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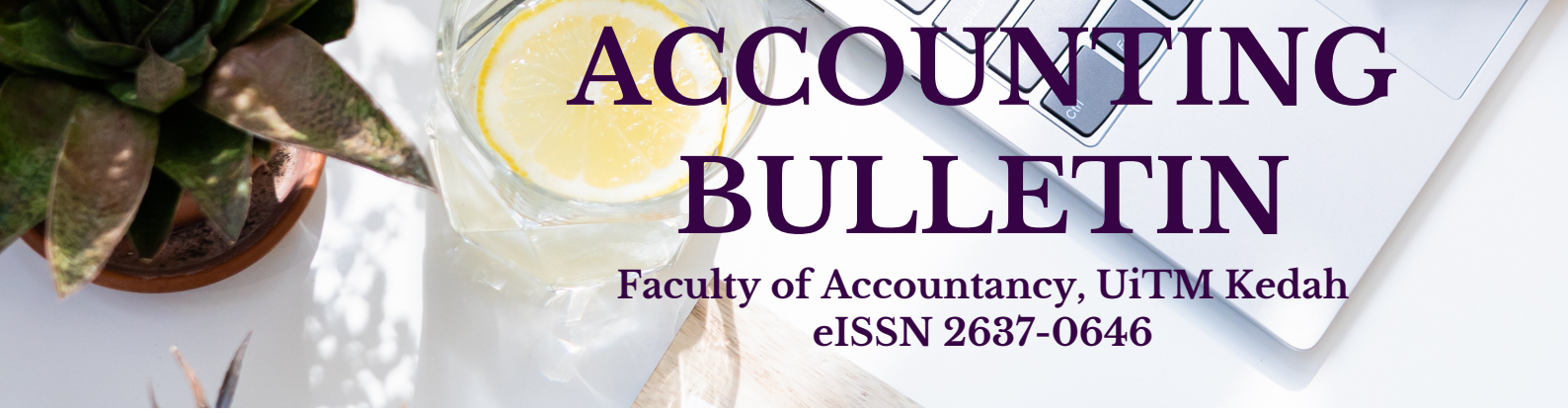

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New Technologies: A Brief Introduction

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In recent years, technology has become increasingly diverse and advanced – having significant impacts on society. It has not only ingrained in our daily lives, but also transformed the way we do businesses by introducing new approaches, techniques, and tools. As a result of the emergence of new technologies, for example, business processes have now become more integrated and streamlined. To have a clear idea of this evolution, the remainder of this article will give us a taste of what these new technologies are all about.

One of the most popular emerging technologies today is the blockchain technology. A "blockchain" is a collection of records that are linked together. It is also known as distributed ledger technology (DLT), which involves entering and storing records in a distributed ledger and making them accessible to all relevant parties. This differs from traditional accounting which keeps all records in a centralized ledger, accessible to only accountants and auditors. Each record entered into the blockchain will be encrypted and verified by a large number of computers interconnected via the internet (Huang et al., 2021). Each entry will be automatically timed and stamped, and given a unique hash code. Any modifications to the original records will generate a new hash, with the old hash remaining in other blocks. This means that, if someone wishes to modify an accounting record, he will have to make sure that all chains have the same hash code.

Artificial intelligence (AI) is another new technology that lately has gained traction. AI is a simulation system that collects, processes, and disseminates knowledge, information, and intelligence in the form of actionable intelligence. To put it simply, AI refers to the ability of machines to mimic human intellect – think and learn in the same way that people do. Robotic process automation (RPA) and machine learning are two types of AI. RPA refers to the use of software robots, such as computer programs, to automate repetitive business tasks. It will always carry out the same repetitive task and will not improve the way tasks are performed automatically. In this regard, machine learning was incorporated to make it smarter. It is a software that allows the system to learn and improve on its own, without the need for explicit programming or human intervention (Duffy, 2018).

Meanwhile, the internet of things (IoT) is a new technology that enables electronic devices and sensors to communicate with one another via the internet – making people's lives and work much easier. IoT can connect all the devices, collect and transfer data over the network without the need for human involvement. IoT is not just for smart devices like computers and smartphones, but also includes sensors and other IoT-enabled devices such as video cameras, transmitters, and receivers. In other words, any device that can connect, receive, and transmit data through the internet is considered an IoT device. In sum, IoT can link multiple devices and collect real-time data, allowing departments to work together more effectively (Dai & Vasarhelyi, 2016).

Another new technology that has garnered a lot of interest is cloud computing. The word "cloud" in cloud computing represents the cloud symbol used in flow charts, which refers to the "internet". It is an internet-based hosting service that includes servers, software, databases, and other computing tasks that are accessible through the cloud. Users can store data in the cloud in massive data centers that can be accessed by other users with their own unique password. As a result, consumers can use this software with confidence, as cloud providers are required to provide a secured location for companies' sensitive data (Alali & Yeh, 2012). A cloud accounting software is usually housed on central servers and can be accessed by users without the need to install anything on their computers.

Big data is also one of the most extensively used technologies in the industry. It applies advanced analytic techniques to massive and large-scale datasets that come from various sources and are of various sizes. Big data analytics deviates from the usual practice of gathering mostly structured data – it also collects unstructured data in order to identify new data relationships or correlations. Unstructured data can be acquired from a variety of sources, including the IoT, mobile devices, social interactions, blogs, and many others.

The huge amounts of information gathered are subsequently stored in data warehouses or SQL databases. Big data analytics is commonly comprised of these four elements: (1) volume, which represents the enormous amount of data included; (2) velocity, which represents how frequently data changes; (3) variety, which is measured by the wide range of data collected; and finally, (4) veracity, which denotes the data's integrity (Zhang et al., 2015).

In today's world, it is hard to overlook the impact of technology on businesses. The new technologies, in particular, have disrupted business models by allowing companies to generate profits faster, obtain consumers easier, increase product and service quality, serve more people globally, speed up business processes, employ less human power in high-risk heavy tasks, and many more. These transformations lead us to ask ourselves, “Are we ready to keep up with all these disruptive new technologies?” Even if we think we are not, someday, eventually we will!

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