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Mortgaging the Meme: Financing and Managing Disruptive Innovation

By Jon M. Garon*

> 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.[1]

I. INTRODUCTION

¶1 Think back to the rise of the transistor.[2] The world once glowed with vacuum tubes, but by the end of the 1960s, the electronic revolution was well underway—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]

This 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 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

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[1] ALFRED NORTH WHITEHEAD, PROCESS AND REALITY: AN ESSAY IN COSMOLOGY 339 (David Ray Griffin & Donald W. Sherburne eds., 2d corrected ed. 1978).

[2] *See* Virginia Montecino, *History of Computing*, GEORGE MASON U., http://mason.gmu.edu/~montecin/computer-hist-web.htm (last updated Nov. 2010) ("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 Massage: An Inventory of Effects 16 (1967).

[4] THOMAS L. FRIEDMAN, THE WORLD IS FLAT: A BRIEF HISTORY OF THE GLOBALIZED WORLD IN THE TWENTY-FIRST CENTURY 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 dynamic force driving global integration, was multinational companies. . . . It was during this era that we really saw the birth and maturation of a global economy, in the sense that 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. . . . [T]he dynamic force in Globalization 3.0—the thing that gives it its unique character—is the newfound power for *individuals* to collaborate and compete globally.").

competitive positions."[5] Moreover, a cloud culture fueled by new media formats, mobile computing, and flash mobs has shifted the global disruption out of the workplace and into the streets.

¶2 In 1997, Clayton Christianson advanced the concept of "disruptive innovation," focusing on technological change that transformed business and often undermined industry incumbents in favor of start-up competitors.[6] Entrepreneurial companies have embraced both the term and the concept, but it has grown considerably to encompass virtually any incumbent market threat.[7]

¶3 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.

¶4 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 provides an overview of disruptive innovation using examples from the past decade, identifies the underlying patterns of change common to these examples of disruptive innovation, highlights strategies to mitigate disruption for existing industry, and addresses the intellectual property securitization aspects of venture capital investment to structure effective deals for both the investors and innovators.

II. THE NATURE OF DISRUPTIVE INNOVATION

¶5 Profound disruptive innovation can be described as a new idea or meme that forever alters the existing system into which it is introduced. Assembly lines, air conditioning, digital film, and personal computers represent such innovations, all of which led to fundamental paradigm shifts.[8] Clayton Christensen highlighted the distinction between sustaining and disrupting technologies.[9] 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.[10] Disruptive innovations essentially

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[5] Steve Hamm & William C. Symonds, *Mistakes Made on the Road to Innovation*, BUS. WK., Nov. 2006, at 26, 28.

[6] Clayton M. Christensen, The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail viii (1997).

[7] *Id.*; *see also* Constantinos Markides, *Disruptive Innovation: In Need of Better Theory*, 23 J. PRODUCT INNOVATION MGMT. 19, 20 (2006).

[8] Markides, *supra* note 7, at 19 ("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.") (citation omitted).

[9] Id.

[10] CHRISTENSEN, *supra* note 6, at 100–01; *see also* Christian Sandström et al., *Exploring Factors Influencing Incumbents' Response to Disruptive Innovation*, 18 CREATIVITY & 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

redefine the value proposition for the customer,[11] which may disintermediate the relationship between vendor and customer, opening the door to competition.[12] Disintermediation, as Paul May explained, "refers to the removal of an established intermediary and replacement by a direct connection between the parties formerly serviced by the intermediary."[13] In this regard, disintermediation is a natural consequence of disruptive innovation.

¶6 Unfortunately, the power of the term disruptive innovation has led to its undoing. Any business challenge can be labeled disruptive innovation. Unfortunately, "it is often used so loosely as to convey almost nothing of substance."[14] Proctor and Gamble's creative Swiffer Mop became "an oft-cited example of disruptive innovation" because, although the product did not perform as well as competing products, the Swiffer's convenience gained it market share.[15] As commonly described, a successful product or technology that features fewer or weaker features and yet outperforms its competitors can be considered disruptive.[16] The Swiffer Mop thus ably fits this model.

¶7 The Swiffer Mop's success, however, was entirely predictable. At a time when products were increasingly disposable and geared toward convenience, the Swiffer Mop followed the trend. Moreover, the economic notion that firms gain market though continuous improvement and product enhancement is at odds with actual customer behavior. Added features and enhancements generally add to the cost of a product. For many products, however, a significant segment of the market is price sensitive and finds limited value in the incremental improvements. This tension creates a natural pattern of market opportunities for lower cost goods.[17] Another significant segment of the market

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hand, initially underperform along these dimensions. The lower traditional performance and the ancillary performance attributes create a large market uncertainty around the disruptive innovation.").

[11] Darryl R. Mountain, *Could New Technologies Cause Great Law Firms to Fail?*, 52 SYRACUSE L. REV. 1065, 1069 (2002).

[12] PETER LAWRENCE, THE CHANGE GAME: HOW TODAY'S GLOBAL TRENDS ARE SHAPING TOMORROW'S COMPANIES 142 (2002) ("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*, HARV. BUS. REV., Sept.–Oct. 1997, at 70, 71.

[13] Paul May, The Business of Ecommerce: From Corporate Strategy to Technology 90 (2000).

[14] Jeff Lindsay & Mike Hopkins, From Experience: Disruptive Innovation and the Need for Disruptive Intellectual Asset Strategy, 27 J. PRODUCT INNOVATION MGMT. 283, 283 (2010).

[15] *Id.* at 284 ("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.").

[16] See id.

[17] CHRISTENSEN, *supra* note 6, 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 Droege & Nancy Brown Johnson, *Limitations of Low-end Disruptive Innovation Strategies*, 21 INT'L J. HUMAN RESOURCE MGMT. 242, 244 (2010).

places a high value on convenience, again resulting in a natural pattern of market opportunities for more convenient goods. For some, convenience or ease of use is the primary sensitivity. The Swiffer Mop—which avoids the cleaning of mop heads—provides the ultimate in mopping convenience. For others, ease of adoption becomes the most important sensitivity. If a product can capture the knowledge users have from experience with another product, such as a standardized keyboard or standardized commands in a spreadsheet, it becomes easier for those users to migrate to that competitor's product, while if the new product requires a new set of skills it is harder for the public to switch.[18] Both ease of use and ease of adoption emphasize incremental changes to products over time.

¶8 In contrast with the these examples, profound disruptive innovation focuses on new memes[19] that undermine the existing way of doing business. The new memes eliminate incremental approaches to product innovation and radically restructure the relationship among manufacturers, distributors, consumers and any others in the supply chain.[20] Some memes evolve slowly and gradually,[21] while others involve radical re-ordering that only reveal themselves once the change is imminent.[22]

¶9 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 Proctor and Gamble lost market share to an existing competitor in the same market space.

¶10 Documenting the Swiffer example, Jeff Lindsay and Mike Hopkins also point to Kleenex facial tissue as an example of fundamentally disruptive innovation.[23] Created to remove theatrical cold cream, Kleenex undermined the handkerchief industry.[24] Customers promoted the product to address the common cold and Kimberly-Clark benefited from the product's success while the handkerchief business faded away.[25] The idea of paper tissue as a handkerchief was radically new and outside the concept for both handkerchief manufacturers and Kimberly-Clark.

¶11 Of course, "[p]redicting emerging disruption is a tricky exercise and requires consideration of complex interactions of many processes including new technologies, several industries, and changing regulations. Judging by historical experience, most disruptive entries become obvious only with hindsight."[26] Nonetheless, there are

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[18] Jon M. Garon, *Reintermediation*, 2 INT'L J. PRIVATE L. 227, 234 (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.").

[19] *See* RICHARD DAWKINS, THE SELFISH GENE 193–94 (30th anniversary ed. 2006).

[20] *See* Jon M. Garon, *Rethinking Intangible Cultural Heritage*, 12 DENVER SPORTS & ENT. L.J. (forthcoming 2012).

[21] Susan Blackmore, The Meme Machine 24 (2000).

[22] DAWKINS, *supra* note 19, 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.").

[23] Lindsay & Hopkins, *supra* note 14, at 283–84.

[24] Id.

[25] Id.

[26] Eldad Ben-Yosef, The Evolution of the US Airline Industry: Technology, Entry, and Market Structure—Three Revolutions, 72 J. AIR L. & COM. 305, 345 (2007).

common attributes that can help anticipate where the nature of fundamentally disintermediative innovations can be found.

¶12 A company can approach the disruptive innovation challenge using three vectors: (1) taxonomy of disruptive innovation, (2) known triggers for disintermediation, and (3) clarification of the paradigmatic market response to disruptive innovation. By understanding the different types of disruptive innovation, the various triggers, and the typical market response, a company is better positioned to take advantage of the disruption as it occurs.

A. Taxonomy of Disruptive Innovation

¶13 The original disruptive innovation theory developed by Clayton Christensen focused on disruptive technology, but over time, he and others expanded the concept to cover all forms of disruption.[27] Constantinos Markides of the London Business School has extensively criticized the conflation of technological change and business model change as common causes of disruptive innovation. In his critique, Markides calls this a mistake and suggests instead that there are two discrete types of disruptions: technological and business-model.[28] At the same time, however, legal disciplines have been moving in the opposite direction. For example, U.S. patent law has explicitly rejected this dichotomy.[29]

¶14 The need to separate business disruption from technological disruption may also be misplaced. In the modern world, almost all economic interactions are mediated by technology. While it is 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 other aspect of electronic communications—even if the primary goal is face-to-face personal service. Professor Markides may be correct that disruption is different when the innovation is based on service rather than a product, but they are both likely to have technological underpinnings.[30]

¶15 At the same time, however, Professor Markides is correct that different forms of disruption have distinct characteristics and companies facing profound disruption will need to tailor their response to the nature of the changes faced. This Article builds upon

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[27] *See generally* Clayton M. Christensen & Michael E. Raynor, The Innovator's Solution: Creating and Sustaining Successful Growth (2003). *See also* Markides, *supra* note 7, at 19.

[28] Markides, *supra* note 7, at 20–21.

[29] *See, e.g.*, Bilski v. Kappos, 130 S. Ct. 3218, 3227 (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 Commc'ns, Inc., 172 F.3d 1352 (Fed. Cir. 1999); State St. Bank & Trust Co. v. Signature Fin. Grp., 149 F.3d 1368 (Fed. Cir. 1998) (eliminating the narrow technological distinction in the area of patent subject matter eligibility).

[30] *Compare* Garon, *supra* note 18, 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 customised 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 7, 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.").

Professor Markides's concern regarding the over-inclusiveness of the disruptive innovation label, suggesting a taxonomy that is more useful for capital allocation. Moreover, this effort is not wholly new. In some ways, the categories relate to the sources of innovation provided by Peter Drucker in his classic text, *Innovation and Entrepreneurship*.[31]

¶16 Drucker identified seven stressors to drive change, which he categorized as either external or internal to the enterprise. Those internal to the enterprise include "the unexpected," "[t]he incongruity," "process need," and changes to the structure of the industry or market.[32] Those external to the enterprise include demographic changes, "[c]hanges in perception, mood, and meaning," and new knowledge, both of scientific and nonscientific nature.[33] These seven categories can be simplified somewhat more for the purposes of distinguishing the triggers for profound disruptive innovation. Innovations can be linked to their roots in (1) product innovation, (2) process innovation, (3) relational innovation, and (4) cultural shifts.

1. Product Innovation

¶17 Product innovation refers to changes in the attributes of an item. It will often be triggered by the stressors Drucker labeled as "the unexpected," "[t]he incongruity," or "[n]ew knowledge."[34] In particular, the distinction between how a product ought to operate and how it actually operates is a dominant influence in its evolution.

