“Visualising Intellectual Capital at
an Australian Public Sector Organisation”

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Visualising Intellectual Capital at an Australian Public Sector Organisation

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Abstract:

The growing interest in intellectual capital (IC) poses challenges to management consultants and researchers and calls for new analytical models and techniques for investigating client organisations’ IC practices. This article traces the techniques deployed by an Australian project team during an investigation of a client organisation’s IC management, measurement and reporting (ICMMR) practices. It exemplifies the benefits of adopting an integrated approach to investigating IC and proposes the Intellectual Capital Value Creation (ICVC) framework for extending the breadth and depth of existing management consulting and research practices into ICMMR.

The ICVC proved beneficial in that it enabled senior management at the client organisation to visualise their knowledge resources and how these contribute to value creation. To the project team, the ICVC illustrated weaknesses in the client organisation’s utilisation of its knowledge resources and facilitated the identification of organisational knowledge management gaps. 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.

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 focus pertain to ‘what constitutes intellectual capital?’ ‘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 including 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 networked (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 establish management studies exemplifying how organisations manage their knowledge resources and how they benefit from doing so. 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 methods and competencies.

This paper addresses this need and outlines how an Australian project team investigated a client organisation’s ICMMR practices. The overarching objective of this 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’s ICMMR practices; and, 3) an outline of the outcome of the analyses, highlighting the organisation’s knowledge management gaps. The paper proposes the Intellectual Capital Value Creation (ICVC) framework as an analytical tool 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 to the project 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. 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 methods deployed to investigate the client organisation’s ICMMR practices. Section 7 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 (AGCCCKC).

The client organisation was motivated to engage in ICMMR by a number of changes in its environment, including an ageing workforce and the introduction of ‘New Public Management’ reforms, which resulted in transformations in the organisation’s structure, the instigation of Public Trading Enterprise structures, and more stringent financial performance requirements typical of recent reforms in the Australian Public Sector (Guthrie, Parker and English, 2003). 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, Treasury and the community. ICMMR was seen
as a means to provide external stakeholders with a broader perspective on the organisation’s value creating abilities and activities. It was deployed as a management tactic to make visible the organisation’s knowledge resources and KM activities. The objective was to demonstrate to Treasury, in particular, 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 organisation’s interest in ICMMR pertained to: 1) improving resource allocation, decision making and the effectiveness of capital; 2) enhancing inter-organisational transparency and knowledge sharing; 3) retaining the expert knowledge held by senior staff scheduled for retirement; 4) initiating a process of self-reflection and the re-establishment of the organisational identity; and, 5) 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 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 documents and annual reports? Does the organisation inform its external stakeholders about the composition and performance of its knowledge resources in its annual reports?
The consulting objectives informed the development of the ICVC framework, discussed in detail in section 5, which framed the investigation of the organisation’s ICMMR practices.

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, recent years have seen the emergence of IC reporting guidelines and acts for organisations to report their knowledge resources and knowledge management activities.

In Scandinavia, the Danish Ministry of Science, Technology and Innovation (DMSTI) has published a reporting guideline illustrating to organisations the content, structure and format IC reports (Mouritsen et al, 2003).

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 and place greater emphasis on 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 all state universities to provide external reports in the form of IC statements. The IC report “informs about the past development of the university as well as forecasts of performance outcomes” (Schaffhauser-Linzatti, 2004, p. 2). The IC statement 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 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 several 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 KM detailing KM processes and perspectives.
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 large research study into IC consisting of 222 completed surveys by senior executives employed in a diverse range of US industries. 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 PwC (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 the businesses’ competitive advantage. Likewise, a case study into the KM practices of a US based company by McKinsey and Co (Capozzi, Lowell and Silverman, 2003) highlights the need for companies to become better at devising and implementing KM strategies and practices. The study shows that organisations must start managing their knowledge more effectively to put themselves in a stronger position.

Evidently, IC and related knowledge management activities are becoming increasingly important to organisations in their pursuit of value creation and competitive advantage. However, organisational practices in relation to ICMMR indicates that there is room for expansion and opportunities for improvement (Roslender and Fincham, 2004; Guthrie and Petty, 2000). The starting point for doing so is to establish management studies exemplifying how organisations manage their knowledge resources, how they benefit from doing so and which opportunities exist for enhancing existing knowledge management practices. 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 one of the main challenges to practitioners, policy makers, management consultants and researchers in the IC field. 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). Existing literature on IC shows that a plethora of terminologies are currently used to inform the discussion of IC. 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 for framing the investigation of the client organisation’s ICMMR practices. The boundaries of the investigation were defined by three IC categories: Internal Capital; External Capital; and, Human Capital. The IC categories were adapted from Petty and Guthrie’s (2000, p. 166) model of IC. Figure 1 provides a graphical illustration of the tripartite model of IC, illustrating the three main IC categories and the related knowledge resources.

