

Charting the Digital Shift of Economy: Investing in Intellectual Capital and its Requirements Lamia BEDIR

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Abstract

This paper emphasizes the crucial role of intellectual capital in driving the digital economy forward and nurturing innovation. With technology shaping every aspect of business, investing in intellectual capital is now essential for staying competitive and meeting the demands of the modern world. Recognizing this, the UAE has prioritized investment in intellectual capital as an integral component of its transition strategy towards a digital economy.

Keywords: Intellectual capital, transition strategy, UAE, the digital economy.

Cartographier la transition digitale de l'économie : Investir dans le capital intellectuel et ses exigences

Résumé

Cette étude souligne le rôle crucial du capital intellectuel dans la promotion de l'économie digitale et l'innovation. Avec la technologie influençant tous les aspects des affaires, investir dans la digitalisation du capital intellectuel est devenu désormais essentiel pour rester compétitif et répondre aux exigences du monde moderne. L'état des Émirats arabes unis a ainsi priorisé cet investissement dans leur stratégie de transition vers une économie digitale.

Mots-clés: Capital intellectuel, stratégie de transition, EAU, économie digitale.

تخطيط التحول الرقمي للاقتصاد: الاستثمار في رأس المال الفكري ومتطلباته

ملخص

تسلط هذه الورقة الضوء على الدور الحاسم لرأس المال الفكري في دفع الاقتصاد الرقمي قدماً وتعزيز الابتكار. فمع تدخل التكنولوجيا في مختلف جوانب الأعمال وتأثيرها على رأس المال الفكري، أصبح الاستثمار في هذا الأخير أمراً أساسياً للحفاظ على التنافسية وتلبية متطلبات العالم الحديث. أخذاً بهذا الأمر، فقد أعطت الإمارات العربية المتحدة الأولوية للاستثمار في رأس المال الفكري كجزء أساسي من استراتيجيتها للانتقال نحو الاقتصاد الرقمي.

الكلمات المفتاحية: رأس المال الفكري، استراتيجية الانتقال، الإمارات العربية المتحدة، الاقتصاد الرقمي.

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Introduction:

As the world is witnessing a digital era that is now holding the business world with an iron fist, it has become inevitable –due to the current state of the economy- for it to turn to digitalizing its business and acquiring all the necessities for it. Many countries now realize the importance of investing in the intellectual capital, being the key of success in transforming to the digital economy that relies on the current developed technologies. This have made the UAE seek investments in the intellectual capital by adopting many strategies and sufficient procedures that would enable the state to achieve a fulfilling application of the digital economy.

With that said, the problematic is the next:

What are the strategies and procedures that have been adopted by the state of UAE to build an intellectual capital that can cope with the current data of the digital economy?

To answer that, the following secondary questions should be asked:

- What are the requirements of the digital economy?
- What is the importance of the intellectual capital in regards to the digital economy?
- To what extent is the UAE interested in the digital economy?

Hypotheses:

In order to answer these questions, the following hypotheses should be considered:

- The application of the digital economy needs a developed intellectual capital since it relies on developed technologies;
- Investing in the intellectual capital should be enough to achieve a progress in the economy;
- The application of a digital economy while neglecting the human resource can't be enough to cope with the current changes in the economic environment.

Study Approach:

The descriptive analytical approach was relied upon, where the descriptive approach was used to define the variables of the study and the analytical one was for analyzing the data of the study.

- **The intellectual capital**
- **The definition of intellectual capital:**

«Intellectual capital represents the distinctive capabilities possessed by many individuals working within an organization, enabling them to make contributions that enhance the organization's productivity and achieve high levels of performance compared to similar entities.»