¶18 As shown by the Swiffer Mop example, the introduction of attributes that change a product's profile may fundamentally change the customer's 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, changes that result in a different customer base may serve as an appropriate distinction.[35]

¶19 A more fundamental and highly disruptive innovation occurred in the area of photography. The early developers of digital photography provided a camera that was significantly more expensive than print photography and had poorer picture resolution. Existing photography customers had little to gain by switching to a digital camera—or so industry leaders thought.[36] 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.[37] There was even a market for it—newspapers needed the

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[31] PETER F. DRUCKER, INNOVATION AND ENTREPRENEURSHIP 26 (1993) ("[T]he entrepreneur upsets and disorganizes. . . . [H]is task is 'creative destruction.'").

[32] *Id.* at 35.

[33] *Id.* Drucker also notes "[t]he 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." *Id.*; *see also* JON M. GARON, OWN IT: THE LAW & BUSINESS GUIDE TO LAUNCHING A NEW BUSINESS THROUGH INNOVATION, EXCLUSIVITY, AND RELEVANCE 66–67 (2007).

[34] DRUCKER, *supra* note 31, at 35.

[35] *See* Markides, *supra* note 7, at 20; Droege & Brown Johnson, *supra* note 17, at 244–45.

[36] Sandström et al., *supra* note 10, at 11–12; Hamm & Symonds, *supra* note 5.

[37] *Meet the 2011 National Inventors Hall of Fame Inductees: Steven Sasson*, INVENT NOW, http://www.invent.org/2011induction/1_3_11_induction_sasson.asp (last visited May 31, 2012) ("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.").

mobility and speed provided by digital photography to shoot pictures across the globe and easily edit images to provide printers on short notice. But Kodak lost the initiative and nearly failed. Other companies, such as Hasselblad, survived only because of expensive corporate buy-outs.[38]

¶20 Digital cameras grew to dominate the industry in part because they filled the incongruity between how the photographic experience should operate and how it actually operated. Consumers wanted to know immediately if their photographs were satisfactory, to easily share photographs, and to avoid delays in the process. In hindsight, it is obvious that the same consumer demand that led to Kodak's success and Polaroid's growth fueled even more instantaneous photography.

2. Process Innovation

¶21 Process innovation emphasizes improvement in the way something is accomplished.[39] It may refer to small changes, the placement of machines on the manufacturing floor, or patentable innovations.[40] Beginning with Henry Ford, who revolutionized the automobile industry with the assembly line,[41] corporate leaders and economists have understood that improving efficiency increases profits and makes competition difficult for new entrants. Process innovation can be (and usually is) incremental. Drucker specifically identifies process innovation when describing innovation based on process need.[42]

¶22 The market response to innovation highlights the relationship between product innovation and process innovation. With the introduction of a new product, for example, both the feature set and the process of manufacture are in flux.[43] Both buyers and sellers experiment with the product until a dominant design emerges.[44] But once the dominant design emerges, the process slows and the market solidifies.

> 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 valueless by major product innovations. Consequently, process

[38] Sandström et al., *supra* note 10, at 13–14.

[39] *See, e.g.*, PHILIP EVANS & THOMAS S. WURSTER, BLOWN TO BITS: HOW THE NEW ECONOMICS OF INFORMATION TRANSFORMS STRATEGY 24–25 (2000); GARON, *supra* note 33, at 182 ("[E]ntrepreneurs provide another essential role in making the inventions practical.").

[40] *See* 35 U.S.C. § 100(b) (2006) ("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 (1972).

[41] *See, e.g.*, Joel Mokyr, *The Second Industrial Revolution, 1870–1914*, NW. U. C. ARTS & SCI. 8–9 (Aug. 1998), 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*, HARV. BUS. REV., June 2011, at 64, 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.").

[42] DRUCKER, *supra* note 31, at 69–70.

[43] Steven Klepper & Kenneth L. Simons, Technological Extinctions of Industrial Firms: An Inquiry into Their Nature and Causes, 6 INDUS. & CORP. CHANGE 379, 384 (1997).

[44] Id.

> innovation rises and a greater amount is invested in capital-intensive methods of production.[45]

The model—as evidenced by studies on firm shakeouts[46]—assumes a somewhat linear relationship that starts with heated competition for a new product that subsides once the market coalesces around a somewhat standard design. The winners of this competition are those who add process efficiencies and produce the product more profitably.[47]

¶23 Process innovation may be more mundane than product innovation, but process innovation is more important in the competitive marketplace. Although process innovation is "not sexy, . . . [t]he really big challenge is not just in having these ideas, but executing these ideas."[48] As such, like in product innovations, the magnitudes involved in process innovation range from very incremental to quite fundamental.

3. Relational Innovation

¶24 Relational innovation is an important offshoot of process innovation. Although it could be categorized as a form of process innovation involving the external relations among a manufacturer and its distribution chain, the rise of social media and the impact of disintermediation strongly suggest that it be treated as a category unto itself.[49] The recognition of relational innovation stems, in part, from Drucker's stressors of demographic or population changes and changes in perception, mood, and meaning.[50]

¶25 Relational innovation begins with a firm's development of relevance for its product or service. Relevance has both an objective and subjective component, each measured by the consumer's desire for the firm's product or service.[51] While objective relevance is based on simple need, social relevance can be measured by the popular demand for a category of goods or services.[52] To illustrate, consider a fan who purchases a ticket 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, where illegal, scalpers) can

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[45] Id.

[46] *See* Steven Klepper & Kenneth L. Simons, *Innovation and Industry Shakeouts*, 25 BUS. & ECON. HIST. 81 (1996); Markides, *supra* note 7, at 19–20, 23; Kenneth L. Simons, *Shakeouts, Innovation, and Industrial Strategy and Policy*, 40 AUSTRALIAN ECON. REV. 106, 107–09 (2007).

[47] *See* Markides, *supra* note 7, at 19–20, 23; Klepper & Simons, *supra* note 46, at 81.

[48] Christine Lagorio, *The Case Against "Sexy" Innovation*, INC. (June 10, 2011), http://www.inc.com/articles/201106/peter-sheahan-the-case-against-sexy-innovation.html (quoting Peter Sheahan).

[49] *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, *supra* note 20, at 95–96.

[50] *See* DRUCKER, *supra* note 31, at 35.

[51] GARON, *supra* note 33, at 55–59 ("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.").

[52] 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 393–94 (briefer version 8th ed. 2010) (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.").

demand a premium. Often, this same football game is available for free on television and radio. So watching the game might not even be part of the ticket's value.[53] In addition, 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 playoff possibilities for each team. The tickets have social, subjective relevance to the purchaser. The fan acquires a wholly personal benefit of association, self-identification, and self-worth through the purchase.[54]

¶26 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 phenomenon of social relevance limited to events. Most of the value in couture clothing can be ascribed to the hype surrounding the designer and brand rather than the materials or construction of the garments.[55] Similarly, a toy that is wildly popularly one season 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 little intrinsic value based on their design and game play, while most of their value is based on the social relevance imbuing to their importance. The same is true of all products and services to some degree.[56]

¶27 Social relevance can also help explain the explosion of social networking sites like Facebook, Twitter, MySpace, LinkedIn, and Google Plus. The philosophy and architecture of successful social media sites embrace a somewhat narcissistic sharing and an internal *quid pro quo* "liking" of one another's comments, photographs, and activities.[57] This, in turn, leads to "a sense of connecting coupled with a fear of being left behind."[58] More recent data shows continued growth in this trend, with fifty-nine percent of internet users on at least one social networking site—nearly double the usage since 2008.[59]

¶28 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 as Facebook, and LinkedIn is largely the same—modified slightly to emphasize professional connections.[60]

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[53] Given the quality of broadcasts (with play-by-play and multiple camera angles), the audience's experience may be much better in a living room or bar than at the event.

[54] GARON, *supra* note 33, at 57–58.

[55] *See generally* Joanne Entwistle, The Aesthetic Economy of Fashion: Markets and Value in Clothing and Modeling 12–13 (2009).

[56] A significant portion of the goodwill value in trademarks flows directly from this social relevance. *See* GARON, *supra* note 33, at 60–63.

[57] *See generally* David Kirkpatrick, The Facebook Effect: The Inside Story of the Company that Is Connecting the World (2010).

[58] Brian Kane, *Balancing Anonymity, Popularity, & Micro-celebrity: The Crossroads of Social Networking & Privacy*, 20 ALB. L.J. SCI. & TECH. 327, 329 (2010). Kane indicates 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." *Id.* (citing Ian Shapira, *In a Generation that Friends and Tweets, They Don't*, WASH. POST, Oct. 15, 2009, at A1, *available at* http://www.washingtonpost.com/wp-dyn/content/article/2009/10/14/AR2009101403961.html).

[59] KEITH N. HAMPTON ET AL., SOCIAL NETWORKING SITES AND OUR LIVES 8 (2011), http://www.pewinternet.org/~/media//Files/Reports/2011/PIP%20-%20Social%20networking%20sites%20and%20our%20lives.pdf.

[60] Privacy advocates are clamoring for a system that values privacy resulting in a more limited sharing

¶29 Academic literature has discussed this notion as the reputation economy.[61] Reputation economies reflect both a more traditional economic model protected by publicity rights (e.g., those that directly tie persona to purse)[62] and a less economic model that values the moral rights of copyright owners and the inherent importance of reputation without regard to direct economic return.[63] In both economic and social terms, the value of reputation ties directly into the broader concept of social relevance. Because 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.[64]

¶30 The phenomenon presents itself as part of everyday life,[65] but is infrequently incorporated into business planning for capital investment. Social relevance is often incremental in nature, but it can also lead to the most unpredictable and dramatic of disruptive innovation.[66]

4. Cultural Shifts

¶31 Cultural shifts should be considered a fourth and distinct trigger for disruptive innovation,[67] in addition to the three external Drucker stressors—demographic changes, changes in perception, mood, and meaning, and new knowledge[68]—which can be summarized as facets of cultural shifts. Cultural shifts are the externalities that may drive the "[c]hanges in industry structure or market structure that catch everyone unawares."[69]

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network, but such tools do not have the network effects 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 Grimmelmann, *Privacy as Product Safety*, 19 WIDENER L.J. 793 (2010); H. Brian Holland, *Privacy Paradox 2.0*, 19 WIDENER L.J. 893 (2010).

[61] *See* Kahn, *supra* note 60, at 184.

[62] See id.

[63] *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 HARV. J. SPORTS & ENT. L. 95, 107–08 (2010).

[64] Social relevance theory explains the rise of companies like Groupon, which provides a simple coupon, coupled with social crowd behavior. *See* GROUPON, http://www.groupon.com (last visited May 31, 2012); *see also* Rakesh 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,"* ALL THINGS DIGITAL (Aug. 25, 2011, 3:02 PM), http://allthingsd.com/20110825/exclusive-groupons-mason-tells-troops-in-feisty-internal-memo-it-looks-good/.

[65] 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.

Liza Barth, *Cars as Status Symbols*, CONSUMER REP. (Dec. 18, 2007, 10:12 PM), http://news.consumerreports.org/cars/2007/12/car-status.html.

[66] *See* GARON, *supra* note 33, at 15.

[67] *See generally* Ronald Inglehart, Culture Shift in Advanced Industrial Society (1990).

[68] *See* DRUCKER, *supra* note 31, at 35.

[69] Id.

¶32 Economic models tend to ignore cultural shifts, but investors follow these economic models at their peril. Prevailing models emphasize rational choice models using economic variables rather than focusing on broader cultural shifts. By ignoring the more significant cultural changes in favor of economic trends, the models fail to predict actual behavior.[70]

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

¶34 Less visible, but equally potent, was the admission of China as a member of 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—China's closest neighbor in both geographic and demographic terms—resulting in the economies of both countries racing into the twenty-first century.[71] The awakening of the Asian markets will have a number of effects in terms of trade, but even more impact on the qualitative nature of the products and services needed. Different societies have different requirements and few nations are homogenous, which means that diversity within the region must also be addressed.

