DZGITAL TRANSFORMATION IN ALGERIA

Assessing Digital Transformation in the country: Overview, challenges and opportunities.

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In cooperation with DAAS e.V.

A Digital Arabia Network Initiative

DAAS e.V
الجمعية الجزائرية الألمانية للطلبة و الأكاديميين
Deutsch Algerischer Akademiker und Studierender Verein

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1.

Executive Summary

Executive Summary

This report gives an overview of the ongoing digital transformation in Algeria. We've led over 20 interviews with local digital champions and extensive desk research to develop it. We ground our review in four essential dimensions governing digital services: infrastructure, regulation, producers and consumers of digital services. The result is an analysis of the different digital initiatives and their impact on government institutions, businesses and individuals. We've also designed a Digital Transformation index that informs about the digital maturity level of the country in an objective manner.

Algeria has an enormous potential in Digital (good coverage, young tech-savvy population, government goodwill). However, a lack of talents, funding, infrastructure and the right regulatory framework hampers its full development. The next 3-5 years are key to demonstrate whether this potential could be fully realised or not.

	KEY FINDINGS	KEY RECOMMENDATIONS
CONSUMERS	Large tech savvy and young connected population, mistrusts digital services. Low adoption of advanced ICT by government institutions and businesses	Continue educating and accompanying businesses and individuals adopting digital services
PRODUCERS	Start-up creation on the rise but they lack access to talents and funding	Support ICT producers notably through better access to funding & talent
REGULATION	Government focus on digitalisation and start-up industry. However, partial executions of the new adopted regulations, legacy laws and lack of accountability and a clear vision hampers the development of the ecosystem	Accelerate implementation of digital agenda and review existing law and regulation impeding its development
INFRASTRUCTURE	Large investments in the technical infrastructure, good coverage, affordable access however access remains patchy and restrictive. Very low online payment penetration	Continue investing in modernising the technical and payment infrastructure of the country

2.

Background

What is Digital Transformation

We consider Digital Transformation to be an ongoing process that leverages technologies, data and innovation and applies it to all aspects of society in order to streamline businesses and improve people lives.

We look at digital transformation on both its economic & social impact through three lenses:

Individuals: access public and private services in more affordable and convenient ways. Take part in the digital economy.

Businesses: fasten time to market, improve competitiveness and improve services

Government: improve public services, help create new jobs and improve people's lives.

DIGITAL IMPACT

Economic Impact

Economic growth

Increased digital penetration has a substantial impact on economic growth

Job Creation

Digital has a powerful multiplying effect: international cases show that each digital job creates 2-4 jobs elsewhere in the economy

Moreover, those are high-value jobs (wages ~ 30% above average)

Productivity

The industries that most harness digital experience the greatest productivity increases

SMEs that make better use of digital grow faster

Social Impact

Poverty

Experience in countries such as Bolivia and India shows that digital can be a tool for inclusion and increased income among the disadvantaged

Healthcare

E-health enables new forms of healthcare management and provision, increasing patient coverage and improving quality

Education

Education can be provided to the masses at low cost and good quality, using e-education tools

Environment

Digital can make an enormous contribution to the environment: (it might contribute with ~ 15% reduction in CO_2 emissions, for example, by using smart grids)

