

Dossier: Social Movements, Digital Transformations and Changes in the Mediterranean Region

The Digital Economy in Mediterranean Countries: Socioeconomic Challenges and Convergence Potential

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After a stage of quick development that had the Mediterranean countries go from the low-income to the middle-income bracket, they entered a long period of growth insufficient for moving towards a significant rise in average per capita income. For several years now, they have been “stuck” in the “middle-income trap”: on the one hand, their salary levels have become too high, rendering them less competitive than low-income countries, and on the other, they have difficulty competing with the more advanced countries, which produce goods and services with higher technological content and greater added value. Whereas the Barcelona Process was supposed to contribute to closing the gap between the standards of living on the Mediterranean's two shores, the per capita income differences between the South and the North have tended to increase (2019 FEMISE Report). Can the digital offer Mediterranean countries the opportunity of a trampoline towards faster growth, allowing this long-awaited process of closing the gap to finally get underway? The answer is that the digital economy can not only contribute to accelerating growth, but can also help reduce situations of exclusion and regional inequalities. On the other hand, the digital economy cannot play its role without ambitious, appropriate national policies (infrastructures, regulations, etc.) and above

all, without regional co-operation. Clearly, it will have to be accompanied by a series of important reforms concerning other domains, especially that of the business environment (access to business financing, less bureaucracy, complicity between the business community and the political milieu, access to real estate, logistics, etc.), for countries to be able to take full advantage of the development of this digital economy.

Digital Opportunities

The digital economy opens up prospects for more rapid, inclusive and sustainable growth because it offers countries capable of taking advantage of its full potential the possibility of skipping certain stages of development while contributing to opening up the most disadvantaged regions and integrating a larger part of the population into economic life.

An Incontestable Factor for Inclusive Growth

In economic literature, a great number of papers have shown that increased access by companies, administrations and individuals to telephony and broadband services has positive effects on economic activity. These include, for instance, the 2009 World Bank study concerning 120 countries, showing that a rise in 10 percentage points in the penetration rate by technology type (landline, mobile telephony, internet and broadband) could generate up to 1.38 growth points in the GDP, with broadband services having the greatest economic impact. Even if the direct contribution to growth of the information and communication technologies (ICTs) sector continues to increase, positive impact on GDP growth can be ascribed above all to the following indirect effects:

- First of all, it facilitates company participation in the global economy. Thanks to the Internet, more products can be exported to a greater number of markets, generally by younger and smaller-scale businesses. According to the World Bank's 2016 World Development Report, a 10% rise in Internet use in two countries increases the average value of their bilateral trade per product by 0.64%. By making a greater amount of available information accessible at a relatively low cost, ICTs effectively open up new trade and transaction opportunities, regardless of a company's situation or location. In Morocco, for example, rural artisans are selling their handmade products throughout the world, through the platform Anou. These new trade possibilities, however, make it essential to develop secure online payment systems.
- Secondly, it improves the efficiency of production systems. Access to ICTs allows companies to enhance their general organization and better use their resources, particularly their labour force, which leads to productivity gains.
- In the third place, it contributes to building a more innovative country. Use of and access to high-performance ICTs, in fact, condition progress in the sphere of innovation to a large extent.

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- In the fourth place, it is a pull factor for foreign direct investment (FDI). Access to broadband services is indispensable for companies that are becoming established and are in contact with customers, suppliers or even a parent company located abroad. In addition, a great number of sectors, some of which have become strategic for Mediterranean countries, such as the automobile or aerospace industries, cannot do without ICTs in their manufacturing processes. The choice of location of these foreign enterprises

depends to a great extent on the quality of broadband access. It is essential to take this factor into consideration, not only in defining the content of strategies for attracting FDI to countries of this region, but also in preventing development gaps from widening on the domestic level, between developed urban areas and regions with only fledgling economic activity.

