An Integrated Framework for Visualising Intellectual Capital*

By

Christina Boedker, School of Accounting, University of New South Wales, Sydney, Australia

James Guthrie[1], School of Accounting, University of Sydney, Sydney, Australia

And

Suresh Cuganesan, Macquarie Graduate School of Management, Macquarie University, Sydney, Australia

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Structured Abstract

Purpose: This article traces the techniques and consulting methods developed and deployed by an Australian project team during an investigation of a client organisation's intellectual capital management, measurement and reporting (ICMMR) practices. It highlights the benefits of adopting an integrated approach to investigating intellectual capital (IC) and proposes the Intellectual Capital Value Creation (ICVC) framework as an analytical model for extending the breadth and depth of existing management consulting and research practices into ICMMR.

Methodology/Approach: The methods deployed by the project team during the consulting project included semi-structured interviews and content analyses. Furthermore, the ICVC framework was developed and deployed as an analytical model to facilitate the investigation of the client organisation's ICMMR practices.

Findings/ Practical Implications: To the client organisation, the ICVC framework proved beneficial in that it enabled senior management to visualise their knowledge resources and how these contribute to organisational value creation. To the project team, the ICVC framework facilitated the identification of organisational knowledge management gaps, highlighting weaknesses in the client organisation's utilisation of its knowledge resources. The framework provides a structured approach for investigating organisations' ICMMR practices and locating and analysing these within a strategic context.

Originality/value of paper: The paper highlights to management consultants and others the importance of investigating client organisations' ICMMR practices in an integrated manner and demonstrates to organisations the strategic significance of making 'visible' their invisible sources of value creation.

Classification: Case Study

Key words: Intellectual Capital, Value Creation, Knowledge Management, Research Method, Management Consulting.

1. Introduction

Intellectual capital (IC) and related knowledge resources are much featured items on the agendas of business executives and public policy makers. Questions in foci pertain to 'what constitutes IC?', 'how to strategically manage knowledge resources?', 'how to establish guidelines for reporting IC?', and 'how to value and measure such 'invisible' organisational resources?'. The growing interest in IC is driven by a broader range of socio-economic changes pertaining to increasingly sophisticated customers, the surge in service based industries, changing patterns of interpersonal activities and the emergence of the network society, being digital, virtual and interconnected (Petty and Guthrie, 2000; Ordonez de Pablos, 2002; Fincham and Roslender, 2003). These broader socio-economic changes have implications for how organisations manage their resources and are causing a shift in organisational value drivers, with knowledge resources taking precedence over traditional physical resources in the pursuit of competitive advantage (Marr, Schiuma and Neely, 2004, p. 312).

However, despite the growing acknowledgement of the strategic significance of IC, there is limited understanding of how organisations manage, measure and report their knowledge resources (Guthrie, 2001; Fincham and Roslender, 2003). Roos (2005, forthcoming, p. 2) explains that "despite the widely recognised importance of IC as a vital source of competitive advantage, there is little understanding of how organisations actually create IC by dynamically managing knowledge". There is a growing need to provide practical examples illustrating how organisations manage, measure and report their knowledge resources, how they benefit from doing so and how they may improve their ICMMR activities and capabilities. It is essential to "gain a better conceptual and operational appreciation of what it means to strategically manage knowledge for sustained competitive advantage" (McCann and Buckner, 2004, p. 61). To management consultants and researchers, this requires the development of new analytical models, research techniques and staff competencies.

This paper addresses this need and outlines how an Australian project team investigated a client organisation's ICMMR practices. The overarching objective of the paper is to outline the techniques and consulting methods developed and deployed by the project team during the IC project. This is achieved through a number of sub-objectives, pertaining to: 1) a classification of IC and definitions of knowledge management (KM) and related KM activities; 2) a review of the analytical framework and consulting methods deployed to investigate the client organisation's ICMMR practices; and, 3) an outline of the outcome of the analyses, illustrating the client organisation's knowledge management gaps.

The paper proposes the Intellectual Capital Value Creation (ICVC) framework as an analytical model for investigating client organisations' ICMMR practices and highlights, via illustrations from its application, its relevance, use and potential impact. The ICVC framework was particularly beneficial in that it made 'visible' the client organisation's invisible sources of value creation and facilitated the identification of three knowledge management gaps.

The paper is structured as follows. Section 2 introduces the client organisation and the consulting objectives. Section 3 provides a brief review of contemporary activities and trends in the field of IC. Section 4 outlines perspectives on, and definitions of, IC and KM. Section 5 details the ICVC framework. Section 6 outlines the consulting methods deployed to investigate the client organisation's ICMMR practices. Section 7 briefly illustrates the outcomes of the knowledge management gaps analyses. Section 8 concludes the paper and highlights future prospects for the field of IC.

2. Client Organisation and Consulting Objectives

The client organisation is an Australian public sector organisation employing 1500 employees. The project was conducted over a seven month period. It was headed by a team of consultants and researchers and facilitated as a pilot study through the Australian Government Consultative Committee on Knowledge Capital (AGCCKC).

The client organisation’s motivations for engaging in ICMMR were driven by a number of changes in its operating environment including an ageing workforce, organisational restructuring, and the introduction of ‘New Public Management’ reforms resulting in the instigation of Public Trading Enterprise structures and more stringent financial performance requirements (Guthrie, Parker and English, 2003)[2]. These broader changes inspired the executive team to seek new ways in which to improve the organisation’s performance.