Other

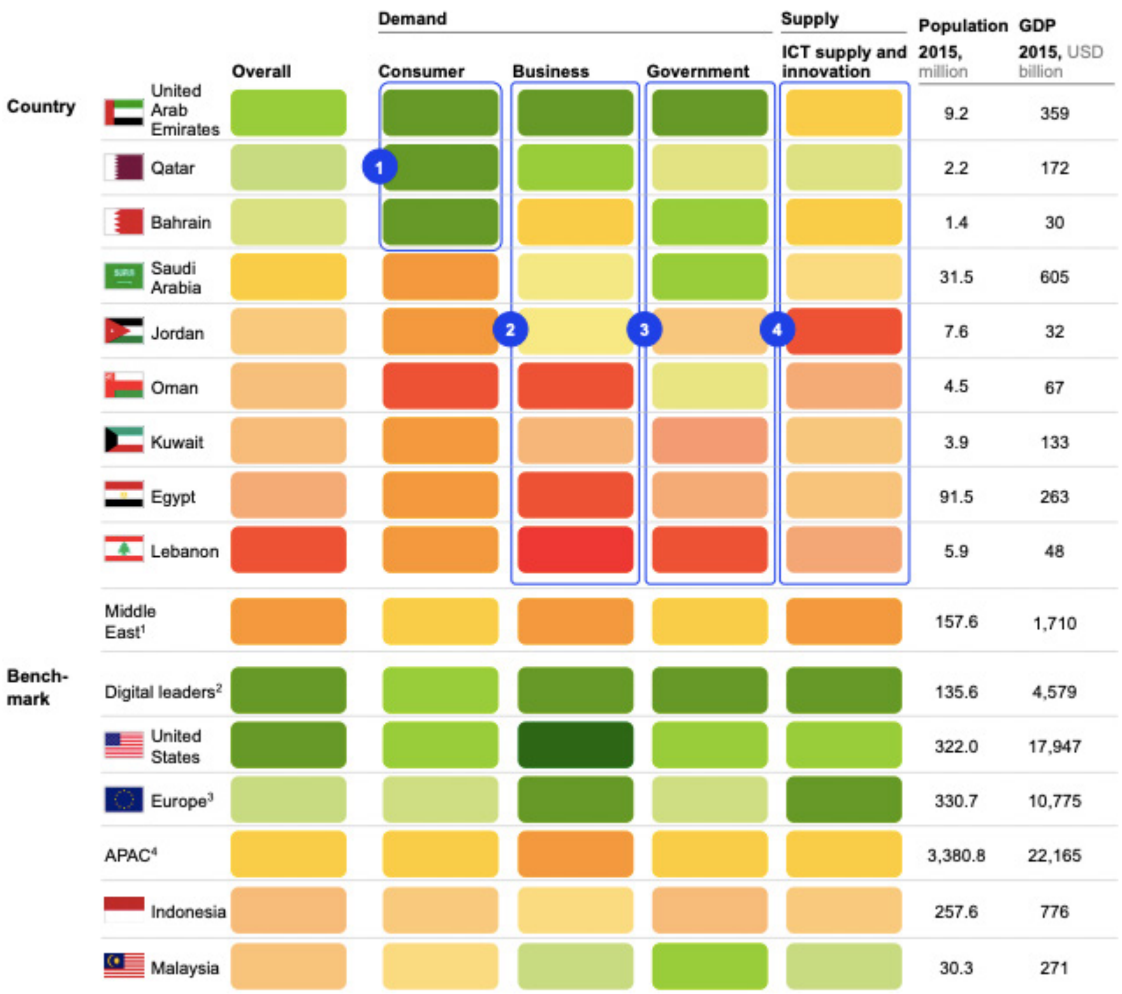
Moreover, there is evidence of the impact of digital on reducing crime, increasing road safety, enhancing financial inclusion, and improving farming

Source: World Bank; Nasscom;Van Reenenet al. (2005), MGI; UNESCO

Digital Transformation in the MENA region

- **Citizens** are ready for more - 50% of the population under the age of 25. +100% smartphone penetration and +70% social media adoption in most countries.
- **Businesses** lag behind in ICT adoption, supply and innovation. Level of digitisation in the business sector scores lower than benchmark. MENA countries has fewer patents compared with benchmark
- **Governments** can do more. Significant progress has been made in improving connectivity and the basic infrastructure. However, a more structured use of new technologies could better meet citizens' expectations according to the OECD. Only 6 percent of the population lives under a digitised smart government.
- The contribution of the Middle East's digital economy is low (4.1%) compared with the EU (6.2.%). Large room for Improvement

