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Researching information technology and management accounting change – some researchers’ thoughts

In 2012, some colleagues and I formed a research group called the Irish Management Accounting Research Network (IMARN). The aim of this group of predominantly younger researcher was to keep in contact and collaborate on research issues on management accounting in the broadest understanding of the discipline.

While writing a paper during summer of 2012, I went back to my PhD for some references. I noticed - for the first time - that many of the references I was looking at (on ERP systems and management accounting change) were two to three years after the Y2k issue - surely a research practice gap I thought. Sometime later, the call for papers for the ENROAC 2013 conference came to my inbox. I noticed the theme for the practitioner day was “ICT as a driver for organizational and accounting change”. My earlier paper came back to mind, and I thought, am I alone in thinking how we research technology and how it affects management accounting needs to change - or at least we need to change how we disseminate our work. I decided to post something on the IMARN blog (imarn.org) with a view to attracting some comments. The result of this posting is below. I did set some basic rules on length and content and have made some very minor edits. I wrote the first comment to get things going. The comments obtained in a short period of time from a small community do bring up some very interesting points, which I try to summarise afterwards.

Martin Quinn, 25 February 2013.

Initial posting

Martin Quinn, Dublin City University Business School.

In 2008, Ahrens et al published a polyphonic debate on the future of interpretive research. In a similar vein, I share some thoughts here which I hope will yield some comment. The thoughts are based on a combination of my experience and my own research on management accounting change and technology.

I like to study change in management accounting, and one of my favourite areas is the effect of technology on the work of management accountants, i.e., their roles and the tasks they actually do. I also am a big fan of interpretive research, as this allows me to really get to the bottom of understanding change. Studying routines in management accounting is my mainstay nowadays, often presenting many a theoretical challenge. Combining my interest in change and technology is great. However, some questions and

thoughts have come to mind in recent times, which I will briefly recount here. In a commentary to a special issue of *Qualitative Research in Accounting and Management* Scapens (2012) noted how, as researchers, we may need to consider other ways to disseminate our research. He is not suggesting our research be solely aimed at practitioners, nor can we abandon our normal research outlets such as academic journals and conferences. However, Scapens' (2012) comments made me think about how we research and disseminate our research on how technology affects management accounting.

My thoughts reflect the rapid pace of technological change compared to the 'speed' of our traditional research dissemination methods. We all probably accept that we as researchers are behind practice to a degree – for example, we might find topics of interest to research based on material from the practitioner magazines. As a slightly younger academic, I found this very apparent during my doctoral studies when I noticed that many articles on ERP were published within 2-3 years of the Y2K issue – that is, a few years after the Y2K hype had hit the (practitioner) media and many firms replaced their systems with ERP software. The Y2K issue is more than a decade ago, and the pace of technological change since then has been (and will continue to be) astounding. If we reflect on the time when Y2K was an issue, the technology we now take for granted from companies like Apple and Google did not exist yet.

So what does this mean for researchers like myself that cross the management accounting and technology divide? Put simply, in my view technology moves so fast that we need another way to disseminate our research which is faster and might stimulate interesting debate and arguments before the technology changes and the research becomes dated. How do we do this? This I hope others will comment on. My initial thoughts are less theory and more facts in our research. Hambrick (2007) recounts how facts eventually build theory, and if we avoid reporting facts until we have theories, then we may be losing out on stimulating debates or miss fruitful avenues of research. Of course there is a place for theory bound academic journals, and for practitioner journals too, but is there middle ground where we can disseminate interesting facts about technology and management accounting change? Scapens (2012) seems to hint there is, and this series of blog comments might one such place. As we disclose and share facts, we might actually keep up with the pace of technological change and how it affects management accounting, while at the same time, engage in very fruitful research. I'll finish with a fact I recently noted while doing some survey research with accountants. A substantial number of respondents (40%) noted that managers use tablets and smartphones to obtain information for decision-making. Surely this fact raises many interesting research questions?

Comments

Gerhard Kristandl, University of Greenwich, United Kingdom.

The management accountant as cloud herder

Technological change has impacted and shaped society for ages – from the first use of a tool to the first abacus up to steam power and the computer. That is nothing new, and I have yet to find the person to contest it.