- **The importance of the intellectual capital:**

The importance of intellectual capital can be summarized in the following points:

1. Facilitating the development of intelligent organizations: Intellectual capital helps in building intelligent organizations by having exceptional minds that can effectively utilize other resources. It enables organizations to leverage the knowledge and capabilities of their workforce to drive innovation, improve processes, and achieve superior performance.
2. Generating wealth for organizations and individuals: Intellectual capital serves as a source of wealth generation for both organizations and individuals. It allows organizations to introduce modifications and improvements to their operations, products, and services, leading to increased efficiency, competitiveness, and market value. Individuals with valuable intellectual capital can also capitalize on their expertise and experience to advance their careers and create economic opportunities.
3. Strategic resource and competitive advantage: Intellectual capital is considered a strategic resource and a competitive weapon, particularly in the knowledge economy. Organizations that effectively manage and leverage their intellectual capital can gain a competitive edge by fostering innovation, nurturing a learning culture, and attracting and retaining talented individuals. It provides a unique value proposition that sets them apart from competitors.

4. Information resources for individuals: Intellectual capital represents a collection of informational resources for individuals, consisting of knowledge, skills, experiences, and expertise. It encompasses both explicit knowledge (codified and documented information) and tacit knowledge (personal insights, know-how, and expertise). These resources contribute to personal and professional development, enhance problem-solving capabilities, and support decision-making processes.

In summary, intellectual capital plays a crucial role in building intelligent organizations, driving wealth generation, providing a strategic advantage, and serving as valuable information resources for individuals.

- **The digital economy :**

- **Definition of the digital economy :**

the digital economy has been given numerous definitions, of which are the following:

«The economy that is associated with the concept of the information society, which expresses a future vision of a world in which information is the basic pillar of the economy and human relations as a whole embodied in a high digital infrastructure.»⁽¹⁾

«An advanced economic pattern based on the widespread use of informatics and the Internet in various aspects of economic activity, especially in electronic commerce, based firmly on creativity, knowledge and technological development, especially with regard to information and communication technology»⁽²⁾.

«An economy that achieves an effective use of knowledge in order to achieve economic and social development, and this includes bringing and applying knowledge, in addition to adapting and forming knowledge in order to meet its own needs.»⁽³⁾.

- **The requirements of the digital economy:**

The requirements of the digital economy typically include several key components and factors. Here are some of the important requirements:⁽⁴⁾

- **Infrastructure:** A robust digital economy requires a reliable and advanced information and communication technology (ICT) infrastructure. This includes high-speed internet connectivity, mobile networks, data centers, and cloud computing infrastructure. The availability and accessibility of these technological foundations are crucial for digital activities.

- **Digital Skills and Literacy:** Individuals need to possess the necessary digital skills and literacy to participate effectively in the digital economy. This includes proficiency in using computers, mobile devices, and digital applications, as well as knowledge of digital security, online privacy, and data protection.

- **Access to Devices:** Access to affordable and reliable digital devices such as computers, smartphones, and tablets is essential. Widespread availability of these devices ensures that individuals and businesses can connect to the digital world and leverage digital opportunities.

- **E-commerce Platforms:** The digital economy relies heavily on e-commerce platforms, which enable online buying and selling of goods and services. These platforms should provide secure payment gateways, user-friendly interfaces, and logistics support to facilitate smooth transactions.

- **Digital Payments:** A well-functioning digital economy requires efficient and secure digital payment systems. This includes online banking, mobile wallets, payment gateways, and cryptocurrencies. These payment methods enable seamless and instant financial transactions across digital platforms.

- **Data Privacy and Security:** As the digital economy revolves around data, protecting individuals' privacy and ensuring data security are critical. Robust regulations and cybersecurity measures need to be in place to safeguard personal information, prevent data breaches, and build trust among users.

It's worth noting that the requirements of the digital economy may vary across countries and regions depending on their level of technological development, infrastructure, and policy frameworks.