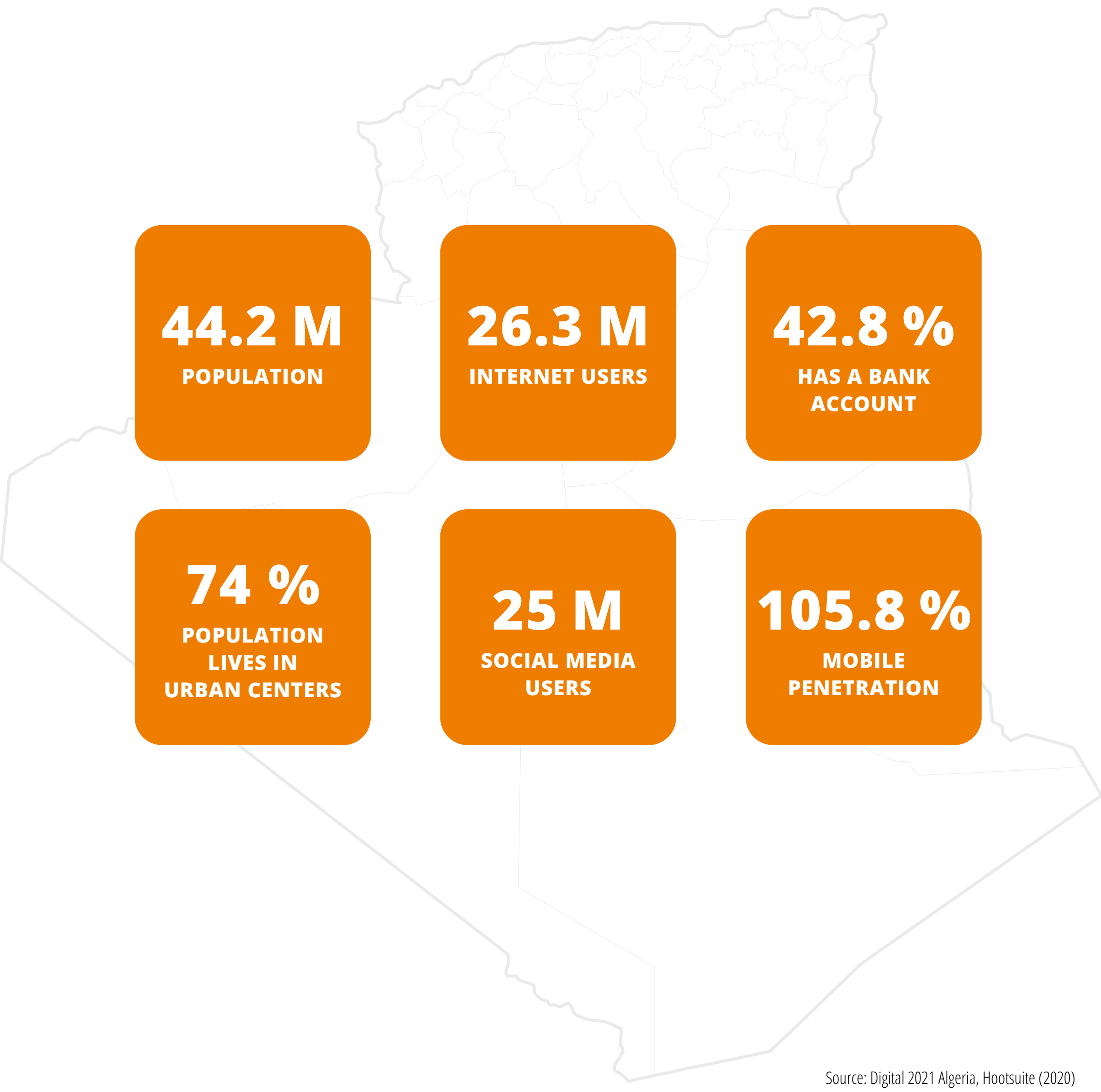
Ranked by overall digitisation



Source: Digital Middle East, transforming the region into a leading digital economy (2016). Benchmarking Digital Government Strategies in MENA countries (2017).

Digital Transformation in Algeria

- Algeria is the largest country in Africa (by Area)
- **Population**: 44.2 million. 59.6% of the population connected to Internet (+16% yoy growth).
  - Mostly young (median age 28.6).
  - Concentrated in urban areas (74%).
  - Mostly connecting through social media.
- **New Government** has put an emphasis on digitalisation and startups with the establishment of deputy ministries and preparation of a host of related legislations
- State of digitalisation inline with the MENA region average



Source: Digital 2021 Algeria, Hootsuite (2020)

3.

Assessing Digital Transformation in the country

A framework to asses Digital Transformation

We've designed a Digital Transformation Assessment framework and an index to gauge the degree of readiness of the Algerian society to Digitalization. We've identified and researched 17 KPIs across 4 key layers to develop this framework. The data comes from desk research + multiple conversations with different actors making the digital ecosystem in the country. The four key layers are:

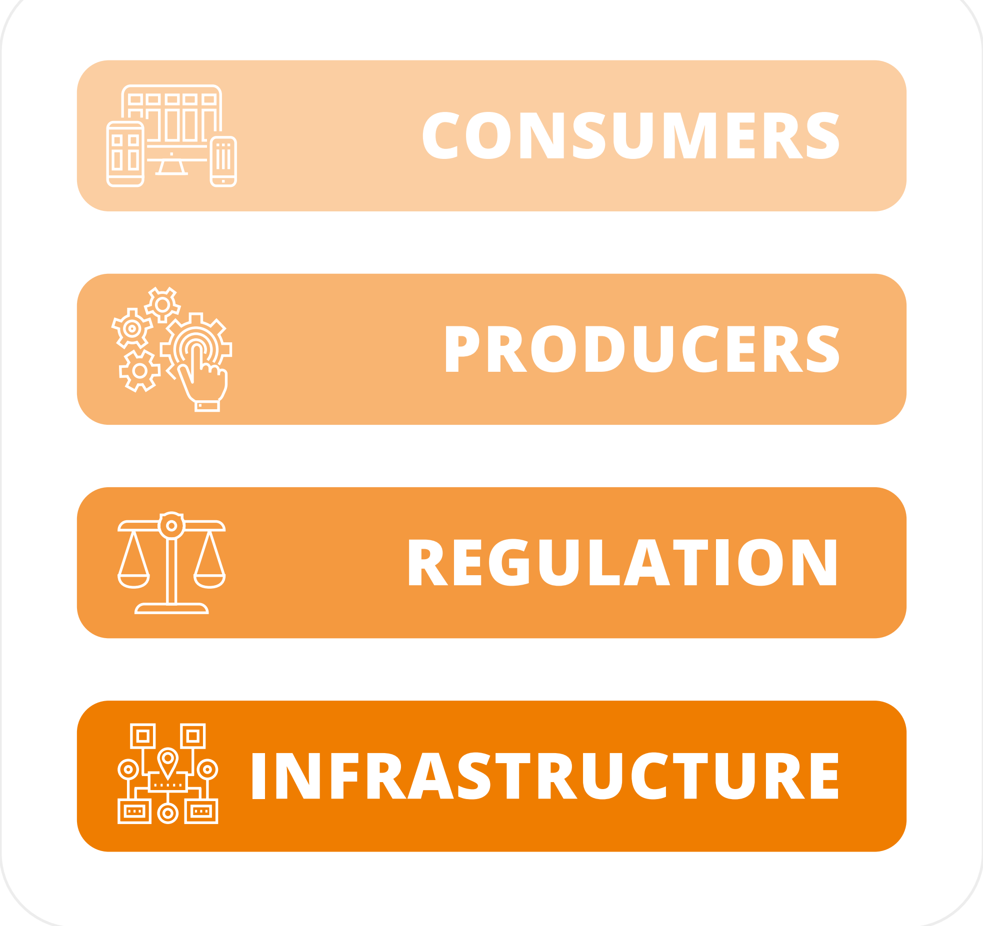
- **Consumer Layer:** end-users of digitals services
- **Producers Layer:** providers of digital services
- **Regulation Layer:** Government interventions & laws governing digitalisation
- **Infrastructure Layer:** the physical networks enabling digitalisation

