



1. INTRODUCTION

Broad Benefits for SMEs

- Improved collection of market intelligence
- Ability to increase scale of operations
- Increased access to global markets and networks at a low cost

Opportunities

- **Demographics and Education:** Young population, increasingly educated and digitally savvy
- **Infrastructure:** Internet penetration in the MENA region at 56%, reaching 90% in certain GCC countries. Rates above world average.
- **Social Media :** Increasingly popular. Has played a key role in shaping local public opinion.

2. HOW TO BETTER HARNESS DIGITAL TECHNOLOGIES FOR SME GROWTH?



Internet of Things

Descriptions

Enables a host of new business models, applications and services based on data collected from devices and objects, including those that sense and interface with the physical world. E.g. A GPS embedded in a telephone can track the user's location.

(OECD, 2019)

Benefits for SMEs

- Better interaction clients
- Improved efficiency and reduction of operational costs
- **In Retail stores:** Allows SMEs to segment clients and provide tailored products
- **In production lines:** Anticipate Stock replacement
- **In logistics:** Calculate better delivery routes and improve customer Experience



Cloud Computing

Is a service model that provides clients with flexible, on-demand access to a range of computing resources. Clients access such resources (e.g. software applications, storage capacity, networking and computing power) online.

(OECD, 2019)

- Overcome barriers of high cost of building ICT infrastructure
- Software easier to install, maintain and update
- Resources can be used and priced in a scalable and adaptable manner
- Reduced piracy risk
- Third parties can provide cost-effective security

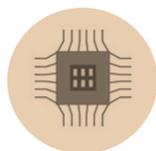


Big Data Analytics

Analysis of data characterized by high volume (vast amount of data generated), velocity (high speed at which data is generated and processed) and variety (ranging from different sources such as market transactions, data retrieved from sensor or social media content).

(OECD, 2019)

- Gather store and analyse relevant data in an effective manner
- Give SMEs a competitive advantage, being able to compete with larger firms
- Reduced costs and increased productivity
- Enhanced design of marketing projects
- Ability to foresee and identify trends



Artificial Intelligence

Descriptions

AI is the ability of machines and systems to acquire and apply knowledge, including by performing a broad variety of cognitive tasks, e.g. sensing, processing language, pattern recognition, learning, and making decisions and predictions. Machine learning is key to the development of AI.

(OECD, 2019)

Benefits for SMEs

- Fewer employee expenses, as robots can execute several company tasks
- Eliminates wasted time
- Helps minimize errors related to the collection and analysis of vast amounts of data



Blockchain

Enables applications to authenticate ownership and carry out secure transactions for a variety of asset types. It is a ledger or spreadsheet that is maintained and stored across a network of computers. The network regularly updates the database in every place it exists, so that all copies are identical.

(OECD, 2019)

- Provides full transparency, allowing buyers and sellers to inquire into the original source of information
- Smaller businesses can obtain more types of trusted information at lower cost
- Target promotions and advertisement
- Reduce advertisement budget

3. HOW TO INTEGRATE A TECHNOLOGICAL DIMENSION INTO NATIONAL SME AGENDAS

Barriers SMEs face to adopt new technologies

INTERNAL

- **Lack of knowledge and awareness:** Entrepreneurs may not understand the benefits of adopting practices that integrate new technologies
- **Mistrust in digital technologies:** Adopting new technologies increases exposure to digital threats and cyberattacks. Moreover, legal risks arising from data collection also deter entrepreneurs
- **Lack of skilled human capital:** Data analytics requires a specific education and skills

EXTERNAL

- **Access to Finance:** Particularly problematic for female and young entrepreneurs
- **Availability of data:** Internal company data becomes more valuable when complemented with other available information. This can be costly
- **Lack of solutions tailored to SMEs:** ICT products tend not to be tailored to SME needs. Legislation ought to be developed

(OECD, 2018)

