

The Hitchhiker's Guide to Intellectual Capital

Introduction

What do numbers mean, especially in accounting for non-financial aspects of businesses, such as intellectual capital (IC)? This was a question posed by some of my students while teaching in Japan in 2012. To me this is an important question because it delves into the heart of how we teach accounting and accounting related subjects to our students and hence how accounting is applied in practice. Since beginning my research into IC I have been critical of traditional accounting concepts such as the balance sheet and traditional forms of reporting that have dominated thinking and thus IC practice, education and research, resulting in what is termed an “accountingisation” of IC (Dumay, 2009; Habersam *et al.*, forthcoming). Thus, in order to help break free from the domination of accountingisation this paper offers a personal and reflective narrative about numbers and IC.

To do this, I have divided the paper into three empirical parts as part of my personal IC journey. The first section, *The meaning of 42* explores my motivation for writing this paper, which is based on a discussion about numbers with my students, while teaching IC in Japan. In this conversation, my students and I explored the meaning of numbers by looking at some of the different contexts the famous number 42 is used to give meaning and context to something.

Building on the concepts of meaning and context I then present reflections about a commonly used measure of IC in organisations, *employee turnover*. Thus, the second empirical part, *Employee turnover at Westpac Bank* examines how an Australian bank has publicly disclosed its challenges with high employee turnover, the results of addressing the challenge and how this changed into different measures as the context of its business changed. A third empirical part, *Employee Turnover at Lands* offers a different view because Lands traditionally had low levels of turnover and continued to do so while attempting to renew its workforce due to the impending retirement of older employees. To conclude the paper, I present some reflections on what this means for IC and the implications for practice, education and research.

The meaning of 42

In August 2012, I was invited to teach a course called *Intellectual Capital: Past, present and future* as part of summer intensive program at Kobe University Graduate School of Business Administration. The purpose of the course was to utilize critical thinking and analytical skills to probe the paradigm of IC. During the course, we examined the concept of IC, why it is important, its history and how it is being used in practice.

The students had all studied accounting as part of their undergraduate degrees. They were now enrolled in a Masters or PhD research program, fully indoctrinated in the concept of accounting. During the opening session of the class one student summed up the expectations of the class declaring he, like most of his classmates, had come to “learn how to put IC on the balance sheet.” Right away I knew I had my work cut out for me because these students appeared to be stuck in

an “accountingisation” of IC that has plagued IC for so many years (Dumay, 2009; Habersam *et al.*, forthcoming). The accountingisation of IC is problematic because it may misdirect “managerial attention towards more refinement “ rather than connecting IC with management actions (Habersam *et al.*, forthcoming, p. 4). My challenge was to get them out of this mode of thinking: but how?

On the third day of the course, I could feel that the majority of students were still looking for the right IC measures, and were perplexed that I had not yet offered them a comprehensive list of IC measures that could be applied to all organisations. To help break them free from their accountingisation mindset, I went to the whiteboard and emblazoned a large number 42. “What does that mean?” I asked them.

After a bit of pondering, one student politely suggested “It is your age sir!”

“Sorry” I replied “it is not. However, the compliment will not go unnoticed, one extra mark for you.” Some polite laughs from the class resulted.

“Next,” I chortled to get them going. A student in the back then explained from a Japanese perspective, 42 is an unlucky number.

“42 is pronounced *yon-ju-ni*. The 4 is pronounced *yon* in ordinary Japanese. However, 4 can also be pronounced *shi*, meaning *death*. Therefore, just 4 is a bad number in Japan. So, Japanese people, especially the older generation, don’t like 4. For example, traditional Japanese hotels do not have a room number 4. Thus, 42 can also be read as *shi-ni* in Japanese, meaning to *die*. Therefore, in Japan, 42 is a bad number.”

“Why did you pick 42?” asked another student after the explanation was complete. I explained that 42 is my favourite number because it’s association with popular culture and book *The Hitchhikers Guide to the Galaxy*. In the book, a giant super-computer, called Deep Thought, is built and takes 7.5 million years to come up with the answer “Of Life, the Universe and Everything...” When asked by the characters Loonquawl and Phouchg, to reveal the answer the computer replies (Adams, 1979, pp. 120-121);

"Forty-two," said Deep Thought, with infinite majesty and calm.