¶35 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."[72]

¶36 German sociologist Pfau-Effinger identifies four underlying cultural assumptions that help predict change. First, "societies have long-lasting cultural traditions that have an impact on behaviour."[73] Internal cultural traditions can shape societal choice and

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[70] INGLEHART, *supra* note 67, at 15 ("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.").

[71] *See* DANCING WITH GIANTS: CHINA, INDIA, AND THE GLOBAL ECONOMY (L. Alan Winters & Shahid Yusuf eds., 2007), *available at* http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2007/01/10/000020953_20070110150325/Rendered/PDF/383390Dancing0with0giants01PUBLIC1.pdf. *Dancing with Giants* provides some particularly useful measures:

> 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 United States). . . . [India] accounted for about 2 percent in the growth of world exports and imports over the period 1995–2004 . . . [and] the most dynamic export sector in India is information technology (IT)-enabled services . . . . So far, India has had export success in textiles and clothing . . . [and] is also a growing player in pharmaceuticals . . . .

Id. at 14, 17, 19; *see also* Pete Engardio, *A New World Economy*, BUS. WK., Aug. 22/29, 2005, at 52; Pete Engardio, *Crouching Tigers, Hidden Dragons*, BUS. WK., Aug. 22/29, 2005, at 60.

[72] INGLEHART, *supra* note 67, at 22.

[73] MONIQUE KREMER, HOW WELFARE STATES CARE: CULTURE, GENDER AND PARENTING IN EUROPE 64 (2007) (describing various theories of gender diversity and the wide gaps among female employment rates in Europe). The context of the reference to Pfau-Effinger is based on her research involving "the interplay

behavior for millennia. Second, cultures are multifaceted such that "there is no cultural coherence in society, as alternative and competing cultural systems may exist."[74] Third, the manner in which change is made affects the outcome of change because "cultural change depends on the way social actors deal with contradictions and alternatives in value systems."[75] Fourth, cultural change, while connected to structural change, can occur independently.[76]

¶37 The cultural traditions Pfau-Effinger identifies are deeply rooted, having long-standing cultural traditions that have an impact on behavior.[77] These traditions are "difficult to give up for individuals, political parties, and sections of the bureaucracy."[78] As such, giving up long-held faiths or abandoning 'zones of comfort' and familiarity are not easy.[79]

¶38 In *The Fortune at the Bottom of the Pyramid*, C.K. Prahalad painstakingly identifies the cultural, social, and economic assumptions that shaped forty-five years of ineffectual policy regarding poverty in India. Prahalad identifies the fallacy of "[t]he dominant assumption is that the poor have no purchasing power and, therefore, do not represent a viable market."[80] He documents that the poor of China and India hold tremendous purchasing power, perhaps as much as $8 trillion.[81] 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.[82]

¶39 Proctor and Gamble demonstrated the reality of this opportunity, using ethnographic studies to quantify that eighty percent of the public in India wash their clothes by hand.[83] Proctor and Gamble redesigned a product to be less astringent on hands while still effective on clothing and priced to undercut competing products that used harsher chemicals. By formulating the product to the Indian hand-wash market, Proctor and Gamble simultaneously improved service to its customers and developed a new market.

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of three dimensions" affecting female employment rates, including: (1) "gender culture" defined as "norms and values towards spheres of work"; (2) "gender order," which includes the labor market and the European welfare state; and (3) these, in turn, produce the "gender arrangement," or "the division of labour within families." *Id.* at 63. 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.

[74] *Id.* at 64.

[75] Id.

[76] Id.

[77] C.K. PRAHALAD, THE FORTUNE AT THE BOTTOM OF THE PYRAMID: EDUCATING POVERTY THROUGH PROFITS 30 (5th rev. ed. 2010) ("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.").

[78] *Id.* at 31.

[79] Id.

[80] *Id.* at 34.

[81] *Id.* at 34–35 (measured in purchasing power parity).

[82] Id.

[83] *See* Brown & Anthony, *supra* note 41, at 69.

¶40 Even more interesting was the foray into this market by Intuit, makers of TurboTax.[84] Looking to develop remote tax preparation tools for the subsistence farmers of India, their first-hand experience with the farmers led Intuit to develop "Mobile Bazaar, a simple text-messaging-based marketplace connecting buyers and sellers."[85] Subscribing farmers benefited because the quality of their information improved and their access to pricing data expanded. Using the simple tool, "half the farmers were able to increase their prices by more than 10%. . . . Within a year of launch, Mobile Bazaar 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%."[86]

¶41 Intuit experienced a highly disruptive development cycle for both the company and country. It entered a market for one product but ultimately developed an entirely different product to meet a need it had not known existed. On the other hand, the product innovation of Proctor and Gamble was merely incremental, not profound disruptive innovation—unless compared with forty-five years of stagnation in India and industry's systemic failure to address a market comprised of four billion poor across the globe.[87] Both Proctor and Gamble and Intuit have made a difference and expanded their business.

¶42 In this context, any effort to expand into this market is profoundly disruptive. It also serves as a stark reminder that a marketplace of four billion people with an incalculable collective bargaining power was ignored for decades. But this narrative has shifted[88] and the race to meet these global needs has just begun. The bottom of the pyramid is replete with opportunity for entrepreneurs who can embrace profound disruptive change merely by overlooking the historical blinders created by prejudice, parochialism, and presumption.

B. The Triggers for Disintermediation

¶43 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.[89] For investors and enterprise operators, disintermediation reflects the most critical risk involving cultural shifts. Cultural shifts that leave economic relations unaffected touch business only indirectly, whereas cultural shifts that disintermediate the supply chains or customer relations require an immediate and unwavering response from the enterprise if it is to survive.

¶44 Within the broader area of disintermediation, certain key trends stand out: globalization, radio frequency identification tags (RFIDs), the networking of things, the geometric expansion of network effects, and the "cloud culture" emerging from transmedia and social media into flash mobs. Together, these trends combine to reshape the historical narrative of society and culture. This group of stressors has been reshaping the Western narrative of community and reflects a redefinition of society that businesses

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[84] Roger L. Martin, *The Innovation Catalysts*, HARV. BUS. REV., June 2011, at 82, 87.
[85] *Id.* at 86.
[86] Id.
[87] PRAHALAD, *supra* note 77, at 27.
[88] For a broader discussion on the power of the narrative, see F.S. MICHAELS, MONOCULTURE: HOW ONE STORY IS CHANGING EVERYTHING (2011).
[89] Evans & Wurster, *supra* note 12, at 73–74.

must anticipate—and that governments must engage. Each of these is described in more detail below.

1. Globalization and the Networked Economy

¶45 The convergence of globalization, a networked economy, and digital technologies has made disruptive innovation a threat to the existing economic structure 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 information and learn as organizations."[90] The nature of global economic enterprise has shifted. Seventy million workers participated in multinational corporations as of the 1990s, representing "$5,500 billion, which is 25 per cent more than the total value of world trade in that year."[91] Production of goods and services has been distributed across the globe, diffusing the impact of any particular nation's laws and customs.[92]

> 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 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.[93]

¶46 Because information moves without restrictions, the transformation is stark, fast, and overpowering.[94] As Thomas Friedman described it, "the dynamic force in Globalization 3.0—the thing that gives it its unique character—is the newfound power for *individuals* to collaborate and compete globally."[95]

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

[90] 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) (footnote omitted) (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 & Daniel A. Levinthal, Absorptive Capacity: A New Perspective on Learning and Innovation, 35 ADMIN. SCI. Q. 128 (1990)).

[91] Manuel Castells, United Nations Research Inst. for Soc. Dev., Information Technology, Globalization and Social Development, UNRISD Discussion Paper No. 114, at 4 (Sept. 1999).

[92] *See generally* Manuel Castells, The Rise of the Network Society, The Information Age: Economy, Society and Culture 167 (2d ed. 2009).

[93] *Id.* at 214.

[94] Partha Dasgupta, *Digitalization*, CACTUS, http://cactus.eas.asu.edu/PARTHA/Columns/12-24-digital.htm (last visited May 31, 2012) ("With the barriers of storing, manipulating and transmitting digitized data falling apart, the rush to digitization of everything has steamed ahead. . . . Data is data—irrespective of source. . . . This brings us to the new meaning of an old word 'convergence.'"); *see also* Claire Wright, *Reconciling Cultural Diversity and Free Trade in the Digital Age: A Cultural Analysis of the International Trade in Content Items*, 41 AKRON L. REV. 399 (2008); Peer Zumbansen, *Law After the Welfare State: Formalism, Functionalism, and the Ironic Turn of Reflexive Law*, 56 AM. J. COMP. L. 769 (2008).

[95] FRIEDMAN, *supra* note 4, at 9–10.

centrality and importance. Unless the enterprise or regulatory body adds value to the relationship, it can 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 toll ways along the path.

2. The Internet and Internet of Things

¶48 There is another data revolution taking place. In this case, it is data about people's physical objects and their movements. Tiny microchips, such as RFID tags—some as small as a grain of sand and many smaller than the period at the end of this sentence—are attached to an antenna, allowing a transceiver to obtain the signal.[96] RFID are just one networked communications tool more generally known as "near field technologies." The primary purpose of near field technologies is inventory control and product tracking.[97] Unlike bar codes, 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."[98] In Europe, regulations have anticipated some of the implications far faster than in the United States.[99]

¶49 The information available to networked devices may profoundly influence how enterprise and government utilize objects in ordinary society. In Houston, Texas, for example, high schools are using RFID tags in student identification cards to track students' movements in their high schools.[100] Some new televisions are equipped with chips to capture second-by-second viewership, complete with the ability to target behavioral advertising on the fly.[101]

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[96] Sarah Gingichashvili, *Hitachi Develops World's Smallest RFID Chip*, FUTURE THINGS (Oct. 26, 2007), http://thefutureofthings.com/news/1032/hitachi-develops-worlds-smallest-rfid-chip.html; *see also* Julie Manning Magid et al., *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.").

[97] Uttarayan Bagchi et al., *The Effect of RFID on Inventory Management and Control*, *in* TRENDS IN SUPPLY CHAIN DESIGN AND MANAGEMENT: TECHNOLOGIES AND METHODOLOGIES 71, 72 (Hosang Jung et al. eds., 2007).

[98] *Id.* at 74.

[99] 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, at 2, COM (2009) 278 final (June 18, 2009), available at http://ec.europa.eu/information_society/policy/rfid/documents/commiot2009.pdf ("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).") (footnote omitted).

[100] H.B. 1134, 82d Leg. Sess. (Tex. 2011) (proposing to limit school districts' authority to require students to use RFID technology).

[101] Chris Marlowe, *TV Keeps an Eye on Viewers*, DIGITAL MEDIA WIRE (Aug. 22, 2011, 8:21 AM), 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

¶50 This networking of objects has the potential to rewrite the relationships between people and their possessions. Consumers will come to expect different behaviors from the products with which they interact. Siri, a popular feature on Apple iPhones, is prominently featured in Apple advertisements interacting with the phone owners in a social manner, providing the owner with relevant data gleaned from the Internet and other sources.[102] With more objects networked, more information about people and their behaviors can be collected and exploited. Privacy will further diminish, while the reliance on objects will increase. Soon consumers will no longer be able to lose their smart keys in their house; car seats will know which driver is entering the vehicle; televisions will recognize which 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 (as well as provide enticing opportunities for product specials and trials of new products); clothes will ask to be washed and help choose their accessories; and only the companies that provide these new features will be ready for the future.

¶51 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 customers and companies. Those companies 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 this engagement will risk alienating customers and quickly losing market share.

