

Introduction

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Surprisingly little research has been directed specifically at the impact of the new business environment on employee-employer relationships, domestically and globally. As the Industrial Age has been supplanted by the Information Age, we have seen a historic rise in inventive and creative activity.¹ The last half century has also seen a shift in firm behavior, from a highly structured model of vertical integration² to a networked form of organization that relies heavily on the use of supplier firms, outsourced or shared collaboration models of research and development, and internationally distributed workforces.³ The implications of these shifts in business focus on both firm activity and employment patterns and behavior are profound. Patents, copyrights, trade secrets, and trademarks – the traditional four pillars of intellectual property law – have taken on increased import and firms must now concentrate on the protection of those assets in a more intense manner than they ever experienced in the past.

¹ *PATENTING AND INNOVATION IN METROPOLITAN AMERICA*, BROOKINGS INSTITUTION (Feb. 1, 2013), http://www.brookings.edu/research/interactives/2013/metro_patenting. A collaboration between Cornell University, INSEAD, and the World Intellectual Property Organization (WIPO) has resulted in an index that attempts to measure global innovation. See SOUMITRA DUTTA, BRUNO LANVIN & SACHA WUNSCH-VINCENT, *THE GLOBAL INNOVATION INDEX 2014: THE HUMAN FACTOR IN INNOVATION* (2014), available at http://www.wipo.int/edocs/pubdocs/en/economics/gii/gii_2014.pdf.

² NEIL FLIGSTEIN, *THE TRANSFORMATION OF CORPORATE CONTROL* (1990).

³ Walter W. Powell, *The Capitalist Firm in the Twenty-First Century: Emerging Patterns in Western Enterprise*, in PAUL DIMAGGIO, *THE TWENTY-FIRST-CENTURY FIRM: CHANGING ECONOMIC ORGANIZATION IN INTERNATIONAL PERSPECTIVE* (2003); MANUEL CASTELLS, *THE RISE OF THE NETWORK SOCIETY: THE INFORMATION AGE: ECONOMY, SOCIETY, AND CULTURE* (2009); Fred Niederman, *International Business and MIS Approaches to Multinational Organizational Research: The Cases of Knowledge Transfer and IT Workforce Outsourcing*, 11 J. INT'L MGT. 187 (2005).

This new environment raises many questions. How should courts, legislatures, and other policy-makers address issues of employee rights and obligations with regard to the intellectual property assets that they manage or create? How should firms manage their behavior so as to enhance both their intellectual property assets and their relationship with their workforce? And how do these issues change as firms increasingly engage in global activities, licensing intellectual property and know-how abroad, creating diverse, international workforces, and protecting themselves against the threats of global competitors, who may come from very different legal regimes and have very different notions of fair play in the intellectual property arena?

This book opens the dialogue on this topic of critical importance to modern firms, and so serves as a tool for firms and policymakers as they consider future actions and reforms. It provides insight into several of the potent issues that arise at the intersection between intellectual property and employees, and, we hope, serves as a catalyst for further research into the critical nexus between intellectual property and employees, in both the domestic and global contexts.

The shift in business activity from traditional manufacturing activities to intellectual property-intensive activities is well documented, both in the United States and at the global level. In the United States, manufacturing has declined as a share of Gross Domestic Product (GDP) from 24.3 percent in 1970 to 12.8 percent in 2010. This same pattern is reflected internationally, where manufacturing as a percentage of world GDP fell from 26.6 percent in 1970 to 16.2 percent in 2010.⁴

Meanwhile, intellectual property-intensive activity has grown as a leading contributor to the economic success of many nations, both in terms of jobs and in terms of value added to GDP. In 2012, the U.S. Commerce Department released a comprehensive report that found that intellectual property-intensive industries directly accounted for 27.1 million jobs in 2010 and supported over 12.9 million additional jobs (totaling 27.7 percent of all jobs in the U.S. economy). These industries contributed more than \$5 trillion dollars to (or 34.8 percent of) U.S.

