

Are there some skills valuers will ‘no longer need to learn’ in the digital technology environment?

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Abstract

Digital technologies are changing workplaces physically and functionally so much that working professionals need to develop digital skills to ensure that they do not become ‘physically present but functionally absent’ in the 21st Century business environment. Accordingly, the nature of the current business space makes digital skills fundamental requirements for a sustainable career in modern valuation practice despite the fact that the valuation profession traditionally does not demand digital literacy as a requirement for professional practice. This brief review examines the digital skills valuers currently have per their training to assess the skills which are relevant, and suggests which digital skills should be the focus of training programmes meant for building the capacities of present and prospective valuation professionals. From the review, the ability to carry out valuations using digital tools is no longer a brand of competitive advantage but increasingly becoming a valuable requirement in the digital era though many working professionals and job seekers lack basic digital skills. This article forecasts that this skills gap can be bridged through digital training in the universities for future professionals and through continuous professional development (CPD) programmes for working professionals at risk of displacement from the valuation profession. Consequently, creativity, critical thinking, collaboration, communication, information, and problem-solving skills (van Laara, et al., 2019) are general fundamental digital skills that valuation professionals should focus on acquiring rather than learning skills such as writing, reading, measured drawings, data entry and analysis, photography which can be efficiently done by using digital tools.

Keyword: *property valuation; digital technologies; automation; sustainable careers*

1. Introduction

In the past few decades, technological transformation in the global business environment has been widespread and intense, particularly in all professions that rely heavily on data. As a result, the use of digital data technologies has risen steeply among professionals in professions such as accounting, finance, auditing, management, insurance, and marketing fields. Consequently, younger professionals and lifelong career professionals need to rethink the future of business clients’ needs and how to position themselves to procure and deliver professional services in an increasingly digital business environment.

In the world economy, the role of property valuation in the operations and performance of market economies is indispensable. Mention can be made of how the world financial system relies heavily on property values produced by valuers to the extent that the domino effect of poor valuations easily triggers global financial crises (Alexandridis et al., 2019). Nonetheless, there are many questionable issues of valuation quality (Amidu et al., 2021; Newell, 2004; Titman

& Trueman, 1986) arising from a litany of causes such as valuation variance, valuation errors (Abidoeye et al., 2021; Adegoke, 2016; Babawale, 2013; Boyd & Irons, 2002; Bretten et al., 2001; Crosby, 2000; Dou et al., 2020; Effiong, 2015; Otegbulu & Babawale, 2011; Su, 2022), client influence (Amidu & Aluko, 2007; Cloyd & Spilker, 1999; Levy & Schuck, 2005; Newell, 2004; Nwuba et al., 2015), and the opaqueness of property transactional information upon which valuation opinions are based (Cloyd & Spilker, 1999; Levy & Schuck, 2005; Newell, 2004; Olapade & Olaleye, 2018; Su, 2022). These issues continue to stick to property valuation practice thereby derailing the progress of the valuation profession toward full operational efficiency. As the application of digital technologies in property markets (Su, 2022; Su et al., 2021) increasingly becomes a means for real estate agents and brokers to survive competition in the digital era, valuer-technology complementarity has the potential to address some of the phenomenological issues of valuation practice. However, the emergence of automation, whether partial or full, in valuation also introduces other critical issues such as the accuracy and interpretability of automated valuation models (Su, 2022; Su et al., 2021), valuers' independence and objectivity (Crosby, 2000; IAAO¹, 2018; Parker, 2016), and how cases of valuation negligence will be handled. There are also cases of uncertainties about job losses, and the security of job tenures which alarm many adult professionals because potential automation of most activities currently performed manually or semi-automatedly. That notwithstanding, these consequential effects of technology adoption in valuation practice do not diminish the benefits and many opportunities of digital technologies for the valuation profession although less scholarly and industry information is available on valuer-technology interactions (VTI) in the valuation process (Su, 2022; Su et al., 2021). Also, regardless of the level of automation the world of business reaches, digital data technologies can never discount the need for human intervention to operate desirably. Hence, the future of professionalism in most careers lies in human-technology collaboration (HTC).