Given the situation of the region's countries (over the past 20 years, they have registered the worst performance in overall productivity progress among the ensemble of developing and emerging countries, and they are significantly lagging in the sphere of innovation), seizing the opportunity that the digital economy can provide is a particularly important challenge.

A Tool for Improving the Quality of Public Services

In Mediterranean countries, public services have considerably deteriorated. One of the main manifestations of this deterioration is the sharp fall in the quality of healthcare and education. According to the latest surveys carried out by the Arab Barometer, over 49% of the region's population stated they were dissatisfied or very dissatisfied with the educational system. This proportion rises to 56% regarding healthcare. The situation in the region is reflected in an Egyptian woman's testimony as reported in a World Bank paper (2015): "You can go to the private clinic and lose your money, or go to the public clinic and lose your life." In the face of a lack of infrastructures (hospitals, clinics) and healthcare personnel, particularly in rural areas, digital access can allow (i) consultations and prescriptions at a distance for simple diagnoses, as well as prevention and detection of serious illness, (ii) the dissemination of basic care and practices to be followed, for instance with regard to monitoring pregnancies, and (iii) the expansion and improvement of healthcare despite economic and geographic barriers through the connection of clinics with large hospitals as well as hospitals with one another. In general, computerization of healthcare services and interconnection of medical infrastructures are indispensable for improving the overall management of the healthcare system and data transfer.

In the sphere of education, the use of ICTs is an opportunity for improving the qualifications of the labour

supply and better meeting the needs of companies. Digital development would also, more specifically:

- (i) allow improved management of schools;
- (ii) contribute support so that a greater number of people can have access to continued education, which it is very important for develop in Mediterranean countries;
- (iii) offer teachers access to training programmes in improved teaching practices;
- (iv) provide the opportunity for an elevated number of youth (including young refugees or youth not attending school) to have access to online courses.

The Abdulla Al Ghurair Foundation for Education, in collaboration with MIT (Massachusetts Institute of Technology), for instance, has established the Al Ghurair Open Learning Scholars Program, in order to render some of the best training in the world accessible to Arab youth through university programmes in the spheres of science, technology, engineering and mathematics. Online education can facilitate the adoption of innovative teaching and learning methods that countries could need. Rote learning, for instance (much practiced in Mediterranean countries), could be reduced and more space given to personalized teaching adapted to each individual's pace.

A great deal of experiences from developing or emerging countries can be found in literature, which show that the use of ICTs has had positive effects on learning among children and youth. In India, the use of smartphone game applications designed to improve English skills has allowed an improvement of approximately 60% in student test results. In Niger, a surveillance system via mobile telephony has proven highly effective in combatting teacher absenteeism.

In any case, the factors behind the deterioration of education and healthcare quality are both multiple and complex. Moreover, recourse to digital tools, although it may be very promising, should be conceived as a complement or support for other, fundamental reforms that need to be implemented to achieve significant improvement.

A Means for Reducing Red Tape and Struggling against Corruption

Bureaucracy and corruption are often cited by companies in the region, in particular SMEs, as a substan-

tial obstacle to their everyday operations and their development. Even in countries that have implemented numerous initiatives to improve the business environment and that, according to the Doing Business criteria (an indicator established by the World Bank), have progressed the most among Mediterranean countries, such as Morocco, entrepreneurs' accounts indicate that there is still an extreme amount of red tape in the process of founding a business, for instance (an elevated number of procedures required, and a significant number of people intervening throughout the process who generate arbitrariness, increasing the risk of corruption). The development of ICTs is a means to modernize government administration by establishing digital services (e-government or e-administration). The use of ICTs allows the complexity of procedures to be reduced, together with the possibility of corruption.

