Digital Transformation of Taxation

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The advancement of technology from analog electronics and mechanical devices to the digital technology available today emerged in the 1980s, when the Third Industrial Revolution was born.[1] The world was taken by storm in 1990[2] when the World Wide Web, as invented by Sir Tim Berners-Lee, was introduced to the public. Life as it was known came to a halt and a new chapter in history began.

Enterprises soon expanded into the international arena, and organizations evolved with technology. Technology went from being a mere support function to a major enabler of ideas that had never dared been dreamed.

Technological innovation expanded exponentially, and the birth of the Fourth Industrial Revolution (IR4) was imminent. Continuing to build on the Third Industrial Revolution, IR4 has been marked by emerging technologies such as robotics, artificial intelligence (AI), nanotechnology, quantum computing, biotechnology, the Internet of Things (IoT), blockchain, 3-D printing and autonomous vehicles.[3] Even though these advancements have changed and influenced the world and society in a variety of areas, the effect IR4 has had on taxation is worth examining.

International Trade Became the New Standard, and Data Became the New Oil

The Third and Fourth Industrial Revolutions enabled easy international trade from any location.

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Enterprises rapidly evolved and started expanding their jurisdictions to other countries. Business types changed and are still changing; the ways in which organizations create value and generate income continue to evolve due to technological innovation.

The Organisation for Economic Co-operation and Development (OECD) has categorized the value-creation process, or virtual business prototypes, in the digital arena into three categories:[4]

1. The value chain creates value by converting inputs into outputs through discrete but related and sequential activities. Examples of such businesses include Alibaba and Netflix.
2. The value network creates value by providing a mutual platform for organizations and users alike to serve the mutual goals and benefits of both. Examples of such businesses include Uber and LinkedIn.
3. The value shop creates value by processing and analyzing data for specific customers to solve specific problems for specific customers. Examples of such businesses include providers of cloud computing and data analysis such as Microsoft and SAP SE.

Business models in the virtual environment can be evaluated by using/applying these different value-creation models. However, these business models all display common characteristics (from a digital perspective). The characteristics are:[5]

- **The global reach of virtual and digital transactions**—Digitalization has eliminated physical borders between enterprises and customers and between countries. The latter, together with globalization, has enabled organizations to dematerialize, transact online and serve customers worldwide.
- **Reliance on intellectual property and intangible assets**—Intangible assets have become an important driver for business value. The location in which an organization's intangible assets are controlled/managed has, consequently, become

a material consideration for organizations and tax authorities alike because profits are taxed where the intangible assets are located.

- **Data and user participation**—The intensive use of data has assisted enterprises in significantly improving their products and services, which, in turn, has had a positive effect on productivity. Data analysis has become an integral part of the digital economy and, therefore, adds value that attracts possible tax implications.

While organizations and taxpayers have changed the way business is done and how data are utilized, tax authorities were forced to follow suit and have become custodians of big data, from which a wealth of knowledge can be derived if assets are managed and processed efficiently and effectively. Data governance, data architecture and data analytics have, thus, become critical skills for tax authorities throughout all departments spanning the IT department to the tax audit department. Even though most tax authorities realize the magnitude of knowledge that can be derived from structured and unstructured data, expertise to govern and maximize this benefit remains scarce.

The Tax Predicament of "Traditional" Tax Legislation

Tax legislation was primarily designed for an environment where physical borders are clearly identifiable because these borders are used to enforce taxes. Principles such as substantive jurisdiction and enforcement jurisdiction play a pivotal role in assisting tax authorities with enforcing taxes within a certain country.

Substantive jurisdiction relates to a country's justifiable reason to tax a person or entity.[6] With reference to income tax, the source of income or the residence of the taxpayer are widely accepted as legitimate grounds for an assertion of substantive jurisdiction to tax. Some argue that a country having contributing infrastructure and other facilities that enable the taxpayer to produce taxable income is justification for source-based jurisdiction.[7] With regard to value-added taxes (VATs)/goods and services taxes (GSTs), the matter is a bit more complicated because the VAT/GST can either be levied where the goods or services

originated and/or where they will be consumed/used by the end user.

Enforcement jurisdiction relative to a specific tax relates to any tax administration's practical ability and effective means of collecting the tax.

> "THE SOURCE OF INCOME AND RESIDENCY OF A PERSON IS NOT EASILY IDENTIFIABLE IN THE DIGITALIZED ECONOMY."