Another dimension worth recalling is that the future of the world is full of endless possibilities following the Covid-19 pandemic. Thus, overly automating businesses processes because of the fear and the lessons learned from coronavirus and the upshot of working from home, and contactless business operations, business leaders should not lose sight of other conceivable pandemics in the digital world – globalized computer virus attacks which could lock up any computer-based platform online if not completely erase every piece of online data. So, therefore, the decision to go for automation and or HTC in say the valuation profession, raises the question: *are there some skills valuers will 'no longer need to learn' in the digital technology environment?*

The subsequent sections of the article cover digital technology and automation of the valuation methodology, potential changes to the valuation process in the digital era, some skills that could become nonessential to learn, why professional valuers need to accelerate toward VTI in the digital era, and a conclusion.

2. Digital Technologies and Automation of Valuation Methodology

The world of business has changed drastically following the transition into the era of the Big Data (BD) ecosystem that is driven by information technology (IT) and the development of the Internet of Things (IoT). These technological transformations are changing the way real estate markets operate in terms of data generation, storage, and sharing, thereby creating digital footprints of property data online as many market participants now prefer paperless reports (Valocity, 2022). Since the valuation profession heavily strides on the availability and

¹ IAAO – International Association of Assessing Officers

accessibility of property/market data, these changes in information production and transfer among business clients in the property market enable valuers, with the aid of digital tools, to conduct in-depth investigations speedily as well as accurately collect and process data more easily (Filippova et al., 2022; Fristedt, 2018; Gindelsky et al., n.d.; Saull et al., 2020; Starr et al., 2021; Blackledge, 2009). At present, electronic devices for measuring dimensions, personal digital assistants (PDAs), laptop computers, smartphones, tablets, and drones have greatly enhanced how valuers collect and manage property data (Blackledge, 2009; Scheurwater, 2017).

As a result of the continuous improvement in the capabilities of digital technologies in data management, several attempts have been made to automate valuation methodology to increase the accuracy and consistency of valuations (Blackledge, 2009, p.73-75). Long before the new millennium (the year 2000) and the 2007-2008 global financial crises (GFC), suggestions have been made about the use of technology such as computerized neural networks to limit valuers' subjectivity in the valuation process to improve valuation accuracies and quality (Lam, Yu and Lam, 2009). Subsequently, AVMs were developed in the UK in 2001 after they have been used in the USA (Blackledge, 2009) albeit limited to some types of residential property valuations (Blackledge, 2009; Scheurwater, 2017). Blackledge (2009) explains that AVMs were developed purposely for rapid assessment of real estate value particularly mortgage-backed transactions in the US and, therefore, AVMs had long become an established feature in the US economy. As a result, most financial institutions were relying on AVMs to assess the risk levels of manual valuations causing a major shift toward automated risk assessment from automated decision-making whereby whenever manual valuation falls outside accepted risk tolerance levels (by comparing with an AVM output), a query is raised (Blackledge, 2009). This raises major concerns about the potential for AVMs to replace humans in the valuation process (Lin et al., 2021; Blackledge, 2009).

However, based on over two decades (now more) years of AVMs' presence in the US economy as new valuation technology, Downie and Robson (2008, p.8) assert that

“although a subset of valuations will eventually be carried out electronically, human valuers will retain their current roles and will have opportunities to undertake new roles using AVMs outputs. As well as providing valuations for many properties not amenable to AVMs, their expertise is required to interpret, check, and evaluate AVM outputs”.

