

## Digitisation of the Arab world: A community approach?

### I. Introduction

The digital sphere in the Arab world, which began to evolve at the dawn of the new millennium, was initially perceived as a catalyst for addressing the structural issues plaguing the Arab economy. This transformation, however, proved hard to control as the Arab Spring had shown the disruptive potential of technology in generating political voice. Digital transformation as an economic policy was, therefore, tightly supervised by the state class to prevent any undesired spill-over. Consequently, the outcomes in both the economic and political spheres fell short of bringing about comprehensive improvements.

The advent of climate change has now further intensified the economic crises in the Arab world, necessitating a search for more innovative and potentially more radical solutions. In this context, digitisation is finding new applications within the framework of Smart City concepts. The construction of these new-age cities, extending into cyberspace, holds the potential to bring about a radical transformation in the landscape of the Arab world. However, this transformation again is unfolding without an explicit discourse on possible new political and economic orientations. It is also taking place against the backdrop of a global multipolar restructuring process. This situation presents a critical decision for the Arab world: to align itself as a European periphery or to carve out its own distinct identity and political pole, whether that be Islamic, Asian, or otherwise. This decision – we must suspect – will carry with it implications for the usage of technology in the region.

### II. Digitisation to overcome economic (and political) issues?

Although digitisation was initially a Western and Chinese phenomenon it became quickly apparent that the involved technology and new organisational models could potentially address the structural impasses of Arab economies.<sup>1</sup> These challenges include:

- Limited internal mass markets often hampering efficient production of larger series;
- Limited investment goods industries and, therefore an ever-lingering inflation risk as increasing demand would require the import of production technology with foreign currency;
- No agricultural surplus and therefore, limited possibility for devaluation as an export booster as this would increase the price of imported foodstuff and risks “bread riots”;
- Higher education focused on the public sector and nation building with low usability of graduates in the private and informal sector.

Potentially, digital technology and new virtual organisational models could address these issues by:

- Developing digital platforms that would increase market size in cyberspace by overcoming physical and geographical boundaries and reaching out to new target groups within or outside the respective home

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<sup>1</sup> A whole series of publications on MENA-region have been added since. For example: World Economic Forum, *The Digital Arab World, Understanding and Embracing Regional Changes in the Fourth Industrial Revolution. White Paper*, 2018; UNCTAD, Policy Brief No 50. Robots and Industrialization in Developing Countries, 2016; Al-Ani, *Der smarte Osten*, 2019. On structural problems of Arab economies see already: Elsenhans, *Abhängiger Kapitalismus oder bürokratische Entwicklungsgesellschaft. Versuch über den Staat in der Dritten Welt*, 1984.

market, thereby providing marketing venues also for the prevalent SMEs and the informal sector;<sup>2</sup>

- Employment of highly advanced production technology (IoT, Cyber Physical Systems, Robots, etc.) assembled in “multi-machines” that would be configured to “print-out” any required product, mitigating the shortage of production skills and investment goods;<sup>3</sup>
- Using smart and open agriculture solutions to boost agricultural output by a more effi-

cient usage of water and fertilisers and open distribution of blueprints for agricultural machines/tools that can be assembled locally;<sup>4</sup>

- Creating free, digital, life-long 24/7 learning paths for everybody using open educational resources and smart learning tools that would select, configure and train content based on specific requirements.<sup>5</sup>

Based on these levers, specific policy and strategy options were devised for the Arab economies (see table 1).

Table 1. Digital strategy options and projects for the Arab World

Microventures/change management at the organisational level	Automation/augmentation of production and service processes by robots and algorithms that each commercial, political and public-sector organisation will have to undergo. Startups would serve as invigorating partners in this process.
Crowdworking	In principle, individual producers may be connected to any commercial, innovation or open manufacturing platform anywhere in the world without having to leave their country.
Open Educational Resources	As crowdworkers and citizens become producers and innovators, they will need ongoing access to knowledge and blueprints.
Digitisation of public processes	Administration processes are digitised and thus allow for transparency and user-centric interfaces. This does not necessarily mean, however, that these processes must become more participatory or even democratic.
Social policy	Disruptive changes in traditional industries will make it necessary to support affected groups with adequate social policies that also ensure the cohesion of society and the nation state.
Regional sovereign platforms	The challenge for Arab countries will be to establish their own platforms (thereby keeping the valuable transaction data needed to improve the content) in areas such as mobility, health, financing, learning, culture and trade.
Participatory platforms	To achieve the greatest possible employment effects and to obtain positive effects on social cohesion, digital platforms that provide products and services using cooperative processes and mechanisms can be created.
Technology hubs/communities, charter cities, pilot structures	If capital- and data-intensive technology leads to concentration processes, Arab countries must also establish such pilots, centers or hubs, even if this creates imbalances in national economic structures.