• **Characteristics and foundations of the digital economy:**

The digital economy is characterized by several key features and foundations that distinguish it from traditional economies. Here are some of the main characteristics and foundations of the digital economy: ⁽⁵⁾

1. **Digitization:** The digital economy is built upon the digitization of various processes, products, and services. It involves the conversion of analog information into digital formats, enabling storage, manipulation, and transmission of data electronically.
2. **Connectivity:** The digital economy thrives on widespread connectivity. It relies on high-speed internet access and mobile networks to connect individuals, businesses, and devices across geographical boundaries.
3. **Data as a Resource:** Data plays a central role in the digital economy. It is considered a valuable resource that drives decision-making, innovation, and personalized experiences. The ability to collect, analyze, and leverage data effectively provides insights and competitive advantages.
4. **Automation and Efficiency:** The digital economy leverages automation and technology to streamline processes and increase efficiency. Tasks that were once manual and time-consuming can now be automated using digital tools, leading to improved productivity and cost savings.
5. **Disintermediation:** The digital economy often eliminates traditional intermediaries by directly connecting producers and consumers. Online marketplaces, peer-to-peer platforms, and direct-to-consumer models reduce the need for intermediaries, leading to more efficient and cost-effective transactions.
6. **Global Reach:** The digital economy transcends geographical boundaries, allowing businesses to operate on a global scale.

These characteristics and foundations of the digital economy shape the way businesses operate, consumers engage with products and services, and economies grow in the digital age.

• **The objectives of the digital economy:**

The objectives of the digital economy can vary depending on the stakeholders involved, but there are several common goals that are often pursued. Here are some of the main objectives of the digital economy: ⁽⁶⁾

- To remove time barriers;
- To remove geographical barriers;
- To remove structural barriers;
- A better handling of cost constraints.

2. The intellectual capital

2.1. The definition of intellectual capital:

« Intellectual capital represents the distinctive capabilities possessed by many individuals working within an organization, enabling them to make contributions that enhance the organization productivity and achieve high levels of performance compared to similar entities. » ⁽⁷⁾

2.2. The importance of the intellectual capital:

The importance of intellectual capital can be summarized in the following points: ⁽⁸⁾

- **Facilitating the development of intelligent organizations:** Intellectual capital helps in building intelligent organizations by having exceptional minds that can effectively utilize other resources. It enables organizations to leverage the knowledge and capabilities of their workforce to drive innovation, improve processes, and achieve superior performance.
- **Generating wealth for organizations and individuals:** Intellectual capital serves as a source of wealth generation for both organizations and individuals. It allows organizations to introduce

modifications and improvements to their operations, products, and services, leading to increased efficiency, competitiveness, and market value. Individuals with valuable intellectual capital can also capitalize on their expertise and experience to advance their careers and create economic opportunities.

- **Strategic resource and competitive advantage:** Intellectual capital is considered a strategic resource and a competitive weapon, particularly in the knowledge economy. Organizations that effectively manage and leverage their intellectual capital can gain a competitive edge by fostering innovation, nurturing a learning culture, and attracting and retaining talented individuals. It provides a unique value proposition that sets them apart from competitors.

- **Information resources for individuals:** Intellectual capital represents a collection of informational resources for individuals, consisting of knowledge, skills, experiences, and expertise. It encompasses both explicit knowledge (codified and documented information) and tacit knowledge (personal insights, know-how, and expertise). These resources contribute to personal and professional development, enhance problem-solving capabilities, and support decision-making processes. In summary, intellectual capital plays a crucial role in building intelligent organizations, driving wealth generation, providing a strategic advantage, and serving as valuable information resources for individuals.

- **The Connection Between Intellectual Capital and Digital Transformation of the Economy:**

The digital transformation of the economy has been closely linked with the emergence of the knowledge economy and the rapid advancements in information and communication technology, driven by increasing attention and the growing role of knowledge in international economies. In the era of knowledge and competitive economies, the concept of intellectual capital emerged as a key pillar in innovation and renewal processes, acting as a leader in driving change and creativity.

Based on this, numerous studies indicate that the greater the level of digital transformation within an organization, the higher the level of intellectual capital, and vice versa. In other words, an increase in one dimension of digital transformation leads to a rise in one or several dimensions of intellectual capital, thereby improving performance and quality. Digital transformation is thus considered a significant factor in enhancing intellectual capital, as it aids in developing the capabilities and skills of human resources, which is one of the most important dimensions of intellectual capital. This facilitates the management of information and knowledge, as confirmed by a study conducted by the Organization of Economic Cooperation and Development (OECD) in 2019. The study revealed that countries with better infrastructure tend to have lower unemployment rates and higher economic growth rates.