Thus, as the US pioneered AVMs, valuers in the US did not lose their jobs despite the wider application of AVMs by most financial services providers, rather, valuers utilized AVMs by improving their service delivery quality by way of “...quality controls, checking and adding value to AVM outputs” (Downie & Robson, 2010, p.14). Hence, in contemplating the future of valuations, Scheurwater (2017) hypothesizes some changes likely to occur in the valuation process as the use of technology will lead valuers to automate fully or partially some aspects of valuation tasks.

3. Aspects of the Valuation Process Likely to Change in the Digital Era

As noted earlier, the use of innovations such as AVMs in property valuation began several decades ago as the application of multiple regression analysis (MRA) in rating valuations to

assure appraisal conformity and uniformity became a necessity (Angrick et al., 2021; Demirci, 2021; Fristedt, 2018; IAAO, 2018; Krause et al., 2020). Thus, in the residential property market, the application of computer-assisted mass appraisal (CAMA) technology has been well-recorded (Scheurwater, 2017). However, the demand for more accuracy in property valuations because of the costly nature of valuers' cognitive biases (Crosby, 2000), client influence (Amidu & Aluko, 2007; Cloyd & Spilker, 1999; Crosby et al., 2010; Levy & Schuck, 2005; Newell, 2004), which occasionally leads to dire global property market crunches (Mooya, 2017; Alfaro-Navarro et al., 2020; Doumpos et al., 2021) keeps pushing the valuation profession to improve valuation quality (Amidu et al., 2021; Parker, 1998; Gilbertson & Preston, 2005; Newell, 2004; Titman & Trueman, 1986) using innovations (Scheurwater, 2017; Su, 2022; Tidwell, 2011). Hence, researchers have attempted to address the question: *how is valuation quality measured through the valuation process by professional valuers?* (Newell, 2004; Mooya, 2017, Amidu, Levy & Bolomope, 2021).

To this end, there is no debate that the emergence of digital technologies in property markets will have significant implications for the property valuation profession. One driver for the use of digital technology in property valuation is the constant quest to improve valuation quality. Therefore, in conceptualizing the outlook of the valuation process in the digital age, Scheurwater (2017) abstractly highlights the key changes likely to occur in the current valuation process due to digital technology (see **Fig. 1**). The conventional valuation process is highly cognitive because the valuer performs all the valuation activities usually on the ground of applying sound judgment.

