

May 2015

Mortgaging the Meme: Financing and Managing Disruptive Innovation

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**Mortgaging the Meme:
Financing and Managing Disruptive Innovation**

Jon M. Garon*

Abstract

Traditional financing of innovative companies emphasizes the use of patents and associated intellectual property rights to secure debt and provide assets for valuation. Although the model suffices for incremental innovation, it does not account for investments in disruptive innovation, those that undermine traditional business models, supply chains or industry relationships.

Disruptive innovation can be described as the introduction of a new conceptual idea or meme into an existing system that causes the system to be fundamentally altered. Assembly lines, air conditioning, digital film, and personal computers represent such innovations, all of which led to fundamental paradigm shifts.

The convergence of globalization, a networked economy, and digital technologies have made disruptive innovation a threat in almost every industry. Changes to publishing, music, and television distribution – along with the rise of social media – highlight this transformation, but they are not alone; manufacturing, retail, payment systems, transportation and other industries are struggling with volatile upheaval caused by such change.

Disruptive innovation, however, follows predictable patterns. Investors can anticipate these shifts if their financial transactions are properly structured and effectively documented. The model requires a holistic intellectual property approach which looks beyond just patents. It must explicitly incorporate the underlying meme, and it must account for the inflection points in the transformation pattern. Utilizing this model, inventors, private equity investment structures and established firms can maximize value and promote innovation.

This article provides an overview of disruptive innovation from examples of the past decade, identify the underlying patterns of change common to disruptive innovation, highlight strategies to mitigate disruption for existing industry, and address the intellectual property securitization aspects to structure effective deals for both the investors and innovators.

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The art of progress is to preserve order amid change, and to preserve change amid order. Life refuses to be embalmed alive. The more prolonged the halt in some unrelieved system of order, the greater the crash of the dead society.

— Alfred North Whitehead¹

Introduction

Think back to the rise of the transistor.² Once the world glowed with vacuum tubes, but by the end of the 1960's, the electronic revolution had begun – and not without notice. Marshall McLuhan described the future quite presciently:

Electronic circuitry has overthrown the regime of “time” and “space” and pours upon us instantly and continuously the concerns of all other men. It has reconstituted dialogue on a global scale. Its message is Total Change, ending psychic, social, economic, and political parochialism. The old civic, state, and national groupings have become unworkable. ... You can't go home again.³

The description aptly describes profound disruptive innovation. Today the world is changing faster than ever before. Globalization, social networks, professional mobility, and job insecurity have flattened the world and placed the knowledge worker at the center of his or her own enterprise.⁴ “For many, their core businesses are being disrupted by globalization, technology shifts, and new competitors. They must reinvent the company. Even at healthy companies, business model innovations are essential to retaining their competitive positions.”⁵ Moreover, a cloud culture fueled by transmedia, mobile computing and flash mobs has shifted the global disruption out of the workplace and into the streets.

In 1997, Clayton Christianson advanced the concept of “disruptive innovation,” focusing on technological change that transformed business and often undermined the industry incumbents in

¹ ALFRED NORTH WHITEHEAD, PROCESS AND REALITY 515 (1929).

² See *History of Computing*, <http://mason.gmu.edu/~montecin/computer-hist-web.htm> (last visited Aug. 20, 2011) (“1960-1968 - transistor based technology. The transistor, invented in 1948, by Dr. John Bardeen, Dr. Walter Brattain, and Dr. William Shockley. It almost completely replaced the vacuum tube because of its reduced cost, weight, and power consumption and its higher reliability.”).

³ MARSHALL MCLUHAN & QUENTIN FIORE, THE MEDIUM IS THE MESSAGE 26 (1967).

⁴ THOMAS FRIEDMAN, THE WORLD IS FLAT 9-10 (2005).

The second great era, Globalization 2.0, lasted roughly from 1800 to 2000, interrupted by the Great Depression and World Wars I and II. ... [T]he driving force was multinational companies.... It was during this era that we really saw the birth and maturation of a global economy, in the sense there was enough movement of goods and information from continent to continent for there to be a global market, with global arbitrage in products and labor. ... [I]n Globalization 3.0 – the thing that gives it its unique character – is the newfound power for individuals to collaborate and compete globally.

Id.

⁵ *Mistakes Made on the Road to Innovation*, BUSINESSWEEK, Nov. 27, 2006 at ____, available at http://www.businessweek.com/magazine/content/06_48/b4011421.htm.

favor of start-up competitors.⁶ The concept has been embraced by technological innovation, but has grown considerably past that to encompass virtually any incumbent market threat.⁷

This article focuses on the original aspects of profound disruptive innovation. The article does not, however, emphasize the distinction between technological innovation and business innovation. Instead it focuses on managing the most fundamental and profound disruptive innovations. While particular disruptions are – by definition – incapable of being predicted, the shape they take and havoc they reap does follow a fairly predictable pattern. More importantly, application of traditional and non-traditional uses of intellectual property assets can allow both incumbents and start-ups some predictability in this environment. These lessons shape how strategic industry assets and venture capital should be deployed for industries struggling in the midst of upheaval.

This article will provide an overview of disruptive innovation from examples of the past decade, identify the underlying patterns of change common to disruptive innovation, highlight strategies to mitigate disruption for existing industry, and address the intellectual property securitization aspects to structure effective deals for both the investors and innovators.

The Nature of Disruptive Innovation

Profound disruptive innovation can be described as the introduction of a new conceptual idea or meme into an existing system that causes the system to be forever altered. Assembly lines, air conditioning, digital film, and personal computers represent such innovations, all of which led to fundamental paradigm shifts. “In its original formulation, [Clayton] Christensen focused primarily on technological innovation and explored how new technologies came to surpass seemingly superior technologies in a market.”⁸

Christensen highlighted the distinction between sustaining and disrupting technologies. Whereas sustaining technologies improve performance, increase margins and build customer relations, disrupting technologies often start out as unusable innovations that underperform, cost too much or focus on a different customer base.⁹ Disruptive innovations essentially redefine the value proposition for the customer,¹⁰ which may disintermediate the relationship and open the

⁶ CLAYTON M. CHRISTENSEN, *THE INNOVATOR’S DILEMMA: WHEN NEW TECHNOLOGIES CAUSE GREAT FIRMS TO FAIL* (HARVARD BUSINESS SCHOOL PRESS 1997).

⁷ *Id.* See also Constantinos Markides, *Disruptive Innovation: In Need of Better Theory*, 23 J. PROD. INNOV. MANAG. 19, 20 (2006).

⁸ Markides, *supra* note __ at 19.

⁹ CHRISTENSEN, *supra* note __ at 100-01. See also Christian Sandström, Mats Magnusson & Jan Jörnmark, 18 *Exploring Factors Influencing Incumbents’ Response to Disruptive Innovation*, CREATIVITY AND INNOVATION MGMT. 8, 9 (2009).

Sustaining technologies have in common that they improve the performance of established products along the dimensions that mainstream customers demand. Disruptive technologies, on the other hand, initially underperform along these dimensions. The lower traditional performance and the ancillary performance attributes create a large market uncertainty around the disruptive innovation.

Id.

¹⁰ Darryl R. Mountain, *Technology and Legal Practice Symposium Issue: Could New Technologies Cause Great Law Firms to Fail?*, 52 SYRACUSE L. REV. 1065, 1069 (2002).

door to competition.¹¹ Disintermediation occurs “where changes in the current business model or advances in technology mean that a company ceases to need to use intermediaries to create the value sought by end customers.”¹² In this regard, disintermediation is a natural consequence of disruptive innovation.

Unfortunately the power of the term has led to its undoing. Any business challenge can be labeled disruptive innovation. “Disruption has become a popular business term, yet it is often used so loosely as to convey almost nothing of substance.”¹³ Procter and Gamble’s creative Swiffer Mop became “an oft-cited example of disruptive innovation” because as a product it offered reduced performance but still gained market share.¹⁴ As commonly described, a product or technology that is adopted despite having a reduction in features is deemed disruptive.¹⁵ As far as that goes, the Swiffer Mop fits the model.

But the Swiffer Mop adoption was entirely predictable in an age where product after product was moving toward disposability and convenience. Moreover, the economic notion that firms gain market through continuous improvement and product enhancement is at odds with actual customer behavior. Added features and enhancements generally add to the cost of a product and, for many products, a significant segment of the market is price sensitive, resulting in a natural pattern of market opportunities for lower cost goods.¹⁶ Similarly, additional features add to product complexity which is useful for some consumers but not others. Another significant segment of the market is convenience sensitive, again resulting in a natural pattern of market

¹¹ PETER LAWRENCE, *THE CHANGE GAME: HOW TODAY'S GLOBAL TRENDS ARE SHAPING TOMORROW'S COMPANIES* 142 (2004) (“In a strict sense disintermediation occurs when some organization is cut out of the loop, as when airlines exhort and/or pressurize people to book via telephone call centres or on the Internet....”). See also Philip B. Evans & Thomas S. Wurster, *Strategy and the New Economics of Information*, 75 HARV. BUS. REV. 70, 71 (Sept.-Oct. 1997).

¹² MARTIN CHRISTOPHER, ADRIAN PAYNE & DAVID BALLANTYNE, *RELATIONSHIP MARKETING: CREATING SHAREHOLDER VALUE* 173 (ELSEVIER LTD. 2002).

¹³ Jeff Lindsay & Mike Hopkins, *From Experience: Disruptive Innovation and the Need for Disruptive Intellectual Asset Strategy*, 27 J. PROD. INNOV. MANAG. 283, 283-84 (2010).

¹⁴ *Id.*

In the late 1990s, Procter & Gamble (P&G) would introduce the Swiffer mop, a product that would become an oft-cited example of disruptive innovation. With its low-cost disposable wiping surface, mopping would be transformed to a more convenient and easier activity. ... It would offer “worse” performance relative to the durability and cleaning power of conventional dry and wet mops but would convert many nonmoppers and infrequent moppers into frequent floor cleaners.

Id.

¹⁵ See *id.*

¹⁶ CHRISTENSEN, *supra* note ___ at 122. The cycle is very common:

[C]ost advantages combined with lower prices drive competitors – sustaining innovators – toward target markets that are more demanding but also less price sensitive. Existing competitors begin offering value-added attributes while incrementally ratcheting up prices slightly more than marginal costs. ... This follows a cycle that creates the innovators’ dilemma: firms add new product/service attributes to attract the most demanding customers then these attributes are imitated by competitors, forcing innovators to add still more product/service attributes. This cycle tends to create products/services that are ‘too good’ for the least demanding market segments.

Scott Droegea & Nancy Brown Johnson, *Limitations of Low-End Disruptive Innovation Strategies*, 21 INT’L J. OF HUMAN RESOURCE MGMT. 242, 244 (2010).

opportunities for more convenient goods. Convenience sensitivity can be further segmented into the ease of use (such as the Swiffer Mop – which avoids the cleaning of mop heads) or the adoption learning curve (such as the customer capture involved in a computer user interface or proprietary digital rights management systems).¹⁷

In contrast with the Swiffer example, profound disruptive innovation, as used here, focuses on those new memes¹⁸ that undermine the existing way of doing business. They eliminate incremental approaches to product innovation and radically restructure the relations between the parties to the transaction or within the supply chain.¹⁹ Some memes evolve in slow, gradual development,²⁰ while in other cases the influence may only be first felt when they evidence themselves with radial re-ordering.²¹

Proctor and Gamble did not need to change its strategy of selling mops through wholesale and retail channels; it merely added another mop brand to its product array. It did not face disintermediation of its traditional distribution because of the Swiffer. The *idea* of the mop did not change. And the companies which lost market share to P&G lost market share to an existing competitor in the same market space.

Jeff Lindsay and Mike Hopkins, the authors who document the Swiffer example, point to Kleenex facial tissue as a fundamentally disruptive innovation. Created to remove theatrical cold cream, Kleenex undermined the handkerchief industry.²² Customers promoted the product to address the common cold, and Kimberly-Clark benefited from the product's success while the handkerchief business faded away.²³ The idea of the paper tissue as a handkerchief was radically new and outside the concept for both handkerchief manufacturers and Kimberly-Clark.

Of course, “[p]redicting emerging disruption is a tricky exercise and requires consideration of complex inter-actions of many processes including new technologies, several industries, and changing regulations. Judging by historical experience, most disruptive entries become obvious only with hindsight.”²⁴ Nonetheless, there are common attributes that can help anticipate where – at least in general terms – the nature of fundamentally disintermediative innovations can be found.

The challenge can be approached using three vectors: (i) a taxonomy of disruptive innovation; (ii) known triggers for disintermediation; and (iii) a clarification of the paradigmatic

¹⁷ Jon M. Garon, *Reintermediation*, 2 INT. J. PRIVATE LAW 227, 234-35 (2009) (“Reintermediation relies upon customer affinity and behaviour of repeated reliance on a particular company to the exclusion of all other providers of that good or service. The exclusivity may have no legally enforceable parameters or it may be based on either exclusive dealing contracts or intellectual property protections.”). [*hereinafter* Garon, *Reintermediation*]

¹⁸ See RICHARD DAWKINS, *THE SELFISH GENE* 193-94 (2006).

¹⁹ See Jon M. Garon, *Rethinking Intangible Cultural Heritage*, __ DENVER SPORTS & ENT. L.J. __ (forthcoming 2011) [*hereinafter* Garon, *Rethinking Intangible Cultural Heritage*].

²⁰ SUSAN BLACKMORE, *THE MEME MACHINE* 24 (2000).

²¹ DAWKINS, *supra* note __ at 194 (“We biologists have assimilated the idea of genetic evolution so deeply that we tend to forget that it is only one of the many possible kinds of evolution.”).

²² Lindsay & Hopkins, *supra* note __ at 283-84.

²³ *Id.*

²⁴ Eldad Ben-Yosef, *The Evolution of the U.S. Airline Industry: Technology, Entry, and Market Structure - Three Revolutions*, 72 J. AIR L. & COM. 305, 345 (2007).

market response to disruptive innovation. Innovation will occur across the model, but where the three fields converge, the greatest disruption should be expected. In instances where all three vectors predict change, it is likely that the underlying economic or cultural organization is in play.

Taxonomy of Disruptive Innovation

The original disruptive innovation theory developed by Clayton Christensen focused on disruptive technology, but over time both he and others expanded the concept to cover all forms of disruption.²⁵ Constantinos Markides of the London Business School has written extensively, criticizing the conflation of technological and business models as causes of disruptive innovation. In his critique, Markides calls this a mistake and suggests instead that there are two types of disruptions, technological and business-model.²⁶ At the same time, however, the legal disciplines have been moving in the opposite direction with the U.S. patent law moving to explicitly reject this dichotomy.²⁷

The concern regarding technology may also be misplaced. In the modern world, almost all economic interactions are mediated by technology. While theoretically conceivable that a new and innovative barter system could develop using word-of-mouth communication, it is highly unlikely that economically significant models will not involve currencies moving electronically through financial services systems or computer-based inventory and tracking, or some aspect of electronic communications – even if the primary goal is face-to-face personal service. Professor Markides may be correct that disruption focused on service may be different than disruption based on product, but they are both likely to have technological underpinnings.²⁸

At the same time, however, Professor Markides is correct that different forms of disruption have distinct characteristics and may require somewhat different responses. This article builds upon Professor Markides' concern regarding the over-inclusiveness of disruptive innovation and suggests a taxonomy can be developed for more useful for capital allocation.

Moreover, the effort is not wholly new. In some ways, the categories can be tied to the sources of innovation provided by Peter Drucker in his classic text, *INNOVATION AND*

²⁵ See, e.g., CLAYTON CHRISTENSEN & MICHAEL RAYNOR, *THE INNOVATOR'S SOLUTION* (2003); Markides, *supra* note __ at 19.

²⁶ Markides, *supra* note __ at 20-21.

²⁷ See, e.g., *Bilski v. Kappos*, 561 U.S. __, 130 S. Ct. 3218 (2010) (“It is true that patents for inventions that did not satisfy the machine-or-transformation test were rarely granted in earlier eras, especially in the Industrial Age.... But times change. Technology and other innovations progress in unexpected ways.”). See also *AT & T Corp. v. Excel Communications, Inc.*, 172 F.3d 1352 (1999); *Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d 1368 (1998) (eliminating the narrow technological distinction in the area of patent subject matter eligibility).