Additionally, studies affirm that digital transformation improves the quality of intellectual capital by increasing creativity and innovation, facilitating collaboration and knowledge sharing, creating new learning opportunities, developing employees, and enhancing productivity.

Information technology also impacts intellectual capital. As a that facilitates communication, processing, dissemination of information, and knowledge sharing, it is considered a dimension of digital transformation. Consequently, it significantly affects structural capital primarily, followed by relational capital, and lastly, human capital.

On this basis, digital transformation contributes to the development of human capital by enhancing the scientific, knowledge-based, and skill levels of employees, increasing their ability to innovate and renew, improving the organizational climate and work relationships, and boosting job satisfaction⁽⁹⁾.

Digital transformation also impacts structural capital through its support for operational and administrative activities and processes, as well as its influence on organizational structure, company size, procedures, operations, and the effectiveness of internal and external communications⁽¹⁰⁾.

Regarding the relationship between digital transformation and relational capital, digital transformation in its various dimensions contributes to improving the quality of services, innovating more effective delivery methods, increasing institutions' ability to enter new markets, attracting more customers at lower costs, and overcoming geographical and temporal challenges, which enhances customer satisfaction⁽¹¹⁾.

UAE's Efforts to Develop Intellectual Capital to Align with the Knowledge-Based Economy

- **The digital economy in the UAE:**

The United Arab Emirates (UAE) primarily relies on strategic plans for the digital economy to develop its intellectual capital. The digital economy contributes to creating real investment opportunities, and the UAE implements plans to enhance the digital economy through the adoption of the UAE strategy for the industrial revolution. One of its objectives is to enhance national security, which is achieved through the adoption of policies for the digital economy and digital transaction technologies (such as blockchain) in financial services.

- **UAE's strategy in building intellectual capital:**

The global leadership in digitization and digital transformation began with the "UAE Vision 2021," launched by the UAE government in 2010. The vision aimed to build a sustainable and competitive knowledge-based economy, driven by digitization and innovation. The UAE ranked first among Arab countries and tenth globally in the Global Digital Competitiveness Index 2020, published by the International Institute for Management Development. It also ranked first among Arab countries and twenty-first globally in the United Nations E-Government Survey 2020, and eighth globally in the E-Government Development Index of the same survey⁽¹²⁾.

Additionally, the UAE ranked fifth globally in the Global Cyber security Index in the International Telecommunication Union's report for 2020. The UAE's leadership in utilizing information and communication technology to improve government services and mobile network coverage also played a significant role in achieving these rankings.

This global leadership would not have been possible without the visionary leadership, proactive thinking, and relentless pursuit of global competitiveness by the UAE government. The government has implemented efficient and effective strategies, initiatives, and performance indicators. One of the key factors contributing to the UAE's success in Bloomberg's Best Countries ranking during the COVID-19 pandemic was its advanced digital readiness, including digital infrastructure, smart electronic services, and distinctive digital platforms that enabled remote work, remote learning, and e-commerce, resulting in minimal disruption to businesses and society.

Digitalization has also had a positive impact on building trust in the UAE government. The UAE government ranked second globally in Edelman's Trust Barometer 2022, which measures trust in government. This is particularly significant considering the trust crisis faced by governments worldwide. The quality of information plays a crucial role in building trust in the government, highlighting the role of digitalization and digital transformation in providing high-quality information.

The UAE's global leadership is further demonstrated through the annual World Government Summit, which serves as a global platform for dialogue and stimulates governments worldwide to innovate and embrace digitalization to find sustainable solutions for global challenges based on the UAE model⁽¹³⁾.

The UAE has focused on developing and equipping national talents with the required digital skills for the Fourth Industrial Revolution, such as programming, data science, and machine learning. The country has also attracted international talents and expertise in these fields, establishing global initiatives like the Arab Coders initiative and introducing new specializations in master's and doctoral programs, such as artificial intelligence at the Mohamed bin Zayed University and data science programs in various government and private universities in the UAE⁽¹⁴⁾.