Generally, access to government services often requires a significant effort by the population at large. Administration opening hours are sometimes limited and, for certain services, administrative offices are far away, in particular for people living in rural areas, making people lose many hours of work and involving transport expenses in order to obtain certificates, pay for public services, etc. ICTs can help facilitate access to these services and thus simplify people's lives. Initiatives such as online university registration (implemented in Tunisia, for instance) or online registration of candidates for school examinations illustrate the advantages such systems can have for citizens living in remote areas. It would be very useful if, as certain emerging countries have done, citizens and enterprises could obtain all, or at least a large part, of public certificates on line (birth certificates, company registration certificates, etc.) with the same level of security and authenticity as traditional paper documents, and with an online payment system. In countries where this has been implemented, as for instance Cape Verde, such systems have had very positive results on citizens' evaluation of their satisfaction level with the authorities and government administration services.

The advantages of using digital technology are evident, for governments (cost reduction through online public services, citizen satisfaction, improved transparency), companies (improved access to information, productivity gains), citizens (greater access to information and government services, improved cus-

tomer service, more commodities), and society alike, as well as for the country as a whole (increased foreign investment, more efficient public service, greater economic growth). Nonetheless, the ensemble of initiatives in e-administration have not been successful everywhere and their implementation is a complex, costly process requiring planning and rigorous organization. Note that in nearly all countries in the region, online administration projects are underway.

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A Tool for Sustainable Development

Building digital capabilities can be useful in supporting the development of technologically innovative solutions for green growth and sustainable development. Namely, it can allow:

- Development of incentive programmes or systems encouraging populations to modify their behaviour and raising awareness of the importance of biodiversity and the risk of pollution caused by certain activities. In Morocco, for example, the Clean City application encourages sorting at the source and seeks to change attitudes towards waste management.
- Provision of observation and measuring tools for improved decision-making for the authorities. These tools also allow data collection for enhanced management of biodiversity, overfishing or ecosystem pollution. The INDESO project in Indonesia, for instance, financed by the Agence française de développement (AFD), ensures sustainable fishing practices based on sound coastal environmental management and the struggle against illegal fishing.
- Improved prediction of natural disasters and extreme weather episodes (drought, flooding, tornadoes, etc.), development of warning systems in areas of risk.

A Tool for Combatting Violence against Women

Violence against women continues to be carried out in both the private and the public space. A recent phenomenon in the region is the upsurge of acts of harassment in the public space in certain countries. The rise in these situations of insecurity is not only intolerable, but also and above all very detrimental to women because it slows their integration into economic life. This phenomenon is experienced even more intensely by women from underprivileged environments and working in low-paying jobs, insofar as they are more dependent than others on public transport. Although to our knowledge, there is no census of practices and procedures, different types of ICTs are used, and include online platforms, downloadable applications for mobile phones and portable technologies. In Tunisia, for example, a mobile phone application has been launched (SafeNes) that raises awareness of the problem among citizens and connects victims with specialized NGOs. There are also “panic button” systems and GPS traceability systems. An analysis of the different solutions based on development of digital technology was carried out by the United Nations Economic and Social Commission for Western Asia (ESCWA, 2019). It would be highly useful in Mediterranean countries if the most effective and appropriate technological procedures and systems were applied on a large scale.

Challenges to Overcome

In the region, the different opportunities provided by the digital economy are still largely under-exploited and countries must overcome a certain number of challenges in order to benefit from the positive effects.

Lack of Broadband Infrastructure

With a regional average of 100 subscriptions per 100 inhabitants (Chart 4), the Mediterranean countries are well-positioned in cellular mobile telephony. In all countries in the region, the number of mobile phone subscriptions has progressed very quickly (Chart 5). Algeria and Morocco have even caught up with Israel, attaining a rate of subscription of 120 per

100 inhabitants, which is nearly the level of developed countries. This very positive fact is the result of significant reforms that were implemented for the most part in the early 2000s. In addition, in Morocco, for instance, the population at large enjoys the advantages of mobile telephony, even in isolated regions. On the other hand, access to broadband is still very insufficient on the whole in Mediterranean countries. Chart 6 indicates that the number of fixed broadband subscriptions is on average 7 per 100 inhabitants, compared to 27 for developing and emerging countries in Europe and Central Asia and 22 for East Asian countries. Among Mediterranean countries, only Lebanon, with a broadband subscription rate of 20%, approaches the level of Israel (nearly 30) (Chart 7). Broadband, however, is one of the decisive factors for the competitiveness of these countries and its deployment is of strategic importance for taking full advantage of the opportunities offered by the digital economy.