"Forty-two!" yelled Loonquawl. "Is that all you've got to show for seven and a half million years' work?"

"I checked it very thoroughly," said the computer, "and that quite definitely is the answer. I think the problem, to be quite honest with you, is that you've never actually known what the question is."

"But it was the Great Question! The Ultimate Question of Life, the Universe and Everything!" howled Loonquawl.

"Yes," said Deep Thought with the air of one who suffers fools gladly, "but what actually is it?"

A slow stupefied silence crept over the men as they stared at the computer and then at each other.

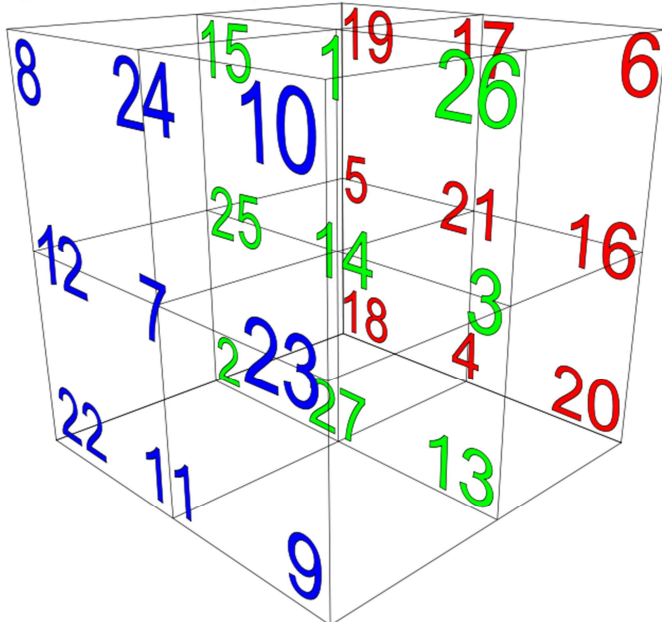
"Well, you know, it's just Everything... Everything ..." offered Phouchg weakly.

"Exactly!" said Deep Thought. "So once you do know what the question actually is, you'll know what the answer means."

Unfortunately, the age group of my class was such that they did not know much about the book or its relationship to the number 42, so my whole point on meaning and context was somewhat lost on them. So I promised to investigate the number 42 in more depth and get back to them in what 42 meant in different contexts.

The first and most intriguing discovery I made is the 3X3X3 magic cube, whereby the numbers from 1 through to 27 can all be used to form a cube whereby any three numbers in a line add up to the sum of 42, a bit like Sudoku on steroids.

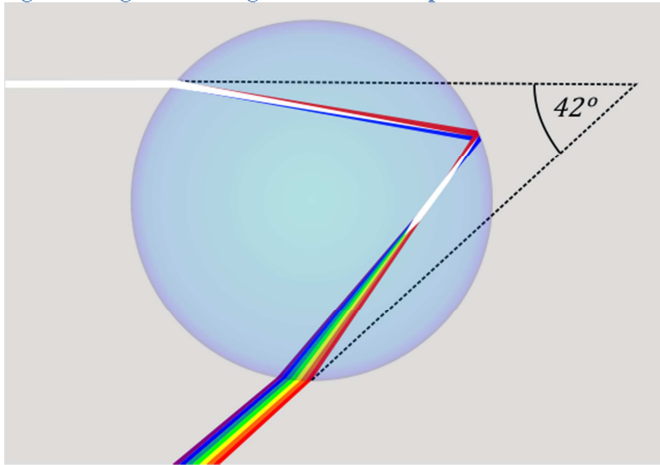
Figure 1: The 3X3X3 Magic Cube adding to 42



Source: Wikipedia Commons - http://en.wikipedia.org/wiki/File:Simple_Magic_Cube.svg

In nature, 42 is the optimum angle for white light to refract through water in order to form a rainbow. As shown in figure 2 below, when white light enters the raindrop it is reflected off the back of the raindrop. The light is dispersed into the colours of a rainbow because red light refracts less than blue light. The optimum angle for this to occur is between 40.89° and 42° .

