


Disruptive technologies and evolving value chains

Carlo L Navarro and Sujay Thakkar of Deloitte explore how new-age technologies such as blockchain and the metaverse may reshape value chains.



What is Web 3.0?

The evolution of the internet from a simple website containing bland pages of text (Web 1.0) to its 'current' version (Web 2.0) has paved the way for companies to transform business, scale globally, and achieve unprecedented exponential growth.

User-generated content can be viewed virtually by millions of people in an instant on various platforms, propelling the growth of the gig economy and e-commerce. Web 2.0 tremendously disrupted sectors that failed to integrate the new web-based business model. In Web 1.0 and 2.0, the exploitation and centralisation of user data has been fundamental to the operation of the internet. The codes for these two are written and controlled by a small group of experts and data aggregation, analytics as well as some processing permissions for commercialisation of the data are usually required from central authorities.

The concept of Web 3.0 was introduced in 2006 with the core objective of addressing the principles of openness, transparency, freedom of expression, decentralised ownership, and reduced interventions.

Web 3.0 aims to improve user interactions through immersive experiences and flexibilities using artificial intelligence, virtual reality, machine learning, automation and control over data, thereby enhancing user ownership, utility, monetisation and experiences. It is a verifiable, self-governing, trust-less, permission-less, decentralised and robust transfer of data across platforms. It has the potential to be even more disruptive than its predecessors.

Understanding how such digital transformation affects the end-to-end value chain is essential for the tax function. Heads of Tax will need to consider the impact of such digital transformation on existing transfer pricing (TP) operating models and the creation of digital 'value' and 'assets' across the value chain.

The 'next' normal – Technological revolution, transformation and disruption

Under Web 3.0, there are a number of technological revolutions that are worth mentioning because they may present changes to value chains.

Blockchain is a distributed user-based ledger system rooted on a consensus model that arranges data based on network of nodes and blocks. It provides value for transactions, which can be conducted safely since they are permanently recorded without the need for intermediary or secondary reconciliation.

Blockchain transforms businesses by automating processes, ensuring secure, decentralised, and transparent record-keeping and validation of transactions in real-time. For example, 'smart contracts' in blockchain can self-execute terms of agreements once pre-defined conditions put in place by transacting parties are met.

One of the applications of blockchain is cryptocurrency. Cryptocurrencies are decentralised digital currencies that are de facto used as a new form of investment and payment, particularly in the post-pandemic world where it has gained significant momentum.

Blockchain can also be used to manage supply chains due to its dynamic way of organising and tracking data. In media, the technology can be used to distribute content without content delivery networks.

Metaverse is another revolutionary technology with the potential to reshape several businesses and create new value chains. It is a "convergence of physical, augmented and virtual realities in a shared online space".

Being augmented (AR) and virtual (VR) reality-powered, it can replicate the physical world where real people or their avatars can interact. For the consumer sector, the metaverse can be the enabler where traditional retail and e-commerce marketplace will fuse to become the next phase of business growth. Brands can set up their metaverse-stores, which potential consumers from anywhere in the world can visit to virtually experience the product or services. This immersive technology can change the creation, distribution, and consumption of marketing content.

As these nascent technologies continue to develop, the stakes will continue to rise and their effects will potentially need to be understood and regulated. For example, the internet was not initially regulated; however, with the explosion of e-commerce and the digital economy, governments intervened and regulations (such as BEPS 1.0 and BEPS 2.0) were put in place.

How will value chains be impacted?

Blockchain, with a combination of artificial intelligence and machine learning significantly increases the utility and value of data, especially in complex, highly regulated industries such as financial services that need to share data

through elaborate stakeholder networks without compromising security.

In the absence of central authorities and intermediaries, blockchain can in principle be applied to facilitate easier, faster, and cheaper access to capital by creating a new economic system, i.e. decentralised finance (Defi), setting new standards for financial access, opportunity, and trust.

Blockchain can enable the settlement, transfer, or clearing of funds between two users with a unique digital identity at high speed, resulting in lower transaction costs, reduced counterparty risk, and verifiable compliance records. It can remove intermediary systems that are usually found in these regulated industries' value chains.

It can also be used to manage supply chains due to its dynamic way of organizing and tracking data. The availability of information within blockchain can increase traceability of material supply chain, lower losses from counterfeit and grey market, improve visibility and compliance over outsourced contract manufacturing, and potentially enhance an organisation's position as a leader in responsible manufacturing.

In the entertainment sector, celebrity or sports 'smart' contracts can be enabled, new revenue models can be identified through enhanced fan engagement and loyalty programmes.

