Is accounting keeping pace with digitalization?

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Abstract

Digital transformations are taking place across enterprises in every industry. Becoming digital is both essential to compete and virtually unstoppable. All previous major technological disruptions have led to financial intelligence being altered to ensure more effective decision making in the face of change. This article considers issues that organizations going digital need to address in relation to accounting information provision. It discusses several points: accounting's need to move toward the delivery of predictive information rather than relying on extrapolations of historical data; the recognition that machines make more decisions, which alter accounting information needs, structures, and contents; the importance of recognizing the "data-learning-action" loop that is emerging; the emergence of "strat-perational" information contexts; and the relevance of prioritizing qualitative insights in decision making.

[1] The ideas in this article are drawn from my books: Bhimani, A., 2021, *Accounting disrupted: how digitalization is changing finance*, AICPA/Wiley, and Bhimani, A., 2022, *Financial management for technology start-ups*, Kogan Page

1. Introduction

Three decades ago, new computer technologies changed how businesses manufactured products and delivered services. Accountants, as a result, altered the information they provided to managers to enable decisions to be made that were aligned with the new business environment. Digitalization today is not only transforming products and services but also the form and type of information enterprises must grapple with. Consequently, the interface evolving between digital technologies and financial information is likely to become the biggest shift ever seen in the history of business decision making. The beauty of digital is that it unfolds novel products, services, and value creation possibilities while also changing the nature of information managers can use to steer their organizations. The question remains: are enterprises deploying financial intelligence that is up to the mark? This article examines key financial information changes that digitalization necessitates to ensure decision makers are not retaining a mindset belonging to conventional analogue modes of operating.

2. The limits of accounting

Accountants take the view that there exists no business situation that accounting cannot report on. From cost determinations, to auditing, to taxation, to financial analyses, accounting information is considered to provide a sound basis for assessing financial performance and to make business decisions. However, accounting is today facing an unmitigated rupture – it needs to restructure itself from the core. While financial information within balance sheets and income statements will likely always matter at some level, accounting's sole focus on past economic transactions and business outcomes cannot remain viable. Several disruptive forces confront modern accounting expertise. To start, accounting information needs to address what will take place rather than simply reporting on what has transpired. The finance professional must veer toward delivering predictive insights based on a wider analysis of data as opposed to focusing on historical accounting reports perused by decision makers who must then extrapolate the implications. Going digital provide executives a bridge to tomorrow as data becomes more predictive of financial outcomes to follow rather than ones that have already materialized. To achieve this, accountants must develop skillsets enabling them to assess more diverse organizational datasets.

Secondly, many firms are seeing a greater portion of executive action being taken through autopilots without human input. As such, accounting reports that used to guide such actions are becoming redundant because machines do not need to "read" reports formatted in a specific way. Machines act and operate simultaneously. In effect, the forms and intents of accounting information are changing because the agents requiring financial reports are changing. The notion that humans must make decisions based on information and only then act is inimical to the manner in which machines function, since information retrieval, analysis, decision-making, and action are not dissociated processes.

A third key trend is that digital technologies increasingly enter products as ID tags and IoT devices, whereby information systems and data gathering mechanisms are baked into the products themselves that are being reported upon. Accountants have traditionally collected data about processes and products using information systems developed to capture data and convert these into useful information. They now need to focus on unravelling new insights from products that are themselves also information systems. Furthermore, it is not just a matter of products and information systems being intertwined but contexts where digital technologies structured on blockchain applications that record transactions in a manner that grounds the assurance of transactional legitimacy. In such contexts, trust becomes integrated as part of information content, placing the traditional role of audits under question.

Accounting is without doubt becoming a whole lot more complex and digitalization is at the heart of the ongoing disruption. In altering what information sound decision making must rest on, digital technologies are crowding out conventional business philosophies, models, and thinking. Their capacity to self-transform further displaces the traditional role of accounting, premised on a linear sequence of data collection followed by conversion into financial information that accountants produce in a digestible form, allowing humans to base their actions upon. Business history knows no such pace or scale of change and there exists no technological U-turn to this transformation. Executives cannot afford their accounting information to stand still, as digitalization progresses without relent.

