

## ORIGIN OF INTELLECTUAL CAPITAL: A REVIEW

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### INTRODUCTION

The Intellectual Capital (IC) movement is relatively young in terms of study, but it is already rich in history. It existed in yester years but its existence was widely recognised as an important asset of the organisation a few decades back only. Its role as the main value driver has been objectively established by the different scholars in the annals of Intellectual Capital and its development. This term was first introduced by John Kenneth Galbraith (an economist) in 1969 and after that several authors like Bontis, Roos, Edvinsson, Sveiby, and Stewart used this concept. They worked over its conceptualization, composition, its significance to the organization, measurement and management. But none could succeed in providing a unified concept, a universally accepted typology and model to measure the same because this phenomenon still is at an emerging stage of development (Martin-de-Castro et al., 2010).

In today's scenario, there has been greater focus on Intellectual Capital in the realm of service sector than ever before and it, therefore, requires much more sophisticated management of the same. But for effective management, its measurement is required and which further needs the identification of its typology. In the present study, an attempt has been made to identify the typology of Intellectual Capital as per the Indian service sector and to develop a model to measure the same.

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## 1.2 INTELLECTUAL CAPITAL

The term Intellectual Capital comprises of two words- Intellectual and Capital. In English, intellectual conveys the general notion of a literate thinker. Its earlier usage, such as in *The Evolution of an Intellectual* (1920) by John Middleton Murry, connotes little in the way of public rather than literary activity. However, according to their linkage and contribution for certain businesses, their importance for stakeholders is irrefutable as stated by Lopes and Rodrigues (2007). According to Oxford English Dictionary, Intellectual means having a highly developed ability to think logically and understand things; relating to a person's mental powers. According to Talkadar, (2008), Capital, in the business context, refers to any asset that will produce future cash flows. The most well known asset types are tangible in nature. Tangible capital therefore refers to the physical and financial assets of the organization. The value of such assets is disclosed periodically (by publicly listed companies) and can be found easily on the balance sheet of the Company's financial records. Physical assets mean land, machinery, inventory, plants, trucks, etc. Whereas financial assets refer to the shareowner's equity, retained earnings, working capital, prepaid expenses, accounts receivables, etc. Intangible assets, on the other hand, such as the skills of the workforce and its organization, are increasingly becoming important towards determining future profits. However, they are much difficult to determine, difficult still to quantify into a value and therefore are never reported. The term combines the idea of the intellect or brain-power with the economic concept of capital, the saving of entitled benefits so that they can be invested in producing more goods and services. The term 'intellectual capital' was first used in a publication by John Kenneth Galbraith in 1969. His concept of the term incorporated a degree of 'intellectual action' rather than 'intellect as pure intellect'. The implication of the view presented by him was that the intellectual capital was more likely to be a dynamic rather than a static form of capital (Edvinsson and Sullivan, 1996: S.358). After that, different authors have defined this term in different manners. According Blair and Wallman (2003:451), "intangibles are non-physical factors that contribute to, or are used in; the production of goods or the provision of services or those are expected to generate future productive benefits to the individuals or firms that control their use".

As per Business Dictionary, (2006) Intellectual Capital is the knowledge that can be exploited for some money-making or other useful purpose. In a very comprehensive manner did Stewart (1997) say, “By intellectual capital I don’t mean a clutch of Ph. Ds locked up in a lab somewhere? Nor do I mean intellectual property (such as patents and copyrights), though that is one part of intellectual capital. Intellectual capital is the sum of everything everybody in a company knows that gives it a competitive edge. Unlike the assets with which business people and accountants are familiar – land, factories, equipment, cash – intellectual capital is intangible. It is the knowledge of the workforce: the training and intuition of a team of chemists who discover a billion-dollar new drug or the know-how of workmen who come up with a thousand different ways to improve the efficiency of a factory. It is the electronic network that transports information at warp speed through a company, so that it can react to the market faster than its rivals. It is the collaboration – the shared learning – between a company and its customers, which forges a bond between them that brings the customer back again and again. According to epistemological studies, intellectual capital is not an object, it is a process which operates in the organizations and its quality is determined by the generating and maintaining abilities of the organization” (Arenas and Lavanderos, 2008:84).

Intellectual capital includes the skills and knowledge that a company has developed about how to make its goods or services; individual employees or groups of employees whose knowledge is deemed critical to a company's continued success; and its aggregation of documents about processes, customers, research results, and other information that might have value for a competitor that is not common knowledge. Thomas Steward (2001) defined IC as “*Intellectual capital is the sum of everything everybody in a company knows that gives it a competitive edge.* In other words it can also be defined as Collective knowledge (whether or not documented) of the individuals in an organization or society. This knowledge can be used to produce wealth, multiply output of physical assets, gain competitive advantage, and/or to enhance value of other types of capital. Intellectual Capital includes customer capital, human capital, intellectual property and structural capital. Sullivan defines Intellectual Capital as the non-financial and non physical resources used by and within a company; it is the knowledge which can be converted into profits (1999:210).