In the oil and gas industry, blockchain solutions can significantly increase process efficiencies, reducing costs associated with oil and gas operation and distribution. Within the global trade and commerce industry, blockchain can help with management of cash pools, trade financing, oil usage and cost optimisation, trading route efficiency management, tokenisation of documents, letters of credit, and more.

In the healthcare sector, blockchain can help businesses manage medical data and supply for improved patient care. It can also ensure the authenticity of drugs circulating in global markets.

In the insurance industry, blockchain can securely streamline data and claims verification, claims processing, fraud detection, and disbursement, reducing processing time significantly. Use of blockchain can also help significantly reduce transaction costs within the travel and tourism industry.

On the other hand, the metaverse has already been valued as a \$47 billion marketplace, with the potential to grow to \$800 billion over the decade. A fusion of digital and physical realities offers businesses a unique opportunity to provide path-breaking experiences, products, and services to their customers. The metaverse is evolving into an increasingly vast and rich ecosystem that comprises metaverse gateways, platforms, and infrastructures, as well as a variety of service providers to enhance the customer experience with identity, social, gaming, and economic services.

In the financial services sector, the metaverse has the potential to develop virtual to physical redemptions, investment and trading of digital ownership tokens (such as



Carlo L Navarro

Partner

Deloitte Southeast Asia

T: +63 2 581 9035

E: canavarro@deloitte.com

Carlo L Navarro is currently Deloitte's Southeast Asia (SEA) TP Leader and heads Deloitte's SEA TP Centre located in Manila, Philippines. He is based in Singapore and the Philippines.

Carlo specialises in TP, international corporate restructuring and planning, cross-border taxation, and tax-effective supply chain transformations. Before joining Deloitte, Carlo led transfer pricing and international tax practices of Big Four firms around Southeast Asia.

Carlo has over 20 years of experience working in various jurisdictions in Southeast Asia as an international tax and TP practitioner, giving him practical experience in dealing with the tax authorities of these countries. He has assisted clients in various phases of TP engagements, from planning, documentation, and audit defence, to negotiating APAs and MAPs. He has an excellent reputation in handling TP audits and bilateral negotiations.

digital music rights or NFTs, which are currently being monetised by a number of celebrities and sports personalities), higher engagement in financial services (virtual bank account opening), integration of cryptocurrencies, virtual spaces for branding, education and product placements, education and trainings.

In the automotive and manufacturing sector, the creation of an industrial metaverse will enhance users' experience of virtual events, improve understanding of a product's performance characteristics, provide virtual installation and skills training, verify results and correct errors in real-time, without the need to be on-site.

In addition, the design and development process, trials, testing, operations management, marketing, and other processes can be curated, simulated, and verified within the virtual community (i.e. real-time response without financial investment in building the vehicles). The metaverse can also be integrated into smart cockpits, voice recognition, and artificial

intelligence in driverless vehicles. Technology upgrades and modification preferences can be made available to vehicle manufacturers to produce the next-gen variant of the vehicles.

In the real estate sector, the metaverse has sparked tremendous growth opportunities whereby users are able to trade and invest in 'digital real estate', offering digital spaces for events and collaborations in exchange for cryptocurrencies as rental payments. This, however, exposes the users to tremendous risk since the value of such 'virtual' or non-quantifiable real estate may skyrocket or crash unpredictably and there may be no limitations on the 'size' of such virtual real estate.

In the educational sector, the metaverse is expected to drive spatial changes. Today, educational content such as words, images, and lectures are available on demand. In the metaverse, however, academic learning will be amplified by immersive experiences and a shared digital ecosystem where high-quality educational resources will be available on a global scale to a bigger population.

In the retail and consumer sector, the metaverse provides a new marketing concept for various products and brands and presents tremendous business opportunities for companies to offer products and services to the virtual world. A digital identity and personalised avatar can be used to engage with brands, try out clothes, purchase daily necessities, and elevate browsing experiences in a virtual store. In fact, the avatar itself can be customised through online purchases using cryptocurrencies. Luxury brands have already started retailing collectibles and fashion apparel in the metaverse, offering a completely new immersive marketplace where there is no need to set up the traditional factory or manage complex inventory and logistics.

In the media and entertainment sector, the metaverse offers a completely new marketplace whereby online concerts or personalised content can be showcased in return for cryptocurrencies. These concerts can be held on digital real estate and the event can be managed by virtual event managers. The icing on the cake here is that a virtual concert can be made available to a significantly wider audience compared to physical concerts, which are limited to a few thousand attendees.

Similarly, the metaverse can reshape the travel and tourism industry by making available customised tours and travel to consumers within the comfort of their homes through an immersive experience. The metaverse also offers interesting and significant growth opportunities to the IT and cloud storage industry, IT infrastructure companies, gaming developers, VR equipment makers, and cryptocurrency providers. Accordingly, it is inevitable that existing value chains will be altered and new value chains will be created in the metaverse.