What is of greatest relevance to business today is acknowledging the ramifications of going digital. It has been said that we have entered a new industrial revolution. Two hundred and fifty years have passed since mechanization emerged in industrial activities. A hundred years ago, we saw electrification and mass production taking shape, and electronics and automation started a third revolution around sixty years ago. The ongoing "fourth" industrial revolution has ushered in a convergence of our biological, physical, and virtual worlds. But, of note, is that during the first three revolutions, few people were cognizant of the magnitude of changes to come. Today, however, we are all too aware of the massive and unprecedented shifts that are ongoing in the way we produce, consume, move, communicate, and experience things. While the industrial changes surfacing during the first three industrial revolutions could perhaps not be foreseen by people, no one today can stand in denial of the all too evident and fast paced changes this fourth one has unleashed. No excuse can be had for financial information to not react, or indeed proact, in this climate of extreme change for business.

3. Unknowns in corporate strategy execution

Executives face an increasing array of unknowns. In the past, decisionmakers pursuing major alterations in their operations fully appreciated what they were seeking. It could have been a novel marketing campaign to rebrand a product, implementing flexible work practices to make production more pliable, possibly facilitating customer service via new support systems, perhaps making capital investments to increase productivity and scope, or, possibly, to seek a merger for acquiring new knowledge and mobilize wider revenue streams. Decisionmakers have had the luxury of reasoning and purposefulness in investments they made in pursuit of specific business outcomes. Going digital, by contrast, implies operating within a limited vision of what the end state of executive action might be. There are no mechanisms available that can lend assurances that a specific digital transformation investment will culminate in specific enduring outcomes. Indeed, that is the point of digital: pursuits leading to outcomes that are more dispersed than the ones that were initially advanced, and which may even be unintended, can lead to strategic moves that are not only viable but extremely apt and which trigger the next move. To a degree, digitalization enables digitalization that sets off new trajectories, which alter processes, all the while enabling further action that is far from being anticipated at the outset. Speed of action has always been of relevance in business, but going digital powers fast iterative changes that executives may not fully fathom and, which, therefore, remain outside what competitors can envision. Digital paths of action can take enterprises to different destinations, where reaction and pro-action are essential to effectively and continually address the status quo, whose half-life becomes more transient.

We turn now to how accounting must be re-thought.

4. What needs to change

How data can assist managers is changing. Financial information systems capture data about economic transactions that have occurred, converting it into information that is condensed, formatted, and made intelligible to decisionmakers. Digital data is much broader than economic data points. We can think of conventional internal accounting reports as being intended for executives through the collection of economic transactions-based data and related quantitative and qualitative metrics to feed into their decision making (Figure 1).

Accountants within enterprises that are digitally transforming must have greater engagement in assessing cloud infrastructure benefits, as well as mobilizing process changes and containing their costs, assessing cybersecurity constraints, and exploring pathways to more flexibility, automation, and scalability. Their role is becoming growingly complex in relation to dealing with more varied data sources and data volume and becoming more cross-functional with decisions having to be made on enhanced rules-based automation across organizational activities.

Digital transformation offers a much wider realm of insights for executives to benefit from and accountants need to become adept in determining what maximizes the insights they can advance for the enterprise. Data that is external to the domain of economic transactions can enable the identification of trends that foretell economic exchanges and provide intelligence on novel possibilities for action and opportunities for growth. Executive action based on such data creates more such data that can be acted upon. Technologies such as robotic process automation (RPAs) are becoming increasingly sophisticated, with machines undertaking devolved action and continuously learning from those actions and refining information, yielding insights for assessment that executives can in turn harness (Figure 2). Financial information systems need to react to the possibilities that data creation that is non-financial that has implications for financial transactions. Beyond that, machine-based actions culminate in decisions that executives can undertake based on the growth of structured, financial, and non-financial, as well as unstructured, data (Figure 3).

With machine learning, machines can assist in taking and operationalizing certain actions reliant on data inputs and subsequently to refine these actions based on data outputs from prior actions. Concurrently, humans can focus on using information to guide actions they do not delegate to machines. Actions drawing on data insights from machine executions can become further integrated with human action related data outputs, producing a breadth of data that circularly underpins yet more decisions and actions. Ultimately, data growth enables decision making that fosters more data that enables greater and faster learning, which in turn unleashes enterprise action that unleashes more data (Figure 4). That looping of data-learning-action is among the most powerful force of digital, if effectively channeled into intelligent decisions made, whether by humans or machines. In contexts where artificial intelligence (AI) agents find increased presence, data becomes a principal basis for ML systematized learning. Consequent action based on that learning unleashes more data faster, enforcing even greater and faster learning. This gives form to a virtuous loop with extreme data analysis, accelerating learning, and extensive action powering the looping. It is this in AI intense environments that enables extremes of growth, potentially leaving competitors in rear view. As firms implement AI systems, the interfacing of data, learning, and action makes accounting more complex than it has ever been, while also enabling it to become more strategically relevant for organizational growth and performance.

