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The performance of intellectual capital

Mobilising relationships between intellectual and financial capital in a bank

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Abstract

Purpose – This paper aims to analyse the relationship between intellectual capital and financial capital using a case study. This makes it possible to discuss how intellectual capital is related to value creation with a degree of nuance that is absent from most statistical studies of relationships between human, organisational, relational and financial capital.

Design/methodology/approach – The paper uses a case study of a firm that invests in intellectual capital in order to develop financial capital. It traces the relationship between intellectual capital elements and financial capital via interviews. This allows the development of a nuanced account of the performance of intellectual capital. This account questions the universality of the linear model typically found in statistical studies. The model makes it possible to show how items of intellectual capital not only interact but also compete.

Findings – Relationships between intellectual capital and financial capital are challenging to specify because they are complementary rather than causal. Financial capital is not only an effect but also an important input because the development of intellectual capital takes place through the firm's budgeting processes.

Research limitations/implications – The findings suggest future development of accounts of the role and performance (strength) of intellectual capital be developed around imaginative, perhaps recursive and certainly dynamic, statistical models and/or more inclusive case studies of the various elements that influence the development and transformation of intellectual capital.

Originality/value – The case study suggests that investments in intellectual capital happen in the context of many other investments. Bounded by the budgeting process, intellectual capital has no separate agenda and therefore, intellectual capital investments compete with other types of investments.

Keywords Intellectual capital, Budgetary control, Performance management, Management control

Paper type Research paper

Introduction

The research reported below extends knowledge about the performance of intellectual capital. Intellectual capital is typically understood to consist of human capital, which is creative, organisational capital which consists of best practices, and relational capital,

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which draws knowledge from, and develops knowledge about, suppliers and customers. These elements are often understood to form a sequence so that human capital is antecedent to organisational capital which again is antecedent to relational capital, which then translates into financial capital.

This model can, however, be challenged in two ways. First, each of the elements of intellectual capital – human, structural and relational capital – has a fragile identity and causality, and therefore it has only limited individual power to increase creativity, to consolidate best practice or to extend relationships with suppliers and customers. Intellectual capital elements may summarise certain practices, but these practices are so diverse that they do not provide intellectual capital elements with strong distinct power and causality. Second, the model indicating a positive relationship between the elements of intellectual capital and financial effects is too coarse. Financial capital in the form of a budget may reverse the relationship between financial capital and intellectual capital, where financial capital rather than being an effect of intellectual capital may be an input to, and often a constraint of, the development of intellectual capital.

This paper explores these relationships using a case study of NSW Bank (pseudonym). While prior research has identified difficulties in establishing credible, statistical relations between non-financial and financial performance measures (see, e.g. Ittner, 2008; Wyatt, 2008), NSW Bank was able to establish stable statistical relations between intellectual capital and financial capital. There was high correlation between human capital, organisational capital, relational capital and financial capital. While it is not difficult to imagine that managers struggle to establish rapport between intellectual capital and financial capital when statistical relations are absent, it is surprising to learn that this is also a problem when they are present. The study of NSW Bank is interesting because, in this setting, it is expected that the management of intellectual capital via non-financial performance measures would happen without friction. But the study shows that the mere existence of correlation does not make the case of intellectual capital strong.

The theme of correlation is relevant for intellectual capital research (Ittner, 2008; Wyatt, 2008). Generally, cross-sectional research on intellectual capital has not primarily been concerned with the links between individual non-financial indicators, but more with relations between constructs of human, organisational, relational and financial capital. These constructs (based on questionnaires rather than archival data) comprise a variety of broad competencies and capabilities that together define the size and quality of intellectual capital. This research is able to suggest with significant statistical support that elements of intellectual capital tend to correlate positively with each other; it can be argued that the performance of human capital influences the performance of organisational capital and of relational capital, and eventually the interactions between these elements correlate positively with financial performance. The statistical models of intellectual capital suggest that investments in intellectual capital are associated with financial outcomes. It appears that in many cases intellectual capital does correlate with financial capital (e.g. Youndt *et al.*, 2004; Wang and Chang, 2005; see also section 2).

This should make the case for intellectual capital easy but it is not. The problem is that cross-sectional research when generalising the effects of intellectual capital tends to omit the managerial practices that develop and mobilise intellectual capital. The

sequence of causality includes few variables and tends to ignore the frictions experienced by managers when they grapple with questions about increasing or decreasing intellectual capital. Managers may attempt to establish activities that develop the links between the elements of intellectual capital; these are investments that cross-sectional research does not study. For managers the links are activities and investments; for cross-sectional studies they are correlations (Mouritsen, 2006).

This paper addresses this gap in the literature where cross-sectional models explain the effects of intellectual capital but ignore managerial concerns about investment in and allocation of intellectual capital. In an attempt to consider this gap the research question asked is: How do managers mobilise intellectual capital? Drawing on material from field work undertaken in NSW Bank's efforts to devise and translate a knowledge based strategy to become more customer oriented in its investments in intellectual capital, it can be observed that there are many surprising trials involved in mobilising intellectual capital. A key finding is that intellectual capital does have the positive agenda of growth proposed by the intellectual capital model where it is understood to bring financial capital forward. Yet, the dilemma is that intellectual capital is not only a resource; it is also expensive and has to compete with many other types of investments that emerge as part of organisational processes such as financial planning and budgeting. The translation between elements of intellectual capital is thus not only progressive; it is also potentially regressive because trade-offs have to be made both between elements of intellectual capital, and between intellectual capital and other types of capital. In NSW Bank organisational capital was favoured over human capital. This suggests that the conclusion drawn by cross-sectional research, that human capital drives the other types of capital, is fragile.

The paper is organised as follows. The next section reviews prior literature to understand the interactions between the elements of intellectual capital. The third section accounts for the research strategy used to collect data. The fourth section introduces the empirical site, NSW Bank, and presents evidence for interactions between the various elements of intellectual capital and with financial performance. Discussion is provided in the fifth section and the conclusion in the final section.

Relationships between elements of intellectual capital and financial capital in the literature

The three elements – human, organisational and relational capital – play a central role in theorising intellectual capital. Some research focuses on the properties of the elements of intellectual capital, identifying the “size” of the three elements in annual reports and the statistical relationships between the three elements. A second type of research, more concerned with field-based observations of managerial practices related to intellectual capital, questions these findings and focuses on managers' attempts to manage (via) intellectual resources. This field-based research identifies uncertainties in the roles and consequences of intellectual capital in firms. It finds intellectual capital is more fluid and identifies the problems of managing it.