### 1.3 THE EARLY TERMINOLOGY OF INTELLECTUAL CAPITAL

While expounding the term Intellectual Capital, it may be enunciated that some terms and phrases are often confusingly analogous, with each describing a dimension of Intellectual Capital as seen from the perspective of a particular profession and its body of knowledge. Intangible assets, intellectual property, intellectual assets, and knowledge-based assets are discipline-specific terms that often interchangeably and synonymously refer to, what at it most articulate, has become Intellectual Capital.

Intangible assets, also known as non-financial assets, are accounting and financial terms and are mostly used by accountants and financial professionals to refer to the entities or factors of financial analysis that couldn't be captured and reported in the traditional statements of financial reporting. Originally lacking the ability to be formalized within the traditional financial concepts, such intangible entities were often subsumed, if they were attended to at all, for accounting purposes under the term goodwill and placed on the balance sheet as such. Thus, until the turn of the 21<sup>st</sup> century, any monetary value attributed to brands and intellectual property was mainly captured as goodwill. Intellectual Property, recognized in modern law as those ideas, inventions, processes, names, and creations that could be protected and asserted under the law as patents, trademarks, copyrights and trade secrets. Since the European Renaissance, the economic and political significance of ideas and inventions has been acknowledged in some form or another, initially as business monopolies or commercial grants that were bestowed by a monarch or nobility, and later, under the U.S. Constitution and legislation as patents, copyrights, and trademarks. Near the end of the 20<sup>th</sup> century, it became clearer that Intellectual Capital property was a business asset as it had both economic and strategic significance. At that time, lawyers and managers referred to it in its strategic deployment as intellectual assets. Simultaneously, economics and the emerging knowledge management, and information technology disciplines referred to intellectual assets as knowledge-based assets. As the production process for creating intellectual assets became increasingly codified, data was collected and turned into information, and then finally to knowledge, and thus knowledge-based assets became the operational term for increasingly sophisticated intellectual assets.

Strategically, and at the senior and executive levels within corporations, Intellectual Capital became de rigueur as the synthetic terminology used to refer to all the intangible, intellectual, knowledge-based assets that were being formalized for business deployment within society and

that could be protected under the law. As a result, the intellectual material under study and to be identified, captured, formalized, and managed increasingly became known as intellectual capital.

### 1.4 INTELLECTUAL CAPITAL: FROM THE MAIN CONTRIBUTORS IN THE FIELD

Table: 1.1

Skandia (1998)	Brooking(1996)	Stewart (1999)	Roos & Roos (1997)	Bontis (1999)
<b>Human capital</b> <ul style="list-style-type: none"> <li>• Employees' competence</li> <li>• Employees' relationship ability</li> <li>• Employees' Values</li> </ul>	<b>Human-centered Assets</b> <ul style="list-style-type: none"> <li>• Education</li> <li>• Work related knowledge</li> <li>• Vocational Qualifications</li> </ul>	<b>Human capital</b> Employees are the most important assets of a company	<b>Human capital</b> <ul style="list-style-type: none"> <li>• Knowledge Capital</li> <li>• Skill Capital</li> <li>• Motivation Capital</li> <li>• Task Capital</li> </ul>	<b>Human capital</b> Tacit knowledge embedded in the minds of the employees
<b>Structural capital (a)</b>  <i>Customer capital:</i> <ul style="list-style-type: none"> <li>• Customer base</li> <li>• Customer relationships</li> <li>• Customer Potential</li> </ul>	<b>Infrastructure Assets</b> <ul style="list-style-type: none"> <li>• Corporate culture</li> <li>• Management processes</li> <li>• Information technology systems</li> </ul>	<b>Structural capital (a)</b> Explicit knowledge <ul style="list-style-type: none"> <li>• Patents</li> <li>• Trademarks</li> <li>• Databases</li> </ul>	<b>Organizational capital (a)</b> Business process capital: <ul style="list-style-type: none"> <li>• Flow of information</li> <li>• Flow of products and services</li> <li>• Cash flow</li> <li>• Co-operation forms</li> <li>• Strategic processes</li> </ul>	<b>Structural capital (a)</b> Organizational routines of the business
<b>Structural capital (b)</b>  <i>Organizational capital:</i> <ul style="list-style-type: none"> <li>• Innovation capital</li> <li>• Culture</li> <li>• Process capital</li> </ul>	<b>Intellectual property assets</b> <ul style="list-style-type: none"> <li>• Proprietary technology</li> <li>• Trademarks</li> <li>• Patents</li> </ul>	<b>Structural capital (b)</b> Tacit knowledge Connects people to experts and expertise, including bodies of knowledge	<b>Organizational capital (b)</b> Business renewal and development capital: <ul style="list-style-type: none"> <li>• Specialization</li> <li>• Production processes</li> <li>• New concepts</li> <li>• Sales and marketing</li> <li>• New co-operation Forms</li> </ul>	<b>Relational capital</b> Knowledge embedded in the relationships established with the outside environment
	<b>Market assets</b> <ul style="list-style-type: none"> <li>• Brands</li> <li>• Customers</li> <li>• Company name</li> <li>• Distribution</li> </ul>	<b>Customer capital</b> Information about the market that helps create and sustain market share	<b>Customer and relationship capital</b> <ul style="list-style-type: none"> <li>• Customer relationship capital</li> <li>• Supplier relationship capital</li> <li>• Network partner</li> </ul>	