Senior management was particularly interested in identifying the organisation’s invisible sources of value creation and making these known to external stakeholders, such as customers, New South Wales (NSW) Treasury and the community. ICMMR was perceived to be a means to provide external stakeholders with a broader perspective on the organisation’s value creating abilities and activities. It was a management tactic deployed to make visible the organisation’s knowledge resources and KM activities. In particular, the intention of the organisation’s senior executives was to demonstrate to NSW Treasury the value of the organisation’s knowledge resources and KM activities, which thus far had not been captured in Budget Papers and financial accounting reports.

Other key motivations driving the executive team’s interest in ICMMR pertained to: 1) improving resource allocation, decision making and the effectiveness of capital; 2) retaining the expert knowledge held by senior staff scheduled for retirement; 3) initiating a process of self-reflection and the re-establishment of the organisation’s corporate identity; and, 4) building a stronger corporate image and positioning the department as an innovative, learning organisation, which sets a benchmark for other public sector organisations.

Based on the client brief, the project team developed the following three consulting objectives:

i. **IC Management:** How does the organisation prioritise, enact, manage and develop its knowledge resources? Is the management of IC done in a strategic manner relating organisational knowledge resources and KM activities to the organisation's strategic management challenges? Is the management of IC done in an integrated manner, taking into consideration the direct and indirect relationships that exist between the organisation's resources?

ii. **IC Measurement:** To what extent does the organisation measure the composition and performance of its knowledge resources and KM activities? Are IC indicators incorporated in strategic planning processes and used to inform decision making and resource allocation?

iii. **IC Reporting:** What is the type and level of IC reported in the organisation's internal business management and strategy documents and annual reports? Does the organisation inform its external stakeholders about its strategic management challenges, KM activities and the composition and performance of its knowledge resources?

The consulting objectives informed the development of the ICVC framework, discussed in detail in section 5.

3. Contemporary Trends in ICMMR

IC and related knowledge management activities have become increasingly important to organisations in their pursuit of value creation and competitive advantage. Reflecting this, in recent years there has been an emergence of IC reporting guidelines and acts, which inform and educate organisations on how to report their knowledge resources and KM activities.

In Scandinavia, the Danish Ministry of Science, Technology and Innovation (DMSTI) has published IC reporting guidelines illustrating to organisations the content, structure and format of IC reports (Mouritsen et al, 2003). The Danish guidelines are based on a pilot project, in which over 100 organisations participated in preparing IC reports.

In the UK, the UK Department of Trade and Industry has proposed a compulsory reporting requirement for UK organisations to include an Operating and Review section in their annual reports from 2005. The objective is to provide a more strategic and forward looking perspective, highlighting the importance of intangible, largely human, assets (CIPD, 2004).

In Austria, the Austrian University Act 2002, which came into force on January 1, 2004, requires state universities to prepare and disclose IC reports. The IC report “informs about the past development of the university as well as forecasts of (sic.) performance outcomes” (Schaffhauser-Linzatti, 2004, p. 2). It is designed to provide an inventory of the IC that exists within the university and serves as an important basis for the university’s budgetary reimbursement.

In Australia, the government has set up the Australian Government Consultative Committee on Knowledge Capital (AGCCKC) with a view to “produce a set of comprehensive knowledge capital standards whose application across the public and private sectors will contribute to the development of Australia as a competitive knowledge economy” (AGCCKC, 2004, p. 2). The AGCCKC has instigated pilot studies, which aim at testing frameworks for reporting and valuing IC. At an industry level, Standards Australia (2003) has released an interim Standard on Knowledge Management, which outlines KM processes and concepts.

Empirical research into IC is also on the increase, both in the USA, Europe and Australia. For example, in the USA, McCann and Buckner (2004) undertook a research study into IC consisting of 222 completed surveys. Among others, the study found that the best performing organisations: “viewed intellectual capital as a competitive asset to be actively managed; had adopted explicit measures for assessing intellectual capital; had cultures that supported the sharing of knowledge; and provided rewards and incentives tied to knowledge creation, application, and sharing” (McCann and Buckner, 2004, p. 59).

However, a recent survey by PricewaterhouseCoopers (2004, cover page) finds that "mid-sized Australian businesses have not realised their true value by taking up the opportunities resting in their intangible assets, both on and off the balance sheet". The survey encourages businesses to conduct a thorough review of their intangibles to determine which soft assets are important to their business' competitive advantage. Likewise, a case study by McKinsey and Co. into the KM activities of a US based company (Capozzi, Lowell and Silverman, 2003) highlights the need for organisations to become better at devising and implementing KM strategies and practices. The study argues that organisations must start managing their knowledge more effectively to put themselves in a stronger position.

This brief review of trends in ICMMR demonstrates that IC and related KM activities are becoming increasingly important to organisations in their pursuit of value creation and competitive advantage. However, the review also highlights that there is a growing need to provide practical examples, which exemplify how organisations manage, measure and report their knowledge resources, how they benefit from doing so and how they can improve their ICMMR activities and capabilities. To management consultants and researchers, this requires the development of new analytical models and consulting methods and competencies. It also requires the establishment of a common language with which to discuss IC, as discussed in the following section.