Hand in hand with technological change came the craving to codify information generated – arguably, the quicker the technological change, the more information generated. That means information about EVERYTHING. One of the main drivers was undoubtedly IT and computer technology, but only since the world wide web became fast and affordable to the masses (and businesses), the flow of newly generated information and data is mind-blowing. According to Nick Bontis from McMaster University in Hamilton, Canada, everything we know and wrote down on a stone, papyrus or in a Word document – or as he calls it “cumulative codified information base” doubled every 30 years when evaluated in the 1930s, every 7 years in the 1970s, in the future we can expect that everything we know and wrote down doubles every 11 hours (Bontis, 2011). Even from our own experience as part of the world wide web, email and social media we can tell that we have no way of keeping up even with everything that lies in the sub-set of “interesting to me”.

Now it is safe to say that businesses have always produced massive amounts of data, from ledgers in the 15th century to customer data used and employed by the likes of Google, Amazon or Facebook. Data from transactions, patterns in customer behaviour, market reactions, costs and prices – it goes on and on. The assumption is thus not far-fetched that businesses as part of our culture and society are at least not slower in codifying new information. To managers, that information is key to decisions they need to make on various bases, from daily, short-term to strategic, long-term ones. In order to do this – and so we learn and teach and assume – the management accountant is the role that is responsible in order to gather, process and provide this decision-relevant information to the managers. Looking in any textbook, however modern, shows that this is still the basic assumption what the management accountant is and does.

However, it has been suggested that “management accounting” as a label is redundant (Otley, 2008), and that the management accountant as a role (or management accounting as a set of tasks) is moving away from counting beans and crunching numbers to an in-house consultant on operational and strategic topics and decision-making, even a business partner (Weber, 2011). In other words, they should help make sense of the

information and advise the decisions that based on our textbook-knowledge the managers should take based on what management accountants provide them. I would claim that based on this, the management accountant is assumed to take a “grey eminence” position as a powerful advisor to the managers.

Now based on our own survey, as Martin stated earlier, “a substantial number of respondents (40%) noted that managers use tablets and smartphones to obtain information for decision-making”. That means that managers (with or without knowledge of the management accountant) are able to make quicker decisions by obtaining decision-relevant information with a tap or a swipe, using anytime-anywhere technology like tablets and smartphones, powered by wifi and broadband. The easy access to cloud technology and the generation of so-called “big data” thus enables managers to bypass the management accountant. If their role was not to take another dent, management accountants will need to re-define themselves as quickly as the technological cycles go, on a permanent basis. They will need to be more than “just” business partners – they need to be IT-savvy knowledge workers (Bontis, 2011), experts in handling of big data, and “cloud herders”, up-to-date with technological developments that may impact how management decisions can be improved and supported. Management accounting will need to accept the responsibility to develop the IT procedures so the technology is able to provide information at a finger’s tap. This would determine a strong impact on the discipline of management accounting itself – the toolbox of instruments like budgeting, break-even or variance analysis will not only need an overhaul but also an extension. Even practice will have difficulties keeping up with all these requirements due to the sheer pace of technological change and “information bombardment” that needs to be turned into corporate gold.

And where is academic research in all of this, with their overly long publishing cycles, cumbersome dissemination procedures and penchant for “theory first, practice later”? The number of publications in accounting and finance journals that deal with the aforementioned technologies (and their impact) is low. Closing the research – practice gap anyone? I might have a theory for it.

Orla Feeney, Dublin City University Business School.

The posts to date, to me, highlight two interesting issues. Firstly, the changing role of management accounting- nothing new there and it is an issue that is as fascinating as ever; Secondly, the theory practise gap- nothing new there either and it is an issue that is as frustrating as ever!

Starting with the latter, the gap between theory and practice within the discipline of management accounting appears to be getting wider. Today’s cloud computing is