¶52 Beyond improving consumer interaction with products, this technology raises many issues. Ethical and privacy concerns regarding misuse tend to focus on government, businesses, and organized crime.[103] These include unwarranted surveillance, profiling, behavioral advertising, and targeted pricing campaigns.[104] As a result, companies that increasingly rely on these tools also bear a responsibility to do so in a socially positive manner that increases the public's estimation of the company.

3. A Network of Network Effects

¶53 Under fundamental economic theory, goods do not vary their value based on the number of people who possess them.[105] Network effects, in contrast, "apply to goods whose value increases as more people possess and use them."[106] The value of a good or service increases precisely because of its adoption by the public. Network effects apply to everything from music and television to computer networking protocols. And the

viewer opts in.").

[102] *See Siri: Your Wish Is Its Command*, APPLE, http://www.apple.com/iphone/features/siri.html (last visited June 5, 2012); Jefferson Graham, *Apple iPhone 4S' Siri Says the Darnedest Things*, USA TODAY: TECH (Oct. 23, 2011, 7:55 PM), http://www.usatoday.com/tech/columnist/talkingyourtech/story/2011-10-20/siri-says-funny-things/50847142/1.

[103] Bagchi et al., *supra* note 97, at 76.

[104] Id.

[105] Kahn, *supra* note 60, at 216.

[106] *Id.*; *see also* Mark A. Lemley & David McGowan, *Legal Implications of Network Economic Effects*, 86 CALIF. L. REV. 479 (1998).

value increases at a geometric rate. A new person added to a network adds value as a member and also adds some value for each other member in the network, so each new member in a large network is worth more than a new member in a small network.[107]

¶54 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 also affects the Internet of things,[108] 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.[109]

¶55 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.[110] 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.

¶56 Payment systems provide an interesting example in another way. Two competing networks drive network effects: the network of consumers and the network of merchants.[111] 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.[112] Mobile phone companies, social media organizations, and online companies are searching for entry points into this highly lucrative market.[113] The conflict will reshape the consumer experience—already the most mediated point in the economic relationship.[114] In short, the battle over payment systems will decide the future of the Fortune 100.

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[107] Lemley & McGowan, *supra* note 106, at 484.

[108] *See* Alex Williams, *The Megatrend of Our Time Is the Internet of Things and Connected Devices*, INTERNET THINGS COUNCIL, http://www.theinternetofthings.eu/content/alex-williams-megatrend-our-time-internet-things-and-connected-devices (last visited May 31, 2012) ("[T]here is the network effect that is occurring. The more devices we connect, the more need we have for embedded sensors. These sensors will form the future data fabric that we will move across and through in a mulitdimensional manner . . . .").

[109] *See* GREGG EASTERBROOK, SONIC BOOM: GLOBALIZATION AT MACH SPEED 25 (2011) ("[T]he more people who get on a network, the more beneficial the network becomes.").

[110] *See* William J. Kolasky, *Network Effects: A Contrarian View*, 7 GEO. MASON L. REV. 577, 610 (1999). Network complexity, a counterpart to network effects, adds expense exponentially for each additional new system necessary for integration to a system unless the systems are standardized. *Id.* ("[B]ecause the number of links grows disproportionately with the number of firms (e.g., with 4 firms there are 6 possible links; with 5 firms, there are 10) a decentralized side payment system quickly becomes unwieldy as a network grows in size."). This leads to standardization and centralization of networks, further emphasizing the dominant systems.

[111] *See id.* at 586–87.

[112] *See* Jeffrey Selingo, *Seeking Ways to Cut Fees on Credit Cards*, N.Y. TIMES, Sept. 26, 2007, at H5, *available at* http://www.nytimes.com/2007/09/26/business/smallbusiness/26card.html.

[113] *See* Karen J. Bannan, *Cell Phone Payment System Options Multiply*, CREDITCARDS.COM, http://www.creditcards.com/credit-card-news/payment-applications-cell-phone-evolve-1273.php (last updated May 24, 2010).

[114] *See id.* ("The mobile payments for digital and physical goods and person-to-person payments worldwide will grow from $170 billion in 2010 to the $630 billion mark by 2014, and about $100 billion of that will come from offline purchases, according to a Juniper Research report. . . . Today, the majority of U.S. cell phone payment systems aren't designed to eliminate the credit card from the equation. Instead,

¶57 In addition, network effects 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.[115] 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 children under thirteen,[116] those who are protected by the Children's Online Protection Act.[117] 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.

4. Cloud Culture: Transmedia, Mobile Computing, and Flash Mobs

¶58 The final disintermediating influence comes from the intersection of mobile computing, cross-platform media content, and the use of technology for real-world public organizing. These three incremental changes combine into a distinctive new trend, which this Article refers to as "cloud culture." When combined, mobile computing, transmedia, and flash mobs catalyze into an unknown and largely unpredicted social shift.[118]

¶59 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 has come together as the dominant transformation of preexisting economic social relationships for this decade.

¶60 The first element comprising the cloud culture is mobile computing. Media has left television and now plays from computers, mobile devices, downtown billboards, football stadia, theaters, and game consoles.[119] Look no further than Sesame Street's home network, PBS, which now provides "new interactive whiteboard activities, broadband video, E-books, and iPhone and iPad applications that encourage kids to practice and

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they augment them. For example, Apple has an iPhone app called Bump that lets two iPhone users tap their phones together to transfer cash from one credit card-funded PayPal account to another. Another company, Square, takes this paradigm one step further by letting anyone with an iPhone or iPad accept credit card payments from Visa, MasterCard, American Express and Discover.").

[115] *See, e.g.*, Miguel Helft, *Privacy Questions Dog Facebook*, N.Y. TIMES, June 7, 2010, at B6 ("Mr. Zuckerberg . . . was being questioned 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 acknowledged that Facebook had made mistakes by letting its privacy settings grow too complicated.").

[116] *Facebook Terms of Use*, FACEBOOK, http://www.facebook.com/terms.php (last updated Apr. 26, 2011).

[117] *See* Children's Online Privacy Protection Act of 1998, 15 U.S.C. §§ 6501–6506 (2006).

[118] *See* THOMAS STEWART, INTELLECTUAL CAPITAL: THE NEW WEALTH OF ORGANIZATIONS 173 (1997) ("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.").

[119] *See, e.g.*, Ryan Lawler, *HBO Go Coming to Connected TVs, Game Consoles*, GIGAOM (Aug. 3, 2011, 8:24 AM), http://gigaom.com/video/hbo-go-connected-tvs/; Tim Carmody, *Time Warner Bringing Digital Magazines, HBO to More Platforms*, WIRED: EPICENTER (Aug. 3, 2011, 2:56 PM), 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.").

reinforce literacy skills" under the "PBS KIDS Raising Readers" brand.[120] Dedicated devices are giving way to fully functioning computers residing in a multitude of form factors. The device goes everywhere, can be found anywhere, and can be used by all ages.

¶61 The second element of this trend is transmedia, a comprehensive multi-platform content delivery strategy. "In transmedia, elements of a story are dispersed systematically across multiple media platforms, each making their own unique contribution to the whole."[121] A producer implementing a well-developed transmedia strategy will emphasize the benefits of each medium to incorporate additional elements of the story or experience.[122] Transmedia—and any consumer interaction—is best when it is interactive and engaging for the audience.[123]

¶62 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 event.[124] Flash mobs started as stunts involving dancers or other clever pranks, but the practice[125] has also had a lawless and violent component.[126] 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.'"[127]

¶63 In recent social unrest, the use of these tools became a potent weapon against police response.[128] 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 Foursquare, focus on geographic activities.[129] Participation in flash mobs seems anonymous, which may encourage behaviors that tend to be antisocial.

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[120] PBS KIDS Raising Readers, A Story of Success: Using Media Across All Platforms to Close the Literacy Achievement Gap 19 (2009), *available at* http://pbskids.org/read/files/raising_readers_a_story_of_success.pdf.

[121] Henry Jenkins, *Seven Myths About Transmedia Storytelling Debunked*, FAST CO. (Apr. 8, 2011, 10:30 AM), http://www.fastcompany.com/1745746/seven-myths-about-transmedia-storytelling-debunked.

[122] Id.

[123] *Id. See generally* Henry Jenkins, Convergence Culture: Where Old and New Media Collide (2006).

[124] Sheila Shayon, *Flash Mob Trend Spawns a New Social Media Industry*, BRAND CHANNEL (Aug. 23 2011, 2:06 PM), http://www.brandchannel.com/home/post/2011/08/23/Flash-Mob-Trend-Spawns-A-New-Social-Media-Industry.aspx.

[125] Mark Milian, *Little Evidence Links Mob Violence to Social Media*, CNN TECH (Aug. 19, 2011, 5:50 PM), http://www.cnn.com/2011/TECH/social.media/08/19/flash.mob.violence/ ("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.").

[126] *See* Robert Klein Engler, *Chicago's Violent Flash Mobs*, AM. THINKER (June 13, 2011), http://www.americanthinker.com/2011/06/chicagos_violent_flash_mobs.html; *see also* Susan Candiotti & Ross Levitt, *Philadelphia's Juvenile Curfew Is Extended Through Labor Day*, CNN (Aug. 23, 2011, 11:50 AM) http://www.cnn.com/2011/US/08/23/pennsylvania.youth.curfew/ ("The tighter summer curfew wend into effect August 12 . . . following a string of mob attacks by young people alerted to gathering via e-mail and social media.").

[127] Milian, *supra* note 125.

[128] Josh Halliday, *London Riots: How BlackBerry Messenger Played a Key Role*, GUARDIAN (Aug. 8, 2011, 7:24 AM), http://www.guardian.co.uk/media/2011/aug/08/london-riots-facebook-twitter-blackberry.

[129] *E.g.*, FOURSQUARE, https://foursquare.com (last visited May 31, 2012); Ingrid Lunden, *Facebook Places Check-in More Popular than Foursquare*, PAIDCONTENT.ORG (Aug. 26, 2011, 9:11 AM), http://paidcontent.org/article/419-developer-facebook-places-check-in-use-is-huge-compared-to-

¶64 Cloud culture is a more profound disintermediation than its violent illustration in London[130] or the Jasmine Revolution in Yemen and Egypt.[131] 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, cloud culture is ephemeral and has little cohesion, but when the group comes together as a mob, the gathering cloud can unleash fierce storms with gale-force winds.

¶65 Cloud culture has a second inherent danger, beyond that targeted by the crowd. Reactions to unpredictable and violent situations have generated police responses such as turning off cellular phone networks, Internet connectivity, and other systems.[132] If the trend continues, the response to violent flash mobs and civil unrest could reshape the social contract regarding privacy and telecommunications in various nations around the world.

C. The Market Response: Riding the Waves

¶66 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 an animal's reaction to an earthquake warns other animals in advance of the physical shaking, businesses can watch the trends of other businesses to be alerted to the coming disruption.

¶67 For venture capital, in particular, the third vector emphasizes the shape of industrial participation in the field. This may be captured through "shakeout" studies that identify entry and exit patterns of companies as they respond to changes in a particular industry.[133] The general pattern of innovation involves a host of new entrants, perhaps lured by uncertainty in the market and a lack of market leaders.[134] These early participants will struggle to gain dominance and erect barriers to entry while trying to overcome any such barriers erected by others. For example, "[e]mpirical investigation suggests that industries with dramatic shakeouts tend to have fast-paced innovation."[135]

¶68 Professor Markides suggests that the disruption regarding product innovation occurs because the new entrant is "pushing" both the consumer and the competitor with

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foursquare.

[130] *See* Ravi Somaiya, *In Britain, a Meeting on Limiting Social Media*, N.Y. TIMES, Aug. 26, 2011, at A4, *available at* http://www.nytimes.com/2011/08/26/world/europe/26social.html; Eric Pfanner, *U.K. May Restrict Social Media Use to Curb Rioting*, INT'L HERALD TRIBUNE, Aug. 12, 2011, at 16.

