Mashreq 2.0:
Digital Transformation for Inclusive Growth and Jobs
Executive Summary

Digital transformation of the Mashreq economies presents a unique opportunity at this critical juncture to help address the Region’s most imminent challenges. Many emerging countries, including rising leaders such as Estonia in Eastern Europe or Chile in Latin America, have chosen the digital path and are driving rapid digital transformation of their economic activities, industrial sectors, and trade relationships. This growth in the digital economy stems from the growth in the billions of online transactions that businesses, individuals, and governments perform every day, which bring about efficiencies and quicker inclusion of lagging economic and social groups and improve governance and transparency, among other results. A new and different kind of economic growth is thus shaping the present and the future of global economic activities.

Recognizing the importance of digital transformation, the World Bank President Mr. Jim Yong Kim during the World Bank Annual Meetings held in Bali in October 2018 announced the target of doubling Internet penetration in the Arabic countries by the time of the Annual Meetings to be held in Marrakesh in October 2021. This plan is also referred to as the “Moonshot Approach” and is articulated in the World Bank’s Middle East and North Africa Economic Monitor: A New Economy for the Middle East and North Africa (Arezki et al., 2018a). Disruptive technologies are also increasingly changing the business model of core sectors of the economy, including electricity, oil and gas, and industry production, and legacy systems will soon be antiquated, carrying the risk that countries that do not embrace digital transformation will continue to invest in “stranded assets”. The Mashreq countries must therefore catch up in strengthening their digital economy ecosystems and reposition themselves as strong economic competitors at the regional as well as interregional level. Building the ecosystem of a regional digital economy would greatly benefit from two main comparative advantages the region’s countries enjoy: a high level of education, including digital literacy, and a strategic position that allows them to be at the center of advanced services, trade, and connectivity.

The Mashreq countries are witnessing several social and economic challenges as well as the impact of conflicts, all of which are stalling, if not reversing, the path to sustainable economic growth and inclusive societies. Many national priorities are common across countries and are highlighted in several World Bank strategies and partnership frameworks for the Mashreq region. These include: creating jobs, improving service delivery and thus transparency and accountability, supporting the economic and social development of refugees and improving their ability to return home and integrate in the economic and social fabric of their countries and the region, and finally boosting inclusion in lagging areas and for vulnerable populations.

Digital infrastructure is the foundational element of the digital economy and thus essential to any such transformation and leapfrogging. Therefore, this report should be taken as a first assessment of a key foundational element for the digital economy and can be complemented by future assessments of digital entrepreneurship and skills, digital payments, and digital government as key elements of the enabling environment for the digital economy. For the “Moonshot Approach” to be implemented, the following actions will need to be undertaken, to “make markets work”, while complementing markets with proactive public investment to address market failure. Specifically, the World Bank’s Middle East and North Africa Economic Monitor: A New Economy for the Middle East and North Africa advocates: (i) deepening competition; (ii) eliminating rents; (iii) creating regulatory incentives, including a Fiber Regulatory Package (FRP)
to help operators invest in fiber optics and ensure universal access in broadband through proactive use of public sector subsidies (Arezki et al., 2018a). Broadband infrastructure enables economic growth by providing easier access to information and by increasing efficiencies and productivity in the economy. The underlying broadband infrastructure has direct impact on jobs, efficiency, and an inclusive economic growth.

The Mashreq countries must fully leverage digital infrastructure as well as their relative strengths in transforming their economies. The report lays out the strategic importance of digital infrastructure for countries in the region, takes stock of its status, and provides recommendations. Countries studied are: Iraq, Jordan, Lebanon, Iran, and Syria. Digital infrastructure covers the broadband value chain: international connectivity, Internet exchange points (IXPs), backbone networks, and access networks. It identifies the main elements of broadband networks in the Mashreq, assesses the potential of data centers and regional IXPs, and provides benchmarks on key sector indicators for the region.

