Accounting and Finance 4.0: Renewing the Language of Business

The business environment has constantly evolved over time, marked by periods called industrial revolutions. We have gone through three industrial revolutions: The first industrial revolution introduced water and steam power; the second, electric power, and the third, electronics and information technology. We are now in the 4th industrial revolution, commonly referred to as Industry 4.0. This is a name given to the current trend of automation and data exchange.

This is a force of change that we in accounting and finance cannot ignore and will affect us all whether we are ready or not. PwC conducted a survey called Global Industry 4.0 in 2016, with over 2,000 participants from nine major industrial sectors and 26 countries. The numbers are staggering: US$907 billion in annual digital investments, US$493 billion in digital revenue gains per annum, US$421 billion in cost and efficiency gains per annum. About one third of the surveyed companies expected that their level of digitisation would rise on average from 33% to 72% within the next five years.

Since accounting and finance exist to support the business environment, this discussion centres on how our traditional notions need to evolve to support Industry 4.0, thus the inspiration for the name of this discussion as accounting and finance 4.0. Furthermore, given that accounting and finance are also known to be the language of business, this article will explain how we need to accustom ourselves to new terms in our language of business and then explore the areas where we need to prepare for change.

Under the broad term of data analytics, we find other Industry 4.0 terms making way to accounting and finance. They include artificial intelligence, cloud technology, robotic process automation, distributed ledger technology, and blockchain.

**Artificial Intelligence** or AI refers not only to software that can draw conclusions from large quantities of data and adjust its activities based on those conclusions, but it can also be a system that can learn quickly in real time and be applied to an entire organization.

**Cloud technology** allows applications to run on remote servers and are accessed via a web browser. It can still provide much of the same functionality as desktop accounting software.

**Robotic process automation** or RPA refers to the use of automation applications to reduce the amount of human labor required to process accounting and finance transactions.

**Distributed ledger technology** or DLT refers to a consensus of replicated, shared, and synchronized digital data geographically spread across multiple sites, countries, or institutions with no central administrator or centralized data storage.

**Blockchain** was the first fully functional DLT and can be easily understood as a type of DLT.
Having identified the most common Industry 4.0 terms to affect accounting and finance, we will discuss the impact on the traditional functions of accounting and finance. We will examine relevant examples or case studies. Specifically, we will address the following questions:

How will Industry 4.0 change traditional business models?
How may accounting and finance change in a 4.0 world?
How does this affect how we communicate the value of the company to its stakeholders?
What type of skills are needed for accounting and finance people?

From the discussion, we can identify major challenges or opportunities. Challenges include:

- Tension between people and machines as to whether they will coexist as competitors or collaborators.
- Security, especially those regarding information about management accounting, payments, and investment activities.

Opportunities include:

- Transparency being enhanced.
- Production of more relevant, timely and insightful financial and non-financial reporting.
- Standardization and automation of tasks and reporting.