²⁸ Compare Garon, *Reintermediation*, *supra* note __ at 231 (“Amazon.com has moved the furthest to introduce its reintermediation strategy, creating an intuitive user interface which pulls consumers into the website with highly customized e-mail communications and an equally customised home page; a proprietary product distribution device and increasingly control over products sold on its platform.”), with Markides, *supra* note __ at 20 (“Business-model innovation is the discovery of a fundamentally different business model in an existing business. For example, Amazon and Barnes & Noble compete in the book retail business in fundamentally different ways.”).

ENTREPRENEURSHIP.²⁹ He identified seven stressors to drive change, which can be categorized as external and internal to the enterprise:

[S]ystematic innovation means monitoring seven sources for innovative opportunity. The first four sources lie within the enterprise

- *The unexpected – the unexpected success, the unexpected failures, the unexpected outside event;*
- *The incongruity – between reality as it actually is and reality as it is assumed to be or as it “ought to be”;*
- *Innovation based on process need;*
- *Changes in industry structure or market structure that catch everyone unawares.*

The second set of sources for innovative opportunity, a set of three, involves changes outside the enterprise or industry.

- *Demographic (population changes);*
- *Changes in perception, mood, and meaning;*
- *New knowledge, both scientific and nonscientific³⁰*

Since disruptive innovation is largely a response to these underlying changes, the innovations can be linked to their roots as follows: (i) Product Innovation; (ii) Process Innovation; (iii) Relational Innovation; and (iv) Cultural Shifts. The stressors will affect all of these, but each will be more closely associated with some more than others.

Product Innovation

Product innovation can be used to refer to changes in the attributes of an item. It will often be triggered by the stressors Drucker labeled as “the unexpected,” “the incongruity,” or “new knowledge.” In particular, the distinction between how a product ought to operate and how it actually operates is a dominant influence in its evolution.

Like the example of the Swiffer Mop, a product can be fundamentally altered by the introduction of attributes that change its profile and the customer value proposition. Product innovation may range from incremental improvements to profound disruptive innovations. If line-drawing is necessary to separate the incremental from the disruptive, the change in customer base may be an appropriate distinction.³¹

²⁹ PETER DRUCKER, INNOVATION AND ENTREPRENEURSHIP 26 (1993) (“the entrepreneur upsets and disorganizes ... his task is creative destruction.”) (quoting Joseph Schumpeter & J.B. Say) (internal quotations omitted).

³⁰ *Id.* at 35 (“The lines between these seven source areas of innovative opportunities are blurred, and there is considerable overlap between them. They can be likened to seven windows, each on a different side of the building”). See also JON M. GARON, OWN IT - THE LAW & BUSINESS GUIDE TO LAUNCHING A NEW BUSINESS THROUGH INNOVATION, EXCLUSIVITY AND RELEVANCE 66-67 (2007) [hereinafter GARON, OWN IT].

³¹ See Markides, *supra* note __ at 20; Droegge & Brown Johnson, *supra* note __ at 244-45.

A more fundamental and highly disruptive innovation occurred in the area of photography. In digital photography, the early developers of the technology provided a camera that was significantly more expensive than print photography with a much poorer picture resolution. Existing customers had little to gain from switching to a digital camera – or so the industry leaders thought.³² So why did the technology overrun the industry? The digital camera owes its origins, in large part to Kodak, which encouraged Steven Sasson to create a charge-coupled device.³³ There was even a market for it – newspapers needed the mobility and speed provided by digital photography to shoot pictures across the globe and provide easily edited images to printers on short notice. But Kodak lost the initiative and nearly failed. Other companies such as Hasselblad survive only because of expensive corporate buy-outs.³⁴

Digital cameras, in part, grew to dominate the industry because they filled the incongruity between how the photographic experience should operate and how it actually operated. The public wanted to know immediately if the photographs they took were satisfactory, they wanted to share the photographs easily, and they wanted no delays in the process. In hindsight, it was obvious that the same consumer demand that led to Kodak's success and Polaroid's growth would fuel even more instant photography.

Process Innovation

Process innovation emphasizes improvement in the way something is accomplished.³⁵ It may be small changes to the placement of machines on the manufacturing floor or patentable innovations.³⁶ Beginning with Henry Ford, who revolutionized the automobile industry³⁷ with the assembly line, corporate leaders and economists have understood that improvements to efficiency increases profits and makes it difficult for new entrants to compete. Process innovation can be (and usually is) incremental. Drucker specifically identifies process innovation when describing “innovation based on process need”³⁸ as well as the all-too-common operational

³² Sandström *et al.*, *supra* note __ at 11-12; BUSINESSWEEK, *supra* note __.

³³ The National Inventors Hall of Fame, Meet the 2011 National Inventors Hall of Fame Inductees, http://www.invent.org/2011induction/1_3_11_induction_sasson.asp (last visited Aug. 20, 2011) (“In 1974, Kodak supervisor Gareth Lloyd asked electrical engineer Steve Sasson to investigate whether charge-coupled devices could be used to create an image sensor for a camera. After a year in the laboratory, Sasson created a device that captured an image, converted it to an electronic signal, digitized the signal, and stored the image—the first digital camera.”).

³⁴ Sandström *et al.*, *supra* note __ at 13-14.

³⁵ See, e.g., PHILIP EVANS & THOMAS WURSTER, BLOWN TO BITS 24-25 (2000); GARON, OWN IT, *supra* note __ at 182 (“entrepreneurs provide another essential role in making the inventions practical”).

³⁶ See 35 U.S.C. § 100(b) (“The term ‘process’ means process, art, or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material.”). See also Parker v. Flook, 437 U.S. 584, 589 (1978); Gottschalk v. Benson, 409 U.S. 63, 64 (1973).

³⁷ See, e.g., Joel Mokyr, *The Second Industrial Revolution, 1870-1914*, NORTHWESTERN UNIVERSITY DEPARTMENT OF ECONOMICS WORKING PAPER, 8-9 (1998), available at <http://faculty.wcas.northwestern.edu/~jmokyr/castronovo.pdf>; Bruce Brown & Scott D. Anthony, *How P&G Tripled Its Innovation Success Rate Inside the Company's New-Growth Factory*, HARVARD BUSINESS REVIEW, June 2011 at 66 (“Although the assembly line wasn't a novel concept, Highland Park showed what it was capable of: In four years Ford slashed the time required to build a car from more than 12 hours to just 93 minutes.”).

³⁸ DRUCKER, *supra* note __ at 35-36.

problems that occur when internal processes do not match the corporate handbook and the operational reality is far from what it is assumed to be.³⁹

The relationship between product innovation and process innovation is highlighted by the market response to innovation.

When a new product is introduced, buyer preferences for possible features of the product and the technological means of satisfying these preferences are uncertain. As a result, producers enter offering different varieties of the product and compete based on product innovation. Experimentation by buyers and sellers leads to a resolution of uncertainty over time, contributing to the emergence of a dominant design.

After the emergence of the dominant design, product innovation slows as producers and users are reluctant to adopt innovations that upset the benefits conferred by the dominant design. This makes entry more difficult. It also reduces producer fears that investments in the production process will be rendered obsolete by major product innovations. Consequently, process innovation rises and a greater amount is invested in capital intensive methods of production.⁴⁰

The model – as evidenced by studies on firm shakeouts – assumes a somewhat linear relationship that starts with hot competition for a new product which subsides once the market coalesces around a somewhat standard design. Once this has occurred, the winners in the competition are those who can add process efficiencies and make the product more efficiently.⁴¹

Process innovation may be more mundane but in the competitive marketplace it is more important. “All the innovation that drives truly successful companies is in their processes—and that's not sexy. By getting executives focused on what are the systems that are locking out value, we can tear them down and destroy them. The really big challenge is not just in having these ideas, but executing these ideas.”⁴² As such, like product innovations, the steps involved in process innovation range from very incremental to quite fundamental.

Relational Innovation

Relational innovation is an important offshoot of process innovation. Although it could be categorized as a form of process innovation involving the external relations between a manufacturer and its distribution chain, the rise of social media and the impact of

³⁹ *Id.*

⁴⁰ Steven Klepper & Kenneth L. Simons, *Technological Extinctions of Industrial Firms: An Inquiry into their Nature and Causes*, 6 *INDUSTRIAL AND CORPORATE CHANGE* 379, ___ (1997).

⁴¹ See Markides, *supra* note __ at 19-20, 23; Kenneth L. Simon, *Shakeouts, Innovation, and Industrial Strategy and Policy*, 40 *AUSTRALIAN ECON. REV.* 106, 107-109 (2007); Steven Klepper & Kenneth L. Simons, *Innovation and Industry Shakeouts*, 25 *BUSINESS AND ECONOMIC HISTORY* 81 (1996).

⁴² Christine Lagorio, *The Case against "Sexy" Innovation, INC.*, June 10, 2011 (quote from interview with Peter Sheahan), <http://www.inc.com/articles/201106/peter-sheahan-the-case-against-sexy-innovation.html>.

disintermediation strongly suggest that it be treated as a category unto itself.⁴³ The recognition of relational innovation stems, in part, from Drucker's stressors of demographic or population changes and those changes in perception, mood, and meaning.⁴⁴

Relational innovation begins with the firm's development of relevance for its product or service. "Relevance is based on the consumer's objective and subjective assessment of the product or service."⁴⁵ While objective relevance is based on simple need, social relevance can be measured by the popular demand for a category of goods or services.⁴⁶ To illustrate the point, consider the purchase of tickets to a professional football game. If both teams are popular, the resale value of the ticket may significantly exceed its face value. Thus, resellers or scalpers can demand a premium. Often this same event is available for free on television and radio. So the watching of the game is not even part of the value proposition.⁴⁷ The value of the ticket may vary even more greatly between fans of the two teams, particularly if the game will affect rankings, standings or play-off possibilities for the clubs. The tickets have social (or subjective) relevance to the purchaser. The fan acquires a wholly personal benefit of association, self-identification and self-worth through the purchase.⁴⁸

Attendance at sporting events, live music concerts and cultural events has no intrinsic value, but the experience is important to the audience. Nor is the phenomena of social relevance limited to events. Most of the value in couture clothing can be ascribed to the culture surrounding the designer and house rather than to the materials or construction of the garments.⁴⁹ The same toy is wildly popular one season and barely moves the next. The toy did not change; instead the social relevance to the children, parents and other gift-givers changed.

Toys in general may have a small intrinsic value based on their design and game play, but most of their value is based on the social relevance imbuing their importance. The same is true

⁴³ See, e.g., Jon M. Garon, *Content, Control and the Socially Networked Film*, 48 U. LOUISVILLE L. REV. 771 (2010) [*hereinafter* Garon, *Content, Control and the Socially Networked Film*]; Garon, *Rethinking Intangible Cultural Heritage*, *supra* note __ at 95-96.

⁴⁴ DRUCKER, *supra* note __ at 35-36.

⁴⁵ GARON, OWN IT, *supra* note __ at 57-58 ("Basic necessities are the most objectively relevant items. Air, water, food, shelter and clothing are highly relevant to one's survival. ... Subjective [or social] relevance may be understood in the same fashion. ... Toys, posters, video games, perfumes and similar items play a large part in society's social fabric, but have little or no survival value.").

⁴⁶ This participation may be part of the larger theory of self-actualization, but such discussion is beyond the scope of this article. See generally WAYNE WEITEN, PSYCHOLOGY THEMES AND VARIATIONS 8E BRIEFER VERSION 393-94 (2008) (describing Maslow's Theory of Self Actualization); PAUL W. KING, CLIMBING MASLOW'S PYRAMID – CHOOSING YOUR OWN PATH THROUGH LIFE 3 (2009) ("When our basic physiological needs have been met we progress to a new set of needs which are less pressing for immediate survival but are nonetheless very important to us all.").

⁴⁷ Given the quality of broadcasts – with play-by-play and multiple camera angles – the audience experience may be much better in a living room or bar than it is at the event.

⁴⁸ *Id.*

⁴⁹ See generally JOANNE ENTWISTLE THE AESTHETIC ECONOMY OF FASHION: MARKETS AND VALUE IN CLOTHING AND MODELING 12-13 (2009).

for all products and services to a greater or lesser degree. Through the careful exploitation of trademarks and publicity rights, these attributes can be enhanced.⁵⁰

Social relevance can help explain the explosion of social networking sites (SNS) like Facebook, Twitter, MySpace, LinkedIn or Google+. The philosophy and architecture of the successful social media sites embraces a somewhat narcissistic sharing and an internal *quid-pro-quo* “liking” of one another’s comments, photographs and activities.⁵¹

As social networking evolves, a sense of connecting coupled with a fear of being left behind encourages users to actively share information through these sites. The intensity of the pressure cannot be discounted, particularly when considering that eighty-five percent of Internet users, ages 18-34, have visited Facebook, Myspace, or Twitter, and eighty-four percent of users, ages 18-29, check one of the social networking sites at least once a week.⁵²

More recent data shows the continued growth in the trend. “59% of internet users, say they use at least one of SNS. This is close to double the 26% of adults (34% of internet users) who used a SNS in 2008.”⁵³

Just as Sesame Street’s Elmo became a toy sensation when the parents of every preschooler decided they “must” have it, Facebook users reward each other with likes and links – feeding a cycle of participation and social reinforcement. Twitter has precisely the same social networking architecture, and LinkedIn is largely the same – moderated slightly to emphasize institutional connections.⁵⁴

This notion has been discussed in academic literature as the reputation economy.⁵⁵ Reputation economies reflect both a more traditional economic model protected by publicity rights (e.g. those that directly tie persona to purse)⁵⁶ and a less economic model that values the moral rights of copyright and inherent importance of reputation without regard to direct

⁵⁰ GARON, OWN IT, *supra* note __ at 60-63.

⁵¹ See generally DAVID KIRKPATRICK, THE FACEBOOK EFFECT: THE INSIDE STORY OF THE COMPANY THAT IS CONNECTING THE WORLD (2010).

⁵² Brian Kane, *Balancing Anonymity, Popularity, & Micro-Celebrity: The Crossroads of Social Networking & Privacy*, 20 ALB. L.J. SCI. & TECH. 327, 329 (2010) (citing Ian Shapira, *No Friends of Facebook’s, in a Generation That Is*, WASHINGTON POST, Oct. 15, 2009, available at <http://www.washingtonpost.com/wp-dyn/content/article/2009/10/14/AR2009101403961.html>).

⁵³ KEITH HAMPTON, LAUREN SESSIONS GOULET, LEE RAINIE & KRISTEN PURCEL, SOCIAL NETWORKING SITES AND OUR LIVES, PEW INTERNET AND AMERICAN LIFE PROJECT, June 16, 2011, available at <http://www.pewinternet.org/Reports/2011/Technology-and-social-networks/Summary.aspx>.

⁵⁴ Privacy advocates are clamoring for a system that values privacy and a more limited sharing network, but such tools do not have the potential for networks that underlie the allure of social networks. See, e.g., Daniel H. Kahn, *Social Intermediaries: Creating a More Responsible Web Through Portable Identity, Cross-Web Reputation, and Code-Backed Norms*, 11 COLUM. SCI. & TECH. L. REV. 176 (2010); James Grimmelman, *Where Technology & Law Collide: Privacy As Product Safety*, 19 WIDENER L.J. 793 (2010); H. Brian Holland, *Where Technology & Law Collide: Privacy Paradox 2.0*, 19 WIDENER L.J. 893 (2010).

⁵⁵ See Daniel H. Kahn, *Social Intermediaries: Creating a More Responsible Web Through Portable Identity, Cross-Web Reputation, and Code-Backed Norms*, 11 COLUM. SCI. & TECH. L. REV. 176, 184 (2010).

⁵⁶ See *id.*

economic return.⁵⁷ In both the economic terms and the social terms, the values of reputation tie directly into the broader concept of social relevance. Because the data suggest that socially relevant rewards pay dividends in the reputational economy just by attending an event. Even members of the crowd at a concert receive a reputational payout for attending. Acquiring totems tied to the event – buying souvenir tee-shirts and memorabilia – further enhances the value.⁵⁸

The phenomenon presents itself as part of our everyday lives,⁵⁹ but it is infrequently incorporated into the business planning for capital investment. Like the other categories, social relevance is often incremental in nature, but it can also lead to the most unpredictable and dramatic of disruptive innovation.⁶⁰

Cultural Shifts

Cultural shifts should be considered a fourth and distinct trigger for disruptive innovation.⁶¹ The three external Drucker stressors – “demographic change,” “perception/meaning change,” and “new knowledge” — can be summarized as facets of cultural shifts. Cultural shifts are the externalities that may drive the “changes in industry structure or market structure that catch everyone unawares.”⁶²

Economic models tend to ignore cultural shifts, but investors follow these economic models at their peril. “Since the late 1960’s, rational choice models based on economic variables have become the dominant mode of analysis, while cultural factors have been deemphasized to an unrealistic degree. ... The incompleteness of models that ignore cultural factors is becoming increasingly evident.”⁶³

⁵⁷ See Greg Lastowka, *Digital Attribution: Copyright and the Right to Credit*, 87 B.U. L. REV. 41, 59-62 (2007); Jon M. Garon, *Wiki Authorship, Social Media and the Curatorial Audience*, 1 HARVARD J. SPORTS & ENT. L. 96, 107-08 (2010).