Sources: Amri et al., *Understanding the Platform Economy in Developing Countries. The Case of Tunisia*, 2022; Sultanate of Oman. Ministry of Transport, Communication and Information Technology, Executive Program for Artificial Intelligence and Advanced Technologies, 2020; Al-Ani et al., *Digital Strategies for the Arab World*, 2018

<sup>2</sup> For an early evaluation of the negative effects of the markets size und unsuccessful integration policies for the development of Arab economies: Hasseb, *The Future of the Arab Nation*, 1991.

<sup>3</sup> Bauwens et al., *Synthetic Overview of the Collaborative Economy*, 2012. Markoff, *Machines of Loving Grace. The Quest for Common Ground between Humans and Robots*, 2017. Al-Ani, *CPS and the Worker. Reorientation and Requalification?*, 2017.

<sup>4</sup> Al-Ani et al., *Digital Strategies for the Arab World*, 2019, 20.

<sup>5</sup> Al-Ani, *Learning to Labour in the Digital World*, 2021. Sallam, *A Review of MOOCs in the Arab World*, 2017, 564.

From the outset, particularly young individuals and women who had lacked access to the public sector controlled by the state class, embarked on the burgeoning startup industry.<sup>6</sup> They created innovative solutions in both the economic and social areas, and almost all Arab countries developed some kind of digital strategy under consideration of the respective economic and political possibilities/constraints.<sup>7</sup>

Looking back at this process, some generalised observations on the path and nature of the Arab digital transformation process are possible:<sup>8</sup>

- The startup industry has, until now, often remained disconnected from traditional sectors such as textiles, health, agriculture and administration. As a result, its potential to rejuvenate conventional production through the opening of processes to individual producers (via crowdsourcing, crowdworking, and open manufacturing mechanisms) has been underutilised;
- Countries often struggle to leverage platforms that enhance the quality of their citizens' skills (e.g., eLearning), connect them with public services (e.g., eHealth, eVeterinary), or match them with job opportunities (e.g., Digital Work Agencies). As a consequence, the level of public services does not always show significant improvement due to digitisation. This is different in the more affluent Gulf countries. However, even here, processes often have not radically changed (i.e., became more participative) but have “merely” transitioned into the digital sphere more or less “as they were”;
- Once successful Arab platforms (e.g., Careem, Al-Souq) emerged, they were often acquired by Western platforms, subsequently losing their potential to support local producers. The new Western owners were primarily interested in utilising these platforms for the distribution of Western goods;<sup>9</sup>
- Even as it became apparent that Arab countries were primarily affected by factory automation, with robots substituting less sophisticated and repetitive work in which these nations formerly had a competitive advantage, no apparent strategies on how to retrain workers, redirect them to other parts of the economy, and provide sufficient social security are in place;<sup>10</sup>
- Most Arab economies are dominated by a state class not oriented on productivity but on security and control. When transformation policies violate the prevailing modus operandi, they are curtailed: “Today, jobs and privileges are primarily dependent on government agencies and are awarded according to an established system of nepotism and favouritism.”<sup>11</sup> The public sector has not yet evolved

<sup>6</sup> For an early assessment of this “entrepreneurial” movement: Schroeder, *Startup Rising, The Entrepreneurial Revolution Remaking the Middle East*, 2013.

<sup>7</sup> For examples of these startups see: Digital Arabia Network, *Success Stories*, n.d.

<sup>8</sup> For an evaluation of Arab digital policies see also: Arab Economic Unity Council, *Arab Digital Economy Vision*, 2020, 104.

