Management accounting goes digital: Will the move make it wiser?

Paolo Quattrone

The University of Edinburgh, The University of Edinburgh Business School, UK

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ABSTRACT

This essay places current fascinations with the digital revolution into the historical and cultural contexts that have intertwined with the evolution of management accounting as a practice involved in the production of knowledge for decision-making. In outlining similarities and differences in the production of management accounting information from aural to digital cultures, it argues that while the effects of the digital revolution on management accounting and decision-making are still unclear, these effects surely (and hopefully) will not deliver the dream of perfect information and rational decision-making as one may be lead to believe by the growth of data-driven organizations and societies. Becoming aware of this impossibility is the first step for bringing wisdom back into decision-making processes and making management accounting gaining central stage again in the organizational arena.

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Words are important

"Chi parla male, pensa male e vive male. [...] Le parole sono importanti" (Palombella Rossa, by Nanni Moretti, 1989)1

Words have a history (Long, 2001). Accounting words have a long history too. For example, not many accountants know that the word ‘inventory’ comes from Latin inventio (Goody, 1996); that is, the first canon of rhetoric—the process of developing and refining one’s arguments. This link already reveals, and points to, the persuasive power of accounting and its narrative nature (Carruthers and Espeland, 1991), which convinces users, for example, that a given strategic objective may be right. Equally, this narrative nature helps users of accounting to imagine visions and strategies and to construct different courses of action among which one can then choose, making users enthused and engaged by this imaginative power (Busco and Quattrone, 2015): accounting cannot be an ‘answer machine’ (Burchell et al., 1980) that helps decisions to be made simply by calculation but it can prepare the ground for communicative actions which will lead to decisions to happen and be managed.

Similarly, not many know that the word ‘auditing’ comes from audire—to listen—showing a remnant of an aural culture that trusted the sense of sound more than that of sight. It was the sixteenth century Benedictine accountant Angelo Pietra who suggested that, in checking the accuracy of accounting records, one would benefit from “having a practical companion, who could help reading and checking the entries” (1586, p. 19; my translation), thus revealing that when auditing, greater trust was to be placed on hearing figures of speech rather than seeing numbers in writing.2 Auditing is indeed claimed to be originally made aurally (Clanchy, 1979).

1 “Those who speak badly, think badly and live badly. […] Words are important.” (All translations from Italian are mine.)

2 Auditing is indeed claimed to be originally made aurally (Clanchy, 1979).

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comes from Latin *ratio*, and that *ratio* meant also ‘account’ and not ‘logic’ as one may suppose. But *ratio* is not just an account. It is a specific kind of account. In fact, *ratio* also meant ‘proportion’, as Pacioli (1494) reminded us from the very beginning of his work when discussing bookkeeping in a treatise about *proporionet et proportionalité*: a rational account needs also to be a *proporionate* account; i.e., an account that establishes a proportion and seeks to balance opposites (as opposed to being about ‘maximization’). Therefore an account always implies a balancing act that establishes proportionate relationships between *soci* (i.e., companions) in societies (Puyou and Quattrone, 2014), or, as Latour would say, in ‘socie-ties’ (2005), where links among these companions are managed by powerful and pragmatic institutions such as accounting.

Accounting history, and especially the Italian accounting history that I know better, is full of examples where accounting has been used to establish this communication, a dialogue to debate what is right rather than to benchmark it to a given notion of rational social behavior. From the Jesuit way of managing their cash account (Quattrone, 2015a) to the reporting format of the income statement in Italian financial reports (Dagnino and Quattrone, 2006), passing through the planning and budgeting techniques developed in a large Italian state-owned enterprise (Quattrone et al., 2014), accounting (and management accounting even more so) has always been used to interrogate notions of rationality and of what counts as right, rather than assuming rationality as a given, in an effort to avoid that what was technically rational and correct equated with being morally just. In other words, and as illustrated in Fig. 1, this historical account suggests that decision makers exercised judgment all the way along the link that connects knowledge to action: from the beginning of the gaining and construction of knowledge to the execution of the decision through individual and social actions (the red oblique line in the figure).

Knowledge was not a given to be communicated untouched but it was a process of mediation eventually leading to a pragmatic ‘balanced’ decision or compromise.

This is also why accounting inscriptions are called ‘records’ (from Latin *recordor*—to remember) because they are signs that remind us that a communicative process has eventually lead to a decision that can finally be recorded. What is important in this recording process is not the accounting number, the bottom line, but how one got there. As Bob Scapens reminded us while working together on a CIMA sponsored project, one of the interviewees (a financial controller) stated that budgets are important for the process that they require for their construction, not for the outcomes that they generate. Or to quote Merchant and Van der Stede (2012), “for plans and budgets to serve a useful role, the issue is not whether to prepare a plan or budget, but rather how to do it.” It is during this process that one really gets to know the organization and colleagues and their problems. The end result of that process, i.e., the budgeted profit, will already be obsolete by the time the budgeting process is complete. It is through discussing budgeting (hearing and discussing figures, visions of the future, as the early modern Benedictine accountant Pietra would remind us) and not by looking at budgets (i.e., looking at objective accounting numbers) that the knowledge is generated.