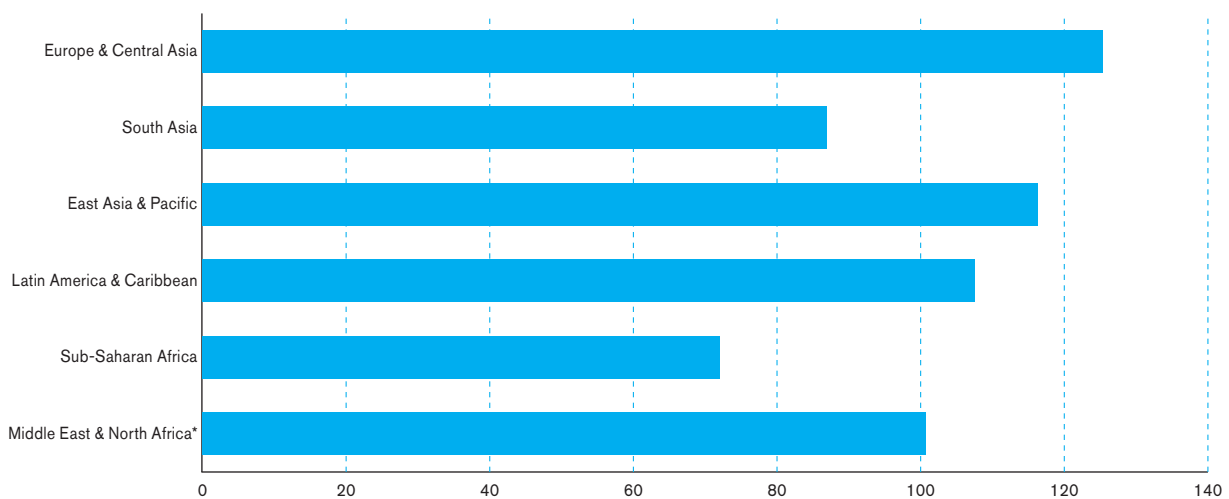
One of the consequences of the lack of broadband infrastructure is the lag in internet access. On average, only 50% of the MENA population has access, in contrast to 75% in developing and emerging countries in Europe and Central Asia (Chart 8). Again, Lebanon has nearly reached the level of Israel, where nearly 80% of the population uses internet. As with mobile telephony, Chart 9 shows that the proportion of internet users has quickly progressed over the

course of a dozen years throughout the region. Note also that Jordan, Palestine, Tunisia and Morocco have internet user rates above 60%.