This assessment concludes that:

- Lebanon and Jordan are leaders in the use and adoption of mobile and fixed broadband services, and Iran has a comparatively high broadband penetration rate. Yet overall, there remains a considerable gap in the adoption, speed, usage and affordability of fixed broadband services between the Region and emerging economies such as Turkey, Romania, and Bulgaria, countries that compare positively in digital economy development. Lack of competition at the access level in the fixed broadband market is a constraint to broadband diffusion in all countries, except for Jordan. Syria, which is currently in conflict, has seen development of its broadband sector negatively impacted by physical destruction, but also more importantly by a slowdown of sector reform since the beginning of the hostilities. Competition and PPPs can drive access further in Iraq and Lebanon. Syria and Iraq will need a slightly adjusted approach: removing entry barriers and making markets work, including through PPPs, will still be a major objective. However, the implementation of the approach will need to be integrated into reconstruction and post-conflict efforts.

- The Mashreq has an extensive regional and backbone broadband infrastructure in place, but it is sub-optimally used, due to a mix of war and instability, complex political economy, and lack of reform at the domestic level. National backbone networks in the Mashreq countries are mostly managed and operated by incumbent SoEs. The Mashreq region has a strategic geographic position with respect to the global Internet infrastructure. Major regional backbone networks exist and have the potential to impact that infrastructure but are hampered by the conflict and violence in the region. The Mashreq countries could capitalize on the strategic access to major sea cable links through further liberalization of international gateways and IXPs.

- IXPs, public and private digital platforms, and data centers are less developed in the region. There is only one functional data center in the region, Beirut Internet Exchange,

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1 The World Bank has active programs in Iraq, Jordan, and Lebanon. This report includes data available to the extent possible on Syria and Iran.
with other centers attempting to play this role. Iraq, Syria, and Jordan have no IXPs and Iran has four. The data center industry is nascent but has ample room for robust growth in the future.

- Private sector digital platforms (also called multi-sided platforms, MSPs), are booming throughout the Arab countries of the Mashreq and in Iran, reflecting a growing willingness of consumers to engage in e-commerce and digital transactions, and despite some foundational bottlenecks. MSPs will be a fundamental driver of the transformation of the economies in the region.

**Key constraints in the region are: war and instability, political economies of reform, market concentration and continued dominance of state-owned enterprises (SoEs), and political isolation:**

- The political economy of reforms and the specificities of each country, as well as fiscal pressures and conflict and instability, are greatly affecting sector development. The implementation of reforms is complex and may require innovative ways of introducing competition and of balancing between these challenges and boosting growth of the digital infrastructure market through private sector investment and participation.

- The Middle East and North African (MENA) countries, including the Mashreq countries, have the most concentrated broadband market in the world. (This is particularly the case in the backbone and international connectivity segments of the value chain.) In addition, in these countries the monopoly is exploited either directly by the Government (e.g., Ministry of Telecommunications in Lebanon) or through state-owned enterprises (SoEs) (e.g., Iraq and Syria). These SoEs represent a considerable drag on sector development.

The second part of the report looks in detail at the importance of regional digital infrastructure for key sectors of the Mashreq economy, relates digital infrastructure to the overall development program of the Mashreq, and presents emerging research in private sector digital platforms in the region. It concludes that there is a substantial cross-infrastructure agenda both at the national, but more importantly, at the regional level, as energy and transport networks can be effectively used to expand broadband access in the region both across and within countries. The report presents several opportunities for the Mashreq governments to take advantage of and improve their digital infrastructure and the verticals that build on it. The report also highlights the opportunity to develop regional digital services for trade diversification, growth, and economic integration as a foundation for the emergence of a digital economy. Finally, the report stresses the importance of digital transformation, highlighting opportunities in key sectors, including health, education, urban development, and social services for migrant communities.

The following implementation roadmap can be envisaged for Iraq, Lebanon and Jordan, and at a Mashreq regional level. Iraq, Jordan and Lebanon should adopt “Moonshot” targets as part of their sector development strategies and, in particular:

- Double broadband access by 2021 and;
- Achieve complete broadband coverage by 2030.
To achieve these targets, the countries in the region will need to undertake reforms and actions at the national and regional levels.