This is not a trivial reflection if one considers that a move towards a digital culture is said to revolutionize decision-making processes by altering the way in which knowledge is gained and actions are undertaken, with technologies and algorithms supplementing humans in the production and certification of knowledge, and in the making of decisions, as is already happening, for instance, in high frequency trading (MacKenzie, 2014).

How the relationship between knowledge and action has changed when moving from aural to digital cultures is what I would like to briefly reflect upon in the remainder of this essay. As the quote by the Italian film director Moretti that opens this section reminds us, words not only have a history: *words are important*. The same applies to figures and numbers: they have to be listened, discussed and understood because numbers, as much as facts, do not speak for themselves. The same applies, I would argue, to digits. Those who assume that figures, numbers and digits convey immutable truths, use them badly, think badly, and act badly.

**Magic words**


I have illustrated elsewhere (Quattrone, 2009) how the development of accounting has been historically linked to humanist culture and more specifically to rhetoric, conceived of as a method of knowledge classification and invention and not merely as a technique of persuasion. These were the same techniques utilized in religious practices to question individual morality and collective social order (Quattrone, 2015a). When such techniques travelled into other spaces, thus constructing new fields of knowledge, from science (Galison, 1997) to accounting (Quattrone, 2009), recording slightly changed its function: no longer an instrument to question the morality of conduct but one to provide information and skills (Grafton and Jardine, 1986). Subjective and relative figures and images became objective numbers and facts, ready to be stored and objectified in visual inscriptions then accumulated in written books and centers of calculations (Robson, 1992).

The diffusion of Enterprise Resource Planning (ERP) systems made this objective feature of accounting numbers even more pervasive and visible, with a formal separation between supposedly powerful organizational centers and peripheries. However, access to a larger amount of data reconfigurable at will also incidentally allowed multiple loci of controls and therefore the diffusion of power (see, e.g., Quattrone and Hopper, 2001, 2005).

The inscription of accounting numbers on physical and virtual ledgers makes accounting numbers travel easily and become immutable mobiles that make action—at-a-distance a possibility (Latour, 1987), where the production and consumption of accounting numbers is now separated in siloed functions: on one side, the finance function, which produces mountains of data more for compliance than for management purposes (Power, 1997, 2007); on the other, the management and strategic functions, which consume data without a close scrutiny of their quality. This is what we see in Fig. 2, where numbers are used as mere inputs to decision-making processes with the exercising of judgment now beginning at the point when data have already been packaged and made

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3 The reader will forgive me for yet another self-reference to Quattrone, 2016, forthcoming, where I expand these points.

4 This is also related to Weick’s (1979) notion of ‘enaction’—i.e., the connection of knowledge with action.

5 “The accounts are in order, Excellency”. These were the magic words.”

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available for consumption. Data are now ‘given’ to decision makers who are formally and substantially excluded from their manufacture. Decisions happen only after numbers have been recorded and management reports are often tabled rather than discussed.

We nowadays consume accounting figures (Graham, 2008) as we buy groceries in supermarkets, without knowing how the food has been processed, technically alienated from the manufacturing process, with labels there to reassure us about the ingredients but nothing about whether these are the right nutrients for us. The same applies to financial and management accounting numbers with standardized information, too costly to be customized, generating standard charts of accounts formalized in XBRL codes, ready to be consumed but not always questioned and debated. Technological developments make users believe that they can interrogate accounting system and get answers out of it (Burchell et al., 1980), but perhaps that is rather an illusion of control.

As the quote opening this section suggests, accounting information is there to reassure us that everything is “in order”: accounting numbers have become magic words that close conversations about intrinsically doubtful and unquestioned qualities rather than fostering conversations instilling doubt in the user. Accounting numbers are no longer there to be spoken, listened, and debated in communicative acts, but to be consumed as inputs to decision making.

Magic digits

Feeling unknown and you’re all alone Flesh and bone, by the telephone Lift up the receiver, I’ll make you a believer. (Depeche Mode, Personal Jesus, 1989)

The world of practice is already embracing the digital revolution with information technology firms using large amounts of data not only to profile customers but also to predict their behavior and to make decisions. This is the case, for instance, with analysis of large amounts of communication flows to understand the ‘mood’ of organizations. One example is the use of Facebook posts to explain investors behavior (Danbolt et al., 2015).

