

CAN EMERGING MARKETS LEAPFROG THROUGH DIGITALIZATION?



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Over the last decade, innovation is happening not just in the developed world but also in emerging markets. Emerging markets have advanced to become innovation leaders in a diverse set of areas including mobile payments, microloans, egovernment, ecommerce and electrical vehicles. The digital age has become an enabler for countries to leapfrog and start leading in key application domains. Technology-enabled innovation is helping emerging markets to create home-grown solutions to local challenges which in many cases also be exported to other markets.

Innovation is no longer the exclusive privilege of advanced economies. Since the turn of the century, new actors from emerging economies have entered the scene as global innovators and technology leaders. The turning point was the past decade. A number of indexes such as the Global Innovation Index (GII), a composite index published by Cornell University, INSEAD and the World Intellectual Property Organization (WIPO), illustrate such a change.

In 2020, eight E20³ emerging economies: Korea, China, Malaysia, Poland, Thailand, Russia, India and Philippines, were among the top 50 innovators in the world as per the GI index, compared to only five a decade earlier.




The change taking place goes deep: for one, innovation in emerging markets is not limited to process and cost innovations but also encompasses more fundamental technological innovations, based on Research and Development (R&D) spending, patenting, and the like. Likewise, some emerging market firms are among the largest R&D spenders in the world, creating new high-technology goods and services. According to the 2020 European Union industrial R&D investment scoreboard, out of the 2000 firms that are the largest spenders in R&D in the world, about 25 per cent are from emerging markets, compared to less than 5 per cent a decade ago. A notable example is the Chinese Huawei, the biggest telecom equipment provider in the world which was ranked fourth in the European Union scoreboard. Hence, emerging markets are turning from copycats to leaders, with a number of enterprises from these economies leapfrogging developed-country firms in the type of products and services they provide without ever imitating them, as shown in Cahen, Casanova and Miroux⁴ 2021. In some advanced fields, such as Artificial Intelligence (AI) and space technology for instance, the trend has been particularly visible in recent years, with China's and also India's achievements. While China was the first country to land robots on the dark side of the moon, India's space agency was able to reach Martian orbit in its first attempt.

Behind such a profound transformation in the global innovation landscape is a key feature of the past decade: the fast pace of digitalization in emerging economies and the digital transformation therein.

Massive changes in Internet access and usage illustrate that trend. Half the population in emerging markets worldwide is now connected to the Internet, compared with less than a quarter in 2010. The connected population is two-thirds and more in parts of Southeast Asia as well as in Brazil, Chile, Colombia, Mexico, Russia, and Turkey for instance.





Admittedly, there are differences among and within countries, with for instance rural areas significantly lagging urban areas. Yet, the 2.5 billion Internet users in middle income countries according to data published by the World Bank, now far outnumber those in developed markets by a ratio of 2.4 to 1 while it was 1.3 to 1 a decade. Over the past decade, emerging markets connected approximately 1.4 billion new Internet users which accounted for 70% of the increase in the number of internet users worldwide.

These data are only one illustration of what is taking place in emerging and developing economies. The variety of new products and services offered, the new business models developed, and the leadership assumed by emerging market firms in a number of areas illustrate even more how deep the transformation has been, as will be described later in this paper.

THE FUTURE IS MOBILE

For emerging markets and developing economies, the game changer has in fact been mobile technology. Sparing the need for huge investment in infrastructure, mobile technology enabled them to leapfrog over the hard infrastructure building phase that more advanced economies went through, facilitating access to IT based technologies and opening up new horizons.

For individuals, it meant the availability of products and services better tailored to their needs and to the specific environment of emerging markets. For businesses, it meant the ability to respond to such needs and reach more new clients than ever.



Spurred by technologies that are increasingly cheap and powerful, or as ubiquitous as mobile phones, the digital revolution has triggered a wave of innovations in business models, production process, labor relations, and supply of smart goods and services.

GETTING AHEAD IN MOBILE PAYMENTS

Nowhere is the change more visible than in the field of e-commerce and digital financial services. The trajectory of companies such as China's Alibaba, Argentina's Mercado Libre or African Jumia, in particular, exemplifies the breakthroughs that emerging economies brought to the global technology and innovation landscape. These emerging market powerhouses transformed their challenges into opportunities, building upon their familiarity with the difficult market conditions prevailing in many emerging economies and their knowledge of specific customer needs in those markets. They innovated in delivery methods, payment systems, and business models to serve clients, propelling themselves at the forefront of technological development in online retail and financial services, and in the digital economy more broadly.