⁴ See Mark J. Perry, Blog Post, *Manufacturing's Declining Share of GDP is a Global Phenomenon, and It's Something to Celebrate* (March 22, 2012), available at <http://www.uschamberfoundation.org/blog/post/manufacturing-s-declining-share-gdp-global-phenomenon-and-it-s-something-celebrate/34261> (citing data from the United Nations National Accounts Main Aggregate Database, available at unstats.un.org/unsd/snaama/dnllist.asp).

GDP.⁵ Similar trends hold true in other developed nations. The European Union, for example, reported in September, 2013 that between 2008 and 2010, intellectual property-intensive industries contributed almost 77 million direct or indirect jobs out of a total of 218 million jobs (35.1 percent), and that these industries generated almost 39 percent of GDP in the European Union, valued at €4.7 trillion.⁶

Moreover, the creation, protection, and exploitation of intellectual property, both at home and abroad, are important issues for all businesses, not just “high-tech” industries. The bulk of business assets today are held in the form of intangible property as opposed to the land, factories, and machines of earlier decades. The World Intellectual Property Organization (WIPO) notes that in 1982, almost two-thirds of corporate assets in the United States were physical assets (e.g., land or machinery); however, by 2000, 70 percent of all such assets were intangible.⁷ A leading intellectual property merchant bank, Ocean Tomo, estimated in 2010 that 81 percent of the assets held by the S&P 500 were in the form of intangible assets, rather than tangible ones – a complete reversal from 1975, where only 17 percent of such assets were intangible and 83 percent were tangible.⁸

This growth in intellectual capital coincides with a growing understanding of the importance of human capital to the firm and the need to manage employees effectively. In 1973, in *The Coming of Post-Industrial Society*, Daniel Bell posited that the rapid rise of the computer industry in the 1950s and 1960s would lead to an increased dependence by business firms on highly skilled employees, such as scientists, engineers, and technicians, as the primary drivers of innovation.⁹ In Bell’s words:

⁵ U.S. DEPT. OF COMMERCE, INTELLECTUAL PROPERTY AND THE U.S. ECONOMY: INDUSTRIES IN FOCUS vi-vii (March 2012), available at http://www.uspto.gov/news/publications/IP_Report_March_2012.pdf.

⁶ EUROPEAN UNION, OFFICE FOR HARMONIZATION IN THE INTERNAL MARKET, INTELLECTUAL PROPERTY RIGHTS INTENSIVE INDUSTRIES: CONTRIBUTION TO ECONOMIC PERFORMANCE AND EMPLOYMENT IN THE EUROPEAN UNION (Sept. 2013), available at http://ec.europa.eu/internal_market/intellectual-property/docs/joint-report-epo-ohim-final-version_en.pdf.

⁷ KAMIL IDRIS, INTELLECTUAL PROPERTY: A POWER TOOL FOR ECONOMIC GROWTH 6-7 (2003), available at http://www.wipo.int/edocs/pubdocs/en/intproperty/888/wipo_pub_888_1.pdf.

⁸ Ocean Tomo, *Ocean Tomo’s Intangible Asset Market Value Study*, INSIGHTS BLOG (Dec. 9, 2013, 12:00 AM), available at <http://www.oceantomo.com/2013/12/09/Intangible-Asset-Market-Value-Study-Release/>.

⁹ DANIEL BELL, *THE COMING OF POST-INDUSTRIAL SOCIETY: A VENTURE IN SOCIAL FORECASTING* (1973).