It is an effort to help articulate our findings, quantify the readiness of the country and capture what is blocking the spread of digitalisation and what levers can be pulled in order to accelerate this process.

We conclude this report by offering 19 tangibles recommendations across the 4 layers.

First, let's understand the situation at hand ....

Digital Transformation Assessment Framework



Consumers

Individuals

- 59.6% of the population connected to Internet
- 76 web shops have included online payment
- Cash is King! Only 4.6% of the population makes online purchases or bill pay. Cash on Delivery preferred method for e-commerce
- Online payment usage ramping up quickly to over 638k transactions and 5.4 Billion DZD in volume in 2020 (224.81 % CAGR over 5 years)

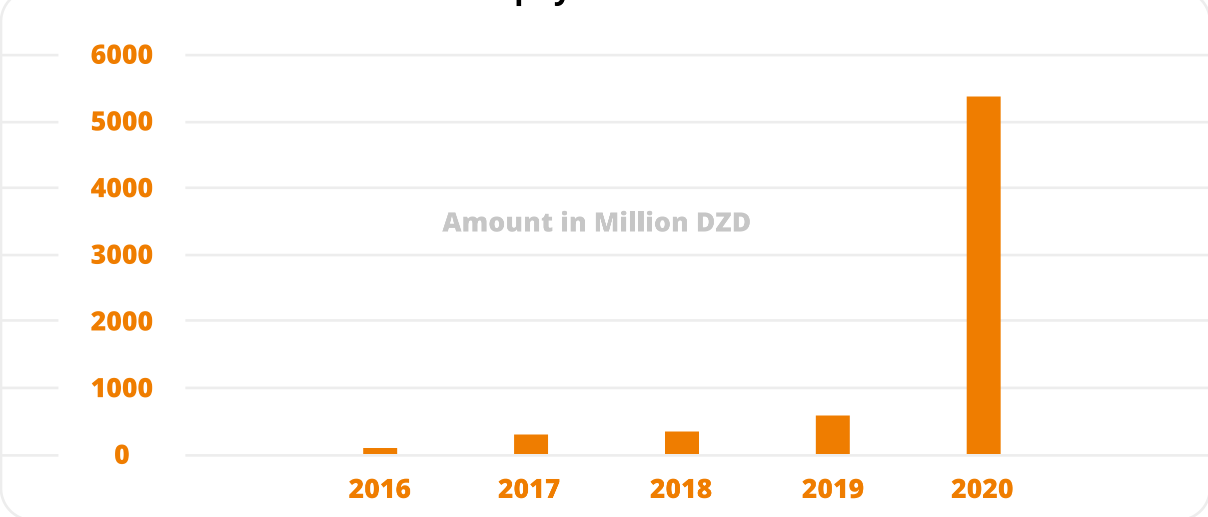
Corporates & SMEs

- +1 Million incorporated SMEs in Algeria. 97.1% are micro-enterprises, with less than 10 employees. Large informal sector (±50%)
- Good adoption of basic ICT by SMEs. Low adoption of more advanced ICT such as enterprise resource management software

Government

- Low consumption of ICT despite new leadership plans
- Smart City Algiers project dropped in 2019
- Rank 120 /193 on UN’s E-Gov Index. And 183/193 on E-Participation Index

Online payment activities



Source: GIE Monetique.
“344“ SMEs Adoption of ICT: Evidence from Algeria, L. Atik 2018

Producers

Fragmented Local ICT Providers market

with a host of SMEs and Freelancers offering their services

BigTech & Foreign Providers capture Algerians' attention online

14 of the 20 most visited sites in Algeria are foreign

Tech Start-ups are on the rise

+900 start-ups identified , 40+ have been granted the government's Startup Label

Funding Innovation is scarce

- Public funding not adapted so far (e.g. ANSEJ).
- Little VC activity - Between 2011 and 2020, only 3 start-ups raised over 100k USD vs 13 in Tunisia & 92 in Egypt