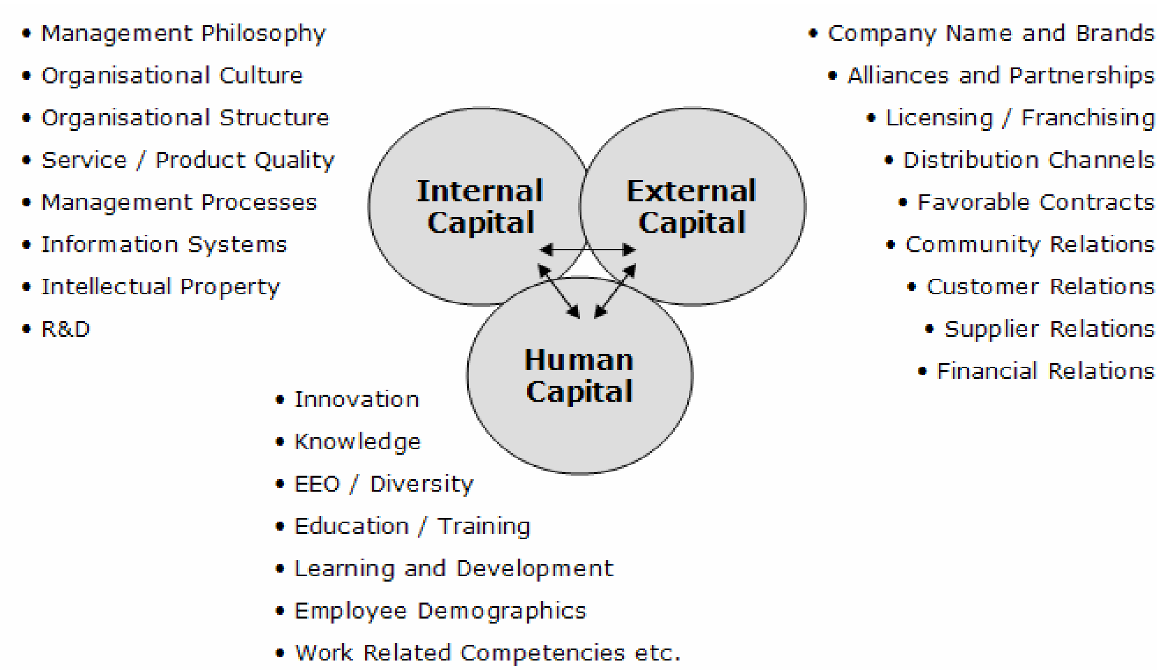
4. Definitions of and Perspectives on ICMMR

Agreeing upon a common language with which to discuss IC is a challenge to practitioners, policy makers, management consultants and researchers within the field of IC. This is partly due to the embryonic nature of this area of management practice and partly due to the inherent difficulties associated with establishing universally acceptable definitions (Leon, 2002). Contemporary literature on IC shows that a plethora of terminologies are being used to inform the discussion of ICMMR. Some of the most frequently used terminologies include: knowledge resources; knowledge assets; knowledge based assets; intellectual resources; intangibles; and, intellectual capital.

Often these terminologies are used interchangeably and ambiguously. This ambiguity poses a challenge to practitioners and management consultants aiming to establish IC as a plausible field of management concern.

To reduce the level of ambiguity surrounding IC, the Australian project team introduced a tripartite model of IC. The model was used to frame the investigation of the client organisation's ICMMR practices. It classifies IC into: Internal Capital; External Capital; and Human Capital, as illustrated in Figure 1. The IC sub-categories featured in the tripartite model of IC were adapted from Petty and Guthrie's (2000, p. 166)[3] IC model.

Figure 1: Tripartite Model of IC



The tripartite model of IC was beneficial to the client organisation in that it simplified the meaning of IC and translated IC into a language easily understood by the senior executives interviewed during the project. It reduced the uncertainty and ambiguity commonly experienced by practitioners wanting to engage in the IC discourse.

In regards to KM, Petty and Guthrie's (2000, p. 159) definition "that knowledge management is about the management of the intellectual capital controlled by a company" and that "knowledge management, as a function, describes the act of managing the object, intellectual capital" was used by the project team. The terminology 'knowledge resources' was used interchangeably with the terminology 'intellectual capital'. This definition correlates with Fincham and Roslender's (2003, p. 3) argument that "the imperative to manage knowledge coincides with that of managing intellectual capital". Furthermore, KM activities were defined as tactics and initiatives taken by the organisation to identify, enact, develop and dispose of its knowledge resources.

In regards to identifying the value of IC, contemporary literature shows the existence of two lines of thinking, known as the stock and the flow approaches (Guthrie et al, 1999; Guthrie and Ricceri, 2002). The first approach, the stock approach, is concerned with calculating a dollar value of intangibles (Guthrie and Ricceri, 2002, pp. 5-9). It provides a snapshot of stocks of IC that is suitable for comparisons between companies. "It represents an attempt to fill the gap between market and book value by finding ways of determining the market assessment of the value of an organisation's stock of IC" (Guthrie and Ricceri, 2002, p. 8).

The second approach, the flow approach (Guthrie and Ricceri, 2002, pp. 9-13) views IC as being concerned with identifying the knowledge resources that drive value creation, rather than assigning a specific $-value to the resources. It is based on the notion that future financial performance is better predicted by non-financial than by financial indicators.

Fincham and Roslender (2003, pp. 10-11) extend this line of reasoning and distinguish between 'value realisation' and 'value creation'. Value realisation is concerned with the historical value generated by an organisation. It correlates with the stock approach. In contrast, value creation is concerned with the capacity of an organisation to deliver sustainable competitive advantage now and in the future. It correlates with the flow approach. The value creation approach is not bound by the necessity of identifying a transaction basis for inclusion in any account or report and does not seek to incorporate value into the balance sheet using traditional financial measures. Instead, the focus of the value creation approach is on providing information, which captures and represents an organisation's future value creation capacity.