In summary, these new technologies can alter value chains by:

- 1) Removing intermediary systems existing within the current value chains. Thus, a review of which parts of the

value chains can be replaced through simplification or be revamped is necessary;

- 2) Decentralising value creation as trusted data is available within the platform and can be used and created by anyone in the system with negligible permissions; and
- 3) Replacing management support systems using available data within the system.
- 4) Automation through artificial intelligence, machine learning and smart contracts

Can blockchain be used in TP?

Blockchain will be an invaluable tool in operational transfer pricing (OTP) where governments and regulators demand high levels of transparency, reporting, and reconciliations. Blockchain can also automate the process of applying, documenting, and defending transfer prices, thereby improving efficiencies in TP control. For example, a smart contract can be set to only ‘green light’ transactions between related parties that fit within a pre-defined arm’s-length range.

Additionally, blockchain can also be used for determining and reliably tracking the contributions of the respective related parties in the value chain (for example, in shared assets, cost contribution agreements, profit splits, treasury, cash pooling, lending transactions, guarantees and other funding scenarios). Blockchains can also help with formulary apportionment as it is possible to track and detect the contributors to the value chain. This will be critical especially in the context of identifying BEPS 2.0 Pillar one contributions by the respective parties and the satisfaction of the ‘nexus’ rules. Blockchain can provide reliable avenues to track the development, enhancement, maintenance, protection, and exploitation activities undertaken by related parties, which will be a key component for analysis in digital value chains.

As transparency is at the forefront of the international tax law agenda, blockchains could offer avenues for tax regulators to embrace transparency and code APAs into smart contracts, undertaking real-time audits and participating in the network to identify or even green-light the appropriate application of TP policies. Tax regulators may also use international level consortium blockchains for the confidential exchange of information under multilateral conventions.

Blockchain can potentially provide businesses and regulators with additional information on comparable prices or CUPs, which could then be used as benchmarks to test inter-company transactions. In addition to TP, blockchain will also help streamline reporting for indirect taxes such as VAT and other indirect transaction taxes.

Having said the above, there are potential downsides to the adoption of blockchain, which include network adoption, the cost of implementation as well as the exposure of sensitive and confidential data, which, if not handled carefully, may end up in the hands of competitors. Hence, establishing the trust protocols, type of blockchains to be



Sujay Thakkar

Director

Deloitte Singapore

T: +65 8386 3843

E: suthakkar@deloitte.com

Sujay Thakkar has over 11 years of TP experience in Big Four accounting firms across Southeast Asia. He has advised leading multinationals in the technology, infrastructure, shipping and logistics, aviation, mining, commodity trading, manufacturing, automotive, telecommunication, services, health sciences, educational and retail sectors.

Sujay’s experience includes supply chain planning and transformation, restructuring and TP policy setting, intellectual property structuring, undertaking global, regional and local TP compliances, and TP dispute resolution.

Sujay has also successfully represented his clients before revenue authorities in several audits, APA and MAP cases, including drawing up proactive strategies and negotiations with the tax authorities. Recently, Sujay provided extensive support to his clients with COVID-19 impact assessments and helped set future pricing strategies for clients in the post-pandemic era.

used, access rights and permissioned blockchains between businesses and tax regulators as well as other participants in the block chain will be critical.

Takeaways

Regardless of the reshaping of value chains or the introduction of new value chains due to the introduction of disruptive technologies, tax practitioners should bear in mind that the application of fundamental TP principles relating to value creation and profit attribution will still apply in such situations. Another important aspect is to consider the accounting treatment, quantification, and reporting of such items, especially digital properties and assets, which is currently a work in progress.

As businesses evolve and transform digitally, TP will emerge as one of the top tax risks for businesses. The convergence of operations and taxation is critical, especially in an environment where regulators will be under immense pressure from lower tax collections due to COVID-19.

Related-party transactions are expected to fall under the microscope for closer scrutiny, especially once reliable and transparent data is made available to the tax regulators across territories. TP methodologies will need to be reviewed depending on how the value chains will reshape. Given that tax and TP teams deal with massive data sets and manual processes (to decipher and analyse such tax data), there is a need and an opportunity to use automation and technology solutions in everyday aspects of TP.

To stay abreast of future demands and to remain relevant, the tax and TP teams will need to expand their horizons and adopt and learn new technologies. By combining technology with skilled workforce, multinational corporations' tax and legal departments will get the much-needed facelift. Thus, the need of the hour is to cultivate a culture within the tax function that embraces new, more efficient ways of working, with a focus on people and technology working together in a collaborative, complementary manner.