

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

Jessica Abrams (Dr. Dennis Gross Skincare), Carmela Deang (L'Oreal),
Danielle Fanslau (Flavor & Fragrance Specialties), Hilary Feldman (The Estee Lauder
Companies), Meredith Gray (The Estée Lauder Companies), Nicole Handy (LVMH),
Sorah Kim (L'Oréal), Jackie Lazor (Google), Therese Lizardo (Charlotte Tilbury),
Andrea Muguerza (L'Oreal)

Cosmetics and Fragrance Marketing and Management Master's Degree Program

School of Graduate Studies

Fashion Institute of Technology

State University of New York

This 2016 Capstone research paper is the work of graduate students, and any reproduction or use of this material requires written permission from the FIT CFMM Master's Degree Program.

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

Abstract

The ability to be innovative is paramount, especially for corporations trying to curb cannibalism in their product offerings while creating a steady stream of newness to drive growth. In this paper, we researched how large-scale organizations who are seeking newness to drive growth can reconcile the desire to be on the cutting edge with the reality that truly disruptive innovation is incredibly rare and nearly impossible to achieve. In addition, we attempt to answer the question of how organizations can prepare themselves for the future of innovation, using lessons of both success and failure from the past and present. Three emerging macro trends — the Democratization of Innovation, Collaborative Consumption, and the Linked Generation — will give rise to the three key values of *Access*, *Trust*, and *Connection*, providing the foundation upon which the future of innovation will be built. Organizations will need to evolve from the old IP, Intellectual Property, to the new IP, Innovation Partnerships, and learn to harness their innovative power through the adoption of an Innovation Ecosystem.

Keywords: Innovation, Ecosystem, Innovation Partnerships, Democratization of Innovation, Trust Economy, Gen Z

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

Introduction

The ability to be innovative is paramount, especially for corporations trying to curb cannibalism in their product offerings while creating a steady stream of newness to drive growth. There is a staggering amount of difference in how innovation is defined — from the foremost experts in science and technology to those in academia who have devoted their careers to analyzing the concept. The fact is, there is no unequivocal consensus — it all depends on the context. In this paper, we researched how large-scale organizations who are seeking newness to drive growth can reconcile their desire to be on the cutting edge with the reality that truly disruptive innovation is incredibly rare and nearly impossible to achieve. In addition, we attempt to answer the question of how organizations can prepare themselves for the future of innovation, using lessons of both success and failure from the past and present. Our research uncovers how today's increasingly competitive global economy creates a dynamic in which it will soon be unrealistic to believe that innovation can solely happen within an organization's own four walls (Keeley, 2016).

Many organizations across industries are currently functioning in a bubble of self-preservation. As a means to be innovative, these organizations focus their efforts on investing in research and development. In 2014, U.S. companies spent about \$465 billion on R&D in an attempt at growth via development of new products. This figure is equivalent to about 2.7 percent of the U.S. GDP (CNBC, 2014). Furthermore, the assumption that innovation can be cultivated simply via the act of creating job titles geared toward it has become increasingly prevalent. Organizations declare that they want to be innovative as part of their overall strategy, but this is no guarantee that innovation will then follow. In order to go beyond traditional out-of-the-box thinking, stakeholders must be willing to reach outside the organization (and, in some

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

cases, even outside the industry) in order to source measurable and meaningful innovative solutions.

Consumers are already over-stimulated, anxious, and distrustful, which means that companies chasing innovation must be willing to take a step back and re-evaluate their strategies. Research has shown that, in large company, a culture of “fear or failure” inhibits speed and risk-taking, which, in turn, inhibits innovation (Blank, 2015). Organizations must learn to embrace *fearless* failure and become willing to forfeit some control over the creation process in order to allow innovation to happen. This will mean seeking help from external partners.

Background

The term “innovation,” as we understand it today, is associated with science, technology, and industry. This meaning first began to take root in the 19th century, aligning with the progress made by the Industrial Revolution (Green, 2013). At that time, however, *invention* was the more valuable and desired concept. Centuries prior, the idea of innovation was seen as heretical and even criminal — newness was dangerous, not desired. But it is Austrian economist Joseph Schumpeter who is credited as giving meaning to the concept of innovation as we know it today. In 1939, he differentiated *invention* and *innovation* as follows:

“Invention is an act of intellectual creativity undertaken without any thought given to its possible economic import, while innovation happens when firms figure out how to craft inventions into constructive changes in their business model” (Green, 2013).

According to Canadian historian Benoît Godin, this definition shifted over time to also include “bringing to market a new technology” (Godin, 2008). In his view, innovation was thought of as

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

a packaged, predictable research product. And it was a result of government funding for research and development that led to this understanding (Green, 2013).

Another important figure in the innovation definition debate is Harvard Business School professor and management expert Clayton Christensen. He invented the theory of “disruptive innovation” in his 1997 book, *The Innovator’s Dilemma*, in which he used the term to describe innovations that create new markets by discovering new categories of customers (Christensen, 1997). This is achieved in part by harnessing new technologies, but also by developing new business models that exploit old technologies in new ways. According to Christensen, disruption displaces an existing market, industry, or technology, and produces something new, more efficient, and/or worthwhile. A perfect modern-day example of disruptive innovation is Uber. A car service is not a new invention, but it is a new business model that exploits existing technology in an entirely revolutionary way, and it is on its way to displacing several industries, from traditional taxis to vehicle ownership. For innovation to be disruptive, it is at once destructive and creative.

Through innovation’s historic lens, rather than looking to define it, one might gain more insight by categorizing it. The following chart is our representation of innovation in terms of degrees, each serving as a unique point of origin.

Degree of Innovation	Definition	Example
Blue Sky	To introduce an entirely new concept, process, product or technology	The personal computer: Irrevocably revolutionized the way we live and work
Accidental	The surprise creation of newness without intent, or in pursuit of other goals	Teflon: Invented by a chemist at DuPont who was actually trying to create a more effective refrigerant
Solution-Oriented	Problem-solving within an existing framework and/or to ease a particular pain point	Warby Parker: Solves the problem of unaffordable eyewear and industry monopoly, while also doing

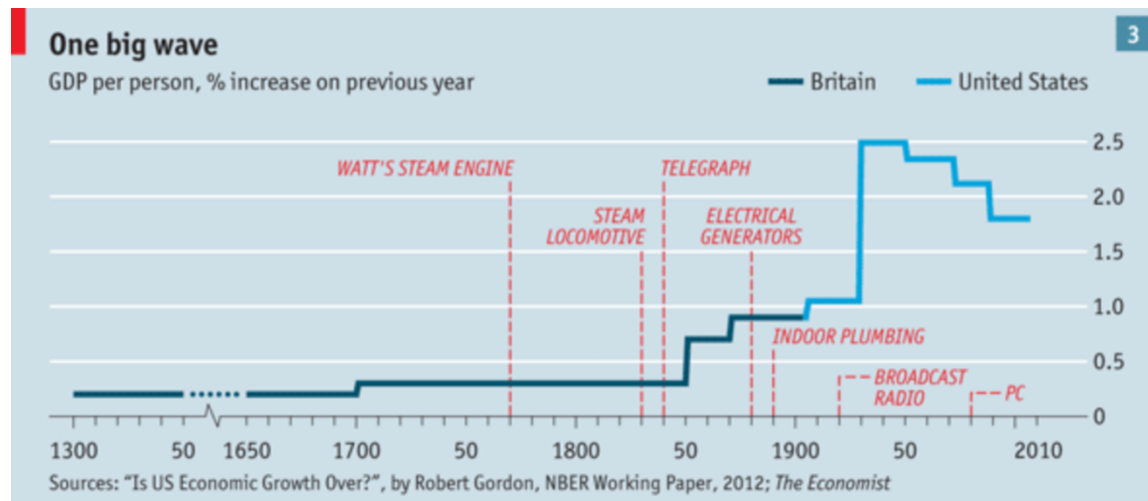
PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

		social good
Iterative	To improve upon something that already exists, whether in process or product	iWatch: Leverages the already-created and designed technology of the Apple iPhone in a wearable device

Since the invention and mainstream adoption of the personal computer, the world has seen a slowdown of economic output generating innovation. According to Tyler Cowen, an economist at George Mason University, America is experiencing a “Great Stagnation” as it relates to invention and innovation. Economists divide growth into two types: extensive and intensive. Extensive involves adding more and/or better labor, capital, and resources. Intensive, on the other hand, is characterized as the kind of growth that allows for ongoing improvement in income and welfare, and that enables an economy to grow, even if its population is decreasing (*The Economist*, 2013). This is typically measured in growth in output per person in a particular country. For example, in mid-20th century America, innovation output per person grew at 2.5% per year; post World War II, it grew to an all-time high of 3%. But by the 1970s — the same time as the invention of the personal computer, it is worth noting — output fell backward to 2%. In the 2000s it decreased below 1% and has yet to recover.

Northwestern University economist Robert Gordon believes the most fundamental inventions have already been made. This includes, he says, the ability to use power on a large scale, to keep houses comfortable regardless of outside temperature, to get from any A to any B, and to talk to anyone you need to (*The Economist*, 2013). This is not to say innovation is dead, but he believes future output will not change the world the way the aforementioned examples have. The below graph highlights big-impact innovations plotted on calendar years versus real output per person. The decrease in output since the release of the PC is striking.

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION



Even more striking is the value and importance that modern society places on the concept of innovation — which directly contradicts our actual output. Since 1975, the share of the American economy involved in research and development has expanded by one third. This number increases when we consider the amount of job functions relating to innovation — from Chief Innovation Officer positions to entire departments re-branding from “Research & Development” to “Research & Innovation.” According to a survey conducted by Capgemini Consulting (Brankovic, Duppen, Klokgieters, & Miller, 2012), 33% of companies reported having a Chief Innovation Officer position in 2011. Just one year later, that number increased to 43%. However, the same study also revealed that 58% of those companies reported not having an innovation strategy to support the position. Additionally, a search on job networking site LinkedIn for positions with the word “innovation” in the title yields 2.9 million results. It is clear that these measures are an attempt to force innovation from within.