⁵⁸ Social relevance theory explains the rise of companies like Groupon, which provides a simple coupon – coupled with social crowd behavior. See Groupon Deals, <http://www.groupon.com> (last visited Sept. 5, 2011); Rocky Agrawal, *Why Groupon is Poised for Collapse*, TECHCRUNCH, June 13, 2011, <http://techcrunch.com/2011/06/13/why-groupon-is-poised-for-collapse>; Kara Swisher, *Exclusive: Groupon’s Mason Tells Troops in Feisty Internal Memo: “It Looks Good.”*, WALL ST. J. ALL THINGS D, Aug. 25, 2011, <http://allthingsd.com/20110825/exclusive-groupons-mason-tells-troops-in-feisty-internal-memo-it-looks-good/>.

⁵⁹ The social status of car buying provides the perfect example:

With cars, you wear your status on the road. Everyone knows which ones are the most expensive. The brand marking is clear. In our recent Mercedes E-Class sedan, I was constantly reminded of what vehicle I was driving, because the emblem on the hood was staring right at me, as well as several Tri-Star logos throughout the interior. With clothing, you can buy cheap knock offs and still look presentable. There is no hiding a brand while driving a car. Removing the trunk-mounted badge doesn’t fool anyone.

Cars as status symbols, CONSUMER REPORTS Dec. 18, 2007, <http://news.consumerreports.org/cars/2007/12/car-status.html>.

⁶⁰ See GARON, OWN IT, *supra* note __ at 15.

⁶¹ See generally RONALD INGLEHART, *CULTURE SHIFT IN ADVANCED INDUSTRIAL SOCIETY* (PRINCETON UNIVERSITY PRESS 1990).

⁶² DRUCKER, *supra* note __ at 35.

⁶³ INGLEHART, *supra* note __ at 15.

Some of the cultural shifts culminate in memorable moments in time. The fall of the Soviet Union, the September 11th attacks on the World Trade Center and Pentagon, and the election of Barak Obama as the first African-American President reflect non-economic shifts that each had significant impact on global culture – which in turn impacts trade, production and economic choices at the micro and macro level.

Less visible but equally potent was the admission of China to the World Trade Organization, reflecting a fundamental re-ordering of global economic relations. This highlighted, if not triggered, an economic arms race between China and India – its closest neighbor in both geographic and demographic terms – resulting in both economies racing into the 21st century.⁶⁴

With annual growth at 15.1 percent over 1995-2004, China provided almost 9 percent of the increase in world exports of goods and services (second only to the United States), and 8 percent of the increase in imports (also second to the US). Both exports and imports are dominated by manufactures. India, accounted for about 2 percent in the growth of world exports and imports over the period 1995-2004, and its most dynamic export sector is information technology (IT)-enabled services. However, India's manufacturing exports are starting to grow strongly, particularly in the textiles and clothing as well as the pharmaceuticals sectors.⁶⁵

The awakening of the Asian markets will have a number of effects in terms of trade, but even more impact in the qualitative nature of the products and services needed. Different societies have different requirements and few nations are homogenous so that the diversity within the region must also be addressed.

Whether in Asia, Europe or North America, there are a great many factors realigning the culture. Economics may play only a modest part. "Economic changes help shape cultural change, but they are by no means the only factor involved; moreover, cultural patterns can persist long after the factors that originally gave rise to them have ceased to operate. Thus, they can influence economic life as well as being shaped by it."⁶⁶

[German sociologist] Pfau-Effinger stresses four basic assumptions about culture and cultural change. The first is that societies have long-lasting cultural traditions that have an impact on behavior. The second is that although there is usually a set of dominant cultural values and ideals, there is no cultural coherence in society, as alternative and competing cultural systems may exist. Third, cultural change depends on the way social actors deal with contradictions and alternatives

⁶⁴ See L. ALAN WINTERS & SHAHID YUSUF (EDS.), *DANCING WITH GIANTS: CHINA, INDIA, AND THE GLOBAL ECONOMY* (WORLD BANK 2007). See also *A New World Economy, The balance of power will shift to the East as China and India evolve*, BUSINESSWEEK, Aug. 22, 2005, http://www.businessweek.com/magazine/content/05_34/b3948401.htm, *Crouching Tigers, Hidden Dragons*, BUSINESSWEEK, Aug. 22, 2005, http://www.businessweek.com/magazine/content/05_34/b3948411.htm.

⁶⁵ *Dancing with Giants: China, India, and the Global Economy, Key Findings*, <http://go.worldbank.org/QU1HDPXHK0> (last visited Sept. 9, 2011).

⁶⁶ INGLEHART, *supra* note __ at 22.

in value systems. And finally, cultural change is connected to structural change but it can also be autonomous.⁶⁷

[S]ocieties have long-standing cultural traditions that have an impact on behavior.⁶⁸ “The dominant logic ... is difficult to give up for individuals, political parties, and sections of the bureaucracy. ... Most thinking people know where they have to go, but letting go of their beliefs and abandoning their “zones of comfort” and familiarity are not easy.”⁶⁹

In *The Fortune at the Bottom of the Pyramid*, C.K. Prahalad painstakingly identified the cultural, social and economic assumptions that shaped 45 years of ineffectual policy regarding poverty in India. Prahalad points out that although “[t]he dominant assumption is that the poor have no purchasing power and, therefore, do not represent a viable market.” Yet the poor of China and India represent a tremendous purchasing power, perhaps as much as \$8 trillion.⁷⁰ Because the poor are forced to pay a premium for all the services they receive “from rice to credit” of “5 to 25 times what the rich pay for the same services” unlocking this poverty penalty would generate a huge economic opportunity.⁷¹

The reality of this opportunity has been demonstrated by Proctor & Gamble, which used ethnographic studies to quantify that 80% of the public in India wash their clothes by hand.⁷² A product was redesigned to be less astringent on hands while still effective on clothing and priced to undercut the harsher chemical products. By formulating the product to the Indian hand-wash market, P&G was able to provide better service and develop a new market simultaneously. Even more interesting was the foray into this market by Intuit, makers of TurboTax.⁷³ Looking to develop remote tax preparation tools for the subsistence farmers of India, their first-hand experience with the farmers led to the development of “Mobile Bazaar, a simple text-messaging based marketplace connecting buyers and sellers.”⁷⁴ Using the simple tool, “half the farmers were able to increase their prices by more than 10%....Within a year of launch, Mobile Bazaar

⁶⁷ MONIQUE KREMER, *HOW WELFARE STATES CARE: CULTURE, GENDER AND PARENTING IN EUROPE* 63-64 (2007) (describing various theories of gender diversity and the wide gaps among female employment rates in Europe.)

The context of Pfau-Effinger is based on her research involving “the interplay of three dimensions” affecting female employment rates, those being ‘gender culture’ defined as “norms and values towards spheres of work,” ‘gender order’ which includes *inter alia* the labor market and European welfare states. These, in turn, produce the ‘gender arrangement’ – “the division of labour within families.”

Id.

The interplay between norms, industrial practice, regulatory models, and existing practices addressed by Pfau-Effinger illustrates the multifaceted interplay at work in every foundational shift in culture and helps to illustrate why changes in regulation may only have a marginal affect on the broader system.

⁶⁸ C.K. PRAHALAD, *THE FORTUNE AT THE BOTTOM OF THE PYRAMID* 30 (REVISED AND UPDATED 5TH ANNIVERSARY ED. 2009) (“Each one of the groups that is focusing on poverty alleviation – the World Bank, rich countries providing aid, charitable organizations, national governments, and the private sector – is conditioned by its own dominant logic.”).

⁶⁹ *Id.* at 31.

⁷⁰ *Id.* at 34-35 (measured in purchasing power parity).

⁷¹ *Id.*

⁷² See Brown & Anthony, *supra* note ___ at 69.

⁷³ Roger L. Martin, *The Innovation Catalysts*, *HARVARD BUSINESS REVIEW*, June 2011 at 87.

⁷⁴ *Id.* at 86.

had 180,000 subscribing farmers, most of them acquired by word of mouth. They report that, on average, the service boosts their prices by 16%.”⁷⁵

The experience of Intuit is disruptive. It entered a market for one product and developed an entirely different product to meet a need it had never known existed. On the other hand, the product innovation for P&G should not be considered profound disruptive innovation – until one realizes the 45 years of stagnation in India and failure to address a market comprised of 4 billion poor across the globe.⁷⁶ Both P&G and Intuit have made a difference and expanded their business.

In this context, any effort to expand into this market is profoundly disruptive. The lesson that a marketplace of 4 billion people with an incalculable collective bargaining power was ignored for decades reflects the power of our cultural expectations. But this narrative has shifted⁷⁷ and the race to meet these global needs has just begun.

The Triggers for Disintermediation

Disintermediation can properly be considered one of these transformative cultural shifts. But it reflects a special case because it focuses on the economic relationship and therefore stands as a particularly potent portent of profound disruptive innovation.⁷⁸ For investors and enterprise operators, disintermediation reflects the most critical risk involving cultural shifts. Those cultural shifts that leave economic relations unaffected touch business only indirectly; those that disintermediate the supply chains or customer relations require an immediate and unwavering response from the enterprise if it is to survive.

Within the broader area of disintermediation, certain key trends stand out: Globalization, RFIDs and the networking of things, the geometric expansion of network effects, and an emerging “cloud culture” growing from transmedia and social media into flash mobs, – together these combine to reshape the historical narrative of society and culture. This group of stressors has been reshaping our narrative of community and reflect an redefinition of society that business must anticipate – and governments must engage. Each of these is described in more detail below.

Globalization and the Networked Economy

The convergence of globalization, a networked economy, and digital technologies have made disruptive innovation a threat in almost every industry.

“The world economy is undergoing a radical paradigm shift in terms of basic mode of production: a shift from scale-based competition to knowledge-based competition is underway, placing new emphasis upon the capabilities of business enterprises to manage knowledge and

⁷⁵ *Id.*

⁷⁶ PRAHALAD, *supra* note __ at 27.

⁷⁷ For a broader discussion on the power of the narrative, *see* F.S. MICHAELS, *MONOCULTURE: HOW ONE STORY IS CHANGING EVERYTHING* (2011), *infra* note __ and accompanying text.

⁷⁸ Evans & Wurster, *supra* note __ at 73-74.

information and learn as organizations.”⁷⁹ The nature of global economic enterprise has shifted. By the “early 1990s multinational corporations employed directly “only” about 70 million workers, but these workers produced one third of the world’s total private output, and the global value of their sales in 1992 was US \$5,500 billion, which is 25 percent more than the total value of world trade in that year.”⁸⁰ Production of goods and services has been distributed across the globe, diffusing the impact of any particular nation’s laws and customs.⁸¹

For the first time in history, the basic unit of economic organization is not a subject, be it individual (such as the entrepreneur, or the entrepreneurial family) or the collective (such as the capitalist class, the corporation, the state). ... [T]he unit is the network, made up of a variety of subjects and organizations, relentlessly modified as networks adapt to supportive environments and market structures.⁸²

Because information moves without restrictions, the transformation is stark, fast and overpowering.⁸³ As Thomas Friedman described it, “in Globalization 3.0 – the thing that gives it its unique character – is the newfound power for individuals to collaborate and compete globally.”⁸⁴

For a company – or nation – managing disintermediation, losing the ability to control collaboration and channel (and tax) relationships profoundly undermines centrality and

⁷⁹ Michael P. Ryan, *Knowledge-Economy Elites, the International Law of Intellectual Property and Trade, and Economic Development*, 10 CARDOZO J. INT’L & COMP. L. 271, 299 (2002) citing Robert M. Grant, *Prospering in Dynamically-Competitive Environments: Organizational Capability as Knowledge Integration*, 7 ORG. SCI. 375 (1996); Barbara Levitt & James G. March, *Organizational Learning*, 14 ANN. REV. SOC. 319 (1988); Wesley M. Cohen & David A. Levinthal, *Absorptive Capacity: A New Perspective on Learning and Innovation*, 35 ADMIN. SCI. Q. 128 (1990).

⁸⁰ MANUEL CASTELLS, *INFORMATION TECHNOLOGY, GLOBALIZATION AND SOCIAL DEVELOPMENT*, 4 UNRISD DISCUSSION PAPER NO. 114 (SEPTEMBER 1999).

⁸¹ See generally MANUEL CASTELLS, *THE RISE OF THE NETWORK SOCIETY: THE INFORMATION AGE: ECONOMY, SOCIETY, AND CULTURE VOLUME I* 167 (2d ed. Wiley 2009).

⁸² *Id.* at 214.

⁸³ Globalization101.org, *Culture and Globalization*, The Levin Institute (State University of New York) 2, <http://www.globalization101.org/uploads/File/Culture/cultall2009.pdf> (last visited Sept. 3, 2010) (defining globalization as “acceleration and intensification of economic interaction among the people, companies, and governments of different nations.”) See Peer Zumbansen, *Values: Law after the Welfare State: Formalism, Functionalism, and the Ironic Turn of Reflexive Law*, 56 AM. J. COMP. L. 769 (2008).

⁸⁴ THOMAS FRIEDMAN, *THE WORLD IS FLAT* 9-10 (2005).

[T]here have been three great eras of globalization. The first lasted from 1492 ... until around 1800. I would call this era Globalization 1.0. ... [T]he key agent of change, the dynamic force driving the process of global integration was how much brawn – how much muscle, how much horsepower, wind power, or, later, steam power – your country had and how creatively you could deploy it. ... The second great era, Globalization 2.0, lasted roughly from 1800 to 2000, interrupted by the Great Depression and World Wars I and II. ... [T]he driving force was multinational companies.... It was during this era that we really saw the birth and maturation of a global economy, in the sense there was enough movement of goods and information from continent to continent for there to be a global market, with global arbitrage in products and labor.

...

Id.

importance. Unless the enterprise or regulatory body adds value to the relationship, it can now be bypassed. Just as small towns decried the expansion of Interstate highways that rerouted traffic to avoid local stops, the information superhighway has rendered obsolete the tollways along the path.

The Internet and Internet of Things

There is another data revolution taking place. In this case, it is the data about people's physical objects and their movements. The tiny microchips, such as radio frequency identification tags (RFID tags), some as small as a grain of sand, and many smaller than the size of this typed period (.), are attached to an antenna, allowing their signal to be obtained by a transceiver.⁸⁵

In Europe, regulations have anticipated some of the implications far faster than in the United States.

One major next step in this development is to progressively evolve from a network of interconnected computers to a network of interconnected objects, from books to cars, from electrical appliances to food, and thus create an 'Internet of things' (IoT). These objects will sometimes have their own Internet Protocol addresses, be embedded in complex systems and use sensors to obtain information from their environment (e.g. food products that record the temperature along the supply chain) and/or use actuators to interact with it (e.g. air conditioning valves that react to the presence of people).⁸⁶

The primary purpose of these devices is inventory control and product tracking.⁸⁷ Unlike bar codes, RFID and similar near field technologies use "an electronic product code (EPC) to provide a unique identity to each individual product, thereby enhancing the tracking and control of inventories within a supply chain."⁸⁸

The information available to networked devices may profoundly influence how we utilize objects in ordinary society. In Houston, Texas, for example, high schools are using RFID tags in

⁸⁵ Sarah Gingichashvili, *Hitachi Develops World's Smallest RFID Chip*, *TFOS*, Oct. 26, 2007, available at <http://thefutureofthings.com/news/1032/hitachi-develops-worlds-smallest-rfid-chip.html>. See also Julie Manning Magid, Mohan V. Tatikonda, & Philip L. Cochran, *Radio Frequency Identification and Privacy Law: An Integrative Approach*, 46 AM. BUS. L.J. 1, 9 (2009).

RFID systems comprise three main components: (1) the RFID tag, or transponder, which is located on the object to be identified and is the data carrier in the RFID system; (2) the RFID reader, or transceiver, which may be able to both read data from and write data to a transponder; and (3) the data processing subsystem which utilizes the data obtained from the transceiver in some useful manner.

Id.