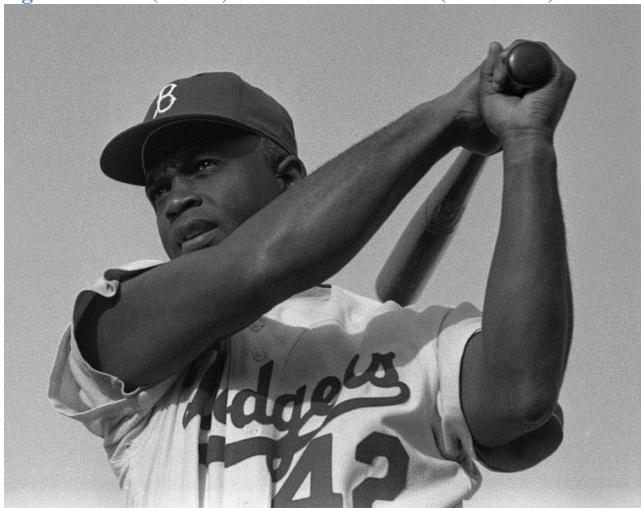
Figure 2: Light refracting within a raindrop to form a rainbow.



Source: Wikipedia Commons - <http://en.wikipedia.org/wiki/File:Rainbow1.svg>

In sport, 42 was the number worn by Jackie Robinson, who in 1947 became the first black Major League Baseball player since the 1880s. This was instrumental in not only breaking down the race barrier in American professional sports, but also contributed to the development of the Civil Rights Movement in America. Robinson was also a star player and was inducted into the Baseball Hall of Fame in 1962. His jersey number 42 was officially retired from all Major League Baseball teams in 1967, the first time such an honour was bestowed on any professional sportsman.

Figure 3: Jack (Jackie) Roosevelt Robinson (1919-1972)



Source: Wikipedia Commons - <http://en.wikipedia.org/wiki/File:Jrobinson.jpg>

In computer science, 42 is the ASCII number¹ corresponding to the asterisk (*) which is commonly used as a wildcard character. This is especially handy when searching databases when part of what you are searching for is unknown. For example, if I wanted to search for everyone

¹ ASCII stands for American Standard Code for Information Interchange. Computers can only understand numbers, so an ASCII code is the numerical representation of a character such as 'a' or '@' or an action of some sort. See <http://www.asciitable.com/>

whose name was John in a database I would enter the search term 'John *' and the database would return everyone with the first name John regardless of what their last name was. Thus, 42 can really have any value and is not just a number.

I reported the findings of my research to the class, and they were amazed that one number could mean so many different things.

“But, what does this have to do with intellectual capital?” asked one student. “

Well, to me, it is all about the meaning and context” I replied. I then quoted from my favourite paper about accounting numbers by Robson (1992, p. 688) where he explains how accounting numbers are abstractions and hide the context when discussing nine cars:

That my cars may be of different make, engine capacity, colour, top speed, etc., and indeed that no cars are ever the same, is actively suppressed by the process of quantification. ... The objects constituted as concepts, numbered and subject, in this example, to aggregation are not merely “similar” by being counted; they are identical within the signifiers of mathematics in which they are now located.

Our conversation then turned to how this can be applied to IC context by examining a common number found in IC and other reports, such as Corporate Social Responsibility reports, being employee turnover rates. Most managers I know would make a strong argument that their businesses would consider high turnover rates to be bad and low turnover rates to be good. Many would see this as one way of developing their human capital and may even argue that it was one way of developing competitive advantage. Many businesses would even try to benchmark their performance. If all organisations were exactly the same as their competition, they should work hard at reducing the rate below their competitors'. But is this really true? To examine this question I will use the cases of Westpac Bank and the NSW Department of Lands (Lands) in Australia to illustrate

Employee turnover at Westpac Bank

The following extract from Westpac Bank's (2002, p. 13) *Social Impact Report* highlighting the fact they saw employee turnover as one of their key human capital management challenges

One key to being an employer of choice is creating conditions where our employees feel fully engaged in our business and successful in their jobs and careers. This is essential if we are to build long-term relationships with our employees. With our employee turnover level currently at 19.5%, broadly in line with industry experience, we know we have more to do.

