Intellectual Capital and External Environment Link in Organisations

Dr. Eric Kong
School of Commerce
Charles Sturt University
Locked Bag 588, Wagga Wagga
NSW 2678, Australia
Fax: +612 6933 2790
E-mail: ekong@csu.edu.au

Preferred Stream: Stream 6

Profile: Eric Kong is a Lecturer at the School of Commerce, Charles Sturt University, Australia. He completed his PhD at Monash University, Australia. He also holds a Master of Science in Quality Management from the University of Paisley, United Kingdom and a Postgraduate Diploma in Training from the University of Leicester, United Kingdom. Prior to joining the academia, Eric worked in Human Resources and Training & Development in the private sector for 10 years. His current research interests include intellectual capital, knowledge management, non-profit management, strategic management and governance. Eric is a member of Academy of Management (AOM) and Australian and New Zealand Academy of Management (ANZAM).

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ABSTRACT: *Intellectual capital (IC) is generally categorised into three primary interrelated components: human capital (HC), structural capital (SC), and relational capital (RC). The popular 'value platform' has been widely used to help managers to visualise the importance of value creation through the interactions of the three IC components. However, organisations do not exist in vacuum. External environment conditions are crucial to organisations' ability to function as well as knowledge transfer from and to the organisations. A review of the literature and a series of in-depth interviews with 36 senior executives from 23 organisations in Australia reveal that there is a strong link between IC and external environment in organisations. A better understanding of the link enables organisations to better manage their intellectual resources and external environmental conditions. The paper contributes to the existing IC literature by suggesting a modified IC conceptual framework which highlights the importance of external environment in the today's knowledge economy.*

INTRODUCTION

The popular 'value platform', as an IC conceptual framework, has been widely used to help managers to visualise the importance of value creation through the interactions of the three IC components in organisations. However, organisations do not exist in vacuum as they are connected to their external environment. In this paper, the external environment conditions are defined as any factor or trend that is external to an organisation but which has direct or indirect impact on the organisation' day-to-day operations and strategies. Examples of external environment are natural disasters or economic crises. External environment likely has significant influence on an organisation's ability to function as well as knowledge transfer from and to the organisation. With this in mind, the value platform does not reflect a holistic view of an organisation as there is a missing link in the framework regarding the organisation's intellectual resources and its external environment. This missing link is rarely discussed in the existing literature. This paper aims to fill this gap by arguing that there is a link between IC and external environment in organisations and that link helps to lead to organisational performance.

Based on a review of the existing IC literature and a series of in-depth interviews with 36 senior executives from 23 organisations in Australia, this paper argues that there is a strong link between IC and external environment in relation to the organisations' ability to capture, create, and diffuse knowledge. A better understanding of the link between IC and external environment enables managers to better manage their intellectual resources and external environmental conditions. The original contribution of the paper is therefore threefold. Firstly, very little systematic research has focused on the IC-external environment link. This paper takes the first step to examine the relationships between IC and external environment in organisations. Secondly, based on the data from the case of 23 Australian organisations, this paper builds a nascent body of literature suggesting that organisations need to invest in their IC and pay attention on their external environment simultaneously. The findings help managers to understand how IC can assist dealing with external environment conditions and how external environment conditions may have implications on organisational intellectual resources.

Finally, the paper proposes a holistic IC conceptual framework which helps managers to visual the importance of external environment in the today's knowledge economy. The framework demonstrates that an effective management of IC-external environment relationships aids organisations to sustain a long-term success in the competitive environment.

This paper is divided into three main parts. Firstly, it provides a brief outline of the concept of IC and its components. Then it suggests there is a link between IC and external environment. After a short outline of the research methodology, the findings of the interview data gathered from the 36 Australian senior executives are presented. A holistic view of IC conceptual framework based on the findings is proposed which reflects the significance of IC-external environment relationships in organisations. This is followed by a detailed discussion of the holistic IC conceptual framework and how the framework can be utilised effectively for long-term organisational success.