In contrast, according to economists Pierre Zoulay of MIT and Benjamin Jones of Northwestern University, despite the boom of employees involved in research and development for a living, they are actually doing less good — meaning, according to their research, in 1950

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

the average American R&D worker contributed almost seven times more to “total factor productivity” (the researchers’ metric for contribution of technology and innovation to growth) than an R&D worker in 2000 did (The Economist, 2013).

Corporations have also tried to prove their innovation capabilities through the use of patents. According to the World Intellectual Patent Organization, the number of international patent applications filed in 2015 grew by 1.7% to 218,000, setting a new annual record. While patents can serve to represent new technologies and/or scientific discoveries, this is further proof that organizations are more concerned about ownership than they have ever been before. In direct opposition to this need to protect intellectual property, NASA has taken what may be considered the extreme position of understanding the need for patent-sharing, and the Administration opened its patents last year, allowing anyone the ability to experiment with NASA-owned intellectual property. We believe that a move such as this, by a leading science and technology organization, should spur other organizations to experiment with opening pieces of their IP as a new method of driving innovation.

Another present-day method many companies employ to facilitate innovation is acquisition. In 2015, there were 85 acquisitions within the beauty industry alone, a 37% increase over the prior year (Davis & Attaie, 2015). While this can be a successful strategy to grow a business, it is not a form of innovation. The mere act of acquisition takes something inherently external and makes it internal. As such, organizations lose diversity of thought and knowledge, rendering any possible future innovation from the result of acquisition minimal.

These attempts at innovation, primarily within the beauty industry, reveal a certain “product myopia.” That is, companies are so focused on innovation specifically through product, they miss the bigger picture and more impactful opportunities to improve the business. In their

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

Harvard Business Review article “Innovation Isn’t Just About New Products,” authors Vijay Govindarajan and Jatin Desai state that to achieve sustainable growth, companies must better integrate product innovation with business model, process, and service innovations (Govindarajan & Desai, 2013). The new product itself cannot be the end goal — organizations must consider and declare their overall innovation intent.

For example, consider the beauty industry’s struggle with foundation shades. Companies frequently try to prove their mettle through expanded shade ranges that cater to difficult-to-match skin tones, and yet the consumer is frequently still left dissatisfied. As Jorge Garcia, Executive Director of Innovation and R&D at the Estée Lauder Companies puts it:

“It’s not that we don’t have the shades. Consumers feel that they don’t have the right shade because the color of their skin has been neglected. But some brands will say they have more than what sells, because the actual number of consumers that buy the product is not as much as others, so the shade doesn’t sell and gets discontinued. So more than having the actual product, we need a new business model in which financially it works for both the company and the consumer. We assume it’s a product innovation issue, but it’s really a business need” (Garcia, 2016).

As Garcia sees it, a truly disruptive chance for innovation in this context lies in a process or service change. Unfortunately, organizational emphasis on product innovation — product myopia — interferes with that opportunity.

With all the effort we expend chasing innovation, it would appear we are focusing on the wrong outcomes. Stepping outside the fields of economics and technology, some of the world’s

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

foremost problem-solvers and creative thinkers say innovation itself should not be the goal. In fact, as Larry Keeley, president and co-founder of Doblin, a global innovation consulting firm puts it, “Innovation in the 21st century is less about the primary invention of something new and more about the elegant integration of things that are known.” Our increasing obsession with innovation is actually keeping us further from the goal.

Whether in business, books, or as a standard technology-fueled buzzword, “innovation” is an overused word. A search for the term on Amazon.com, just among books about technology, returns 4,660 titles. And despite the aforementioned drop in actual per person innovation output, the mere mention of the word in the global lexicon has skyrocketed. In his book *A Curious Mind: The Secret to a Bigger Life*, Hollywood producer Brian Grazer points out that twenty years ago, in 1995, “innovation” was mentioned 88 times a day in the U.S. media. Just five years later, mentions soared to 260 a day. By 2010, innovation showed up 660 times a day (Grazer & Fishman, 2015).

As the old adage goes, “actions speak louder than words.” And yet we are screaming “innovation” at the tops of our lungs without much concrete proof that it is actually happening. What is needed, then, is to reframe the problem. The problem, Grazer believes, is that we tend to forsake curiosity in favor of innovation. But it is curiosity, he argues, that sparks creativity; it is the technique that gets to innovation. Curiosity is more accessible, more democratic, easier to see, and easier to do than its innovative and creative counterparts (Grazer & Fishman, 2015). The bubble of self-preservation in which we currently operate does not equal creation, nor innovation. Industries’ obsession with internal innovation has resulted in a backward approach, in which we are trying to make innovation happen at the very beginning. Innovation is the output, and what we have lost is the input: curiosity.

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

Could it be, though, that we have access to so much knowledge and information today that we have lost the ability to be truly curious? According to Northwestern University economist and professor Benjamin Jones, “if knowledge accumulates as technology advances, then successive generations of innovators may face an increasing educational burden” (Jones, 2008). He further posits that the amount of education required to keep up with today’s flow of knowledge forces potential innovators to narrow their fields of expertise. This thereby reduces an individual’s “innovative capacities,” forcing greater reliance on teamwork to effectively broaden a scope of understanding (Jones, 2008). And, because fields of expertise have become increasingly specialized, it has had a definitive impact on the global economy — which explains why, as mentioned earlier, that despite the increase in R&D investment and resources, the output has actually been less productive. Through this lens, one could argue that not only are companies operating in a self-preservation bubble, but today’s leading visionaries and inventors are, as well, due to their truncated skill sets.

Adding further pressure on the bubble of self-preservation are three rising macro trends:

The Democratization of Innovation, Collaborative Consumption, and The Linked Generation.

The Democratization of Innovation. This macro trend is based on a concept originally developed by Dr. Eric von Hippel, an economist and professor at MIT’s Sloan School of Management. As he puts it, “The tools for designing high-quality innovations are getting so cheap and so ubiquitous that individuals can innovate for themselves at a steadily higher quality and at a steadily decreasing cost....As a result, even hobbyist users find they can use them to design new products and services” (Burkhardt, 2008). In the same way that anyone can become a makeup artist through watching YouTube videos or take over as his or her own accountant via

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

Turbo Tax, nearly anyone with an internet connection can become an innovator. This concept was especially prescient in 2008, when, just six years later, the concept of the “Internet of Things” — defined by *Forbes* as the practice of connecting any device with an on and off switch to the Internet (and/or to each other) — exploded in 2014 (Morgan, 2014).

This consumerization of technology has empowered average users to find solutions to problems once restricted to those in the upper echelons of science and technology. Take, for example, the spate of amateur cartographers who have been tracking and mapping the conflict in Syria, creating some of the most accurate and up-to-date reports of the battles in its civil war. Their work has challenged, and, in some cases, even overtaken traditional media reporting (Cérez & O'Brien, 2016). Another example is Facebook’s “bug bounty” program, which offers monetary rewards to anyone who spots issues with any of the company’s applications or software. Recently a 10-year-old boy in Finland became the youngest person ever to spot a problem and receive the bounty, after discovering a bug that allowed comments to be deleted on Instagram (Woolf, 2016). For context, even Mark Zuckerberg himself did not begin to learn programming until age 11 — and with the help of a tutor.

Another important aspect of the Democratization of Innovation is that individuals have become creators. Joichi Ito, the director of MIT’s Media Lab, calls this “permissionless innovation.” Rather than an erudite designer designing for the mass customer, the designer becomes a participant in a system in which anyone is welcome to join (BCG Perspectives by The Boston Consulting Group, 2016). The proliferation of the Fab Foundation — also known as Fab Labs — around the world further illustrates this point. The organization originally emerged from MIT’s Center for Bits & Atoms Fab Lab Program. Its mission is as follows:

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

“[To] provide access to the tools, the knowledge and the financial means to educate, innovate and invent using technology and digital fabrication to allow anyone to make (almost) anything, and thereby creating opportunities to improve lives and livelihoods around the world” (Fab Foundation, 2015).”

The takeaway is that the Democratization of Innovation has granted **access** to all.

Collaborative Consumption. This macro trend refers to the “uberization” of the economy. We currently live in a shared economy which virtually eliminates the need to own even the most fundamental possessions, from cars to clothes to homes. As of 2015, nearly one-quarter of the populations in the U.S., U.K., and Canada engaged in some form of economic sharing (Ufford, 2015). However, an important implication of all of this sharing is that **trust** becomes a highly valued currency. According to Pew Research, only 19% of Millennials believe most people can be trusted, while 31% of Gen X’ers do (Pew Research Center, 2014).

The Democratization of Innovation has a direct impact on Collaborative Consumption. With innovation open to anyone, the need for trust is implicit. The benefit of innovation having previously been restricted to the foremost experts on a particular subject is that it created a natural curation of winning ideas. Now, with the public actively involved in the innovation arena, it requires end users to trust another average person’s insights and determine their validity. This also creates the need for a clear distinction between peer trust and institutional trust. According to author Rachel Botsman, a new world of trust is emerging: one in which trust lies in the hands of individuals, not in the big bellies of institutions (Botsman, 2015). We live in a society where companies and consumers alike are rated on the most basic attributes, meaning that reputation and credibility drive the currency of trust. The future of innovation will depend on

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

the speed of trust — that is, how quickly anyone, from the institution to the individual, can earn the trust of those for whom they are trying to create or problem-solve.

