

# Barun ICT Global News April 2022



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# 01

## The Case of Digitalization of Personal Identification

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Though it used to be difficult to prove who you were in a legal sense, proving one's identity is surprisingly simple these days. It is usually done by presenting a police officer, security, or anyone who asks for your identity with a plastic card. One of these is often your driver's license, used to certify if you are qualified to drive. For many years, the license was physical. Recently, however, some countries have announced plans to transition to a digital card. Interestingly, the results have differed for two countries despite their almost identical plans.

Last year, Apple released a plan to include a mobile driver's license (mDL) within their wallet app. However, the plan had to be delayed after all due to fierce opposition. South Korea, which also was planning to introduce a mobile version of its drivers license, started a trial period this January. After the planned six-months, it is expected that the entire driving population will be eligible for a mobile driver's license [1].



## 01. The Case of Digitalization of Personal Identification

The mobile versions of the license for the two countries have almost the same registration procedures and functions. For one, they can be accessed by downloading a designated app, and by tapping their physical cards on their phones. The NFC function of the phone will then take in the card's information and store it on your phone. Additionally, both countries emphasized the benefit of these mobile versions to protect privacy - one can "choose which personal information to provide depending on the situation, something which cannot be done with a physical ID card [1]." Why then were the results so different?

The divergence may come from a difference in public sentiment. The Washington Post describes how a driver might be forced to hand over their phones to traffic police to check their mDLs when pulled over and that this may lead to privacy issues [2]. It wouldn't be too difficult to imagine the same happening in Korea. However, it seems that the Korean public seems less concerned with surrendering their phones to traffic police. Additionally, the same Washington Post article also points out that mDLs have minimal practicality because drivers are recommended to carry physical versions of the identification in case their mDLs don't work or they enter a state which doesn't approve of mobile versions [2]. While similar problems may occur in South Korea, it did not stop people from getting mobile versions on their phones anyway.

Certainly, there can be and most likely are complex cultural, historical, and technological contexts that explain how the difference came about. Although it would be fascinating to delve into the reasons, what the implementers of the mobile driver license system need to focus on are the result: that there was a difference at all. Responses to accepting a new piece of technology can always differ depending on regions, cultures, and historical backgrounds. Therefore, when introducing new technology, the implementers need to consider not only the objective facts but also the nuances of public sentiment.

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# 02

## The Impact of ICT on Tourism

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Information and Communication Technologies (ICT) interfere in the market in increasingly competitive scenarios. Due to the nature of the service sector, the quality of communication among all parties directly linked to organizations makes all the difference to business success. The opportunities to improve these systems with digital innovation are countless - however, it is important to pay attention to the leverage raised by these changes when it comes to tourism.

Tourism has been adapting to the innovations ICT offers in a range of tools to improve the process of searching destinations, products, post purchase experiences, and other services. Therefore, due to the rise of social media and tourism focused apps, industries such as hotels, travel agencies, airlines, restaurants, and shopping facilities have adopted information technology as part of their business strategies [1].

Travelers' behavior has also changed because of the Internet, which allows them to communicate directly with different types of providers in the tourism sector, calling into question the function of intermediaries such as tourism agents. Consumers may now engage with suppliers and destinations in real time, and even

modify products thanks to advances in information technology. All forms of products related to the tourism sector can be purchased online, without the need for professional intermediaries. This is the reason why this shift in the market has a substantial impact on travel agents' operations [2]. The future of tourism seems to be centered on consumer-centric technology that will enable companies to interact with their customers in a dynamic way, giving consumers an unprecedented amount of power and expanding their ability to choose aspects of their offerings.

Because tourists are getting smarter and savvier, they are becoming increasingly harder to please. Innovative tourism will be able to redirect resources and expertise toward serving customers, resulting in a higher value-added transaction. Both suppliers and destinations can improve their efficiency and re-engineer their communication strategies thanks to the emergence of new and more powerful ICT, particularly social media [3].

ICTs can be used and implemented in a variety of ways. For example, according to studies, website and app design and social media strategies directly impact destination image perception, playing a significant role in a travel company's success [4]. This emphasizes the importance for tourism and hospitality service managers to grasp the impact of design and mobile technology experience as e-tourism platforms in attracting and retaining clients. Managers should make sure that tourism websites contain features that allow for easy navigation, engagement, and creativity in the packaging of information content such as audio and video clips, which can improve viewers perceptions of reality [5]. Individuals all around the world use these new methods to create the vacation of their dreams.