INTELLECTUAL CAPITAL (IC)

The IC concept and Value platform

Edvinsson and Malone (1997: 44) describe IC as "the possession of knowledge, applied experience, organisational technology, customer relationships and professional skills that provide … a competitive edge in the market". Youndt, Subramaniam, and Snell (2004: 337) define IC as "the sum of all knowledge an organisation is able to leverage in the process of conducting business to gain competitive advantage". Marr and Roos (2005) argue that organisations often perform more efficiently and effectively if they understand what IC they possess and how to configure their IC to create organisational value. According to these scholars, organisations are able to achieve competitive advantage through IC. Following the work of a number of scholars in the field, IC is generally taken to encompass three primary interrelated components: human capital (HC), relational capital (RC) and structural capital (SC) (Bontis, 1996; 1998; Dzinkowski, 2000; Roos; Roos; Dragonetti & Edvinsson, 1997; Saint-Onge, 1996; Stewart, 1997).

HC includes various human resource elements, including attitude, competencies, experience and skills, and the innovativeness and talents of people (Bontis, 2002; Choo & Bontis, 2002; Fletcher; Guthrie; Steane; Roos & Pike, 2003; Guerrero, 2003; Roos & Jacobsen, 1999; Roos et al., 1997). HC represents the tacit knowledge that is embedded in the minds of people in organisations (Bontis, 1999; Bontis; Crossan & Hulland, 2002). SC, on the other hand, is the pool of knowledge that remains in an organisation at the end of the day after individuals within the organisation have left (Grasenick & Low, 2004; Mouritsen & Koleva, 2004; Roos et al., 1997). SC includes all of the non-human storehouses of knowledge in organisations, such as databases, process manuals, strategies, routines, organisational culture, publications, and copyrights which creates value for organisations, thus adding to their material value (Bontis; Keow & Richardson, 2000; Guthrie; Petty & Ricceri, 2006; Ordóñez de Pablos, 2004). Finally, RC represents the knowledge embedded in relationships external to an organisation (Bontis, 1998; Bontis, 2002). RC incorporates the loyalty of valuable customers; the

mutual trust and commitment given by key suppliers and clients; the reliability and reliance partnership from alliance or contractual partners; and the reputation and relationships that an organisation has developed over time in its surrounding community (Knight, 1999). Although RC captures the relationships external to an organisation, it does not reflect the total influence of the external environment on the organisation (Kong & Thomson, 2006). In sum, IC is the intelligence that can be found in human beings (or HC), organisational routines (or SC), and network relationships (or RC) in organisations (Bontis, 2002).

One conceptual framework in IC theory explicitly prescribes the three components as having equal importance to organisations. This equality in components is the "value platform" (Dzinkowski, 2000; Edvinsson & Malone, 1997). This can assist managers to articulate the three IC elements and ultimately maximise the contributions of IC to their organisations. Figure 1 shows the value platform and how knowledge flows between the three IC components.

Insert Figure 1 here

Since what constitutes IC for one organisation may not be the same for another organisation (Roos; Bainbridge & Jacobsen, 2001; Roos & Jacobsen, 1999; Snyder & Pierce, 2002), IC is therefore compatible with resource-based view's four attributes of firm resources: it is rare, valuable, costly to imitable, and non-substitutable, which has been criticised for being predominantly focusing on the internal aspects of organisations (Bontis, 1999; Bontis, 2002; Roos et al., 1997). Thus, the value platform falls into the same criticism of too much internal focus.