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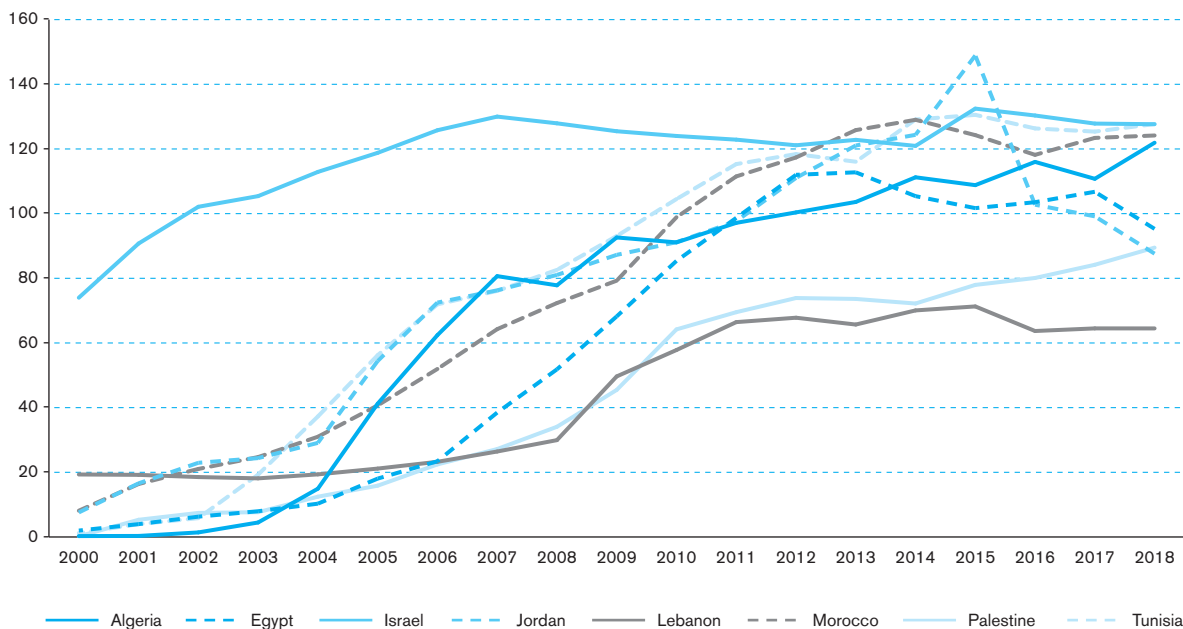
For the number of internet users to continue to grow, the price of access must decrease (it is estimated, for instance, that the price is too high for at least 60% of the population in the case of Morocco) and training campaigns for these technologies should be implemented everywhere in these countries. Such training could target certain sectors of the population or certain locations where there is low ICT dissemination. It is likewise essential for countries to establish regulatory frameworks allowing the ensemble of ICT markets to open up to the competition. In the Maghreb, for instance, no country has yet opened up its market to private internet providers, in contrast to Mashreq countries. Experience in other countries has effectively demonstrated that everywhere, the rise in competition has resulted in lower prices and

CHART 4 Mobile Cellular Subscriptions by Developing Region (per 100 inhabitants)



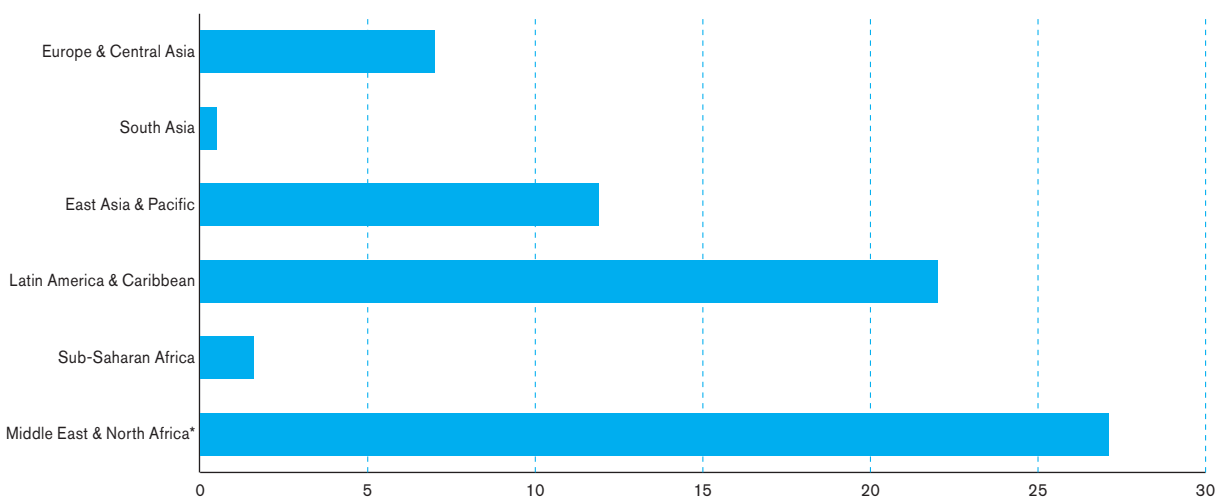
* Excluding high-income countries.
Source: World Development Indicators (WDI) 2018, World Bank.

