# Applications of the Digital Revolution and Its Role in Affirming National Identity

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## Abstract:

Preserving identity is considered one of the most prominent directions for research and study, due to its importance and danger to all Arab countries, especially because we live in the era of "globalization," the new world order characterized by the information revolution and digital transformation in the political, economic, social, and especially cultural fields. For this reason, Arab societies seek to preserve its cultural identity, especially Egypt, which has always been distinguished by its cultural and religious character and distinguished intellectual wealth that has been evident throughout the ages and has received respect and appreciation from various civilizations for what it has provided to the world. Affirming national identity includes promoting common values, culture, history, and a sense of belonging among the country's citizens by supporting and promoting traditional arts, music, literature, and other forms of cultural expression that contribute to a sense of identity and national belonging.

The digital revolution came to refer to the radical and rapid transformation resulting from great technological progress. This transformation is characterized by the rapid development of digital technology and its profound impact on all different aspects of life, especially the cultural aspect. The multiple digital revolution applications come to allow the preservation and dissemination of cultural heritage, including art, literature, music and historical antiquities, through digital platforms and the use of artificial intelligence applications and virtual, augmented and mixed reality to revive Islamic arts and architecture and historical Egyptian antiquities in an interactive manner, allowing users to explore and understand arts and heritage in new ways, in addition to providing virtual experiences for art exhibitions and documenting Egyptian heritage and culture, which contributes to spreading understanding and appreciation for national heritage and civilization, which enhances belonging and works to confirm national identity among citizens.

## Keywords:

Artificial Intelligence - Virtual Reality - Augmented Reality

## الملخص:

يعتبر الحفاظ على الهوية من أبرز اتجاهات البحث والدراسة، لأهميته وخطورته على كافة الدول العربية، خاصة أننا نعيش في عصر "العولمة"، النظام العالمي الجديد الذي يتميز بثورة المعلومات والتحول الرقمي. في المجالات السياسية والاقتصادية والاجتماعية، وخاصة الثقافية. ولهذا السبب تسعى المجتمعات العربية إلى الحفاظ على هويتها الثقافية، وخاصة مصر التي تميزت دائما بطابعها الثقافي والديني وثروتها الفكرية المتميزة التي تجلت على مر العصور، ونالت الاحترام والتقدير من مختلف الحضارات لما قدمته. تم تقديمها للعالم. يتضمن تأكيد الهوية الوطنية تعزيز القيم المشتركة والثقافة والتاريخ والشعور بالانتماء بين مواطني الدولة من خلال دعم وتعزيز الفنون التقليدية والموسيقى والأدب وغيرها من أشكال التعبير الثقافي التي تساهم في الشعور بالهوية والانتماء الوطني.

وجاءت الثورة الرقمية لتشير إلى التحول الجذري والسريع الناتج عن التقدم التكنولوجي الكبير. ويتميز هذا التحول بالتطور السريع للتكنولوجيا الرقمية وتأثيرها العميق على كافة جوانب الحياة المختلفة، وخاصة الجانب الثقافي. وتأتي تطبيقات الثورة الرقمية المتعددة لتسمح بحفظ ونشر التراث الثقافي، بما في ذلك الفن والأدب والموسيقى والآثار التاريخية، من خلال المنصات الرقمية واستخدام تطبيقات الذكاء الاصطناعي والواقع الافتراضي والمعزز والمختلط لإحياء الفنون والعمارة الإسلامية والآثار المصرية التاريخية بطريقة تفاعلية، مما يتيح للمستخدمين استكشافها وفهمها. الفنون والتراث بطرق جديدة، بالإضافة إلى تقديم تجارب افتراضية للمعارض الفنية وتوثيق التراث والثقافة المصرية، مما يساهم في نشر الفهم والتقدير للتراث والحضارة الوطنية، مما يعزز الانتماء ويعمل على تأكيد الهوية الوطنية لدى المواطنين.يهدف البحث إلى استكشاف تأثير التطبيقات الرقمية على تأكيد الهوية الثقافية وتحليل كيفية استخدام التكنولوجيا الرقمية في تعزيز الهوية الرقمية ودور المصمم في تحقيق ذلك من خلال التطبيقات الرقمية , وتوظيف الذكاء الاصطناعى في الحفاظ على التراث وتعزيز الهوية القومية والثقافية وتنمية الشعور بالانتماء الوطنى لدى المواطنين ولاسيما الاجيال الجديدة .