<sup>9</sup> The aim of the acquisition of Al-Souq by Amazon being: “... helping more U.S.-based sellers expand in the region.” Kim/Levy, *Amazon Plans to Launch a New Middle East Marketplace, Two Years After Buying Souq for \$580 Million*, 2019.

<sup>10</sup> On first calculations of job losses due to automation in the Global South: Carbonero et al., *Robots Worldwide: The Impact of Automation on Employment and Trade*, 2018; World Government Summit/McKinsey: *The Future of Jobs in the Middle East*, 2018, 8.

<sup>11</sup> See here the interview with the former Jordanian vice premier: Qantara, *Die Krise ist hausgemacht. Eine übermäßige Abhängigkeit von Zahlungen und Hilfgeldern aus dem Ausland zwingt Jordanien in die Knie, kommentiert Marwan Muasher*, 2023 (own translation).

into a “digital partner state” capable of supporting the transformation of societies and economies.<sup>12</sup>

### III. Climate change and radical new thinking?

The digital transformation process in the Arab world has taken a unique path. The results of this development, it might be fair to say, are all too often disappointing. This disappointment is observed not only in terms of unmet expectations and untapped potentials offered by new technologies – a phenomenon observed globally – but also in relation to the necessary level required to offset population growth and address the negative impacts of climate change.<sup>13</sup> Arab political and economic institutions and organisations have yet to undergo significant transformations that prioritise productivity, sustainability and economic and political participation as possible key success factors. Instead, attempts have been made to translate current settings into new technological configurations.

This, of course, is less of a problem in the Gulf countries. Early scenarios there predicted that the resources of these countries will enable them to sustain their universal income scheme and furthermore substitute cheap Asian labour with robots and algorithms by 2050, allowing them to continue to “live the way they wish.”<sup>14</sup> However, even these countries are facing new challenges due to

the tipping points of the climate system requiring fresh and perhaps entirely new thinking.<sup>15</sup> The Arab region seems destined to face severe effects of climate change, including higher temperatures and longer drought periods. These changes will add pressure to current ways of living, producing, and farming, potentially questioning even the concept of a nation-state, as scenarios assume increased internal tensions and instability.<sup>16</sup> Moreover, North African countries will become an escape route for populations fleeing soon-to-be uninhabitable equatorial regions, further contributing to internal turmoil. In this situation, digitisation becomes an increasingly important lever for developing new institutions and forms of production.<sup>17</sup>

### IV. Multipolarity as a catalyst?

The war in Ukraine and the destruction of Gaza are introducing a new context to the transformation of the Arab world. Surprisingly, these crises have led some Arab countries to question their exclusive allegiance to European/Western hegemony. It is perhaps being realised that the Arab world may never be an equal partner of the West, but rather a periphery connected via special agreements and also burdened with the task of shielding Europe from climate refugees.<sup>18</sup> In addition, the persistent racism of the West (“garden” versus “jungle”), contradicting its self-perceived moral superiority, might have further fueled frustrations and led to the unpopularity of forging deeper alliances with Europe.<sup>19</sup>

<sup>12</sup> For this new role of the state (enablement of citizens by providing them with knowledge, technical blueprints, code and connecting them via public platforms that forge cooperation and match demand and supply ...) see the South African example in: Abrahams et al., *Crafting the South African Digital Economy and Society: Multi-Dimensional Roles of the Future-Oriented State*, 2022.

<sup>13</sup> For the general disappointing results of utilising new technologies in the economic and political sphere: Al-Ani, *Widerstand in Organisationen, Organisationen im Widerstand*. 2022, 143. For Arab expectations and futuristic visions see: Blassim, *Iraq +100. Stories from a Century After the Invasion*, 2016.

<sup>14</sup> For this scenario: Moravec, *Robot. Mere Machine to Transcendent Mind*. 1990, 135.

<sup>15</sup> For this conclusion (Degrowth) see Saiko, *Systemsturz*, 2022.

<sup>16</sup> For these predictions: Waha et al., *Climate Change Impacts in the Middle East and Northern Africa (MENA) Region and their Implications for Vulnerable Population Groups*, 2017.

<sup>17</sup> For these climate related scenarios of the Arab region: Vorha, *The Middle East is becoming Literally Uninhabitable*, 2021.