This paper argues that organisations should not only focus on their intellectual resources, but also their external environment because external environment conditions are crucial to an organisation's ability to function (Giffords & Dina, 2004). In this paper external environment refers to any factor or trend that is external to organisations but which has direct or indirect impact on the organisations' day-to-day operations and strategies. Organisations might have direct or indirect influence over some of their external environment. For instance, organisations may be able to enhance their public image through their public relations activities. However, more often the organisations have no or very little power to prevent and control external factors. This environment includes global economic crises such as the Asian economic crisis of 1997-1998, change of technology such as easy access of information through internet, malicious events such as the 9/11 attack on the United States in 2001, natural disasters such as the Asian tsunami in 2004, and diseases such as the severe acute respiratory syndrome (SARS) outbreak in China and Hong Kong in 2002 to 2003 and the avian influenza epidemic in many countries around the world. The next section outlines the methods used by this research project to explore the IC-external environment link using the case of 23 Australian organisations.

METHODS

IC by its nature involves tacit knowledge, thus extremely difficult to quantify (Roos et al., 1997). Also, the IC-external environment link in organisations is a new area of enquiry. It was important,

therefore, to allow a degree of flexibility during the research process in order to explore and examine the relationships between IC and external environment in organisations. Due to this reasoning a qualitative approach adopting in-depth, semi-structured interviews of 45 to 60 minutes was conducted as the primary research method. This was supplemented with an analysis of relevant documents such as annual reports, organisational websites and newspaper clips. The adoption of multiple methods helps to increase the credibility and reliability of the collected data. The sample population was only chosen from Australian organisations which had at least five years of history, formal structure and strategic planning. The reason for the selection criteria is that a long history of organisational establishment with formal structure and strategy formulation allows IC to be sufficiently utilised and accumulated in the organisations.

Only "elite" participants were interviewed in the semi-structured interviews (Marshall & Rossman, 1999: 113; Welch; Marschan-Piekkari; Penttinen & Tahvanainen, 2002: 613). According to Welch et al. (2002: 613), "elites are synonymous with top management". Elite participants can usually provide valuable information such as an organisation's policies, past histories, future plans, legal and financial structures, and its relationship to other organisations because they are often considered to be influential, prominent, and/or well-informed people in their organisation (Marshall & Rossman, 1999). All this information is critical to this study in relation to the link between IC and external environment in organisations. Accordingly, elite participants are believed to be the best individuals to fulfil the purpose of theoretical sampling by providing the largest amount of information for the research study (McNabb, 2002).

Based on the sampling selection criteria, 55 Australian organisations were contacted via e-mail and telephone, of which 23 agreed to participate. Those participated included a variety of organisations from both for-profit and non-profit sectors. There were 36 senior executives (17 women and 19 men) in total who took part in the interviews. All the senior executives involved in key strategic management positions within their organisations. Most of them were previously involved in the strategic management of their previous organisations before they joined the current organisations. Accordingly, these participants were able to provide rich, textured descriptions of strategic management in their organisations, particularly regarding the holistic views on the IC practices and concepts adopted by their organisations and how external environment may affect their intellectual resources. The average number of years for interviewees working in their current organisations was over 6 years with a range of less than one year to 40 years experience. All participants who took part in this research were Australian citizens. To maintain the confidentiality of the participants each participant was assigned a code (e.g. Exec-1) and the numerical order was not indicative of interview chronology.

Interviewees were asked a range of questions regarding the relationships of IC and external environment in their organisations. More specifically, senior executives provided insights into their knowledge of how IC-external environment link could be conceived as a holistic concept for strategic

management decision making in organisations. An ongoing analysis was conducted through out the entire interview process which ensured the justification of theoretical saturation which determined whether data collection activities should end or carry on (Charmaz, 2003; Richards, 2005; Strauss & Corbin, 1998). A qualitative research computer software program – NVivo was used to assist the organisation and analysis of the collected data. Theoretical saturation occurs when no pertinent or new data emerges; the properties and dimensions of emerging categories are well developed; and the relationships between categories have been established and validated through the data collected (Strauss & Corbin, 1998). In this case theoretical saturation occurred after 27 interviews and 8 further interviews were conducted to validate the emergent categories. The findings of the interview data are presented in the next session.