Cross-sectional research on the properties of intellectual capital elements

A significant amount of research on intellectual capital has been concerned with gauging the extent to which it exists in firms' account of their resources. Analysing annual reports from companies in various parts of the world, this research has

examined intellectual capital reporting patterns of organisations (e.g. Guthrie and Petty, 2000; Brennan, 2001; Bozzolan *et al.*, 2003; Olsson, 2001; Abeysekera and Guthrie, 2003; Petty and Cuganesan, 2005). Guthrie and Petty (2000) suggested that, at the time of their study, in Australia the most reported intellectual capital element was relational capital (40 per cent), with human and structural capital reported equally (30 per cent). In a Sri Lankan study conducted by Abeysekera and Guthrie (2005) the proportion of relational capital reported (44 per cent) was more than human capital (36 per cent) and organisational capital (20 per cent). Brennan (2001), in her study of the intellectual capital reporting pattern of Irish firms, found a more even split across the three categories. In Guthrie *et al.*'s (2006) study of disclosure of intellectual capital, relational capital was the most popular, at 37 per cent, human capital accounted for 35 per cent and the least reported was organisational capital with 28 per cent. Such research illustrates that relational capital is given slightly more emphasis in annual reports than the other two intellectual capital elements. When companies report on intellectual capital they frequently build all elements into the reporting picture so that their intellectual capital reporting reflects broadly on the firm's knowledge resources. In effect the research discussed here suggests that there is a concern with all the elements of intellectual capital.

Second, there are many different types of relationships between the elements of intellectual capital. Investigating the statistical properties of relationships between human capital, organisational capital and relational capital, Bontis (1998) suggested that human capital leads to organisational capital and relational capital and then on to financial capital. While he found no relationship between organisational capital and relational capital, it seems that increasing human capital led to increasing levels of organisational and relational capital, which in turn led to increasing levels of financial capital (see also Martin de Castro and Lopez Saez, 2008). In a later study, Bontis (2004) corroborated human capital as the primary source of intellectual capital and found that an emphasis on human capital allowed for better understanding of the hidden values of intellectual wealth. Human capital seemed to be a precursor for the intellectual wealth of a nation but it had to move through organisational capital to develop future research and development activities. Bontis (2004) argued that with the development of human capital, a nation's ability to merchandise its intellectual capital improved resulting in higher financial prosperity. Likewise, Namasivayam and Denizci (2006) claimed that human capital interacts with organisational capital to create, acquire, and employ customer capital that then would enable continued organisational success. They suggested that the human capital practices of an organisation support employee creativity to improve the delivery of value to customers; this operation requires well-established processes (organisational capital) to facilitate "insourcing" of external knowledge assets (relational capital) before which human capital may be ineffective. Therefore, the relations between human and organisational capital account for the creation, development and harvesting of an organisation's customer capital. Chen *et al.* (2005) suggested that intellectual capital not only has a positive impact on present financial performance, it also indicates future financial performance. Likewise Wang and Chang (2005) suggested that human capital does not affect performance directly; rather this relationship is mediated by the other intellectual capital elements. Human capital affects organisational capital (innovation and process capital), which influences relational capital. Relational capital in turn contributes to financial performance. These

cross-sectional studies indicate that it is possible to identify relationships between the elements of intellectual capital and resulting financial performance. This research suggests, generally, that in a sequential model of intellectual capital, human capital is prior to organisational and relational capital; these are then associated with financial capital. Notably, all relations are positive and it may seem from this research that maximisation of all elements would be financially appropriate.

However, there may be trade-offs between the elements of intellectual capital. Youndt *et al.* (2004) found that organisations tend to focus on one type of intellectual capital; they suggest that multiple forms of intellectual capital may be unproductive. Only a few organisations reach high levels of all three types of intellectual capital. Yet they also suggested that intellectual capital is typically associated with financial returns and Tobin's q . Huang and Liu (2005) employed multiple regression models to examine the relationships between innovation capital and information technology (IT) capital (i.e. organisational capital) and firm's performance. They found that investment in organisational capital has a positive effect on performance, but when the investment exceeds a certain level, it has a negative effect on performance. Moreover, investment in IT has no significant effect on business performance but the interaction between IT and innovation capital shows a positive impact on performance. Consequently, not all investments in intellectual capital elements are profitable; sometimes investments in intellectual capital may not be profitable unless the elements of intellectual capital are put together in a form unique to the firm or the situation (see also Vergauwen *et al.*, 2007).

Cross-sectional literature seeks to find causality between intellectual capital elements and financial performance. This is an optimistic agenda and, in general, its findings place human capital as the starting point of intellectual capital, with organisational and relational capital the next steps in a path towards financial capital. The interactions between the elements of intellectual capital are noteworthy. However, there are many variations on this model in the literature. Sometimes not all elements play a role because certain combinations of elements will favour either a human centred or a technology centred organisation. Although most research suggests positive relations between the elements, a few studies caution that there are optimal levels of investment in each of the elements.

Field-based research about elements of intellectual capital

Cross-sectional research explains that intellectual capital is present in firms, that there are relationships between its elements and that intellectual capital has to be contextualised by other resources including physical and financial ones. However, these studies pay only scant attention to how the performance of intellectual capital is realised, how intellectual capital is mobilised and how trade-offs are made.

Relationships between elements of intellectual capital may be dynamic. Pike *et al.* (2005) mapped the dynamic interaction and transformation of the intellectual capital elements. Based on case studies they found that human capital was the primary resource followed by organisational and relational capital. The interaction between human capital and organisational capital was strong, while interactions between relational capital on the one side and human capital and organisational capital on the other were weaker. Marr *et al.* (2004) used a new form of strategy map to visualise how elements of intellectual capital interact to create value by illustrating how intangible

assets are converted to tangible outcomes. They claimed that intangible assets are embedded in physical assets and considerable interactions between both types of assets create value. This dynamic intellectual capital research says that there are multiple translations between the elements of intellectual capital (see also Beuno *et al.*, 2006; Dumay, 2009; Jhunjhunwala, 2009). These studies suggest that the elements are closely related to conventional assets and difficult to separate. Mouritsen and Koleva (2004) show that organisational capital organises human and relational capital, and Thorbjørnsen and Mouritsen (2003) show that human capital is intrinsically intertwined with organisational capital.

Others pay attention to how intellectual capital information may make managers more uncertain, rather than reduce certainty. For example, Catasús and Gröjer (2006) show that intellectual capital information influences managers' thinking about the future even if it does not settle the future. Cuganesan (2005) explored how intellectual capital information is loosely and fluidly related to managerial and corporate concerns and found relations between intellectual capital elements to be transient. Vaivio (2004) says that non-financial information can develop organisational problematisation suggesting that the future could be different from what it is even if not predicting how it will be. Catasús *et al.* (2007) analysed the unpredictability of the use of indicators and Johnson (2002) suggested that it may be counter-productive to measure all intellectual capital because sometimes the elements are highly involved in mediating managers' concerns but not always with similar and predictable effects. In all these instances, information is input rather than output and the concern is therefore to study how intellectual capital information plays a role. A common point is that the actions made possible by even the very smallest and possibly insignificant items of intellectual capital information can travel far and produce effects not thought of in advance.