CHART 5 Evolution of Mobile Cellular Subscriptions in Mediterranean Countries (per 100 inhabitants)



Source: International Telecommunication Union (ITU).

CHART 6 Fixed Broadband Subscriptions by Developing Region (per 100 inhabitants)

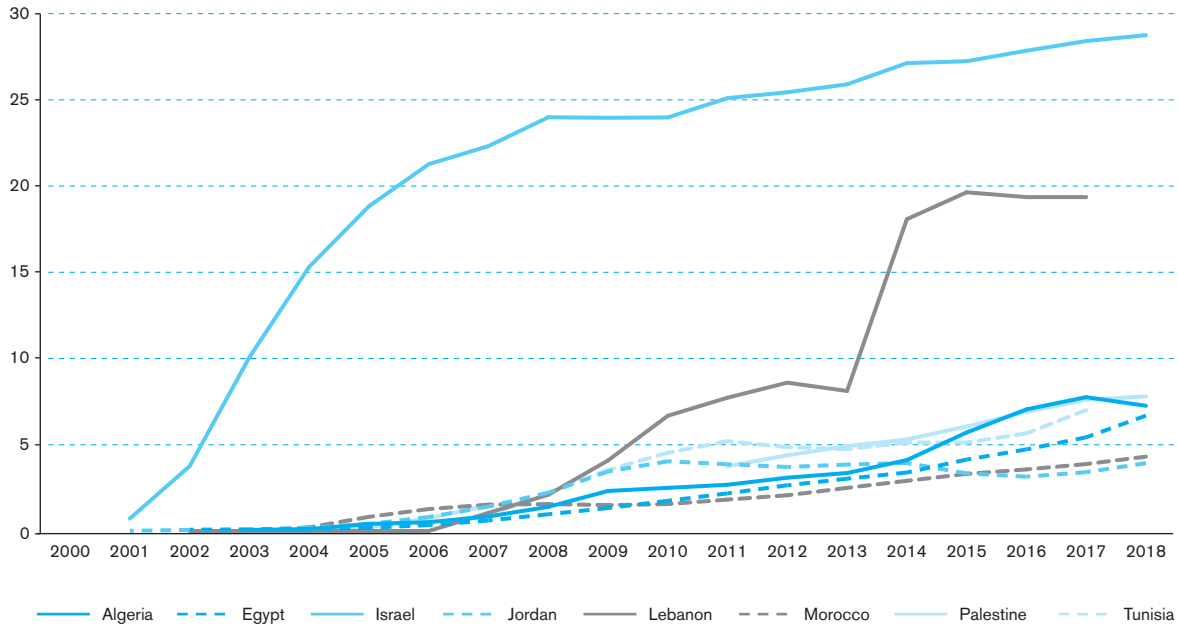


* Excluding high-income countries.
Source: WDI 2018, World Bank.

increased access to these technologies. To ensure complete geographic coverage within countries and access for the entire population, use of public funding or public-private partnership is generally necessary. In Mediterranean countries, it is likewise important to simplify administrative procedures for obtaining licences for new operators and to limit insofar as possible