The project team's analysis of the client organisation's ICMMR practices was conducted in accordance with the value creation approach. The team focused on identifying the organisation's sources of value creation and how these influence its current and future value creation capacity. This entailed making 'visible' the organisation's invisible knowledge resources and assessing how these were managed, measured and reported.

From this value creation perspective, *IC management* is conceptualised as a process of organisational discovery and development (Roos et al, 1997). Here, "value does not (only) imply calculating a value, but to understand the creation and development of value" (Mouritsen, 2004, p. 261). "What is important about intellectual capital is the implicit importance, not of the investment in the stock of intellectual capital, but of the flow - the utilisation of that stock in pursuing the purposes of management" (Collier, 2001, p. 441).

The objective of *IC measurement,* from this value creation perspective, is not to assign a financial value of IC but rather to enable management to monitor the performance of the organisation's knowledge resources and KM activities over time (Mouritsen et al, 2003; Fincham and Roslender, 2003). IC measurement is, in this regard, "a means to verify a company's ability to achieve its strategic intent" (Chen, Zhu and Xie, 2004, p. 196).

In regards to *IC reporting*, from this value creation perspective, an IC statement is seen as an inscription device and a centre of translation, which makes knowledge visible (Mouritsen, Larsen and Bukh, 2001). It does so by summarising the organisation's efforts to develop and use knowledge resources, by reporting on the mechanisms put in place to make knowledge manageable and by telling a story of how the resources of the organisation are composed and bundled together in order to create value (Mouritsen, Larsen and Bukh, 2001). This perspective correlates with Fincham and Roslender's

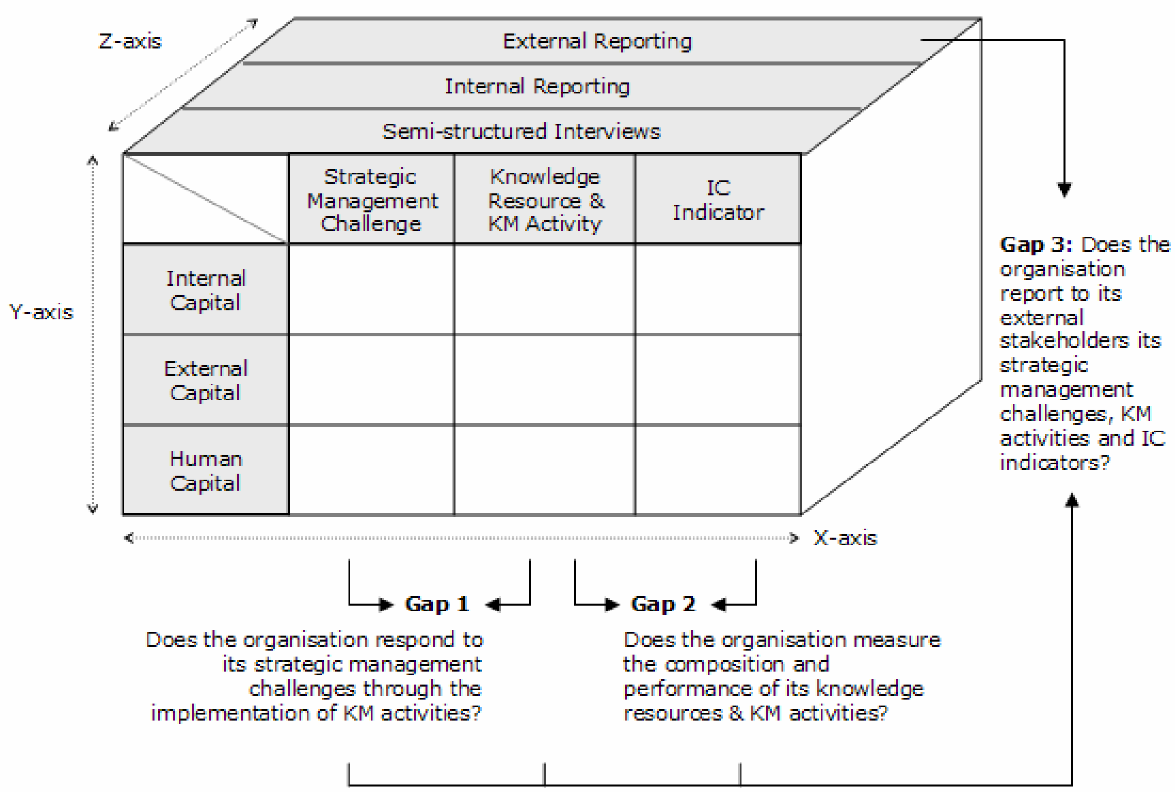
(2003, p. 12) argument that business reporting is no longer solely about the financial representation and the valuation of assets. Instead, its emphasis is:

> on telling the story of how different assets and values within the organisation evolve jointly and coalesce. The new business reporting is a theory of what creates value, one that is set in narrative form, albeit a reliable and valid form (Fincham and Roslender, 2003, p.12).

5. A Framework for Investigating ICMMR Practices

The project team developed the ICVC framework (see Figure 2) as an analytical model to facilitate the investigation of the client organisation's ICMMR practices. The ICVC framework was informed by the consulting objectives outlined in section 2.