This research is concerned with managers' individual and collective use of indicators of intellectual capital. It confirms that it is not easy to bring out the stable relationships between non-financial indicators and financial effects (Ittner, 2008; Wyatt, 2008). But this research is also concerned more with the role of indicators developed in the field and used by managers than the structure of the elements of intellectual capital as defined in cross-sectional intellectual capital research. There is a difference between cross-sectional and field-based research; the former is interested in the structure of the model, while the latter is typically interested in how managers make sense of individualised indicators. There is a need for research that addresses the model of intellectual capital from the perspective of the field. Therefore the research question of this paper is not specifically about the use of indicators but about the activities and investments that managers mobilise to manage intellectual capital.

Research strategy

A field study is useful when the research question concerns interaction (Creswell, 1998; Scapens, 1990; Scapens and Roberts, 1993) since it is possible to collect "rich data" (Yin, 1994) that allows access to situated interactions (Tellis, 1997). Such an approach has the potential advantage to find elements and events that are important for the role and characteristics of intellectual capital which have not been incorporated into the

cross-sectional models. The advantage is the potential discovery of new conditions and interactions that are important for understanding how intellectual capital is mobilised.

Data was collected from multiple sources such as annual reports, stakeholder impact reports, internal strategy reports, and semi-structured interviews. Semi-structured interviews, which this study draws on, were conducted with 14 senior executives and with 40 employees from different levels within the organisation.

Senior executives were interviewed about strategies of the organisation, the role performed by the back office and the challenges faced by the management in implementing strategies for the entity. Interviews with employees focused on their accounts of work life experiences. Throughout the interviews the main attention was on respondents' explanations of human capital, organisational capital and relational capital. This analytical strategy aimed to identify links and relationships between the intellectual capital elements. When respondents proposed new barriers to the power of intellectual capital or new conditions for its existence, this was noted as enhancing the power of an explanation of the role and character of intellectual capital. In this way, it was possible to detect surprising explanations about the role of intellectual capital. In particular, this approach increased attention on the role of budgetary pressures and of trade-offs between the elements of intellectual capital.

The research site is the back office of NSW Bank, which was the core service provider within the group, delivering services such as infrastructure, group property management, information technology, outsourcing governance, loan documentations, and corporate services (including fraud, anti-money laundering and security). Having piloted the preparation of intellectual capital through so-called Extended Performance Accounts to understand the performance of intangibles (EPA, 2005) this bank was a useful research site because intellectual capital was claimed to be important in the development of the firm. Over some years the bank had even developed a framework to describe extended performance and it had used this to emphasise the role of knowledge and intellectual capital as primary drivers of performance. There was a strong claim about intellectual capital performance leading to financial performance. This organised non-financial measurements about customer satisfaction, customer loyalty, and employee satisfaction, investments in training, quality measures, and measures about corporate social responsibility. NSW Bank mobilised extended reporting of intellectual capital as one element in the development and implementation of corporate strategy.

The collection and interpretation of empirical evidence was informed by actor-network theory. Particularly, actor-network theory's advice to structure the empirical findings as a chronology has been important because this allows the research to find surprising, interesting new elements and links between elements in the theoretical explanation. According to actor-network theory, researchers have to attempt to record the translations that happen over time:

The task of the researcher is not to impose order, limit the range of acceptable entities or add reflexivity to [actors'] practice. But follow the actors, their wild innovations, methods, and accounts (Latour, 2005, p.11).

In the case of NSW Bank, actor-network theory was used to follow as many relationships between the elements of intellectual capital as possible and see how, over time, these relationships transformed and developed new propositions about their

sequence, power and causality. In this sense, the research aims to study the links between the intellectual capital and financial capital by slowing the speed of the explanation and attempt to account directly for the role and power of the elements of intellectual capital, their relationships to each other and their relationships with financial capital.

This involves the study of translations; paying direct attention to “displacement, drift, invention, mediation, the creation of a link that did not exist before” (Latour, 1999, p. 179). Translation emphasises the displacement that occurs when an actor gets into contact with other actors because no actor has sovereign power since any actor is a network. Or with Latour’s (2005) explanation:

So, an actor-network is what is made to act by a large star-shaped web of mediators flowing in and out of it. It is made to exist by its many ties: attachments are first, actors are second (Latour, 2005, p. 217).

Studying NSW Bank from this perspective involves observing the translations that human, organisational, relational and financial capitals go through over time. The empirical storyline is organised to test claimed stability of the intellectual capital model by showing how management is involved in mobilising intellectual capital when intellectual capital itself is also a possible actor that may force managers into new unexplored territory.

The case of NSW Bank investing in intellectual capital

In 2006, the bank’s vision, mission, values, strategy and key objectives were first communicated to stakeholders by way of the extended reporting model. The bank’s vision was to be a great Australasian company in helping customers achieve their financial aspirations. Customer focus was its strategy and the mission was to be number one for customer service in the Australian banking industry. The business strategy of the bank centred on superior execution through outstanding leadership, committed people, quality processes and embedded values. The bank proposed that it could deliver value across its business through relationships between internal practices and employee commitment, customer satisfaction and loyalty, profitability and value creation. It relied on a direct link between superior customer service and sustainable profit growth.

The bank’s belief in this link did little to recognise the problems facing managers when working to develop and mobilise intellectual capital. The intellectual capital model translated easily from employees through customers through to financial results. However, it was quickly found that in practice the process of managing intellectual capital was intertwined with another process – a budgeting process. The following sections are organised in accordance with the sequence of corporate strategy, which was translated in many situations and with different effects into the budget process and the intellectual capital management process. The narrative starts from a statement on the positive relationship between intellectual capital and financial capital. Then it discusses the customer (relational capital), goes on to budgets (financial capital), moves further to technology (organisational capital), and last to the employee (human capital). This was the sequence of managing intellectual capital that came out of the case study material.

Minding financial capital via intellectual capital

NSW Bank presented its intellectual capital as a non-financial model that explained financial effects by a model that “link[s] employees, customers, the community and outcomes for shareholders” or as suggested by John, a manager in back office:

Perhaps it is because the value and loyalty of staff and customers is considered intangible and difficult to measure, perhaps it is because there has traditionally not been a great deal of transparency around them, but the fact remains that too little attention is paid to these critical performance drivers. We have seen them as critical to our success.

These precarious value drivers were proposed to have much power. Any positive impact on employees could have a positive impact on customers and develop business opportunities that would have a positive effect on shareholder value. But would this hold? Its statistical properties added credibility to the model[1]:

We’ve evaluated the model [...] so we did some correlations to see whether our assumptions about the model were actually valid. And we found that there is actually a two-way correlation between employee satisfaction and customer satisfaction (Bill, Head of Risk Management).