A study by Dumay and Lu (2010, pp. 84-86), examining human capital disclosures by Westpac Bank from 2001 to 2008, found that while turnover rates began to fall, reaching 16% by 2005, by 2008 they had risen to 20%, exceeding the unsatisfactory 2001 rate of 19.5%. In response, Westpac tended to downplay the fact by trying to evoke some positive spin on the result as found in their *Stakeholder Impact Report* (WBC, 2008, p. 17):

In 2008, although our turnover rate remains in line with the industry average we did see an increase from 17% to 20% in Australia. This is mainly due to increases in first

year resignations in our retail bank, a trend we are seeking to address [. . .] In addition, there has been a reduction in back office roles to accommodate more front line positions. Pleasingly, many of these employees have moved into customer facing positions via our active Redeployment Program. Most notable has been an increase in induction training from one to four weeks, also designed to reduce turnover rates within the first year of employment.

I further examined the turnover rate for Westpac and found that the rate dropped to 15% in 2009 and then rose back to 17% in 2010 (WBC, 2010, p. 44). However, I could not find any further disclosures for 2011 and 2012. When I examined the *Annual Review and Sustainability Report* for those years, it seems the employee turnover measure has been replaced with new measures such as *employee voluntary attrition*, *new starter retention* and *high performer retention*. (WBC, 2011, p. 37; 2012). These new measures seem to be designed to present Westpac in a more positive light as employee voluntary attrition comes in at 11.8% (2010), 11.5% (2011) and 9.9% (2012), far lower numbers than the old employee turnover rates of 17% or more. On the opposite side, new starter retention at 83.8% (2011), 84.8% (2012) and high performer retention at 95.3% (2011) and 95.9% (2012) are all high numbers, as Westpac tries to signal that these are good numbers (WBC, 2012, p. 25).

So what is Westpac trying to do by excluding the old employee turnover results from their reports? (I searched their 2011 and 2012 annual reports, and it was not included there either). One thing Westpac could be doing is attempting to downplay reductions in their workforce, especially since completing their merger with St George Bank and Bank SA in 2010, which saw total full time equivalent staff numbers climb to 35,055 at the end of 2010. Since then Westpac has continued to shed staff to 33,898 in 2011 and to 33,418 in 2012 (WBC, 2012, p. 25) in line with an expected loss of about 2,000 jobs as was foreshadowed when the merger was first proposed (Murdoch, November 14, 2008). Thus, a pessimistic view would be that since 2010 Westpac has excess human capital and wants to shed its excess human liabilities and retain those it sees as its human assets making reductions in employee turnover undesirable.

It is important to note that the evidence does not imply that all staff leaving Westpac were human liabilities. On the contrary, evidence from the Australian Financial Markets Association (AFMA) (2011, p. 13) points to the fact that the majority of people in the financial sector in Australia are voluntarily leaving their jobs because of a lack of opportunities for career advancement or progression, as opposed to being let go for being unsuitable for the role. It is also interesting to note that since 11.5% of staff left Westpac voluntarily in 2011 this would mean more than 4,000 employees left Westpac, almost four times the 2011 reduction in full time equivalent staff (1,157) meaning it would have the need to hire and train nearly 3,000 new employees.

Therefore, a more optimistic answer is that Westpac seems to have found that the old employee turnover measure was not the appropriate measure within the context of what Westpac was trying to achieve. As Westpac indicated in 2008, a major cause of high turnover rates was the resignation of newly hired staff. As a result, Westpac has not only changed the way it looked at how it managed its human capital, but also the way it was measured. Thus, it appears that the new measures are more appropriate to deal with the exodus of employees leaving which is far in excess of any desired reduction in staff numbers.