Figure 2: ICVC Framework & Gaps Analyses



The ICVC framework was inspired by two existing IC models: Petty and Guthrie's (2000) tripartite model of IC; and Mouritsen et al's (2003) IC statement model. The ICVC framework is structured as follows:

- The y-axis elements are derived from Petty and Guthrie's (2000) tripartite model of IC, categorising IC into: External, Internal and Human Capital.

- The x-axis elements are adapted from the reporting categories of Mouritsen et al's (2003) IC statement model. They detail the: 1) organisation's Strategic Management Challenges; 2) Knowledge Resources enacted, and the Knowledge Management Activities implemented, by management to respond to the management challenges; 3) Indicators or Measures assigned to measure the composition and performance of the knowledge resources and KM activities vis-à-vis the management challenges.

- The z-axis elements detail the research methods including the semi-structured interviews and content analysis. These methods are discussed in more detail in section 6 below.

The ICVC framework proved particularly beneficial to the project team in that it facilitated the assessment of organisational knowledge management gaps. As illustrated in Figure 2, three knowledge management gaps were investigated:

i. **Gap 1: Strategic Management Challenges vs Knowledge Management Initiatives:** Does the organisation respond to its strategic management challenges through the implementation of KM activities, including the acquisition, disposal, enactment and development of its knowledge resources?

ii. **Gap 2: Knowledge Management Activities vs IC Indicators:** Does the organisation measure the composition and performance of its knowledge resources and KM activities?

iii. **Gap 3: Internal IC Management Issues and Practices vs External IC Reporting Practices:** Does the organisation report to its external stakeholders its strategic management challenges, KM activities and IC indicators via its annual reports?

The ICVC framework was used to link the organisation's knowledge resources and KM activities to its strategic management challenges and, hence, its ability to create value now and in the future. The ICVC framework is thus similar to recent models developed within the IC discipline, which also attempt to link IC to organisational value creation. Popular models include among others the: Balanced Scorecard and Strategy Maps (Kaplan and Norton, 1996; 2004); Value Creation Maps (Marr, Schiuma and Neely, 2004); and IC-Navigators (Fernstrom, Pike and Ross, 2004). Comparing the ICVC framework to these models, similarities include the strong strategic focus (as per the Balanced Scorecard) and consideration of inter-relationships between different knowledge resources (as per the Value Creation Maps and IC-Navigators). In contrast, the ICVC does not attempt to force a causal relation to value in financial terms, as is the case with the Balanced Scorecard. Furthermore, it identifies inter-relationships between different knowledge resources through a consideration of how these resources are co-implicated in the strategic management challenges rather than through the development of visual linkages, as per the Value Creation Maps and IC-Navigators.

The ICVC framework is also significantly different to those IC models offered by management consulting firms in Australia. Common approaches in this regard appear to focus on assigning monetary values to IC resources or emphasising particular aspects of IC categories or ICMMR activities only. For example, Deloitte offers a specialised human capital consulting service (Deloitte, 2005) while PricewaterhouseCoopers includes IC as part of a broader investigation into ValueReporting™ (Morris *et al.*, 1998). In contrast to these, the ICVC framework presents a more holistic approach to examining client organisations' ICMMR practices, incorporating all functional aspects of IC (i.e. Internal, External and Human Capital) and three key IC activities (i.e. IC management, measurement and reporting).

The ICVC framework neither attempts to pre-define the knowledge resources or activities to be considered or how they impact on value creation. Rather, the establishment of the knowledge resources is done through consulting and research methods that capture and reflect the unique value creation context and logic of the client organisation. This contrasts with models such as the Value-Creation Index (Baum *et al.*, 2000) and the Value Creation Scoreboard (Lev, 2001), both of which identify a set of non-financial measures or drivers that are statistically associated with indicators of value such as share prices. Furthermore, an explicit and differentiating element of the ICVC framework is the evaluation of alignment or gaps in client organisations' ICMMR practices.

The project team's experiences with using the ICVC framework to investigate the client organisation's ICMMR practices are discussed in more detail in section 7.

6. Consulting and Research Methods and Processes

The consulting and research methods deployed to analyse the client organisation's ICMMR practices are illustrated on the z-axis in the ICVC framework. The three methods adopted include: 1) semi-structured interviews with fifteen senior managers and executives; 2) content analysis of the department's Annual Reports (2000–03); and 3) reviews of the organisation's internal business management and strategy documents including the: Corporate Plan (2003-06); Divisional Business Plans (2004); and Target Business Model (2003) document[4].

The use of multiple consulting and research methods facilitated a more comprehensive investigation of the client organisation's ICMMR practices, revealing gaps in its KM practices. Each of the three methods employed are discussed briefly below.

Semi-structured Interviews

The objective of the semi-structured interviews was to gain an understanding of how the organisation and its members enact, manage, measure, report and develop their knowledge resources and whether this is done in a strategic and integrated manner (see consulting objective 1 in section 2). To achieve this objective, the interviewees were asked to: (1) identify the organisation's Strategic Management Challenges (column 1 in the ICVC); (2) comment on the Knowledge Resources deemed to be important to the organisation and the KM Activities implemented by management to respond to the management challenges (column 2 in the ICVC); (3) outline the IC Measures or Indicators, if any, assigned to assess the composition and performance of the knowledge resources or KM activities (column 3 in the ICVC).