THE LINK BETWEEN IC AND EXTERNAL ENVIRONMENT

The influence of external environment to organisational intellectual resources can be evidenced from the 2004 Asian tsunami in Thailand. In an interview by the Los Angeles Times on 1 January 2006, the President of Phuket Tourist Association, Pattanapong Aikwanich, sadly revealed that "[w]e lost about half of our (tourism) income in 2005, compared with 2004". Khao Lak, which is part of Phang-nga, was the worst hit area of all six coastal provinces in the South. The major problem impeding Khao Lak's recovery is the lack of credit of the resort owners. Unlike other affected areas where most of the structures were repairable, virtually everything at Khao Lak needs to be rebuilt from the ground up. With most of their resorts in their first few years of operation, and thus still shouldering significant debt from the initial construction, they face considerable difficulty finding financing to rebuild.

However, the worst hit was not only limited to the infrastructure in the areas, but also the intellectual resources that embedded in the organisations operating in those areas. As revealed from newspaper clips and the Tourism Authority of Thailand (TAT) website which is the official organisation responsible for the promotion of tourism in Thailand, all the processes, procedures, databases publications (or in other words SC) were destroyed. Human lives (which carry HC) were lost. Reputation and image (which represent partly RC) of the areas were damaged. All these could take years to recover.

Nevertheless, external environment conditions might be perceived as opportunities to organisations (Weihrich, 1982). They might instantly increase the demand for operations and activities which puts immense pressures on organisational resources or they might create opportunities for organisations to enhance efficiency. This view was supported by the data gathered from the interviewees. An example of the external environment which was perceived to be a threat to the organisations was given by Exec-1:

> I suppose the challenge for charitable non-profit organisations is the influences that the outside world can sometimes have on us. When the big discussion of the Governor General in relation to child abuse became public knowledge, our weekly donations went down by 75%. There is a direct correlation (Exec-1, Paragraph 104).

Adopting new technology in the following example was deemed to be an opportunity for the organisation to improve organisational efficiency.

> *We also need to look at things like merging technologies and external market trends where we may be able to adopt new technology to allow us to deliver more effective and efficient services (Exec-13, Paragraph 47).*

Others perceived that the external environment changed the way their organisation operated and delivered its services.

> *Technology change will be a big one. I don't think [our services] will be eradicated as a result of technology change but something could come along and change the way we do things. We have to be ready to face that challenge of new training, new knowledge or whatever (Exec-8, Paragraph 43).*

> *Our operations may in fact be improved by new technologies. One of the things we have tried to do with our human resources is trying to manage the time difference in different states like in [one of the Australian states]. We travel a big distance, with many employees travelling frequently. So we are trying to plan modern ways to deliver our services without reducing the efficiency and the effectiveness of our services as well (Exec-9, Paragraph 128).*

Patrickson and Bamber (1995) argue that successful organisations develop their own ways of scanning and monitoring their external environment. In Exec-5's case below, an "environmental scan" was interpreted as the ability to envision a holistic perspective of essential organisational elements in relation to IC.

> *You need to know how you are going to allocate your IC. There are a whole lot of issues around you whether or not you are doing the right thing. Knowing your resources gives you the opportunity to do an <u>environmental scan</u>. Not only that you know what could happen internally and externally in a range of areas, but also it gives you an opportunity to look at government policy and look at what is happening in states and overseas, what are some of the trends might be. Where things might be going in the future (Exec-5, Paragraph 25, <u>emphasis added</u>).*

Similar views were also found elsewhere in the data, suggesting that holism was necessary:

> *I think it is the understanding of the <u>holistic</u> nature of IC. Getting the greatest integrated systems and a <u>bigger picture</u> to get a grasp of what the assets that the organisation has got is important. Not just in terms of human capital but also all the other things, for example, without those infrastructure capacities and network relationships we just can't do what we need to do (Exec-16, Paragraph 145, <u>emphasis added</u>).*

Both P5 and P16 argued that knowing what intellectual resources their organisations embraced and integrating their intellectual resources with a bigger picture involving external environment was critical to their strategic management processes.