Employee Turnover at Lands

The following section is based on my reflections of a research project at Lands that I participated in with other researchers, originally as a research assistant, and eventually the chief investigator, from 2005 to 2010. In this research, we gathered data from observations, semi-structured interviews, internal documents and annual reports. Lands was a government department in the state of New South Wales which managed information about the private ownership of land and property, and managed government owned land property.² It is another interesting case to understand the impact of employee turnover as a measure because it had the opposite problem to Westpac as for many years Lands experienced lower turnover rates than the public sector averages (Dumay & Rooney, 2011).

Lands in particular, was subject to new public management reforms, which resulted in a smaller public sector (English *et al.*, 2005). Contributing organisational factors include downsizing and employment freezes, which prevented younger workers from entering the public sector workforce as they had done in the past (APSC, 2003; Kiyonaga, 2004). Thus, Lands was not renewing its employees preventing the implementation of new technologies and business processes which may have been able to contribute to increased efficiencies as observed by an IT manager in 2010:

A lot of managers here will only use paper. They'll only do things the way they've always done it. They're retiring in two years so they don't want to hear about it. They don't want to know about change. They're not interested. They just want to sit until they retire.

This also highlights how Lands had a more serious problem than trying to manage employee turnover because in 2006 it recognised that a significant portion of its current staff had reached an age whereby more than 30% of their staff was predicted to retire by 2013 as detailed in Table 1. LPI management argued at the time that the majority of LPI staff planned to retire at or before 60 because of financial penalties commonly referred to as “the golden handcuffs” associated with their superannuation (retirement plans), whereby “the financial advantages of the schemes and the restraints they impose on employment decisions in order to maximise superannuation payouts”, the “members of these schemes generally retire within a predictable period relating to their age” (Douse, 2006, p. 19). Thus, if Lands did not implement a plan to manage retirements along with natural attrition, changes in demand for Lands services, and changes in technology, it would find itself in a position whereby it did not have enough people with requisite skills to perform day-to-day tasks as outlined by a divisional General Manager (Douse, 2006, p. 7):

This whole process is about ensuring we have sufficient staff with the appropriate skills to provide our vital services to the public and the various industry groups who rely on [Lands]. If we do not embrace this process we will find ourselves with too few appropriately skilled staff to maintain the viability of this business.

² In 2011 as a result of a change of government and subsequent restructuring of NSW government departments Lands ceased to substantially exist in the form I observed during my research. Its major entity, Land and Property Information (LPI) is now part of the Department of Finance and Services.

Table 1: LPI Retirement Forecast 2006 - 2013

Function	2006 Staff	Turned 60 Years 2006-13	Staff under 60, Feb 2013	% to retire by 2013
Conversions & Data Cleansing	64	22	42	34.4%
Title Registration Services	217	70	147	32.3%
Property Information Services	70	22	48	31.4%
Valuation Services	107	46	61	43.0%
Map Sales	13	7	6	53.8%
Spatial Information Services	101	35	66	34.7%
Survey	61	20	41	32.8%
Graphic Services	42	4	38	9.5%
Legal Services	23	4	19	17.4%
ICT	75	12	63	16.0%
Total	773	242	531	31.3%

Source: Douse (2006)

The next problem Lands had was not just about replacing the retirees; it also needed to ensure that new employees were trained by the retirees, and the retiree's knowledge about core systems and processes was preserved. However, the dilemma here was identifying which forms of knowledge are at risk as a senior manager explained that some employees who:

... have been with the organisation for a long time are redundant knowledge and a drag on the business. They are sticking to the way we do things around here. The organisation must introduce new knowledge and must shed old, useless knowledge.

However, as lands implemented their plans to replace impending retirees and train new staff, their turnover rates remained low. For example, as outlined in Table 2, in the Lands employee turnover rates from 2005 to 2009 were between 5.1% to 7.5% percent compared to the NSW public sector rate of approximately 10 percent (DPC, 2008). This appears to be the case for two reasons. First, the biggest waves of retirees have not yet retired because, by 2010, fewer people had retired than was expected, at about 10 as opposed to an expected 35 per year. Even the employees who did retire seemed to want to remain as a finance manager observed in 2010:

But I've been watching and as fast as they go out the door they're back in as a consultant, nobody's left or hardly any.