⁸⁶ Communication From The Commission To The European Parliament, The Council, The European Economic And Social Committee And The Committee Of The Regions, *Internet of Things — An action plan for Europe*, COM (2009) 278, June 6, 2009 (footnote omitted) (Hereinafter IOT ACTION PLAN).

⁸⁷ Uttarayan Bagchi, Alfred guiffrida, Liam O'Neill, Amy Zeng, & Jack Hayya, *The Effect on Inventory Management and Control in Trends in SUPPLY CHAIN DESIGN AND MANAGEMENT*, (HOSANG JUNG, F. FRANK CHEN, BONGJU JEONG, EDS.) 72 (2007).

⁸⁸ *Id.* at 74.

student identification cards to track students' movements in their high schools.⁸⁹ Some new televisions are being equipped with chips to capture second-by-second viewership, complete with the ability to target behavioral advertising on the fly.⁹⁰

The networking of objects has the potential to rewrite the relationships between people and their objects. Consumers will come to expect different behaviors from the object with which they interact. Privacy will further diminish, but the expectations for the objects will increase as well. Soon smart keys will no longer be able to be lost in the house; car seats will know which driver is entering the vehicle; televisions will anticipate what viewers are in the room and provide channels or programs accordingly; shopping carts will direct shoppers to the aisles they need based on prior shopping behavior (along with enticing opportunities for specials and trials of new products); clothes will ask to be washed and help choose their accessories; and only the companies that engage in this new behavior will be ready for the future.

In each of these situations, an automated and consumer-defined relationship will replace the pre-existing activities. In many situations, this will create efficiency and convenience for the consumer, but it will also reduce the opportunities for human interaction and subtly rewrite the engagement between customer and company. Those that understand this change will adjust their technologies to improve the service and increase the customer's reliance on its systems. Companies that do not understand how this engagement will occur risk alienating customers and losing markets quickly.

Beyond consumer interactions, other uses may arise. Ethical and privacy concerns regarding misuse tend to focus on government, business and organized crime.⁹¹ These include unwarranted surveillance, profiling, behavioral advertising and target pricing campaigns.⁹² As a result, as companies increasingly rely on these tools, they also bear a responsibility to do so in a socially positive manner that increases the public's estimation of the company.

A Network of Network Effects

"In economic theory, the value of most goods does not vary with the number of people who possess and use them. ... In contrast, "network effects" apply to goods whose value increases as more people possess and use them."⁹³ The value of the good or the service increases precisely because of its adoption by the public. It applies to everything from music and television to

⁸⁹ Stephen Dean, *Concerns Raised Over Tracking Students With Chips*, CLICK2HOUSTON.COM, Apr. 18, 2011, <http://www.click2houston.com/news/27584374/detail.html> ("State Rep. Lois Kolkhorst, R-Brenham, has introduced a bill that would limit how districts can deploy the technology.... She said one school district even said they can monitor children's eating habits with the RFID chips and she's afraid that information about a child's movements could be sold to companies").

⁹⁰ Chris Marlowe, *TV Keeps an Eye on Viewers*, DIGITAL MEDIA WIRE, Aug. 22, 2011, <http://www.dmwmedia.com/news/2011/08/22/tv-keeps-an-eye-on-viewers>. ("Chips built in to some of the latest TVs are aware of every program, even every snippet of program and YouTube video, the set is showing. These chips also know and can report on any apps that get used and website activity that goes through the TV. Furthermore, this information can be available to advertisers and other third parties if the viewer opts in.").

⁹¹ Bagchi et al., *supra* note __ at 76.

⁹² *Id.*

⁹³ Kahn, *supra* note __ at 216-17. See Mark A. Lemley & David McGowan, *Legal Implications of Network Economic Effects*, 86 CALIF. L. REV. 479 (1998).

computer networking protocols. And the value increases at a geometric rate, so each new member in a large network is worth more than a new member in a small network.

The network effect defines the value of social networks, so that as a particular platform becomes more popular, its value increases geometrically. This is why the popularity of one network has such a devastating competitive impact. The network effect will also affect the IoT, causing objects that are part of the network to be more valuable than those that are disconnected from the networked. As the network grows, the value outpaces other systems.

Particularly in the area of payment systems, the implications of network effects will have a highly disintermediating impact. One particular payment system will become more readily used than the others, and as more objects can be purchased using that system, it will become more valuable and disrupt other systems. The network effect will not be the sole predictor of which platform will be successful – social relevance will play a powerful role – as will the underlying attributes of cost and convenience, but cost and convenience will not be the prime factors.

Payment systems provide an interesting example in another way. The network effects are driven by two, competing networks – those of the consumer and those of the merchant. The cost, convenience, social relevance and network for the merchant may have quite a different value proposition than for the consumer. Merchants struggling to reduce the fees they pay to current credit card companies are motivated to find less expensive alternatives, so some are promoting competition. Mobile phone companies, social media organizations and online companies are searching for entry points into this highly lucrative market. The conflict will reshape the consumer experience – already the most mediated point in the economic relationship. In short, the battle over payment systems will decide the future of the Fortune 100.

In addition, network effect may partly explain the reasons social network designers have avoided providing robust privacy tools. Network effects – as well as social relevance – eschew any value of privacy because privacy.⁹⁴ Private activities have little or no subjective influence beyond the actual participants, so they undermine the expansion of the network and the reinforcing aspects of social relevance. This may help explain why Facebook bans children⁹⁵ who are protected by the U.S. Children’s Online Protection Act.⁹⁶ The service emphasizes sharing so that any legal requirements that discourage sharing are better avoided than incorporated. Architecture that promotes sharing encourages the network effects and the social relevance of the network.

⁹⁴ See, e.g., Miguel Helft, *Zuckerberg on the Hot Seat*, N.Y. Times June 10, 2010, <http://bits.blogs.nytimes.com/2010/06/02/zuckerberg-on-the-hot-seat/>.

Mr. Zuckerberg was being grilled about Facebook’s latest privacy flap, and he was visibly uncomfortable and sweating profusely. ... “There have been misperceptions that we are trying to make all information open,” Mr. Zuckerberg said at one point. “That’s completely false.” ... Mr. Zuckerberg, 26, appeared ill-at-ease with questions that he had answered deftly a week earlier when he admitted that Facebook had made mistakes by letting its privacy settings grow too complicated.

Id.

⁹⁵ Facebook Term of Use, <http://www.facebook.com/terms.php> (last visited Sept. 9, 2011).

⁹⁶ See Children’s Online Privacy Protection Act, 15 U.S.C. §§6501-06 (2010).

Cloud Culture: Transmedia, Mobile Computing and Flash Mobs

The final disintermediating influence comes from the intersection of mobile computing, cross-platform media content, and use of technology for real-world public organizing. Each of these three incremental changes combine into a distinctive new trend, referred to here as “cloud culture.” When combined, mobile computing, transmedia, and flash mobs catalyze into an unknown and largely unpredicted social shift.⁹⁷

The cloud culture is at once the product of disruptive innovation and the likely trigger for significantly more profound disruptive innovation. This combination of factors have come together as the dominant transformation of pre-existing economic social relationships for this decade.

The first element comprising the cloud culture is mobile computing. Media has left the television and now resides on computers, mobile devices, downtown billboards, football stadia, theaters, and game consoles.⁹⁸ Look no further than Sesame Street’s network home, PBS. “PBS KIDS Raising Readers has developed a myriad of new digital media learning resources — so that kids have more opportunities to learn, wherever they are. PBS KIDS Raising Readers content provides new interactive whiteboard activities, broadband video, E-books, and iPhone and iPad applications that encourage kids to practice and reinforce literacy skills.”⁹⁹ Dedicated devices are giving way to fully-functioning computers residing in a multitude of form factors. The device goes everywhere and can be found anywhere, to be used by all ages.

The second element of this trend is transmedia. “In transmedia, elements of a story are dispersed systematically across multiple media platforms, each making their own unique contribution to the whole. Each medium does what it does best – comics might provide backstory, games might allow you to explore the world, and the television series offers unfolding episodes.”¹⁰⁰ Transmedia – and any consumer interaction – is best when it is interactive and engaging for the audience.¹⁰¹

The third element is the catalyst – flash mobs. Once an oddity of social media, flash mobs allow groups to rapidly form, converge and dissipate – making the crowd itself the news of the

⁹⁷ See STEWART, *supra* note __ at 173 (“Nonsubtractive, structurally abundant, front-loaded, and unpredictable: When the most important economic resource has these characteristics, it’s no wonder that information-rich businesses such as finance and computer software are notoriously volatile. Frequently they even venture outside fundamental laws of economics.”).

⁹⁸ See, e.g., Ryan Lawler, *HBO Go coming to connected TVs, game consoles*, GIGAOM, Aug. 3, 2011, <http://gigaom.com/video/hbo-go-connected-tvs/>; Tim Carmody, *Time Warner Bringing Digital Magazines, HBO to More Platforms*, WIRED, Aug. 3, 2011, <http://www.wired.com/epicenter/2011/08/time-warner-platform-push/> (“Time Warner’s ... CEO Jeff Bewkes announced that the company was expanding its TV Everywhere strategy, bringing the popular HBO Go service to game consoles, smart televisions and other streaming media boxes.”).

⁹⁹ RAISING READERS, A STORY OF SUCCESS, PBS KIDS 19 (2009), *available at* http://pbskids.org/read/files/raising_readers_a_story_of_success.pdf.

¹⁰⁰ Henry Jenkins, *Seven Myths About Transmedia Storytelling Debunked*, Fast Company, Apr. 8, 2011, <http://www.fastcompany.com/1745746/seven-myths-about-transmedia-storytelling-debunked>.

¹⁰¹ *Id.* See generally HENRY JENKINS, *CONVERGENCE CULTURE: WHERE OLD AND NEW MEDIA COLLIDE* (2006).

event.¹⁰² Flash mobs started as stunts involving dancers or other clever pranks, but the practice¹⁰³ has also had a lawless and violent component.¹⁰⁴ As CNN recently noted, “[t]he concept of sudden, coordinated bursts of violence by gangs of people is not new. Race riots have occurred for centuries. In 1989, gangs of teens in New York attacked random bystanders, an activity that was dubbed “wilding.”¹⁰⁵

In recent social unrest, the use of these tools became a potent weapon against police response.¹⁰⁶ Peer-to-peer networks also reflect another variation on this behavior. Flash mobs now reflect a divergent group of phenomenon triggered by the intersection of mobile computing and social media. Certain social media services, such as Four Square, focus on geographic activities.¹⁰⁷ It seems anonymous, which may encourage behaviors that tend to be antisocial.

Cloud culture is a more profound disintermediation than its violent illustration in London¹⁰⁸ or the Jasmine Revolution in Yemen and Egypt.¹⁰⁹ Cloud culture actually relies on a network of networks and a commonly held interest in the group. Social relevance plays a significant role – becoming part of the group (or mob) has a value independent of the goal of the group.

Cloud culture has little beyond the common instinct of the crowd to hold it together. Like real clouds, it is ephemeral with little cohesion, but when it comes together, it can generate fierce storms with gale-force winds.

Cloud culture has a second inherent danger, beyond that targeted by the crowd. The reaction to the unpredictable and volatile situation has generated a police response to turn off cellular

¹⁰² Sheila Shayon, *Flash Mob Trend Spawns A New Social Media Industry*, BRAND CHANNEL, Aug. 23 2011, <http://www.brandchannel.com/home/post/2011/08/23/Flash-Mob-Trend-Spawns-A-New-Social-Media-Industry.aspx>.

¹⁰³ Mark Milian, *Little evidence links mob violence to social media*, CNN (Aug. 19, 2011) (“The phrase flash mob was coined in 2003 by Bill Wasik, then an editor at Harper’s magazine. It was later adopted by Web-savvy folks to describe large choreographed dances and songs in public places, usually organized through digital messaging tools.”)

¹⁰⁴ Johan Thomas, *Philadelphia Mayor Extends Flash Mob Curfew*, NEWSONE (Aug. 24, 2011), <http://newsone.com/nation/jothomas/philadelphia-mayor-extends-flash-mob-curfew/> (“The curfew, which has been in effect since Aug.12, was instituted in response to a string of mob attacks by young people who gathered using text messages and social media to alert one another.”).

¹⁰⁵ Milian, *supra* note __ at __.

¹⁰⁶ Josh Halliday, *London riots: how BlackBerry Messenger played a key role*, The Guardian, Aug. 8, 2011, <http://www.guardian.co.uk/media/2011/aug/08/london-riots-facebook-twitter-blackberry>.

¹⁰⁷ E.g., Foursquare, <https://foursquare.com> (last visited Sept. 9, 2011) (“Foursquare gives you & your friends new ways to explore your city. Earn points & unlock badges for discovering new things.”); Facebook Places, Ingrid Lunden, *Facebook Places Check-In More Popular Than Foursquare*, PaidContent.org, Aug. 26, 2011, <http://paidcontent.org/article/419-developer-facebook-places-check-in-use-is-huge-compared-to-foursquare>.

¹⁰⁸ See Ravi Somaiya, *In Britain, a Meeting on Limiting Social Media*, N.Y. TIMES, Aug 25, 2011 at A4, available at <http://www.nytimes.com/2011/08/26/world/europe/26social.html>; Eric Pfanner, *Exploring Crackdown on Social Media After Riots*, N.Y. TIMES, Aug. 11, 2011, available at <http://www.nytimes.com/2011/08/12/world/europe/12iht-social12.html>.

¹⁰⁹ Kim Sengupta, *Media throw off censor's shackles after decades of fear and collaboration*, THE INDEPENDENT (LONDON), Jan. 20, 2011 at 24; Jennifer Preston and Brian Stelter, *Cellphones Become the World’s Eyes and Ears on Protests*, N.Y. TIMES, Feb. 19, 2011 at A11 (“A novelty less than a decade ago, the cellphone camera has become a vital tool to document the government response to the unrest that has spread through the Middle East and North Africa.”).

phone networks, Internet connectivity and other systems.¹¹⁰ If the trend continues, the response to these attacks could reshape the social contract regarding privacy and telecommunications in various nations around the world.

The Market Response: Riding the Waves

If the first two vectors help identify change, the third assists in seeing a patterned response to the change. The taxonomy of disruptive innovation helps to see the direction from which the change will come, and the components of disintermediation help explain how the change will manifest. This third vector explores how the markets react to the other influences. So just as animals' response to an earthquake warns other animals in advance of the physical shaking, business can watch the trends of other business to be alerted to the coming disruption.

For venture capital, in particular, the third vector to be tracked emphasizes the shape of the industrial participation in the field. This may be captured through "shakeout" studies that identify the entry and exit patterns of companies as they respond to changes in a particular industry.¹¹¹ The general pattern of innovation involves a host of new entrants, perhaps lured by the uncertainty and lack of market leaders.¹¹² Those early participants will be struggling to gain dominance and erect barriers to entry while trying to overcome any such barriers being erected by others. For example, "Empirical investigation suggests that industries with dramatic shakeouts tend to have fast-paced innovation."¹¹³

Professor Markides suggests that the disruption regarding product innovation comes because the new entrant is "pushing" both the consumer and the competitor with the new product.¹¹⁴ Implicit in this assertion is the notion that the consumer could be pushed to an inferior product. While consumers will trade the convenience of the Swiffer mop for the possibly better cleaning benefits of a sponge mop, the old product isn't better – it has a different value proposition. Early digital cameras had better instant features and better sharing capability – at the cost of picture quality. Consumers understood the tradeoff.

Regardless of the cause of the disruption, a violative, disrupted market tends to follow a pattern not unlike that of surfers competing to catch a wave. Many make a run at the wave but most fall back as the successful entrant captures the dominant position and rides (or falls) based

¹¹⁰ Milian, *supra* note __ at __; Ravi Somaiya, *supra* note __ at A4; Eric Pfanner, *supra* note __ at __.

¹¹¹ See Kenneth L. Simon, *Shakeouts, Innovation, and Industrial Strategy and Policy*, 40 AUSTRALIAN ECON. REV. 106, 107-109 (2007); Markides, *supra* note __ at 19-20; Steven Klepper & Kenneth L. Simons, *Innovation and Industry Shakeouts*, 25 BUSINESS AND ECONOMIC HISTORY 81 (1996).

¹¹² Markides, *supra* note __ at 23.

¹¹³ Simon, *supra* note __ at 106.

¹¹⁴ Markides, *supra* note __ at 22-23.

Radical innovations are disruptive to consumers because they introduce products and value propositions that disturb prevailing consumer habits and behaviors in a major way. They are disruptive to producers because the markets they create undermine the competences and complementary assets on which existing competitors have built their success. Because they are disruptive to both consumers and producers, these innovations are rarely driven by demand. Instead, they result from a supply-push process originating from those responsible for developing new technologies.

