

What Is Intellectual Capital?

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Abstract

The transformation of Las Vegas from the domestic center of gaming to the future global command center of the gaming industry is an ambitious undertaking. The city of Houston, Texas successfully underwent a similar evolution in the 1980s. Now recognized as a global hub of the energy industry, Houston's stakeholders often credit intellectual capital as a primary driver of their success. This article provides an introduction to intellectual capital theory and offers Las Vegas and its stakeholders some guidance for future examinations of the city's intellectual resources.

1. Introduction

Why was the city of Houston, Texas able to transform itself from a domestic center of the oil industry to a global center for the energy industry? In the late nineteenth and early twentieth century, Houston (in its emerging role as domestic oil center) benefited largely from its location. Positioned down the Buffalo Bayou and off the Gulf of Mexico, the city was protected from storms. This fact, combined with the convenient proximity to major oil discoveries like the Spindletop oilfield, motivated companies like the Texas Company (now recognized as Texaco) to build offices and refineries in and around Houston¹. Eventually, the domestic flow of oil diminished, yet Houston did not follow the examples set by the steel towns of the Northeast or the mining towns of the West when their commodities became depleted or the nature of their industries transformed. On the contrary, Houston not only survived, it flourished.

Las Vegas has stood at the pinnacle of the United States commercial gaming industry in terms of both revenues and public visibility for the greater portion of the last 60 years. Las Vegas' position both domestically and internationally has changed with the dramatic expansion of Asian gaming and the proliferation of both casino and tribal gaming in the United States. To ensure that Las Vegas succeeds at navigating the path from domestic commercial gaming hub to global gaming control center, we might examine Houston's transformative success. At this stage of the assessment, one thing appears to be clear: Houston has relied heavily on intellectual capital to leverage their makeover. To better understand this process, this article serves as an introduction to intellectual capital theory and research.

2. Definitions

In 1997, Thomas Stewart published "Intellectual Capital" and wrote, "Intellectual capital is the intellectual material – knowledge, information, intellectual property, experience – that can be put to use to create wealth."² Later Stewart expanded on the definition by adding that the concept refers to a capital asset of intellectual material. Additionally, Stewart added some restrictions, such as the requirement that the knowledge held must be useful to the creation of wealth. Examples provided by the author include: talents and abilities of both groups and individuals; social and technological networks including cultures and software that enable their function; and intellectual property such as copyrights, patents, methods, and procedures.³

3. Foundation

Three different origins have been identified as the foundation of intellectual capital theory⁴. Hiroyuki Itami studied and wrote on the impact of invisible assets upon the Japanese corporation. The work was first published in Japan in 1980 and then

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subsequently published in the United States in 1987.

In 1986, David Teece published a seminal article that combined the work of a diverse group of economists and focused on the subject of technology commercialization. Teece and his colleagues identified a basis and foundation for understanding how value is derived from technological innovation, the recipe for commercializing innovation, and the procedure for transforming value into profits.⁵

Considered to be the father of the “Swedish Movement” in intellectual capital, Swedish researcher Karl-Eric Sveiby specifically examined the human capital aspect of intellectual capital. Sveiby sought to offer a window into assessing the value of an enterprise by measuring the knowledge and competencies of its employees (instead of just focusing on conventional assets). First published in 1986, the researcher was interested in the question of how to manage companies that offered no traditional product, and instead relied on creative and knowledge-based assets. In doing so, Sveiby has become widely regarded as an innovator who recognized the importance of accounting for the influence of intellectual capital when valuing technology firms and companies that deploy these assets.⁶

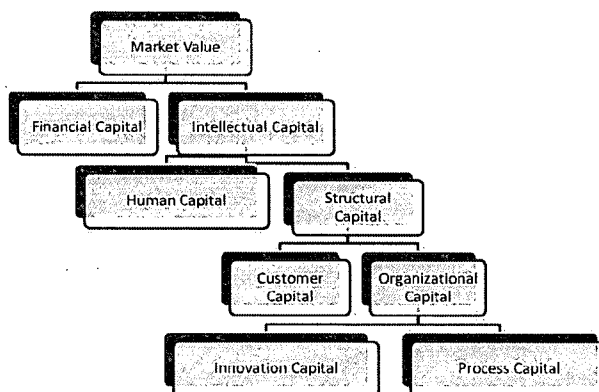
4. Research Stream

The interest in intellectual capital theory has been steadily increasing, especially during the last decade. As we move into a “post-industrial” business environment, academics have paid more interest to intellectual capital -- as have leaders of industry, and more recently politicians and other public leaders. Thus far, despite signs of change, the majority of academic inquiry into the understanding of intellectual capital has been directed at the organizational level. For example, a large percentage of intellectual capital research has focused on the concept of intangible assets and their role when accounting for the difference between the book value of a company and the market value of a company.⁷ Attempts to quantify the worth of a company’s intellectual capital, when evaluating the firm as a whole, has been the goal of many researchers, particularly in the Scandinavian countries.

