and Colombia. These differences are below 0.25 on a scale from 0 to 1.

Table A.1 Heat map among needs and countries (55 years old or above)

		To have internet access	To be able to travel	To own your own car	To own a cell phone	To have free time for yourself	To help other people who are in need	To have a fulfilling job	To have money for old age	To be safe from crime	To own your own home	To have a good education for your children	To have good health
Africa	Egypt	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	Ghana	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	Kenya	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	Nigeria	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	Senegal	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	South Africa	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	Tanzania	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	Tunisia	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	Uganda	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
Asia	Bangladesh	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	China	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	India	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	Indonesia	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	Jordan	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	Lebanon	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	Malaysia	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	Pakistan	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	Palestinian territories	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	Philippines	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	Thailand	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	Turkey	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	Vietnam	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
Latam	Argentina	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	Brazil	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	Chile	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	Colombia	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	El Salvador	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	Mexico	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	Nicaragua	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	Peru	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	Venezuela	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
Europe	Poland	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	Russia	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	Ukraine	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	Total	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	

Source: BBVA Research, Pew Research Center and Maslow (1943)

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