yesterday's Y2K compliance and yesteryear's emergence of the microprocessor and Martin's observation with regard to the lag between these major technological stepping stones and the publication of corresponding academic research makes for stark reading. Baldvinsdottir, Mitchell and Norreklit (2010) view empirical research in management accounting on a continuum. At one end of the continuum lies the type of research which is intended to contribute directly to practice. Described as 'interventionist research' it offers potential for prescription but it does not enjoy a prestigious position in the academic community. At the other end of the continuum is academic research, that is, research which explores management accounting practice as it is found in the real world. In this context, the researcher is "not influenced by the pressures of justifying the findings in terms of immediate practical relevance" (p. 81). This type of academic research in management accounting has become increasingly interpretative in nature, drawing on social theories and qualitative methodologies in order to understand why people use management accounting in the way that they do. The management accounting research agenda is now dominated by explorations of the sociological implications of management accounting such as how management accounting is affected by its institutional surroundings or how management accounting changes in response to its contextual environment. To me there is a certain irony in the fact that this increased recognition of management accounting as a social phenomenon has served to enhance the discipline's academic credibility, yet it brings us no closer to actually contributing to practice in any meaningful way. Will the pace of technological change today finally provide the catalyst for a new research outlet which has more practical relevance? Will that same technology provide this outlet (this is my first time posting to a blog after all, thanks Martin!) Something quite radical needs to happen because as things currently stand academic credibility and practical contribution appear destined to remain entirely mutually exclusive.

As regards the role of management accounting, I would not be alone in my view that technology continues to be the single biggest issue driving change in the role of the management accountant. In 2001, Bernard Pierce wrote about management accounting without accountants suggesting that ERP systems and spreadsheet software meant that information had become so widely dispersed that managers had ready access to information previously provided by the management accountant. This resulted in managers preparing their own budgets, updating their own forecasts, even assessing their own performance. Gerhard and Martin's observation regarding the number of managers accessing information on tablets and smart-phones suggests that we have moved on to another generation of technology influencing management accounting. Clearly the management accountant is under as much pressure as ever to move on from his traditional role of number-crunching bean-counter to a commercially astute business advisor, but moreover, he or she must find a new relevance in this environment where accounting information is no longer a precious commodity and the accountant is no

longer the gatekeeper of financial knowledge. This relevance surely lies in supporting this more widespread availability of accounting information, ensuring it retains its quality and reliability and ensuring managers are equipped with the appropriate knowledge to access and use it themselves. Ironically, I believe a loosening of the reins over accounting information will serve to enhance the management accountant's relevance in today's i-environment!

Ahmed Alrajeh, School of Business, University of Dundee

Is management accounting change driven by technology? This is the question I started with for my PhD in 2009. Early on I found that Scapens and Jazayeri (2003) pointed out that Enterprise Resource Planning (ERP) systems were not a driver of change. Moreover, some other researchers for example Busco, Quattrone and Riccaboni (2006) indicated that for understanding the issue of change, there is not necessarily a need to reconceptualize change. However, there is a need to discover how to link these views to the non-linear change we witness in management accounting. Bridging different aspects of change is not an easy task. For example, Ribeiro and Scapens (2006, p. 107) indicate that “numerous institutional reasons interact and (often) enmesh with each other”. Also, they stress that it is a big challenge to understand the relations between different issues and reasons in institutional studies.

From my experience, I found that it is not important which research approach you are using either deductive or inductive. It depends in your research question. I agree that technology is developing quicker than our research can be published, and there is a need to keep up to speed with the developments of technology. In my PhD I use an abductive approach (Alrajeh, Fearfull and Monk, 2012) to investigate the implementation of ERP systems using case studies.

I suggest that we need to develop our research questions. It is the research question that pushes our understanding of the drivers of change in management accounting. Qualitative research that has a more flexible form of research design may be useful. This may help the researcher through the exploratory and explanatory research process, to develop the better research questions.

To conclude, I believe that qualitative research is still needed. But it is time consuming. Maybe one method of keeping track with the development of technology is by publishing our studies at early stages. As Alrajeh, Fearfull and Monk (2012) provided details of exploratory stage and explanatory stage and focused on the literature and case studies. If the exploratory stage is published, then it may lead other researchers to explore these issues in different countries, and not wait until the final draft or publication of the studies.

Garvan Whelan, School of Business, National College of Ireland

As regards the theory-practice divide, I think that there are two main contributory factors:

- A time lag as highlighted by Martin above; and
- A content relevance deficit.

The second factor is a function of the time lag insofar as the material presented in an academic journal has (as noted by Gerhard above) gone through “overly long publishing cycles”. Because of this time lag, an amount of redundancy is an inherent part of the academic research and publication process. To some extent this is desirable and necessary in order to allow for sufficient time for iterations of editorial feedback, consideration of alternative viewpoints and reflection on the implications of the findings before publication. However, the relevance deficit is also caused by the conventional approach to enquiry adopted by most academic researchers. The main problem here (as noted in previous comments) is, to use Gerhard’s words: “theory first, practice later”. I would like to investigate this issue further by critically examining some previous work on this topic and then to propose a way forward.