Thus, as shown in Table 2, it is not surprising that the number of employees increased as did the number of contractors and temporary staff while the average age of employees increased rather than decreased as would be expected if younger employees came on board as older employees left the organisation.

Table 2: Land's changing employee demographics

	2005	2006	2007	2008	2009	2010
Staff turnover	7.5%	5.1%	6.0%	7.2%	5.8%	
Number of employees	1427	1453	1551	1597	1618	1628
Contractor/temp staff	101	94	120	136	146	157
Average age	45	46.49	46.48	46	46.4	

Source: (Lands, 2005; 2006; 2007; 2008; 2009; LPMA, 2010)

Therefore, the employee turnover rates, while they may seem low, do not reveal the entire story, and it is questionable if the rates are good, bad or indifferent. According to one Lands manager, retaining the older retirees was necessary, even though many younger employees had joined Lands and had been trained in the technical skills required for their new roles, their lack of experience was still a risk:

And just taking that a little bit further, in 80% of the work that you have to do, they pick up so quickly and they can do it better than the originals that you were pointing to. But in those cases, the 20 per cent, you really need years of understanding. I've made that mistake before. I've done this and the other, that's the bit that some people confuse that they're absolutely fully competent to do anything. Whereas, some of those more tricky ones, they'll stumble and fall a little bit at some of those at the edges.

As long as you're wary and the supervisors are wary and understand that they just don't know everything, not that anybody does, but without the experience of coming across so many tricky complex bits and pieces, they think that they know it all because they're younger folks, which is good and bad.

Thus, while it is possible to teach *explicit* knowledge of how to perform tasks, transferring *tacit* knowledge is both needed and difficult, and hence it was necessary to retain retirees for some time longer. As a result, the context of employee turnover has changed from a low number signifying that there was little organisational renewal because of the inability to renew employees due to political and social pressures influencing a smaller public sector, to a lower number highlighting how older workers were retained to help the renewal process.

At the time our research concluded in 2010, we also observed that a new challenge would be how to retain the new, younger employees. Therefore, Lands faced a new employee turnover challenge beyond 2010, being a "crisis of retention" as retirees would eventually leave and the new employees were more likely to leave sooner than those they replaced (Dumay & Rooney, 2011, p. 193). Thus, Lands managers were faced with a new business environment context whereby most Australian employees change jobs on average every four years, and it was expected by employers that 75% of employees would remain with an employer for less than 5 years (Asquith *et al.*, 2008, p. 1).

Conclusion: Reflections and implications

In practice, as I have outlined in the cases of Westpac and Lands, it is possible to take a performance measure such as employee turnover and use it to measure something, in this case the number of people leaving the organisation every year. However, I argue the way in which employee turnover, and thus any IC element, is measured is problematic from an accounting perspective because each organisation is unique and operates in a different context; thus the comparability of the number from one organisation to another and from one period to another is nearly impossible. I base this conclusion on Robson's (1992, p. 688) argument that the numbers are abstractions and hide the context. Therefore, each time employee turnover is measured it is measured in a different context and means something different.

For example, the strategic context of employee turnover constantly changed, as evidenced by Westpac's desire for lower employee turnover to create "*conditions where our employees feel fully engaged in our business and successful in their jobs and careers*" changing to a context, whereby it relied on a certain level of employee turnover, to assist with reducing the overall number of employees after the merger with St George Bank. In this case, the context changed so much that the *employee turnover* number appears to have become redundant, and was replaced with the more strategically appropriate measures of *voluntary attrition* and *new starter retention*. In the case of Lands, low employee turnover rates up to 2006 prevented the acquisition of new employees and thus prevented the acquisition of new knowledge. By 2010, low turnover rates helped enable the transfer of tacit knowledge from the impending retirees to newly hired employees.