The influence of the external environment may not be readily seen frequently in the participating organisations, but its impact to the organisations can be profound. Sull (2005) argues that major opportunities and threats often emerge sporadically and thus, what senior executives do during the lulls in external developments often matters more than the dramatic actions taken during times of crisis. Accordingly, whether organisations are capable of capturing the opportunities (or eliminating the threats) will depend strongly on the capabilities of the organisations. Sull (2005) puts forth that managers must probe the future and remain alert to anomalies that signal potential threats or opportunities during the lulls. Thus, when an opportunity or threat emerges, their organisations will be in the best position to face the challenges from the threat or concentrate resources to seize the opportunity. The following senior executives' view echoed this point.

If we are planning strategy ... for a non-profit organisation the operation environment is very complex because we need to look at government policies at various levels and we work within Federal, State and Local government environments. We need to consider the policies and the politics of the external environment (Exec-15, Paragraph 59).

Why are they [external environment] so important? Because we are a large [non-profit] organisation and if we do something wrong or we miss what is happening or we plan on the basis of incorrect information or bad forecasting, it may be very costly for us. Equally we, for example, invest in [particular non-profit] services which are unsustainable from a funding point of view, which has impacts on our capacity to do other things. So get the picture in terms of looking at where the economy, where the nation is going, where the government is going is pretty important to what we do (Exec-16, Paragraph 67).

Both Exec-15 and Exec-16's views in relation to maintaining a close watch over the economy, government policies and contemporary issues in Australia are consistent with the argument that this paper proposes. A clear picture of IC and the external environment allow managers to fully utilise their intellectual resources in order to face future challenges. In short, this paper stresses that enhancing the capabilities of organisations through IC is a way of handling the challenges directly from the external environment. Based on the interview data and a review of the IC literature, a holistic view of IC conceptual framework is proposed in the next session to reflect the importance of external environment in organisations.

A HOLISTIC VIEW OF IC CONCEPTUAL FRAMEWORK

An organisation should be recognised as dynamic rather than static entity because people join and leave the organisation, parts of the organisation are divested or new parts are acquired and, sometimes, the organisation is merged with another (Caddy; Guthrie & Petty, 2001). IC is a dynamic resource because organisations need to possess or divest, as well as use knowledge. Thus, in addition to marrying the IC components, organisations should also link IC to the external environment. This paper argues that knowledge flow, in particular that from and to the external environment, is missing in the current IC model – value platform. Missing this part of knowledge, managers, employees and volunteers (in the case of non-profit organisations) may be misled as they may see their organisations as simple rather than complex organisations. To address these shortcomings, a "holistic view of IC" model is suggested. Figure 2 provides a visualisation of the "holistic view of IC" model, incorporating external conditions.

Insert Figure 2 here

The tripartite "holistic view of IC" conceptual framework, along with knowledge flow between the three components and with the external conditions in the environment, helps managers to visualise conceptually where they might put their attention and resources, and provides managers broad guidelines on how to seek to maximise the utilisation of resources for growth and enhanced performance. In the holistic view of IC conceptual framework, HC, RC and SC interact with each other on an ongoing basis and that interaction between the three types of IC create value for organisations. Knowledge flows between the three IC components and the value of knowledge increases when it is used. The significance of interaction between the three types of IC resonates in the argument of Nonaka and Takeuchi:

> *[K]nowledge is created only by individuals. An organisation cannot create knowledge without individuals. [However,] the organisation supports creative individuals or provides contexts for them to create knowledge. Organisational knowledge creation, therefore, should be understood as a process that "organisationally" amplifies the knowledge created by individuals and crystallises it as a part of the knowledge network of the organisation. This process takes place within an expanding "community of interaction" which crosses intra- and inter-organisational levels and boundaries (1995: 59).*

The input of new knowledge ("external input" in Figure 2) from external (tacit and explicit) sources enhances the three IC components in organisations. Examples of new external knowledge may include newly recruited employees (or volunteers in the case of non-profit organisations) who bring in extra skills and experience, an input of novel management practices from organisations which lead to renewed policies and work procedures, or newly established relationships with external new stakeholders due to recently explored service areas.