[131] Kim Sengupta, Media Throw Off Censor's Shackles After Decades of Fear and Collaboration, INDEPENDENT (LONDON), Jan. 20, 2011, at 24; Jennifer Preston & Brian Stelter, Cellphone Cameras Become the World's Eyes and Ears on Protests Across the Middle East, 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.").

[132] Milian, *supra* note 125; Somaiya, *supra* note 130; Pfanner, *supra* note 130.

[133] *See* Simons, *supra* note 46, at 107–09; Markides, *supra* note 7, at 19–20; Klepper & Simons, *supra* note 46, at 81.

[134] Markides, *supra* note 7, at 23.

[135] Simons, *supra* note 46, at 106.

the new product.[136] 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 is not 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.

¶69 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 on talent and technique.[137] Unlike open markets, surfers have rules of etiquette to determine who has priority[138] (which sometimes applies to regulated markets and oligopolies as well). Professor Markides's summary captures the pattern of market entrants and shakeouts 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. . . . [P]roduct 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.[139]

¶70 The process Markides describes often unfolds over a good deal of time. The structures for such markets are initially quite fluid, with entrants coming and going as they struggle to develop the optimal product, pricing, and operations.[140] Throughout the process, there is not necessarily a first-mover advantage. Timing can be seen as a critical factor, but 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 goodwill that shifts consumer behavior, or better predict the manifestation of the disruption, that entrant will outperform the other entrants. The entrant's success drives economically inefficient competitors out of the competition and

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[136] Markides, *supra* note 7, 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.").

[137] *See* RAUL GUISADO, THE ART OF SURFING: A TRAINING MANUAL FOR THE DEVELOPING AND COMPETITIVE SURFER 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 the right-of-way.").

[138] *Id.* at 78.

[139] Markides, *supra* note 7, at 23.

[140] Id.

triggers a shakeout. In retrospect, that entrant is seen as having timed its entrance precisely, but in reality it was the assets brought to bear on the disruption that shaped the timing.

¶71 This is not to say that timing does not matter. The cost of participation appears to have a saddle-curve distribution.[141] Early entrants must bring with them the research, development, and awareness to participate, resulting in relatively high entry costs. Early entrants also face the challenge of waiting 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.[142] 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.

¶72 In addition, this timing model assumes the entrant is not affecting the shape of the innovation or the competition. To shape the development curve, an entrant must have the right assets: patents, know-how, brands, and pattern-recognition of the disruption. Moreover, all the tools for success are affected by timing. Move too early and these tools may not be ready to bring to bear; move too late and a competitor may capture these assets. Thus, understanding the pattern is an incremental tool to manage the competition, but a company must bring the right assets to the competition to be successful.

¶73 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 successfully implemented the innovation and captured the market. Implicit in the optimal model is the ability to envision the consequences of the disruption, so the more effectively a company can be at exploring the opportunities, the earlier it can make an effective run.

III. UNDERSTANDING THE MEME, NOT THE CUSTOMER

¶74 Recognizing the saddle curve of disruptive innovation provides one key indicator to anticipate 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.[143] By understanding how a potentially new, disruptive meme fits into the broader world of a narrative, how that narrative is spread, and where springboards for ideas can be found, investors and enterprises can better study and predict the marketplace.

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[141] Id.

[142] *Id.* ("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.").

[143] *See generally*, Jure Leskovec et al., *Meme-tracking and the Dynamics of the News Cycle*, ACM SIGKDD INT'L CONF. ON KNOWLEDGE DISCOVERY & DATA MINING 497, 504 (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.").

A. The Customer Conversation

¶75 By definition, a company's ongoing conversation with its customer will focus on process or product innovations. The discussion the company 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 are irrelevant and the exercise is unlikely to succeed. But within the non-customer population are the members of a company's new market. The key is not to sift through the throngs in hopes of finding one new customer. Rather, the key is to identify what memes would drive new populations to goods and services that the firm could make, if only the firm was aware of the need for that product.

1. Recognizing that Reality is a Narrative

¶76 The roadmap through the development paradox can be found in the narrative of the consumer. "The universe . . . is made of stories, not of atoms,"[144] and so is the world of business and commerce. The story defines the social narrative which provides the context for interactions. Social relevance prioritizes these interactions. The network reinforces this importance, to the point that it reshapes one's perception of the experience, which thus redefines the experience itself. Successful parents know this instinctively, making a 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.[145]

¶77 The narrative is social. As the public increasingly accepts 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.[146] "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."[147]

¶78 Culture has numerous threads, weaving narratives 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.[148] Each

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[144] MICHAELS, *supra* note 88, at 7 (quoting poet Muriel Rukeyser) (internal quotation marks omitted).

[145] 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*, THOUGHT & ACTION, Summer 2001, at 9, 12, *available at* http://www.nea.org/assets/img/PubThoughtAndAction/TAA_01Sum_02.pdf.

[146] PRAHALAD, *supra* note 77, at 30.

[147] Id.

[148] Mizuko Ito, *Technologies of the Childhood Imagination:* Yu-Gi-Oh!, *Media Mixes, and Everyday Cultural Production*, *in* STRUCTURES OF PARTICIPATION IN DIGITAL CULTURE 88, 90 (Joe Karaganis ed., 2007) ("My central argument is that everyday life, pursued by . . . 'just plain folks,' needs to be theorized as a site of generative cultural creativity and production. This is a *structure of participation* in cultural life that . . . has been overshadowed but never eliminated by centralized, professionalized, and capitalized

meme either reinforces the central narrative or serves to undermine it.[149] Memes clash often since "[c]ultural change is never frictionless, uniform, or isolated in its effects."[150] 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. Out of the chaos emerge the dominant themes.

¶79 Successful new stories have a common method for distribution and sustenance. Cultural shifts tend to come from a concerted effort of a school, group, or cult.[151] For example, "the determining factors that influence innovation are the cognitive frames that shape what types of information are perceived relevant to the individual, and the cultural constraints that lead an individual to question if change is even possible."[152] Group members band together against the prevailing meme—often absolute in tone—rejecting everything about the currently accepted truth.[153] The retelling of a narrative is a power tool for reintermediating relationships because "[s]tories shape people's perception of realty."[154] Groups often use major events as an inflection point to highlight the shift from the old meme to the new one, though the importance of the event may grow as the story is retold.[155] The story—more than any objective truth—ultimately dominates the social narrative. The story shapes the relationships among its adherents and defines the boundaries of the shared culture.

¶80 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.

¶81 Events like the TED conference[156] and the Mac developer conference[157] 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

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forms of media production.").

[149] *Id.* ("[T]his approach draws on established anthropological concerns with everyday practice, folk arts and crafts, apprenticeship, and community.").

[150] Joe Karaganis, *Presentation*, *in* STRUCTURES OF PARTICIPATION IN DIGITAL CULTURE, *surpa* note 148, at 8, 10. Karganis explains: "In contrast to some early views of the social impact of information technology, we do not live in an increasingly smooth, homogenized global digital culture, but rather in a lumpy one that facilitates some kinds of mobility, social networking, and representations of the world while marginalizing others." *Id.*

[151] *See, e.g.*, Toddi A. Steelman, Implementing Innovation: Fostering Enduring Change in Environmental and Natural Resource Governance 15–17 (2010).

[152] *Id.* at 16.

[153] *See generally* UNDERSTANDING POWER: THE INDISPENSABLE CHOMSKY (Peter R. Mitchell & John Schoeffel eds., 2002).

[154] Judith E. Glaser, The DNA Of Leadership: Leverage Your Instincts To: Communicate—Differentiate—Innovate 274 (2006).

[155] STEELMAN, *supra* note 151, at 16 (suggesting that public policy can only be changed in response to crisis).

[156] *TED Conferences*, TED, http://www.ted.com/pages/registration (last visited May 31, 2012) ("Each year, the world's leading thinkers and doers gather for an event many describe as . . . 'The ultimate brain spa' and 'A 4-day journey into the future, in the company of those creating it.'").

[157] *See* Geoffrey Goetz, *iOS and Mac Developer Conferences To Check Out in 2012*, GIGAOM (Jan. 17, 2012, 11:38 AM), http://gigaom.com/apple/ios-and-mac-developer-conferences-to-check-out-in-2012/.

cults) that cohesively advocate for a particular platform or service—investors can identify the potential authors of the next social narrative.

¶82 Leading technology companies and their marketing divisions are actively pursuing this approach. The lexicon for Kindle, Wii, Macintosh, Blackberry, iPad, Nook, and similar products has eschewed the article *the* and positioned the device as a social movement.[158] The style raises the perceived importance of the brand, representing "the desire of some brand professionals to turn brands into religions or cults."[159] In language and in social organization, these companies are building an infrastructure to maximize the dispersion and impact of their branded memes.

2. Appreciating the Social Media Meme

¶83 If stories, not atoms, make up the universe, then today these stories are linked by social media. Social media and other new technologies have reshaped consumer behavior, empowering the audience to share, retell and even adapt the story.[160] This effect has been described as "curatorial me," in which the nature of the audience has become social, interconnected and participatory.[161] "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."[162] 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 has grown to a much broader scale with the explosion of social media tools.[163] The curatorial audience participates on blogs, wikis, Facebook pages, YouTube, Twitter, massively multiplayer online games, and peer-to-peer networks.[164] They engage in commerce on Craigslist, evaluate services on Angie's List and Amazon, and redefine culture throughout cyberspace, "issues of creativity, ownership, collective authorship, and illegal appropriation of previously copyrighted works."[165]

¶84 Curatorial audience engagement 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, which has created a socially relevant, highly networked community of consumers and consumer advocates.[166]

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[158] Geoffrey A. Fowler & Yukari Iwatani Kane, *An Article of Faith for Marketers: Place No Faith in Articles*, WALL ST. J., Sept. 12, 2011, at A1, A16 ("In Silicon Valley especially, dropping 'the' before product names has become an article of faith.").

[159] *Id.* (quoting Seth Godin).

[160] Garon, *Content, Control, and the Socially Networked Film*, *supra* note 49, at 795; *see also* ROBERT H. WICKS, UNDERSTANDING AUDIENCES: LEARNING TO USE THE MEDIA CONSTRUCTIVELY 74 (2000).

[161] Bill Ivey & Steven J. Tepper, *Cultural Renaissance or Cultural Divide?*, CHRON. HIGHER ED., May 19, 2006, at B6, B7; *see also* Laura Grindstaff, *Culture and Popular Culture: A Case for Sociology*, 619 ANNALS AM. ACAD. POL. & SOC. SCI. 206, 213 (2008).

[162] Ivey & Tepper, *supra* note 161, at B7.

[163] *See* Garon, *Content, Control, and the Socially Networked Film*, *supra* note 49, at 791–94.

[164] See 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); see also Steven Hetcher, User-Generated Content and the Future of Copyright: Part One—Investiture of Ownership, 10 VAND. J. ENT. & TECH. L. 863 (2008).

[165] Halbert, *supra* note 164, at 925.

[166] Elizabeth M. Gillespie, *Amazon.com Opens Big Doors for Small Publishers*, ASSOCIATED PRESS,

Perhaps the starkest example of the social media imperative is 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.[167]

If this seems far-fetched, one need merely review the DARPA request for proposals 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.
> 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.[168]

Focusing on the tracking of the memes (rather than the misinformation), the Department of Defense's approach to understanding the information flow helps to see the direction from which the pressure for innovation will arise. The Defense Department approach recognizes that the information flows "continuously over time, assembled from many small pieces, and conveyed through social networks as well as other means."[169]

¶85 Disruptive innovation follows a predictable pattern that is reflected throughout human culture.[170] Profound disruptive innovation necessarily includes disintermediation

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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.").