The UAE government launched the Smart Learning Initiative in 2012, which covers all government schools in the country at a cost of one billion dirhams. The UAE also embarked on the world's largest deployment of digital transformation in education by using iPads, which received positive acceptance and yielded significant results in addition to the set objectives.

Dubai Internet City, established by the Dubai government, is a free zone for information technology and serves as a strategic base for companies to encourage intellectual capital to keep pace with technological advancements and utilize digitization in their operations⁽¹⁵⁾.

The UAE has significant opportunities to achieve global leadership in digitization and transition to a sustainable digital economy. The next digital revolution is the green revolution, and these opportunities will require an « Exponential Growth » mindset, focusing on transformative technology-driven change that brings about significant impact and returns. It is essential to address the challenges that technology brings, such as bias in artificial intelligence algorithms and inequality. The UAE must prioritize human-centric technology that adheres to ethical principles in its design and use, ensuring justice, responsibility, and sustainability while meeting societal needs. The UAE is committed to enhancing its position in the Fourth Industrial Revolution, artificial intelligence, and future foresight, directing them towards serving humanity, progress, and well-being. The UAE believes that the value of technology lies in its ability to positively change people's lives and that intellectual capital works to make technology a bridge for construction, progress, security and stability for all⁽¹⁶⁾.

Conclusion:

Through this study, it has been concluded that the digital economy is the modern economic direction that countries seeking to keep up with economic changes aim to implement. It helps achieve better economic results, especially in financial management areas such as tax administration. However, for its efficient implementation, it is necessary to provide advanced intellectual capital capable of optimal utilization of technology and software. Therefore, the hypothesis "The digital economy requires advanced intellectual capital for its implementation as it relies on advanced technology and software" has been proven, as the digital economy requires knowledge and expertise to effectively leverage advanced technology in business operations.

The United Arab Emirates (UAE) serves as a notable example of a country that has successfully embraced digital transformation and achieved global leadership in digitalization. The UAE's focus on building a competitive, sustainable knowledge-based economy through digitalization and innovation has propelled its rankings in various global digital competitiveness indices. The government's visionary leadership, strategic initiatives, and performance indicators have played a significant role in this achievement.

Results:

The study has yielded the following results:

- The transition towards the digital economy requires material resources to provide the necessary technology and tools for its implementation.
- The effectiveness of the digital economy is based on the availability of highly skilled human resources capable of keeping up with technological advancements.

- Intellectual capital is a crucial investment for countries aiming to adopt the digital economy. It offers a forward-thinking vision and high efficiency, enabling them to deal with economic shocks flexibly and transparently.

- The United Arab Emirates has worked on providing all the necessary material and moral means to invest in intellectual capital, enabling it to effectively transition towards the digital economy.

- The digital shift of the UAE economy shows that investing the oil revenues in technologies and innovative researches goes back positively on the economy throughout providing the necessary infrastructure and intellectuals, which makes the correlation between the investment in intellectual capital of the country and its effectiveness in digitalizing the economy undeniable.

In summary, the results indicate that the digital economy necessitates material resources for the provision of technology and tools, and it relies on highly skilled human resources to ensure its efficiency. Intellectual capital serves as an effective investment for countries embracing the digital economy, allowing them to have a future-oriented, highly efficient vision that enables them to navigate economic shocks with flexibility and transparency. The United Arab Emirates has taken significant steps to provide the necessary means to invest in intellectual capital, facilitating its transition towards the digital economy with efficiency.

Recommendations:

- Prior to embarking on the digital economy, it is crucial to provide all the necessary material and moral requirements to achieve the desired results.
- Prioritizing investment in intellectual capital before transitioning to the digital economy is essential, as it is the element that efficiently applies and utilizes digital technologies. Therefore, countries should focus on training and developing human resources, especially in the technological aspect, which forms the basis of digital transformation.
- Encouraging organizations to foster teamwork and collaborative work environments will help individuals feel valued within the organization and recognize their role in the digital transformation process.
- Updating laws and regulations to align with the development of the work environment, allowing institutions to operate within a conducive environment for the digital economy, including data protection laws.

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