Statistical correlation justified the relevance of intellectual capital and then to some degree it was possible to substitute concerns for financial capital with concerns for intellectual capital.

Minding the customer (relational capital)

NSW Bank launched a “One Point Contact” customer charter to initiate change within the bank with a strategy to substitute a concern with products to one with customers. “One Point Contact” was a commitment from the bank to the customers that they would provide an appropriate answer to the customer within an appropriate time without passing it around. A comment from Alex, an employee at the collections team:

We have a “One Point Contact” policy; we try to satisfy the customer on the first call. We always have someone to follow up steadfast. We try to have one person to look after the customer from beginning to the end, one person to deal with this customer especially if it is for an outside customer [...]

This concern to mind the customer influenced the development of business processes in NSW Bank since it both motivated re-training the bank’s employees and automating systems and processes to be able to deliver customer orientation. A comment from David, a senior manager, gives a picture of the change:

I guess it’s just having run a model that was quite different for a number of years, we’ve been on the customer focused journey since [...] [8 years]. It’s a very easy thing to say, and if you’ve been running your business for however many years around product P&L, to swap to customer is a huge underlying systemic change. And I don’t just mean that in systems, I mean in the way you manage and focus, and everyone up to the way we structure our business.

The back office, which developed, operated and maintained the bank’s systems and processes, saw itself as confronted with a new stage of its strategic and cultural development. The focus was gradually shifted from efficiency and cost cutting to enterprise-focused capability development, which would lead to improvement in customer experience through customer focused services. However, the strategy was

time consuming and created disorientation within the back office. This was explained by Sally, the Head of Portfolio Management:

Well I think our core value proposition is to help keep the lights on, and that is that it actually provides a stable operating environment by which the business operates in. So in value proposition terms the back office is sort of process driven as opposed to service driven. And as an end consumer it's sometimes very difficult to see the lens by which the back office applies its business model to that of its internal customers [...] I think their structure doesn't assist the creation of value at this point in time, in that it's not customer aligned or process aligned, heavily matrixed, and I think it creates a distraction to the customer [...]

The back office could only reach the end customer through the front office; process activities in the back office were translated into service activities via the front office. This was a long translation and the value of the back office was not obvious. This translation was made more difficult by the back office being a cost centre which thus had no income generating potential and could only establish itself as productive for the group by keeping costs level. To achieve this, back office relied on headcount reduction and outsourcing. This created a potential negative effect on employee morale that eventually was seen to impair customer satisfaction. The Head of Operations Linda explained this claim:

Like in my instance, it might be we can reduce our staff numbers by 300, well great reward. And I could quantify that, and I could put a value on it, and can tell you exactly what I can do for you in that space. But the risk side of it, in terms of gee wizz what's going to happen to your service levels when you want to give service calls to if you take away 300 people, what's going to happen to morale, what's going to happen to customer experience [...]

Customer service was linked to employee morale; budgetary constraints would challenge first employee morale and then customer relations. By these translations, financial capital would impact human capital and in turn relational capital negatively.

Minding financial effects (financial capital)

The relationship between human and relational capital was challenged by financial constraints. With a view to improving this relationship, NSW Bank attempted to invest in infrastructure, information technology and automation of processes (which was the task portfolio of the back office). It introduced investments in organisational capital to reduce the reliance on employees in the pursuit of customer satisfaction. This substitution of human capital for organisational capital was, however, linked to a possible increase in the short-term cost because of investments in technology. The budgeting process introduced a concern with the bank's financial focus, James, the head of outsourcing group commented:

Though it is fun and interesting to have a conversation around long-term, in 70 per cent of the cases the bank would sacrifice our long-term goals for the short-term deliverables. Therefore it is easier to take costs out of the operations area where the short-term cause-effect is seen immediately and the long-term cause-effect does not normally get the focus that it craves.

The schism between the short term and the long term did not favour the long term; the long term was the intellectual capital formula understood as "long-term cause-effect" relations, to be found between investments in intellectual capital financial returns. The sacrifice of the long term – which allegedly happened in 70 per cent of the cases –

motivated managers to continue safe and predictable activities rather than experiment with innovative change, says Paul, General Manager Group Property:

There's nothing particularly innovative about Six Sigma. It's a methodology that plays in the known space. And so here's my [...] version, to be truly disruptively innovative, you need to be playing in the more complex [...] discontinuity space. And as an organisation, because of the focus on the short term earnings, we have a big reluctance to play.

Six Sigma was a methodology for making known processes more productive and, as Paul suggests, the short term would make the bank reluctant to use innovative technology in the pursuit of improved customer experience. Jill from the collections team pointed out:

Well we've got some great technology to help our customers, but NSW Bank tends to be a little bit stuck in the 20th century [...] Currently we're trying to establish something within Collections, a new voice technology [...] an automated voice [...] and we were just about to roll it out, and then a whole heap of people came out of the woodwork and said, no, no one's ever done it before, we don't know how people are going to react [...] if we're always following and not actually leading, well we're never going to be this number one service provider.

Technology – an item of organisational capital – could be a new voice talking to customers (relational capital) but there were two possible disruptions. One was that financial capital would not allow investments to happen; another was that human capital would react with hostility. Neither human nor financial capitals were in favour of organisational capital; they hindered its potential.

Minding technology (organisational capital)

Financial capital was a constraint but it was not a complete barrier to organisational capital. Some funds were allocated to technology investments and upgrades commenced. However, to make technology capable of customer orientation was a significant challenge since at the time, technology was organised around products rather than around customers. The benefits of automation were to increase productivity, but would productivity be similar to customer orientation. John, an executive from the back office, explained:

What are we seeking to excel at? Well we want to excel at all points on that value chain. But it depends on which part of that chain you're talking about, because there are areas there that we're under considerable margin pressure for example. An example of that would be on corporate superannuation, we're a major player in that market, but there's substantial margin pressure around that, because of industry competition particularly from industry funds that have a larger part of that. So the proposition there has to be to provide value by reducing costs and improving service at the same time.

NSW Bank attempted to benefit from automation, but its efforts faced the risk of pushing its customer orientation backwards second to cost savings. Technology was seen to reduce cost and increase productivity; this could be translated into service as predictable execution of processes. However, technology was not necessarily very flexible and might not be customer oriented. Building customer orientation and changing technology away from product orientation was complex and therefore there was a requirement to prepare employees to use new technology constructively. It was acknowledged that technology needed complementary investments in employees'

skills and training was sought to equip personnel with skills to communicate better with customers as Lawrence from the documentation department pointed out:

We do have programs that have targeted that, particularly the Reach Program about providing information out to the front line people. And we have in the NSW Bank Academy is providing training to those front line people in term of experience in what we need to do.