Talent in the Rough

- Algeria records the highest rate of women engineers in the world according to UNESCO
- Not enough IT engineers graduates per year
- Brain drain is key issue
- Talents lacks in soft skills

SERVICE	LEADERS IN DZ	TRACTION
SEARCH	GOOGLE	16:10 MIN / DAY / USER
SOCIAL MEDIA	FACEBOOK	23 M USERS
COMMUNICATION	FB MESSENGER	14 M USERS
ENTERTAINMENT	YOUTUBE	18:03 MIN / DAY / USER
TRANSPORTATION	YASSIR	3 M DOWNLOADS
E-COMMERCE	OUED-KNISS	11:36 MIN / DAY / USER
JOBS	EMPLOITIC	1.2 M CANDIDATES
NEWS	ENNAHARONLINE	4:32 MIN / DAY / USER

Regulation

Ambitious e-Government Programme underway

- Digitization and interconnection of the central administration
- Online request of documents and administrative forms (civil status, criminal record, cnas, casnos, etc)
- Establishment of a National Identification Number (NIN) and generalisation of biometrics-based documents (passport, identity card).

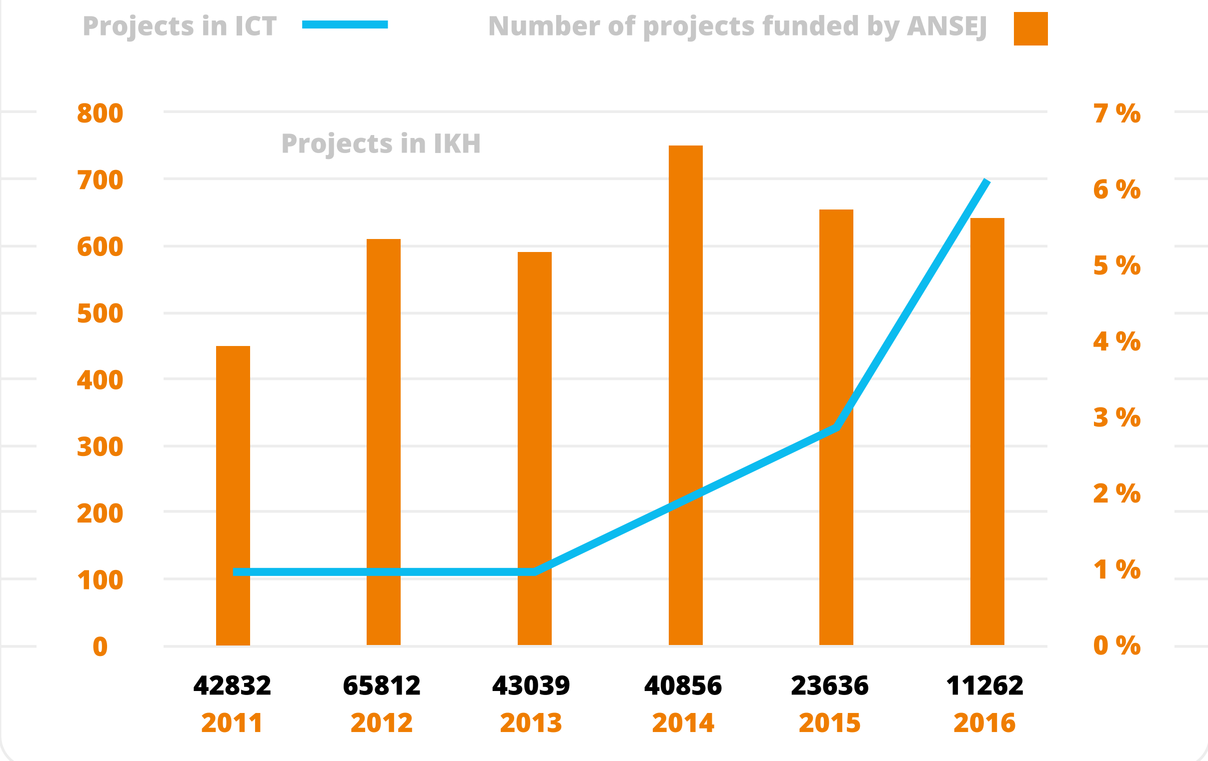
Government's bet on start-ups

- with a deputy minister attached to the Prime minister office,
- A "Start-up Label" granting tax benefits to eligible companies
- Online platform dedicated to startups (https://startup.dz/)
- A government fund "Algeria Start-up Fund"

Centralisation and Legacy laws and regulations still impede the development of the sector

- notably regarding company formation, foreign investment and foreign exchange

Financing ICT startups in Algeria
(18 - 40 year-olds; ANSEJ)



Source: ANSEJ

Infrastructure

CONSUMERS
PRODUCERS
REGULATION
INFRASTRUCTURE

Connectivity & Coverage

- Plans to extend further submarine cables (fiber optics) to Spain, Niger and Nigeria.
- 4G network in place across three Telecom providers
- Low network quality despite constant progress and investment in infrastructure
- Government interventions limit connectivity (e.g. during exams)
- Government surveillance spreads mistrust