Martin de Holan and Phillips (2004) argue that whenever an organisation is generating new knowledge, it will likely also generate outdated or unwanted knowledge simultaneously. Thus managers must become skilled at learning new knowledge as well as forgetting unwanted knowledge as managing outdated knowledge can be very costly (Martin, 2000a; Martin de Holan & Phillips, 2004). Accordingly, successful organisations should divest themselves of outdated or unwanted knowledge, which applies to the three types of capital. The proposed holistic IC conceptual framework visualises how outdated or unwanted knowledge is eliminated through an "internal output". From a strategic point of view, internal knowledge may be lost intentionally and unintentionally (Kong, 2003). Examples of intentional reduction of knowledge may include throwing out an outdated user manual, terminating an alliance with a partner or reinventing a new organisational image. Voluntary employee turnover (not lay-off), however, is an example of loss of knowledge unintentionally.

The holistic view of IC conceptual framework provides several strategic strong points for organisations. Firstly, the framework emphasises the stocks and flows of knowledge within and outside organisations in order to maximise value creation. External new knowledge comes into individual IC components one at a time or simultaneously. The knowledge flows from one IC component to the others before it is transformed into value to organisations. Secondly, it provides managers, employees, volunteers (in the case of non-profit organisations) and other stakeholders with a better understanding of strategic direction, and consequently leads to better strategic decision making for organisations. Thirdly, the core value is placed at the centre of the model. This enables people in organisations to direct their energy towards the same organisational goals. This holistic IC conceptual framework therefore helps to achieve a strategic alignment between organisational strategy and value creation in organisations. Finally, the framework emphasises the importance of external knowledge input and the significance of internal knowledge divestment.

These strategic advantages help to create a learning culture within organisations by realising the value of acquiring new external knowledge and retaining useful internal knowledge. This implies a greater flexibility within the organisations to adapt to crisis or new opportunities. As a result, this learning culture will enable organisations to better deal with new challenges. More specifically,

learning must relate to the mission and objectives of an organisation and must be seen as the responsibility of all organisational members (Martin, 2000b). One of the participants stressed the importance of learning and how learning may help managers to have a better understanding of the world they were serving:

> *... once we are clear about the strategic intention of the organisation, we then can scope the world [<u>internal and external environment</u>] which we are trying to operate and understand the forces that are around there. Apply the men's learning [sic] can help you to understand that [<u>internal and external environment</u>]. We adopt the best practice that we can in relation to marketing thoughts and so on. And then devised the best means we can to promote our mission, our goals, and dealing with the world where we are in (Exec-3, Paragraph 55, <u>emphasis added</u>).*

The importance for organisations to invest in their IC and pay attention on their external environment simultaneously is that the organisations will be more prepared when threats and opportunities do occur unexpectedly. Although Quinn (1978: 17, emphasis added) argues that "it is virtually impossible for a manager to orchestrate all internal decisions, external environmental events, behavioural and power relationships, technical and informational needs and actions of intelligent opponents so that they come together at a precise moment", it is still important to do the best to protect the intellectual resources in organisations as they are the source for competitive advantage. The holistic IC conceptual framework helps to alert managers the importance of the external environment and its profound effect on their organisations.