Training did meet obstacles, however, since technology was not quite ready. George from the loans team commented that training did not suit the “actuals” and employees were left confused about rather than clearly understanding the functioning of the new technology:

When we're trained initially, work's like A-B-C-D, this is the practice and stuff like that. It's when we actually get out of the training wheel and we are put into some team, it is completely opposite.” And “We had our training on [the IT system]”. Even during the training we had problems as well, the system wasn't working [...] so we're left confused.

While training was hampered by lack of technology, it was also challenged both by its cost and by its effectiveness due to staff turnover. Amanda, the Head of Human Resources, explained:

I think look at the capabilities of the people that we have at the moment, and particularly turnover rates in process jobs. There at such a level, you can see issues around training, bringing new people into the organisation, a loss of knowledge. I don't know what it is now, but the branches used to turnover their workforce every three years type thing, which is just huge, and it's worse in regional areas. So you've got the high induction training, recruitment [...]

In spite of regular training schedules, it was difficult to retain existing knowledge and effectively transfer knowledge. Amanda further commented that:

Having a quite constrained type view on resourcing, you don't have a lot of capacity to train and train well, and the efficiency that would depend on how well you transfer your knowledge. And we're not at a stage where we really understand those dynamics, but we do understand how important they are.

As organisational capital, technology was a drain on financial capital because to transform it to suit customer orientation (relational capital) it needed investment. The mediation between organisational and relational capital required on the one hand outlays of financial capital and on the other it required complementary investments in human capital. The constraints of financial capital had a negative impact on organisational capital, however, because technological change was only partially accomplished and was late. Financial capital first economised organisational capital and then this impacted the returns on investments in human capital negatively because training was delivered on only partially developed technology.

Minding the employee (human capital)

Training was seen as only a partial success for employee capabilities, but in addition because budgets were constrained generally, staff turnover was exacerbated by restructuring and downsizing employee numbers. With downsizing, employees suspected that the bank was targeting everybody in the department. Jackie from the collections team explained:

I think sometimes they get rid of people who are actually good, you know [...] now you're downsizing you get rid of them. It's really sad that they're losing so much of experience and skills [...]

Downsizing impacted employee capabilities. Although it was expected the speed of downsizing due to automation increased workload and the benefits of automation appeared to arrive late rather than early, in the process creating a pressure on employees. Rob, an employee from the cards team, commented that there was an air of insecurity and employee morale was down:

The new processes and the new technology aren't in yet, so it's kind of like doing something before it happens. They noticed their staff numbers are going to reduce based on the new technology that we're going to get, so why not wait until after that. I can understand getting rid of poor performers, but there's a better way to do that, an easy way to do that without actually targeting everybody. So by doing what they've done recently they've created an environment where people don't feel secure.

However, management suggested that restructuring could be positive as it could help the employees get new and challenging opportunities. John, head of strategy, said:

If you do a good job, I guess the likelihood of you being put in that (being retrenched) position is less, but still I think people now accept that you don't have a job for life. A lot of people are quite happy with the way that things are, because there's lot more opportunities to have a more flexible lifestyle, and so there's certain costs that have come, but there's certain benefits that have been delivered. So personally I think it's good, it's good.

Employees did expect restructuring, but they questioned its timing which seemed to demoralise rather than create opportunities for employees. Michael from the risk and innovation team said:

That [restructure] did come from the top, that wasn't an internal, that's happening across the bank and you can see that happening across the bank. And I don't disagree with it happening, I think occasionally you do need to do retrenchments and stuff, but I think they go too hard, too soon [...]

The patterns of retrenchment, more than the expectation of retrenchment, could result in demoralised employees.

NSW Bank's management understood that automation could result in the possible loss of knowledge and personal networks existing in the business. Therefore, the bank encouraged redeployment of employees skilled, knowledgeable and capable of providing value to the organisation. The bank collected information on tacit skills of employees from their peers and managers. George from operations team said:

[...] And management have all got together and collated a lot of the information, part of them being the core comps that other people have done on people. And due to the core comps they were given, be they good or be they bad, other people have lost their job due to that [...] And so that caused a lot of people not to be reemployed, caused them to lose their job. So, you have to be very honest when you give those appraisals on people.

Employees claimed that if they had good personal relationships with the manager they could be recognised, redeployed and promoted but if they had a strained relationship then they might be made redundant irrespective of their capabilities. Anita, a junior manager from the operations team, remarked:

I've been restructured into sales and service team. And I suppose the new manager that I'm reporting to who's Neil, he's very appreciative, I find him to be a very appreciative manager. He recently nominated me for an award, which I won. So it was good to get some recognition, because previously you can work a lot and not achieve a lot of recognition.

Alex from the collections team commented:

I think the bad things that tend to happen are more with your immediate manager. Maybe someone has been treated unfairly, [...] So the manager may assess your performance based on what they think you're doing, which may be a very small amount of what you really do. It happens to a lot of people, is that you feel that not only is the review not fair in that way, but during the last six months or 12 months you know your manager didn't really know what you were doing on a day to day basis. So I think that as far as I know, from other colleagues on different teams, that seems to be a common thing that occurs at review time.

Relationships between managers and employees were difficult themes to resolve. While discussing this issue the Head of Risk and Innovations team, Bill said:

We know that there are major relationship issues with [...] say for example [...] Sally a team leader and her employees. Sally is a good worker who gives the bank a million dollars profit every year. Rather than questioning her with her relationship issues we tend to just focus on the returns she brings to the bank. We really don't worry about her people skills [...] because at the end of the day it narrows down to money.

Issues such as automation of a product focused process, ambiguous training programs, incomprehensible restructures and strained relationships were proposed to effect customer service negatively. Employees felt unable to cope with work pressure and they suggested that management did not respond to the root of the problems. Employees appeared to understand the importance of positive customer experience, but they saw themselves as hampered in this venture due to increasing workload. John from the property team said:

I don't know, like I've been thinking there's no One Point Contact. Because a lot of customers have been thinking every different person tells different stories, and they have to speak to different people all the time. Yes, there's no One Point Contact really for us here. We have spoken to management about it, but they said yes because it's just the recent restructure, we've still got to fine tune things.

This rather sad conclusion strongly reflected that intellectual capital was difficult to put in place. Human capital did not lead to relational capital because of financial capital. There was an abundance of obstacles to prevent the success of intellectual capital. Intellectual capital faced many different trials.

Relationships between and identities of financial and intellectual capital

The storyline developed above extends knowledge of relationships between elements of intellectual capital by focusing attention on managerial use of intellectual capital information (e.g. Catasús and Gröjer, 2006; Catasús *et al.*, 2007), on the ambiguous relationships between intellectual capital and organisational outcomes such as innovation (Cuganesan, 2005; Mouritsen *et al.*, 2002), and to relationships between intellectual capital information and knowledge management strategies (Mouritsen *et al.*, 2002). Specifically, the storyline helps to focus on how actors such as managers and employees develop and act on the three elements and their relationships

(Mouritsen, 2006). Other research has developed and tested a model where human capital leads to financial capital mediated by organisational and relational capital. The study of NSW Bank suggests that the relationships between the elements of intellectual capital are more complex and more fluid even in a situation where we should expect intellectual capital to be easily and simply managed; after all, in the bank, there was an established statistical model that documented statistically significant and positive relations between the elements of intellectual capital so that happy employees, happy customers, and happy shareholders would co-exist.