A benefit of using the ICVC framework to guide the semi-structured interviews was that it established a linkage between IC and organisational value creation. It did so by asking the interviewees to comment on the ways in which they respond to the organisation's management challenges and how they enact, utilise, develop and dispose off the organisation's knowledge resources. The ICVC framework helped frame the mindset of the interviewees to view their organisation and managerial activities from an IC perspective. It brought day to day tactical activities to a strategic level and enabled them to relate the organisation's management, measurement and reporting activities to its strategic intents.

The semi-structured interviews were integral to establishing the organisation's ICMMR activities and played an important role in facilitating the three gaps analyses, discussed previously in section 5.

External Reporting: Content Analysis of the Client Organisation's Annual Reports

Content analysis was deployed as a research method to analyse the level and type of IC reported in the client organisation's annual reports and internal business management and strategy documents[5]. The outcome of the content analyses was a quantitative summary of the levels and types of IC reported to external stakeholders in its annual reports. The analyses enabled the project team to derive patterns in the presentation and reporting of information and gain an insight into which resources and activities are important to the organisation. A rationale for applying this method to analyse annual reports is that annual reports are viewed as communication devices, which tell a story of how the organisation and its resources are enacted, utilised, developed and disposed off. The starting point for conducting the content analyses entailed classifying IC information into categories and sub-categories according to a pre-defined coding scheme. The annual reports were thereafter analysed in accordance with the coding scheme and the level of reporting of IC within each pre-defined category was recorded. One of the benefits of content analysis is that it ensures published information is analysed systematically and reliably (Guthrie *et al*., 2004).

Together with the semi-structured interviews and review of internal business documents, the content analyses of the annual reports were integral to the analysis of gap 3, which assessed the extent to which the organisation reports to its external stakeholders its strategic management challenges, KM activities and IC indicators.

Internal Reporting: Content Analysis and Reviews of Internal Documents

The review of internal documents entailed reading through the organisation's Target Business Model (2003), the Corporate Plan (2003-06) and the Divisional Business Plans (2004). Content analysis was applied to the Corporate Plan (2003-06) in accordance with the method used to analyse the annual reports, discussed above.

Together with the semi-structured interviews, the review of the internal business management and strategy documents played an important role in establishing how the organisation manages, measures and reports its IC internally. The Divisional Business Plans and the Corporate Plans were particularly useful to the project team in establishing whether the organisation manages its knowledge resources in a strategic and integrated manner. They provided an insight into which knowledge resources and KM activities are prioritised within the organisation's strategic management framework and informed all three gap analyses.

A benefit of using the ICVC framework to conduct content analyses on annual reports and internal documents is that it details whether the organisation measures the composition and performance of its knowledge resources and KM activities. This is done by means of the ‘IC Measures or Indicators’ reporting category featured on the x-axis of the ICVC (see column 3). The decision by the project team to include this reporting category was based on the assumption that measuring the performance of the knowledge resources and KM activities is necessary to evaluate whether the resources and/or activities create or destroy value for the organisation.

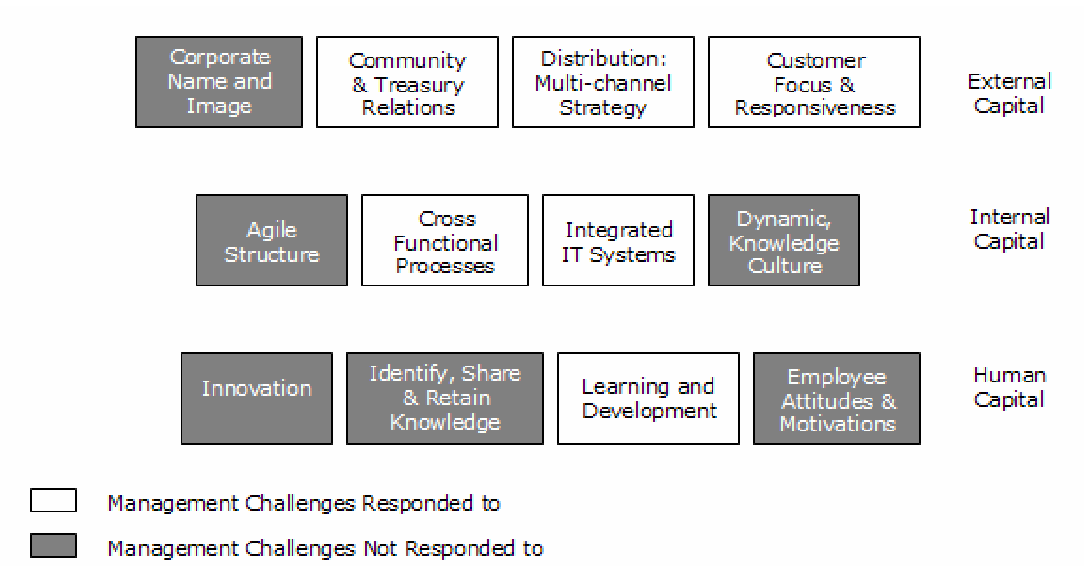
7. Knowledge Management Gaps & Practical Implications

The project team’s investigation of the client organisation’s ICMMR practices illustrated that all three knowledge management gaps were found to be present at the client organisation, indicating weaknesses in the utilisation of its knowledge resources. Gap 1 showed that the organisation responded poorly to six out of twelve of its strategic management challenges, indicating that it does not manage all areas of IC in a strategic manner. Gap 2 showed that the organisation does little to measure the composition and performance of its knowledge resources and KM activities and illustrated that IC measures are not used to inform decision making and resource allocation. Gap 3 showed inconsistency between the organisation’s internal IC management issues and practices and its external IC reporting practices, indicating that external stakeholders are not fully informed about the organisation’s internal IC management issues and practices[6]. The use of the ICVC framework to identify gap 1 is illustrated in more detail below.