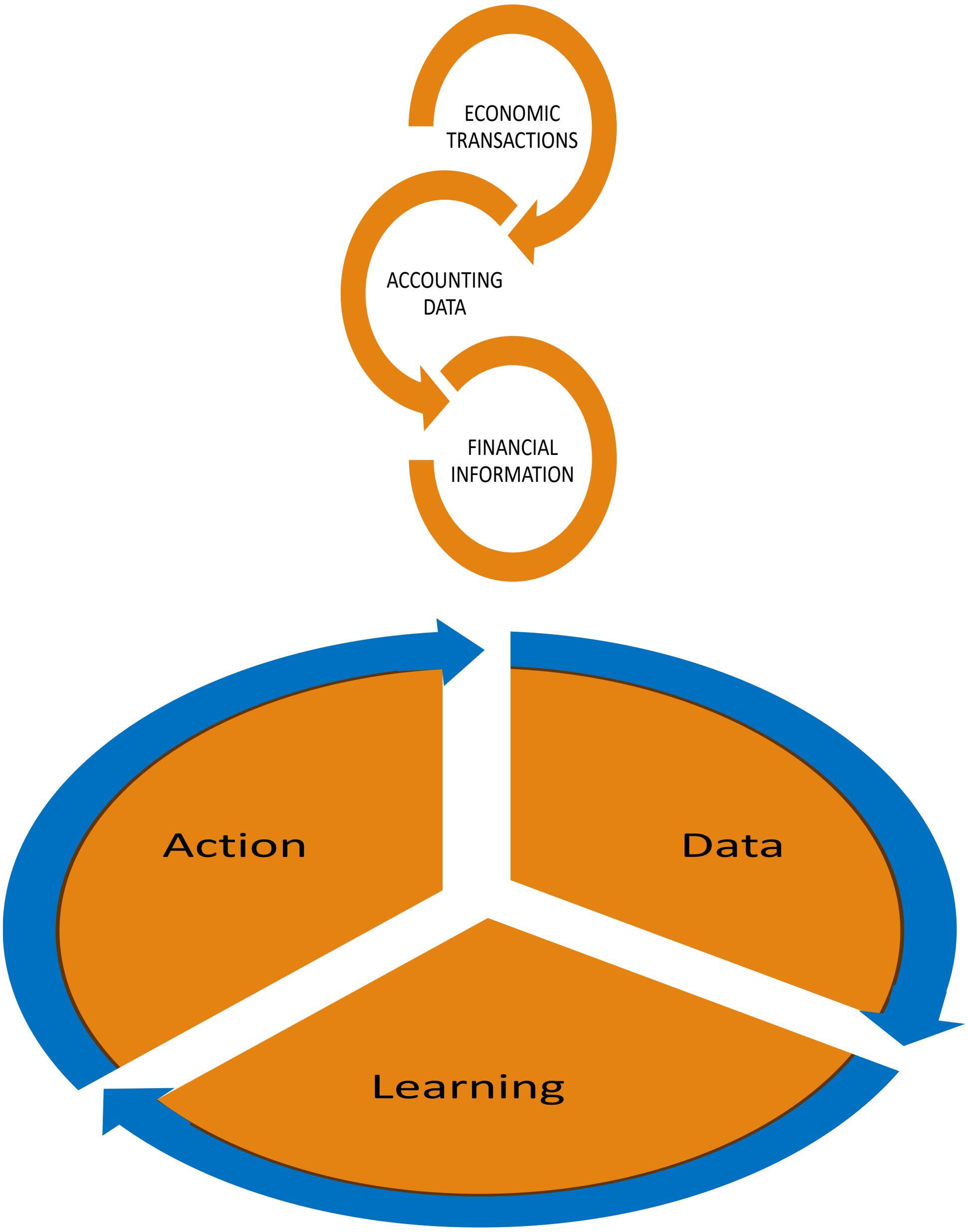
Conventionally, strategy is regarded by some executives as emerging over time, as intentions collide within their firms. But for most, strategy tends to be formulated to define and guide desired operations, taking account of wider business and environmental factors. As such, strategic information points executives to what should underpin their decisions in pursuit of targeted business activities, with such decisions having to take account of marketing advances to be made, investment opportunities to be identified, branding efforts to be made, and so on. And, of course, operations should essentially tally with, and support, strategic intentions. Within digitally transforming organizations, it may well be that the past should not determine strategy.