However, such insight does not describe the management of intellectual capital. The management concerns that can be noted from NSW Bank extend the knowledge of how intellectual capital performs. The study of NSW Bank illustrates that the composition of elements of intellectual capital is more a set of trade-offs between investments in various elements of intellectual capital than a model proposing investments that augment all these elements because the budget makes intellectual capital an object of economising. When intellectual capital is economised it is constrained and reduced, and its effects will be more uncertain than expected by the intellectual capital model. In NSW Bank the logic of the intellectual capital model can be laid out as in Figure 1, which is a statement not only of the rhetoric of intellectual capital but also of the statistical correlations that the bank had developed. The evidence of the more detailed case study of NSW Bank presents a process more akin to Figure 2, which illustrates how relations between the elements become strained.

Figure 1 resembles the intellectual capital model, even if it starts from organisational capital rather than from human capital. NSW Bank wished to automate customer-oriented processes (organisational capital) and improve employee capabilities (human capital) through training to develop a high performance culture and improved employee commitment. This was proposed to lead to improved customer satisfaction and enable customer loyalty (relational capital). An increase in customer loyalty would increase customer value and in turn increase shareholder value. This is as a flow of investment in organisational capital and human capital which will generate customer relations and financial value.

Figure 2, in contrast, illustrates multiple pressures present when intellectual capital becomes a management object. There are challenges, disruptions and contradictory effects. The ambition to invest in intellectual capital to develop financial capital is questioned by budget restrictions. Both managers and employees understand that intellectual capital is not only an asset; it also requires financial resources and is then also a liability. Intellectual capital may lead to financial capital, but financial capital may also lead to intellectual capital. The model of intellectual capital is therefore underdetermined.

Figure 2 also illustrates that there may be substitutions between the elements of intellectual capital. It is possible to substitute organisational capital (technology) for human capital (employment). Investment in organisational capital is financed by reduction in human capital. Reduction in human capital is not only reduction of employment; it is also loss of knowledge, and of morale with the advent of uncertainty. Increasing organisational capital comes with a loss of human capital. However, increasing organisational capital is an ambiguous move because there is uncertainty about the possibilities of technology to automate processes. Complete automation would be highly costly, and therefore because budgetary constraints also limit the

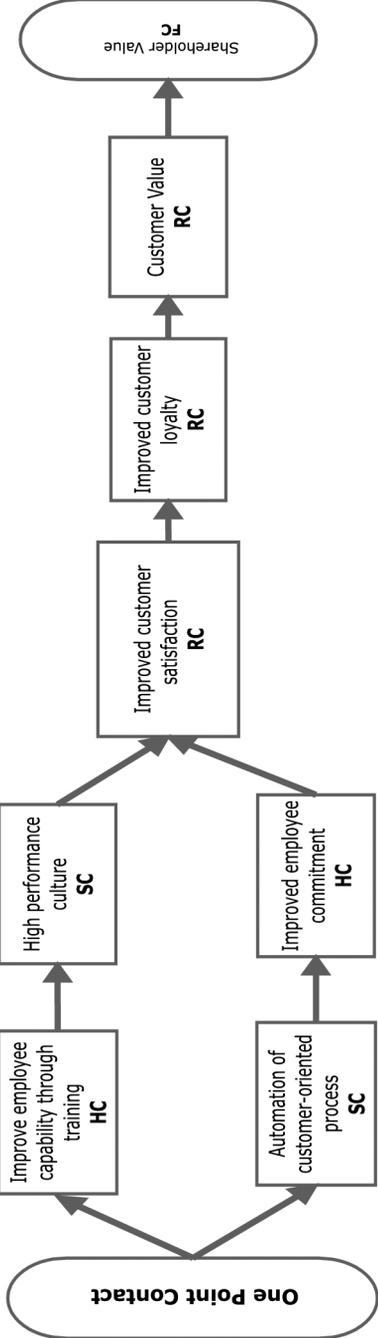


Figure 1.
Proposed flow of value in
NSW Bank

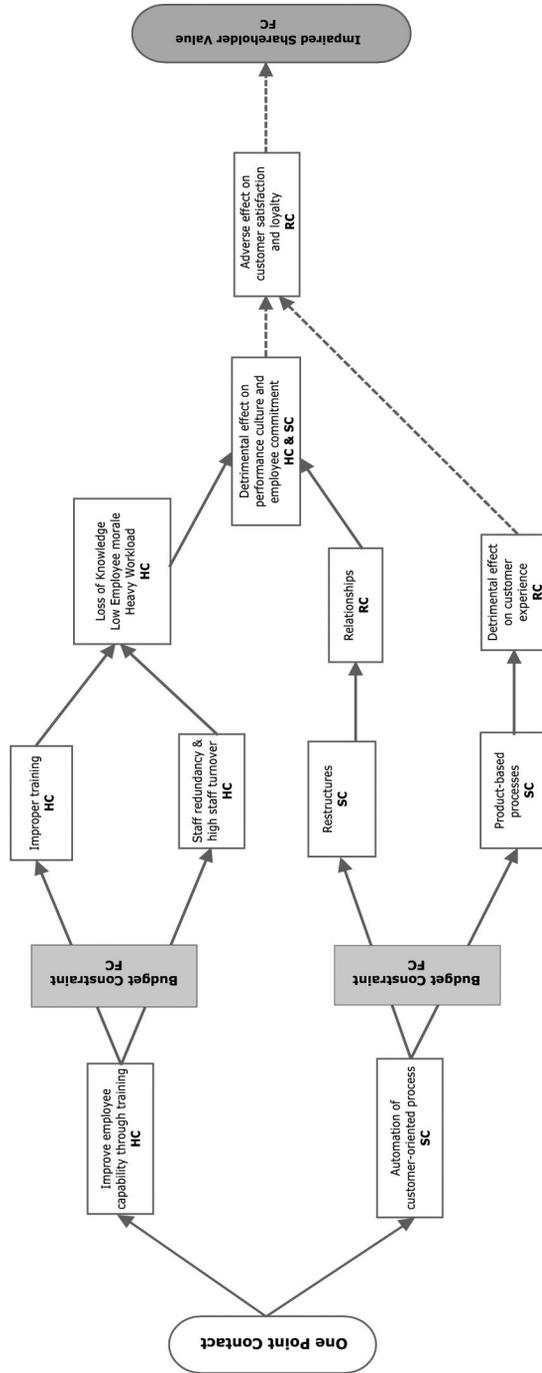


Figure 2.
Complications in
translations of value in
NSW Bank

expansion of organisational capital, it is also deficient in some ways and then there is a return of human capital to resurrect the problem of organisational capital. Organisational capital had not become customer oriented and front line staff was encouraged to make the translation from technology to customers. Human capital was no precondition for organisational capital; neither was it its effect. Human capital was much more related to organisational capital; it was part of the constitution of organisational capital.