The Linked Generation. This segues into the third key macro trend impacting the future of innovation. According to Robin Albin, Senior Vice President of Conceptual Innovation at Estée Lauder, *innovation* is a thing; *curiosity* is an ideal (Albin, 2016). The future of innovation may rest on this ideal, particularly when one considers the future of the workforce: Gen Z. It is, by its very nature, the most innately curious generation, having more resources to seek out information than any peer group before. Consisting of those born between 1996 and 2010, the cohort is described as more open-minded, practical, and solution-oriented than Millennials (Schlossberg, 2015). Gen Z is also the most diverse and multi-cultural: The mix in the U.S. is 55% Caucasian, 24% Hispanic, 14% African-American, and 4% Asian. By the time the 2020 Census is conducted, more than half of all U.S. children are expected to be part of a minority race or ethnic group. At that point, Gen Z is estimated to make up one-third of the U.S. population, exceeding Millennials (Ideas in Digital, 2016).

A number of significant events has shaped this generation's approach to work. While Millennials are considered digital natives, Gen Z grew up in a world where the World Wide Web was widespread — and portable. 60% of this connected generation shares knowledge with others online, while 64% contribute content to websites because they enjoy learning new things. 66% believe technology makes them feel as though anything were possible, and 73% are actively connected — checking email, exchanging messages — within an hour of waking up (Wikia, 2013). This serves as a powerful indication that Gen Z possesses innate, substantial collaborative skills.

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

Entrepreneurship is in this generation's DNA. 9/11 was the first memory for many, followed by the Great Recession in 2008. Whereas previous generations have come of age being able to rely on specific life milestones and economic certainties — for example, the assumed ability to retire comfortably with social security — Gen Z has been shaped by severe economic strife. They take nothing for granted — the stability their elders came to expect in days of yore is not the reality of today. As such, Gen Z is self-sufficient and determined to make an impact. A perfect example of this determination is the story of Emily Stutz, a current high school senior who recently decided to crowdsource her college tuition money. Faced with the reality that she could not afford even in-state tuition in her home of Massachusetts, Stutz set up her own GoFundMe page (Rosenberg, 2016). To date, she has made enough to cover tuition for the first two years. However, not content to make the effort all about her, Stutz notes on her page that she hopes to “raise awareness of the skyrocketing costs of college and the huge financial burden placed on students and families.”

Collaboration is also in Gen Z's DNA. As the above example illustrates, Gen Z prefers reality over perfection, and they seek to be part of the process. They value creating their own experiences and being able to do things themselves, but also see the value in working together. In fact, Gen Z is shifting the notion of DIY to DIT: Do It Together. Furthermore, they do not see boundaries, as Barbara Kahn, marketing professor and director of the Jay H. Baker Retailing Center at Wharton, puts it. Gen Z is coming of age at a time when everything is fluid, from work and education to sexuality and gender (Knowledge @ Wharton, 2015).

Gen Z is also learning from the buzzy, economy-defining generation that precedes it. According to Dan Schawbel, the managing partner of Millennial Branding, a New York-based consulting firm, “They've seen millennials suffer under the weight of student loans; they've seen

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

them be underemployed and they've witnessed their delayed adulthood," he says. "[Members of Gen Z] don't want that" (Knowledge @ Wharton, 2015). In other words, they want to be prepared for whatever the world may throw at them. This could involve taking a gap year before college to collect real-life experiences; conversely, it may mean skipping college altogether in favor of jumping right into the workforce to establish credibility. Like their Millennial predecessors, they may be reluctant to commit to one career path, but through their own intrinsic motivation and self-discipline, they can position themselves as assets in a variety of fields. The one thing they will not do is put their lives in someone else's hands.

Fortunately, when it comes to this naturally curious generation shaping the future of the workforce and, thereby, the future of innovation, the outlook is encouraging. Members of Gen Z are predisposed to be resourceful and will utilize their robust networks to help accomplish any task, proving that **connection** is essential. If the most successful innovation stems from a problem or unmet need, Gen Z is virtually guaranteed to be curious enough to find the solution.

Key Findings

If we extract from each of the aforementioned macro trends — the Democratization of Innovation, Collaborative Consumption, and the Linked Generation — their most essential takeaways, we have **Access, Trust, and Connection**. These are the values that will drive the future of innovation, allowing organizations to emerge from their bubbles of self-preservation to collaborate on never-before-seen innovative concepts, while keeping their brand identity and integrity intact.

The notion of fostering open innovation stands in stark contrast to the traditional ownership-oriented approaches adopted by companies in the past. Michael Schrage, a research

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

fellow at the MIT Sloan School Center for Digital Business, supports this idea, projecting that in the future, the key to harnessing innovation will be not be through Intellectual Property, but rather the new “IP”, *Innovation Partnerships* (Schrage, 2014). Both historically and today, enterprises have attempted to manage the perception of their brands by controlling the company they keep — in other words, their physical proximity to other brands — at point of sale. However, in the future, the key strategic *external* partnerships that brands establish — meaning the *collaborative* company they keep — will offer just as much insight, if not more, into a brand’s strength and relevance (Lotman, 2016).

Innovation Ecosystem

Understanding the past and present landscapes of innovation and the resulting organizational pitfalls in trying to achieve it, we have created an *Innovation Ecosystem*, designed for any organization or enterprise desiring to foster new methods of innovation to drive future growth. We have identified the following external players and partners crucial to the success of the Innovation Ecosystem, presented below, to exemplify the synergies, relationships and interdependencies among them. The ideal external partners to fuel the ecosystem are as follows: **1) The Government, 2) The NGO, 3) The City, 4) Academia, 5) The Corporation, and 6) The Individual.**

An organization (or even an individual) who can effectively harness the elements from this ecosystem stands to be more innovative than its internally focused counterparts. These external partnerships will be increasingly imperative to successful, sustainable, and scalable innovation in the future.

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

Innovation Ecosystem: The Government

Government policies and the regulatory framework in which companies form and grow have a direct impact on the process of innovation. According to a report by the World Economic Forum, the government is a key pillar to drive innovation (Kon, 2016). It can effect change to create a social safety net, as well as help to lower barriers to innovation, including: the ease of starting a business; tax incentives; matching private investments; business-friendly regulations, legislation and policies; promoting cross-border collaboration; and facilitating access to basic infrastructure: water, electricity, telecommunications, internet, and transport.

An ideal example of government driving innovation today is in South Korea. Its government provides more backing per capita than any other country in the world. In just the next three years (2016-2018), the Korean government will invest \$3.7 billion into startups through grants and other initiatives (Delacharlerie, 2015). Additionally, Ernst & Young reported that the Korea Ministry of Trade, Industry and Energy will dedicate half of its R&D funding to entrepreneurial businesses by 2017. To stimulate investments in entrepreneurial businesses, the government also holds a fund called the Korea Fund of Funds (KFoF), which provides stable finances to investors. From 2005 to 2010, the KFoF contributed \$1.2 billion to 160 private equity and venture capitalist funds, which resulted in over 1000 small business investments. The effect on these small entrepreneurial startups is significant. Those that received funds experienced an average annual growth of +57.5%, in comparison those that did not receive funding, which grew at just +14.9% (Ernst & Young, 2013).

The Korean government is also consistently on the lookout for new products and goods to export, and has doubled down on the beauty industry in particular in recent years, fiercely protecting and supporting companies and brands via tax breaks, while also funding legal fees for

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

brand protection overseas. This level of investment in local industry has served to catapult Korean beauty, making Seoul the emerging beauty epicenter of the world, with beauty products now one of the country's biggest exports. According to the Korean Pharmaceutical Traders Association, in 2014, the country exported more beauty products than it imported, totaling just over \$1 billion. In the first half of 2015, Korea Customs Service reported the total export value of Korean beauty products to the U.S. specifically to be over \$50 million, growing at more than 60% versus the previous year (Schaefer, 2015). The Export-Import Bank of Korea predicts that this trend will continue to accelerate, with beauty products accounting for more than \$10 billion of the country's exports by 2020-2025 (Lee, 2015).

Sweden provides another powerful example of the type of innovation support government can provide, alleviating burdens placed on individuals. The country is consistently ranked in the top three most innovative countries, according to the Global Innovation Index (Cornell University, INSEAD, and WIPO, 2015). The Swedish government provides free access to education, a monthly childcare allowance, and affordable healthcare, which, as a result, has led to reported lower stress levels and higher levels of happiness. With stress being one of the major obstacles to creativity (Martin, 2012), the output of innovation is not stifled for Swedes.

A prime example of the purpose government can serve in an external innovation partnership is the U.S. government's recent call-to-action for more affordable diapers. Nearly one out of every three families in the U.S. report that they cannot afford to buy diapers when they need them, so the White House began a public dialogue about the issue with discount wholesale website Jet.com, via Twitter (Hirschlag, 2016). In working to understand the problem at hand, Jet.com realized it would need help from a manufacturing partner, and brought in Cuties diapers to explore cost-saving measures. Their solution was to drive down costs through more

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

efficient packaging, rather than compromising the quality of the diapers. Jet.com then worked together with the White House to set up a system enabling nonprofits nationwide to procure these drastically discounted diapers and source them to local low-income families. All told, this program reduced the average cost per diaper from 50 cents to 13 cents, enabling families to pay one-fourth of what they previously had, thereby providing 10-15 million diapers to families in need this year (Hirschlag, 2016). Collaborative, creative solutions like this prove that the government can make a meaningful impact on the lives of its citizens outside the typical regulatory and policymaking framework.

Innovation Ecosystem: The NGO

The role of the NGO within the Innovation Ecosystem will become increasingly relevant as the focus on social responsibility and search for meaning continues to grow. NGOs spark opportunity for innovation in process, strategy, and social change. And, if necessity is the mother of invention, their limited resources can provide great benefit to fueling innovation. In 2014, we witnessed the viral phenomenon of the ALS Association's Ice Bucket Challenge, which raised over \$115 million for the organization, of which \$77 million was used to fund ALS research (ALS Association, 2014). NGOs often take a grassroots approach like this one, enabling them to be highly flexible, adaptive, and nimble.