Orla has referred to a paper by Balvinsdottir et al. 2010 that notes how ‘academic research’ is at one (the top?) end of a continuum, with ‘practical research’ at the other (bottom?) end. Echoing this, Scapens (2012) remarks that “highly theorised” management accounting papers have been “published in the top international research journals”. So perhaps those of us that are concerned with promoting research of practical relevance are destined to be published at the bottom end of the research spectrum. Scapens continues by asking: “what do we do, or indeed what should practitioners do, now we have these highly theorised explanations of management accounting practice?” (ibid.). This a development of a viewpoint previously expressed by Scapens in 2006: “The challenge for management accounting researchers [...] is to explore the implications for management accounting practices and for management accounting practitioners of these recent theoretical advances.” (Scapens, 2006 p.8).

These remarks imply an approach that puts the cart before the horse. I think it is inappropriate to attempt to bring these theoretical explanations to practitioners. From my experience management accountants are well versed in many fields (including research methodology) but are primarily concerned with solving problems and dealing with relevant issues including those brought about by ICT. For this reason I think the first step in the management accounting (or any) research process should be to work with practitioners to understand the issues that concern managers and then conduct further research (including a literature review) to investigate and test what works or

doesn't work in various contexts i.e. in organisations of different sizes, location and operating in various sectors.

Scapens has called on academics and practitioners to “work together to provide practical solutions, while at the same time developing theoretical understandings” (2012 *ibid.*). However, I think it is inappropriate to label this approach as “interventionist”. Use of this word reminds me of a scenario where an individual with an alcohol addiction problem is ambushed by his well-meaning family and friends and is confronted with tales of how his/her inappropriate behaviour is having an adverse impact on their lives. Leaving aside reservations about the terminology used, it is fair to say that Scapens is advocating a collaborative approach to research. I think that this points us in the right direction and I propose Action Research (AR) as the way forward in our efforts to bridge the theory-practice gap. AR was pioneered by Kurt Lewin who once remarked that “there is nothing so practical as a good theory” (1951, p.169). Baskerville and Wood-Harper (researchers in the field of IT systems) explained that that AR “assists in practical problem-solving and expands scientific knowledge”, in tandem with improving the skills and knowledge base of the respective actors (1996, p.239). AR encourages practitioners to become involved in projects because its starting point is identifying issues and problems of concern to them. With its collaborative approach that seeks to improve the skills and knowledge base of all involved in the project, this approach motivates individuals and organisations to continue their support and commitment. AR can facilitate the exchange of information between the various actors and in this way can help to bridge the gap between theory and practice. It can provide insights into the work of management accountants as they deal with the challenges arising from the rapid developments in ICT. Maybe some of these findings will find their way in a timely manner into a ‘top’ academic journal via a polyphonic debate?

Ruth Mattimoe, Dublin City University Business School

Better Decision-making or Better Technology?

In almost every piece of research on the role of the accountant and the future of the finance function, “effective business partnering” is rated as the most important aspiration of this function. In a nutshell, this means transforming finance to be more efficient through a combination of new structures such as shared-service centres, ERP technologies, reengineering of processes as well as standardisation of systems etc, freeing up accountants to move into the business units to provide decision-support information (Gould and Fahy 2005, p. 27). Many companies use Business Intelligence (BI) systems, described by CIMA (2009, p.3) as the “technical architecture of systems that extract, assemble, store and access data to provide reports and analysis . . . for presentation on

users' desks as reports, analysis or displayed on screens as dashboards or scorecards. However, BI is broader than technology. It is about using the information available to a business to improve decision making . . . requiring leadership and cultural change”.

In principle, the use of technology has revolutionised the role of finance, but is this enough?. Companies now have a greater range and variety of data than ever before, owing as Cronin (2012, p. 29) says “to the growth of a ‘digital wake’ of data created by individuals and business processes”. More and more data will thus be captured and this carries a responsibility to analyse it more effectively and more quickly to make better decisions. Technology creates more and more data, but turning data into information and insights into action is how value is created. Finance transformation has meant a shift from its traditional structure of Accounting and Controlling to a service delivery model comprising Front, Middle and Back Office. In the Front Office, value should be created because the team is closely aligned to the operating business units and must have strong commercial acumen, good modelling skills and “the ability to translate data into everyday business language”(Cronin, 2012, p. 29).