As demonstrated previously, physical borders played a pivotal role in the enforcement of taxation. However, the digitalized economy eliminated all physical boundaries, which introduced major challenges to tax authorities' ability to enforce taxation effectively and efficiently in terms of "traditional" or contemporary tax legislation. The source of income and residency of a person is not easily identifiable in the digitalized economy. The digitalization of the economy has further caused major challenges regarding the practical ability of governments to collect taxes effectively.

> “INTELLECTUAL PROPERTY (IP) AND INTANGIBLE ASSETS (IA) HAVE BECOME MAJOR DRIVERS OF VALUE THAT ATTRACT TAX IMPLICATIONS.”

Organizations can structure their affairs in such a way within the digitalized economy so as to either pay no taxes and/or pay decreased taxes in lower-tax havens. The effect of the latter causes base erosion and profit shifting (BEPS) out of countries that previously had a tax enforcement right. An excellent example of this is the Google tax case, in which income generated in India was moved to Ireland to lower the company’s tax liability in India; the Indian Tax Office won this case in 2017.[8] Other similar cases have also been tried in courts globally.

Another major change in the digitalized economy is that digital services have increased exponentially while the sale of physical products has decreased. An example of the latter includes 3-D printing, where a customer can now print a product in the comfort of their home instead of a seller shipping the product, having it go through inspection and paying customs fees on it. Another example includes automated refrigerators that assess which consumables should be reordered and then do so automatically. While the delivery of the refrigerator remains “goods” in terms of current tax legislation, the services that are delivered thereafter become a challenge from a tax administrative perspective. The delivery of digital services, consequently, places major constraints on tax authorities’ coffers because digital services are not as easily identifiable and regulated as physical goods, which impairs governments’ ability to collect the due taxes on these services.

The fact that any user/organization can anonymize and/or change its identity also creates major global disruption to governments’ traditional tax enforcement strategies. The identification of a user and/or enterprise and the user’s/enterprise’s location is pivotal to effective tax enforcement.

Several tax authorities have put in place proxies to be used to enforce consumption taxes; these include but are not limited to the IP addresses and billing addresses of both the supplier and consumer of goods and services. However, both types of addresses can be manipulated within the digitalized environment and are, thus, of questionable value from a tax enforcement perspective.

Intellectual property (IP) and intangible assets (IA) have become major drivers of value that attract tax implications. Identifying the location of the IP and IA of organizations within the digital economy remains a challenge from a tax perspective.

The OECD issued an interim report in 2018[9] with measures that tax administrators could implement, but an international consensus has not been reached regarding alternative measures to ensure efficient and effective tax administration. A public consultation document was issued by the OECD early in 2019[10] that presented the tax community with another alternative to tax collection within the digitalized economy, which involves fractional apportionment of taxes based on a concept called significant economic presence. The document has evoked a healthy debate regarding a possible alternative to effective and efficient tax administration within the digital economy, but consensus regarding the way forward has not been reached.

The Rise of the Gig Economy

The digitalization of the economy has created the opportunity for employees to provide professional services globally to any employer from any country in the world. This platform is referred to as the gig/shared economy and has created the

opportunity for traditional workers to either supplement their income or to resign from their traditional work and perform contract work within the gig economy.

Most G20 nations derive a major part of tax revenues from the taxes paid by human workers on their salaries and wages. Very little tax legislation globally refers specifically to the gig economy and the taxes that it attracts, which leads to major tax shortfalls. Global statistics are not available, but it is estimated that approximately US$5.6 billion in taxes was left uncollected in the United Kingdom from cash-in-hand jobs (gig economy) during the 2016 financial year.[11]

Yet a ruling was made in the United Kingdom in 2018 that confirms Uber drivers are regarded as workers in terms of labor legislation; however, this principle is not currently specifically included in tax legislation.[12] This can be attributed, among other factors, to the various inconsistencies of defined employment in terms of tax legislations among the different countries.

If employment income fails to continue to grow as projected, governments could face difficult choices about how to adjust the tax base to compensate for these tax losses.[13]

While some tax authorities have started to join forces with the private sector and, specifically, technology professionals to develop solutions for tax enforcement within the digitalized economy, the phenomenon of collaboration between tax authorities and private sector with specific reference to tax enforcement solutions from a technology perspective is not yet a collaboration all tax authorities feel comfortable with due to, among other factors, security, legislative and taxpayer confidentiality concerns.