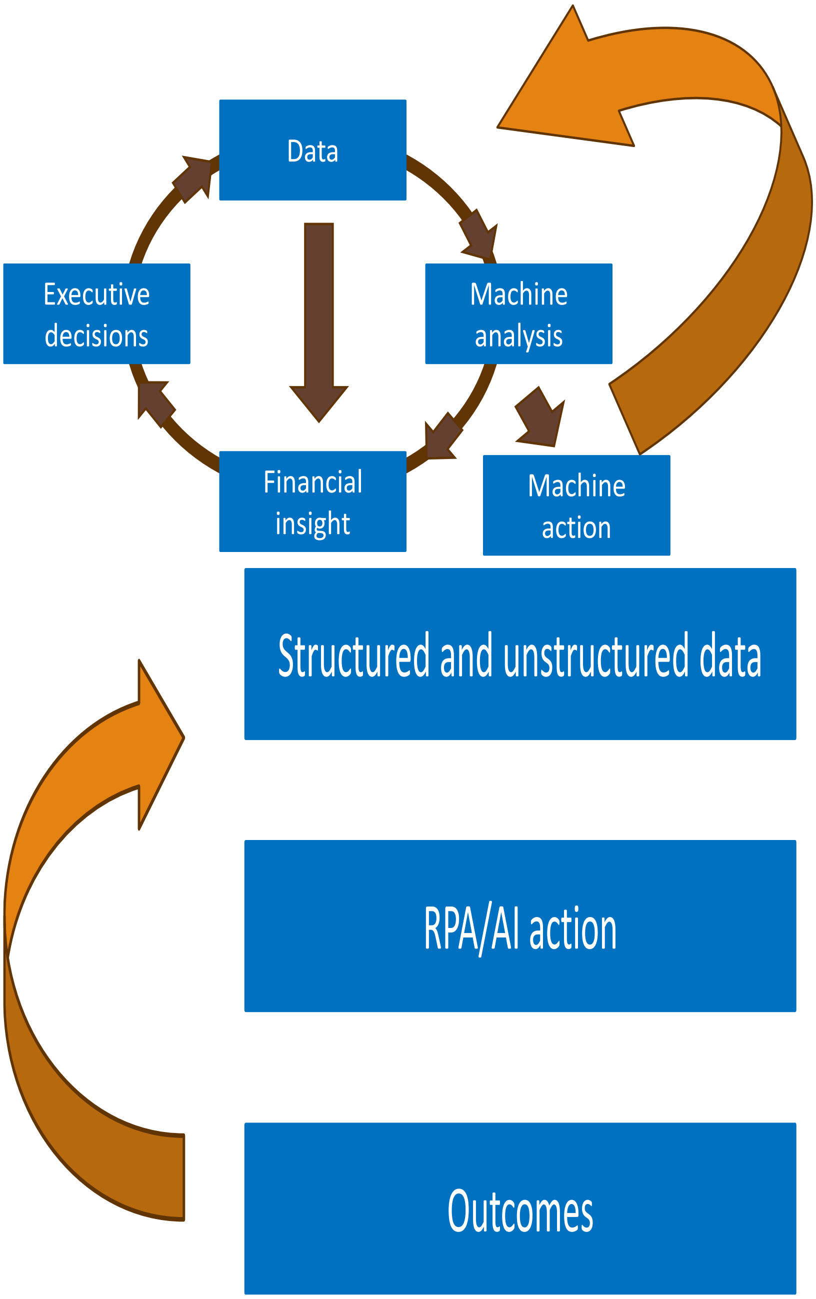
Just as this article argues for accounting information to be predictive and focused on the present to point to what is to follow financially, strategic action can no longer be defined based on what has happened. But a further point must be made, which is that it is now inappropriate to see strategic intent as presuming a long-term time period, so the enterprise paves its protracted directional purpose. In rethinking alternative courses of action on a continuous basis, executives cannot adhere to a pre-digital conception of strategy. In fact, strategy and operations are intertwined in digital contexts, so much so that strategic action that is now of essence is one that recognizes the process of data capture, decision making, and action having become "strat-perational" (Figure 5). Strategy has moved to the "here and now", directing organizations to consider whether operations need refining and also whether strategic intents need redefining in an interrelated realm. This implies that accountants should no longer lock-in expired rationales into digital contexts, because the information potential of operations intermeshed with strategic aims goes much beyond treating the two as separates, with long term strategic intent guiding day-to-day operations.