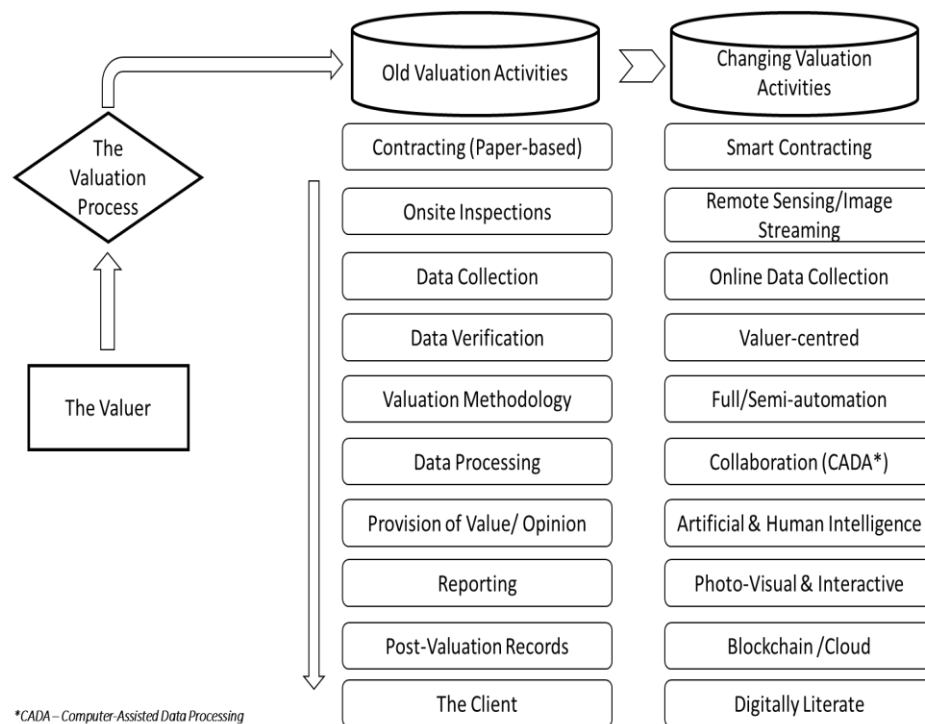


Figure 1: Changes likely to occur in the conventional valuation process

From **Fig.1** above, the nature of property valuation as both art and science implies that the valuer will remain indispensable in the future valuation process (IAAO, 2018). Activities such as smart contracting, machine-led inspections, desktop data gathering, automation of valuation methodology, use of virtual reality, and application of blockchain will emerge in the valuation process to allow some business clients to control some automated valuation functions in-house

(Scheurwater, 2017). Specifically, Scheurwater (2017) postulates that computer protocols will drive offsite verifications, contract negotiations, and enforcement. Such changes in the valuation process will lead to major savings in cost, and time in valuations as well as minimize the possibilities of client pressure which arises from the familiarity of the contracting parties (Levy and Schuck, 1999; Amidu and Aluka, 2007; Achu, 2013).

Furthermore, Scheurwater (2017) asserts that onsite property surveys may be partially or completely replaced as digitalized property data management improves and devices such as drones become affordable and easy to use. Image streaming which became one of the best ways to gather property data during Covid-19 can only get better for offsite property inspections. Valocity Connect, for instance, facilitated the viewing of property data and images via a mobile app during covid lockdowns and strict enforcement of physical mobility and contacts (Valocity, 2020). Hence, as buildings progressively become smarter and banded inside IoT, remote sensing of data will be better. The availability of 'property passports', and the increasing adoption of BIM and blockchain will ensure that property data is available in real-time (Scheurwater, 2017; Su, 2022; Su et al., 2021). Note that as professional valuation standards require (IAAO, 2018), the nature of building surveys and the consequences of professional negligence will encourage valuers to, nonetheless, undertake due diligence by vetting machine-led inspections through onsite-building surveys whenever there is a necessity. Thus, in the digital era, the availability of online data in tonnes through big data platforms such as Google Analytics, Twitter, LinkedIn, YouTube, Facebook, etc. will defuse informational power which is characteristically associated with analogue property markets where data are kept in silos of databases and controlled by few. In the digital property markets, property data will invariably become readily available from public platforms for free access or by subscription. However, secondary sources of data will raise quality and reliability issues which then means that the valuer must verify the reliability of such secondary data before using them as the basis of any valuation analysis (IAAO, 2018). This means that valuers would require expertise in statistics and data analytics to be able to effectively verify data reliability in the digital era (Scheurwater, 2017).

Another perspective on the potential changes in the valuation process is partial or full automation as the world of business gets submerged in big data and data analytics becomes popular. As a result of the development of algorithms and various statistical models (, 2018), valuers can use AVMs for low-risk valuations mainly in the residential property market where are sufficient 'comparables'. Meanwhile, where AVMs are used in valuations, the valuer will need to independently review an AVM outcome and objectively interpret the results (Cook, 2015; , 2018; Scheurwater, 2017). Here again, the demand for statistical skills will be high as business clients will expect strategic property advice from valuers. To this end, Scheurwater (2017) argues that going forward, AVMs will schematize the valuation by creating a 'one-size-fits-all valuation process' which will serve as a valuation menu card that allows clients to decide whether to use AVM only or go for a 'full-valuation' with the valuer acting as a facilitator (Scheurwater, 2017). Therefore, whether semi-automation or outright automation, valuers will still have jobs to do in aiding some clients to understand the meaning and implications of automated valuations outputs.