From an IC perspective, these examples show how developing *balance sheets* of intangibles and applying accounting principles to IC is fraught with danger, and as IC practitioners we must realise that we can never look at a number and assume it is good or bad depending on its value or in comparison to other organisations. For example, there is an ongoing debate in the IC and Human Resources literature about the link between employee turnover and organizational performance with "human capital theory, predicting losses in performance as turnover erodes firm-specific human capital, with cost-benefit approaches predicting an optimal level of turnover maximizing the difference between its benefits and costs" (Siebert & Zubanov, 2009, p. 294). Thus, extremely low employee turnover is not desired because it may prevent organisational renewal as a result of not replacing underperforming employees while high turnover rates are not desired due to the cost of recruiting and training new hires. However, evidence from research shows that the 'optimum' level of employee turnover is a contentious issue and is dependent on multiple contexts such as industry, skill level required, training and recruitment costs, part-time versus full-time positions, to name just a few (Siebert & Zubanov, 2009, pp. 311-312).

The above discussion also has implications for education as our accounting students are first taught the principles of financial accounting prior to being taught how accounting can be used in different contexts such as management accounting and accounting for IC. However, I am not arguing that we should not teach the rudimentary basics of accounting first as it is an essential precursor to teaching the latter. However, we must be aware as accounting and IC educators that IC is not just about valuing, measuring and reporting IC. Unfortunately, this appears to be almost the default position taken by the creators of most IC frameworks as most of the early IC frameworks attempted to establish an overall dollar value of IC, value IC components or create IC scorecards (see Sveiby, 2010). However, as evidenced by my Japanese students, the

“accountingisation” of IC is so entrenched that it is difficult for them (as well as practitioners) to look beyond how to account for IC rather than enable it in practice (Dumay, 2013).

As Habersam *et al.* (forthcoming) argue, we need to open “up a discussion on understanding [IC] value creation, extending the accounting-oriented agenda ... towards narratives and visualisations”. This is not a new argument (Mouritsen *et al.*, 2001); however it seems be continually overshadowed by the measurement and accounting approach (Dumay, 2009). I saw evidence of this when I recently reviewed a Masters of Science program in Knowledge Management at an Asian university which included an introductory course on IC entitled *Managing and Measuring Intellectual Capital*. Within the syllabus, there was no mention of narratives or visualisation (although reporting was mentioned) as key aspects of understanding IC. I argue that what we need is to first instil in our students that IC is more than just accounting for it because every time we examine any aspect of IC in an organisation there is a story of what it means and how it can be applied to a specific context to improve its relevance (Dumay & Roslender, 2013 forthcoming). As evidenced by the two distinctly different stories about employee turnover at Westpac and Lands, not only did the meaning and context differ between the two organisations, over time the meaning and context changed within the organisations. Ensuring our students are equipped with an alternative view not based on the accountingisation of IC will hopefully help them to apply IC in practice and make a difference (Tull & Dumay, 2007; Guthrie *et al.*, 2012).

As researchers, we must also take a step backwards and review where we are heading with our current research agenda because all too often we get stuck in what Mouritsen (2006) refers to as the ostensive approach to IC, attempting to create all encompassing IC frameworks. Fortunately, it seems the tide has turned as Guthrie *et al.* (2012, p. 77) outline “the trend to develop new ICA frameworks is waning ... as more researchers use existing frameworks to frame their research”. So rather than conducting research that continues to account for IC, so it can be compared to past periods or benchmarked against other organisations, we should be developing research based on how IC is applied inside organisations, and what impact it has. In order to do so, researchers must be asking the right questions, rather than just seeking the answers.

This brings me back to *Deep Thought's* original answer “Of Life, the Universe, and Everything?” which is undoubtedly 42. While it is good know the answer, such as the rate of *employee turnover*, however, “... once you do know what the question actually is, you'll know what the answer means” (Adams, 1979, p. 121). Hopefully IC researchers might discover “The Ultimate Question?” of IC sooner than the “ten-million-years” predicted by *Deep Thought* (Adams, 1979, pp. 121-122) and the answer is more revealing, than just another number.

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