Alibaba is a prime example. Founded in 1999, it has become a multinational conglomerate, operating in e-commerce, mobile payments, artificial intelligence, digital media, and entertainment, with over 726 million annual active customers in 2020. Through the rapid development and incorporation of new technologies, it has generated a unique granular and wide-ranging ecosystem of interconnected services. Being by far the world leader in e-commerce with gross merchandise sales twice those of Amazon in 2020 with USD 975 billion. Thanks to Alipay, its own payment system launched in 2004 to address the lack of sufficient credit card usage in China, Alibaba is also a leader in e-payment. Alipay, within the Ant Group, is now the world's largest mobile payment service company with over one

billion users, while the runner-up, PayPal, has about 300 million. Partnering with major Chinese banks, Alibaba also developed quick payment options for offline purchases. In the process, it launched its own QR payment method, which allows partnering stores to accept real time payment by scanning a person's QR code straight off their mobile phone. The firm pioneered mobile payments in China for rent, tickets, hospital bills, and taxes, just to name a few. Offering a wide range of financial services including loans to small business; asset management; and insurance service, Alipay has become a one-stop online financial solution provider, with its own credit assessment scoring, thereby creating a new space and being far ahead from other mobile payment systems such as Apple Pay or Google Pay.

In Latin America, Mercado Libre is another striking example. Established in 1999 in Argentina, it is nowadays the e-commerce leader in 18 countries in the region - with USD 13 billion in gross merchandise sales in 2019, - and the largest unicorn on the continent. Because of inefficient postal services, and limited use of bank accounts and credit cards, the company faced steep challenges in delivery and payments. Mercado Libre opted for a "platform mode" of operation, connecting buyers and sellers directly, and developed its own payment solution—Mercado Pago. As Alibaba, it quickly expanded beyond online payments for items bought on its website, completing its offers with services such as: payments to friends, investment options, and small short-term loans, among others. Mercado Pago became also widely used as a means of payment in brick-and-mortar stores and other online marketplaces. Technology has been at the heart of Mercado Libre's expansion, with the firm specifically relying on full proprietary control of its technological platform, a distinctive feature of the company. Over its 20 years of existence, Mercado Libre transformed into an integrated payments, sales and logistics platform, heavily investing in fintech as well as technologically advanced facilities and distribution centers.

Jumia, the African e-commerce platform founded in 2012 - and the continent's first unicorn - also had to innovate to adapt to challenging conditions like low Internet penetration, poorly developed logistics and postal services, and limited access to banking all particularly acute on the African continent. Originally operating in Nigeria, Jumia was





active in 11 countries in 2020, with a 6,8 million customer base and about USD 1 billion in Gross Merchandise Value. To familiarize people with online shopping, Jumia opened up adoption centers, making connected laptops and tablets available to customers. Its business model progressively evolved: while continuing to rely on its own inventory, it also developed Jumia marketplace with registered vendors using the platform and the firm's resources to do online retail. The development of its own payment system, Jumia Pay, was a milestone in the firm's growth and diversification strategy. It opened the door to additional online services, such as bill payment, and mobile phone reloading – a particularly important service when customers cannot afford pre-paid models as is the case in many emerging economies. By evolving towards consumer credit capability assessment, Jumia may soon establish, like Alibaba, its own credit-scoring infrastructure. It also diversified into a variety of segments, such as food and meal delivery with Jumia Food, hotel and flight booking with Jumia Travel, classified ads, and real estate, progressively developing – like Alibaba and Mercado libre – its own ecosystem of interconnected services.

In many respects, these three companies have moved ahead of their competitors from more advanced economies, such as Amazon.

They pioneered innovative business models based on a universe of interconnected services, with their own payment systems, and developed technologies to support them.

Very early in their life, they were forced to adjust to 'cash on delivery' and mobile payment platforms, while Amazon was late in doing so. Such platforms have become a core part of their business, offering more features, including money transfer and loans, than more established e-commerce firms. The same approach can be observed with companies in other digitally based industries, such as the Chinese Tencent whose « one stop philosophy » – with its platform

providing a comprehensive suite of products and services in a variety of areas in particular entertainment and gaming, its WeChat messaging and social network, and its WePay payment platform similar to Alipay, will be difficult to replicate, even for dominant players such as Facebook.

LEADING IN FINTECH

More broadly speaking, financial technologies (Fintech) is a domain where emerging markets have been making a difference, with new players allowing underserved and underbanked populations to access and use financial services. Kenya's M-Pesa, the mobile money transfer service launched in 2007, was a pioneer. Others followed in Asia and Latin America.

Building on the success of mobile money, a wide range of sophisticated financial services has flourished.

According to the OECD, by 2020 more than 500 African companies were in fintech while Johannesburg and Cape Town in South Africa, Nairobi in Kenya and Lagos in Nigeria ranked among the top 100 cities for fintech ecosystems worldwide. In Latin America and according to the InterAmerican Development Bank, there were more than 1,160 start-up Fintech in 2018 -three quarters of them located in Brazil, Mexico, Colombia, Argentina, and Chile and in the KPMG list of the top 100 Fintech innovators, about a third were from emerging markets in 2020, with ten firms from China and eight from India leading the pack. Within Fintech, digital insurance (insurtech), in particular, is assuming increasing importance.

Its impact on emerging markets can be significant, unlocking entrepreneurial capabilities. Insurtech facilitates micro-insurance contracts, enabling small entrepreneurs to better manage risks and venture into more promising activities.

Emerging markets are expected to lead growth in the insurance industry in the years ahead. It is not a coincidence that the Chinese Ping An has become the biggest insurance company in the world (Casanova and Miroux 2019b).