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(Sources: Brooking, 1996; Roos & Roos, 1997; Skandia 1998; Bontis, 1999; Stewart, 1999)

## 1.5 CHARACTERISTICS OF INTELLECTUAL CAPITAL

Although Intellectual Capital is similar to tangible assets in its potential for generating future cash flows, it is radically different from tangible capital in the following respects:

- Intellectual assets are non-competitive assets. Unlike physical assets which can only be used for doing one thing at a time, intellectual assets can be multiplex. For example, a customer support system can provide support to thousands of customers at the same time. It is this ability to scale with need that makes intellectual assets superior to physical assets.
- Human Capital and Relational Capital cannot be owned, but have to be shared with employees and suppliers and customers. Growing these kinds of capital therefore require careful nurturing.
- Structural capital is an intangible asset that can be owned and controlled by managers. However, it cannot be traded easily since no markets exist for this purpose. Moreover, customers do not care about the structural capital of their suppliers since everyone likes dealing directly with real human beings rather than with systems.
- Structural capital, in the form of just-in-time procurement processes and real time inventory control systems, can be substituted for expensive capital expenditure such as storage warehouses. Hence, the knowledge economy has opened up opportunities for every firm to explore whether inexpensive intangible assets can do the work of costly physical assets.
- Firms that leverage their intellectual capital to do knowledge work are able to generate higher margin of profits than those who provide mass-produced solutions.
- Human, Structural and Relational Capital often work together in judicious combinations to give rise to core competencies that assume strategic significance. Hence it is not enough to invest in people, systems and customers separately, but in combinations that produce end value. So, it becomes mandatory to understand the role of Intellectual Capital and its measurement issues.

## 1.6 WHY INTELLECTUAL CAPITAL?

The prevailing economies in which business organizations operate are in constant change and no organization can excel by virtue of the material assets, financial assets and the thinking developed for different economic dynamics instead of those in which an organization operates. This means that there is a stern need to reappraise our mental models, our assumptions, and our practical approaches to manage organizations. In today's scenario, there has been greater focus on services sector and intangibles than ever before and therefore requires much more sophisticated management of issues such as processes, brands, Intellectual Property, relationships and competence. It is now largely accepted that intangible assets such as knowledge, brands, relationships, organizational culture, and intellectual property are primary drivers of competitiveness in today's global economy. However, intangible assets seldom affect performance directly. Instead, they work indirectly through relationships of cause and effect (Kaplan and Norton, 2004). It is essential to recognize that intangibles are not *per se* sufficient for an organization's successful performance. These key elements must be combined to generate value. In support of this, Thomas Stewart (1991), in his Fortune article wrote, "Every company depends increasingly on knowledge—patents, processes, management skills, technologies, information about customers and suppliers, and old-fashioned experience." He continues: "Added together, this knowledge is intellectual capital". The battle for acceptance of Intellectual Capital as an important concept for looking at modern organization has largely been won (Andriessen, 2001). There is increasing evidence that the drivers of value creation in modern competitive environments lie in a firm's intellectual capital rather than in its physical and financial capital (Petty et al., 2001). An organization's most valuable intangible asset is the knowledge contained in its processes which is used to produce the organization's final output – the product or service which it sells (Kanevsky and Housel, 2008). Although the importance of Intellectual Capital has been accepted widely in the last two decades (Serenko and Bontis, 2004), many organizations are still struggling with the application of Intellectual approach due to measurement difficulties (Dzinkowski, 2000; Nazari and Herremans, 2007). Intangibles, although not always recognized, have always been a driver of corporate performance Low (2000). As asserted by Pavlou et al. (2005), Intangible assets for the modern day organization are viewed as the engine of its productive and profitable operations. There is very much need of