Government Responses

MEASURES ADOPTED THUS FAR

- Setting a structured regulatory environment requiring increased awareness in data management
- Promoting data sharing and diffusion
- Supporting knowledge exchanges among SMEs and with associations and public institutions
- Offering skills training to entrepreneurs and SMEs' employees
- Providing financial support for the uptake of data analytics projects in companies

ISSUES TO BE ADDRESSED SPECIFIC TO THE MENA REGION

- **Affordability and Connectivity:** In many countries connectivity is either unavailable or unaffordable
 - **To address this,** infrastructural investment is required, competition in the telecommunications market is to be promoted, collaboration amongst network providers is to be fostered to decrease user costs
- **Lack of Local Relevance:** The local population still finds it hard to understand the benefits of e-commerce, which in turn reduces the market for SMEs. Moreover, the majority of internet content is not provided in Arabic. Language is a great barrier and indeed social interactions in the local language would motivate clients to go online
 - **To address this:** Improve Digital Governance programmes. Educate citizens to make internet more relevant. Policies to tailor internet products to the local culture
- **The Role of Government:** Governments can play a key role. Thus, they need to be more engaged
 - **To address this:** Invest in the development of digital skills. Ensure consistent and predictable law. Coordinate and cooperate with neighboring countries

(OECD, 2018) (Dean, 2017)

4. CASE STUDIES

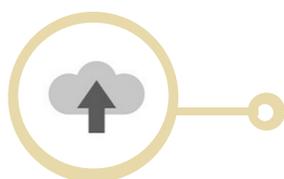


Internet of Things

Nakheel Cognitive Plant, Bahrain

One of the biggest threats to palm trees across the world is the Red Palm Weevil, an insect that infects these plants and causes millions of dollars worth of losses to farmers in the MENA region.

Nakheel installs a hardware device on palm trees, allowing farmers to detect infection at an early stage through their smartphones. The startup specializes in Internet of Things, as the devices installed offer a comprehensive GIS database which is updated daily and allows users to know the exact location of the infected plant.



Cloud Computing

Aliphia, Morocco

Sahih Business is an SME that has developed an accounting software to be sold to other businesses. The owners came to understand that accounting and finance software are often extremely complex and require intense training in order to be utilized effectively. These products are thus only appropriate for large firms, not for other SMEs like themselves.

Hoping to address this issue, Sahih Business developed Aliphia, the first Arabic cloud-based SaaS accounting software targeting SMEs.

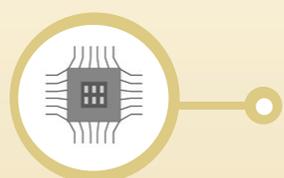


Big Data Analytics

Lucidya, Saudi Arabia

This business-to-business company aims to provide customers with a better understanding of their clients, in order to enhance their marketing processes. The agency analyses more than 200 million sites, including social media, to examine how the users of a particular brand perceive the company and how they use the company's products.

Big Data analysis, coupled with artificial intelligence and machine learning, allow emotions to be extracted from comments posted by the brand's users.



Artificial Intelligence

WrappUp, UAE

While working as a consultant at Bain and Company, one of WrappUp's founders realized that oftentimes it was hard to take notes during meetings and to analyse the main topics covered and conclusions reached.

WrappUp was founded to address this issue. The app records meetings and uses AI and machine learning to identify who is speaking, to make written summaries of the main topics covered, to segment a meeting by speaker or topic, to search key words within a meeting and to build efficiency metrics on speech content for each person. This allows meetings to be more efficient and to be summarised and shared with absent members.



Blockchain

Addenda, UAE

Addenda is a startup that employs blockchain technology in the insurance sector. It is an end-to-end insurance settlement layer that allows insurers to automate claims, reduce overhead costs and easily identify fraudulent claims.

It employs distributed ledger technology (DLT) to streamline processes between insurance companies. The interface reports live on tailored tasks, which are subsequently timestamped as evidence onto the blockchain. As a result, insurers can report claims and policy changes in a transparent and encrypted way.