**الكلمات المفتاحية:**

الذكاء الاصطناعي، الواقع الافتراضي، الواقع المعزز

## Introduction:

Preserving identity is considered one of the most prominent directions for research and study due to its importance and danger to all Arab countries, especially because we live in the era of "globalization," the new world order characterized by the information revolution and digital transformation in the political, economic, social, and especially cultural fields. This is why Arab societies seek to preserve its cultural identity, especially Egypt, which has always been distinguished by its cultural and religious character and distinguished intellectual wealth that has been evident throughout the ages and has received respect and appreciation from various civilizations for what it has provided to the world. Affirming national identity includes promoting common values, culture, history, and a sense of belonging among the country's citizens by supporting and promoting traditional arts, music, literature, and other forms of cultural expression that contribute to a sense of national identity and belonging.

The digital revolution came to refer to the radical and rapid transformation resulting from great technological progress. This transformation is characterized by the rapid development of digital technology and its profound impact on all different aspects of life, especially the cultural aspect. The multiple applications of the digital revolution allow the preservation and dissemination of cultural heritage, including art, literature, music and historical antiquities, through digital platforms and the use of artificial intelligence applications and virtual, augmented and mixed reality to revive Islamic arts and architecture and historical Egyptian antiquities in an interactive manner, allowing users to explore and understand arts and heritage in new ways. This is in addition to providing virtual experiences for art exhibitions and documenting Egyptian heritage and culture, which contributes to spreading understanding and appreciation for national heritage and civilization, which enhances belonging and works to confirm national identity among citizens. This research aims to explore the impact of digital applications on confirming cultural identity and analyzing how the use of digital technology in this context.

## Research problem:

As a result of the radical and rapid transformation resulting from great technological progress, this transformation is characterized by the rapid development of digital technology and its profound impact on all different aspects of life, especially the cultural aspect and what is related to the issue of national and cultural identity. Accordingly, the role of the designer appears in benefiting from the digital transformation in all areas of life, especially Digital applications that can be used in the issue of strengthening the national and cultural identity of countries while adhering to considerations of preserving intellectual property and the cultural identity of the country's civilization.

## Research goal:

The research aims to explore the impact of digital applications on confirming cultural identity and analyze how digital technology is used to enhance digital identity and the role of the designer in achieving this through digital applications.

## Research importance:

Benefiting from the digital revolution and its various applications, and employing artificial intelligence to preserve heritage, enhance national and cultural identity, and develop a sense of national belonging among citizens, especially new generations.

## First: The digital revolution

Today, digital technology is an essential part of our lives, with individuals and communities having unparalleled opportunities to connect, learn and interact with different cultures. Digital applications represent a turning point in affirming cultural identity, as they enable individuals to preserve and enhance their heritage through new and innovative means.

**1 - What is the digital revolution?**

The digital revolution is referred to as the shift from mechanical and analog electronic technology to digital electronics as a means of storing, transmitting and using information.

It began in the second half of the twentieth century with the adoption and spread of digital computers and digital storage of information, which in turn led to the development of more advanced computer systems capable of digitally replicating and automating mathematical calculations previously performed manually.
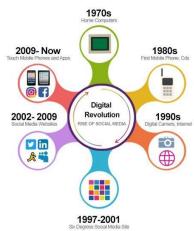
## 2 - Why did it become a revolution?



**Figure (1) The development of the digital revolution**

Digital technology is characterized by continuous development and gradual expansion in all fields that will change the way we exchange and use information. In the twenty-first century, the digital revolution has emerged as a driving force that is reshaping almost every aspect of human life, from communications and commerce to health care and education, and then Digital technologies have penetrated every sector, revolutionized operations and opening new business opportunities with a myriad of applications of the digital revolution and delving into its transformative power across diverse fields. Starting with the revolutionary invention of the transistor in 1947, subsequent technological advances have made the components of computer systems more efficient with lower manufacturing costs. This led to the development of computers that had more complex processing circuits and storage memory capable of holding the program being run and the data it was working on. It demonstrated the potential for computers to be versatile rather than being geared to one specific task. In 1965, Gordon Moore predicted that the number of components in an integrated circuit would double every year in what became the greatest technological prediction of the past half-century, also known as Moore's Law.

By the 1950s and 1960s many governments, militaries, and other organizations were already using computers to manage data and more complex functions. In parallel, scientists began to consider the sharing of time between computer users and the possibility of achieving this over large-scale networks known to the public as the Internet. In 1969, the first computers got connected, and further development of software enabled remote login, file transfer, and the emergence of e-mail.

Equally important was another development in digital data compression technology which later became fundamental to the digital revolution as the basis for most digital media compression standards from the late 1980s onwards, including various digital image formats, video codecs, formats, audio compression standards and digital television standards. Improved performance and reduced costs have led to widespread acceptance and adoption of digital technologies.

The 1980s saw a significant rise in the popularity of digital technology, with automatic teller machines (ATMs), industrial robots, electronic music, video games, and computer-generated images appearing in films and television. Millions of people also acquired home computers,

Motorola manufactured the first cell phone in 1983 (although digital cell phones were not sold commercially until 1991) and in 1988 the first digital camera was created.