Likewise, Brazilian banks were early adopters of technology and online access. And it is not surprising that the only stand-alone online bank, Nubank, is Brazilian. With 10 million customers, the online bank is Latin America's largest Fintech and one of the biggest in the world offering a digital account, NuConta, credit card and consumer finance. After the acquisition in September 2020 of Easyinvest, Nubank will start offering investment bank services.

DIGITALIZATION AS A DEVELOPMENT ENABLER FOR EMERGING MARKETS

Beyond fintech, new technologies can help address the specific challenges of emerging economies. In agriculture, digital tools can lead to shorter and more efficient rural urban supply chains, enabling farmers to get better prices and more reliable supplies to buyers. Digital solutions also facilitate farmers' access to location specific agronomic information and appropriate advisory services. Agritech and data related start ups are on the rise. In Africa, for instance, start-ups such as Farmerline in Ghana provide small scale farmers with mobile access to agricultural services; others such as Aerobotics in South Africa or AgriEdge in Morocco use aerial imagery from drones and satellites for precision farming, or to provide early detection of problems that could affect crops. Digital transformation has started to bring about a revolution not only in business but also in people's personal lives by facilitating access to basic services such as health and education through e-health and e-education. Examples here abound such as the Indian healthcare company Apollo Hospitals which offers online consultations and has launched its own e-health subsidiary: Sanjeevani Telehealth Seva.

ALL IT TAKES

Emerging economies are at a particular juncture and the present times offer them a window of opportunity: there is an expanding demand for goods and services from their population, and increased capability from their firms to answer it thanks to digitalization. This convergence of trends gives digitalization in emerging markets its huge transformational power.



On the demand side an expanding middle class, rapid urbanization, rising education levels and spending power are powerful factors. McKinsey projects that by 2025 emerging market consumers could account for 30 USD trillion, almost as much as developed markets, and 2.5 times their consumption levels in 2010 (Mc Kinsey, 2013). Besides, emerging markets have young populations. Indeed, about 90% of the people under 30 live in emerging markets and this is the population that accounts for most digital transactions. This young and often tech savvy generation is a key factor driving the demand for IT-enabled new products and services.

There are however a number of constraints that may prevent digitalization to play its full transformational role in emerging economies. The first relates to the fact that there are still significant connectivity gaps in emerging economies, between rural and urban areas for instance, or between more and less affluent social groups.

As important as infrastructure gaps is the human capital constraint that a number of countries face. Success in the digital era requires new sets of skills that will enable business and individuals to reap the benefits that digital technologies can yield. Developing and acquiring the right set of skills is hence essential to ensure the diffusion of digital tools across all businesses, including SMEs. This is key for them to succeed in the new environment. All this means that the education systems of emerging economies will have to adapt, not only to ensure that their citizens have the right skills to operate in an IT-based environment but also to ensure that their enterprises have the right talents to develop and lead in IT-based industries.

Lastly, the digital transformation of emerging economies requires a proper legislative and regulatory framework for, inter alia, cybersecurity, data protection, privacy and to regulate the potential of Artificial Intelligence and big data, among others. There is a delicate balance to draw between regulation and the need to nurture a business-friendly environment. Yet, it is essential to ensure a foundational element of successful digital transformation: trust in digital technologies. This applies in particular in countries – whether developed, emerging or developing, by the way – where the overall legislative and regulatory framework and judicial systems for consumer protection or basic civil rights implementation, among others, is not yet fully developed or properly functioning.

Finally, the transformation in the global innovation and technology landscape that we are witnessing goes beyond the mere fact that emerging economies are coming up with new products and services fit for their own needs and environments.

Over the past two decades, a number of these products and services have started to diffuse back into developed markets, in a process referred to as “reverse innovation” and amply described by authors such as V. Govindarajan and R. Ramammurti (2011 and 2018). This is in stark contrast with the traditional vision of technology flowing from the so-called “North” to the so-called “South”, as happened during the past two centuries. This phenomenon is definitely changing how we look at innovation and emerging markets and our perception of how powerful the competitors from these markets could become in the future.

TECHNOLOGY AS AN OPPORTUNITY TO LEAPFROG

We are living in times where, for emerging economies, technology has moved from being a challenge in itself to becoming a source of competitive advantages. Unfettered from the legacy of the “traditional economy”, emerging markets can quickly grasp new technologies. The digital age has thus become an enabler for them to leapfrog and start leading in key application domains.

Digital technologies are disruptive, allowing emerging economies a new start in a completely different environment as they can now address challenges and take up opportunities through home-grown solutions that can be exported to other markets, including developed ones.

In the process, some of their enterprises are becoming formidable competitors for more traditional incumbents. Digital technologies are not only transforming the global technology and innovation landscape; they are also profoundly changing global business.



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NOTES AND REFERENCES

- 1 Senior Lecturer, Director Emerging Markets Institute
- 2 Faculty Fellow, Emerging Markets Institute
- 3 The E20 is a group of 20 top emerging economies, set up by the Cornell's Emerging Market Institute (EMI), based on their GDP and demography (see Casanova and Miroux, 2016 and 2019a).
- 4 Cahen, F., Casanova, L and Miroux, A., 2021.