[167] 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/.

[168] DEF. ADVANCED RESEARCH PROJECTS AGENCY, SOCIAL MEDIA IN STRATEGIC COMMUNICATION 4 (2011), *available at* https://www.fbo.gov/utils/view?id=260a47e592fc4e0bb25207af167c13f3.

[169] Jaewon Yang & Jure Leskovec, *Modeling Information Diffusion in Implicit Networks*, 2010 IEEE INT'L CONF. ON DATA MINING 599 (2010).

[170] 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 Christian Church

of prior relationships triggered by one or more of the types of innovation. These are typically coupled with an already accepted, but historically unachievable idea, such as the personal communicator of *Dick Tracy* or *Star Trek*. The pattern revolves around the adaptation of the disrupted relationship to the acceptance of the newly achievable idea and the innovative step. At this point, the new meme begins to disconnect and reconnect relationships, just as a catalyst may reform atoms into new combinations of molecules.

3. Tracking the Meme in Culture

¶86 The next profoundly disruptive meme will not be new. The seeds for the next important meme have already been planted in social culture.[171] Important innovations and disruptive ideas have been considered in academic, scientific and business literature. Motorola found inspiration for flip phones from Star Trek.[172] Of course, as Cory Doctorow noted, "there is a difference between prediction and inspiration."[173] The meme need not be operationalized. Indeed, once it has been reduced to practice, the innovation takes a different form.

¶87 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 products and services that are 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.[174]

¶88 Apple is perhaps the greatest success story. A once-struggling, marginal computer company, Apple's success was based on innovative design and ease of use rather than cost. It leveraged its success with Mac computers to enter the music player market with the iPod, and used that platform to build a marketplace in iTunes and expand the consumer experience on the iPhone and iPad.[175] Apple created its own software

formed in the first century, two divergent sects emerged. One was led by James, the brother of Jesus, and leader of the Christian Church in Jerusalem. Paul led the other. "James is defined by the fact that he was a Jewish Christian." PATRICK J. HARTIN, JAMES OF JERUSALEM: HEIR TO JESUS OF NAZARETH 3 (2004). 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's message, the branch of the Church that could be accessed by over ninety percent of the people—away from the strength of the anti-Christian stronghold—was likely to become the dominant model. *See id.* at 84–85. 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.

[171] BRIAN DAVID JOHNSON, SCIENCE FICTION PROTOTYPING: DESIGNING THE FUTURE WITH SCIENCE FICTION 42 (2011) (noting the difference between prediction and inspiration, Cory Doctorow commented, "I do not think that Gene Roddenberry'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.").

[172] *See* Tom Kaneshige, *iPad's Starring Role in Sci-fi Movies*, APPLE ENTERPRISE NOW (Aug. 24, 2011, 3:09 PM), http://blogs.cio.com/tablet-pcs/16473/ipad%E2%80%99s-starring-role-sci-fi-movies.

[173] JOHNSON, *supra* note 171, at 42.

[174] *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 UNCONSCIOUS 6 (2002)) (internal quotation marks omitted).

[175] Hamm & Symonds, *supra* note 5, at 28–29.

environment with iTunes that freed it from the constraints of Windows—something it had been working to achieve throughout the company history.[176] More importantly, "it switched from being a great designer of computer products into a great designer of consumer experiences delivered via devices and services."[177]

¶89 The key to Apple's transformation was changing its output from a computer company focused 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 . . . ."[178] Apple did not invent MP3 players, smart phones, or tablet computers, but by changing the public experience with these devices, it transformed the marketplace. The company was totally focused on the customer; the customer was Apple CEO Steve Jobs.

¶90 The iPad's design is nothing new. Samsung points to early adoption of the form factor in Stanley Kubrik's 2001 movie *A Space Odyssey*.[179] It also served as the primary computer for *Star Trek: The Next Generation*.[180] Moreover, the design was wholly iterative. The iPad was a natural and long-discussed extension of the smart phone design with measurements that almost precisely replicate the standard mouse pad.[181] Each improvement in smartphone design generated more excitement for a tablet that evolved from a media player rather than a Windows PC device dedicated to word processing and spreadsheets.[182] The public had seen and desired such a device for years—even though most never wrote the specifications down on their Dell or Hewlett Packard feedback questionnaires.

¶91 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 customer base. Just as Microsoft utilized Encarta to convince families to buy a home computer instead of an Encyclopedia Britannica set,[183] digital cameras become the reason to invest in a home computer or upgrade a computer and printer. Understanding the meme rather than the customer is

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[176] *Id.* at 28 ("By making iPod and iTunes work with Windows PCs, Apple broke out of selling only to its niche of loyal fans.").

[177] *Id.* at 28–29.

[178] Peter Burrows, *Apple's Product Vision Falls to Jonathan Ive*, S.F. CHRON., Aug. 28, 2011, at D1, *available at* http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2011/08/28/BUAP1KSBC5.DTL.

[179] Ned Potter, *Stanley Kubrick Envisioned the iPad in '2001,' Says Samsung*, ABC NEWS (Aug. 26, 2011), http://abcnews.go.com/Technology/apple-ipad-samsung-galaxy-stanley-kubrick-showed-tablet/story?id=14387499; 2001: A SPACE ODYSSEY (MGM Studios 1968).

[180] *See* Kaneshige, *supra* note 172.

[181] *See* Potter, *supra* note 179. *See generally*, James Grimmelmann & Paul Ohm, *Dr. Generative; Or: How I Learned to Stop Worrying and Love the iPhone*, 69 MD. L. REV. 910 (2010) (reviewing JONATHAN L. ZITTRAIN, THE FUTURE OF THE INTERNET—AND HOW TO STOP IT (2008)); *Why the Newton Failed, and the iPad Is Poised for Success*, EDIBLE APPLE (Apr. 29, 2010), http://www.edibleapple.com/2010/04/29/why-the-newton-failed-and-the-ipad-is-poised-for-success/.

[182] *See* D.J. Power, *A Brief History of Spreadsheets*, DSS RESOURCES, http://dssresources.com/history/sshistory.html (last updated Aug. 30, 2004) ("[Daniel] Bricklin and Bob Frankston then co-invented or co-created the software program VisiCalc. We can look back and recognize that VisiCalc was the first 'killer' application for personal computers.").

[183] *See* Shane Greenstein & Michelle Devereux, *The Crisis at Encyclopædia Britannica*, KELLOGG SCH. MGMT. 7 (2006), http://www.kellogg.northwestern.edu/faculty/greenstein/images/htm/research/cases/encyclopaediabritannica.pdf.

axiomatic to the Innovator's Dilemma. Good management is responsive to its customers—furthering its own decline.[184]

¶92 Professor Gilson concurs in outcome with Professor Christensen, using a somewhat different framework to reinforce the result. Gilson emphasizes that despite an established company's "tax, informational, scale, and scope advantages,"[185] the start-up can outperform it because the established company has internal stakeholders pushing against the innovation.[186] The transaction and information costs are much higher for the established company, which may find the innovation undermining its existing relationships.[187] The start-up and the established divisions may each seek to undermine the success of the other, leaving the established company far well less off than the truly independent start-up. As a result, such siblings within a common enterprise might be much better kept separated.

¶93 To manage disruptive innovation successfully, the successful established companies acted more like start-ups and 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 . . . process and values."[188] This mode of doing business has been embraced in the literary works of *M*A*S*H*[189] and the *Bad News Bears*.[190] Or, as Thomas Edison once said, "[t]here ain't no rules around here! We're trying to accomplish something."[191] By using the resources but breaking all the rules, the renegades outperform the establishment and succeed despite all the obstacles.

¶94 Just as Christensen and others have identified the lock-in caused by the existing customer base,[192] 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.[193] Innovators look for rewards and they look not to be stymied. Christensen's and Gilson's analyses provide great insight 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

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[184] CHRISTENSEN, *supra* note 6, 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.").

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

[186] *Id.* at 898.

[187] *Id.* at 896–87.

[188] CHRISTENSEN, *supra* note 6, at 99.

[189] *M*A*S*H*, (20th Century Fox 1970).

[190] THE BAD NEWS BEARS, (Paramount Pictures 1976).

[191] STEWART, *supra* note 118, at 169 (quoting Thomas Edison).

[192] CHRISTENSEN, *supra* note 6, at 196.

[193] Gilson, *supra* note 185, at 898–99; Ben-Yosef, *supra* note 26, at 306–07.

where the future trends will be—not in an incremental fashion, but in the more chaotic fashion.

¶95 Moreover, memes likely must be mature to have any significance. Memes 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 expansion of the creative class[194] and the aging of America[195] have been discussed for a decade. They are making their way into a class of products, brand personas, and services.[196]

B. The Investor's Strategies

¶96 Venture capital participants want to be rewarded with their capital returns. Potential investors represent 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).[197] And they do not necessarily need to be tied to the pre-existing industry being disintermediated by disruptive innovation.

¶97 Venture capital and innovative investment are critical to fuel disruptive innovation. Therefore, the disruptive innovation must communicate a story to the potential investor and build upon the strengths of "the U.S. entrepreneurial engine."[198] These strengths include "a strong domestic venture capital system," an effective higher educational system, and a corporate culture encouraging innovation.[199] In addition, past success in the three technologies of the computer, mobile phone and Internet have the effect of "democratizing innovation."[200]

¶98 Venture capital also has some advantages. It can stage its investment to limit risk and assure progress.[201] The investors can elect whether to continue investing in subsequent rounds or withdraw their funding.[202] Venture capital is necessarily valued to reflect a higher degree of risk and concomitant degree of reward, if successful. And despite the stability of established firms, the demands of meeting quarterly earnings forecasts demands an even shorter return on investment than that of start-ups.

¶99 Although venture capital reflects a only modest portion of the overall capital market, a significant portion of it is invested in strategies that promote disruptive innovation.[203] But this advantage hardly dictates which trends to follow or which

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[194] *See generally* Richard Florida, The Rise of the Creative Class and How It's Transforming Work, Leisure, Community and Everyday Life (2002).

[195] *See generally* Donald H. Kausler & Barry C. Kausler, The Graying of America: An Encyclopedia of Aging, Health, Mind, and Behavior (2d ed. 2001).

[196] For example, the public is older, but individuals do not feel that way. Products that emphasize one's age tend to fail; products that emphasize the purchaser's continued vitality do better because such products reflect the consumer's self-perception.

[197] *See* GLADWELL, *supra* note 174; *supra* note 174 and accompanying text.

[198] Philip J. Weiser, *Innovation, Entrepreneurship, and the Information Age*, 9 J. ON TELECOMM. & HIGH TECH. L. 1, 2 (2011).

[199] *Id.* at 2–3.

[200] *Id.* at 3 (citing Eric von Hippel, Democratizing Innovation (2005)).

[201] Gilson, *supra* note 185, 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.").

[202] *Id.* at 902.

[203] Id. at 887. See generally Paul Gompers & Josh Lerner, The Use of Covenants: An Empirical Analysis of Venture Partnership Agreements, 39 J.L. & ECON. 463, 471–73 (1996).

companies have priority positions as these technologies unfold. To maximize potential success 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 in the context of that company's ability to respond. Specifically, the potential investment target must demonstrate an ability to capture the meme, manage relevant supplier and consumer relationships, and expand laterally into additional markets.