Another turning point for the digital revolution was the invention of what became known as the World Wide Web, starting in 1989 when Tim Berners-Lee designed a standard set of protocols or rules for communication between systems, followed by setting up a server to store information and creating a browser program, which is a program used to display different types of resources; the Internet and interaction with it. With the availability of these elements, the World Wide Web became available to the public. Through the improvements and development made to the web, it has been increasingly used, which in turn has brought more users to the Internet. First companies and then individuals realized the potential to expand the capabilities of computers and other digital devices when connected to the Internet. The Internet expanded rapidly and by 1996 it had become part of mass culture and many companies had websites.

Due to the success of companies using digital technologies and advances in transmission technologies (including computer networks, the Internet, and digital broadcasting), countries of the developed world began to experience economic prosperity throughout the 1990s. By 1999, almost every country had an Internet connection and it was the time when the digital revolution became truly global with the spread of digital technologies to the developing world in the first decade of the twenty-first century.

By late 2005, the number of Internet users had reached one billion people, and by the end of the same decade, three billion people around the world were using mobile phones, and more individuals were using the Internet to communicate.

The digital revolution has radically changed the field of marketing. The world has witnessed new and emerging digital technologies which have transformed every part of organizations and changed traditional marketing communication strategies. In recent years, digital technologies have not only impacted key business areas such as product development, profitability, brand management, customer relationship management and purchasing. Selling, communicating, and applying digital technologies, but also on how organizations relate to beneficiaries, especially customers and users, and how these customers interact with companies and their brands.

Digital technologies have redefined the language of communication with their unique capabilities including interactivity, measurability, customer engagement, personalization, accessibility, and management of large information resources. Marketers are turning to digital marketing communications because it allows them to deliver personalized services and content in real time to the individual consumer. Digital marketing attracts, notifies and influences consumers in an engaging and accurate way while keeping important customer satisfaction intact. Interactive and targeted communication with the individual customer through digital channels remains at the core of digital marketing communications. However, the digital medium ability to personalize the individual experience makes it a truly attractive alternative to its traditional counterparts.

In today's digital environment, technological innovation affects the efficiency of improving marketing and communication and affects changes in consumer behavior. The Internet and social media have played an increasingly important role in accessing information and communicating with consumers and helping them connect and interact with each other easier

and closer. Therefore, this benefit from technological progress in social media can be a good opportunity for companies to promote their products and communicate with target audiences.

**3 - Applications of the digital revolution:**



**Figure (2) Applications of the digital revolution**

Digital revolution applications represent programs and technologies that contribute to changing and improving traditional ways of carrying out various activities in multiple fields with the help of digital technology. These applications rely on the use of cloud computing, artificial intelligence, the Internet and other technological developments to improve efficiency, facilitate access, and increase productivity in a wide range of applications, sectors and activities.

## 1. Digital education:

In the field of education, the digital revolution has unleashed a wave of innovation, changed traditional teaching methods and learned environments. Learning management systems (LMS) facilitate remote learning and collaboration, providing teachers and students with a central platform to deliver courses, communicate and benefit from online educational resources and Interactive multimedia content, which enriches the learning experience and meets diverse learning styles and preferences. Adaptive learning technologies leverage data analytics to customize learning paths to suit individual strengths and weaknesses, leading to improved learning outcomes. The digital revolution has opened up opportunities for all classes, provided equitable access to information, broken down barriers to access, and empowered lifelong learners around the world. Also benefiting from virtual reality and augmented reality technologies to improve the learning experience and provide interactive and encouraging environments that improve the efficiency of the educational process.

## 2. Digital healthcare:

In the field of health care, the digital revolution has improved health services, as electronic health records have replaced traditional paper systems, which has simplified patient data

management and improved accessibility for health care professionals. Telehealth platforms also allow for remote consultations and diagnosis, breaking down geographical barriers and enhancing access. Patients access required medical services such as booking appointments and follow-up. Wearable devices and health monitoring apps are also empowering individuals to take charge of their well-being by tracking vital signs and healthy lifestyle habits in real time. These digital advances are not only improving patient care, but also enhancing approaches to preventive medicine and personalized treatment.

# 3. E-commerce:

E-commerce (or e-marketing) is the process of buying and selling products or services over the Internet. E-commerce allows individuals and companies to shop and trade via digital platforms without the need to be present in stores. E-commerce includes a variety of activities as follows:
• Online stores: Include creating websites or apps that sell products or services directly to customers, such as online retail stores, and sites that sell used goods or arts and crafts.
• Online marketplace selling: Individuals and companies can sell their products via online marketplace platforms such as Amazon, eBay, and Etsy, where sellers can display and sell their products to customers from all over the world.
• Business-to-business e-commerce allows businesses to transact with each other over the Internet, including business-to-business buying and selling and the exchange of business information.
• Digital services: In addition to selling products, services can also be sold online, such as online reservations for hotels and flights, and enrollment in online educational courses.
• Social Shopping: Some social platforms provide live shopping functionality, allowing users to purchase products directly from within social applications.
E-commerce offers many advantages such as reaching a global audience, saving operational costs, and simplifying buying and selling processes. With the increasing use of the Internet and the development of technology, e-commerce is considered an essential part of the modern economy and the daily lifestyle of many users.