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# 03

## A Closer Look at FemTech in Developing Countries

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Gender equality in the workplace has been a long-term goal around the world. Looking back at the past few years, there has been a surge of female entrepreneurs and female-led startups especially in the western world. Women are now encouraged to identify their personal needs and find solutions to them with new technology. However, the industry of FemTech in developing countries is not yet fully established despite being considered the “Next Big Thing” in western media. How the industry can grow and more importantly who should help it to expand to the next level are some of the pressing questions to address.

### 03. A Closer Look at FemTech in Developing Countries

First coined by entrepreneur Ida Tin in 2016, FemTech applies to tech-enabled products and services that cater to female needs [1]. Although a FemTech company does not always have to have female leaders or employees, the majority of FemTech startups are run by females aiming to provide better solutions to a variety of women's healthcare issues. According to the founder of FemTech Partners, a consulting firm specializing in nurturing young aspiring females, there are less than 50 FemTech startups in Southeast Asia as of today, and about half of them are located in Singapore, with only five or six scattered around Indonesia, Vietnam and the Philippines [2]. Such an imbalanced landscape is due to several reasons. First, although Southeast Asia demonstrates high speed economic growth, millions of people, especially women, still live in poverty due to the unequal chance of education and work opportunities. The startup funding nature has also become a stumbling block for FemTech firms as the VC community is largely male-dominated and caters more towards male investors. Moreover, as FemTech is closely related to healthcare, some of the items or topics such as menstrual or reproductive health are considered to be too niche or even taboo by certain conservative countries [3]. Thus, it's not easy to expand the FemTech industry especially in developing countries due to the inherent social problems of gender inequality and discrimination.

Nevertheless, there are some actions that can be taken. For example, a few of the governments and NHS authorities have provided funding to end-users (e.g. hospitals and surgical centers) to facilitate the usage and adoption of more FemTech products. The mass media should also be more open to talk about female health issues and needs, thereby raising awareness and creating more chances for the industry's growth. A more balanced startup ecosystem should also be established so that female entrepreneurs can have easier access to financial resources and research opportunities. Although some have described how the development of FemTech will be "a bumpy road", different parties including government, entrepreneurs and local institutions should work together to contribute toward female health, equality, and rights.

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# The Advent of Edge Computing

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In recent years the discussion around edge computing has grown in prominence in academic and industry circles. By connecting cloud computing facilities and services to end users, it acts as a crucial enabler for numerous upcoming technologies such as 5G, Internet of Things (IoT), augmented reality, and vehicle-to-vehicle communications.

ICT is being reshaped by edge computing. This is because it is redefining the meaning of data and location. Data is traditionally created at a client endpoint, such as a user's computer. That data is then sent through a WAN to the corporate LAN, where it is processed. The outcomes of that effort are subsequently communicated back to the client endpoint [1]. By promoting data processing close to the source, edge computing tends to benefit organizations with agility in accessing important information, reducing Internet broadband energy consumption, lowering costs, and increasing the efficiency of applications used in remote locations [2]. Edge computing is not only a more efficient way of computing data but also an environmentally friendly response to the discussion about carbon footprint in data processing.

Even though the similarities of edge and cloud computing are relevant, they shouldn't be considered the same type of technology. Edge computing is a more complex kind of cloud computing that minimizes several problems, by putting services closer to end users [3]. There are distinguishing characteristics that edge computing has that cloud digital environments cannot offer, such as mobility support. Edge computing



takes advantage of the number of mobile devices rapidly growing, increasing mobility support, allowing communication directly with mobile devices. Another feature is location awareness, allowing mobile users to get services from the edge server that are closer to their actual location. To locate electronic gadgets, users can use a variety of technologies such as cell phone infrastructure, GPS, or wireless access points. Vehicular safety systems and disaster management services can benefit from this location awareness [4]. As mentioned in the beginning of this article, edge computing is all about a more intelligent way of processing data, and this has all to do with location. The closer the data centers are to the end users, the faster and more accurate this data can be used in benefit of the services.