Figures 1 and 2 together also illustrate the dilemma that it makes perfect sense to prioritise relational capital found in customer relations and suggest that happy customers make happy shareholders and at the same time suggest that budgetary constraints will not allow this understanding to unfold. Where financial capital, such as shareholder value could be presented as a by-product of customer value, financial capital also provides constraints that put relational capital in jeopardy. There may plausibly be “optimal” investments in intellectual capital (see, e.g. Ittner, 2008; Youndt *et al.*, 2004). Yet the problem is that managers are not aware of how to know the “optimal” configuration of intellectual capital. Managers face trial and error.

These observations justify two central theoretical concerns related to the research question – how do managers mobilise intellectual capital? – namely first, how does the model of intellectual capital with its three constituent elements guide managerial behaviour, and second, how do the sequences between the models’ constituent elements operate? These two questions can be translated into the two following concerns. Prior literature has advocated that intellectual capital be subdivided into the three elements organisational capital, human capital, and relational capital. It has attempted to understand how each of them contributes to the creation of financial capital. This procedure requires two things namely that each element has a logical and empirically clear identity and that the links between the elements can be accounted for. These propositions will be discussed in the following subsections, based on the findings from NSW Bank.

The identity and power of the elements of intellectual capital

The first concern is the status of the elements of intellectual capital. In the intellectual capital literature each element is often understood to have a unique set of properties, its own identity, power, and principles of performance. This may mean that human capital is accorded the role of thinking and reflexivity; organisational capital is concerned with efficiency, re-production and re-use of knowledge; and relational capital describes the role of external entities in the development and appropriation of firm value. The three elements of intellectual capital perform different roles. In principle, they form their power independently of each other; they come together only contingently as accounted for, e.g. via statistical models or via case studies that say that relationships between the elements are complex. Yet in both cases the elements are constituted as separate entities with clear identities.

Observations from NSW Bank allow a different account of intellectual capital, focusing on the difficulties of reaching closure for each element. The closure of the elements suggested by the three-way classification is stylistic and a priori and less an account of observed practices where the role and character of the elements are more complex. In NSW Bank each element gains properties and boundaries by its association with other elements. Each time a particular element is discussed, actors can

only give attention to it for a short time and quickly they incorporate things stylistically belonging to another element of intellectual capital. Therefore the specific role and identity of each element of intellectual capital is coloured by the specific operations of other elements. To understand the concerns of one element, it is necessary to understand the concerns developed in relation to other elements.

For example, when minding the customer (relational capital), it is impossible to keep proposing and developing characteristics of customer orientation *per se*. Customer loyalty is good; customer relations should be long term. But then what? Rather than pursuing this avenue deeper and deeper into the realm of the customer, the concern suddenly develops into a question of the ability of information technology (organisational capital) to deliver a strong customer orientation rather than primarily enhanced product orientation capabilities. Customer orientation (relational capital) differs between situations where technology (organisational capital) inscribes products compared with situations where it inscribes customers. The meaning of customer orientation is not inherent to the element relational capital but it gets colour and performance by the way organisational capital inscribes the customer in information technology. Since, in NSW Bank, information technology struggles with accounting for customer value and tends to focus on products individually, customer orientation gains parallel properties to product orientation. Even if information technology is asked to develop customer orientation, this is a big move, perhaps too big for the available investment budget. Therefore minding the customer produces strong propositions about the customer from within organisational capital rather than from within relational capital. Even if relational capital claims to work towards customer orientation in a practical sense, organisational capital speaks so loudly that relational capital has to accept that it can only see customers through the lens of products. Relational capital cannot be separated from organisational capital. The identities of both become difficult to define; when intellectual capital is understood as a management concern, they are related.

When minding technology (organisational capital) the aim is to increase its capability to automate processes and develop more customer orientation. However, even if there are serious concerns about the adequacy of funds made available to develop information technology, a concern with employees (human capital) quickly emerges. Employees are called on to resolve the inaccuracies of information technology, e.g. to translate information technology's product orientation to customer orientation. It is hoped that employees can increase their workload and productivity simultaneously in order to hamper the negative effects of investments in information technology. Human capital does not lead to information technology; nor does information technology structure the efforts of human capital; rather information technology's power is intrinsically bound up with the efforts of human capital. They are inseparable. The power of human capital and organisational capital is settled simultaneously. More clearly, human capital and organisational capital weave in and out of each other when intellectual capital is in action and their separate identities blur.

Minding the employee (human capital) ostensibly concerns capabilities of employees to implement customer orientation. This is an expansive agenda which, however, quickly turns into a wholly different matter of retrenchment, an issue that is rippled with uncertainties about the power of organisational capital to facilitate investments in, and the retrenchment of, human capital simultaneously.

Organisational capital, such as management systems' abilities to identify employees' efforts and capabilities, shows its ambiguities in the context of lay-offs. One ambiguity is the system's seeming inability to distinguish systematically between people's capability and their attempts to please their manager. Another ambiguity is that allocation of the critical investments between the front and the back offices of the bank is hampered by uncertainty about how much networked knowledge will follow the fate of the single individual. The system is geared towards the average employee, but rarely to the complexity and specificity of the knowledge networks that carry and are carried by the different individuals. The formation of human capital is already part of the competence of organisational capital to identify capability.

These three discussions of customers, of technology and of employees illustrate that an intellectual capital element does not exist in and by itself. Then the relations between the elements of intellectual capital are not fruitfully described as one causal model. The study of NSW Bank rather illustrates that each element is constituted in the relationship in which it engages with other elements; the power of each element is stronger when it is influenced by other elements. Thus, each element of intellectual capital has only limited power of its own; it has only a few, if any, inherent properties and powers that make it a distinct object. In contrast, its boundaries are permeable and its stylistic qualities that separate human, organisational and relational capital are ambiguous in practice. The characteristics of intellectual capital elements are effects of the ways in which each element of intellectual capital is co-produced by other elements.

Relations between financial capital and elements of intellectual capital

The second concern is the sequence of intellectual capital and financial capital. Financial capital is important in all statistical models of intellectual capital where it is presented as the ultimate lagging variable. This is not surprising since intellectual capital is often proposed to account for innovation and growth.