Agile solutions for tax administration within the gig economy might be the development of specific applications programming interfaces (APIs) developed in collaboration with technology professionals.

> “CRYPTOCURRENCIES INTRODUCE NEW CHALLENGES FOR TAX AUTHORITIES GLOBALLY BECAUSE THESE CURRENCIES ARE DECENTRALIZED, OPERATE OUTSIDE OF THE TRADITIONAL REGULATORY FRAMEWORK AND ARE RELATIVELY ANONYMOUS.”

Cryptocurrencies

Cryptocurrencies are becoming a popular alternative method of business transactions. Although the cryptocurrency market is still relatively new, indications are that the use of cryptocurrencies is here to stay.

Cryptocurrencies introduce new challenges for tax authorities globally because these currencies are decentralized, operate outside of the traditional regulatory framework and are relatively anonymous. Bitcoin ATMs also make the current cash economy much more challenging from a tax administration perspective.

Traditional exchange transactions are regulated by third parties such as financial institutions, while virtual currencies are regulated not by third parties, but by the “e-society” itself, through which a decentralized e-ledger is kept (mostly blockchain technology).

The tax regulation of virtual currencies and transactions is currently largely based on voluntary declarations made by taxpayers who themselves are uncertain of how these transactions and currency exchanges should be dealt with from a tax perspective.

Again, governments are losing substantial amounts of income due to cryptocurrencies being used to transact, transfer money and allocate money to and among beneficiaries without governmental

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oversight. The use of cryptocurrencies affects all tax types ranging from corporate income tax to donations tax.

Possible solutions that could be developed in collaboration with technology professionals might include surveillance of altcoin transactions with specific reference to critical information required to provide tax authorities with enforcement rights. Any possible solution is expected to be a combination of technology and legislative amendments, and multiskilled teams will be critical to find a suitable solution.

Governments Need to Catch Up

Exponential growth and innovation in the digitalized environment and organizations' ability to embrace, adapt and utilize these technological enhancements have left tax authorities in a difficult position.

Governments, due to their nature and size, are not organizations that can change and adapt as easily as the private business sector. Tax administration is multifaceted and includes the cohesive working of politics, legislation, technology, enforcement and collection tools to ensure optimum efficiency. However, the changes to legislation, policies and procedures can sometimes take years to be amended. The approval and funding of technological investments requires a range of presentations and approvals before implementation, which leaves tax authorities in a continuous position of catch-up with further technological developments and enterprises' adaption of them.

Tax authorities currently find themselves in a situation where new advancements and the subsequent tax consequences are much more rapid than the pace at which they are able to find and conclude on international consensus and solutions. This begs the question of the relevance of current global tax legislation and the way governments do business within the digitalized economy. The agility of tax enforcement mechanisms has become a critical requirement to remain effective and efficient as tax administrators within the digitalized economy. Collaboration with technology experts, thus, will become critical to achieve the perfect balance between agility and a properly governed technology environment.

What Is the Relevance to Tech Professionals?

It has been stated that to realize human potential in IR4, the workforce of the future must have characteristics of lifelong learning and be multiskilled.[14]

Although technology has enhanced society in various ways, it has also complicated matters that were previously regarded as simple and straightforward. IT software developers of accounting and business software can no longer ignore global tax requirements and relevant legislation. Their role in the development of APIs to assist tax administration has also become imperative.

> "IT SOFTWARE DEVELOPERS OF ACCOUNTING AND BUSINESS SOFTWARE CAN NO LONGER IGNORE GLOBAL TAX REQUIREMENTS AND RELEVANT LEGISLATION."

For information systems auditors who execute either functional or physical configuration audits, the correct tax software configuration (for both corporate and consumption tax purposes) of multinational entities is no longer something to be ignored or regarded as immaterial.

From an IT governance perspective, it is imperative that global tax legislation and requirements are accurately embedded in accounting and business software packages to align with business strategies.

Even though technology professionals are not required to be experts in all facets of business, they should be mindful of the basic tax requirements and challenges because these challenges have become major challenges within the digitalized economy for all organizations and may have a material financial and business impact if not managed effectively.

Finally, technology professionals' contributions and innovations are of imperative value to enterprises and tax authorities in order to find solutions for the current tax predicament within the digitalized economy.

Global collaboration among professionals is one of the benefits that the digitalization of the economy presents and should be taken full advantage of to find workable solutions for the digital transformation of taxation.

Endnotes

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