5. National Level

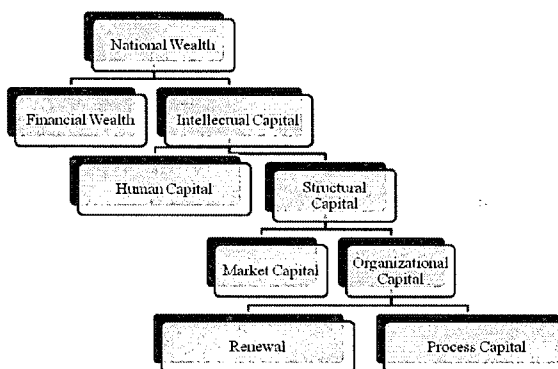
In 2007, the State of Israel delivered a report on intellectual capital at the national level. The study was published by their Office of the Chief Scientist. The goal of the effort was to survey the competitive advantages attributed to the State of Israel with respect to technological excellence, human capital, innovation, and modern infrastructure. The authors, Pashar and Shachar, identified five critical components of national intellectual capital. The components were based upon the “Skandia Model” created by Edvinsson -- who originally served as the vice president of Intellectual Capital for Skania, a noteworthy and progressive Swedish global finance organization. The “Skandia Model” serves to measure and account for both the tangible assets and the intangible assets of an organization.⁸ The model was slightly modified to reflect the same measurement when the object of interest is a country, city, or region. To illustrate how intellectual capital theory manifests itself differently when applied to a single organization in comparison to a nation or city, Figures 1 and 2 (below) provide illustrations:

Figure 1
Edvinsson Malone Model depicting Intellectual Capital at the Organizational Level



Original Skania model⁹

Figure 2
Modification of Edvinsson Malone Model of National Intellectual Capital



Pashar and Shachar modified model depicting intellectual capital model at national or regional level.¹⁰

6. Five Components

Pashar and Shachar proposed that the five components of national intellectual capital were human capital, market capital, process capital, renewal capital, and financial capital.¹¹ Human capital refers to a nation or region's qualifications in terms of education, knowledge, wisdom, expertise and ability to realized collective goals. It includes values inherent to the culture. Lin and Edvinsson recognized human capital as a country's absolute resources as manifested by "education, health, experience, motivation, intuition, entrepreneurship and expertise." Some measures of a nation or region's human capital assets are life expectancy and the availability of highly skilled workers.¹²

Market capital is the totality of a nation's abilities and accomplishments in providing desirable and investments for international customers (or external customers in the case of cities and or regions). Other scholars have broadened this description to include the successes and accomplishments in foreign relations together with the quality or products and services that the nation or region provides.¹³ The assets related to this concept include customer loyalty and economic resilience, along with the degree of satisfaction experienced by outside investors, partners, and external stakeholders.¹⁴

In contrast, process capital is the collaboration and the movement of knowledge by

means of structural entities. These assets include: databases, hardware and software, the nation or region's infrastructure (technical, transportation, and communication), and the legal system. The system is usually measured against the backdrop of new business opportunities -- more specifically, how rapid and supportive the nation, region, or city is with new business efforts.¹⁵

Next, renewal capital describes a nation's current competitive position and its investments into improving its future position in an effort to facilitate growth. The term typically describes investments in research and development, patents, trademarks, and start-up companies. Hence, a nation or city's overall innovative capacity is a reflection of its renewal capital assets.¹⁶

Finally, the national intellectual capital model includes financial capital, which of course encompasses a nation or city's productivity, external debt, and inflation.¹⁷

7. Summary and Conclusion

This article presents an introduction to intellectual capital theory and research. While the subject is relatively young, a great deal of interest has already been generated in both industry and academia. With respect to the interest in transforming Las Vegas into the global command center for the gaming industry, the city of Houston's leveraging of intellectual capital to facilitate their transformation serves as a beckoning example.