The analysis of gap 1 was based on a comparison of columns 1 and 2 in the ICVC framework. The objective of this analysis was to assess the extent to which the organisation responds to its strategic management challenges through the implementation of KM activities across the three IC categories (i.e., Internal, External and Human Capital). The analysis was based on the assumption that value creation is a function of the ways in which the organisation manages its knowledge resources vis-à-vis its strategic management challenges.

Informed by the semi-structured interviews and the review of the organisation's internal business management and strategy documents, the analysis of gap 1 showed that the organisation faced twelve strategic management challenges. These are illustrated graphically in Figure 3. The analysis also illustrated that six out of the twelve strategic management challenges were not addressed by the organisation through the implementation of KM activities. These strategic management challenges are shaded grey in Figure 3[7].

Figure 3: Knowledge Management Gap #1: Responses to Strategic Management Challenges



The lack of attention to six out of twelve strategic management challenges highlighted weaknesses in the organisation's utilisation of its knowledge resources. It illustrated that strategically significant knowledge resources and KM activities, identified by the senior executives during the interviews, were not prioritised by the organisation within its strategic management framework.

The analysis was, in this regard, beneficial to the executive team at the client organisation in that it introduced a new perspective from which to understand and analyse their organisation, enabling them to visualise the organisation's knowledge resources and how these contribute to, or subtract from, organisational value creation. It demonstrated to the executives the strategic significance of making visible the organisation's invisible sources of value creation.

On the basis of the visualisation of the organisation's knowledge resources and the identification of its knowledge management gaps, the project team was able to devise a series of recommendations and action plans for how to improve the utilisation of the organisation's knowledge resources. To illustrate, in brief, the client recommendations for KM gap 1 pertained to:

- **External capital:** Strengthening the corporate image and communicate to external stakeholders and Treasury, in particular, the significance and contribution of the organisation's knowledge resources and KM activities to value creation.

- **Internal capital:** Building structural agility and develop a dynamic, outward looking, engaged, team based, knowledge culture with a view to enhance the timeliness, reliability and responsiveness of customer services and improve organisational innovativeness and development.

- **Human capital:** 1) Enhancing employee motivations to improve operational efficiency and organisational learning; 2) Facilitating knowledge identification, sharing and retention to capture expert knowledge and reduce the risks associated with the ageing of the workforce.

In summary, the ICVC framework offered five main advantages to the project team.

First, the framework is rooted in Sveiby's (1997) original tripartite categorisation of IC, a widely accepted classification and definition of IC categories. Also, it is informed by Mouritsen et al's (2003) IC statement model, which has been tested by over 100 Danish organisations. The roots of the ICVC framework enhanced its credibility. Furthermore, it reduced the level of dissonance among the interviewees as several executives expressed familiarity with the components of the framework, and in particularly the categories featured in the tripartite model of IC. The ICVC framework provided a broad, yet easy to understand, classification and definition of IC, thereby ‘demystifying’ IC and making it easy for the client organisation to comprehend ICMMR.

Second, the ICVC framework linked IC to value creation by tracing the development and creation of value rather than seeking to assign a financial, stock value to the knowledge resources. It enabled the project team to assess how effective the executive team is at managing and developing the organisation’s knowledge resources vis-à-vis its strategic management challenges. The project team was able to identify the knowledge resources that drive value creation at the client organisation and assess how effectively these are enacted, managed, utilised and developed within the organisation’s strategic context.

Third, the framework facilitated an integrated approach to organisational resource analysis and management (Marr, Schiuma and Neely, 2004) by relating knowledge resources and KM activities across the three IC categories featured on the y-axis of the ICVC (i.e., Internal, External and Human Capital) to value creation. This was achieved by the project team requesting the interviewees to identify the knowledge resources enacted to respond to the management challenge across all three IC categories, thereby encouraging cross-functional integration and horizontal, as opposed to vertical, thinking. In doing so, the framework helped illustrate the interrelations and interdependencies that existed between the client organisation’s resources regardless of their nature (i.e., tangible or intangible) or functional location (i.e., operations, HR, finance, etc).

Fourth, the project team’s experience with the application of the ICVC framework suggested that the framework can be used in a variety of ways by management consultants, researchers and client organisations. For instance, it can be used as: 1) an analytical framework for consultants and researchers to analyse client organisations’ ICMMR practices; 2) an internal management tool for managing organisational resources in an integrated and strategic manner; and, 3) a reporting tool to provide external stakeholders with a broader perspective on the organisation’s value creating activities and abilities in the form of an IC report.

Last, the ICVC framework enabled the executive team at the client organisation to visualise the organisation’s knowledge resources and how these contribute to or subtract from organisational value creation. It introduced a new perspective from which to understand and analyse the organisation and enabled the senior executives to gain a better understanding of the strategic significance of the organisation’s knowledge resources and KM activities.

8. Conclusion and Future Prospects of IC

This paper has responded to the growing need to illustrate how organisations manage, measure and report their IC, how they benefit from doing so and how they may improve their ICMMR activities and capabilities to enhance the utilisation of their knowledge resources.

