

## **THE INCREASING VALUE OF INTELLECTUAL CAPITAL (IC) AND THE INCREASING COMPETITIVE RISK EXPOSURE TO IC EXPROPRIATION**

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### **ABSTRACT**

Intellectual capital (IC) has come to comprise the bulk of most firms' market value. Unlike physical assets, knowledge and intellectual property are difficult to measure and hard to protect from expropriation and imitation. The globalization of world markets and information interconnectivity are presenting new challenges to protecting the value of IC. Also, a number of trends in the world market and governmental actions and politics are making the management of IC more challenging and the strategic implications for competitiveness are profound. How firms respond to these challenges will shape their future market value.

Keywords: Intellectual capital, Market value, Globalization, Information age, Intellectual property theft

### **INTRODUCTION; THE EVOLUTION OF INTELLECTUAL CAPITAL**

The early commercial history of the United States was punctuated by the Industrial Revolution and the innovation of production line assembly. During the following decades, the US was transformed into an industrial powerhouse of basic industries and grew to be the largest economy in the world. Of course, things have changed a great deal since then, especially since the 1980s which saw the emergence of the internet and commercial globalism. Since then, the US has lost many basic industries to global suppliers and has been transformed into more of an information-based economy rather than an industrial-based economy. Over this time, intangible assets, such as knowledge, have come to be recognized as a key to success, with observers declaring that we now live in an *information age*, a *networked society*, and a *knowledge economy* (Petty & Guthrie, 2000). Intellectual capital has become a crucial factor for a firm's long-term profit and

performance in a knowledge-based economy as more and more firms identify their core competency as invisible assets rather than visible assets (Hsu & Fang, 2007).

During this transition, companies came to realize that their “know-how” relative to their products and markets was central to their competitive advantage, and “knowledge” came to be seen as an asset that was recognized and managed. Further, this led to the recognition of “knowledge-based competition” in strategic management, to the extent that experts claimed that knowledge was the most important source of competitive advantage and sustained superior performance (Drucker, 1995). From all this, **knowledge management** became the foundation from which the concept of intellectual capital (IC) emerged.

Another milestone in the evolution of intellectual capital came by way of defining “**intellectual property.**” This assumed an accounting-like approach to knowledge in terms of considering trademarks, copyrights, patents, trade secrets, customized software, databases, formulas, and recipes (Hannah, 2006). Also, relational interactions between buyers and sellers were recognized as intellectual property assets (Roy et al., 2004).

### SHIFTS IN CONTRIBUTION AMONG MARKET VALUE INGREDIENTS

A firm’s book value, as based on its balance sheet, is usually less than its market value. The most basic definition of intellectual capital (IC) is that intangible component that comprises the difference between book value and market value. There has been a profound shift in the relative contributions between hard assets, as reflected in book value, and IC as a contributor to market value in that IC constitutes the bulk of market value for most firms now. For many firms, IC can comprise nearly *all* of market value.

### INTELLECTUAL CAPITAL

Most experts recognize IC to have three prevalent component parts – *human capital, structural capital, and customer capital* (Petty & Guthrie, 2000).

**Human Capital** – The value here resides in people and is portable – it is not owned by the organization. This is the knowledge, skills and capabilities of the employees and their combined ability to solve business problems. It also includes the company’s values, culture and philosophy.

**Structural Capital** – Structural capital is the supportive company infrastructure that allows human capital to function effectively and includes physical accommodations, policies and processes, information systems, company intranets, proprietary software and data bases, firewall systems, and information protection, such as patents and trademarks.

**Customer Capital** – There are several dimensions of Customer Value that are relevant here - the value of the current base, the health and value of customer relationships and the means by which these two contribute to new customer potential. Customer loyalty, customer satisfaction, the customer experience and subsequent linkages to repeat business are components of customer capital.

Further ingredients of IC have been seen to include *Organizational Capital, Innovation Capital, Process Capital, Intellectual Property and Intangible Assets*.

## STRATEGIC IMPLICATIONS OF INTELLECTUAL CAPITAL INCREASES

It has become widely recognized that intellectual capital comprises the bulk of market value for many firms, and that proportion is increasing. In terms of competitive advantage, it has been shown that firms with high levels of IC and high use of knowledge management practices (KMP) are likely to outperform the firms with low levels of IC and KMP (Hussinki et al., 2017). Even with these recognitions, the use of best practices in IC management is not ubiquitous with US firms. Recent studies have found that there remains resistance to the diffusion of the IC concept and its practical applications, given traditional management reasoning and experience in how they have always gotten things done; managers still struggle with the concept of how something that is nontangible and cannot be observed makes a majority contribution to tangible value of the firm and operation (Matos & Vairinhos, 2017). The current state of IC focus has to do with its measurement, accounting for its value and protections. However, there are a number of developments on the horizon that promise to affect the dynamics of IC in firm operation.