Consulting companies can serve as a powerful connector between NGOs and other organizations to foster innovative partnerships. McKinsey describes its own work in social innovation as seeking to harness the power of collaboration between businesses, governments, nonprofits and social enterprises to address challenges more effectively, and on a wider scale (McKinsey & Company, 2016). In an increasingly socially conscious business world, NGOs are

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

also able to offer a unique value proposition to corporations in their efforts to innovate in a meaningful way.

One such example is PopTech, an NGO that functions as a consultant to create innovation partnerships across a variety of industries, from science and tech to arts and design, with a mission to “expand the edge of change” (PopTech, 2016). In one initiative, Project Masiluleke, PopTech brought together Frog, a global design and strategy firm, Nokia, and the National Geographic Society in the fight against the HIV/AIDS and TB epidemics in South Africa. The result of this breakthrough project led to the creation of helpline outreach and clinic appointment reminders via text messages to patients and at-risk citizens (PopTech, 2016). With PopTech at the helm, an NGO was able to find a low-cost yet widely adaptable solution to an expensive health crisis.

Another example of the power of an NGO partnership is the case study of Combat Flip Flops, a for-profit enterprise on a mission to manufacture peace through trade and provide inhabitants of war-torn countries with employment and a sense of purpose. In partnership with the Mines Advisory Group NGO, Combat Flip Flops is leading an effort to clean up tens of millions of landmines dropped in Laos during the Vietnam war. The organization works to safely recover the mines and melt down the metal into “peacemaker bangles”, which it sells around the world for \$40 each. Partnering with the Mines Advisory Group provided Combat Flip Flops with unique access to data and intelligence, networks, and connections, as well as an important perception of local credibility — all essential elements in supporting its mission and business (Combat Flip Flops, 2016).

As we move further into the digital revolution, we may expect to see a diminished supply of labor in production. Companies that take a similar approach to Combat Flip Flops and work

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

closely with NGOs to do good may not only solve production challenges, but also stand to gain a more devout following, enabling them to stand out in a crowded marketplace.

Innovation Ecosystem: The City

As with any high-functioning ecosystem, establishing the optimal environment and infrastructure for all elements to thrive and interact is key to its productivity and success. Today, large cities around the world have successfully established themselves as innovation hubs, smartly offering a strong environment that fosters and stimulates innovation. The formula for success in these cities boils down to several factors.

First, they must have the ability to attract and retain entrepreneurs. Therefore, they must offer an attractive quality of life, which many entrepreneurs cite as the most important factor in deciding where to start a business (Endeavour Insight, 2014). This requires the city to have or promote the following key attributes: affordable housing, a well-developed public transportation system, healthy living and a family-friendly culture, access to nature, and a certain level of excitement and cultural vibrancy. One prime (and unsurprising) example is New York City. According to INSEAD, the New York City Economic Development Corporation makes its municipal data publicly available to programmers, designers, and entrepreneurs who seek to solve issues of urbanization affecting city residents (Bouvier, 2016). Access to open data provides fertile ground for creating urban value through human-centered innovation, and this concept comes to life through the annual NYC BigApps competition, which “empowers the sharpest minds to solve New York City’s toughest challenges through technology, data, and collaboration” (NYCEDC, 2016).

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

Access to affordable co-working and living spaces is another critical factor, and one that is highly conducive to start-ups, thanks to fostering innovation through resource pooling and idea-sharing. Companies such as WeWork, a network of co-working office spaces with over 40,000 users across more than 60 cities worldwide, offers entrepreneurs a turnkey solution to their workplace needs. The success of this model has spurred the organization's experimental expansion into WeLive in 2016. WeLive is a similar model that offers amenity-rich, temporary living communities in New York City and Washington, D.C. to meet the needs of travelers and executives on extended assignments.

As large cities such as New York and San Francisco reach a critical mass in population density and cost of living, we foresee a seismic shift in the future of smart cities. Innovation hotbeds will diffuse and proliferate into mid-size cities, such as Pittsburgh, Pennsylvania, and Portland, Oregon (Stevens, 2016), where the cost of living is lower. Inherently, as a result of scale, mid-sized cities will also have an advantage in that improvements in infrastructure can happen significantly faster and more economically than in a large metropolis (Smart London Plan, 2013). These cities will also face fewer hurdles when trying to implement citywide eco-conscious practices.

The rise of remote working and improved digital connectivity will also support this shift toward mid-size cities. As the trend toward remote and mobile workspaces grows and physical location matters less, digital connectivity takes on an even greater role. Initiatives such as Google Fiber (ultra-high speed internet connectivity) in key cities will further help to minimize the relevance of physical location. This has spurred entrepreneur-friendly grassroots programs, such as Homes for Hackers in Kansas City, Missouri, which offers three months of rent-free living for entrepreneurs who want to set up shop in a fiber-connected home (Reardon, 2013). As smart

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

cities continue to proliferate, they will benefit from increased communication and partnerships with one another. Multi-city collaborations on key initiatives will aid in pooling intelligence and streamlining efforts, as well as attaining economies of scale (The White House: Office of the Press Secretary, 2015).

The role of the smart city as an environment that fosters innovation will become an increasingly critical element in the Innovation Ecosystem. Dr. Andy Stanford-Clark, inventor and engineer at IBM, cites several examples of how technology and smart cities might interact in the near future, from a small in-home device that lights up when a commuter bus is minutes away, to an improved transportation system where traffic monitoring dictates traffic-light sequencing and is continually optimized using real-time data (McLelland, 2015). Stanford-Clark also takes these predictions several radical steps further, suggesting that, one day, transport, electricity, healthcare, education, city services, and leisure could be fully integrated into one coordinated framework that interacts with a person's daily activities (McLelland, 2015).

Innovation Ecosystem: Academia

The world of academia inherently holds an abundance of knowledge and expertise. When applied purposefully, this wealth of knowledge can serve to drive innovation from which both industry and academia can benefit. For example, this very program, the Cosmetics and Fragrance Marketing and Management Master's of Professional Studies at the Fashion Institute of Technology, serves as an industry think tank, developing mid-career managers at a highly accelerated pace. This two-way relationship benefits both the academic institution, FIT, and the cosmetics and fragrance businesses it serves via education. Another beauty-industry example of successful partnerships with academia is the award-winning hair care brand Living Proof. It was

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

developed in partnership with MIT's Langer Research Lab, utilizing formulas centered around a specific bio-engineered molecule (Hecht Maxwell, 2015).

A powerful example of how academia can drive innovation is Stanford University's Research Park, opened in 1953. Formed in partnership with the U.S. government for financial support, Research Park ultimately became the birth place of Google, and is now home to other world-leading innovative companies such as Tesla, HP, and Nest. Collaborative government partnerships and influence from other highly successful academic infrastructures exemplify a relationship that has propelled Stanford to not only be a leading institution, but at the forefront of innovation specifically.

There is, however, a significant disconnect in the relationship between academia and the Innovation Ecosystem. While many colleges and universities have evolved their programs to accommodate the increasing flow of knowledge and technological skill and understanding required today, the fundamental structure of grade school in the U.S. has not changed in several decades, creating a detrimental skill gap for those graduating from high school and college and entering the workforce. In a recent Facebook post, founder Mark Zuckerberg presented the eye-opening fact that there are 500,000 open positions in computing in the U.S., but only 50,000 computer science graduates each year. He implores schools to make computer science and coding part of young students' core curriculum, and he has joined forces across industries with Apple's Tim Cook and Walmart's Doug McMillon to lobby congress for the necessary change in grade school curriculum to fill this skill gap (Dickey, 2016).

Another important factor facing the future of academia is the increasing opportunity to become a self-made success outside of the formal education system. As mentioned earlier, Millennials are currently weighed down by the drastic rise in university tuition and student debt,

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

and curious and clever Gen Z is looking for ways to circumvent this fate. Therefore, we predict that colleges and universities may experience a drop-off in matriculation, as potential students begin to explore other avenues toward success. In fact, the Robin Report states that Gen Z will feel compelled to start and sell a business (or two) of their own before graduating from college, if not high school (Ghize, 2016). As such, the need for a traditional education to prepare for the older generations' mindset of corporate ladder-climbing will become less imperative.

To suit the needs of the more flexible students of the future, we can expect to see a much more diversified education framework. By virtue of the laws of supply and demand, the few Micro-MBA courses and certificate programs we see today will become more prevalent, potentially spurring academic institutions to offer even more concentrated and specialized training programs as opposed to traditional academic degrees. Additionally, alternative education paths, such as post high-school gap years will also start to become more mainstream, especially after Malia Obama's highly publicized and influential decision to do so. Further alternative concepts such as hack schooling, a self-schooling concept centered on happiness and individuality, may also begin to take root via their increasing visibility and success stories (Martino, 2014).

Innovation Ecosystem: The Corporation

As freelancers and the entrepreneurial Gen Z become a more significant part of the workforce and talent pool, corporations will need to be increasingly more mindful of their internal structure, as well as more strategic in selecting project-specific individuals as external partners, whether through co-creation or collaboration. This concept is not new, as many corporations have successfully functioned this way for years to fuel innovation, but in the future,

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

some of the more staid organizations will not be able to resist participating. Eric Galler, former Chief Marketing Strategy Officer at 3M, revealed that this mindset was even a necessary reality for arguably one of the most innovative products of the past few decades: the iPhone. The making of this disruptive invention was a highly collaborative process and required the expertise of several external partners, including 3M. In fact, there is an average of 35 components from 3M alone in every iPhone (Galler, 2016).

Several other present-day examples of corporations collaborating across competitive lines indicates this is a trend that will only continue to grow. For example, Google and Microsoft called a recent truce to their years-long patent wars, agreeing to drop around 20 outstanding lawsuits in the U.S. and Germany (Statt, 2015). Rather than fight, the companies determined that it was more beneficial to their respective customers to actually collaborate on certain patent matters.