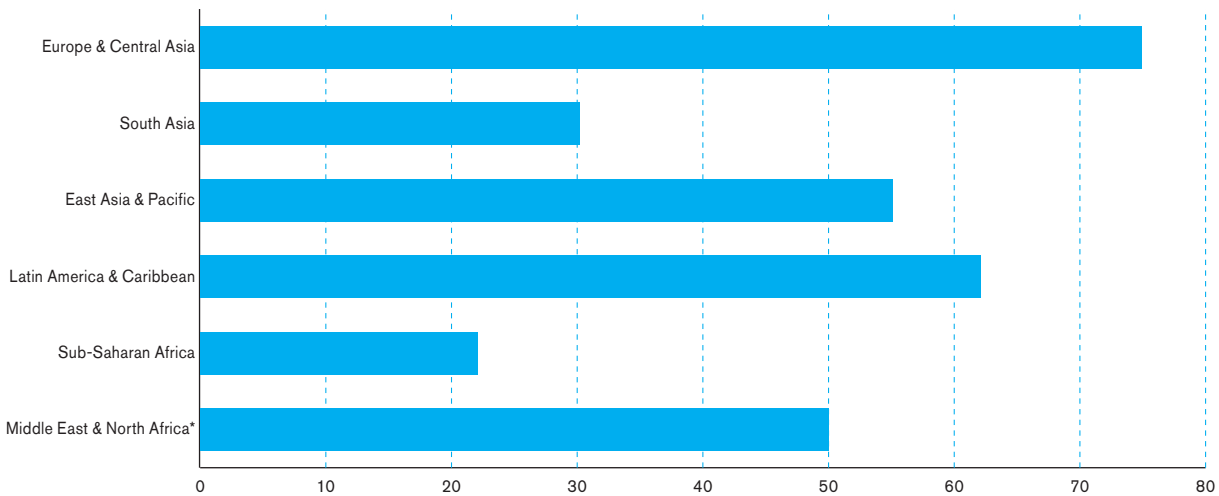
discretionary decisions depending on the authorities. Mediterranean countries would thus benefit from setting up simple, transparent, appropriate legal and regulatory frameworks and encouraging private investment in digital infrastructures. Finally, it could be useful to draw up digital infrastructure cartography for the region.

CHART 7 Evolution of Fixed Broadband Subscriptions in Mediterranean Countries (per 100 inhabitants)



Source: International Telecommunication Union (ITU).

CHART 8 Internet Users by Developing Region (in % of population)