Management thinkers have long held that enterprise controls should keep the strategic apart from the operational. The idea of short-term actions being informationally divorced from long-term aims is one to be questioned when going digital. In digital, the short-term and the long-term enjoy a close coupling that has not been present in conventional industrial businesses. Within digitally transforming contexts, a decision to pivot the firm in a certain direction will create data to be analyzed in real time. Aggregate data produce information that enters decisions concerning the next move or desired action. Under digital, broad business pursuits meet with continuous realignment. Operations can produce sufficient information to suggest the enterprise should steer toward entirely novel areas of activity or a new direction. The broad business hypothesis should be open to being questioned and altered in the face of information from operational activities. Small sets of data cannot be maintained as islands distanced from pointing out alternate organizational agendas. Managing in real time and quantifying short term returns must naturally preserve relevance, while a recognition must be had also that longer term changes are interdependent, with ground level operational processes and business direction being flexible to pointers that are operational. What some view as an "agile business" in digitalizing enterprises, is in fact a rejection of demarcating operational activities as entirely separate from strategic moves. Digital transformation means the two are coupled with differentiation being an obstacle to sound management. This is not to suggest that thinking strategically no longer has a place, but that distancing such thinking from the value of real time action and operational on-goings is to deny the production of insights that can be important to survival and growth.

5. Putting numbers in place

Digitalization is bringing a multitude of changes and challenges that are impacting what executives need from their corporate finance function. The accountant must comprehend the significance of shifts evolving at the interface of digitalization, financial information, and enterprise action. Clearly, as organizations invest in digital technologies, hordes of new data types emerge, not all of which is financial in a conventional sense. This article has discussed the implications. However, what is important to bear in mind is not to overestimate the role of quantification in business decision-making simply because digitalization is taking place. Data-driven management action certainly is desirable, though the implication cannot be that numbers should trump qualitative assessments. Going digital cannot lead to the notion that numbers-based analysis should monopolize enterprise decision making. In the face of information growth, senior executives rely on more, rather than less, qualitative input when businesses digitalize. The movement towards digitalization certainly increases the possibilities for numerical analyses, but this signifies more, rather than less, qualitative insight. Understanding what going digital means for their enterprise should be a priority for organizational leaders and this will involve unlearning at least some conventional managerial precepts that have been said to be fundamental, including the idea that managing by the numbers should be prioritized. Financially relevant information should not preclude that which is most capable of generating insights, and, as it turns out, much of that cannot be quantified.

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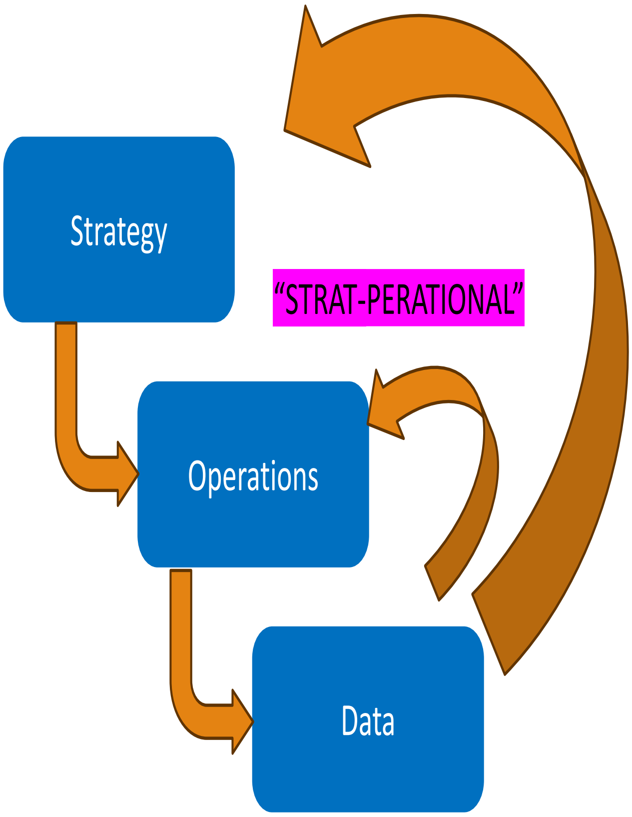

Figure 4: Data enables learning which guides action:

Figure 5: When strategy is truly coupled with operations