Id.

on talent and technique.¹¹⁵ Unlike open markets, surfers have rules of etiquette to determine who has priority¹¹⁶ (which sometimes applies to regulated markets and oligopolies as well). Professor Markides' summary captures the pattern of market entrants and shakeout quite well:

- Despite enormous technological and product uncertainty, newly created markets are invaded by hordes of new entrants, sometimes numbering in the hundreds. Amazingly, this surge in firm population happens well before the new market starts growing.
- Not only is the new market flooded with hundreds of new entrants, but product variety in the young market also surges to amazingly high levels. In fact, the rate of innovation at the start of a market's life is the highest this market will ever see.
- Eventually, the wave of entry subsides and in turn is followed by what is sometimes a sharp, sudden, and very sizeable shakeout leading to the death of most of the early pioneers. The shakeout is associated with the emergence of a dominant design in the market, which signals the beginning of growth in the industry.
- All of this takes a long time to unfold. Thus, the structure of new markets remains remarkably fluid throughout most of the early years, and many more firms come and go than are left operating in the market when its structure finally settles down.¹¹⁷

There is not necessarily a first-mover advantage. Timing can be seen as a critical factor. But as will be discussed, *infra*, timing merely explains why the successful entrant shaped the response of the pack. If an entrant has the ability to control essential patents, hire key personnel and know-how, develop brand good will that shifts consumer behavior, or better predict the manifestation of the disruption, that entrant will outperform the other entrants. The success will drive economically efficient competitors out of the competition and trigger the shakeout. In retrospect, that entrant will be seen as having timed its entrance precisely so, but in reality it was the assets brought to bear on the disruption that shaped the timing.

This is not to say that timing does not matter. The cost of participation appears to have a saddle-curve distribution. Early entrants must invent the research, development and awareness to participate – resulting in relatively high entry costs. Early entrants also face the challenge of a long time before they receive any meaningful return, which reflects on both the cost of the capital investment and the political problem of assuaging investors. The late entrants are competing against an increasingly mature market, which requires greater budgets to acquire technology and larger marketing outlays to acquire market share. The well-timed entrant can reduce the overhead of participation (somewhat) by jumping in at the point that the technology is maturing but before the market is solidifying.

In addition, this timing “model” assumes the entrant is not affecting the shape of the innovation or the competition. The development curve will be shaped by an entrant with the right assets: Patents, know-how, brands and pattern-recognition of the disruption. Moreover, all the

¹¹⁵ See RAUL GUIBADO, *THE ART OF SURFING* 28-29 (2003). (“A large group of surfers in the lineup is referred to as a *pack*. . . . The surfer closest to the peak [of an oncoming wave] has right-of-way”).

¹¹⁶ *Id.* at 78.

¹¹⁷ Markides, *supra* note __ at 23.

tools for success are affected by the timing. Move too early and these tools may not be ready to bring to bear; move too late and these assets may be captured by a competitor. Thus understanding the pattern adds an incremental tool to managing the competition, but the successful company must bring the right assets to the competition to be successful.

Although this is difficult to assess without the benefit of hindsight, some approximations can be made. The successful entrant is likely to be the competitor chasing the wave just as the consequences of the disruption can be envisioned, but before anyone in the field has been successful at implementing the innovation and capturing the market. Implicit in the optimal model is the ability to envision the consequences of the disruption, so the more effective a company can be at exploring the opportunities, the earlier it can make an effective run.

Understanding the Meme, not the Customer

Recognizing the saddle curve of disruptive innovation provides one key indicator to anticipating the rise of a significant meme. But it is probably a rather lagging indicator. Another key trigger may be the movement of memes or ideas spreading among the public.¹¹⁸ By understanding how a potentially new, disruptive meme fits into the broader world of narrative, how that narrative is spread, and where springs for ideas can be found, investors and enterprises can both study the marketplace.

By definition, the conversation with a customer will focus on process or product innovations. The discussion one needs to have is with the non-customer, to find out from those not interested in a firm's products or services what would make that firm's competencies suddenly of interest. The customers of direct competitors will disclose useful information for modest process or product improvements, but these will not typically result in profound disruptive innovation. The true information will come from utterly disinterested individuals who had not previously considered the products or services in question. As a result, most of those conversations will be irrelevant and the exercise unlikely to succeed. But within that population are the members of the new market. So the key is not to chase through the throngs in hopes of finding the one, new customer. Instead, the key is to identify what memes will drive new populations to the goods and services that could be made by the firm, if only the firm was aware of the need for that product.

Recognizing that Reality is a Narrative

The roadmap through the development paradox can be found in the narrative of the consumer. "The universe is made up of stories, not atoms,"¹¹⁹ and so is the world of business and commerce. The story defines the social narrative or context for interactions. Social relevance

¹¹⁸ See generally, Jure Leskovec, Lars Backstrom, & Jon Kleinberg. *Meme-tracking and the Dynamics of the News Cycle*. ACM SIGKDD INTL. CONF. ON KNOWLEDGE DISCOVERY AND DATA MINING, (2009) ("a quoted phrase first becomes high volume among news sources, and is then "handed off" to blogs. The news media are slower to heavily adopt a quoted phrase and subsequently quick in dropping it, as they move on to new content. On the other hand, bloggers rather quickly adopt phrases from the news media, with a 2.5-hour lag, and then discuss them for much longer. Thus we see a pattern in which a spike and then rapid drop in news volume feeds a later and more persistent increase in blog volume for the same thread.").

¹¹⁹ Muriel Rikeyser, in F.S. MICHAELS, *MONOCULTURE: HOW ONE STORY IS CHANGING EVERYTHING* __ (2011).

prioritizes these interactions. The network reinforces this importance, even to the point of reshaping our perception of the experience, which thus redefines the experience itself. Successful parents know this instinctively, making the doctor's visit part of a fun day filled with excitement rather than asking if a shot hurt or telling a child to be brave.¹²⁰

The narrative is social. As more and more of the public accept a social narrative the network effect consolidates the impact. The theory of social relevance predicts that a person is rewarded simply for adhering to the accepted narrative. "All of us are prisoners of our own socialization. The lenses through which we perceive the world are colored by our own ideology, experiences, and established management practices."¹²¹

Culture has numerous threads, narratives woven together. Many are surprisingly resilient to change. Education, training, media, and other tools reinforce these tropes and do little to affect them when advocates challenge particular stories or customs. Each meme either reinforces the central narrative or serves to undermine it. The pattern lends itself well to identifying memes of cultural importance by recognizing both the value in the message and the method of its dissemination.

Successful new stories have a common method for distribution and sustenance. Cultural shift tends to come from a concerted effort of a school or cult. The members band together against the prevailing meme – absolute in tone – denying everything about the currently accepted truth. The school often uses an event as a inflection point to highlight the shift from the old meme to the new, though the importance of the event may grow as the story is retold. Scientists did this with Galileo's heliocentric view of the universe; natural selection and survival of the fittest as applied to evolution by Charles Darwin and to economics by Adam Smith; human capital reconceptualized by Karl Marx; National Socialism by Hitler; Impressionism by Monet and Manet; the social order by Timothy Leary; and economic efficiency and open markets by Milton Friedman.

Each movement first undermined then sought to eradicate the legitimacy of its competition. If the transformation is based on empirical, replicable data, the theory is more likely to be more sound. But even then, the factual information may or may not imbue a set of subjective values. So the heliotropic universe accurately reflected the data and observations of our universe, challenging the Church to redefine the nature of God's centrality. Our understanding of God grew to accept He created the universe, not just the solar system. Economists valued efficiency but in failing to also value the distribution of wealth, these empirical studies have led to models of record economic disparity where such science has been adopted. The story, rather than any objective truth, ultimately dominates. The story shapes the relationships among those who live within the narrative.

¹²⁰ A classic example is the story of learning the Talmud. The teacher introduces a child to study by handing the child a slate, lightly covered in honey. The child draws letters on the slate and as he or she licks the sticky fingers, the child tastes the sweetness of the letters and of study. Thus the narrative of learning is made part of the senses and the lesson that "learning is sweet" can be tasted on the tongue. See Henry Abramson, *Studying the Talmud: 400 Repetitions and the Divine Voice*, THE NEA HIGHER ED. J., SUMMER 2001 at 12, available at http://www.nea.org/assets/img/PubThoughtAndAction/TAA_01Sum_01.pdf.

¹²¹ PRAHALAD, *supra* note __ at 30.

For investors, identifying goods or business models that embody this pattern will help capture the most profound disruptive innovation. As previously described, it disintermediates preexisting relationships and reintermediates them with the new narrative and new transactional relationship. It affords opportunities for horizontal growth into new markets as the meme disrupts neighboring relationships.

Events like the TED conference or MAC developer's conference are not coincidental to the growth of certain technologies and platforms. They are another demonstrated linkage in the chain for identifying and disseminating memes that can be owned and shaped by their investors. By recognizing the power of the story and the role of a new meme within the shared narrative – or just observing the rise of schools (or cults) that cohesively advocate for a particular platform or service – investors can identify the potential authors of the next social narrative.

Leading technology companies and their marketing divisions are actively pursuing this approach. The lexicon for Kindle, Wii, Macintosh, Blackberry, iPad, Nook and similar product launches has been to eschew the article “the” and position the adoption of the device as a social movement.¹²² “Removing articles “is an artifact of the desire of some brand professionals to turn brands into religions or cults,” says marketing blogger and business-book author Seth Godin.”¹²³ In language and social organization, these companies are building an infrastructure to maximize the dispersion and impact of their branded memes.

Appreciating the Social Media Meme

As the universe is made up of stories, today those stories are linked by social media. “The new technologies and social media have affected behavior of the consumer, which in turn afforded new opportunities for content producers to interact with their audience.”¹²⁴ This effect has been described as “curatorial me,” in which the nature of the audience has become social, interconnected and participatory.¹²⁵ “Although not producing art themselves, citizens have developed the skills and expertise to be connoisseurs and mavens — seeking out new experiences, learning about them, and sharing that knowledge with friends.”¹²⁶ The curatorial participant is an active partner in the promotion and dissemination of works they value. This modality builds on a tradition of fan fiction, fan clubs, community theatre and other non-professional engagement, but it has grown to a much broader scale with the explosion of social media tools.¹²⁷

¹²² Geoffrey A. Fowler & Yukari Iwatani Kane, *An Article of Faith for Marketers: Place No Faith in Articles*, WALL ST. J., Sept. 12 at A1 (“In Silicon Valley especially, dropping “the” before product names has become an article of faith.”).

¹²³ *Id.* at A16.

¹²⁴ Garon, *Content, Control and the Socially Networked Film*, *supra* note __ at 795 citing ROBERT H. WICKS, UNDERSTANDING AUDIENCES 74 (2000).

¹²⁵ Bill Ivey and Steven Tepper, *Cultural Renaissance or Cultural Divide?*, CHRON. OF HIGHER ED., May 19, 2006 at B6, available at <http://chronicle.com/weekly/v52/i37/37b00601.htm>. See Laura Grindstaff, *Cultural Sociology and its Diversity*, 619 ANNALS OF THE AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE 206 (Sept. 2008).

¹²⁶ *Id.*

¹²⁷ See Garon, *Content, Control and the Socially Networked Film*, *supra* note __ at 791-94.

User-generated content can be found on wikis, blogs, Twitter feeds, YouTube, Facebook, and pirate websites, as well as in virtual worlds, reactions to news stories, reactions to others' reproductions of news stories, and ratings for products or ratings for seller reputations – not to mention many more places yet to be described or envisioned. They are part of emerging social networks of self-expression that are the foundation of our online political and social culture. All these networks, sites, and virtual worlds raise issues of creativity, ownership, collective authorship, and illegal appropriation of previously copyrighted works.¹²⁸

This has become the predominant modality in the entertainment media, but it has moved very far beyond. Amazon owes much of its success to the consumer ratings and recommendations of its products, creating a socially relevant, highly networked community of consumers and consumer advocates.¹²⁹ Perhaps the starkest example of the social media imperative can be found in a new project under development by the Department of Defense, which is developing a social media advance warning system. “The new Social Media in Strategic Communication (SMISC) program was submitted under the Defense Advanced Research Projects Agency (DARPA), an arm of the Department of Defense. The goal is to “develop a new science of social networks built on an emerging technology base” to help the agency keep abreast with communication technologies, namely Twitter.¹³⁰

If this seems far-fetched, one need merely review the DARPA RFP to understand the goal and its implications:

The general goal of the Social Media in Strategic Communication (SMISC) program is to develop a new science of social networks built on an emerging technology base. In particular, SMISC will develop automated and semi-automated operator support tools and techniques for the systematic and methodical use of social media at data scale and in a timely fashion to accomplish four specific program goals:

1. Detect, classify, measure and track the (a) formation, development and spread of ideas and concepts (memes), and (b) purposeful or deceptive messaging and misinformation.

¹²⁸ Debora Halbert, *Mass Culture and the Culture of the Masses: A Manifesto for User-Generated Rights*, 11 VAND. J. ENT. & TECH. L. 921, 924-25 (2009) citing Steven Hetcher, *User-Generated Content and the Future of Copyright: Part One – Investiture of Ownership*, 10 VAND. J. ENT. & TECH. L. 863 (2008) (other footnotes omitted).

¹²⁹ Elizabeth M. Gillespie, *Amazon.com opens big doors for small publishers*, USA TODAY, Aug. 13, 2005, available at http://www.usatoday.com/tech/news/2005-08-13-amazon-small-publishers_x.htm (“Using data Amazon has collected about what its customers buy, considered buying, browsed but never bought, recommended to others or even wished someone would buy for them, the bookseller is able to recommend more purchases and direct searches toward products it thinks a customer is most likely to want.”).

¹³⁰ Chris Gayomali, *Defense Department Initiative Seeks to Analyze Social Media Patterns*, TIME TECHLAND, Aug. 2, 2011, <http://techland.time.com/2011/08/02/defense-department-initiative-seeks-to-analyze-social-media-patterns/>.

2. Recognize persuasion campaign structures and influence operations across social media sites and communities.
3. Identify participants and intent, and measure effects of persuasion campaigns.
4. Counter messaging of detected adversary influence operations.¹³¹

Focusing on the tracking of the memes (rather than the misinformation), the DoD approach to understanding the information flow helps to see the direction from which the pressure for innovation will arise. “The information we experience comes to us continuously over time, assembled from many small pieces, and conveyed through social networks as well as other means.”¹³²

Disruptive innovation follows a predictable pattern that reflects itself throughout human culture.¹³³ Profound disruptive innovation necessarily includes disintermediation of prior relationships coupled with one or more of the types of innovation and coupled with an already accepted, but historically unachievable idea. The pattern revolves around the adaptation of the disrupted relationship to the accepted idea and the innovative step. Once these stages have occurred, the new meme will begin to disconnect and reconnect relationships, just as a catalyst may reform atoms into new combinations of molecules.

Tracking the Meme in Culture

The next profoundly disruptive meme will not be new.

In the non-business literature or social culture, there will be discussions and musing that lay the groundwork for the fictional or hypothetical innovation. Motorola found inspiration for flip phones from Star Trek.¹³⁴ Of course, as Cory Doctorow noted, “there is a difference between

¹³¹ DEFENSE ADVANCED RESEARCH PROJECTS AGENCY, SOCIAL MEDIA IN STRATEGIC COMMUNICATION, DARPA-BAA-11-64, 4, JUL. 14, 2011.

¹³² Jaewon Yang & Jure Leskovec, Modeling Information Diffusion in Implicit Networks, IEEE INTERNATIONAL CONFERENCE ON DATA MINING (ICDM) 1, (2010) (“The merging of information, network structure, and flow over time opens interesting questions about the large-scale behavior in information networks”).

¹³³ Though perhaps inappropriate for an article on law and commerce, the notion for the competition and control of a meme can best be illustrated by the history of early Christianity. As the Church formed in the First Century C.E., two divergent sects emerged. One was led by James, the brother of Jesus, and leader of the Christian Church in Jerusalem. The other was led by Paul. “James is defined by the fact that he was a Jewish Christian.” His goal was the restoration of the house of Israel, so he never rejected the laws of purity or other rites of the Torah. Peter and Paul, in contrast, ministered to the whole of the Roman Empire (other than the practicing Jewish community). Regardless of which disciple was closer to Jesus’ message, the branch of the Church that could be accessed by over 90% of the people – and do so away from the strength of the anti-Christian stronghold – was likely to become the dominant model. See PATRICK J. HARTIN, JAMES OF JERUSALEM: HEIR TO JESUS OF NAZARETH 84-85 (2004). The competition to control the church and shape its history developed at the intersection of philosophy and methodology, in this case the philosophical relation of Christianity to Judaism and the practical consequence of following the most likely adherents to each competing philosophy.