If the dominant figures of the past hundred years have been the entrepreneur, the businessman, and the industrial executive, the 'new men' are the scientists, the mathematicians, the economists, and the engineers of the new intellectual technology.¹⁰

Bell's prediction has proven true. Even if ultimately owned by the firm, intellectual property today is created and managed by employees of the firm, who undertake research programs, develop new products, create promotional materials, foster confidential business relationships with suppliers, customers, and consumers, and engage in myriad other activities that promote the firm's economic position while simultaneously contributing to the firm's intellectual property holdings. As summarized in the foreword to a recent WIPO report:

The fundamental driver behind any innovation process is the human factor associated with it. We observe that some nations take the lead in innovation capacity over others. A major factor for this disparity of innovation prowess is the quality of human capital linked to the innovation activities carried out in these nations. Other factors, such as technology and capital, also influence the innovation process; these directly correlate with the human factor. Hence nurturing human capital at all levels and in all sections of society can be crucial for developing the foundation for innovation.¹¹

However, businesses must carefully balance this imperative of nurturing their human capital with the need to protect their intellectual property assets. Legal issues arise at various stages of the employment relationship, including the proper use of employment contracts to protect intellectual property, ownership of intellectual property created by the employee, personal liability issues relating to infringement or inadvertent or deliberate misappropriation or theft of trade secrets, and post-employment confidentiality and non-compete agreements. Moreover, these relationships, like modern business itself, may be global in reach. Mechanisms provided by U.S. trade laws are thus also important tools to protect intellectual property abroad.

The nexus, however, between protecting intellectual property, balancing employees' rights and responsibilities, and fostering fair trade practices has not been fully explored by scholars. This book is intended to highlight some of the pressing issues that arise at the intersection of intellectual property law and employment law, domestically and globally, including the impact that those issues have on managers and business

¹⁰ *Id.* at 344.

¹¹ DUTTA ET AL., *supra* note 1, at vii.

practices. These issues can be broadly categorized into: (1) public policy considerations; (2) workplace ramifications; and (3) global intersections between intellectual property and employees. Individual chapters within this book provide detailed consideration of some of the critical issues that arise within these categories.

PUBLIC POLICY CONSIDERATIONS

There is a complex interplay between intellectual property protection and employee interests. On the one hand, businesses have a strong interest in ensuring the security of their intellectual property assets. On the other hand, while employees generally have an interest in (and duty to) protect the employer's business interests, the interests of the two parties may at times conflict. This gives rise to intricate and intertwined legal doctrines governing the employer-employee relationship, which generate concerns about how to balance competing and sometimes conflicting public policy goals.

In Chapter 1, Lynda J. Oswald considers the public policy issues raised by holding corporate officers personally liable for the patent or copyright infringements of their firms. The chapter begins by examining traditional corporate, agency, and tort law concepts that impose liability upon a corporate officer for his or her own wrongful acts, and agency rules of *respondeat superior* that impute that individual's actions to the corporation. It then contrasts those general officer liability concepts with the specialized rules that arise in intellectual property disputes, finding that in the patent and copyright areas, the federal courts have deviated from traditional doctrine and have inappropriately imposed liability upon corporate officers. In the patent area, the Federal Circuit has adopted a distorted application of the veil-piercing doctrine traditionally applied to corporate owners. In the copyright arena, the regional circuit courts of appeal apply a vicarious liability test that is not only inapposite to officer liability, but in some ways mimics the piercing analysis used by the Federal Circuit in the patent law arena and in other ways replicates the personal participation test of traditional doctrine. Oswald discusses why individual officer liability is so muddled in both patent and copyright law, and concludes that current case law reflects an instinctive rejection by the courts of the application of strict liability to individuals. The courts' subconscious efforts to reach liability standards and outcomes that are fault-based, rather than strict, for corporate officers have caused the courts to create *sui generis* officer liability rules that are at odds with

traditional doctrine and that inappropriately expand the individual liability of corporate officers. The chapter concludes by proposing that the courts adopt a more direct approach to the imposition of personal liability on corporate officers that focuses on culpability and that more closely adheres to traditional legal doctrines.