Finally, the reflection of sustainability in property valuation is expected to drive sustainable property development. Besides, the nature of valuation itself in the digital era will be more environmentally friendly to the planet. That is, valuation reports could be delivered through

virtual or augmented realities and BIM 3D modelling platforms to reduce the printing of hard copies (Su et al., 2021; Scheurwater, 2017). Also, interactive valuation reporting will provide clients with insights beyond just reported values (Scheurwater, 2017; Newell, 2004)). In terms of data management, valuation reports from AVMs can be stored in blockchains to improve transparency and accessibility to investors, other valuers, and researchers. Blockchain, for instance, can store valuation reports which will be available and can be accessed multiple times but at the time, serve as a databank for re-valuation purposes (Scheurwater, 2017). These technological developments in valuation will eventually impact the nature of skillsets that would be required of property professionals in general but valuers in particular whose valuation activities impact the efficiency of property markets.

4. Essential and Nonessential Skills in Valuer-Technology Complementarity

Between the uncertainties of automation (Krause et al., 2020), semi-automation (VTC), and valuer cognition (manual valuations), this article examines some soft skills that may no longer be relevant to acquire by valuers in the era of digital professionalism. Thus, regardless of what becomes the actual future of the valuation profession, digital technologies will drive the growth of digital professionalism and no profession can survive without promoting the acquisition of some digital competencies amongst its members. For some time now, computerization has successfully facilitated most human operations, particularly those relating to data management, and are often repetitive. The savings in time, cost, and energy allowing humans to explore other capabilities, therefore, cannot be overlooked. Accordingly, this article conceptualizes conventional valuation skills which may no longer be relevant to acquire in the digital ecosystem as follows:

4.1 Writing

The emergence of software capable of performing grammar-mechanic diagnostic tests is changing the writing process for most business professionals (Purcell et al., 2013). Even though most of these grammar checkers are available as premium tools, both the business and academic communities have subscribed to versions of software to save time spent in writing but more importantly, improve the communication skills of their stakeholders. Notable examples of free and premium versions of grammar checkers are Ginger and Grammarly. The art of property valuation which involves quality storytelling about how the valuation was conducted, therefore, shows how writing tools are relevant to valuers who lack or need to improve their writing skills to effectively report their valuations. As the business environment gets completely hocked up in digital technology, the use of digital technologies to facilitate writing in terms of word processing, editing, and improving grammar would become a necessity rather than an option. As such, while some writing skills in content (critical writing) are still essential, digital technologies will augment the writing tasks in the valuation process by making suggestions and summarizing information in the future. Thus, with time, there will emerge industry-specific writing software versions based on industry standards to eliminate discretions in formats used to present professionals' reports, a practice, Scheurwater (2017) notes contributes to inaccuracies and inefficiencies in industrywide information sharing. Hence, in the future, there is a very high possibility to generate a complete valuation report once standard valuation report templates are fed into unique digital platforms built for various types of property valuation. That notwithstanding, once a standard reporting format is achieved, it would be possible to begin testing for cases of plagiarism of valuation reports thereby pushing the bar of professionalism in property valuation to improve valuation quality for sound and

resilient operations of national economies. Suffice it to say that digital tools such as Google Drive, and Dropbox will promote collaboration between valuation professionals

4.2 Sketch drawing

One of the priorities of the valuer is to sketch or verify the drawings of the subject property. Previously, and probably still sometimes now, sketch drawings are done manually during site inspections. However, digital technologies will momentarily reduce the need to manually sketch property designs as the property/construction industry becomes highly digitized. That is, though variations do occur during construction which is why valuers sometimes must sketch a property despite having access to the actual drawings, these days, fire safety regulations require the visible display of the layouts of properties to aid fire evacuations. This regulatory requirement already makes building design layouts, and other views properties readily available and accessible.