¹³⁴ See Tom Kaneshige, *iPad’s Starring Role in Sci-Fi Movies*, APPLE ENTERPRISE NOW BLOG, CIO, Aug. 24, 2011, <http://blogs.cio.com/tablet-pcs/16473/ipad%E2%80%99s-starring-role-sci-fi-movies>.

But cf. BRIAN JOHNSON, SCIENCE FICTION FOR PROTOTYPING: DESIGNING THE FUTURE WITH SCIENCE FICTION 42 (2011).

prediction and inspiration....”¹³⁵ The meme need not be operationalized. Indeed, once it has been reduced to practice, the innovation will be taking a different form.

This cause and effect is important. Investors do not want to use capital to push the public down paths on which it has no interest traveling. But investors are delighted to bring to market those products and services deeply desired by the public – especially those the public doesn’t expect it can have. The *Blink* moment is when the public comes to desire a new product or product refinement it previously had not acknowledged it wanted.¹³⁶

Perhaps the greatest success story has been Apple. A once-struggling marginal computer company, Apple leveraged its success with Mac computers to the iPod and from there to iPhone, iPad, and iTunes.

Apple Computer ... shows how it's done. Here's a company that was trapped in an ever-dwindling niche of the PC business. Then came the iPod, a must-have device for music fans, and iTunes, an online music shop that turned music downloading into a profit-making business. By making iPod and iTunes work with Windows PCs, Apple broke out of selling only to its niche of loyal fans. But its transformation is even more profound than that: In essence, it switched from being a great designer of computer products into a great designer of consumer experiences delivered via devices and services. Now [in 2006] music represents 44% of Apple's revenues, and an even larger share of profits.¹³⁷

The key to the Apple transformation was the change of its output from a computer company focusing on innovation to an industrial design house that happened to package media devices. ““The greatness of Apple has a lot to do with Steve's commitment to design - the willingness to spend amounts of money on design that would be crazy to most other companies,” said Robert Brunner, a former Apple design chief”¹³⁸ Apple did not invent MP3 players, smart phones or tablet computers, but by changing the public experience with these devices it transformed the marketplace. In this case the customer was Apple CEO Steve Jobs.

The design of the iPad is nothing new. Samsung points to early adoption of the form factor in Stanley Kubrick’s 2001 A Space Odyssey.¹³⁹ It also served as the primary computer for Star Trek the Next Generation.¹⁴⁰ Moreover, the design was wholly iterative. The iPad was a natural and

¹³⁵ JOHNSON, *supra* note __ at 42 (quoting Cory Doctorow) (“I do not think that Gene Rodenberry’s Star Trek predicted that Motorola would create a flip phone that looked like a communicator. I think Star Trek inspired Motorola engineers to make a flip phone that looked like a communicator.”).

¹³⁶ See MALCOM GLADWELL, *BLINK: THE POWER OF THINKING WITHOUT THINKING* 12-13 (2005) (““The mind operates most efficiently by relegating a good deal of high-level sophisticated thinking to the unconscious”” quoting TIMOTHY D. WILSON, *STRANGERS TO OURSELVES: DISCOVERING THE ADAPTIVE UNCONSCIOUSNESS* __ (2002)).

¹³⁷ BUSINESSWEEK, *supra* note __.

¹³⁸ Peter Burrows, *Apple's product vision falls to Jonathan Ive*, S.F. CHRON., Aug. 28, 2011 at __, available at <http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2011/08/27/BUAP1KSBC5.DTL>.

¹³⁹ Ned Potter, *Stanley Kubrick Envisioned the iPad in '2001,' Says Samsung*, ABC NEWS, Aug. 26, 2011, available at <http://abcnews.go.com/Technology/apple-ipad-samsung-galaxy-stanley-kubrick-showed-tablet/story?id=14387499>; STANLEY KUBRICK & ARTHUR C. CLARKE, *2001: A SPACE ODYSSEY*, MGM (1968).

¹⁴⁰ See Kaneshige, *supra* note __ at __.

long-discussed extension of the smart phone design with measurements that almost precisely replicate the standard mouse pad. Each improvement in the phone generated more excitement for a tablet that evolved from media player rather than word processor and spread sheet device. The public had been seeing and desiring such a device for years – even though most never wrote the specifications down on their Dell or HP feedback questionnaires.

Analysts for digital cameras likely assumed rates for computer usage to remain constant or taper off. But the digital camera was a “killer app” – a device that drove consumers to invest in computers and thus expand the base for customers. Just as Microsoft utilized Encarta to convince families to buy home computers instead of Encyclopedia Britannica sets, digital cameras become the reason to invest in the home computer or upgrade the computer and printer. Understanding the meme rather than the customer is axiomatic to The Innovator’s Dilemma. Good management is responsive to its customers – furthering its own decline.¹⁴¹ Professor Gilson concurs in outcome with Professor Christensen using a somewhat different framework to reinforce the result.

[S]omething about the transaction and information costs of both the established employer and the venture capital-backed startup's organizational structure must result in efficiency advantages for the startup form that offsets the employers' tax, informational, scale, and scope advantages. There are two categories of explanations for the presence of startup ventures: first, problems that the employer has in taking advantage of the innovation, and second, advantages of the venture capital-backed startup form. In the case of startups, the technology favors locating the innovation in the employer; however, that advantage is trumped by the transaction and information cost differences between a large established employer and a single project startup.¹⁴²

Successful established companies that managed disruptive innovation avoided the attributes of their success. They did not focus the innovation on their established customers but instead found a different (and less critical) customer base, they isolated the teams and incentivized those teams to invest in the disruptive innovation, they expected failures, delays and an iterative rocky process, and they “were careful not to leverage its process and values.”¹⁴³ This mode of doing business has been embraced in the literary works of M*A*S*H¹⁴⁴ and The Bad News Bears.¹⁴⁵ Or as Thomas Edison once said, “[t]here ain’t no rules around here! We’re trying to accomplish

¹⁴¹ CHRISTENSEN, *supra* note __ at 98.

Managers played the game the way it was supposed to be played. The very decision making and resource-allocation processes that are key to the success of established companies are the very processes that reject disruptive technologies: listening carefully to customers; tracking competitors’ actions carefully; and investing resources to design and build higher-performance, higher-quality products that will yield greater profits.

Id.

¹⁴² Ronald J. Gilson, *Locating Innovation: The Endogeneity of Technology, Organizational Structure, and Financial Contracting*, 110 COLUM. L. REV. 885, 896 (2010).

¹⁴³ CHRISTENSEN, *supra* note __ at 99.

¹⁴⁴ ROBERT ALTMAN, M*A*S*H, TWENTIETH CENTURY FOX (1970).

¹⁴⁵ MICHAEL RITCHIE, THE BAD NEWS BEARS, PARAMOUNT PICTURES (1976).

something.”¹⁴⁶ By using the resources but breaking all the rules, the renegades outperform the establishment and succeed despite all the obstacles.

Just as Christensen and others have identified the lock-in caused by the existing customer base,¹⁴⁷ Gilson identifies the perverse employee incentives to hoard the best innovation for oneself as well as the problem that others in the firm will discourage or undermine disruptive innovation that interferes with the existing relationships among the firm’s knowledge workers.¹⁴⁸ Innovators look for rewards and they look not to be stymied.

Taken together, the analysis provides great insights into the struggles with disruptive innovation, but for the investor in a position to select where to risk capital, the strategies for weathering the storms of disruption are less strategic than the needs to allocate investment in the right positions using the optimal leverage.

By following the meme rather than the customer, the investor and the organization can see where the future trends will be – not in an incremental fashion, but in the more chaotic fashion.

Moreover, to matter these memes are likely to be quite mature. They will undoubtedly be found both in and beyond Twitter and network television. They will be embodied in academic case studies and popular nonfiction literature. Trends such as the identification of the *creative class*¹⁴⁹ and the aging of America¹⁵⁰ have been discussed for a decade. They are making their way into a class of products, brand personas and services.¹⁵¹

The Investor’s Strategies

Venture capital participants want to be rewarded with their capital returns. They reflect a very sophisticated subset of the public – with the same *Blink* reactions to innovation and unmet needs (along with the resources to make those moments happen). And they do not necessarily need to be tied to the pre-existing industry being disintermediated by disruptive innovation.

Venture capital and innovative investment is critical to fuel disruptive innovation. “There are a number of critical factors, in addition to our entrepreneurial DNA, that explain and continue to fuel the U.S. entrepreneurial engine.”¹⁵² These include “a strong domestic venture capital system,” an effective higher educational system, and a corporate culture encouraging innovation.¹⁵³ ““A final driver of entrepreneurship is our strength in three industries that are

¹⁴⁶ THOMAS STEWART, INTELLECTUAL CAPITAL, THE NEW WEALTH OF ORGANIZATIONS 169 (1997) (quoting Thomas Edison).

¹⁴⁷ CHRISTENSEN, *supra* note __ at 196.

¹⁴⁸ Gilson, *supra* note __ at 898-99; Ben-Yosef, *supra* note __ at 306-07.

¹⁴⁹ See generally RICHARD FLORIDA, THE RISE OF THE CREATIVE CLASS (2002).

¹⁵⁰ See generally DONALD H. KAUSLER, THE GRAYING OF AMERICA: AN ENCYCLOPEDIA OF AGING, HEALTH, MIND, AND BEHAVIOR (2D ED. 2001).

¹⁵¹ Both these trends serve to illustrate the disruptive nature of the trends. The public is older – but the individuals are not. To suggest products that emphasize their age will fail; to emphasize their continued vitality will reflect their self perception. The worker is more a knowledge worker – but he or she cannot compare the work to that of prior generation, so work is work. Change is hard to recognize from the inside.

¹⁵² Philip J. Weiser, *Innovation & Antitrust: Innovation, Entrepreneurship, and the Information Age*, 9 J. ON TELECOMM. & HIGH TECH. L. 1, 1 (2011).

¹⁵³ *Id.*

facilitating innovation at a greater pace than ever before: the computer, the mobile phone, and the Internet.”¹⁵⁴ Taken together, these technologies are ... democratizing innovation.”¹⁵⁵

Venture capital also has some advantages. It can stage its investment to limit risk and assure progress.¹⁵⁶ The investors can elect whether to continue making investment in subsequent rounds or withdraw from funding.¹⁵⁷ Venture capital is necessarily valued to reflect a higher degree of risk and concomitant degree of reward, if successful. And despite the stability of the established firm, the demands of meeting quarterly earnings forecasts demands an even shorter return on investment than that of the start-up.

As a result, it is likely that disruptive innovation will flow more frequently or with more support from venture capital, despite it reflecting a modest portion of the overall capital market.¹⁵⁸ But this advantage hardly dictates which trends to follow or which companies have priority positions as these technologies unfold.

To maximize potential and minimize risk – to win – the venture capital firm must evaluate the incipient innovations, the potential for disintermediation and the investment’s relative place within the industry response in the context of that company’s ability to respond. Specifically, the potential investment target must demonstrate an ability to capture the meme, mediate the relationships and expand laterally into additional markets.

To capture the meme, the company must have a robust intellectual property strategy; to mediate the relationship, the company must have a working affinity strategy; and to expand laterally, the company must have the capacity and propensity for horizontal growth.

Capturing the Meme: Patents, Trademarks and Traditional Intangibles

For a venture capital investment, identifying possible memes and recognizing the potential for disintermediation provides only the indicators of which wave to surf. To ride successfully, the expert begins with traditional intellectual property assets. “It is the intellectual property that provided the basis for investors to place their resources at risk. ...The appropriate use of the intellectual property system is a powerful tool for competition, stability and mitigation of risks on capital investments.”¹⁵⁹

Patents provide the right to exclude others from making, using or vending the same invention, which is a very powerful tool that forestalls the independent development by others.¹⁶⁰

¹⁵⁴ *Id.*

¹⁵⁵ *Id.* (quoting Eric von Hippel).

¹⁵⁶ Gilson, *supra* note __ at 901-02 (“A particular investment round will provide only the capital the business plan projects as necessary to achieve specified milestones set out in the business plan.”).

¹⁵⁷ *Id.*

¹⁵⁸ Gilson, *supra* note __ at 887. See generally Paul Gompers & Josh Lerner, *The use of Covenants: An Empirical Analysis of Venture Partnership Agreements*, 39 J. LAW & ECON. 463, 471-73 (1996).

¹⁵⁹ MARIO W. CARDULLO, INTELLECTUAL PROPERTY – THE BASIS FOR VENTURE CAPITAL INVESTMENTS 1 WIPO, http://www.wipo.int/sme/en/documents/venture_capital_investments.htm (last visited Aug. 30, 2011).

¹⁶⁰ Patents may issue for “any new and useful process, machine, manufacture, or composition of matter,” 35 U.S.C. § 101 (2006). Additional limitations require that the invention is not “obvious at the time the invention was made to a person having ordinary skill in the art,” *id.* § 103, and described “in such full, clear, concise, and exact terms as to enable any person skilled in the art . . . to make and use the same . . .” *Id.* § 112. Moreover, once

A well-guarded trade secret, in contrast, cannot stop others from independent creation, but its benefits can be kept indefinitely if the secret is not disclosed as a result of the sale of the product or activities of the enterprise.¹⁶¹ More practically, some combination of patent ownership and post-patenting innovation to acquire trade-secret-protected know-how is essential to assist the enterprise.

Patent strategy involves three key aspects – acquiring foundational patents to earn the rewards available to the pioneers in the field; acquiring a slew of follow-on patents to have rights of ownership locked up with the overlapping interest of the key players in the field; and robust publication strategies to make unpatentable competing technologies and undermine the business strategies of others.

Foundational patents are at the heart of many profound disruptive innovations, though certainly not all. They provide tremendous leverage to the owner of the patent to control or earn revenue from the variety of follow-on uses that derive from such inventions.¹⁶² Foundational patents are rare and may only be recognized in hindsight. For only after the expansion of licensing and adoption by a wide variety of different inventors will an idea be demonstrated as having been foundational. Still, they are the inventor and venture capitalists' ultimate goal.

Follow-on patents provide modest, incremental improvement on the prior art – sufficient to earn a patent but unlikely to force all competitors to seek licenses. In the current state of the patent system, such patents are slow to be issued but not necessarily difficult to acquire. Instead they are rife with uncertainty. “A firm with a large patent portfolio enveloping a competitor's key technologies – one that could be termed a “patent thicket” – has the potential to use it to suppress competition in the ultimate goods market.”¹⁶³

Particularly in crowded fields, the need to have a thicket or portfolio of incremental patents is akin to the need to maintain a largely defensive army. The position is largely defensive. The patents (like the troops) are more effective being used as the threat of force rather than actually being deployed. Each patent holder bears a large transaction cost in defending its patents from challenge, which encourages all patent holders to cross-license amongst themselves and exclude any competitors who have failed to arm themselves. Thus, patent thickets open to manageable if narrow paths for those with patent portfolios of their own and create an unruly barrier to competitors who do not have such resources. IBM, for example, transformed its pure research

issued, the patentee has “the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States or importing the invention into the United States....” *Id.* at § 154(a)(1).

¹⁶¹ “A trade secret is any information that can be used in the operation of a business or other enterprise and that is sufficiently valuable and secret to afford an actual or potential economic advantage over others.” RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 39 (1995). *See also* UNIFORM TRADE SECRETS ACT § 1(4) (1985). Trade secret laws protect from misappropriation of the trade secret either through the breach of a duty to maintain the secrecy of the information or when the information is obtained through improper means. *Id.* § 1(2).

¹⁶² *C.f.*, DAN BURK AND MARK LEMLEY, THE PATENT CRISIS AND HOW THE COURTS CAN SOLVE IT 221 (2011) (objecting to the very effectiveness of power in foundational patents by suggesting a limitation on such patents, saying “it would be unwise to give the first person to think of an idea the exclusive right to control all implements of the idea.”).