In Chapter 2, Julie Manning Magid looks at another aspect of the conflicts that can arise between employees and their firm, examining the implications that the change in physician employment relationships – occasioned by the increasing consolidation of the U.S. health care industry – has had on physician ownership of health care-related inventions. One increasingly common mechanism that they have used to do this is to require physicians and other health care employees to sign invention assignment agreements that assign to the hospital system the intellectual property rights of any innovations created by those employees. But are invention assignment agreements the best means to motivate a culture of innovation? Magid finds that the health care industry's dependence on invention assignment agreements impedes rather than promotes a culture of innovation. The chapter examines the changes in the health care industry and the role of intellectual property in spurring those changes and then turns to the challenges of incentivizing innovation, noting that compensation alone does not accomplish innovation. The chapter concludes that the health care industry should engage employees in creating innovation to reduce health care costs and benefit patients by developing a process of employee-driven innovation.

In Chapter 3, Norman D. Bishara examines a broader issue of how firms with a globally diverse workforce can protect their important business knowledge. The misappropriation of proprietary business knowledge and trade secrets across international borders has received extensive attention from policy-makers, scholars, and commentators. There has been less consistent focus on an important underlying transfer mechanism of that commercial knowledge that companies can only partially control: the movement of knowledge across borders as a result of employee mobility. This chapter identifies a portfolio of legal options for businesses facing the dilemma of how to not only share business secrets with employees and cultivate employee skills for the benefit of both parties, but also how to protect those investments in human capital when there is an increased risk of the employee leaving for an overseas competitor. Bishara also discusses the contractual and non-contractual options firms can use to manage the knowledge held by key employees. He suggests a business and policy agenda related to successfully navigating the complex issues surrounding international employee mobility and knowledge transfer to competitors.

WORKPLACE RAMIFICATIONS

Part II of the book steps back from larger policy questions about how we should structure legal doctrine to protect intellectual property assets, incentivize innovators, and correctly attribute liability for infringement. It examines the ways in which intellectual property law and the rise of technology directly impact the workforce environment that employees face.

Chapter 4 looks at a special subset of trademark law: certification marks. Jamie Darin Prenkert examines the manner in which certification marks, which are sometimes used for the purpose of private regulation, may positively affect the employment relationship by providing for better working conditions. In particular, this chapter focuses on when certification is used to affect private ordering in the workplace to supplement existing employment or labor regulations or to fill regulatory voids. After describing the legal basis and history of certification marks and certification schemes, the chapter describes five exemplary uses of certification to regulate workplace conditions. Those descriptions provide a taxonomy to categorize certification according to the breadth of regulated conduct, the reliance on certification marks, the application to a particular product or service, and the type of regulation (supplemental versus new). Then the chapter raises four questions that relate to four characteristics of certification schemes that are likely to guide the inquiry into the likely regulatory effectiveness of a certification.

What happens when technology outstrips the law, creating detrimental impacts on employee working conditions? In Chapter 5, Robert C. Bird examines the impact that the rapid growth in technology can have on the modern workplace and considers the manner in which the law can seek to constrain the costs imposed on employees, using smartphone and related mobile technology as an example. Bird examines the impact of smartphone and related technology on modern fair labor standards, including the Fair Labor Standards Act (FLSA), finding that small increments of time, even when easily traceable and the source of frustrating interruptions, are not readily protected as compensable work. This chapter proposes a reform to the FLSA that narrows the *de minimis* exception that enables periods of time to remain unpaid. The narrowing of this exception, limited to what is available under reasonable business realities, will help employees be compensated for their full time worked regardless of location or length of time worked. The chapter also offers ways for employers to minimize administrative and other costs of such reform and

presents opportunities for using such tracking information to add value to their organizations.

GLOBAL INTERSECTIONS

The last part of the book turns to the increasingly global nature of both modern business activity and intellectual property law, looking at the myriad of issues that are created when firms engage in business across borders. The cost and incidence of cross-border trade-secret misappropriation is rising, but current international protection measures often fall far short of companies' needs. Chapters 6 and 7 deal with this significant problem, but examine different mechanisms for addressing it. Chapters 8 and 9 look at the issues that global businesses face in confronting differing legal regimes around work, considering how firms address issues of copyright ownership and authorship and patent licensing when operating across borders. The final chapter of the book looks at intellectual property issues faced by firms doing business in China.