4.3 Data entry and analysis

This is one task of the valuation process that could be completely automated with the help of digital technologies. Already, there are digital tools that can convert handwritten texts and printed documents into digital data. This leverage offered by technology will efficiently reduce data entry and processing errors while saving time and improving data processing quality. The cognitive limitation associated with the manual analysis of huge amounts of data has been removed by various digital technologies which can effectively evaluate large volumes of data and efficiently identify patterns more quickly than humans. In the context of the property valuation process, digital technologies will make it simple to create paperless forms in minutes for data collection at the same time, make it possible to automatically distribute data and reports in various formats (word, excel, pdf, CSV, XML, and more) in accordance with standard workflows. That is, data can be shared via different digital platforms like google sheets, google drive, email, Dropbox, etc. The dashboard function of most digital tools allows data to be viewed immediately as the data can quickly be transformed into meaningful insights (statistics, trends, and patterns) for a quick review of the data quality and suitability for collection. Examples of these digital tools include Google Forms (collect and analyze data with automatic visualized summarise), SurveyMonkey (allows the creation of professional surveys concerning market research, customer satisfaction etc) JotForm (allows collection of various types of data such as barcodes, electronic signatures, voices recordings, geolocation, etc), SurveySparrow (enables chatting and conversation, etc), Fulcrum (can use satellite, street, terrain base maps, etc), KoboCollect (can be used to visualize, download and share data collected), Fastfields (allows remote collection even when it is in offline mode), Zonka (very useful for analyzing customer interviews and surveys, can be set up in multiple languages, etc), Forms on Fire (cloud-based digital tool can streamline data collection process, allows drag and drop, gives visual appeals, generates reports, etc), Paperform (can collect and process data from emails, text, images, addresses, electronic signatures, etc and export data in various compatible formats, etc).

4.4 Photography

Photography plays a vital role in the valuation surveying profession. As buildings become so tall and irregular in shape, smart cameras, drones, and video-enabled editing technologies can assist people with little or no experience in photography to select and assemble the best shots for valuation purposes. Thus, digital technologies can be used to perform image retouching, colour correction, and preview images, for easy visualization of properties.

5. The essentiality of digital skills for valuation practice in the digital era

Terms such as digital literacy, digital competence, and digital professionalism will no longer become buzzwords but attributes of professionalism in the information age. The centre of business in the world now is technology. The high demand for digital communication devices such as computers, smartphones, and internet services for finding, evaluating, utilizing, transferring, and creating content will continue. As such, basic digital skills such as installing basic digital devices and connecting to the internet, virtual communication skills, surfing for information online, utilizing cloud-based collaboration tools, managing online data, etc could soon become fundamental requirements to operate in a digital work environment.

As a result, for the pre-valuation process, as the absorption rate of digital tools increases, face-to-face meetings will significantly reduce thereby increasing the need for e-signatures for digital contracts and sharing of the initial information to conduct valuations. This will, therefore, render paper-based contracts obsolete as the client becomes smarter and more conscious of sustainable environmental issues of most conventional business practices.

During the valuation, the pressure to meet tight deadlines, and the difficulty of having to deal with huge amounts of data among other factors will drive valuers to purposefully adopt data analytics to manage property data effectively and efficiently in the digital environment. Thus, in the digital business environment, most property market participants would likely reject valuation outcomes produced manually even if they were collaboratively produced by more than one valuer. Issues of scientific rationality for valuations to gain legitimacy in the business community will not just become a priority among valuers but also an image enhancer for clients to have confidence in the quality of valuations rendered by valuers. Again, the exponential growth in property data will mean that manually collecting and analyzing data will be uneconomic, and unproductive to the economic motives of operating any valuation firm.