¹⁶³ Marshall Leaffer, *Patent Misuse and Innovation*, 10 J. HIGH TECH. L. 142, 163 (2010). *See also* Proctor & Gamble, Co. v. Paragon Trade Brands, Inc., 15 F. Supp. 2d 406, 414 (D. Del. 1998) (using term “packet thicket”).

model into a harvester of the patent thicket – earning the company a reported \$1 billion in profit in 2002, primarily on software patents.¹⁶⁴

An incidental benefit of the cross-licensing is that it allows oligopolistic industries to coordinate their efforts in a context not proscribed by antitrust laws. This is not suggesting pretextual license agreements or a lack of aggressive competition among these firms; merely that the ability for industry leaders to limit their competition amongst themselves makes each of their challenges more predictable and benefits them (though probably not equally). The practice reinforces the conservative and predictable goals of the established firm to have established competition stemming from a predictable stable of firms.

Given the many benefits of the patent thicket, it takes a firm willing to engage in its own disruptive innovation to embrace the third prong of the patent strategy – which is to aggressively publish any research that cannot be incorporated into the business strategy of the enterprise.¹⁶⁵ “[T]he disclosures are designed to preempt patents in instances in which the disclosing firm does not itself plan to pursue patent protection but fears that its rivals might.”¹⁶⁶ The purpose is simple: published research serves as the prior art to undermine the patent applications of competitors. The firm that publishes gives away much – though likely not all – of its know-how in its secondary and tertiary research so that other competitors cannot gain the leverage patents would provide to them.

The strategy has an internal positive effect of promoting scholarship and encouraging the culture of disruptive innovation that academic publication inherently spurs.¹⁶⁷ It may have a second positive benefit of encouraging innovation, since the work of non-patented research will

¹⁶⁴ Lisa DiCarlo, *IBM's Path From Invention To Income*, FORBES.COM, Aug. 7, 2003, http://www.forbes.com/2003/08/07/cx_ld_0807ibm.html (“Much of the focus has been on software, which accounts for 15% of IBM's revenue and one-third of its profits. . . . With more than 22,000 patents in total, IBM has been granted more patents than any company in the world for the past decade.”).

¹⁶⁵ Jeff Lindsay, *Don't Overlook the Power of Defensive Publications*, INNOVATION EDGE, Feb. 12, 2010 <http://innovationedge.com/2010/02/12/publications/>.

IBM, one of the world's leaders in extracting value from its patent estate, publishes about half of all its invention disclosures. John Cronin of ipCapital Group taught us some of the reasons for IBM's aggressive publishing and some of the unexpected benefits of publishing. He was involved in IBM's successful efforts in the 1990s to generate revenue by licensing its estate. One of their early efforts involved a patent for a technology (scanning tunnelling microscope) where the value of a patent estate ended up being reduced by about 90% due to a group of minor improvement patents on top of the foundational IBM patent. Many of the improvements were things that IBM had thought of but didn't feel were worth the cost of additional patents. They realized that such improvements needed to be disclosed to create prior art that would stop others from getting patents for all those minor variations or minute improvements, thereby increasing the value of their own estate.

Id. (citing Richard Poynder, *On the Defensive about Invention*, <http://www.richardpoynder.co.uk/On%20the%20defensive.htm>, Sept. 25, 2001 (last visited Sept. 8, 2011)).

¹⁶⁶ Scott Baker & Claudio Mezzetti, *Disclosure as a Strategy in the Patent Race*, 48 J. LAW & ECON. 173, 175 (2005).

¹⁶⁷ *Id.* at 177. (“firms have reason to disclose even in cases in which they still plan to pursue patents related to the disclosed information. . . . Disclosure can, in addition, be a rational strategy for firms that plan to continue racing.”).

still have an organizational value rather than being thrown into a drawer and discounted during one's annual performance review. A third benefit is that a publication strategy stretches the field, requiring better patents and therefore eliminating all but the best competitors from seeking such patents. "If an invention of a certain quality would have been sufficient to qualify for patent protection before the disclosure, after the disclosure the invention must be that much better before it will represent a sufficient advance over the now-expanded prior art."¹⁶⁸

The obvious down side comes if research believed to be incidental turns out to be fundamental. Again, this is a measure that can only be known in hindsight and further confounded because it may well be that the public disclosure was necessary for success. The institutional challenge is to recognize the long-term benefit will outweigh the short-term conservative view of such research. This will be difficult for the entrenched industry leader and that is precisely the posture that makes it successful in incremental innovation and outflanked by profound disruptive innovation.

Trade secrets follow a similar path of acquisition and dissemination as the field of patents. Trade secret laws protect information that derives its value from not being generally known and not being readily discoverable so long reasonable efforts are made to protect the secrecy of the information.¹⁶⁹ Proper protection of trade secrets requires careful protection of documents, drawing and other information along with good protocols for managing personnel.

Trade secrets are essential to the development of information that later becomes patentable as well as the protection of know-how valuable to the core operations of a company. At the same time, however, the need-to-know requirements of trade secret practices can undermine a company's ability to cross-fertilize ideas, develop collaborative problem solving and otherwise exploit the know-how in innovative manners.

The key to trade secret practice, therefore, is to redefine the foundation of need-to-know culture. By making cross-promotion integral to product development and problem solving, the reasonable steps to protect the trade secret information will expand to include that team. The side benefit is that the creative teams can be encouraged to share, collaborate and cross-fertilize their information because a strong trade-secret culture will keep the trade secrets and the experimentation located within the group.

In the traditional capital investment, the investor is sold stock in the company and may also take a security interest in the capital assets of the company including the patents, trademarks and copyrights. This will help minimize the risk that those assets will be transferred to another party and the investment made worthless, but it does not provide a strategy for growth.

¹⁶⁸ *Id.*

¹⁶⁹ Uniform Trade Secrets Act §1 (4).

(4) "Trade secret" means information, including a formula, pattern, compilation, program device, method, technique, or process, that: (i) derives independent economic value, actual or potential, from no being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use, and (ii) is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

Id.

In the meme-based approach to investor security, the investor must find tools to take a mortgage on the story being told, incorporating security interests in each of the intellectual property components of the meme and well as ongoing financial incentives for each of the investors, the enterprise, and the inventors to expand these interests into more and more products and services; provided only that each new expansion reinforce the central meme and further the disruptive transformation at the heart of the enterprise.

Mediating the Relationships: Creating Affinity and Valuing Social Relevance

The model must explicitly incorporate the underlying meme, so the growth strategy must look beyond patents and trade secrets from the very beginning. From a capital investment standpoint, often overlooked assets can be found in trademarks and creative use of identity rights.¹⁷⁰ Trademarks and publicity rights focus on the source of goods or services, protecting the public from confusion regarding the source.¹⁷¹ This protection has expanded to protect the producer of goods and services, creating a property-like right in these interests.¹⁷² Trademarks and identity rights are valuable and the rights most capable of being exploited across a broad range of goods and services. They are critical to the creation of market power for a company.

[C]ustomers should be able to distinguish, at a glance, between your products or services and those of your competitors and associate them with certain desired qualities. ... IP rights, combined with other marketing tools (such as advertisements and other sales promotion activities) are crucial for:

- Differentiating your products and services and making them easily recognizable.
- Promoting your products or services and creating a loyal clientele.
- Diversifying your market strategy to various target groups.
- Marketing your products or services in foreign countries.¹⁷³

Trademarks and identity rights can be used to manufacture good will for a company. By associating the marks with positive attributes of the product and attributes important to the consumer, an impression of the product is created.¹⁷⁴ So long as the impression is not palpably

¹⁷⁰ The term “identity rights” encompasses both the traditional U.S. right of publicity and more general unfair competition laws such as section 43(a) of the Lanham Act. *See, e.g.*, 15 U.S.C. §1125 (2011) (Lanham Act); CAL. CIV. CODE § 3344(a) (West 2011) (statutory publicity rights statute); N.Y. Civ. Rights Law §§ 50-51 (McKinney 2011) (statutory publicity rights statute); RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 46 (1995) (common law publicity rights).

¹⁷¹ *E.g.*, Lanham Act, 15 U.S.C. §§1051 *et. seq.* (2011).

¹⁷² *E.g.*, 15 U.S.C. §1125(c) (protecting against the dilution of a famous mark from being used without the authorization of the rights owner, “if such use begins after the mark has become famous and causes dilution of the distinctive quality of the mark”).

¹⁷³ WIPO, *Why is Intellectual Property Crucial for Marketing the Products or Services of Your SME?*, http://www.wipo.int/sme/en/ip_business/marketing/marketing.htm (last visited Sept. 9, 2001).

¹⁷⁴ *See* Kristin Tillotson & Bill Ward, *A Matter of Choice*, MPLS STARTRIBUNE, Sept. 8, 2011 at E1 (“We don’t always know why we choose the brands, stores and activities that we do. We just do things as we always have, following that first impulse again and again.”).

false, the public will begin to associate the positive attributes with the brand. On U.S. television (like many other nations), images of sexual prowess and satisfaction are tied to products as diverse as hair lotion and bubble gum.

A brand image may be closely associated with a product or it may be very loosely associated.¹⁷⁵ As quality and reputation grow, however, that good will can be leveraged from product to product. The public today has come to expect that companies are highly diverse. The good will and trademark recognition for one product will often translate into additional goods and services.

Virtually every product or service consumers select informs their self-image.¹⁷⁶ Innovation, of course, has a certain social relevance inherent to it. Beyond being about innovation, however, the business must understand the lifestyle choice of their future customers and incorporate those values into the narrative underlying the investment strategy and product development cycle. By building the social relevance into the underlying strategy, the enterprise will greatly enhance the social incentives to adopt rather than reject the disruptive innovations at the heart of the new enterprise.

Identity rights create a similar opportunity, tying the reputation of a well-known athlete, movie star or public figure to a brand. The endorsing participant becomes part of the brand. In some cases, these are foundational figures such as Colonel Harland Sanders who pioneered the Kentucky Fried Chicken chain,¹⁷⁷ Wally Amos of the Famous Amos cookie retailer,¹⁷⁸ or Paul Newman, who created a national food company, Newman's Own, to generate for-profit revenue to reinvest in nonprofit activities.¹⁷⁹

Generally speaking, capital start-up companies do not use publicity rights to gain market share, but strategic alliances between celebrities and owners can create lower cost launches of companies, create instant recognition, and change the public perception of a brand.

Like patents and trademarks, the selection of the person with whom to brand a new meme becomes a critical, defining choice. Bill Gates and Steve Jobs each defined the persona of their companies, Microsoft and Apple, respectively. Jobs, in particular, became iconic when he

¹⁷⁵ The association may be as loose as a word association.

American Family Life Assurance Company ... had little name recognition. Its acronym, AFLAC, was far from a household word. Then Dan Amos, company CEO, broke the mold and allowed the company to be represented by a duck. The AFLAC commercials featured a frustrated duck trumpeting out the company name. This strategy increased the company's name recognition to over 90% of consumers.

GARON, OWN IT, *supra* note __ at 192-93.

¹⁷⁶ Tillotson & Ward, *supra* note __.

¹⁷⁷ Colonel Sanders, <http://www.kfc.com/about/colonel.asp> (last visited Sept. 9, 2001).

¹⁷⁸ Famous Amos Cookies, <http://www.famous-amos.com/About.aspx> (last visited Sept. 9, 2001).

¹⁷⁹ Newmans Own, <http://www.newmansown.com/paulnewman.aspx> (last visited Sept. 9, 2001). ("Newman's Own has grown into a powerful and lasting expression of Paul Newman's generosity. The Company has generated over \$300 million in proceeds that have been donated by Paul Newman and the Newman's Own Foundation to thousands of charities worldwide. ... Newman's Own is a thriving company with hundreds of millions of dollars in annual revenue. As always, all profits are donated to charity through Newman's Own Foundation.").

returned to the floundering Apple in 1994, refocusing it on its design-centric roots and emphasis on connecting computers to one another.¹⁸⁰

For an innovator of a certain type, the investment strategy may be best if tied to the person rather than the company. In music, for example, record companies are experimenting with the “360 deal,” whereby the company bankrolls the artist in exchange for a revenue stream from all activities.¹⁸¹ The opportunity in a 360 deal is that it aligns the inventor and investor, creating a complementary financial incentive for both. At the same time, however, there exist real concerns regarding overreaching if the investor – like the record label – offers minimal additional inducement while demanding a portion of revenue streams that it has not financed.¹⁸²

The 360 deal will only align the interests of inventor and investor if the financing is “stepped,” meaning that specific additional payments to the investor (or into the enterprise) are made in exchange for specific rights, and those investments may not necessarily be made at the outset of the transaction. Offering \$1 million for everything will not have the same cognitive effect as offering \$500,000 for development rights on computers and an additional \$500,000 on mobile devices. The later strategy will not only motivate the inventor to push into the second field, but it will likely engage the parties in a more collaborative relationship to expand the project together.

The stepped investment deal, like the use of the trademark beyond a single core product, will help the enterprise expand its base to develop a platform for economic growth. This will help reinforce the meme underlying the disruptive innovation and create more avenues to retell the story.

Copyright also provides a powerful tool for creating ownership of rights. Copyright is all about telling stories. Copyright protects the expression of an idea,¹⁸³ not the underlying idea itself.¹⁸⁴ Literary works, drawings, software, audiovisual works and other expressions are provided legal protection.¹⁸⁵ While copyright has the most impact in the creative industries, it also plays an important role in the ownership of intellectual property assets for non-media companies. The photographs in catalogs, the designs and drawings used by the company, the

¹⁸⁰ See, e.g., Gary Wolf, *Steve Jobs: The Next Insanely Great Thing*, WIRED, Feb. 1996 at ___, available at <http://www.wired.com/wired/archive//4.02/jobs.html>.

¹⁸¹ Jeff Leeds, *The New Deal: Band as Brand*, N.Y. TIMES, Nov. 11, 2007, § 2, at 1 (“Madonna has been the most prominent artist to sign on (her recent \$120 million deal with the concert promoter Live Nation allows it to share in her future earnings), but the majority of these new deals are made with unknown acts.”). See also Gary Myers & George Howard, *The Future of Music: Reconfiguring Public Performance Rights*, 17 J. INTELL. PROP. L. 207, 218-19 (2010) (“These deals require the artist who signs to the label to share revenue from touring, merchandise sales, record sales, and often even publishing income with the label. These types of deals thus lay claim to assets that heretofore had been sacrosanct for the artists.”).

¹⁸² See Mark F. Schultz, *Live Performance, Copyright, and the Future of the Music Business*, 43 U. RICH. L. REV. 685, 700 (2009).

¹⁸³ 17 U.S.C. §102(a) (2011).

¹⁸⁴ *Id.* at §102(b) (“In no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work.”).

¹⁸⁵ *Id.* at §102(a).

written materials used to solicit investors and sell products all have elements protected by copyright.

One simple strategy for gaining meme ownership is to underwrite the publication of a book by the corporate entrepreneur regarding the importance of the innovation. The book helps rewrite the narrative regarding the innovation, disseminates the underlying meme, reinforces the valuable identity rights of the entrepreneur and solidifies ownership through copyright. By integrating the various components for meme management, the publication of a start treatment regarding the innovation, the elements that support a common theme knit together.

The book project has a second benefit – the writing and editing process will itself require reflection and intentionality about the nature of the story being told and the memes essential to its coherence. The process of writing the book, receiving feedback, redrafting and editing, subjecting it to reviews and public comment will all help reinforce the most powerful memes within the concept and perhaps eliminate those memes that cannot withstand scrutiny or those whose time has not yet come.

A variation on the book publication is to underwrite a conference dedicated to the development of the meme and the community behind the meme. Provided the conference include a journal or other publication, this has the same attributes of meme generation, narrative control, cult encouragement, copyright ownership and trademark management as the publication of a book. By assuring the entrepreneurial leader is a keynote speaker at the event, certain identity rights interests are also enhanced. And like the editorial process, the organizational process will challenge the notion underlying the meme – for better or worse.

Lateral Analysis to Explore New Markets

Edward de Bono coined the term “lateral thinking” in 1970 to suggest a way of problem solving that involved challenging the existing paradigms.¹⁸⁶ While the notions of lateral thinking are applicable throughout the process of disruptive innovation, the notion of analyzing markets laterally is much more explicit. For every meme identified by the investor and enterprise, there should be a regular and recurring process of looking to see what additional fields of endeavor, product lines, and other opportunities might exist to extrapolate the intangibles owned and affinity held to that new market. The process should be a very open one – at least until the discussion of actual investment and the opportunity cost of pursuing one strategy over another becomes factored into the process.