# 4- Social media applications:

In the modern age of technology, social media applications have become an essential part of the lives of millions around the world, especially among young people. These applications are a space for constructing and confirming digital identity, which reflects their significant impact on users' behaviors and beliefs. It also shows the role of social media applications in confirming identity among young users and analyzing its impact on their behaviors and social lifestyle, which facilitate communication and interaction between individuals and communities, in addition to digital arts platforms that allow artists to share their work and interact with the public directly.

# 5- Smart cities:

Smart Cities is a concept that refers to the use of technology and data to improve the quality of life in cities and enhance the efficiency of public services and infrastructure. Smart cities rely on information and communications technology (ICT), the Internet of Things (IoT), Big Data,

artificial intelligence (AI) and other technologies to improve urban management and provide services better and more effectively. Smart cities application areas include the following:

• Transportation: Includes smart technologies to manage traffic, provide efficient public transportation, and encourage sustainable transportation such as cycling and walking.

• Energy: Smart cities rely on using energy more efficiently and sustainably by providing smart lighting, energy management, and using renewable energy sources.

• Environment: Smart cities aim to preserve the environment by improving waste management, sustainable development, and reducing pollution.

• Public services: Smart cities seek to improve the delivery of public services such as health, education, public safety, and crisis management.

• Communication and participation: Smart cities encourage communication with citizens, collecting their feedback, and participating in the decision-making process to meet their needs.

## 6 - Digital government:

Digital Government is defined as the use of digital technology and data to improve government services and internal operations, and to better interact with citizens and businesses. Digital government aims to improve efficiency and effectiveness in providing government services, enhance transparency and civic engagement, and improve communication and interaction between government and citizens. The principles of digital government include the following:

• Improving government services: Providing government services via the Internet and smart applications to facilitate and accelerate access to them, and improve the user experience for citizens and companies.

• Improving transparency and civic participation: Providing government information and public data openly and available to all, and encouraging civic participation and interaction between the government and citizens.

• Developing technological infrastructure: Using technology to develop the government's digital infrastructure, such as information management systems, cloud storage, and information security.

• Improving communication and interaction: Using social media and smart applications to provide interactive channels between the government and citizens to receive feedback, complaints, and provide assistance.

• Enhancing cybersecurity: Protecting government data and sensitive information from cyber threats and cyber-attacks.

• Promoting inclusivity: ensuring the provision of digital government services to all segments of society, including groups with special needs and the disadvantaged.

Digital governments rely on the concepts of digital transformation, innovation, and the use of technology to achieve government goals more efficiently and comprehensively. Digital government applications are one of the essential elements in achieving digital transformation in the government sector and improving the experience of citizens and companies in dealing with the government.

## 7 - Financial technology:

Financial technology refers to the use of modern technology to improve and facilitate financial services. Financial technology depends on innovation and development in areas such as finance, payment, investment, insurance, and wealth management, through the use of cloud computing, massive analytics, artificial intelligence, and blockchain technologies. The importance of financial technology lies below:

• Improving access to financial services: Financial technology offers a solution to the challenges of accessing financial services in remote areas or for low-income groups, by providing easy-to-access digital financial services.

• Increase efficiency and reduce costs: Modern financial technologies contribute to reducing the operational costs of financial institutions and increasing their efficiency by improving processes and reducing paper procedures.

• Improving the user experience: Financial technology provides enhanced and convenient user experiences, such as mobile applications for account management and electronic payment, which provide ease of access and use.

• Electronic payment: Innovative electronic payment technologies have emerged, such as smartphone wallets, NFC payment, and digital payment applications, making payment easier and safer.

• Crowdfunding: Crowdfunding techniques allow individuals to raise money from several investors via electronic platforms, which encourages financing of emerging projects and creative ideas.

• Digital banks: Digital banks have emerged as an alternative to traditional banks, providing banking services via the Internet without the need for physical branches, which reduces costs and facilitates access to financial services.

• Cryptocurrencies: Digital currencies such as Bitcoin and Ethereum have emerged as an alternative to traditional currencies, and rely on blockchain technology to achieve security and transparency in transfer operations.