CONCLUSION

Based on a review of the literature and interview data from 36 senior executives from 22 Australian organisations, this paper argues that there is a strong link between IC and external environment. A holistic view of IC conceptual framework is proposed, which helps managers to visualise the importance of IC and external environment. Strategic management decision making based on a consideration of IC and external environment will help to minimise the risk of damaging the intellectual resources in organisations. In other words, it helps to sustained long-term success in the highly competitive environment. Other extended qualitative research methods such as case study can be used to further our understanding of the IC-external environment relationships.

Figure 1 – The Value Platform
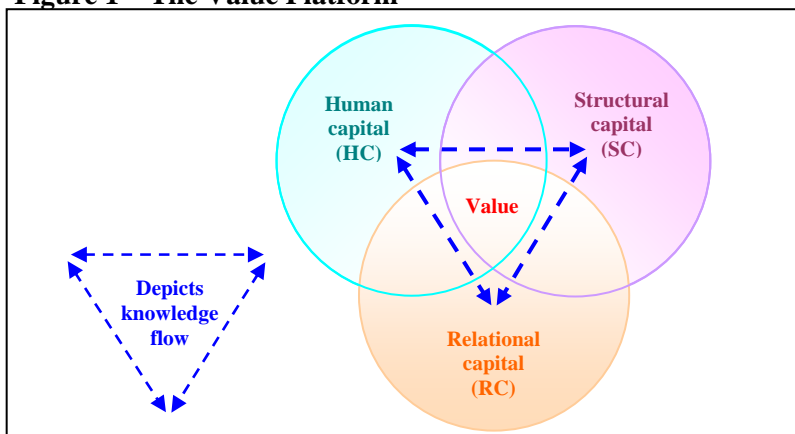
(Adapted from Dzinkowski, 2000; Edvinsson & Malone, 1997; Petrash, 1996)

Figure 2 – A holistic view of intellectual capital (IC) conceptual framework
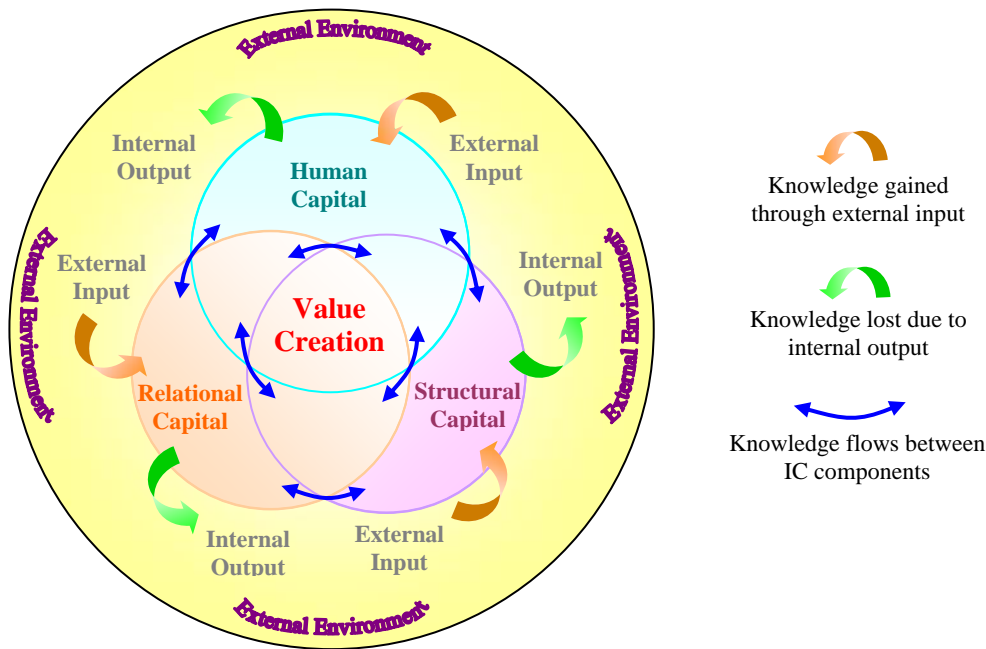
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