The assessment should explicitly value the social networks of the innovations key targets, but it should separately assess whether there is a second narrative for untapped markets. For example, what do kindergarten classrooms, Mexican businessmen and active seniors have in

¹⁸⁶ See generally EDWARD DE BONO, THE USE OF LATERAL THINKING (1971); TONY PROCTOR CREATIVE PROBLEM SOLVING FOR MANAGERS: DEVELOPING SKILLS FOR DECISION MAKING 145-48 (3D ED. 1999) (“Take for instance the case of shoe fasteners” – buttons gave way to laces, then slip-on shoes, each of which stretched but did not change the paradigm. “Then someone hit on the idea of extending [V]elcro fastening method to shoes. This involved stretching existing paradigms to cover a new application.”); MARK A. RUNCO CREATIVITY: THEORIES AND THEMES : RESEARCH, DEVELOPMENT, AND PRACTICE 12, 347 (2007) (discussing analogous thinking – “e.g. Velcro and weeds, steam engines and tea kettles”).

common – the need for tracking devices in the case of accident or abduction.¹⁸⁷ The markets seem quite dissimilar but the meme and narrative are not.¹⁸⁸ Moreover, the actual consumer is likely an upper-middle-class or affluent adult.¹⁸⁹ The adult parent will be the actual purchaser, not the children and not the seniors. So the device must address the concerns for a single type of purchaser but must be marketed to address three very distinct narratives.

To effectively design products, the market segments and the social relevance should be incorporated into the product design itself. In addition to the marketing of the product, there are many production decisions that will enhance relevance and these should be identified by market segment as the product is being created and re-assessed as the product is marketed and branded.

A split audience is different from a product which has multiple markets. A manufacturer of small digital audio players may have one market in electronic devices and a second market when selling these to toy makers. These are two separate markets that both use the same product but are otherwise unrelated, so that the marketing and distribution is distinct.¹⁹⁰

The lateral thinking approach to markets must be tied to the contractual structures of the investment relationship. At a minimum, the investors should insist that the rights acquired are not limited to a single product or even product line, but instead run with the meme to other products and services. All parties must understand and plan for the disruption. Each new product or service – as well as each new market segment – is a new inflection point in the expansion of the meme and the level of disruption.

At each such inflection point, the deal structure should require additional capital resources. If the investors do not continue to opt in, then their participation becomes frozen at the previous level and new investors have the opportunity to participate and share in the next level of growth. In this way, both investor and inventor are continually reasserting their willingness to go forward and providing the resources to do so.

Strategies to Maximize Participation for the Entrenched

Despite the advantages available to start-up companies, the established companies have greater financial resources, entrenched affinity relationships and exclusive dealing arrangements, access to governmental agencies and regulatory bodies, and a tremendous knowledge base.

The core techniques for acquiring memes, developing reintermediation strategies, building a common narrative and expanding laterally into new markets remains equally true for the

¹⁸⁷ See Nick Miroff, *Scared Mexicans try under-the-skin tracking devices*, WASH. POST, Aug. 21, 2011 at ___, available at http://www.washingtonpost.com/world/americas/scared-mexicans-try-under-the-skin-tracking-devices/2011/08/14/gIQAtReNUJ_story.html.

¹⁸⁸ In all three cases, the meme is one of tracking as a social safety net; it must respond to a broader “big brother” fear of control by explicitly putting the management of the tracking in the hands of the adult rather than the state.

¹⁸⁹ See GARON, OWN IT, *supra* note __ at __. [sidebar – knowing the audience]

¹⁹⁰ *Id.*

established company as for the start-up. These efforts are inevitably more difficult because they involve not only the creation of new relationships and challenging forays into new markets, but they come at the cost of deemphasizing the established relationships and existing markets. “An organization’s *capabilities* become its *disabilities* when disruption is afoot.”¹⁹¹ The failure is the natural unwillingness to move past existing success in the face of an uncertain future. “[T]he very skills that propel and organization to succeed in sustaining circumstances systematically bungle the best ideas for disruptive growth.”¹⁹²

Those established market leaders able to look past the short-term needs of its customers and stockholders will engage in strategies to compete in the marketplace of disruptive innovation. Christensen focuses his work on the management of disruption for established firms.¹⁹³ His primary strategy involves the creation of a nimble firm-within-the-firm that has strong incentives to create new markets and fewer of the incentives to focus on the short-term needs of existing customers and established business methods.¹⁹⁴ Proctor & Gamble uses a variation of this with groups identified within business units, management training, procedural manuals, and demonstration projects.¹⁹⁵

Like the lateral thinking and the emphasis on social relevance, companies must reach out to find the best fit for their innovations, since they are unlikely to be driven by normal customer demand.¹⁹⁶ At the same time, the forces of entrenched relationships, existing processes, corporate culture, short-term needs, investor returns and other demands will generate countervailing pressures within the enterprise.

An alternative model for improving lateral thinking emphasizes what Richard Florida described as the “no-collar workplace” in his discussion of “soft control.”¹⁹⁷ “The no-collar workplace runs on very subtle models of control that rely on people’s intrinsic motivations. ... One very effective form of soft control is challenge.”¹⁹⁸ For creative people and particularly for change agents within the organization, “challenge and responsibility are what matter most to them in their jobs.”¹⁹⁹ When an enterprise values and rewards creativity and change, employees model that behavior. If, however, the company provides actual rewards for conformity, then no amount of sloganeering about creativity will alter the entrenched culture.

This is why Christensen emphasizes placing these groups in autonomous positions.²⁰⁰ “Companies can create new prioritization criteria, or values, only by setting up new business

¹⁹¹ CHRISTENSEN & RAYNOR, *supra* note __ AT 177.

¹⁹² *Id.*

¹⁹³ CHRISTENSEN, *supra* note __ at 105-07.

¹⁹⁴ Brown & Anthony, *supra* note __ at 67.

¹⁹⁵ *Id.*

¹⁹⁶ *Id.* at 70-71 (P&G promotes a portfolio approach to innovations. “It ... deploys portfolio-optimization tools that help managers identify and kill the least-promising programs and nurture the best bets”).

¹⁹⁷ RICHARD FLORIDA, THE CREATIVE CLASS 132-34 (2002).

¹⁹⁸ *Id.* at 134.

¹⁹⁹ *Id.*

²⁰⁰ CHRISTENSEN, *supra* note __ at 106 (“By embedding independent organizations within an entirely different value network, where they were dependent upon the appropriate set of customers for survival, those managers harnessed the powerful forces of resource dependence.”).

units with new cost structures.”²⁰¹ It requires ongoing reinforcement for the values of disruptive innovation and swimming against the tide. The P&G training, for example, evolved over time. “The training ... initially ranged from short modules on topics such as assessing the demand for an early-stage idea to multiday courses in entrepreneurial thinking.”²⁰² The training can help inoculate those involved in innovation from the infectious group think or internalized values that exist throughout the rest of the enterprise.²⁰³ The internalized values are particularly difficult to address because they are unstated and implicit in the organizational ethos. “[V]alues often represent constraints – they define what the organization cannot do....”²⁰⁴ The values or corporate cultural norms that sustain a company can often make it impervious to change. Training programs that identify and challenge the corporate cultural norms help companies address these constraints. The training can provide clear alternatives. For most, however, the easier solution is to isolate teams or divisions and create a new culture for the group.

For many established firms and independent investors, the success will come through joint ventures. These will pair start-up firms with established companies or operate as independent projects from within established industry among its entrenched players.²⁰⁵ Joint ventures will necessarily have a new internal culture because neither venturer can successfully impose its pre-existing culture on the venture unchanged.²⁰⁶

Joint ventures also provide leverage for the start-up investor. Venture capital simply does not have the same economic capacity. Ultimately, “venture capital, while certainly important in its own right, is just a drop in the innovation bucket.”²⁰⁷ By partnering, the culture of the start-up can be combined with the resources of the industry leader to maximize opportunities to manage the profound disruptive innovation.

Gilson emphasizes the impact of joint ventures, such as in the pharmaceutical and biotech industries as a method of aligning the interests of these smaller, internal work groups (or divisions or subsidiaries) with the external financial incentives found in the venture capital model.²⁰⁸ The joint venture weans the established enterprise from its prior relationships towards

²⁰¹ CHRISTENSEN & RAYNOR, *supra* note __ at 198.

²⁰² *Id.*

²⁰³ See CHRISTENSEN & RAYNOR, *supra* note __ at 198 (“An organization’s values are the standards by which employees make prioritization decisions – those by which they judge whether an order is attractive or unattractive, whether a particular customer is more important or less important than another, whether an idea for a new product is attractive or marginal, and so on.”).

²⁰⁴ *Id.*

²⁰⁵ For example, the Japanese government has recently stepped in to consolidate LCD television production to compete against the successful companies in Korea. Mariko Yasu & Takashi Amano, *Sony, Toshiba, Hitachi Unload LCD Units to Japan Government-Backed Fund*, BLOOMBERG, Aug. 31, 2011, available at <http://www.bloomberg.com/news/2011-08-31/sony-toshiba-hitachi-to-merge-lcd-businesses-form-state-backed-venture.html>.

²⁰⁶ The venturers may or may not realize this. The clash of cultures may be planned or a byproduct of the agreements, depending on the structure of the joint venture.

²⁰⁷ Gilson, *supra* note __ at 887 (citing PricewaterhouseCoopers & Nat'l Venture Capital Ass'n, Money Tree Report) (“In 2006, the four largest U.S. corporate research and development (R&D) programs alone invested more than five times what the entire U.S. venture capital industry put into seed, early-stage, and startup investments, the areas where the focus on innovation is most intense.”).

²⁰⁸ See Gilson, *supra* note __ at 909-910.

the needs of the venture, and ultimately the needs determined by the new markets created from the disruptive innovation.

For venture capital investors, these joint ventures may provide similar benefits to those of start-ups, though the risk that the survival instinct of the parent firm must be explicitly addressed in the joint venture agreement.²⁰⁹

To manage this survival instinct threat from the established company, the joint venture agreement can specify conditions upon which the termination of the joint venture will vest the incipient technology among the investor's assets. Essentially such a provision will provide that the patents, know-how (protected by trade secrets), copyrighted materials and trademarks shall be subject to a valuation and right to acquire for the parties to the venture. This can be accomplished through an "I-cut-you-choose" provision requiring the valuing party to agree to purchase for the specified price but giving the right of first refusal to the non-valuing party.²¹⁰ An alternative of this can be found in the agreement between Verizon and Vodaphone.

[I]n the event of dissolution the partners cannot agree on the value of Verizon Wireless's assets, each must hire a qualified investment bank to perform an appraisal of the assets. If the appraisals are within ten percent of each other, their average will be the conclusive value. If the gap between them is greater than ten percent, then the original appraisers (or, if they cannot agree, the American Arbitration Association) must choose a resolving appraiser to perform an independent valuation. The conclusive value would then be the average of the resolving appraiser's valuation and the original appraisal that is closest to it.²¹¹

Alternatively, the parties can elect to use baseball arbitration utilizing a valuation expert.²¹² In baseball arbitration, each side submits a single offer to the arbitrator, who must choose the more reasonable number – which encourages the parties towards more realistic valuations.²¹³

Joint ventures also have challenges regarding changes in ownership and buy out provisions.²¹⁴ Buy out provisions, in particular, benefit the larger company, which likely has the resources to value or stymie the joint venture. But there are options:

²⁰⁹ See Gompers Lerner, *supra* note __ at 473 (“[contract] covenants represent a less visible way to make price adjustments than explicit modifications of the split in capital gains.”).

²¹⁰ See Keith Sharfman, *Valuation Averaging: A New Procedure for Resolving Valuation Disputes*, 88 MINN. L. REV. 357 (2003).

²¹¹ *Id.* at 366 citing Verizon Wireless, Inc., SEC Form S-1, No. 333-44394, Amended and Restated Partnership Agreement 9.5, at 42-44 (Aug. 24, 2000) (on file with the Securities and Exchange Commission), available at <http://www.sec.gov/Archives/edgar/data/1120994/000095010300000976/0000950103-00-000976-0003.txt>.

²¹² See Sharfman, *supra* note __ at 366; David E. Brown, Jr., Kathryn M. Cole & Joseph A. Smith, Jr., *Strategic Alliances: Why, How, and What to Watch for*, 3 N.C. BANKING INST. 57, 99 (1999).

²¹³ *Id.*

²¹⁴ *Id.* at 100.

Although buy/sell arrangements are facially neutral, they are very sensitive in operation to the number of parties and the relative financial resources of the parties. Too often one sees buy/sell options that, in practice, given the relative size and resources of the parties, can have only one result: sale of the smaller company's stake to the larger company.

Id.

Techniques to mitigate the effects of disparate resources can include providing for an extended period during which the smaller party may attempt to find financing for the purchase, providing for the larger party to finance the purchase, providing for a minimum buy-out price, and specifying a date several years out prior to which the buy/sell option may not be exercised.²¹⁵

These techniques are critical for the venture capital company to assure that it does not lose the advantages it brought to the table in the dissolution. Even more potent – though more difficult to negotiate – is for the venture capital firm to be able to acquire specific assets or technologies – on either an exclusive or non-exclusive basis.

While negotiating for the exclusive rights to the intellectual property upon dissolution is problematic, it may be less difficult to do so in the context of a non-exclusive license. A third variation on this theme is that in the event the joint venture fails its essential purpose, it is not wound-up but rather turned into a holding company for whatever intellectual property assets were developed. Both venturers then have non-exclusive rights to exploit the intellectual property. The race will once again be on, but here the advantage returns to the venture capital partner – for all the reasons previously outlined.

Ironically, it is in the best interest of the entrenched, senior enterprise to incorporate these victories for the junior partner upon dissolution. The punitive nature of the joint venture's failure will be a strong factor aligning the interests of the senior enterprise to let the venture succeed. Creating powerful economic and organizational penalties for killing the venture may be precisely what a conservatively-cultured company needs to stay the course and let the profound disruptive innovation take place under its roof.

Managing the exit strategy between the start-up and the established enterprise is not the only aspect of the partnership that can help create alignment towards an embrace of profound disruptive innovation, but it is the most important. Given the relative ease with which the established company can write off its loss and move on, costly exit strategies are essential to keep the established company on the path towards innovation.

Beyond the exit strategies, many of the techniques that investors can bring to bear on new ventures also apply to the joint venture:

- The use of stepped investment deals to create incentives for each lateral expansion of the innovation into a new market, product unit or division will help promote internal strategies to seek these opportunities.
- The emphasis on social relevance will build an interest in the innovation for the existing client base, if the attributes that motivate the existing customers can be carefully identified and nurtured.

²¹⁵ *Id.*

- The creation of a *team*²¹⁶ approach to grow a school of thought supporting the innovations, that includes both employees and customers will help establish the keystone memes being developed and helped propel the narrative.
- The emphasis on books, publications and conferences to position the enterprise and building a culture that promotes the narrative.

Each of these approaches can be advanced within the larger, established enterprise. The growth will come at a social cost, but as the team supporting the initiative grows, there will come a point when the values and ethos of the company – its existing narrative – will suddenly flip. At that point the narrative of the team will supplant the old narrative of the firm. Today, IBM is a great service provider and software innovator, the old narrative of its dominance as a mainframe company has been romanticized and the decades of pain it took to transition is largely forgotten. The story rewrites itself.

Conclusion

To benefit from profound disruptive innovation, a capital investor must know how to identify the trends as they develop, find the central meme within the potential innovation and understand how it will rewrite the dominant narrative. The investor must recognize the social relevance of the change and map how it will disintermediate the existing customer and vendor relationships as well as predict how those relationships can be remediated in light of the new innovation.

Having identified the opportunity, the investor is in a position to structure financing opportunities to invest in the potential new technology or innovation using deal structures that maximize the incentives to embrace the new meme even at the cost to existing customers. Through stepped, comprehensive financing agreements, broadly based intellectual property security agreements, and an incentive structure for trademark growth and identity rights exploitation, the investor will maximize the potential for success and the value of success if it does come. Similarly, when working through joint ventures or within established enterprises, the teams involved in disruptive innovation can use these techniques to best prepare their firms for the change that is coming.

Because change is here.

The globalization trends, the expansion of networks, the increased mobility of technology and the networking of objects through RFID technologies have accelerated change and disruption. Flash mobs and networked insurgencies have upended governments and challenged traditional order. The network effect of having everyone plugged-in is too large to dismiss and the connection to the 4 billion people at the bottom half of the pyramid has become too immediate to ignore.

In the context of this transcendent change, those inventors, investors and enterprises that can understand the pattern to recognize the important memes and help revise the social narrative will be at the center of new economic growth. The modest suggestions in this article will not

²¹⁶ The word “cult” is too pejorative to use within the enterprise.

guarantee success, but hopefully they will increase its likelihood and enhance its magnitude. Together, inventors, investors and enterprises can better prepare for the disruption that has only begun.