Affordability

- Avg. Cost of 1GB of data = $0.65 (lowest in the region)
- Expensive for businesses

Hosting

- 3 colocation data centres
- low number of active website hosted locally (<1000)

E-Payment

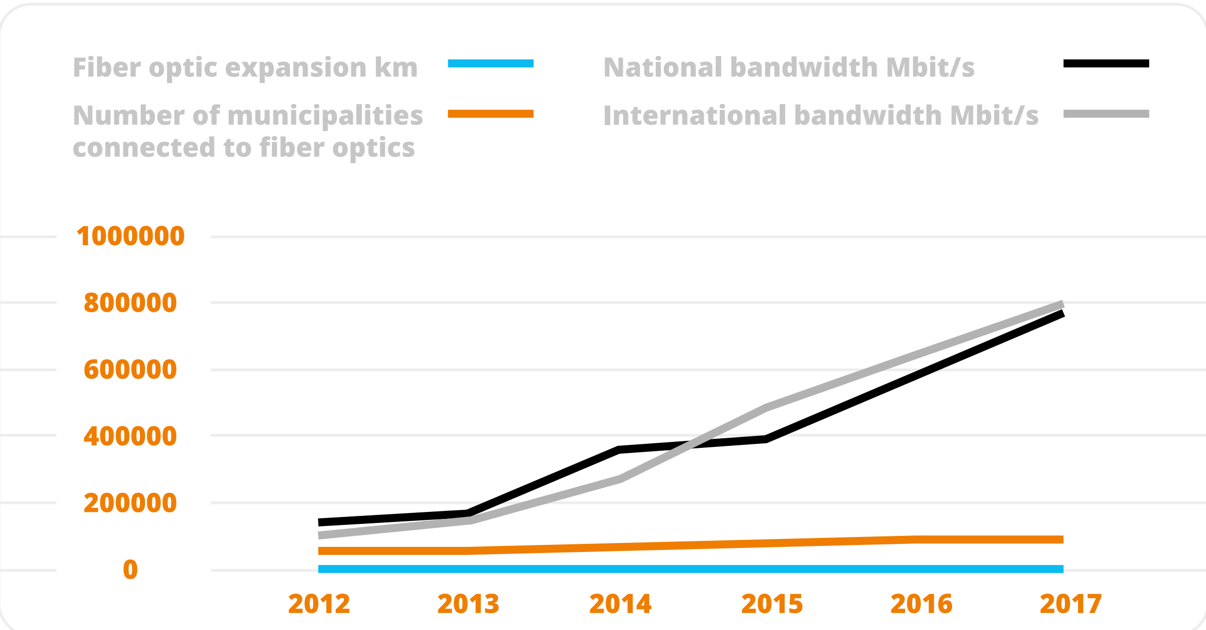
- Nascent E-payment infrastructure managed by SATIM
- E-Payment remains restrictive and costly for services providers
- M-payment project in the pipe
- Low card penetration (3.2%)

Huwaei Global Connectivity Index

COUNTRY RANKS	
Algeria 2020	Morocco 2020
69/79	60/79

COUNTRY SCORES	
ALGERIA 2020	Morocco 2020
32/120	38/120

Source: Huwaei Global Connectivity Index (2020)



Source: Ministry of Posts, Telecommunications and ICT, Algeria

What's the state of digital in Algeria?

Consumers

Large tech savvy and young connected population, mistrusts digital services.

Producers

Low lever of innovation, large share of women in ICT. Start-up creation on the rise but ICT providers lack access to talents and funding

Regulation

Government focus on digitalisation and start-up industry. However, partial executions of the new adopted regulations, legacy laws and lack of accountability and a clear vision hampers the development of the ecosystem

Infrastructure

Large investments in the technical infrastructure, good coverage and affordable access however access remains patchy and restrictive

Low High

	KPI	NOTE
CONSUMERS	Internet usage	
	Mobile usage	
	Social media usage	
	Online purchase	
PRODUCER	Patent	
	Startup creation	
	Funding	
	Human capital	
	Women in tech	
REGULATION	Vision	
	Provision of E-Services	
	Ease of doing business	
	Laws & regulation	
INFRASTRUCTURE	Coverage	
	Connectivity	
	Affordability	
	Hosting infrastructure	

This Digital Transformation Assessment Index evaluates a country's level of digitalisation based on 17 KPIs across four areas (Infrastructure, Regulation, Producers & Consumers). We've rated each KPI on a scale of 1 to 10. Results represented above in a colour coded manner.