Specific reform actions for Iraq:

- Remove the restrictions on the private operators to build, own, and operate domestic and international fiber infrastructure, and specifically, allow licensed telecommunications operators to reach the final customer with any technology, including fiber to the home (FTTH); allow mobile operators to build fiber backhaul networks.
- Enact a telecommunications legislation that lays the groundwork for increasing competition and private sector participation.
- Stimulate wholesale broadband investment to develop the broadband wholesale infrastructure to be used by private operators and Iraq Telecommunication and Post Company (ITPC) to deliver high speed access;
- Develop Iraq as a hub for international connectivity, by liberalizing the international broadband market segment, allowing for multiple landing stations and a “carrier hotel” model, and fostering IXPs.
- Reinforce the regulatory authority capacity.

For Lebanon, the implementation roadmap includes:

- A unified vision for the information and communications technologies (ICT) sector and a clear consensus on Government policy.
- The enactment of a harmonized license framework for digital service providers (DSPs).
- Reforming the fiscal transparency and management of the sector.
- Introducing competition in the sector and increasing private sector participation by making sure that all DSPs have a common legal framework to expand broadband access through fiber.
- Considering the restructuring of the mobile broadband sector by awarding fifth generation mobile (5G) licenses; and introducing private investment in the mobile sector by transforming Mobile Interim Company 1 (MIC1) and Mobile Interim Company 2 (MIC2) into operations that can be licensed to the private sector through an open tender process.
- Re-empowering the sector regulator and modernizing the legal and regulatory framework.

For Jordan, the implementation roadmap agenda includes:

- Introducing next generation public-private partnerships (PPPs), which emphasize a “risk sharing” (as opposed to “risk shifting”) approach,\(^2\) to stimulate high speed Internet access beyond the main cities and urban centers by leveraging the existing national broadband network (NBN).
- Developing a White Paper for 5G Networks and awarding frequencies for 5G operators.

• Strengthening the regulatory framework and reviewing overall taxation and fees in the sector to stimulate investment and ensure appropriate regulatory oversight.
• Introducing next generation digital infrastructure including Internet of Things (IoT), cloud, and artificial intelligence and accompanying the digital transformation of the broadband, electricity, and transport sectors by leveraging that infrastructure.

At the **regional level**, the following implementation map is recommended:

• On the basis of this report, assess opportunities for regional integration of broadband networks by leveraging existing assets and networks, including terrestrial and submarine backbone networks, and leveraging the cross-national fiber assets of the utilities.
• Convene a regional workshop with the aim of agreeing on a common action plan to strengthen regional connectivity in the Mashreq and positioning the region as a digital hub at three different levels: (i) Internet connectivity; (ii) data hosting and cloud; and (iii) export of business process outsourcing (BPO)/information technology outsourcing (ITO)/knowledge process outsourcing (KPO) and digital services to the rest of the world.
• Leverage existing World Bank instruments and donor partners to design and implement an investment and advisory program on international broadband connectivity at the regional level.

The development of physical access networks (“last mile” access) will be the area where most policy attention will need to be paid and the area which could attract the largest amount of investment. The level of investment needed to bring high speed broadband access to 30% of the population of the Mashreq through fiber access (about 13 million households) will be between **US$4.0 - 5.2 billion**. The development of IXPs (beyond the two operating in Lebanon and the four in Iran) is also a major priority and could be in the range of US$200 million.

Several multi-disciplinary, lending, and advisory service programs can therefore be formulated to support the Mashreq governments in developing their digital infrastructure markets in order to foster their digital transformation. These include programs for facilitating trade, in the energy sector, for financial inclusion, for the rebuilding of damaged cities such as Mosul, and for improving governance and public services.

The Mashreq countries can benefit from broader assessments of their economies’ readiness for digital transformation. The Digital Economy Country Assessment (DECA) and Digital Economy for Africa (DE4A) framework has been developed for this purpose. Multi-disciplinary teams are now supporting DECA’s in several countries in Africa (starting with Senegal) and Europe and Central Asia (Russia, Armenia, Kazakhstan). These assessments survey the essential components of the digital economy in a specific country (institutions, governance, digital skills, private and public platforms, entrepreneurship, digital finances and innovation) and recommend policy interventions and actions that could greatly improve the socioeconomic impact of the transformation to a digital economy. The team proposes to conduct this type of assessment for the Mashreq countries, at national levels as well as at a regional level. Assessment of common bottlenecks and opportunities would greatly improve the integration effort and strengthen the regional competitiveness of the Mashreq countries.
## World Bank Operational and Advisory Intervention in support of Mashreq 2.0

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