Another example is the recently formed Self-Driving Coalition for Safer Streets, which includes Google, along with carmakers Ford and Volvo, plus ride-sharing rivals Uber and Lyft. All of these enterprises have come together to lobby the government in support of the benefits of self-driving vehicles. Despite the fact that each is competing to develop its own self-driving car, they see the long-term value of fighting for this legislation, which will enable them each to further their own businesses (Shepardson, 2016). The coalition also sourced an external counsel and spokesman, David Strickland, a former top official of the U.S. National Highway Traffic Safety Administration, showcasing the opportunities that exist for organizations to source help from individuals, as well.

In the case of Google and Microsoft, as well as the Self-Driving Coalition for Safer Streets, these decisions will better serve each of the involved enterprises in the future, especially

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

when viewed through the lens of the Collaborative Consumption macro trend, in which trust is a key value for the consumer. Both initiatives are prime examples of exhibited trust, demonstrating that corporations can have interests that serve the people above selling to people. If other major corporations begin to take cues from these companies — as they often already do when it comes to innovation — we may start to see less of a stronghold around intellectual property and patents, which, in turn, could lead to more meaningful innovation and collaboration across external parties and even competitors.

Innovation Ecosystem: The Individual

Innovation is inherently human, making the individual an essential component of the Innovation Ecosystem. Some of the world's greatest innovations have been the product of a visionary who exhibited dynamic leadership to guide the idea to fruition. One historic example is President John F. Kennedy's famous call-to-action in 1961 to put a man on the moon. His vision motivated the U.S. Congress to provide the budget that fueled NASA's research, making the dream a reality. A modern example is Elon Musk, who is working to revolutionize transportation with a 700 mile-per-hour high-speed train (Kelly, 2016). Both individual icons exemplify leading through fearless failure, as opposed to fear of failure.

As mentioned, young people today are more entrepreneurial than ever before, and with the rise of Gen Z in the workforce, this will only increase. Much as the Democratization of Innovation macro trend has irrevocably changed the way we problem-solve, barriers to entrepreneurship have also decreased, enabling essentially anyone with a smartphone to start her own business. Young entrepreneurs, such as 20-year-old vlogging sensation Bethany Mota and nine-year-old toy-reviewer EvanTube, are thriving in this model, building their own brands —

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

not to mention a multi million-dollar net worth (MSN Money, 2015), with relatively few tangible resources.

The relevance of this model will only continue to increase, as individuals continue to innovate as a matter of course. A recent study by Intuit predicted that by 2020, 40% of the U.S. workforce will be freelancers (Intuit, 2010). We predict that this will give rise to a new type of worker, one we have dubbed the *omni-employee*, who is able to work at any time, from anywhere, and for anyone whom he or she desires. Much as the modern-day, omni-channel consumer has evolved to shop on her own terms, we predict the individual worker will function the same way, with a wide variety of methods and skill sets that can be put to use on a range of projects.

Crowdsourcing

Within the Innovation Ecosystem, the above demonstrates that an individual as an external partner can have a positive impact. However, there is even greater power in numbers. A group of individuals can bring more depth, expertise, and wisdom to innovation than a sole contributor. To fuel the Innovation Ecosystem, organizations seeking to cultivate innovation must accept that crowdsourcing is a necessary driver. Today's most successful companies are the ones that recognize the value of crowdsourcing and have a corporate culture to support it — that is, a system for vetting and acting on a crowd's ideas (Dombowsky, 2013).

Through the lens of the technology of today, crowdsourcing is best defined as follows:

“An engagement method whereby organizations seek input from communities of people [which] can be open or closed, homogenous or diverse. Participants are invited to contribute ideas,

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

solutions, or support in an open process whereby elements of creativity, competition and campaigning are reinforced through social media to come up with more powerful ideas or solutions than could be obtained through other means” (Dombowsky, 2013).

A frequently referenced crowdsourcing example is the Lay’s Potato Chips “Do Us a Flavor” contest (Frito Lay, 2015). The “crowd” in this sense can be treated much like the literary device, synecdoche. It can represent an individual or a group of people, as long as those who are sourced to help solve a problem or complete a task. However, the true value of crowdsourcing, especially for an organization seeking to fuel innovation, extends far beyond the Lay’s example. According to Jorge Garcia of Estée Lauder, the Lay’s example is more accurately described as co-creation, in which the end user (i.e., the consumer) is a participant in the generation of the innovation. True crowdsourcing, on the other hand, is the opening up of a particular innovation need to people outside an organization’s typical collaboration network. The “helper,” in this case, does not necessarily need to be the consumer or the final user of the innovation, but rather someone who can look at the need or challenge with a very different set of eyes (Garcia, 2016).

Crowdsourcing is such a vast concept that it can be known via many different names — user-centered innovation, user-generated content, open innovation or creative collaboration, for example — and it can be further divided into four categories: crowd voting, crowd creation, crowd wisdom and crowd funding. Each category is dependent on the type of innovation need, or problem that needs to be solved (Lieberstein, Tucker, & Yankovsky, 2012).

Crowd voting. Crowd voting is when end users or computer algorithms evaluate the popularity of a given subject matter. The aforementioned Lay’s “Do Us a Flavor” contest is a prime example. Other examples include *American Idol*, the television show in which a

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

contestant's longevity depends on votes from viewers, and Yelp.com, the online restaurant review platform, in which users are empowered to make selections based on ratings from other consumers (Lieberstein, Tucker, & Yankovsky, 2012).

Crowd creation. In crowd creation, individuals or groups of people are solicited to solve a problem or work on a system. A key example is the stock image website iStockphoto, which is a marketplace housing the work of amateur photographers. It threatened to displace more traditional stock photo websites like Shutterstock and Getty Images, which only featured the work of more professional photographers at much higher rates, until Getty Images purchased iStockphoto in 2006 (Howe, 2006). Now, anyone seeking stock images has a choice between the more accessible iStockphoto or the more professional Getty Images, and contributors themselves need not have a barrier to entry.

Crowd wisdom. Crowd wisdom leverages the diversity of knowledge within a group to help source solutions to problems, predict the future, or direct a corporate strategy. Key examples are the aforementioned amateur cartographers helping to map battles in Syria or Facebook's "bug bounty" program. Another compelling example is the case of online video gamers deciphering an accurate three-dimensional map of a complex enzyme in 2011, which had previously stymied AIDS research scientists for over a decade (Lieberstein, Tucker, & Yankovsky, 2012).

Crowd funding. Crowd funding is a model that removes corporate lenders from the equation and offers financing to individuals and groups. Kiva.org is a global non-profit organization built on this type of crowdsourcing, which provides microloans to individuals and small businesses in developing nations. Other examples include Kickstarter and Indiegogo, best for individuals or groups looking to progress existing projects, and spanning categories from

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

artistic to commercial. This particular form of crowdsourcing has become increasingly popular as of late, as evidenced by a recent record-breaking campaign for Memorial Sloan Kettering Cancer Center. Photographer Brandon Stanton, known via social media as Humans of New York, began a storytelling project featuring pediatric cancer patients and their families at Sloan Kettering. Using the website Generosity.com, a philanthropic arm of Indiegogo, Stanton raised \$3.8 million from 103,000 people in just 18 days, all of which will go toward pediatric cancer research (LaMantia, 2016). According to Marian Stern, an adjunct assistant professor at NYU's Heyman Center for Philanthropy and Fundraising, Stanton's project was a "perfect storm" of philanthropy, citing that people are more willing to donate to an online platform than ever before (LaMantia, 2016).

Crowdsourcing: Best Practices for Success

While crowdsourcing can provide many salient benefits for an organization in terms of fostering innovation, it is not without risk. Frequent pitfalls are that the crowd does not provide the answers an organization seeks, the practice of crowdsourcing itself is too time-consuming, organizations are unable to maintain privacy, or the participants in the crowd "game the system" to skew the results. However, when implemented effectively, the results can lead organizations to powerful ideas and creativity (Dombowsky, 2013).

According to Paul Dombowsky, founder and CEO of Ideavibes, companies must do the following in order to succeed:

1. Be culturally open-minded to external ideas
2. Have a protocol of filtering through ideas and implementing them

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

3. Effectively communicate and build deep relationships with the crowd by exhibiting appreciation and valuing of their ideas
4. Implement timelines depending on the request
5. Leverage social media to mobilize large groups of people (Dombowsky, 2013).

The Future of Crowdsourcing

Even if organizations shy away from the practice, most understand that crowdsourcing is an effective method to source new ideas. However, crowdsourcing as we know it today may be another victim of the burden of knowledge. With so many voices and opinions in the ether, calling upon the wisdom of the crowd may lead to overly generalized feedback void of any human element. Considering the future omni-employee and the values of access, trust, and connection garnered from the three aforementioned macro trends, we predict that both individuals and organizations alike will need to turn to others for help in pursuit of innovation needs, even more than they may today. The combination of Gen Z's innate curiosity and resourcefulness, plus its Do-It-Together mentality, creates the perfect environment for collaboration. Additionally, factoring in the need for access to innovation partners, plus trust in those whom you select, the concept of crowdsourcing will evolve into something much more calculated and strategic, which we are calling *Squadsourcing*.

An organization's "squad" will be key to making best use of the Innovation Ecosystem. It is Gen Z's version of a brain trust, in that each member or partner will be hand-selected, vetted, and curated with the goal of a particular project in mind. As opposed to crowdsourcing, which is more freeform and lacks control, the concept of squadsourcing yields a focused group of experts and trusted advisors who have been chosen to help bring a collective vision to life. This method

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

will also enable organizations to infuse the human element back into crowdsourcing that is lost in today's traditional models.