The following table summarizes the applications of the digital revolution in various fields:

**Table (1) Applications of the digital revolution in various fields**

| | Field | Applications of the digital revolution |
|---|---|---|
| 1. | Education | Online learning platforms, smart learning systems, virtual/augmented reality educational experiences |
| 2. | Health care | Remote patient monitoring, digital health records, appointment booking, medical reports |
| 3. | E-Commerce | Online shopping platforms, digital marketplace, online retail applications |
| 4. | Social networking applications | Social media platforms, digital content creation tools, live streaming |

| 5. | Smart cities | Smart grid systems, energy management software, renewable energy monitoring platforms, environmental monitoring devices, climate planning software, sustainability analytics, industrial Internet of Things, digital prototyping, smart manufacturing systems, streaming services, digital art platforms, advanced agricultural technologies, farm management software, Agriculture planes |
|---|---|---|
| 6. | Digital government | Trip booking applications, navigation systems, electric car sharing platforms, e-government services, digital identity systems, open data initiatives, instant messaging applications. |
| 7. | Financial technology | Digital banking, mobile payment apps, cryptocurrency exchanges, digital banks |

## Second: National and cultural identity

## 1- National identity:

National identity is a multifaceted concept: It includes shared values, cultural heritage, history, and a sense of belonging among citizens. It refers to belonging and loyalty to a particular class of people or group that shares common customs, traditions, values, language, history, religion, and geographic origins. National identity is considered an important factor in building personal identity, for the individual and determine his social and cultural affiliations. National identity forms an integral part of an individual's personal identity and influences his actions, opinions, beliefs and feelings. It plays an important role in shaping individual and group identities and in strengthening social and cultural affiliations.

National identity is affected by several factors, including:

• History and culture: History and culture play a crucial role in shaping national identity, as historical events and cultural traditions can be the basis of national identity.

• Language: Language plays a major role in determining national identity, as it is considered a common means of communication between members of the national group and an important factor in building national belonging.

• Religion: Religion can be an important part of the national identity of some people, as religion forms a part of the cultural, historical and social identity.

• Geographic origins: Geographic origins can be an important factor in determining national identity, as shared geographical features can be a source of national belonging.

• Political experience: Political and historical experiences play a major role in determining national identity, as shared political experiences can be a factor in uniting people and strengthening their national identity.

National identity varies from country to country and from culture to culture, and it can be multidimensional and sometimes complex. National identity forms an essential part of human identity and influences individuals' behaviors and relationships with others, providing individuals with a sense of rootedness and common identity in a world of increasing globalization and tremendous development in technology.

Preserving and promoting cultural heritage plays a vital role in affirming national identity and enhancing a sense of pride among citizens. This research addresses the importance of promoting traditional arts, music, literature, and forms of cultural expression as a means of strengthening national identity through the following elements:

• Understanding national identity: National identity includes a complex interaction between factors, including history, language, religion, cultural values and traditions. It reflects the feeling of belonging to a particular nation and society, and the promotion of solidarity and mutual understanding among citizens. Since cultural heritage forms an integral part of national identity, it represents a link to the past and a foundation for new generations.

• Cultural Promotion: Promoting arts, music, literature, and traditional cultural expressions is essential to affirming national identity, and by celebrating cultural diversity and heritage, countries can develop a sense of pride and belonging among their citizens through cultural promotion initiatives in preserving intangible heritage, such as cultural traditions and popular rituals and practices, which are considered essential to national identity.

• Strategies to preserve and enhance culture: Various strategies can be used to effectively preserve and enhance cultural traditions through:

✓ Cultural education programs: Integrating cultural education into school curricula helps instill an appreciation for national heritage from a young age.

✓ Festivals and cultural events: Organizing festivals and events that showcase traditional and popular arts, music, folklore, and cuisine enhances community participation and cultural exchange.

✓ Supporting artisans and cultural practitioners: By providing financial support and training opportunities for artisans, musicians, writers and other cultural practitioners, which ensures the continuity of traditional crafts and practices.

✓ Digital initiatives: Taking advantage of digital technologies to document, archive, and disseminate cultural heritage enhances accessibility and communication, especially among younger generations.

Affirming national identity requires concerted efforts to preserve and promote cultural heritage and traditions. By supporting traditional arts, music, literature and cultural expressions, countries can develop a sense of belonging and pride among their citizens. Initiatives aimed at preserving cultural heritage not only protect intangible heritage, but also contribute to social cohesion, diversity and inclusion within society. We find in the following examples what confirms the importance of strengthening national identity:

• Egypt: Egypt's efforts to preserve its rich cultural heritage, including ancient monuments, artifacts, and traditions, contribute to creating a strong sense of national pride and identity among its citizens. Initiatives such as virtual tours of archaeological sites and cultural festivals showcase Egypt's cultural vitality and historical heritage.

• Japan: The Japanese government's support of traditional arts, such as tea ceremonies, ikebana (flower arranging), and Kabuki theater, reflects its commitment to preserving cultural heritage and strengthening national identity.