<sup>18</sup> Al-Ani, *Auf den Krieg in Europa folgt ein geopolitisches Triell*, 2022.

<sup>19</sup> Berliner Zeitung, *Mächtigster EU-Diplomat: Europa ist ein Garten, der Rest der Welt ein Dschungel*, 2022.

Tunisia has recently refused to sign the free trade agreement (DCFTA) with the EU, which would have meant deeper economic integration into Europe, and is instead looking towards BRICS.<sup>20</sup> It has also been noted that even "submission" to Western hegemony does not guarantee success, as the example of Sudan shows: Despite making economic concessions, such as the reduction of subsidies, and political concessions, including the establishment of relations with Israel, Sudan recently found itself with no further debt restructuring options.<sup>21</sup> From an Arab perspective, multipolarity might indeed be desirable. Some Arab voices assume that multipolarity would enable the increased distribution of technology that would in turn support the digital transformation process.<sup>22</sup> And wouldn't the Arab world have more opportunities and markets in an Asian/African setting? Wouldn't the Arab elites then have to stop hiding behind European powers and solve their problems themselves? This is already happening (Syria, Yemen, Saudi Arabia, Iran). And it is noticeable that these initiatives are not well received from a Western perspective or are dismissed as unimportant.<sup>23</sup>

#### V. New Arab cities and states (in the cloud)?

With a new urgency (climate) and new options (multipolarity), an alternative approach is possible. In this context, it is noticeable to see the emergence of smart city projects in the region.<sup>24</sup> These projects have the scope and potential to radically change the political

and economic landscape of the region. Not only might they offer a new sustainable architecture better suited to climate change, but they could also potentially create new modes of production and thereby new societal structures. In this setting, production and rapid prototyping processes (multi-machines, 3D-printers, open AI foundation models ...) are in the hands of a sustainable community that openly distributes them to its citizens, thereby reducing the monopolistic power of corporations or state classes.<sup>25</sup>

True, just as in other parts of the world, current discussions about smart cities often sidestep radical societal changes and raise concerns about a potential omnipotent data-driven dictatorship.<sup>26</sup> However, the positive aspects of smart cities might prevail once these cities have solidified their roles as players in the multipolar political and economic arenas.<sup>27</sup> In these tribe-like "machinic" communities, a strong affinity for technology could foster participatory processes as these communities would compete for international talent and resources; if citizens dislike the place, they can not only voice concerns but potentially exit to other communities, thereby creating reformist pressure.<sup>28</sup> Of course, the possibility of highly controlled and data-rich surveillance governance is always a concern and would follow current traits. Yet, an intriguing aspect is that most of these cities are expected to establish connections with producers and places outside its boundaries, who will "open up" these communities, a trend already evident in places like Dubai:

<sup>20</sup> Modern Diplomacy, *Tunisia Rejects IMF Loans and Wants to Join BRICS*, 2022.

<sup>21</sup> Economist Intelligence Unit, *Paris Club Suspends Debt Relief for Sudan*, 2023.

<sup>22</sup> Hashem, *Multipolarity is the Future for the Arab World*, 2023.

<sup>23</sup> For Syria: Deutsche Welle, *Baerbock Warns Against 'Unconditional' Assad Normalization*, 2023.

<sup>24</sup> For an overview of Arab Smart City projects: IMD, *Smart City Index 2023*, 2023.