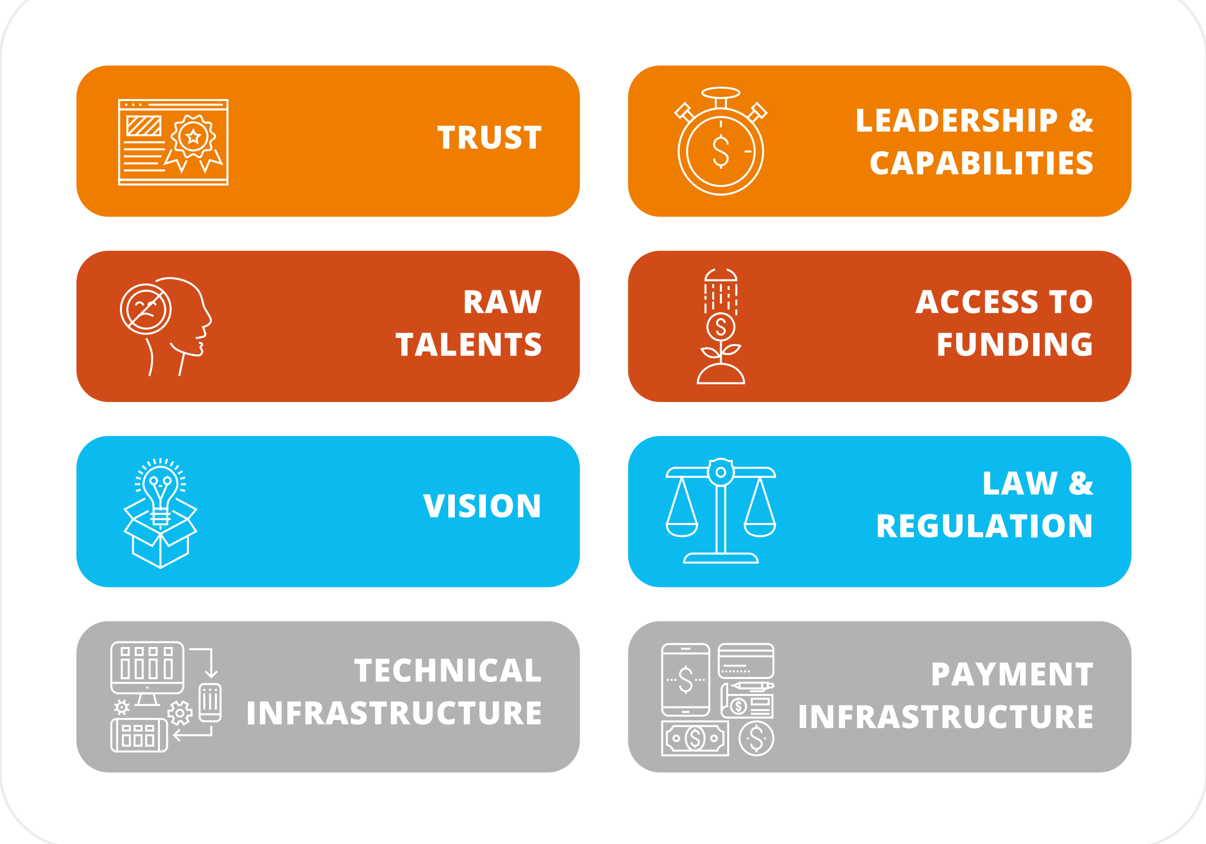
4.

Findings & Conclusions

What's blocking a thriving digital ecosystem?

1. **Expensive and unstable technical Infrastructure** – the availability and affordability of the technical infrastructure (hosting, connectivity) makes it difficult for both consumers and producers of digital services
2. **Limited payment infrastructure** – the low penetration of online payments and credit card use makes the commercialization of digital services most challenging
3. **Absence of a political vision** – a lack of clear vision and concrete roadmap aligned with stakeholders needs confuses digital players and makes it difficult to count Algeria as country championing digital in the region
4. **Unsuited laws and regulations** – antiquated laws and regulations prevents digital players from experimenting and scaling their initiatives.
5. **"Raw" talents** – ICT talents are scares (the university system doesn't cover the needs of the market) and lack soft skills.
6. **Access to funding** – a lack of funding for digital providers is a key challenge. In particular, a post-Series A funding gap is noticeably. State support and bank loans are not suited for digital providers
7. **Lack of leadership & capabilities** – Corporate and SMEs show a disdain for digital and lack of know-how when it comes to execution
8. **Low trust** – Algerians have yet to adapt and adopt digital services fully. Online purchases are low. Local brands are perceived poorly

Digital Transformation Blockers in Algeria



What if Algeria misses the digital turn?

Should Algeria fail to embrace digitalisation in the next 3-5 years, a host of risks can harm its development. Below we've identified some of the most worrying risks. To mitigate, the country should seek to benefit from digital and accelerate its transformation.

Loss of Privacy & Data Sovereignty

Data hosted on 3rd party platforms can end up misused, sold, or leaked with no recourse for the individuals and business if the right policy is not in place. Algerians have experienced data privacy issues with digital platform and their views on the subject are changing.

Digital Darwinism

If we fail to foster local champions, global players will take their place and most of Algerian digital lives will be served and monitored from offices in Silicon Valley, Europe or Dubai. This is detrimental to the country competitiveness, tax revenue and to the entrepreneurship ecosystem.