management of intellectual capital in an organization. But for effective management of intellectual capital, its measurement or identification is necessary. “Sustained successful performance of an enterprise depends on its continuing ability to produce and deliver customer-valued outcomes in a competitively superior manner. A firm’s customer-value proposition defines its attractiveness to customers. The firm’s ability to create and deliver competitively superior value to its customers, in turn, depends on the collaborative efforts of its highly motivated, skilled, capable, creative, and knowledgeable people. Such people constitute the firm’s appreciating HC. Collaboration and motivation of people stem from the firm’s social capital (SC). The latter comprises the shared values, vision, and sense of destiny of people; and an organizational ethos of trust and care” (Rastogi, 2000a, b). IC is here conceptualized as the holistic and super-ordinate capability of an enterprise to create value through a creative orchestration of its knowledge resources under conditions of constant change. It is the result of the dense dynamic nexus of a firm’s social capital (SC), human capital (HC), and KM. It is manifested in the form of a firm’s sustained profitable growth. It, thus, also represents a firm’s overarching capability to meet challenges and exploit opportunities in its continual efforts to generate wealth (Rastogi, 2003). In a treatise Petty and Guthrie (2000) acknowledge the significance of IC as nucleus factor in the era of transition:

- The revolution in information technology and the information society;
- The rising importance of knowledge and the knowledge-based economy;
- The changing patterns of interpersonal activities and the network society; and
- The emergence of innovation as the principal determinant of competitiveness.

Intellectual capital in service sector plays very significant role as the main source of production of services is intellectual capital. In other words, service sector works on the virtue of intellectual capital or soft capital.

## 1.7 INTELLECTUAL CAPITAL AND NEW ECONOMY

The New Economy is an expression that refers to the shift from the economy based upon industrial manufacturing and material assets to the one based upon knowledge and intangible assets or in other words which is based upon soft capital rather than the physical and the financial ones.



Tom Stewart (2001), in an early article in Fortune Magazine that explored the appearance of intellectual capital assets, defined the new concept with reference to the then new economy: *...the new economy is about the growing value of knowledge as an input and output, making it the most important ingredient of what people buy and sell; it is about the rise in the relative weight of intellectual capital vis-a-vis real estate, plant, and equipment, and financial capital.* The ascend of the new economy, principally driven from information and knowledge, is attributed to the increased prominence of intellectual capital (IC) as a business and research topic. Intellectual capital implies in recent economic, managerial, technological, and sociological developments in a manner previously unknown and largely unforeseen. Whether these developments are viewed through the filter of the information society, the knowledge-based economy, the network society, or innovation, there is much to support the assertion that IC is instrumental in the determination of enterprise value and national economic performance (Petty and Guthrie, 2000). The rise of the knowledge-based economy and society has been attributed to the predominance of intellectual capital (IC) as a key resource for obtaining firm's sustained competitive advantages (Dean and Kretschmer, 2007). The changes in the economy in the past ten years have made knowledge and information the most significant; while land, capital and labour all follow the law of decreasing returns, knowledge and information enjoy increasing returns instead (Roos, et. al., 1997). It was hardly perceived in the past that factors of production have increasing returns but now it can be stated that factors of production follow law of increasing returns (in case of knowledge and information). Roos, et. al. (1997) stated that "we are familiar with the mantra of 'the economy is changing very fast', 'we are witnessing the biggest wave of changes since the Industrial Revolution' and similar refrains. Here authors are not talking about technological changes, although these certainly had something to do with it. Here they want to accentuate the fact that today; the prime commodities are knowledge and information. According to Roos, et. al. (1997), knowledge and information are now the most important resources a company can muster and in the modern business world, the business imperative is to manage intellectual capital or die. As stated by Rodgers and Housel (2009), as companies now become more knowledge-based, intangible assets will comprise an increasing percentage of the value of businesses acquired. From strategic point of view, Intellectual Capital is becoming a crucial factor for a firm's long-term profit and performance in the knowledge-based economy (Hsu and Fang, 2009 and Kong, 2010). This transformation of economy from traditional age to information age has made certain

drastic changes in the economy. Researchers have suggested that this new economy is based on totally different principles and require totally different environment. With the advent of new economy which is based purely on information and knowledge and is also called soft capital, it is mandatory, according to Ross, et. al. (1997), to have clear understanding of the concept intellectual capital as well as the concept behind it because building an intellectual capital system in a company with no understanding of the assumptions and origins behind it is akin to building a house of sand. So proper clarity about intellectual capital is very much required. Knowledge based Organizations (KBO), where intangible or intellectual assets are treated as the main source of increasing wealth, it becomes imperative to understand the role and nature of Intellectual Capital for its effective measurement and management. These days KBO are covering greater extent of market, which is why the new economy is termed knowledge economy which works on intellectual capital.

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