The Innovation Ecosystem In Action

The definition of a natural ecosystem describes a living and breathing system of interacting, interrelated, and/or interdependent living organisms in a particular physical environment that work together to support life. In the way that organisms in a natural ecosystem rely on each other to function optimally, we also see this phenomenon within the ecosystem of innovation. The incidence of meaningful, disruptive innovation occurring in complete isolation is rare, and companies that continue to force strictly internal innovation will soon be stonewalled, as this practice is not sustainable.

In order for companies to innovate, they must look outward, and strategically identify and leverage external partners where appropriate. The Government, NGOs, Smart Cities, Academia, Corporations, and Individuals all present unique and valuable offerings that can help solve problems and play an instrumental role in propelling innovation and fueling the ecosystem.

For the forward-thinking organizations who do understand the need to accelerate their efforts in sourcing externally, many lack a structured Innovation Ecosystem that allows them to see the benefits available. Therefore, it is imperative that companies begin to build and participate in their own Innovation Ecosystems, using these external collaborations to harness and foster creativity and open innovation, in order to reap the following benefits.

Quality. In general, all organizations suffer from some degree of group-think. As an employees' time increases within an organization, they begin to recycle ideas. Additionally, the

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

diversity of knowledge that an organization is able to receive is inherently limited. Although this is a natural phenomenon in groups, both factors can obstruct an organization's ability to innovate in a significant way (Harwood, 2016).

For this reason, the value of ideas coming from outside of an organization can be even greater than those from within. Reid Hoffman, the co-founder of LinkedIn, articulates this concept best: "There are more smart people outside your company, than within it. It's the law of numbers. Be adaptive" (Harwood, 2016).

Cost. Until recently, the cost and time investment needed to source external partners was prohibitive, compared to hiring teams within an organization. However, due to the connectedness and globalization the internet provides, the hassle of identifying and collaborating with the right external partners is quickly diminishing. Today, the process can be even more simple and less expensive than attempting to solve for the same innovation needs internally. According to Chris Thoen, former P&G Director of Open Innovation, "In closed innovation we would have paid the same amount to get one project to the position [whereas with] Open Innovation... [we] got four" (Harwood, 2016).

Perception. The flexibility of selecting different groups for specific projects, and the freedom of the external partner to be selective about the projects he or she is willing to take on, will generally mean that with careful selection, project managers will be highly suited to the specific projects for which they are chosen. This will yield heightened satisfaction from both internal and external parties, which can result in increased motivation and improved brand perception and reputation (Harwood, 2016).

Effort. Successful innovation, including open innovation, can be challenging at times. Another advantage to working with an external partner is that it enables another set of

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

stakeholders to have skin in the game. Having a second motivated party to help oversee projects can be a major source of value. This can mean more opportunities and (wo)manpower for project reviews. The more of this reviewing that is done up front, the more effectively businesses will be able to fail fast and learn (Harwood, 2016).

How to Build a Squad

Before any organization or entity begins squadsourcing, it is crucial to first focus, understand, and define the goal or objective. Then, stakeholders must thoroughly evaluate the experience, skills and knowledge necessary to help solve the problem or bring a vision to life. From there, stakeholders must explore their networks to identify potential members of the squad.

As the shared economy shifts into one based on highly valuable trust, participants in the trust economy will help identify and act as a guide to the right external partners. This codification of trust in potential partners is witnessed in two ways today: On a professional level, “[t]he recommendations [received] on LinkedIn and the connections [shared] with a potential employer can determine whether [one] get[s] the job.” On a personal level, social media sites like Instagram and Facebook feature likes and comments, through which high engagement acts as a code that can determine trustworthiness (Stan, 2016). Leveraging codes that are already publicly available can help distill the pool of potential squad members. From this point, it is a matter of establishing a mutually beneficial connection, planning, setting a timeline and mobilizing together as a peer army toward the end goal.

When to Squadsource

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

Although squadsourcing requires keen attention on the selection process of potential squad members, another important aspect is for an organization to be introspective and seek to understand its needs for sourcing. An organization or individual should source a squad when the following criteria is met:

1. When the innovation need requires a high level of trust
2. When there are gaps in expertise, experience and skill sets requiring a diverse yet specialized knowledge
3. When you require a curated and personal approach to finding a solution

The Future of the Innovation Ecosystem

The Innovation Ecosystem is predicted to evolve with the further development of the three previously discussed emerging macro trends, which provide the future pillars of innovation: access, trust, and connection. Each external partner identified as crucial to the Innovation Ecosystem — the government, NGOs, the city, academia, the corporation, and the individual — will have equally important roles in advancing innovation.

Government. The government will have an active role in fostering innovation. Evolving the New Deal, the series of programs implemented by Franklin D. Roosevelt in the 1930s in an effort to restore the economy for the American people (Staff, 2009), the government will need to develop policy along the lines of an “Innovation Deal.” This will involve alleviating daily stressors to provide a social safety net, empowering individuals to ignite their own curiosity and seek solutions, and hence, fuel innovation ecosystems.

NGO. With the rise of crowdfunding initiatives, technology will continue to transform NGO fundraising activities. NGO-led innovation today has a frugal and grassroots approach,

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

which it will need to evolve to pace at society's expectations for speed of innovation. The key will be to engage in strong collaborations by identifying innovation partners who can assist in making quick decisions and take calculated risks to continue social change.

City. The city of tomorrow should be a smart, sustainable city that is designed for the individual to support innovation. The evolution of the city will place collaboration at the center of work and life, creating a bridge between the two. Modular centers for innovation, for example pop-up innovation districts, will emerge depending on the innovation need, and environments for cultivating innovation will become more prevalent and omnipresent. These districts will satisfy the curious appetite, problem-solving resourcefulness and interconnectedness of Gen Z (McCafferty, 2013).

Academia. As mentioned above, we predict colleges and universities will experience a steep drop-off in matriculation, as students realize their opportunities to become self-made by harnessing their own squads. Currently, students are taking advantage of more flexibility in their timelines for education. According to Forbes, "there is an increase of students in the [United States] taking a gap year, with a 20 percent rise since 2006" (Bridges, 2014).

As Gen Z's desire to devote a career to a corporation diminishes, the need to have a structured path of education will become less imperative. The trend of hackschooling has begun to challenge the status quo and will further disrupt the present-day linear education system. Hackschooling is "the concept that education, like everything else, is open to being hacked or improved, not just by working within the current system, but by going outside the educational establishment to find better ways to accomplish the same goals" (Natomas Homeschool Alliance). We predict that globally connected external entities will form to provide guidelines and inspiration to future hackschoolers' curriculum, incubate a network, and create opportunities

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

of lifelong learning and development. Education will become more modular and flexible in the form of micro-degree programs or certification boot camps that will offer professional skill development.

Corporation. As evidenced by the Ford/Google/Uber collaboration (Shepardson, 2016), corporations will begin to realize the necessity of open innovation for the future of innovation. Like-minded organizations with similar goals will seek to collaborate and innovate for the common good. Competitors will become allies to elevate the innovation game.

Individual. The individual will transition from embracing the American Dream to adopting a new “American Truth.” Individuals will further progress to becoming their own brands as the economy shifts from shared to trust (Stan, 2016). Speed of trust will become even more imperative as Gen Z impacts the global economy with its entrepreneurial mindset. (Ghize, 2016). Hence, the practice of squadsourcing will come naturally to this generation as it enters the workforce, given its lifelong, easily accessible connection to a diverse network of individuals with varying expertise, experiences, interests and skills.

Recommendations for Implementing the Innovation Ecosystem

Implementing the Innovation Ecosystem depends on four variables: innovation need, project scope, resources, and risk tolerance. Regardless of where an organization or individual lands on the spectrum of each variable, the future of successful innovation will depend on an organization’s ability to embrace fearless failure. Dr. Kit Yarrow, consumer psychologist and contributor to *WWD* articulates it best: “If retailers just keep trying to do the same things better instead of doing things better, it’s just a question of time before they die” (Clark, 2016). This statement could be applied to anyone seeking innovation, not just retailers. Future success will

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

require organizations to create and participate in some form of an Innovation Ecosystem and embrace and establish a network of the new IP: Innovation Partners.

The timeline of implementation can be established in checkpoints of one, three, and seven years. Many of these action steps involve entities and organizations that already exist. The key is to be proactive, develop relationships with strategic innovation partners, build a squad, and embrace the “DIT” mentality.

Year 1. Create an Innovation Ecosystem and build a squad.

1. Define what to innovate and how.
 - a. Reform: Reforming culture, image, process to become more innovative/willing to take risks
 - b. Reframe: Reframing the problem to find an innovative solution
 - c. Resolve: Resolving key business problems with speed and efficiency
 - d. Research: Utilizing insights, market trends and emerging technologies
2. Identify key partner(s) from the Innovation Ecosystem.
 - a. For scientific subject matters, search for academic research labs around the world conducting studies on a specific topic to connect with an expert
 - b. For sourcing talent, whether it be students or influencers, reach out to an agency like Way Up or Fohr Card to gain access to a curated database and leverage their existing connections.
 - c. For segmentation, take advantage of the aggregated data from smart cities around the world like New York, Pittsburgh and Singapore to generate the insights needed to identify targets.

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

- d. For training and upskilling, tap into academic curriculums such as micro-MBA programs, innovation schools such as THINK, or professional boot camps to strengthen skills.
3. Select the platform of communication.

Leverage the power of social media and get involved in an open innovation community such as OpenIDEO, 100% Open and Hyve to utilize their technology and open innovation platforms.
4. Source your Squad. Utilize readily available intel and resources to identify potential squad members. An organization or individual should source a squad when:
 - a. The innovation task at hand requires a high level of trust,
 - b. There are gaps in expertise, experience and skill sets in which diverse, specialized knowledge would be beneficial and
 - c. A curated and personal approach to finding a solution is necessary.