**Figure 1: Tripartite Model of IC**

- Management Philosophy
- Organisational Culture
- Organisational Structure
- Service / Product Quality
- Management Processes
- Information Systems
- Intellectual Property
- R&D
- Corporate Name and Brands
- Alliances and Partnerships
- Licensing / Franchising
- Distribution Channels
- Favorable Contracts
- Community Relations
- Customer Relations
- Supplier Relations
- Financial Relations

- Innovation
- Knowledge
- EEO / Diversity
- Education and Training
- Learning & Development
- Employee Demographics
- Work Related Competencies etc.
The tripartite model was beneficial to the client organisation in that it simplified the meaning of IC and translated IC into a language easily understood by the client. 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. For the purpose of the research study the terminology ‘knowledge resources’ was used interchangeably with the term ‘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”. In regards to knowledge management activities these were defined as tactics and initiatives taken by the organisation to identify, enact, develop and dispose of its knowledge resources.

In regards to approaches to valuing IC, contemporary literature shows the existence of two lines of thinking, known as the stock or the flow approaches (Guthrie et al, 1999; Guthrie and Ricceri, 2002). The first approach, the stock approach (Guthrie and Ricceri, 2002, pp. 5-9), is concerned with calculating the dollar value of intangibles. 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, focus 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 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* was 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 initiatives 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 makes IC ‘visible’ 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, pp. 403-404). Fincham and Roslender (2003, p. 12) explain that business
reporting is no longer solely about the financial representation (i.e., valuation of tangible and intangible 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 consulting objectives outlined in section 2 informed the development of the Intellectual Capital Value Creation (ICVC) framework, illustrated in figure 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 accounting model. The ICVC 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 accounting model. They detail the: 1) organisation’s Management Challenges; 2) Knowledge Management Initiatives taken 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.

- The z-axis details the methods used to inform the data collection processes. These pertain to: 1) IC reporting in the organisation’s annual reports; 2) IC reporting in the organisation’s business management and strategy documents; and 3) IC management, measurement and reporting as observed during semi-structured interviews with senior managers and executives. The research methods are discussed in more detail in section 6 below.

The ICVC framework proved particularly beneficial to the project team in that it enabled the assessment of consistencies or knowledge management gaps in the client organisation’s ICMMR activities. It was used to assess the existence of knowledge management gaps in three areas, as follows:

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

ii. **Gap 2. Knowledge Management Activities vs IC Measures:** Does the organisation measure the composition and performance of its knowledge resources and KM activities?
iii. **Gap 3. Organisational KM Activities vs External Reporting of IC:**

Does the organisation report to its external stakeholders its strategic management challenges, KM activities and IC indicators via its annual reports?

In summary, the ICVC framework offered six main advantages to the project team as they embarked on the process of investigating the client organisation’s ICMMR practices. First, it provided a broad, yet easy to understand, classification and definition of IC and related IC categories, thereby reducing the ambiguity of IC. This made it easy for the client organisation to comprehend IC and facilitated the translation of IC activities and resources into everyday management challenges and activities.

Second, the ICVC framework is rooted in Sveiby’s (1997) original categorisation of IC, a widely accepted classification and definition of IC categories. Also, it is rooted in Mouritsen et al’s (2003) IC accounting model, which has been tested by 100 Danish organisations, which used the framework to develop IC reports detailing the composition and performance of their knowledge resources and KM activities.

Third, it linked IC to value creation by tracing the development and creation of value (Mouritsen, 2004, p. 261). It enabled the project team to assess how effective management is at managing and developing the organisation’s knowledge resources (see column 2 on the x-axis of the ICVC) vis-à-vis the organisation’s management challenges (see column 1 on the x-axis of the ICVC). This enabled the project team to identify the organisational knowledge resources that drive the creation of value and assess how these are enacted, managed and developed. In line with the value creation approach to IC, the framework not only captured the type of IC at a given point in time, but more importantly, it traced the development and creation of value over time. It provided a tool to make visible the organisation’s value creating activities and abilities, thereby providing an insight into the organisation’s future value creating capacity (Fincham and Roslender, 2003).

Fourth, the ICVC 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 managers to identify the knowledge resources required 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).

Fifth, 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 researchers and management consultants to analyse client organisations’ ICMMR practices; 2) an internal management tool for senior executives to manage and measure business performance, improve resource allocation and manage the organisation’s knowledge resources in an integrated and strategic manner; and, 3) an external 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 senior management at the client organisation to visualise the organisation’s knowledge resources and how these contribute to organisational value creation. It introduced a new perspective from which to understand the organisation, which enables senior management to gain a better understanding of the strategic significance of the organisation’s knowledge resources.

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. 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 business management and planning documents including the Corporate Plan (2003-06), Divisional Business Plans (2004) and Target Business Model (2003) document.

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 in the following.

**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
Management Challenges (column 1); (2) comment on the Knowledge Resources
deemed to be important to the organisation and the KM initiatives undertaken by
management to respond to the management challenges (column 2); (3) outline
the Measures or Indicators, if any, assigned to assess the composition and
performance of the knowledge resources or KM activities (column 3).

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 inducing the interviewees to comment on the ways in which they
respond to the organisation’s management challenges and how they enact and
manage the organisation’s knowledge resources, thereby bringing day to day
tactical activities to a strategic level.

The semi-structured interviews were integral in establishing the organisation’s IC
management and measurement activities and played an important role in
facilitating the three gaps analyses, outlined in section 5.