• Ireland: Ireland's investment in cultural institutions, such as the Irish Traditional Music Archive and the National Folklore Collection, underscores its dedication to protecting intangible heritage and promoting a sense of Irish identity.

## 2- Cultural identity

Cultural identity is considered one of the most important aspects that define an individual's personality and distinguish him from others, as it reflects the set of values, beliefs, traditions, and customs to which the person belongs and which constitute his cultural identity. The study of cultural identity is an important topic in several fields such as social sciences, psychology, and anthropology. Cultural identity carries an individual and collective dimension, as it is linked to individuals' experiences and interactions with the communities to which they belong.

### 2-1 Dimensions of cultural identity:

• Values and beliefs: Cultural identity consists of a set of values and beliefs that members of a society share, and these values and beliefs are shaped through history, social interactions, and cultural heritage.

• Language: Language plays a crucial role in determining cultural identity, as it is considered a vital means of communication that transmits history, culture, values and beliefs to future generations.

• Traditions and customs: Traditions and customs form an essential part of cultural identity, as they represent behaviors and practices that are transmitted across generations and express a specific identity.

• Arts and Literature: Arts and literature reflect artistic and cultural expressions that reflect the identity of peoples and societies, and contribute to enhancing cultural belonging.

• History and heritage: History and heritage play an important role in building cultural identity, as they represent an important source for learning about the origins, roots, and cultural identity of peoples.

### 2-2 The impact of globalization on cultural identity:

The increasing impact of globalization is considered one of the most important challenges facing cultural identity in the modern era, as the process of globalization can lead to the loss of individual cultural identity and cultural similarity between peoples, which threatens the loss of cultural and heritage diversity, which affects the cultural, moral, and economic dimensions, and while countries seek to achieve integration among digital technologies, it has been important to consider how these developments shape perceptions of national identity and values. By addressing ethical concerns, promoting inclusive innovation, and enhancing regulatory cooperation, countries can navigate the complexities of digital technologies and applications while reaffirming their unique identities. We find that there are basic elements that must be taken into consideration to preserve national and cultural identity, as follows:

• Cultural identity and artificial intelligence: Cultural identity includes shared beliefs, values, and traditions that define the nature of a nation. Artificial intelligence technologies use language processing and data analysis and are distinguished by the ability to shape and reflect cultural identities. For example, language translation tools supported by artificial intelligence contribute to the preservation and dissemination of indigenous languages and enhancing cultural heritage. Conversely, concerns arise about the homogenization of cultural expressions as AI algorithms prioritize mainstream content, potentially eroding unique cultural identities.

• Ethical considerations: The ethical implications of artificial intelligence extend to questions of national identity, especially with regard to privacy and surveillance. AI-based surveillance

systems used by governments raise concerns about infringing on civil liberties and eroding national values such as freedom and independence. In addition, the use of artificial intelligence in propaganda and disinformation campaigns challenges democratic principles and undermines trust in national institutions, further complicating the relationship between artificial intelligence and national identity.

• Economic impact: The technologies of the digital revolution have transformative effects on economies, as they affect labor markets and industrial competitiveness. Therefore, countries that invest heavily in research and development in the field of artificial intelligence aim to position themselves as global leaders in the field of innovation, and to shape their national identities as pioneers of technological progress. However, disparities in AI adoption and access could exacerbate social and economic inequalities, leading to divergent national identity narratives based on economic status and technological prowess.

• Regulatory frameworks: With the development of digital technologies, governments seek to develop regulatory frameworks to protect national interests and values, and by achieving a balance between innovation and ethical considerations, policymakers seek to establish guidelines for the governance of digital applications that reflect national identity.


**Third: Applications of the digital revolution and its impact on affirming national and cultural identity**

The world is currently experiencing a phase of digital revolution, where digital technology is growing at accelerated rates and infiltrating all aspects of daily life. One of the areas that has seen a significant impact is the national and cultural identity of individuals in different societies, as digital technologies have become increasingly used in the processes of verifying identity and identifying individuals. Today, digital technology forms an essential part of our lives, as individuals and societies have unparalleled opportunities to communicate, learn and interact with different cultures. Therefore, digital applications represent a turning point in confirming cultural identity, as they enable individuals to preserve and enhance their heritage through new and innovative means. The role of digital applications in confirming national identity also appears as a model of technological development that works to improve operations and increase security in the digital world.  As technology continues to develop, it is expected that the importance and spread of digital identity confirmation applications will increase in various sectors and industries.

The following are examples of digital revolution applications:

1- Two-factor verification techniques are used by applications and digital services to verify national identity by sending a verification code via mobile phone or email.

2- Digital fingerprint: Fingerprint recognition is used to confirm identity in digital applications, where the user's fingerprint is recorded and used as a method of verification.