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

1. Capturing the Meme: Patents, Trademarks, and Traditional Intangibles

¶101 For a venture capital investment, identifying possible memes and recognizing the potential for disintermediation provides only the indicators of which wave to surf. The expert surfer seeks a wave that will provide the longest ride on which he can score the maximum points. The venture capitalist similarly needs stability and control of assets that can be developed for exploitation of the new meme. To ride successfully then, an expert investor begins with traditional intellectual property assets. Intellectual property serves as 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."[204]

¶102 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.[205] 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.[206] More practically, some combination of patent ownership and continual, post-patenting innovation to acquire trade-secret-protected know-how is essential to assist the enterprise. Patent strategy involves three key aspects: (1) acquiring foundational patents to earn rewards available to the pioneers of a field; (2) acquiring a slew of follow-on patents to lock up the ownership rights; and (3) exploiting robust publication strategies to preempt others from

[204] Mario W. Cardullo, *Intellectual Property—The Basis for Venture Capital Investments*, WORLD INTELL. PROP. ORG. 1, http://www.wipo.int/export/sites/www/sme/en/documents/pdf/venture_capital_investments.pdf (last visited May 31, 2012).

[205] 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 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.* § 154(a)(1).

[206] RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 39 (1995) ("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."); *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. *See id.* § 1(2).

patenting competing technologies and undermine other entrants' abilities to compete with patents.[207]

¶103 Foundational patents are at the heart of many profound disruptive innovations, though certainly not all. They provide tremendous leverage to the patent owner to control or earn revenue from a variety of follow-on uses that derive from their invention.[208] Foundational patents are rare and may only be recognized in hindsight. Only after a wide variety of inventors adopt an idea will that idea be considered foundational. And the more broadly the idea is adopted, the more inventors will chafe at the patent as the source of the innovation. Still, foundational patents are the inventor and venture capitalists' ultimate goal.

¶104 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. Companies regularly acquire large patent portfolios "enveloping a competitor's key technologies—one that could be termed a 'patent thicket'—[which] has the potential to . . . suppress competition in the ultimate goods market."[209]

¶105 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 effectively used as a threat of force rather than actually being deployed. Each patent holder bears a large transaction cost in defending its patents, which encourages all patent holders to cross-license among themselves and exclude competitors that have failed to arm themselves. Thus, patent thickets open 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 model into a harvester of the patent thicket—earning the company a reported $1 billion in profit in 2002, primarily on software patents.[210]

¶106 An incidental benefit of cross-licensing is that it allows oligopolistic industries to coordinate their efforts in a context not proscribed by antitrust laws. These are not necessarily pre-textual license agreements. The coordination does suggest a lack of aggressive competition among these firms. Nonetheless, the ability for an industry's leaders to limit competition amongst themselves makes each of their challenges more predictable and benefits each established player in the industry (though probably not equally). The practice reinforces the conservative and predictable goals of the

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[207] *See* Jeff Lindsay, *Don't Overlook the Power of Defensive Publications*, INNOVATION EDGE (Feb. 12, 2010), http://innovationedge.com/2010/02/12/publications.

[208] *C.f.* DAN L. BURK & MARK A. LEMLEY, THE PATENT CRISIS AND HOW THE COURTS CAN SOLVE IT 123 (2009) (objecting to the very effectiveness of power in foundational patents by suggesting a limitation on such patents, stating that "it would be unwise to give the first person to think of an idea the exclusive right to control all implementations of the idea").

[209] 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 n.6 (D. Del. 1998) (using the term "packet thicket").

[210] Lisa DiCarlo, *IBM's Path from Invention to Income*, FORBES (Aug. 7, 2003, 12:00 PM), 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.").

established firm to have established competition stemming from a predictable stable of firms.

¶107 Given the many benefits of the patent thicket, a firm must be 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.[211] "[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."[212] The purpose is simple: published research serves as 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 that patents would provide.

¶108 This strategy has an internal positive effect of promoting scholarship and encouraging the culture of disruptive innovation that academic publication inherently spurs.[213] It may have a second positive benefit of encouraging innovation, since the work of non-patented research would still have an organizational value rather than being filed away 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. Following the publication, any new patent applications will need to extend the art that much further.[214]

¶109 The obvious drawback to this strategy results from undervaluing the publicly disclosed research, creating a risk that a firm is giving away innovations that could prove to be fundamental. Again, this is a risk that industry will only recognize in hindsight, and is further confounded because it may well be that the public disclosure was necessary for success. The institutional challenge is to recognize that the long-term benefit will outweigh the short-term conservative view of such research.

¶110 Trade secrets follow a similar path of acquisition and dissemination as that of patents. Trade secret laws protect information that derives value from being generally unknown and not readily discoverable, provided that a company make reasonable efforts to protect the secrecy of the information.[215] Proper protection of trade secrets requires

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[211] Lindsay, *supra* note 207 ("IBM, one of the world's leaders in extracting value from its patent estate, publishes about half of all its invention disclosures. . . . They realized that [certain] 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.") (citing Richard Poynder, *On the Defensive About Invention*, RICHARD POYNDER INDEP. JOURNALIST (Sept. 25, 2001), http://www.richardpoynder.co.uk/On%20the%20defensive.htm).

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

[213] *Id.* at 177 ("[F]irms 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.").

[214] *Id.* ("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.").

[215] Uniform Trade Secrets Act § 1(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 not 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.").

careful protection of documents, drawings, and other information, along with good protocols for managing personnel.

¶111 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, to develop collaborative problem solving, and to otherwise utilize its trade secrets in an innovative manner.

¶112 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 a more broadly constituted development team. An additional benefit is that creative teams can be encouraged to share, collaborate, and cross-fertilize information because a strong trade-secret culture will keep trade secrets and experimentation information located within the development team.

¶113 In traditional capital investment, an investor purchases stock in the company and may also take a security interest in the capital assets of the company including the company's patents, trademarks, and copyrights. This helps minimize the risk that those assets will be transferred to another party and the investment made worthless, but neither the stock purchase nor security interest provides a strategy for growth. In the meme-based approach to investor security, an 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. At the same time, the investor and enterprise must develop ongoing financial incentives for each other and for the inventors to promote exploitation of the meme into an ever-increasing array of products and services, provided only that each new expansion reinforce the central meme and further the disruptive transformation at the heart of the enterprise.

2. Mediating the Relationships: Creating Affinity and Valuing Social Relevance

¶114 The investment strategy must explicitly incorporate the underlying meme, so the growth strategy must focus beyond patents and trade secrets from the very beginning. From a capital investment standpoint, enterprises can utilize early investments in trademarks and develop creative use of identity rights.[216] Trademarks and publicity rights focus on the source of goods or services, protecting the public from confusion regarding the source.[217] This protection has expanded to protect producers of goods and services, creating a property-like right in these interests.[218] Trademarks and identity

[216] The term "identity rights" encompasses the traditional U.S. right of publicity as well as more general unfair competitions laws embodied in § 43(a) of the Lanham Act. *See, e.g.*, 15 U.S.C. § 1125 (2006) (protecting from false claims of endorsement or other acts which may mislead the public regarding the association of a person with a product); 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).

[217] *E.g.*, Lanham Act, 15 U.S.C. §§ 1051–1141n.

[218] *See, e.g.*, *id.* at § 1125(c)(1) (protecting against the dilution of a famous mark from being used without the authorization of the rights owner "at any time after the owner's mark has become famous, commences use of a mark or trade name in commerce that is likely to cause dilution by blurring or dilution by tarnishment of the famous mark").

rights are valuable and are the rights most capably utilized 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.
>
> . . . [Intellectual property] 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[219]

¶115 Trademarks and identity rights can be used to generate goodwill for a company. By associating the marks with positive attributes of the product and attributes important to the consumer, the firm creates a positive impression of the product and the company.[220] As long as the impression is not palpably false, the public will begin to associate positive attributes with the brand. On U.S. television (as with many other nations), images of sexual prowess and satisfaction are often tied to products as diverse as hair lotion and bubble gum.

¶116 Brand image often starts out closely associated with a particular product.[221] As quality and reputation grow, however, that goodwill can be leveraged from the initial product to related products and product lines. The public today has come to expect that companies are highly diverse. The goodwill and trademark recognition for one product will often translate to additional goods and services.

¶117 Virtually every product or service a consumer selects informs that person's self-image.[222] Innovation, of course, has a certain inherent social relevance. Beyond the person's association with innovation, however, the business must understand the lifestyle choice of their potential customers. The company must 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 greatly enhances the social incentives to adopt rather than reject the disruptive innovations at the heart of the new enterprise.

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[219] *Why Is Intellectual Property Crucial for Marketing the Products or Services of Your SME?*, WORLD INTELL. PROP. ORG., http://www.wipo.int/sme/en/ip_business/marketing/marketing.htm (last visited May 31, 2012).

[220] *See* Kristin Tillotson & Bill Ward, *A Matter of Choice*, STAR TRIBUNE, Sept. 8, 2011, at E1, 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.").

[221] The association may be as loose as a word association. GARON, *supra* note 33, at 192 ("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.").

[222] Tillotson & Ward, *supra* note 220.

¶118 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,[223] Wally Amos of the Famous Amos cookie retailer,[224] or Paul Newman, who created the national food company, Newman's Own, to generate for-profit revenue to reinvest in nonprofit activities.[225]

¶119 Generally speaking, capital start-up companies do not use publicity rights to gain market share, but strategic alliances between celebrities and owners can lower the cost of launching a company, create instant recognition, and change the public perception of a brand. Like patents and trademarks, the selection of a celebrity or spokesperson with whom to brand a new meme becomes a critical, defining choice. Bill Gates and Steve Jobs each personified the brand proposition of their companies, Microsoft and Apple, respectively. Jobs, in particular, became iconic for Apple when he returned to the floundering company in 1994, refocusing Apple on its design-centric roots and emphasizing connecting computers to one another.[226]

¶120 For an innovator of a certain type, the investment strategy may be best if tied to a person rather than the company. In music, for example, record companies are experimenting with the "360 deal," whereby a company bankrolls an artist in exchange for a revenue stream from all activities.[227] The opportunity in a 360 deal is that it aligns incentives of the inventor and investor, creating a complementary financial incentive for both parties. At the same time, however, real concerns of overreaching exist regarding whether the investor—like the record label—offers minimal additional inducement while demanding a portion of revenue streams that it has not financed.[228]

¶121 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 exchanged for specific rights—investments which may not necessarily be

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[223] *History: Colonel Harland Sanders*, KFC, http://www.kfc.com/about/pdf/colonel.pdf (last visited May 31, 2012).

[224] *The* Famous Amos *Cookie Story*, FAMOUS AMOS, http://www.famous-amos.com/About.aspx (last visited May 31, 2012).

[225] *See We Remember the Life & Legacy of Our Founder*, NEWMAN'S OWN, http://www.newmansown.com/paulnewman.aspx (last visited May 31, 2012) ("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.").

[226] *See, e.g.*, Gary Wolf, *Steve Jobs: The Next Insanely Great Thing*, WIRED (Feb. 1996), http://www.wired.com/wired/archive//4.02/jobs.html.

[227] Jeff Leeds, *The New Deal: Band as Brand*, N.Y. TIMES, Nov. 11, 2007, at A1, A9 ("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.") (footnote omitted).

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

made at the outset of the transaction. Offering $1 million for everything does not have the same cognitive effect as offering $500,000 for development rights on computers and an additional $500,000 on mobile devices. The latter strategy not only motivates the inventor to push into the second field, but would 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, helps an enterprise expand its base to develop a platform for economic growth. This also helps reinforce the meme underlying the disruptive innovation and creates more avenues to retell the story.

¶122 Copyright also provides a powerful tool for creating ownership of rights. Copyright is all about telling stories. Copyright protects the expression of an idea,[229] not the underlying idea itself.[230] Copyright protection extends to works such as drawings, software, literary works, audiovisual works, and other expression.[231] While copyright has its primary impact in the creative industries, it also plays an important role in the ownership of intellectual property assets for non-media companies. Photographs in catalogs, designs, and drawings used by a company, the written materials it uses to solicit investors and to sell products all have elements protected by copyright.