However, the study of NSW Bank offers an important nuance. This starts in the ambiguity of financial capital. In the intellectual capital literature financial capital is invariably presented as a dependent variable. It is an effect that shows up after the work of intellectual capital has been done. It is a marker, a performance indicator, for the success of intellectual capital. The study of NSW Bank shows that this is a simplification. The NSW Bank study shows that financial capital is sometimes an effect; it does, in fact, produce statistical material to show that it is possible to understand financial capital as an effect. But it also adds that in situations where intellectual capital is a managerial concern, financial capital is an input. It is an independent variable that provides investment to intellectual capital. In this capacity, financial capital is no bottom line profit figure; it is a cost budget or cash flow budget that tells managers about their resources to invest in intellectual capital. The conventional model where intellectual capital leads to financial capital can be reworked so that financial capital leads to intellectual capital.

There is a possible circular argument because there is a perpetual sequence here: FC-IC-FC-IC... However, neither financial nor intellectual capital is one thing in this sequence. As input financial capital is a budget that divides up a financial space, this makes heterogeneous investments in intellectual capital possible. The budget requires intellectual capital to be separated into various objects that can be invested in. As output financial capital is more singular and reflects an integrated structure of prior

intellectual capital elements. These are different concerning managerial trade-offs and concerning timing as will be elaborated below.

The concern with managerial trade-off is important because not only does it illustrate that a budget is typically constraining in the sense that not all that could have been invested in will be invested in. There are therefore trade-offs where the relative importance of different types of intellectual capital will be contemplated. In the NSW Bank study budgetary constraints do not allow full transformation of information technology from product focus to customer focus. Nor do they allow the bank to keep all qualified employees. Suddenly there is a trade-off between organisational capital and human capital which generally will imply a negative correlation between organisational and human capital. When financial capital is a budget, managerial concerns do not accept cross-sectional models' claim that all elements of intellectual capital correlate positively. In the case of NSW Bank an increase in organisational capital is accompanied by a reduction in human capital.

The budget thus works directly on each of the elements of intellectual capital. When financial capital is understood as an outcome it reacts to the collective between these elements. The budget makes distinctions which the financial outcome does not. The budget faces dilemmas and trade-offs which the financial outcome does not face. The budget is managerial and concerned with managerial dilemmas.

When in action, the budget does two different things. It disentangles the network of elements of intellectual capital. The budget separates them and treats them as individual entities to manage. Human capital can be taken care of separately to the point where it can be associated less with the specific requirements of technology, less with the specific types of competencies of relevance to the new situation and less with the timing that makes translations between organisational and human capital productive. Training investments appear to be out of synchronisation with the capabilities of technology, and the organisational adjustment of the quantity of employees may be premature. The budget individualises the elements of intellectual capital which, however, when they are in action are impossible to separate as discussed above.

The budget also dramatises the difficulty of making trade-offs. When managers attempt to trade off between elements of intellectual capital, they are understood as having only limited proficiency in seeing the consequences of their work. Trade-offs develop lines of conflict and allow multiple propositions about relations between intellectual capital and financial capital. Even if it is generally accepted that retrenchment of the workforce may be unavoidable, the closer to the time of retrenchment the less certain this is. Only at a distance is it possible to direct the increase in organisational capital and the reduction in human capital. When close, reduction in human capital produces uncertainty since not only is workforce quantity reduced: workforce quality is also reduced.

The second concern with timing reworks how and when financial capital is an input, and how and when it is an output; it also helps to explain why it is easy for NSW Bank to consider financial capital an input and an output simultaneously. Sveiby's (2007) survey suggests 19 ways to monetise the value of intellectual capital. Financial capital is no clear category in the intellectual capital literature. Neither is financial capital a clear category in NSW Bank. It can be understood as a budget, as productivity, and as shareholder value. Each of the three understandings of financial

capital mobilises intellectual capital in different ways. The budget concerns cash investments in elements of intellectual capital. As the NSW Bank back office is a cost centre, the budget stipulates general reduction in spending. Thus the budget constrains the development of intellectual capital or at least it makes important trade-offs between elements of intellectual capital necessary.

When proposed as a productivity measure financial capital is potentially different because then the concern is unit cost in the future. This would make simultaneous investments in both organisational and human capital more likely because then there would be more concern to equip organisational capital with more competences such as the ones offered by human capital. Productivity is an objective of retrenchment but retrenchment creates overflows and reduces productivity and therefore extra efforts are mobilised to make human capital more central. The separation of organisational and human capital undertaken by the budget was not possible and productivity became a concern. Otherwise financial capital would suffer.

The type of financial capital that would suffer from poor productivity is shareholder value. Shareholder value is important to NSW Bank and it is used frequently also to explain the need for intellectual capital. While shareholder value may frame strategising in the bank it rarely reaches the back office before it is translated into a budget or perhaps into a hazy unit cost. Shareholder value is the dependent variable that statistical models of the effects of intellectual capital analyses. Shareholder value is also calculated in NSW Bank and related to intellectual capital found out through questionnaires. This is where the long run shows itself: this is where financial capital becomes a dependent variable that intellectual capital seeks to explain.

Conclusion

Based on a case study of the back office of a major bank we suggest that the relationships between elements of intellectual capital and positive associations with financial capital are optimistic stories which are difficult to master in practice. The case study shows that, contrary to much cross-sectional research, intellectual capital can be a managerial challenge or problem rather than a solution.

First, the identities of the elements of intellectual capital are more fragile than is typically reflected in the literature. It is difficult to determine when one element stops and another begins. It may be that investment in information technology are investments in organisational capital, but investments in training aimed at improving the effectiveness of information technology is only human capital for formal rather than for functional reasons. Such investments in human capital emerge as a product of organisational capital and are not only contingently related to organisational capital but an inherent part of its productivity. So, it is difficult to separate functionally between the two categories. Likewise, the information system is oriented towards transforming the firm from product to customer orientation; the training is in customer relations. Here the boundary between human and relational capital is blurred. So, investments that may be categorised as human capital may functionally be organisational capital or relational capital. Human capital, in this instance, does not produce organisational and relational capital as the statistical model would suggest. Human capital is substitutable by the other types of capital. The identities of the elements are fragile.

Second, the budget is one type of financial capital that reduces the relationships between elements of intellectual capital. It singles out the elements and treats them as singular spaces of investment each with their own purpose. This may reduce the complexity of the whole intellectual capital model; by carving it up it may make decisions about investment possible. However, the gain from increasing the ability to budget for intellectual capital has a loss from the separation of the three elements. This loss returns when the investments meet organisational action because here, the three elements are all part of the performance of intellectual capital.

Third, financial capital turns out to be input when it is a deconstructed budget while it is an output when it is a comprehensive calculation of shareholder value. While in principle, rhetoric and long run financial capital is the output of intellectual capital, in managerial situations financial capital as budget is input to intellectual capital elements are traded off. This is how intellectual capital is mobilised. Mobilising intellectual capital surprisingly involves first its break-down to make it manageable and then its continuous reconstruction to make it practical.

Note

1. We did not evaluate the qualities of these statistical tests; only that they were part of the discourse of intellectual capital.

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