3- Facial recognition technologies use facial recognition as a tool to confirm identity in digital applications, where the user's face is compared with previously recorded data.

4- Voice recognition is used in some applications to confirm identity, where the individual's voice pattern is analyzed to verify his identity.

5- The digital signature is used to verify the identity of individuals in electronic signature processes, which facilitates accurate and secure identification of their identity.

6- Social media is considered one of the most prominent digital applications that have influenced the affirmation of cultural identity. These means allow individuals to communicate with individuals of similar cultures and exchange opinions, beliefs, and cultural experiences.

7- Easily accessible digital cultural content, such as books, films, and music, to learn about different cultures and enhance mutual understanding between different cultures.

8- Virtual digital applications for virtual museums provide interactive experiences that allow visitors to explore the heritage, art and culture of different peoples and societies without the need to travel.

9- Distance education: Distance education platforms provide opportunities for students to study and understand different cultures through courses and educational materials available online.

10- Cultural participation via the Internet through the participation of individuals in cultural events via the Internet, such as exhibitions, cultural performances, and workshops, which enhances interaction and cultural exchange. This includes workshops and training courses for reviving heritage crafts.

11- Designing advertising and marketing campaigns to enhance the visual identity of each country.

12- Designing lifestyle products in a way inspired by the national styles and civilizations of each country to deepen national belonging and enrich the citizen's visual culture.

The following table shows how the most important digital applications contribute to strengthening cultural identity and enhancing national belonging by highlighting cultural diversity and enhancing communication between members of society.

**Table (2): The role of digital applications in enhancing national and cultural identity**

| Digital applications | Description | The relationship to cultural identity | Its role in confirming national identity |
|---|---|---|---|
| Social media platforms | Platforms that enable users to interact with each other, share opinions and beliefs, and build online social networks. | It contributes to the formation and transmission of cultural identity through the exchange of cultures, and provides a space for the expression of individual and collective cultural identity. | It contributes to strengthening national belonging by creating virtual communities that bring together individuals of one country and enhance interaction between them. It also helps in transmitting values and traditions and strengthening national unity. |
| Digital media | Online media such as news websites, podcasts, and blogs that enable people to access information and opinions from a variety of sources easily. | It affects the formation of cultural awareness, enhances interaction with different cultures, and contributes to the transfer of different cultural values, beliefs, and practices between societies. | It works to strengthen national identity by providing platforms for exchanging local and national news and information, enhancing awareness of national history and culture, enhancing belonging to the homeland and interacting with its issues. |

| | | | |
|---|---|---|---|
| **E-Learning** | Online learning platforms and digital courses that provide opportunities to learn and develop skills through access to diverse educational resources regardless of geographic location or social circumstances. | It provides opportunities for learning and personal development without cultural bias, and enhances access to education in communities that suffer from geographical or economic restrictions, in addition to instilling values and customs as well as enhancing the visual culture of the nation. | It contributes to building a strong knowledge and technical base that enhances comprehensive development and the development of human resources in the country. It also works to transfer national knowledge and culture, enhance education in the national language, and enhance national identity. |
| **Art and digital culture** | Artistic and cultural content that is developed and disseminated through digital media such as interactive art, digital literature, online short films, training courses in various fields, product design and marketing advertisements. | It allows for multiculturalism and the expression of cultural diversity through artistic and cultural creativity, and enables artists, writers and designers to reach a wide global audience. | It works to strengthen national identity by enhancing the national cultural and artistic heritage, presenting national art and culture to the world through digital media, and enhancing belonging to the homeland and pride in the national heritage. |
| **Digital identity** | Using digital technology to create and manage individuals' online identities, such as virtual identities, profiles on social media platforms, and personal websites. | It enhances interaction between individuals and allows the documentation of individual and collective cultural identity via the Internet. It is considered a means of expressing cultural identity in various forms, such as participating in virtual communities and exchanging cultures and experiences. | It contributes to building national awareness by enabling citizens to express their belonging to the homeland and national identity through digital media, and enhances national unity by creating a digital national identity that brings together the members of the nation and enhances communication between them. |
| **Augmented and mixed reality a** | Augmented Reality (AR) and Mixed Reality (MR) technologies allow users to combine the real world with virtual elements, providing new interactive experiences and enriching the user's surroundings with additional information and enhanced experiences. | Augmented and mixed reality applications enhance cross-cultural interaction and enable users to explore cultural diversity and interact with cultural elements in new and innovative ways, promoting cultural exchange and understanding of different cultures. | It enhances experiences of national belonging by providing interactive experiences that enhance belonging to the homeland and interaction with the national cultural heritage, and enhances national identity by providing experiences and interactions that enhance belonging to the homeland and pride in national heritage and culture. |

### 3-1 Design and strengthen national identity:

The designer may take a general direction in his design production that emphasizes the customs of his country or a style that expresses its special civilization, which contributes greatly to preserving the cultural and folkloric privacy of the people, as well as spreading it throughout the world, especially in light of the popularity that these heritage products receive in the European and international markets. We find this as being important in preserving national identity, continuing renewal, and withstanding attempts to invade the identity of peoples through globalization. The purpose of affirming national identity is not to use and transfer the symbols and symbolic elements of heritage literally. Rather, the designer usually analyzes the basic lines that express this heritage, style, or civilization and integrates them into the design lines in an innovative manner in building the shape or part of it to suggest the value of the product in the required direction.