### Globalization

The globalization of markets and business operations has had tremendous impact on US businesses, both good and bad. One artifact of this globalization for US companies has been outsourcing. Outsourcing began with call centers and low-end information processing, but now has evolved into complex strategic alliances high in the value chain. Managing intellectual property and capital becomes much more challenging in a globalized, outsourcing environment that involves complex networks of service providers and variations in protection regimes, legal infrastructures, employment contracts and knowledge flows (Roy & Sivakumar, 2011). Also, global expansion has increased firms' exposure to expropriation and imitation of their knowledge as global legal protections are weak and/or unenforceable (Liebeskind, 1996). Globalized production alliances, especially for technological products, has created windows of vulnerability for many US based firms. For example, Apple's smart phone is sourced from many foreign countries, particularly China, and this provides great access to inspect or retro-engineer proprietary IT engineering ingredients of the product.

## **Cyberwarfare**

In recent years, apparent government-sponsored cyber-warfare has been increasing. In most instances, these attacks have been aimed at governmental agencies and interests, but US business firms have also been targets, for example the crippling of SONY's data infrastructure plausibly by North Korea in response to a not-so-flattering portrayal of the North Korea's leader in a Hollywood movie. Given the scale and sophistication of cyberwarfare units, US businesses are vulnerable in terms of theft or damage to their intellectual capital.

### **Intellectual Property Theft**

The protection of real property has a long history and many institutional covenants – property laws, titles, deeds, registrations and so forth. On the other hand, protecting knowledge is much harder. Property rights in knowledge - patents, copyrights and trade secrets – are very narrowly defined under the law and are costly to write and enforce. Further, knowledge is very difficult to protect because it is difficult to detect its expropriation or illegal imitation (Liebeskind, 1996). This author also observes that firms may need to rely on their own institutional capabilities to protect knowledge from expropriation and imitation more so than the limited and costly legal protections available. Industrial espionage has been around a long time, but now it is taking new forms, mostly in terms of stealing information by computer access and hiring employees away from firms with arrangements for the departing employee to bring with them intellectual capital. As reported by *Blomberg Business* in 2015, computer circuit boards manufactured in China were discovered to contain a non-specified chip that allowed remote access to a third party of everything processed through that unit. These computer boards were in widespread use in many US companies and even the US Military. Once discovered, this breach of computer security took several years to resolve and made computer motherboard manufacturing a central component in President Trump's trade negotiations with China.

### **National Protectionism**

Historically, protectionism by governments was usually executed by way of taxes and tariffs on imported goods. Protectionism relative to IC is much more complex. China has been accused of appropriating US intellectual capital by exploiting trade relationships and restricting access to the Chinese market unless IC concessions were made. The scale and complexity of these dynamics make governmental protectionist actions difficult to conceive, and even more difficult to exercise. In general, as protectionism increases, this causes complications in IC management. There have been attempted advances in extraterritorial enforcement agreements, but cooperation among countries to enforce such agreements has not been very successful.

## Privacy

Privacy has come to the forefront as a national concern in the United States. The recent advent of social networking and computer tracking of consumers has exposed serious violations of privacy and, possibly, constitutional rights. This has attracted attention up to Congressional hearings and calls to arms for legislation to protect citizens from monitoring and intrusion. Intellectual capital for many firms can be caught up in these privacy issues, especially for firms dealing with consumers.

## Governmental Interventions

Governments are slow and ponderous in making changes in response to national and world circumstances. The Federal Trade Commission (FTC) and Federal Communication Commission (FCC) are ill equipped to govern the rapid and large-scale changes in internet business, social media marketing and social networking. There have been calls to create a new governmental commission dedicated to oversight of all internet issues as related to consumer and citizen rights and commercial use of the internet. As noted by experts, firms' reliance on governmental IC protections are weakening – firms are being forced to assume more individual responsibility in IC protection.

## CONCLUSION

Intellectual capital is becoming a core component of competitive survival in a globalized market. However, IC is difficult to protect and serious erosion of firm value can occur due to this vulnerability. The complexity and dynamics of the interconnected world market render legal and governmental protections of IC ineffective. Thus, firms are entering the era of a new paradigm – self-protection of their intellectual capital. A number of widespread changes in the global market will be bringing new challenges to nurturing and protecting a firm's IC value. How firms respond to these new challenges should be of paramount concern to firm management and will have meaningful effects on firm competitiveness.

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