We also know that accounting, management accounting, and finance are ‘performative’: they are engines and not cameras of financial markets (MacKenzie, 2006), thus defining how markets work regardless of whether financial models provide accurate representations. Algorithms and not humans now match supply and demand in various industries such as transport, retail (the paradigmatic examples being Uber and Amazon; see also Davis, 2013) and finance, where instant trading is managed exclusively by mathematical algorithms (MacKenzie, 2014) in realities that are hyper-real (Macintosh et al., 2000).

In this context of ‘big data’ and spurious correlations, the appeal to the visual power of numbers as digits is increasing (Davison, 2015) with visualizations that become more and more convincing augmenting the already magic persuasive power of accounting numbers, with predictive models now making decisions and thus limiting the space for judgment to the very last, and short, part of the relationship between knowledge and action (see Fig. 3).

I suspect that marketing experts must be very well aware of this human tendency for a desire for certainty if, in choosing their company name, one of the largest information technology compa-

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Fig. 3. Digital accounting: knowledge, action and the exercise of judgment.

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6 For a humorous list that is useful though to reflect on the power of graphics and charts in making people believe in science, see www.tylervigen.com/spurious-correlations.

7 “Everybody there to think that truth is the right thing. Instead it is the end of the world.”

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as accruals, opened his manual by stating that accounting is a pragmatic science, it does not deal with truth, a matter reserved for theologians to discuss: he was just an accountant.

There is much wisdom in this caution. As most of the research in Management Accounting Research has shown since the journal was established 25 years ago, decision-making does not deal only with ‘data’ to be used neutrally in decision-making. Politics, epistemological limitations, biases and the like all intertwine with figures, numbers, and digits. As the etymology of the word ‘data’ reveals (from Latin datum), data are not only ‘given’ but also ‘attributed’ by those who produce and consume accounting data: this attribution implies a lot of politics, pressures, egos, and other factors that inevitably move us away from rational decisions. Yet, in the digital era, this attribution will possibly become more complex with shifting loci of power and control. While, on the one hand, the centralization of data in powerful databases ready to be mined by automated searches will increase the power of those controlling access to such databases; on the other, the knowledge-action continuum will very likely become a constellation as it was already the case with the ERP explosion, where access to a larger amount of data reconfigurable at will allowed multiple loci of controls and therefore the diffusion of power, reminding us that the world of practice always escapes totalitarian forms of control (De Certeau, 1984).

It seems therefore that the digital revolution will prove fruitful if rather than simply increasing divisions between the controlled and the controllers, it will also favor greater dialogue and debate about the attribution of meaning in constellations of action-nets (Czarniawska, 2004) in order not to make rational choices (an epistemologically impossible dream) but reasonable ones. Flori (1638) was already cautioning us that while rational decision-making was impossible, reasonable decision-making was not only possible but it was the primary role of double entry bookkeeping. We seem to have forgotten this message: reasonable not rational choice is what we are after thanks to accounting calculations that create platforms of mediation and maieutic machines used to question and imagine what we cannot know rather than reassuring us of what can be measured (Busco and Quattrone, 2015; Quattrone, 2015b). Let’s use representations to discuss what cannot be represented, be these representations provided by aural figures, written numbers or silicon digits.

We seem to have forgotten that accounting, and even more management accounting (which was more or less all the accounting early modern accountants knew) is about establishing and continuing a dialogue, to keep societies united for them to generate marvels as big as the Renaissance (Padgett and McLean, 2011). The aim of accounting was not to understand who made more profit than another, to establish who was right and wrong in this dialogue. That was almost a childish attitude. It would have meant and implied the end of a conversation by closing the dialogue with a ‘right’ on one side and ‘wrong’ on the other, forgetting that this symmetrical distinction of accounting was used to explore the middle, to seek balance. Charging accounting with the aim of searching for truth would have meant the end of accounting and the death of the accountant, the end of the society and the end of truth. But the interrogation of the mystery of what was worth was the aim of economics, almost a religious practice that would lose grace if that worth was to be measured in objective numbers rather than discussed thanks to relativist figures. Similarly, assuming that the aim of accounting is to establish truth would make this aim accounting’s end, the end of a continuous process of ordering, the end of ‘socie-ties’.

As Paolo Sorrentino reminded us in Il divo: “Everybody there to think that truth is the right thing. Instead it is the end of the world”. Accountants used to know it too but we all tend to forget it. Not truth, a matter for endless theological debates, but a pragmatic communication that is aimed at interrogating the mystery of what cannot be known thanks to the numbers that accounting produces (Quattrone, forthcoming) is the core of the accounting craft. If we lose that core, believing that representations can be accurate and truthful, then not only we lose grace but the move to the digital will make accountants lose in favor of informatics. If we retain it, and make users understand that this ability to deal with uncertainties has been the power of accounting for centuries, then accounting will keep flourishing as it has for hundreds of years.

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References