¶123 One simple strategy for gaining meme ownership is to underwrite the publication of a book by the corporate entrepreneur regarding the importance of one's 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.

¶124 The book project has a second benefit, since —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, and subjecting it to reviews and public comment 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.

¶125 A variation on book publication is to underwrite a conference dedicated to development of the meme and the community behind the meme. Provided that the conference includes a journal or other publication, it has the same attributes of meme generation, narrative control, cult encouragement, copyright ownership, and trademark management as the publication of a book. By assuring that 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 challenges the notion underlying the meme—for better or worse.

3. Lateral Analysis to Explore New Markets

¶126 Edward de Bono coined the term "lateral thinking" in 1970 to suggest a way of problem solving that involved challenging existing paradigms.[232] While the notions of

[229] 17 U.S.C. § 102(a) (2006).

[230] *Id.* § 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.").

[231] *Id.* § 102(a).

[232] *See generally* Edward de Bono, The Use of Lateral Thinking (1971) (discussing the idea of thinking by indirect analogy with an emphasis on creativity); Tony Proctor, Creative Problem Solving for Managers:

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.

¶127 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, kindergarten classrooms, Mexican businessmen, and active seniors have little in common, yet they share a common need for tracking devices in case of accident or abduction.[233] These markets seem quite dissimilar, but the meme and the narrative are not.[234] Moreover, the actual consumer is likely a member of the upper-middle-class or an affluent adult.[235] An adult parent would ultimately purchase the product rather than the children or even the seniors. So the device must address the concerns of a single type of purchaser under a common narrative, but marketed to address three very distinct uses.

¶128 The purchaser and the target of the product may be different, but they share the common meme, which is highly socially relevant to the purchase decision.[236] When the purchaser and the focus of a product are different, the consumer represents a "split audience."[237] The company must address the split within the audience when shaping the story underlying the social relevance of such a product.

¶129 Split audiences represent another aspect of the lateral thinking approach to development. Successful businesses will tie the lateral thinking approach to the contractual structures of the investment relationship. At a minimum, 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.

¶130 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

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Developing Skills for Decision Making and Innovation 145–48 (3d ed. 2010) ("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 the [*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 (2007) (discussing analogous thinking, listing the examples "Velcro and weeds, steam engines and tea kettles").

[233] *See* Nick Miroff, *Amid Abductions, Mexicans Turn to Chip Implants*, WASH. POST, Aug. 22, 2011, at A6.

[234] 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.

[235] *See* GARON, *supra* note 33.

[236] *See id.* at 63 ("To effectively design products, the market segments and the social relevance should be incorporated into the product design itself.").

[237] Id.

share in the next level of growth. This way, both the investor and the inventor are continually reasserting their willingness to go forward and providing the resources to do so.

IV. STRATEGIES TO MAXIMIZE PARTICIPATION FOR THE ENTRENCHED

¶131 Despite advantages available to start-up companies, 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 remain the same for established companies as for start-ups. These efforts are inevitably more difficult because not only do they involve the creation of new relationships and challenging forays into new markets, but they come at the cost of deemphasizing the company's established relationships and existing markets. "An organization's *capabilities* become its *disabilities* when disruption is afoot."[238] The natural unwillingness to move past existing success in the face of an uncertain future often triggers the ultimate failure. "[T]he very skills that propel an organization to succeed in sustaining circumstances systematically bungle the best ideas for disruptive growth."[239]

¶132 Established market leaders able to look past the short-term needs of their customers and stockholders will engage in competitive strategies in the marketplace of disruptive innovation. Christensen focuses his work on the management of disruption for established firms.[240] 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.[241] Proctor and Gamble uses a variation of this with groups identified within business units, management training, procedural manuals, and demonstration projects.[242]

¶133 Like lateral thinking and the emphasis on social relevance, companies must reach out to find the best fit for their innovations, since normal customer demand is unlikely to drive the companies' decisions.[243] 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.

¶134 An alternative model for improving lateral thinking emphasizes what Richard Florida described as the "no-caller workplace" in his discussion of "soft control."[244] "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."[245] For employees, particularly creative people and change agents within the organization,

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[238] CHRISTENSEN & RAYNOR, *supra* note 27, at 177.
[239] Id.
[240] CHRISTENSEN, *supra* note 6, at 105–07.
[241] Brown & Anthony, *supra* note 41, at 67.
[242] Id.
[243] *See id.* at 71 (stating that Proctor and Gamble promotes a portfolio approach to innovations, "deploy[ing] portfolio-optimization tools that help managers identify and kill the least-promising programs and nurture the best bets").
[244] FLORIDA, *supra* note 194, at 134.
[245] *Id.* at 134.

"challenge and responsibility are what matter most to them in their jobs."[246] 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.

¶135 To avoid entrenchment, Christensen emphasizes placing these groups in autonomous positions.[247] To achieve new results, business needs new goals and new organizations. Business can achieve success "only by setting up new business units with new cost structures."[248] It requires ongoing reinforcement of the values of disruptive innovation and swimming against the tide. Proctor and Gamble developed its disruptive innovation strategy by training its employees in methods to think laterally and explore new markets.[249] The training can help inoculate those involved in innovation from the infectious groupthink or internalized values that exist throughout the rest of the enterprise.[250] The internalized values are particularly difficult to address because they are unstated and implicit in the organizational ethos. The unstated "values often represent constraints—they define what the organization cannot do."[251] The values or corporate cultural norms that sustain a company can often make the company 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.

¶136 For many established firms and independent investors, success will come through joint ventures. Such joint ventures pair start-up firms with established companies or operate as independent projects from within established industry among the industry's entrenched players.[252] Joint ventures will necessarily have a new internal culture because no venturer can successfully impose its pre-existing culture on the venture unchanged.[253]

¶137 Joint ventures also provide leverage for start-up investors. 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."[254] By partnering, the

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[246] Id.

[247] *See* CHRISTENSEN, *supra* note 6, at 108 ("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.").

[248] CHRISTENSEN & RAYNOR, *supra* note 27, at 198.

[249] Brown & Anthony, *supra* note 41, at 67 ("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.").

[250] CHRISTENSEN, *supra* note 6, at 164 ("An organization's values are the standards by which employees make prioritization decisions—by which they judge whether an order is attractive or unattractive; whether a customer is more important or less important; whether an idea for a new product is attractive or marginal; and so on.").

[251] CHRISTENSEN & RAYNOR, *supra* note 27, at 186.

[252] 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, 6:23 AM), http://www.bloomberg.com/news/2011-08-31/sony-toshiba-hitachi-to-merge-lcd-businesses-form-state-backed-venture.html.

[253] 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.

[254] Gilson, *supra* note 185, at 887. Gilson explains that "[i]n 2006, the four largest U.S. corporate research and development (R&D) programs alone invested more than five times what the entire U.S.

culture of a start-up company can be combined with the resources of an industry leader to maximize opportunities to manage the profound disruptive innovation.

¶138 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.[255] The joint venture weans the established enterprise away from its prior relationships and towards the needs of the venture. By disrupting the earlier relationships, the joint venture refocuses on the demands inherent in new markets instead of the older, shrinking marketplace. For venture capital investors, these joint ventures may provide benefits similar to those of start-ups, though the parties must explicitly address the additional risk that the survival instinct of the parent firm will undermine the venture.[256]

¶139 To manage this survival instinct threat from an established company, a joint venture agreement can specify conditions upon which the joint venture will terminate and vest the ownership of the incipient technology with the investor rather than the incumbent. Essentially, such a provision provides that the patents, know-how (protected by trade secrets), copyrighted materials, and trademarks shall be subject to valuation and provide the parties to the venture with a right to acquire ownership of these intellectual property right. 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.[257] The agreement between Verizon and Vodaphone provides an alternative option:

> If in 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.[258]

¶140 Alternatively, the parties can elect to use baseball arbitration utilizing a valuation expert.[259] In baseball arbitration, each side submits a single offer to the arbitrator, who must choose the more reasonable number, which encourages the parties to make realistic valuations.[260]

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venture capital industry put into seed, early-stage, and startup investments, the areas where the focus on innovation is most intense." *Id.*

[255] *See id.* at 909–10.

[256] *See* Gompers & Lerner, *supra* note 203, at 472 ("[Contract] covenants represent a less visible way to make price adjustments than explicit modifications of the split in capital gains.").

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

[258] *Id.* at 365.

[259] *See* Sharfman, *supra* note 257, at 366; David E. Brown, Jr. et al., *Strategic Alliances: Why, How, and What to Watch For*, 3 N.C. BANKING INST. 57, 99 (1999).

[260] Brown et al., *supra* note 259, at 99.

¶141 Joint ventures also have challenges regarding changes in ownership and buy-out provisions.[261] Buy-out provisions, in particular, benefit the larger company, which likely has more resources to value or stymie the joint venture. But there are alternatives:

> 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.[262]

¶142 These techniques are critical for the venture capital company to assure that it does not lose its negotiating advantages in the dissolution. Even more potent (though more difficult to negotiate) is for the venture capital firm to acquire specific assets or technologies on either an exclusive or non-exclusive basis.

¶143 Although 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 strategy to retain some of the venture's value is to establish that if the joint venture fails its essential purpose, it is not wound-up, but rather turned into a holding company for whatever intellectual property assets it developed. All remaining owners would then have nonexclusive rights to exploit the intellectual property. The race would once again be on, but for all the reasons previously outlined, the advantage returns to the venture capital partner.

¶144 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 is 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.

¶145 Managing the exit strategy between a start-up and an established enterprise is not the only aspect of the partnership that can help create alignment to embrace 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 toward innovation.

¶146 Many of the techniques that investors can bring to bear on new ventures also apply to joint ventures. For example, the use of stepped investment deals to create incentives for each lateral expansion of the innovation into a new market, product unit, or division helps promote internal strategies to seek these opportunities. In addition, the emphasis on social relevance builds an interest in innovation for the existing client base, if the firm can carefully identify and nurture those attributes that motivate the existing customers.

¶147 For others, evangelizing the innovations are critical. In this regard, the creation of a *team*[263] approach helps to foster a school of thought for supporting innovations. These

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[261] *See 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.").

[262] Id.

[263] The word "cult" is too pejorative to use within the enterprise.

may include strategies for both employees and customers that helps establish the keystone memes and helps propel the narrative. Moreover, an emphasis on books, publications, and conferences help to position the enterprise and build a culture that promotes the narrative.

¶148 Each of these approaches can be advanced within larger, established enterprises. The growth may have a social cost, but as the team supporting the initiative grows, there will be a point when the values and ethos of the company—its existing narrative—will suddenly flip. At this 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.

V. CONCLUSION

¶149 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 to rewrite the dominant narrative. The investor must recognize the social relevance of the change, know how to disintermediate the existing customer and vendor relationships, and predict how to remediate these relationships in light of the new innovation.

¶150 Having identified an opportunity, the investor is in a position to structure financial opportunities to invest in the potential of a new technology or innovation. The investor should utilize deal structures that maximize the incentives to embrace the new meme, recognizing that the cost may include the loss of existing customers. Through stepped, comprehensive financing agreements, broadly based intellectual property security agreements, and incentive structures promoting trademark growth and identity rights exploitation, the investor can maximize the potential for success and fully take advantage of success if it does come. Similarly, when working through joint ventures or within established enterprises, teams involved in disruptive innovation can use these techniques to better prepare their firms for the change that is coming.

¶151 The globalization trend, expansion of networks, increased mobility of technology, and networking of objects through near field 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 four billion people at the bottom half of the pyramid has become too immediate to ignore.

¶152 In the context of this transcendent change, those inventors, investors, and enterprises that can understand the pattern, 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 do not guarantee success, but hopefully they increase the likelihood that success will come. Together, inventors, investors, and enterprises can better prepare for the disruption that has only begun.

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