As the shared economy shifts into one based on trust, in which the value of trust will have a high premium, the new “codification” of it will help identify and act as a guide to the right squad members. This codification of trust in individuals is witnessed, today. On a professional level, “[t]he recommendations [received] on LinkedIn and the connections [shared] with a potential employer can determine whether [one] get[s] the job.” On a personal level, social media sites like Instagram and Facebook in which high engagement through likes and comments act as codes that can determine trustworthiness (Stan, 2016). Leveraging codes that are already publicly available can help distill the pool of potential squad members. From this point, it is a matter of

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

establishing a mutually beneficial connection, planning, setting a timeline and mobilizing together as a peer army towards the end goal.

Year 3. Develop an online Open Innovation Platform, like the Beiersdorf Pearlfinder Platform (Beiersdorf AG, 2014) and P&G's Connect + Develop (Proctor & Gamble, 2013). However, it must evolve into a platform that enables the connection of members and the exchange of ideas beyond typical borders of the organization. As a result, it will allow for an open innovation process between both internal and external members, creating diverse teams that actively collaborate to find solutions regardless of physical location.

Year 7. Develop an Innovation Ecosystem X-celerator, where the "X" stands for external innovation partnerships. It will function within the organization but outside of existing internal core competencies. It will combine the collaborative environment of a Fab Lab with the speed and development capabilities of an Innovation Accelerator integrating internal members across functions as well as external partners. Similar to the Samsung Accelerator the Innovation Ecosystem X-celerator will provide strategic capital, physical infrastructure and operational and product support to the X-celerator team. (Samsung, 2016).

The Innovation Ecosystem X-celerator will allow for the advancement of disruptive innovation through the freedom of experimentation with moonshot projects, providing an environment that is conducive to fearless failure. By establishing an X-celerator, the Innovation Ecosystem can perform at its maximum potential to generate breakthrough thinking. Ideas can shift completely from simply preserving the existing organization to rethinking, reimagining and refocusing on the future.

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

Conclusion

Innovation today is dominated by organizations that are in a combative, self-preservation bubble, further weighed down by a heavy burden of knowledge. Ideas are sought internally, expensive patents are fiercely protected, new products are limited to iterative improvements, and acquisitions have become the major growth drivers. However, the rise of three key macro trends — Democratization of Innovation, Collaborative Consumption, and The Linked Generation — will challenge organizations' self-preserving attempts at innovation, forcing them to look externally to source meaningful, sustainable solutions to innovation needs. Much like the Asian proverb that one “cannot be a rice farmer alone,” in the future, no one entity will be able to innovate alone. Newness and growth will depend on an organization's ability to seek help outside its own four walls, developing an Innovation Ecosystem and harnessing a squad to meet its objectives. Access, trust, and connection will be the threads that connect this network of collaborators, uniting the global economy to yield unprecedented innovation on a disruptive scale.

Appendix

Exhibit A: The Innovation Ecosystem



PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

References

- Albin, R. (2016, May 3). Senior Vice President, Conceptual Innovation, the Estée Lauder Companies. (M. Gray, Interviewer) New York, NY, United States.
- ALS Association. (2014, August 29). *The ALS Association Expresses Sincere Gratitude to Over Three Million Donors*. Retrieved May 20, 2016, from <http://www.alsa.org/news/media/press-releases/ice-bucket-challenge-082914.html>
- Baumgarten, C. (2016, May 3). *Electric Literature*. Retrieved from The next novel you read may have been chosen by a computer: <http://electricliterature.com/the-next-novel-you-read-may-have-been-chosen-by-a-computer/>
- BCG Perspectives by The Boston Consulting Group. (2016, March 22). *MIT Media Lab's Joi Ito on Digital Innovation and Disruption*. Retrieved from BCG Perspectives: https://www.bcgperspectives.com/content/videos/technology-ito-joi-digital-innovation-disruption/?utm_source=201603TechDigital&utm_medium=Email&utm_campaign=otr
- Beiersdorf AG. (2014, December 15). *Relaunch of Pearlfinder*. Retrieved from Beiersdorf AG: <http://pearlfinder.beiersdorf.com/about-pearlfinder/pearlfindernews/new-platform-launch>
- Blank, S. (2015, March 9). *Fear Of Failure And Lack Of Speed In A Large Corporation*. Retrieved from Forbes: <http://www.forbes.com/sites/steveblank/2015/03/09/fear-of-failure-and-lack-of-speed-in-a-large-corporation/#204ccec6a2b>
- Botsman, R. (2015, October 2015). *The Changing Rules of Trust in the Digital Age*. Retrieved from Harvard Business Review: <https://hbr.org/2015/10/the-changing-rules-of-trust-in-the-digital-age>
- Bouvier, P. (2016, April 26). *The Innovation Potential of Human-Centered Cities*. Retrieved from INSEAD Knowledge: <http://knowledge.insead.edu/blog/insead-blog/the-innovation-potential-of-human-centred-cities-4650>
- Bradner, E. (2016, May 3). *Malia Obama to attend Harvard after gap year*. Retrieved from CNN.com: <http://www.cnn.com/2016/05/01/politics/malia-obama-college-decision-harvard-gap-year/>
- Brankovic, A., Duppen, F., Klokgieters, K., & Miller, P. (2012). *Innovation leadership study*. Capgemini Consulting. Barcelona: IESE Business School.
- Bridges, F. (2014, April 29). *Should you take a gap year?* Retrieved from Forbes: <http://www.forbes.com/sites/francesbridges/2014/04/29/should-you-take-a-gap-year/#15f650347818>

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

- Burkhardt, V. (2008, January 5). *Democratizing Innovation: The Shift of Innovation to Users*. Retrieved March 2016, from Idea Connection: <https://www.ideaconnection.com/open-innovation-articles/00010-Democratizing-Innovation-The-Shift-of-Innovation.html>
- Cérez, G., & O'Brien, C. (2016, April 8). *National Geographic*. Retrieved from Watching war: Online mapmakers chart Syrian conflict: <http://news.nationalgeographic.com/2016/04/160408-online-mapmakers-chart-syrian-conflict/>
- Christensen, C. (1997). *The Innovator's Dilemma*. Boston, MA: Harvard Business School Press.
- Clark, E. (2016, May 1). The Psychology of Now. *Women's Wear Daily*, p. 14.
- CNBC. (2014, August 14). *Why do companies invest in R&D?* Retrieved from CNBC.com: <http://www.cnbc.com/2014/08/14/why-do-companies-invest-in-rd.html>
- Combat Flip Flops. (2016). *Our Story*. Retrieved May 20, 2015, from Combat Flip Flops: <http://www.combatflipflops.com/pages/our-story>
- Cornell University, INSEAD, and WIPO. (2015). *The Global Innovation Index 2015: Effective Innovation Policies for Development*. Fontainebleau, Ithaca, and Geneva: World Intellectual Property Organization.
- Davis, S., & Attaie, S. (2015). *Beauty Care M&A Closes Out 2015 Strong*. Intrepid Investment Bankers. Los Angeles: IntrepidIB.com.
- Delacharlerie, C. (2015, Dec 17). *South Korea startup scene*. Retrieved May 29, 2016, from Innovation is Everywhere: <http://www.innovationiseverywhere.com/south-korea-startup-scene/>
- Dickey, M. (2016, April 26). *Tim Cook, Mark Zuckerberg and others urge Congress to fund K-12 computer science education*. Retrieved May 20, 2016, from Tech Crunch: <http://techcrunch.com/2016/04/26/tim-cook-mark-zuckerberg-and-others-urge-congress-to-fund-k-12-computer-science-education/>
- Dombowsky, P. (2013, June 5). *Crowdsourcing risk and return - How to evaluate options for success*. Retrieved February 29, 2016, from InnovationManagement.se : <http://www.innovationmanagement.se/2013/06/05/crowdsourcing-risk-and-reward-how-to-evaluate-options-for-success/>
- Endeavour Insight. (2014). *What do the best Entrepreneurs want in a City?* New York: Endeavour Global. Retrieved from https://issuu.com/endeavorglobal1/docs/what_do_the_best_entrepreneurs_want/3?e=0/6600427

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

- Ernst & Young. (2013, April 8). *The EY G20 Entrepreneurship Barometer 2013*. Retrieved May 20, 2016, from The Korea Herald.
- Fab Foundation. (2015). *Fab Foundation Mission*. Retrieved from fabfoundation.org: <http://www.fabfoundation.org/about-us/>
- Frito Lay. (2015, October 22). *Lay's Southern Biscuits And Gravy flavored chips Is 2015 "Do Us A Flavor" contest winner*. Retrieved May 6, 2016, from Snack Chat Blog: <http://www.fritolay.com/blog/blog-post/snack-chat/2015/10/22/lays-southern-biscuits-and-gravy-flavored-chips-is-2015-do-us-a-flavor-contest-winner.htm>
- Galler, E. (2016, April 27). Former Chief Marketing Strategy Officer. (T. Lizardo, Interviewer)
- Garcia, J. (2016, May 17). Executive Director of Innovation and R&D, the Estée Lauder Companies. (H. Feldman, & M. Gray, Interviewers)
- Ghize, L. J. (2016, April 18). *TOBE Says: The millennial mindset is contagious*. Retrieved from The Robin Report: http://www.therobinreport.com/tobe-says-the-millennial-mindset-is-contagious/?utm_source=The+Robin+Report&utm_campaign=beff980888-The_Millennial_Mindset_Is_Contagious_4_19_2016&utm_medium=email&utm_term=0_e90268c709-beff980888-229098409
- Godin, B. (2008, Unknown Unknown). In the Shadow of Schumpeter: W. Rupert Maclaurin and the Study of Technological Innovation. Montreal, Quebec, Canada.
- Govindarajan, V., & Desai, J. (2013, September 26). *Innovation Isn't Just About New Products*. Retrieved 2016, from hbr.org: <https://hbr.org/2013/09/innovation-isnt-just-about-new-products/>
- Grazer, B., & Fishman, C. (2015). *A Curious Mind: The Secret to a Bigger Life*. New York, NY, United States: Simon & Schuster.
- Green, E. (2013, June 20). *Innovation: The History of a Buzzword*. Retrieved from The Atlantic: <http://www.theatlantic.com/business/archive/2013/06/innovation-the-history-of-a-buzzword/277067/>
- Harwood, R. (2016, April 12). *The Value of Open Innovation*. Retrieved May 20, 2016, from 100% open: <http://www.100open.com/the-value-of-open-innovation/>
- Hecht Maxwell, J. (2015, Aug 7). *Beauty business based on MIT bioengineering*. Retrieved from MIT News: <http://news.mit.edu/2015/living-proof-hair-care-based-on-mit-bioengineering-0807>
- Hirschlag, A. (2016, March 30). *Lots of Americans can't afford diapers, but the White House has a fascinating solution*. Retrieved from Upworthy: <http://www.upworthy.com/lots-of->