Specifically, in Chapter 6, Marisa Anne Pagnattaro and Stephen Kim Park explore trade-secret misappropriation in the context of Section 337 of the Tariff Act of 1930, analyzing how Section 337 can be used strategically to help trade-secret owners protect their valuable assets. For global employers, protecting trade secrets from employee disclosure is a common problem. When misappropriation occurs abroad, U.S. companies may find that it is difficult to obtain adequate redress. For such acts occurring outside of the United States, Section 337 of the Tariff Act offers another avenue of redress, as it can be used to block goods produced with misappropriated trade secrets from being imported into the United States. The chapter details the background of Section 337 and its use in the trade secret context. It explores several early cases, and then focuses on the *TianRui* case, which significantly expanded the potential use of Section 337, as well as a number of recent post-*TianRui* cases brought under Section 337. The chapter then turns to ongoing trends in trade-secret enforcement actions and addresses criticism about the use of Section 337 to address acts occurring entirely outside of the United States. Pagnattaro and Park conclude that, despite criticism, Section 337 is emerging as an important tool to protect the rights of trade-secret owners.

In Chapter 7, Elizabeth A. Brown addresses how the disparities among national and regional approaches to trade-secret protection and the lack of a central protection mechanism make it difficult for any company to secure its trade secrets effectively. Although this is a global problem, no

consensus as to the best global solution has yet emerged. This chapter examines the risks of cross-border trade-secret misappropriation, the regional differences in approaches to trade-secret protection, the range of public and private remedies for trade-secret misappropriation, and the realistic strategies businesses can employ to protect their valuable trade secrets. It explores the differences between various countries' trade secret regimes and assesses the next wave of potential solutions, including both suggested efforts within the United States and proposed multi-national measures to increase global trade-secret protection.

In Chapter 8, Susan J. Marsnik and Romain M. Lorentz note that business functions best when the law is clear and predictable. However, clarity and predictability are notably lacking in the rules governing ownership of copyright when components of the work are contributed by authors in different countries. As U.S.-based companies source talent from employees or contractors in diverse countries to contribute to copyrighted products, it is important they understand that the U.S. work-for-hire rules will not ensure their corporate authorship or ownership. Depending on the country in which a particular task is performed, the rights of a U.S. company, and those of the individuals hired to complete the work, vary considerably. Moreover, moral rights in international and foreign law are also at odds with the work-for-hire doctrine and can impact ongoing control of the work. This chapter explores these differences to facilitate understanding and management of copyright in a globally distributed work environment. It places the U.S. approach in the context of primary international agreements, the Berne Convention and the Agreement on Trade Related Aspects of Intellectual Property. The chapter presents approaches followed in four foreign jurisdictions, including three European Union member states and India, analyzing the conflicts among these foreign laws and demonstrating why a choice of law clause in employment or contractor agreements may not ensure application of the work-for-hire doctrine.

In Chapter 9, David Orozco examines the common practice of adding patent grant-back clauses in international license agreements, surveying U.S., Chinese, and Indian law to highlight important legal issues and differences with respect to this contentious licensing term. Patent grant-back clauses are used by patent owners to minimize competitive risks. The terms of these licenses can be so overly broad as to be an abusive practice that deprives the licensee of the incentive to innovate and the rewards of any such efforts. This chapter examines various international treatments of this issue to find a compromise that tempers the negative impacts of overly broad and restrictive grant-back clauses by offering a

sample clause. This compromise represents an ethical solution that takes international norms and cultural differences into account.

Finally, in Chapter 10, Christine M. Westphal considers the political, economic, and public policy constraints on the use of employment contracts by Western firms to protect their intellectual property when doing business in China. The chapter considers the factors that Western firms must consider when evaluating the benefits of entering China against the risks of losing valuable intellectual property. The chapter concludes with a discussion of some of the steps that firms can take to protect their intellectual property assets in this challenging but economically important setting.

We are pleased to present this collection of research, which addresses a range of important issues arising at the intersection of intellectual property law, employment law, and global trade.

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