For example, we find that preserving the Egyptian identity may come through design lines that confirm Egyptian civilization or bear the character of Pharaonic civilization, or the basic symbolic elements of the distinctive shapes of Pharaonic products (motifs), or Islamic or Coptic elements and their various decorations, or they may take distinctive colors that have significance. Symbolism specific to a particular culture or special customs that is psychologically linked to the user. This is in addition to the impact of this on stimulating the tourism movement and its requirements. There may be special requirements for the product, especially its final form and the model to which it belongs, in the event that the product is prepared for export, displayed in tourist places, or participated in international exhibitions. In this case, the designer must be familiar with the culture of his country, the customs of its people, and the different styles prevalent in it so that he can benefit from them in his designs or choose their distinctive colors. With the beginning of the use of artificial intelligence in product design, a diverse and advanced field has emerged that offers exciting opportunities to improve design processes and product development in ways more efficient and accurate through many activities, for example:

• Artificial intelligence can analyze big data related to market details, customer preferences, and sales history to help make new design decisions.

• Artificial intelligence can be used to develop assistive design systems that help designers create and develop concepts and designs.

• Artificial intelligence can be used to improve product prototypes through simulated tests and performance analysis.

• Artificial intelligence techniques such as machine learning can be used to provide customized products that meet the needs of each customer individually.

• Artificial intelligence can be used to design and develop smart user interfaces and user experiences to improve ease of use and understanding of the product.

• AI can be used to analyze vital signals such as measures of brain waves or facial expressions to understand user reactions and improve products based on this data.

• AI offers advanced and complex designs, such as biophilic design and nature-inspired design, which can provide unique advantages to products.

Based on the above, artificial intelligence can be used in all aspects of the product design process, from understanding market needs to developing and customizing products to meet

those needs better and more effectively. The following are examples of how design can be used to enhance and confirm national and cultural identity in lifestyle products using digital applications:

**Table (3) shows some examples of the design of some products with an Egyptian identity**

| | | | | |
|---|---|---|---|---|
| **Designing an ATM machine with an Egyptian Pharaonic identity, suitable for tourist cities, airports, and public places.** |  |  |  |  |
| **Designing a mobile cart for street vendors to sell Pharaonic souvenirs.** |  |  |  |  |
| **Design of a mobile cart for street vendors to sell food in the Islamic style.** |  |  |  |  |
| **Design of juice packaging containers for the month of Ramadan in an Islamic style.** |  |  |  |  |
| **Design for the mouse and flash memory using the Pharaonic style.** |  |  |  |  |
| **Pictures of virtual tours of the Ancient Egyptian Museum.** |  |  |  |  |
| **Design of stationery bearing Pharaonic inscriptions.** |  |  |  |  |

## Research Results:

• Digital applications constitute an important part of confirming cultural identity, as they represent an effective means of communication and interaction between different cultures. As digital technology continues to develop, it is expected that the importance and spread of the applications of the digital revolution in enhancing understanding and communication between cultures will increase.

• Enhancing understanding and tolerance: Digital applications contribute to increasing understanding and tolerance between different cultures, as they enable individuals to interact and learn about other cultures directly and unlimitedly.

• Digital applications contribute to the preservation of cultural heritage by providing means to document and disseminate cultural heritage in innovative and effective ways.

• Digital applications bring people from different cultures closer together and promote cross-cultural understanding and cooperation.

• The considerations contribute to ensuring the comprehensiveness of applications and providing equal opportunities for everyone to benefit from digital services.

• The focus on preserving heritage and providing access to cultural content contributes to increased cultural awareness and appreciation.

## Research Recommendations:

• Spreading awareness and knowledge among all members of society about the importance of cultural identity and promoting the idea of preserving cultural heritage and working to consolidate it.

• Conducting seminars and workshops that address the issue of enhancing cultural identity.

• Conducting media and educational campaigns in schools and cultural centers, targeting school theatre, entertainment, television, photo and heritage exhibitions, in addition to the media such as newspapers, magazines and publications, as well as social media.

• Interest in research and writing studies, books and studies related to cultural identity.

• Interest in archiving cultural heritage, information, and folklore that enhance cultural identity.

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