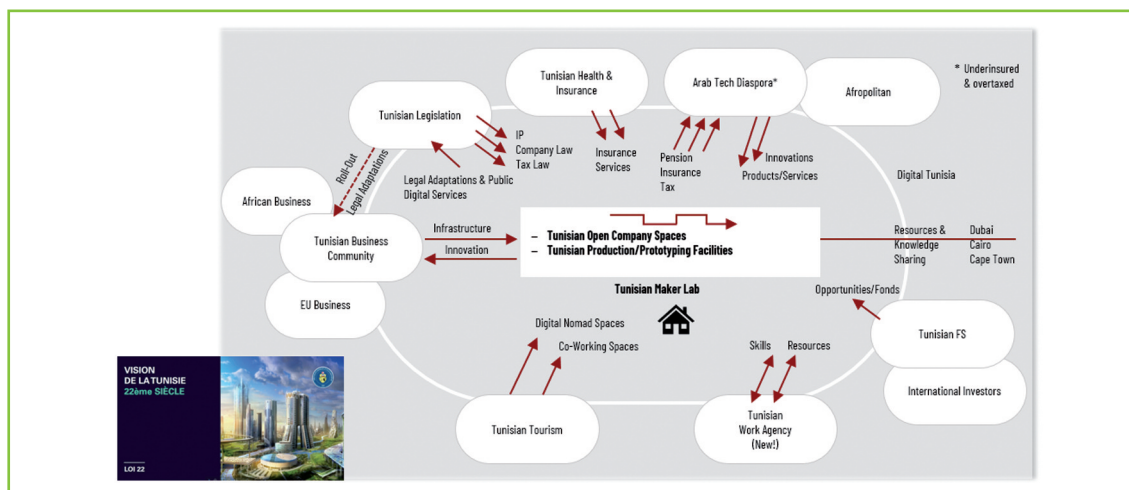
<sup>25</sup> Hard/Negri, *Assembly. Die neue demokratische Ordnung*, 2018, pp.165. The communities could also freely use technology declared as "Public Digital Goods": United Nations, *Report of the Secretary-General. Roadmap for Digital Cooperation*, 2020.

<sup>26</sup> "Cities lack foundational policies for sound technology development, and they need support and strong leadership (sic!?) to fix this." see: World Economic Forum, *Governing Smart Cities: Policy Benchmarks for Ethical and Responsible Smart City Development, White Paper*, 2021, 10.

<sup>27</sup> Barber, *If Majors Ruled the World. Dysfunctional Nations, Rising Cities*, 2013.

<sup>28</sup> On this mechanism already: Hirschmann, *Exit Voice and Loyalty*, 1972. On the aspect and effects of exiting these network communities: Srinivasan, *The Network State: How to Start a Country*, 2022, 119.

Graphic 1. The Tunisian Digital/Network State



Source: Al-Ani/Tunisian Startups

"As a next phase, chief futurist of the Dubai government Noah Raford wants city-states to look beyond onshore-versus-offshore distinctions toward a 'no shore' model in which countries actively lease space to innovators seeking test beds for their new technologies, regulations, and communities. They are not selling their sovereignty but rather upgrading into hybrid physical and digital republics that provide financial, medical, and educational certifications. In this emerging marketplace of governance services, the physical-digital sequence is inverted: You build a digital relationship with a government service provider (not necessarily your own), use its services wherever you are, and leverage its credibility to gain physical access to that country or associated ones."<sup>29</sup>

Implicitly, these smart cities could serve as an incubator for the rest of the nation, where ideas, laws and concepts can be experimented with before being rolled out nationwide. The concept of a Digital Tunisian State

is quite instructive in this regard. The scenario would entail a physical space for the local and international community to try out new products, social concepts and legal frameworks before redistributing them within the nation (see Graphic 1).<sup>30</sup>

## VI. Summary

The digitisation of the Arab world is not progressing as expected. This transformation is impeded by a conservative and tightly controlled political and economic system that places a higher value on security and stability than on productivity and inclusion. With the growing urgency of climate change, the need for change has become even more apparent, pushing for radical measures. The concept of smart cities in the region offers an opportunity for a more ambitious overhaul of production processes, fostering cooperation and possibly participation in both economic and political spheres. This approach is unfolding in the midst of a multipolar reset, which presents a range of options while also underscoring the enhanced role and responsibilities of both the individual and the community.

<sup>29</sup> Khanna, *Move. How Mass Migration Will Reshape the World – and What It Means for You*, 2021, 236.

<sup>30</sup> Khanna (loc. cit., 264) is quite clear about the effects of cyber-communities on the connected nation states: "Millions of remote workers join this cloud republic, voting on its internal policies and building bargaining power over the governments where they each physically reside. Countries will then have two choices: either extort the cloud-based workforce within your country—which may prompt many to leave—or join with other host states in forming a digital version of the medieval Hanseatic League that grants access to more members of this nomadic class and benefits from its innovations." See also: Al-Ani, *Cloud Communities and the Nation State*, 2023.

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