**External Reporting: Content Analysis of the Client Organisation’s Annual
Reports**
Content analysis was deployed as a method to analyse the level and type of IC
reported in the client’s annual reports. A rationale for applying this method to
annual reports is because annual reports are viewed as communication devices,
which tell a story of how the organisation and its resources are managed. Content
analysis can in this respect provide insights into which IC categories are perceived
important by the organisation in its pursuit of value creation. One of the benefits
of content analysis is that it ensures published information is analysed
systematically and reliably (Guthrie et al, 2004).
The outcome of the content analysis applied to the client organisation’s annual reports was a quantitative summary of the levels and types of IC reported by the organisation to its external stakeholders. The analysis enabled the project team to derive patterns in the presentation and reporting of information and form an opinion as to which resources and activities are important to the organisation.

Together with the semi-structured interviews and review of internal business documents, the content analyses were integral to facilitating gaps analysis number three, which assessed whether the organisation reports to its external stakeholders the composition and performance of its knowledge resources and KM activities via its annual reports.

**Internal Reporting: Content analysis and Reviews of Internal documents**

The review of internal documents entailed reading through the department’s Target Business Model (2003), the Corporate Plan (2003-06) and the Divisional Business Plans (2004) to gain an understanding of the type and level of IC reported and managed internally. 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 documents played an important role in establishing how the organisation manages and measures its IC. 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 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 gaps 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 is necessary to evaluate whether the knowledge resources create or destroy value for the organisation. It
provided the project team with an insight into whether the organisation manages its knowledge resources in a strategic manner.

7. Knowledge Management Gaps

The ICVC framework enabled the project team to assess the degree of alignment in the client organisation’s ICMMR practices and investigate its utilisation of its knowledge resources. The analyses showed 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 analysis one showed that the organisation responded poorly to six out of twelve of its management challenges, indicating that it does not manage all areas of IC in a strategic manner. Gap analysis two showed that the organisation does little to measure the composition and performance of its knowledge resources and KM activities and indicated that IC measures are not used to inform decision making and resource allocation. Gap analysis three 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 composition and performance of the organisation’s management issues and KM activitiesvi.

In the following, the use of the ICVC framework to identify gap one is illustrated in more detail.

Gap analysis one was based on a comparison of columns 1 and 2 in the ICVC framework, assessing the extent to which the organisation responds to its management challenges 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 management challenges.

Informed by the semi-structured interviews and the review of the organisation’s internal business management and strategy documents, the analysis showed that the organisation faced twelve management challenges. These are illustrated graphically in figure 3. The analysis also illustrated that six out of the twelve management challenges were not addressed by the organisation. These are shaded grey in figure 3vii.
The gap analysis facilitated by the ICVC framework were beneficial to senior management at the client organisation in that it introduced an IC perspective from which to understand their organisation, enabling them to visualise the organisation’s knowledge resources and how these contribute to, or subtract from, value creation. The lack of attention to six out of twelve key management challenges highlighted weaknesses in the organisation’s utilisation of its knowledge resources and demonstrated 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 the three knowledge management gaps, the project team was able to devise a series of recommendations and action plans for how to reduce organisational risk exposure and enhance organisational sustainability. To illustrate, in brief, the KM recommendations pertained to:

- **External capital**: Building a strong corporate image and communicate to external stakeholders the organisation’s value with a view to strengthening relations with the community, customers and Treasury in particular.
- **Internal capital:** Building structural agility and develop a dynamic, outward looking, engaged, team based, knowledge culture.

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

### 8. Conclusion and Future Prospects of IC

This paper has responded to the growing need to study and analyse how organisations go about managing, measuring and reporting their knowledge resources, how they benefit from these activities and how they may improve their knowledge management capabilities and the utilisation of their knowledge resources.

The paper has also presented the ICVC framework as an integrated management consulting framework for investigating client organisations’ ICMMR practices, detailing its benefits in visualising client organisations’ 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, content analysis of internal documents and content analysis of annual reports. Specifically, the ICVC framework proved beneficial to examining the existence and extent of three knowledge management gaps at the client organisation: (1) Management Challenges vs KM Initiatives; (2) KM Activities vs IC Measures; (3) Organisational KM Activities vs External Reporting of IC. It 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 the organisation’s 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 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. However, 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. Overall, the observations of the project team indicate that the IC movement in Australia is set to increase, with resulting pressures for organisations to improve their managerial practices in relation to the strategic management, measurement and reporting of their knowledge resources.
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ii Please see Guthrie, Cuganesan, and Boedker 2005, for more details on the client organisation’s motivations for engaging in ICMMR.

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


v 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).

vi For more details see, Guthrie, Boedker and Cuganesan (2005, forthcoming).

vii It should be noted that the organisation had in place KM activities pertaining to Knowledge Identification, Sharing and Retention. These activities were however fragmented and done in pockets with no overarching strategy or action plan in place. The smallest division had no activities in place at all. The second largest division was starting to review options for implementing activities. The third division, the largest of the three, had in place two activities. 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 knowledge identification, sharing and retention activities.