Post valuation, valuation reporting will be interactive (Scheurwater, 2017) and the interactive reporting in professional practice is driven by visualization, chatbots, process automation, predictive analytics, and artificial intelligence (Azmi et al., 2022; Su, 2022; Su et al., 2021; Cowden et al., 2019). Digital technology will allow valuers to engage loyal clients after the valuations for more valuation service requests, potential referrals, and access to updates on property market activities in clients' neighbourhoods. Such a customer relationship can only be maintained virtually in an increasingly densely urbanized world but physically distant neighbours. There is, also, the possibility to continue to engage the client on the valuation report through BIM, Virtual, or Augmented Reality platforms (Scheurwater, 2017).

6. Conclusion

We conclude that digital data technologies cannot crowd out professionals from the business space although some people are already apprehensive about technology taking over their jobs. Rather, data technologies will augment, facilitate, enhance, and optimize professional service deliveries in ways never imagined but the human's role in service deliveries for humans will forever remain. That is to say that automation will be disruptive and constructive at the same time because it will displace resisters to change but once they embrace the changes technology brings, they become part of the change process. Accordingly, automation of property data management in valuation will be unavoidable. Meaning, in the future of valuation, valuers will have to focus on developing informational and diagnostic skills (critical thinking and problem-solving skills) to accurately interpret valuations outcomes from AVMs. This also means that

the sustainability of professional careers in property valuation will be anchored on valuer-technology interactions (VTI) through collaborations leading to a more semi-automated valuation practice rather than fully automated valuations as some literature on automated valuation models (AVMs) suggest. That is, though AVMs may and could perform valuations for all purposes (business clients' needs) through auto-valuation mode, a professional valuer will always be needed by business-minded clients to double-check AVMs' outcomes because AVMs cannot apply creativity and intelligent problem-solving skills apart from the computerized function (see *Fig. 2*).

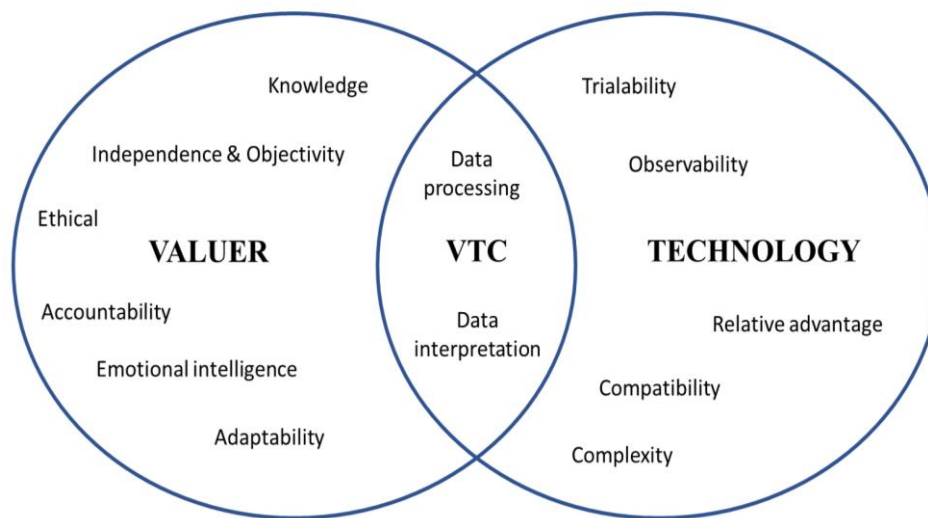


Figure 1: Valuer-Technology Collaboration (VTC)

Consequently, professional valuation skills that would be essential to acquire for a sustainable valuation career would be soft skills such as creativity, emotional intelligence, planning, abstraction, and balanced problem-solving which would be very scarce in any automated business environment but cannot be ignored in any business environment with human participants. Briefly, information literacy, technology acceptance, and lifelong learning will define the future of career professionals. Therefore, the advice is that as automation becomes the new norm, professionals must adapt to the digital environment by accepting it through self-learning, taking advantage of free online courses, and enrolling in certificate programmes on digital literacy to sustain their professional careers.

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