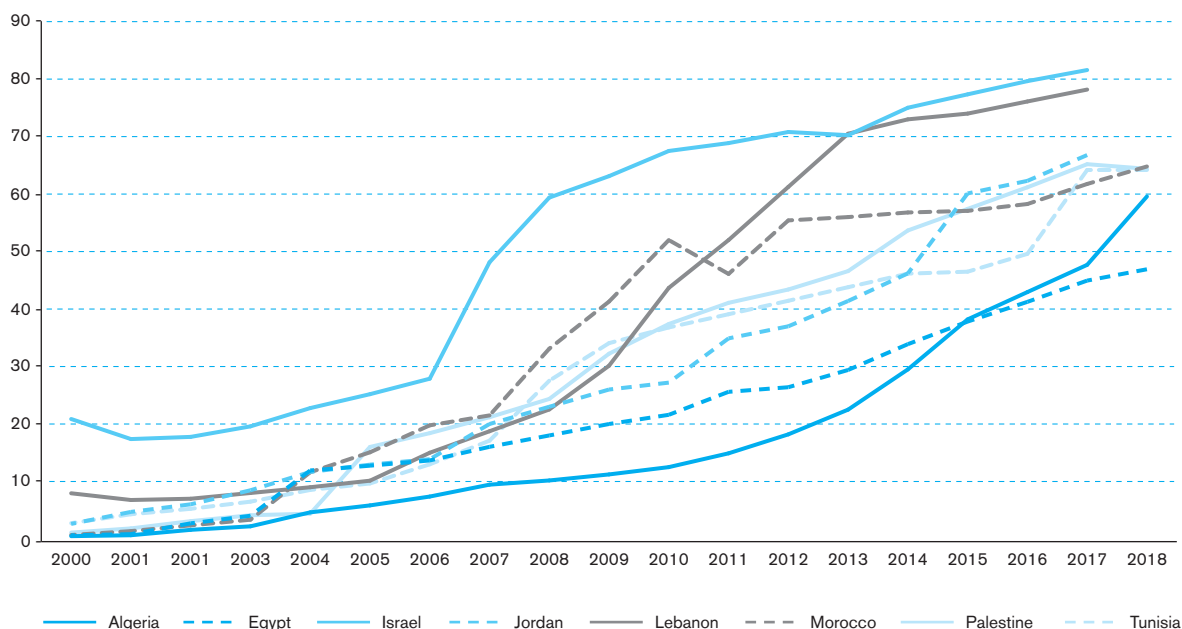


* Excluding high-income countries.
Source: WDI 2018, World Bank.

Lack of Skilled Human Capital

The generalization of digital technology can lead to the destruction of low-skilled jobs and the creation of new employment opportunities for skilled and highly-skilled individuals. This is what in economic

jargon is called “skill-biased” technologies, meaning they require better-trained human resources. In Mediterranean countries, however, even if a significant proportion of young people have university degrees, the active population has a relatively low skill level. Moreover, in the computer sector, a great num-



Source: International Telecommunication Union (ITU).

ber of engineers from Mediterranean countries are recruited by European companies to remedy the shortage of IT specialists. Such brain drain deprives countries of these well-trained engineers. Companies in the region are increasingly expressing their difficulty in recruiting IT specialists. In any case, in the middle to long term, the return of this IT engineer diaspora could contribute to developing a strong technology sector in Mediterranean countries, as occurred in India and Taiwan. Indian and Taiwanese engineers, often having studied at Californian universities and who had thereafter worked in Silicon Valley, returned to their countries, bringing with them their skills, their managerial practices and also their professional networks, which explains to a large extent the rapid growth of technology clusters in Southeast Asia. Cities in India, such as Bangalore, then massively invested in research and development (R&D) and in higher education, which has allowed significant up-market positioning and sustainability of high technology activities in different territories.

The lack of skill can also be felt in education. The experience of developing and emerging countries that have introduced ICTs in school has shown that it is just as important to equip schools with infrastructure and technological materials as it is to train teaching

personnel in using these tools. In the sphere of health, the lack of trained administrative and medical personnel is likewise an obstacle to ICT use.

In the computer sector, a great number of engineers from Mediterranean countries are recruited by European companies to remedy the shortage of IT specialists

Considering the situation of public accounts, countries do not have the financial resources to deal with the majority of these constraints. Foreign aid will be decisive here if we wish the countries in the region to take full advantage of digital technologies.

Other Factors Slowing Digital Use

Numerous obstacles have been identified in empirical studies. These are language (there is little content in Arabic on Internet sites), the existence of local content, bandwidth capacity (as indicated above), and

personal data security. The latter factor is important to keep in mind because the latest survey by the Economist Intelligence Unit shows that the Mediterranean region is the area where the population's confidence in personal data protection is the lowest in the world. It is therefore very important for countries to have suitable regulations regarding personal data confidentiality, data governance and digital security. Another factor that will be decisive for Mediterranean countries is cooperation on a regional scale: cross-border broadband connectivity is crucial and should be stepped up. Moreover, similarity of institutional and regulatory frameworks, the definition of common norms, harmonization and interoperability among countries would create ideal conditions for boosting digital technology in the region. Such conditions would also provide a strong incentive for private investors in the ICT sector, who would perceive the market of the Mediterranean countries as an integrated regional market. Beyond the region, it is probably on the continental level where it would be even more sensible to cooperate. Signing the African Continental Free Trade Area agreement could provide a framework for such cooperation.

The urgency of creating jobs should lead countries and the whole of the international community to bridge the gap in this sphere and prevent a digital divide from becoming yet another of the region's problems.

In any case, despite all of its potential, digital technology can only be a tool contributing to accelerating growth in Mediterranean countries if deeper reforms are implemented, in particular in the domain of the business environment.

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