Future research should first attempt to quantify the Las Vegas gaming industry's current inventory of intellectual capital, based upon the models presented above. This assessment would quantify the intellectual assets possessed by a city that is often mocked as being less than intellectual. However, this assessment should not stop there: industry leaders and academics would be wise to forecast the *future* intellectual capital needs of the industry as well. Since the gaming industry is in a state of transformation, it would be a mistake to solely assess the present status of intellectual capital and attempt to fill the existing needs. Put simply, the nature of decision-making evolves as an industry evolves: Houston's oil industry grew from evaluating where local drilling efforts should be directed to current decisions that allocate billions of dollars of capital to energy projects around the world. Similarly, the Las Vegas gaming industry and its stakeholders must forecast the intellectual skill set necessary to make tomorrow's decisions.

Once an understanding of what intellectual capital assets are needed to propel the Las Vegas commercial gaming industry to its new position of global command center, industry leaders and stakeholders should recognize the requirements necessary to attract the talent required to achieve the desired transformation. As we have noted elsewhere in this issue, the city of Houston has invested heavily in their educational system, their arts community, and all of the amenities that are favored by the world-class talent they wish to attract. Looking forward, Las Vegas' evolution into an intellectual capital depends upon its intellectual capital: the city must evolve into an attractive home for the most intellectually talented leaders of tomorrow.

- 1 McComb, D.G. (n.d.). *Houston, TX*. Retrieved from <http://www.tshaonline.org/handbook/online/articles/hdh03>
- 2 Stewart, T. A. (1997). *Intellectual capital: The new wealth of organizations* (1st ed.). New York: Doubleday / Currency.
- 3 Stewart, T. A. (2011). *Intellectual Capital*. Retrieved from <http://www.qfinance.com/contentFiles/QF01/g956u8c7/11/1/intellectual-capital.pdf>
- 4 Sullivan, P. H. (2000). *Value-driven intellectual capital :How to convert intangible corporate assets into market value*. New York: Wiley.

- 5 Teece, D. J. (1986). Profiting from technological innovation: Implications for integration, collaboration, licensing and public policy. *Ricerche Economiche*, 40(4), 607-643.
- 6 Sullivan, P. H. (2000). *Value-driven intellectual capital :How to convert intangible corporate assets into market value*. New York: Wiley.
- 7 Lin, C. Y., Edvinsson, L. (2011). *National Intellectual Capital: A comparison of 40 countries*. New York: Springer
- 8 Pashar, E., & Shachar, S. (2007). The intellectual capital of the state of Israel. Retrieved from <http://www.moit.gov.il/NR/rdonlyres/C973239E-F6C2-453A-A4D9-5A30F59258E3/0/intellectualcapital.pdf>
- 9 Edvinsson, L., & Malone, M. S. (1997). *Intellectual capital :Realizing your company's true value by finding its hidden roots* (1st ed.). New York: HarperBusiness.
- 10 Pashar, E., & Shachar, S. (2007). The intellectual capital of the state of Israel. Retrieved from <http://www.moit.gov.il/NR/rdonlyres/C973239E-F6C2-453A-A4D9-5A30F59258E3/0/intellectualcapital.pdf>
- 11 Pashar, E., & Shachar, S. (2007). The intellectual capital of the state of Israel. Retrieved from <http://www.moit.gov.il/NR/rdonlyres/C973239E-F6C2-453A-A4D9-5A30F59258E3/0/intellectualcapital.pdf>
- 12 Lin, C. Y., Edvinsson, L. (2011). *National Intellectual Capital: A comparison of 40 countries*. New York: Springer
- 13 Bontis, N. (2004). National intellectual capital index: A united nations initiative for the arab region. *Journal of Intellectual Capital*, 5(1), 13-13-39.
- 14 Lin, C. Y., Edvinsson, L. (2011). *National Intellectual Capital: A comparison of 40 countries*. New York: Springer
- 15 Lin, C. Y., Edvinsson, L. (2011). *National Intellectual Capital: A comparison of 40 countries*. New York: Springer
- 16 Pashar, E., & Shachar, S. (2007). The intellectual capital of the state of Israel. Retrieved from <http://www.moit.gov.il/NR/rdonlyres/C973239E-F6C2-453A-A4D9-5A30F59258E3/0/intellectualcapital.pdf>
- 17 Lin, C. Y., Edvinsson, L. (2011). *National Intellectual Capital: A comparison of 40 countries*. New York: Springer