Cybersecurity Catastrophes

Several cybersecurity issues such as data leaks or power plant outage may arise, whether by accident or by criminals. This could prove disastrous to businesses and individuals if they are not ready, and nothing is done to protect them.

Job Destruction

Many of today's jobs are at risk. Algeria is particularly vulnerable as most of the country's productive jobs are blue-collar jobs that can be automated, and the white-collar jobs might go abroad.

Wider Digital Divide

The lack of access to digital services disproportionately affects rural and less educated populations who are already most vulnerable today. Poor infrastructure, centralisation and automation of low-skilled jobs lead to an increase in inequality.

Political & Social Tensions

The combination of poor infrastructure, security catastrophes, loss of jobs and loss of companies driving job creation might lead to lower tax revenue, higher unemployment rates and amplify social unrest, This might well exacerbate the current political turmoil.

How to accelerate the ongoing Digital Transformation?

Recommendation

Consumers

1. Promote the benefits of digital for businesses and individuals particularly in time of Covid
2. Educate individuals and businesses on the risks posed by Digital notably in terms of, infowar, data privacy and cybersecurity
3. Evaluate the digital maturity of SMEs (**see here for an example**) and Corporates and helping upskill those businesses

Producers

4. Train for what's next. Focus on problem-solving and soft skills in addition to hard skills learned at university.
5. Leverage Diaspora for talents
6. Understand how digital can uniquely benefit your business. Not all ICT providers are meant to be start-ups.
7. Experiment with digital. Build the right set of capabilities through open innovation and experimentation.
8. Think global when raising funds and encourage venture capital and business angels activities
9. Foster local champions by allocating a share of public spending to local start-ups and SMEs and lifting the ban on investing internationally

Regulation

10. Set a clear vision with a national digital strategy, industry-specific roadmaps co-created with the relevant stakeholders.
11. Review and reform existing laws impeding digital entrepreneurship (copyright law, self-employed status, etc, .dz website, investment, e-signature, digital identity) and enact new ones where needed (e.g. Data Privacy)
12. Review tax schemes to incentive SMEs and individuals to adopt digital means of payments
13. Mandate that social transfers and key Government services can be carried online
14. Ensure the full executions of laws and decrees and put in a place an accountability process
15. Learn from other government initiatives in the region

Infrastructure

16. Build a secure and trustworthy digital identity infrastructure for Algerians.
17. Democratise access to online and mobile payments by lowering barriers to entry through SATIM
18. Build an affordable, secure and accessible cloud infrastructure capable of hosting local websites, sensitive data and guaranteeing data sovereignty.
19. Continue to invest in internet infrastructure and lower data access fees to be on par with neighbouring countries

Annex

Methodology

To develop this report, we've organised a field trip to Algeria to meet with the local players and experts. We have organised 23 semi-structured interviews online and in-person between November and December 2020. We've interviewed actors from four areas: Government bodie, Tech Startups, Local Media & ICT Providers and NGOs & Think-thanks. The list of interviewees is provided in Annex.

In order to articulate our findings, we've designed a "Digital Transformation Assessment Framework" that evaluates a country's level of digitalisation based on 17 key performance indicators across four areas (Infrastructure, Regulation, Producers & Consumers). The framework is inspired by similar assessment tools and adapted to the region. We've rated each indicator on a scale of 1 to 10.

Furthermore, to complement the interviews and fill our Digital Transformation Assessment Framework, we have carried out extensive data gathering and desk research, reviewing existing papers on the subject of digitalisation in Algeria and in the MENA region. In particular, we've found the work of the Algerian industry bodies "CARE" and "GAAN" particularly insightful.

	AREA	KPI
CONSUMERS	Internet usage	Internet penetration
	Mobile usage	Mobile penetration
	Social media usage	Active accounts on social media
	Online purchase	Share of online purchase & online bill payment
PRODUCER	Patent	Total patents application per capita
	Startup creation	Share of startups created per year
	Funding	VC funding as a share of GDP
	Human capital	Total employment in the provision of IT services per capita
	Women in tech	Number of femal engineers graduating per year per capita
REGULATION	Vision	Availbility of a digital transformation plan & roadmap
	Provision of E-Services	UN's E-government INDEX
	Ease of doing business	World Bank' Doing Business Survey
	Laws & regulation	World Economic Forum survey on how developed a nation's ICT laws are
INFRASTRUCTURE	Coverage	4G network coverage
	Connectivity	International Internet bandwidth
	Affordability	Broadband tariffs
	Hosting infrastructure	Secure internet servers

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About

About this report

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About DAN

“Digital Arabia Network” (DAN), is a lab for the digital future of the Arab world, which extends from the MENA region to the European diaspora. Launched in 2017 as an online and offline platform, DAN connects all the creative and digital innovators who contribute to making our lives a little bit easier, fairer and better.

More info: **https://digitalarabia.network**
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About DAAS

DAAS- Deutsch-Algerischer Akademiker und Studierender Verein e.V., is a German association that supports students, young graduates, researchers and professionals from an Algerian background in making a dent in Germany.

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