Edge computing had its first success in the vehicle network. Nowadays cloud-computing systems support the majority of IoT platforms, such as the autonomous vehicles systems. The Internet of Things is a multidisciplinary ecosystem - it is currently being used in scenarios that need real-time data processing and response. However, cloud systems are unsuitable for scenarios requiring real-time operations. Fortunately, edge computing has recently acquired attention in the market to satisfy these new obstacles. Vehicle-to-everything communication (V2X) is a promising approach that will be supported by edge computing transmitting tasks across vehicles. Due to the limited computational capability of cars, it is difficult for vehicles to be connected to cloud networks to create a safe autonomous system in real life use. V2X is emerging as a solution to the increasingly congested traffic environment, utilizing edge computing to analyze vehicles and street data through the location-based data processing systems, and the location awareness that this novel approach offers [5].

It is not hard to imagine how edge computing can change society. Besides the vehicle network, edge computing is also a novel approach to the farming industry, health care, and many technologies related to smart cities - which makes this topic extremely relevant to the ICT community.

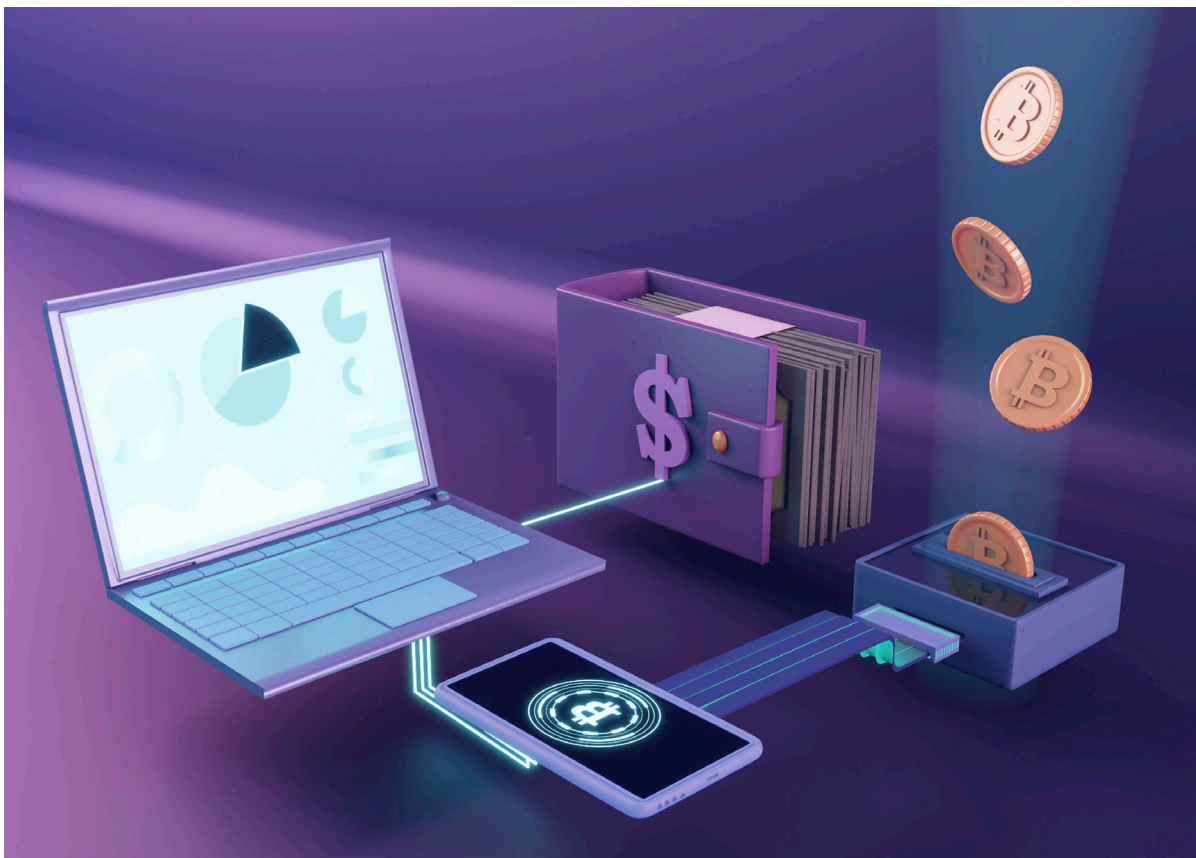
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# How Will NFTs Shape the IP Landscape?