The use of technology may have made accounting ‘faster’ but not necessarily ‘smarter’. This requires good decision-making, an understanding of complex business models that are changing to keep ahead of competitors and of course, the right people with the mix of business and analytical capabilities. In short, it means good analytics/business intelligence. Technology may help to produce lots of information very quickly, but the rate of change in business models is driving the need for deeper insights into operational performance, sometimes having to work towards a “fit- for- purpose solution in a greenfield situation” (Cronin, 2012, p. 26). Hatton (2011) discussing financial recruitment trends in “businesses who are realising the synergies between the IT and accountancy professions” (p. 16) mentions their need for chartered accountants with experience of for example: “project management, financial modelling, business intelligence, data warehousing, reporting and dashboard design”.

Davenport (2006, p. 99) compares the power of analytics to that of the ‘killer app’ which transformed technology from a supporting tool into a strategic weapon. Turning first to sport, he claims the secret weapon of Boston Red Sox “isn’t steroids, but stats” (p. 100), but then he gives some striking examples from the corporate world of where “virtuosity with data is part of the brand”. Analytics competitors go well beyond basic statistics of for example average revenue per employee, but make widespread use of predictive modelling to identify the customers with the most profit potential and the ones most likely to cancel their accounts, pooling in-house data with externally acquired data (p. 101). For example, Marriott International has honed its system for establishing the optimal prices for guest rooms (the key analytics process in hotels, known as revenue management) to a science. It has developed systems to optimise offerings to frequent

customers and assess the likelihood of those customers defecting to competitors.

The implication is clear -technology alone is not the key to success/value creation, but the use of this technology to give better decision-making.

Summary and brief comments

Before reflecting on the comments, I will make some general observations. First, the initial comment I made could be said to be influencing later responses - despite my best efforts to be general. Reading the comments received, each commentator seems to have presented a unique angle, thus it is reasonable to say the comments are independent of my own thoughts. Second, those who have commented are 'younger' academics and below professorial rank - including myself. This could be viewed in two ways 1) they are not sufficiently experienced to questions long-standing ways of doing things or 2) they may bring fresh ideas and experiences with them. Third, IMARN is a small network and the comments presented here are the views of six researchers. Thus, we cannot generalise to all researchers from what is said here. Having said that, the comments do echo what I suspect a lot of us may think.

In my initial comment, I was trying to seek out what researchers who are interested in how technology affects management accounting think about how we normally do our research. Scapens (2012) in my view was hinting at some other ways to disseminate our research, and I had hoped any commentators would take up on this point. It is fair to say most did. Gerhard noted the problem with perhaps over-theorising or 'theory first', a point which is also mentioned by all commentators - which Orla notes this as the research-practice gap and "nothing new there" in her words. There is general agreement in all comments that technology is moving as such a rapid pace that early dissemination of our research would be useful in this environment. Ahmed suggests earlier dissemination of work - even at the PhD stages and perhaps online and this might spark further ideas. Garvan makes a very useful point about what he terms action research. While this may be more common in some countries, it is less common typically. Garvan does suggest academics be involved from the outset in IT change projects - something I would personally support. Even if we could get involved in such research, if how we disseminate it did not change, then we are back to the time/practice/relevance lag issue. The "insights" from such research would be extremely valuable I believe, but would they find their way into top journals as they may have no theoretical implications.

To finish up, Orla's comment reflects the essence of the issue raised here:

I believe a loosening of the reins over accounting information will serve to enhance the management accountant's relevance in today's i-environment!

Technology is now capturing so much data (see comments by Gerhard and Ruth) that a controller/gatekeeper role is now perhaps part of the management accountants future role - an enhanced role we argue. This role is likely to evolve rapidly with future technologies we cannot even imagine yet - I read recently about SAP's HANA technology and the power of it is really scary or brilliant depending on your perspective! Should we study this evolving role change? Undoubtedly yes, but to do so perhaps we need to evolve a little too. There will always be a place for our traditional research and it is fair to say nobody here suggests otherwise. But maybe we do need to relax a little on having theoretical contributions in all our outputs.

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