The paper has presented the ICVC framework as an integrated management consulting framework for investigating client organisations’ ICMMR practice. It has illustrated the benefits of the ICVC framework in visualising client organisations’ invisible sources of value creation and assessing the degree of alignment between the various components of organisational ICMMR. The application, use and relevance of the ICVC framework has been illustrated through a case study of an Australian public sector organisation seeking new ways in which to improve its performance, strengthen its corporate image, and secure its expert knowledge. A combination of different methods was utilised to facilitate the process, comprising semi-structured interviews and content analysis of internal business documents and annual reports. Specifically, the ICVC framework proved beneficial to examining the existence and extent of three knowledge management gaps pertaining to: (1) Strategic Management Challenges vs KM Activities; (2) KM Activities vs IC Indicators; (3) Internal IC Management Issues and Practices vs External IC Reporting Practices. The analyses highlighted weaknesses in the client organisation's ICMMR practices with all three knowledge management gaps detected. Based on these findings, the project team provided the client organisation with a series of recommendations as to how to improve the utilisation of its knowledge resources with a view to enhancing value creation and competitive advantage.

As a result of this initial study, the client organisation has decided to develop IC reports for inclusion in its annual reporting documentation in 2004/05 and to initiate the development of an IC scorecard to improve organisational resource allocation and managerial decision-making processes. Furthermore, the project team has commenced collaborative projects with five other Australian public, private and third-sector organisations with a view to deploying the ICVC framework in their organisations. Common to these organisations is the recognition that knowledge resources and ICMMR activities are increasingly important to securing financial resources from governments and/or other sources of capital and for improving the basis for organisational resource allocation and decision making. As such, organisations seek better understandings and improvements of their value creation processes and an identification of the organisational resources that are key to their ability to survive and compete more effectively. A common challenge to these organisations is the absence of a clear understanding of how these management and development process should be commenced and navigated. The ICVC framework provides one means for organisations to commence this journey.

However, potential barriers to the wider dissemination of the ICVC framework exist. One main barrier is a pre-occupation among corporations with valuing IC. Evidence in Australia indicates share-market investors and analysts focus on value realisation in financial terms, rather than longer-term value creation (Morris, Eccles and Falconer, 1998). This narrow focus on value realisation is among others influenced by the transition to international accounting standards in 2005 (Buffini and Fenton-Jones, 2004).

The second main barrier to the proliferation of the ICVC framework comprises the required engagement of the client organisation in the consulting processes and the continuous commitment to the ICMMR activities after the mandate has been awarded. A distinctive feature of the ICVC framework is that it is developed and implemented in conjunction with senior management at participating client organisations. Doing so requires engagement, involvement and commitment by stakeholders from across all functional areas of the organisation. This is a time consuming process, which may not appeal to ‘time-poor’ executives and employees. In contrast, alternative IC frameworks, which contain pre-defined features and processes that can be quickly implemented, may seem more attractive to organisations in search of fast, short term solutions. Countering such ‘off the shelf’ consulting packages is the loss of organisational learning and development, an invaluable aspect and a significant benefit of the ICVC framework and consulting processes deployed by the Australian project team.

Overcoming such barriers requires education and heightened awareness of ICMMR activities among practitioners, management consultants, researchers and public policy makers. Current initiatives undertaken by the AGCCKC and other institutions detailed earlier provide important stimuli in this regard. The conduct and development of pilot studies, which illustrate the organisational benefits and challenges associated with implementing ICMMR frameworks and activities play an important role in yielding the awareness required to establish ICMMR as managerial priorities. Furthermore, significant monetary funding of innovation programs by the Australian government (Commonwealth, Government of Australia, 2004) are important signals to the broader economy of the importance of ICMMR.

Hence, the observations of the project team indicate that the IC movement in Australia is set to increase. Present and growing pressures for organisations to improve their managerial practices in relation to the strategic management, measurement and reporting of their knowledge resources suggest an increasing market for IC management consulting and the potential use of the ICVC framework.

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[1] Corresponding Author: Address: james.guthrie@mgsm.edu.au, University of Sydney, Economics and Business Building H69, cnr Codrington & Rose Streets, Sydney NSW 2006, Australia

[2] Please see Guthrie, Cuganesan, and Boedker (forthcoming) for more details on the client organisation’s motivations for engaging in ICMMR.

[3] Petty and Guthrie’s (2000, p. 166) tripartite model of IC was adapted from Sveiby’s (1997) original classification of IC.

[4] The Corporate Plan (2003-06), Divisional Business Plans (2004) and Target Business Model (2003) documents are internal documents provided in confidence by the client organisation.

[5] Content analysis of annual reports has frequently been used by researchers in the field of intellectual capital reporting, including Guthrie and Petty (2000) and Yongvanich and Guthrie (2004).

[6] For more details on the inconsistencies between the client organisation’s internal IC management issues and practices and its external IC reporting practices, please see, Boedker, Guthrie and Cuganesan (2005).

[7] It should be noted that the organisation had in place some KM activities pertaining to the strategic management challenge called ‘Knowledge Identification, Sharing and Retention’. These activities were however fragmented and done in pockets with no overarching strategy or action plan in place. This research finding was informed by the semi-structured interviews and the review of the Divisional Business Plans (2004), neither of which showed any mentioning of the organsiation’s knowledge identification, sharing and retention activities. For more information on these activities, please see, Boedker, Guthrie and Cuganesan (2005).