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Tech is fast, law is slow - a discrepancy which has existed for quite some time now. But with technology like blockchain where decentralization is key, the gap is bound to grow. NFTs are yet another challenge proposed to IP law. This, however, is not to say that NFTs are destined to hurt the IP law system. We will see how, in some cases, NFTs actually support and even create a new landscape for IP law.

NFTs (non-fungible tokens) are a type of asset similar to bitcoin. The only difference is that while bitcoin can be traded like any other currency, NFTs are non-fungible. That is: an NFT is unique so that it cannot be treated equally with another NFT. Also unlike bitcoin, NFTs don't have a fixed form. It can be anything from music to arts, from paintings to pictures. Currently, music is one field that's gathering significant enthusiasm in the NFT market.

## 05. How Will NFTs Shape the IP Landscape?

The music industry has been quick to implement this cutting-edge technology for monetization. Bluebox, a platform powered by Ditto Music, uses blockchain technology to instantly copyright a piece when published and sell a portion of the song in the form of NFTs [1]. This way, ardent fans can go beyond simply listening and get a chance to own a piece of their favorites. SM Entertainment, a major K-Pop company, also announced they had signed a partnership with The Sandbox, which hosts “one of the hottest blockchain game projects that offer players a unique virtual experience” [2]. SM plans to cooperate with The Sandbox to create a meta world called SM TOWNLAND. Here, fans worldwide will be able to gather for various events and activities. More importantly, they will be able to “create their own NFTs by reproduced contents and products” [3].

Looking at the cases above hints to us that IP rights are strengthened due to the introduction of the NFT technology. As in the case of Bluebox, copyright can be kept track of and managed more easily using blockchain. The case of SM TOWNLAND and The Sandbox also demonstrate that there may even be a major shift in the IP landscape. Previously, a copyrighted piece belonged exclusively to the copyright holder, and that was the extent of the dynamic. Now, people use copyrighted material to create their own copyrighted item. They are allowed, and even recommended, to profit from it.

Despite all these fascinating possibilities, the effect of NFTs on IP rights remains unclear. As with all technology, what it can possibly do in the abstract may not matter as much as how we use it. There are already incidents where NFTs were used to infringe upon IP rights. Streamer, for instance, is an NFT music platform that was accused of letting users stream copyrighted music without permission [4]. This brings us to the lesson we are all so familiar with: technology is what we make out of it.

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# Will Digital Real Estate Become the Next Investment Boom?

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The concept of the metaverse has captured public attention recently; its digital real estate has subsequently resonated with investors all over the world. Although still in its beginning phase, the metaverse's real estate market may become the next investment boom.

According to a recent CNBC article published, the aggregated sales for real estate in the metaverse increased to \$500 million last year among the four major metaverse platforms, including Sandbox and Decentraland [1]. Sandbox, the largest, achieved a remarkable sale in particular as ninety percent of its virtual islands have been sold on the first day with some even listed for resale.



## 06. Will Digital Real Estate Become the Next Investment Boom?

With all this hype - what is the use of owning a piece of land in the virtual world? As the property belongs solely to the owner, the end user can build anything according instead of being restricted by the providers or platforms. For brands, such virtual space could lead to more marketing opportunities and consumer interactions than their current presence in the 2D world; for individuals, extra income and earnings may be generated by playing games or conducting other monetized actions such as lending the land [2]. However, it's perhaps still too early for individuals to join the boom as the trading method and relevant regulations regarding virtual real estate are still not finalized and implemented.

Another question that has yet to be fully answered is how we can protect our virtual properties since they are intangible. One possible answer is to use NFTs, which are a type of digital certificate that can guarantee and verify that someone is the owner of a certain kind of property. However, NFTs have risks as well. For example, a person may be scammed when purchasing as there are a variety of fake marketplaces and unverified sellers. Moreover, crypto assets (including NFTs) have been criticized due to the damage they have caused to the environment. Crypto-mining alone has created between 3 to 15 million tons of CO2 emissions [3]. Thus, the values of NFTs may be undermined as society becomes more aware of the potential environmental damage and requests the government to impose more restrictive regulations. What we can do now is perhaps to continuously monitor the relevant trends and also pay closer attention to how big companies such as Facebook and Microsoft construct their own metaverse, as we will eventually end up participating or owning a place in such a virtual world.

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