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

americans-cant-afford-diapers-but-the-white-house-has-a-fascinating-solution?g=2&c=upw1

Howe, J. (2006, June 1). *The Rise of Crowdsourcing*. Retrieved from Wired: <http://www.wired.com/2006/06/crowds/>

Intuit. (2010, October 1). *Intuit 2020 Report*. Retrieved from intuit.com: [http://http-download.intuit.com/http.intuit/CMO/intuit/futureofsmallbusiness/intuit_2020_report.pdf](http://download.intuit.com/http.intuit/CMO/intuit/futureofsmallbusiness/intuit_2020_report.pdf)

Jones, B. F. (2008, April 1). The Burden of Knowledge and the "Death of the Renaissance Man": Is Innovation Getting Harder? Evanston, IL, United States.

Keeley, L. (2016, April 19). President and Co-Founder, Doblin, a global innovation consulting firm. (J. Abrams, H. Feldman, M. Gray, & A. Muguerza, Interviewers)

Kelly, H. (2016, May 11). *Elon Musk's Hyperloop vision races toward first public test*. Retrieved from CNN: <http://money.cnn.com/2016/05/10/technology/hyperloop-one-test/index.html>

Kon, M. (2016, Feb 10). *What can CES 2016 tell companies about tech trends?* . Retrieved May 20, 2016, from World Economic Forum: <http://www.weforum.org/agenda/2016/02/what-can-ces-2016-tell-companies-about-tech-trends>

LaMantia, J. (2016, May 20). *Memorial Sloan Kettering is blown away by response to Humans of New York campaign*. Retrieved from Crain's: http://www.crainsnewyork.com/article/20160520/HEALTH_CARE/160529993/humans-of-new-yorks-viral-fundraiser-for-cancer-stricken-kids-is-one-for-the-record-books

Lee, J. (2015, Sept 8). *Could Beauty Products Be Korea's New Export Engine?* Retrieved May 20, 2016, from Bloomberg Markets: <http://www.bloomberg.com/news/articles/2015-09-08/could-beauty-products-be-korea-s-new-export-engine->

Lieberstein, M. A., Tucker, A., & Yankovsky, A. K. (2012, September 1). Crowdsourcing: Understanding the risks. *Kilpatrick Townsend*, pp. 34-38.

Lotman. (2016, Feb 8). *10 High-Profile Brand Partnerships That Struck Gold*. Retrieved May 20, 2016, from Entrepreneur: <https://www.entrepreneur.com/article/254742>

Martinez, M. (2016, March 12). *CNN*. Retrieved from Crowdsourcing volunteers comb satellite photos for Malaysia Airlines jet: <http://www.cnn.com/2014/03/11/us/malaysia-airlines-plane-crowdsourcing-search/>

Martino, J. (2014, January 7). *This Is What Happens When A Kid Leaves Traditional Education*. Retrieved from Collective Evolution: <http://www.collective-evolution.com/2014/01/07/this-is-what-happens-when-a-kid-leaves-traditional-education/>

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

- McCafferty, D. (2013, April 8). *Workforce preview: What to expect from Gen Z*. Retrieved from Baseline: <http://www.baselinemag.com/it-management/slideshows/workforce-preview-what-to-expect-from-gen-z>
- McKinsey & Company. (2016). *Social Innovation*. Retrieved May 20, 2016, from McKinsey & Company: <http://www.mckinsey.com/industries/social-sector/how-we-help-clients/social-innovation>
- McLelland, J. (2015, June 28). *The future of smart cities*. Retrieved May 20, 2016, from Raconteur: <http://raconteur.net/technology/the-future-of-smart-cities>
- Morgan, J. (2014, May 13). *A Simple Explanation Of 'The Internet of Things'*. Retrieved May 2016, from Forbes.com: <http://www.forbes.com/sites/jacobmorgan/2014/05/13/simple-explanation-internet-things-that-anyone-can-understand/#34c039276828>
- MSN Money. (2015, Oct 20). *Youtube millionaires You've Never Heard of*. Retrieved May 20, 2016, from MSN Money: <http://www.msn.com/en-nz/money/news/youtube-millionaires-youve-never-heard-of/ss-BBmik6x>
- Natomas Homeschool Alliance. (n.d.). *Why 'hackschooling'*. Retrieved from Hackschooling: <http://www.hackschooling.net/why-hackschooling.html>
- NYCEDC. (2016, May 1). *Programs for Entrepreneurs*. Retrieved from nycedc.com: <http://www.nycedc.com/program/nyc-bigapps>
- Pew Research Center. (2014, March 7). *Millennials in Adulthood*. Retrieved from pewsocialtrends.org: <http://www.pewsocialtrends.org/2014/03/07/millennials-in-adulthood/>
- PopTech. (2016, March 1). *About PopTech*. Retrieved from PopTech.org: <http://www.poptech.org/about>
- Poptech. (2016). *Project Masiluleke*. Retrieved May 20, 2016, from Poptech: http://www.poptech.org/project_m
- Proctor & Gamble. (2013, February 7). *P&G Connect+Develop launches new open innovation website*. Retrieved from P&G Connect+Develop: <http://news.pg.com/press-release/pg-corporate-announcements/pg-connectdevelop-launches-new-open-innovation-website>
- Reardon, M. (2013, June 19). *Google Fiber spawns startup renaissance in Kansas City*. Retrieved May 20, 2016, from CNET: <http://www.cnet.com/news/google-fiber-spawns-startup-renaissance-in-kansas-city/>
- Samsung. (2016). *Samsung Accelerator*. Retrieved from Samsung Accelerator: <http://samsungaccelerator.com/>

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

- Schaefer, K. (2015, September 9). *What You Don't Know About the Rise of Korean Beauty*. Retrieved from The Cut: <http://nymag.com/thecut/2015/09/korean-beauty-and-the-government.html#>
- Schrage, M. (2014, April 30). *How Innovation Ecosystems Turn Outsiders Into Collaborators*. Retrieved from Harvard Business Review: <https://hbr.org/2014/04/how-innovation-ecosystems-turn-outsiders-into-collaborators/>
- Shepardson, D. (2016, April 26). *Reuters*. Retrieved from Google, Ford, Uber launch coalition of self-driving cars: <http://www.reuters.com/article/us-autos-selfdriving-idUSKCN0XN1F1>
- Smart London Plan*. (2013). The City of London. London: Greater London Authority.
- Staff, H. (2009). *New Deal*. Retrieved from History.com: <http://www.history.com/topics/new-deal>
- Stan, A. (2016, April 24). *The future is the trust economy*. Retrieved May 7, 2016, from Tech Crunch : <http://techcrunch.com/2016/04/24/the-future-is-the-trust-economy/>
- Statt, N. (2015, September 30). *Google and Microsoft end patent battle and drop lawsuits*. Retrieved from The Verge: <http://www.theverge.com/2015/9/30/9428345/google-microsoft-patent-fued-end>
- Stevens, T. (2016, March 12). *\$50 million 'Smart City Challenge' finalists announced at SXSW*. Retrieved May 20, 2016, from CNET: <http://www.cnet.com/roadshow/news/sxsw-smart-city-challenge-finalists/>
- Stintson, L. (2016, May 3). *Wired*. Retrieved from IBM's Watson helped design Karolina Kurkova's light-up dress for the Met Gala: <http://www.wired.com/2016/05/ibms-watson-helped-design-karolina-kurkovas-light-dress-met-gala/>
- The Economist. (2013, January 12). *Has the ideas machine broken down?* Retrieved from The Economist: <http://www.economist.com/news/briefing/21569381-idea-innovation-and-new-technology-have-stopped-driving-growth-getting-increasing>
- The White House: Office of the Press Secretary. (2015, Sept 14). *FACT SHEET: Administration Announces New "Smart Cities" Initiative to Help Communities Tackle Local Challenges and Improve City Services*. Retrieved May 20, 2016, from The White House: <https://www.whitehouse.gov/the-press-office/2015/09/14/fact-sheet-administration-announces-new-smart-cities-initiative-help>
- Trikha. (2015, Sept 4). *The Interdependency Of Stanford And Silicon Valley*. Retrieved May 20, 2016, from Tech Crunch: <http://techcrunch.com/2015/09/04/what-will-stanford-be-without-silicon-valley/>

PREDICTING THE FUTURE OF GLOBAL EXTERNAL INNOVATION

Ufford, S. (2015, February 10). *The Future Of The Sharing Economy Depends On Trust*. Retrieved from Forbes: <http://www.forbes.com/sites/theyec/2015/02/10/the-future-of-the-sharing-economy-depends-on-trust/#5db3bbd758ff>

Woolf, N. (2016, May 3). *Ten-year-old receives \$10,000 reward for finding Instagram bug*. Retrieved from The Guardian: <https://www.theguardian.com/technology/2016/may/03/instagram-comment-bug-10-year-old-hacking-finland-reward>