PreView

Protiviti's View on Emerging Risks

Volume 2, Issue 2

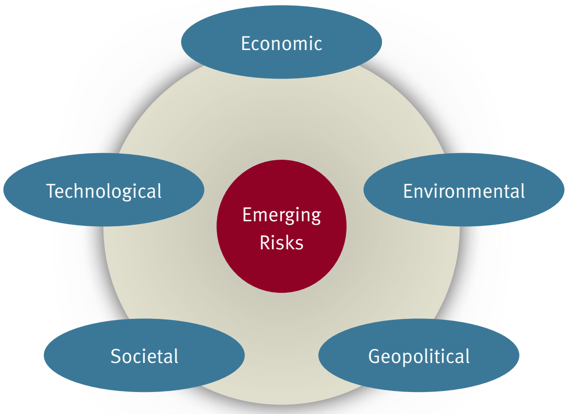
Foreword

As organizations continue to evolve their risk governance practices, focused and relevant information about emerging risks is at a premium. The objective of Protiviti's *PreView* newsletter is to provide an input for these efforts as companies focus on risks that are developing in the market. In this issue, we expand on some of the megatrends we touched on in our previous issue to help organizations anticipate their potential ramifications.

This issue's topics focus on emerging economies and global interdependency, urbanization trends, demographic shifts and their ramifications, artificial intelligence as a game changer in business and technology, and startups, no longer confined to the well-known hubs. As you review this issue, we encourage you to think about your organization and ask probing questions: How will changing demographics affect our business model? Will new technology or worker migration reshape our future workforce? Should we pursue opportunities now, or wait for more certainty? The answers will differ significantly from industry to industry. And even though the next move on the strategic board may not be readily apparent, businesses should pay attention as these shifts will continue to influence the decisions of policymakers, competitors and consumers.

Our framework for evaluation of these risks is rooted in the global risk categories designed by the World Economic Forum. Throughout this series, we will continue to use these categories as a framework for classifying macro-level topics and the challenges they present.

In closing, we are very interested in your feedback. We plan to continue the conversation on emerging risks on our blog, "The Protiviti View" (blog.protiviti.com), and on our microsite (www.protiviti.com/emergingrisks). We welcome your input and comments.



Inside This Issue

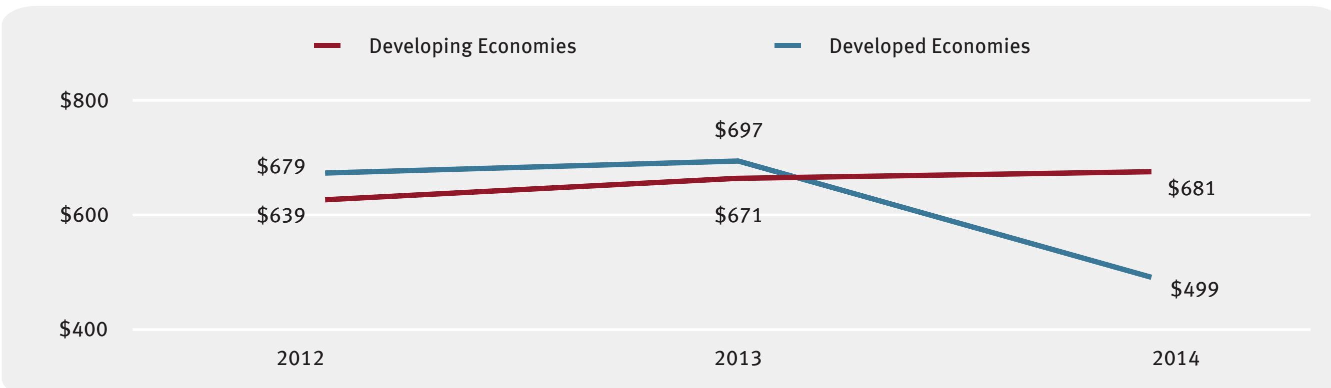
Global Connectedness: Investing in Emerging Economies

Key Industries Impacted: *Consumer Products & Services, Industrial Products, Financial Services, Technology, Energy*

Key Observations

The world is increasingly becoming connected through trade and movement of capital, people and information. The flow of capital in particular across the globe has become more varied and complex, as developing countries emerge as primary recipients of foreign direct investment (FDI). The volume of FDI flowing to developing economies rose 6.5 percent between 2012 and 2014 to reach US$681 billion – the highest level ever, while FDI in developed economies declined 26.5 percent. This trend of accelerating global connectedness through increased capital flows to emerging economies is presenting new risks and opportunities in the marketplace. And while it may still be unclear what actions to take in response to this global trend, the boards and management of established companies looking for sources of growth cannot simply ignore it.

FDI Inflows to Developed vs. Developing Economies in 2013 and 2014 (in Billions US$)



Source: *World Investment Report 2015,* United Nations Conference on Trade and Development, 2015: http://unctad.org/en/PublicationsLibrary/wir2015_overview_en.pdf.

The World Bank defines FDIs as "the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor." In the graph above, developed economies are defined as member countries of the Organization for Economic Cooperation and Development (OECD).

Key Considerations and Implications:

As established companies build their global ecosystems, they must remain aware of the potential risks of global foreign direct investment. Some risks to consider include:

Political Instability

As an emerging economy develops and grows, its political environment can be dynamic and, at times, unstable. This instability can give rise to various risks that can lead to investment impairment or diminished return on investment (ROI). Examples of such risks include confiscatory actions by governments (e.g., nationalizations or expropriations of assets); discriminatory actions against a company or an industry (e.g., taxation, price controls, performance requirements); and destructive acts by non-governmental forces (e.g., war, terrorism, strikes).

To illustrate the effects of political disruption, before the political crisis in Greece, triggered by a change of power in January 2015, and a second crisis eight months later, triggered by political promises not met, this country of 11 million was the second fastest-growing economy in the Eurozone, the government was running a budget surplus before interest payments and the banks had just passed a European Central Bank stress test. Now the economy is back in a serious recession, the populace faces punishing austerity measures, the government is running huge deficits, and the banks are estimated to need up to €25 billion (US$28 billion) in fresh capital – all with no hope for significant improvement any time soon.

Key Considerations and Implications (continued):

Global Climate Change and Natural Disasters

Global climate change and natural disasters present increasingly significant risks for the global economy, and emerging markets in areas such as Asia-Pacific are often more severely affected and suffer higher economic costs than developed economies elsewhere. In November 2013, super typhoon Haiyan cost the Philippines, a developing economy, US$12-$15 billion, which represents over five percent of the nation's gross domestic product (GDP). A natural disaster of the same dollar impact, hurricane Sandy, cost a developed economy, the United States, less than one percent of its GDP. In addition, only 10 percent of the losses from Haiyan are estimated to have been insured, compared to 50 percent of losses from hurricane Sandy. Infrastructure damage, repair, subsequent commodity price fluctuations and mass migration can all have an effect on global investor strategies, shifting capital movement throughout the world.

Foreign Currency

Foreign currency volatility can have potentially catastrophic impacts across financial markets and expose vulnerabilities in hedging strategies across financial systems, especially for those investing heavily in emerging markets. For example, currencies in Brazil and South Africa, both emerging markets that rely heavily on commodity exports, fell 31 percent and 15 percent, respectively, against the dollar during 2015, due in large part to decreasing commodity prices as a result of China's (a major importer) devaluation of the yuan in August. Weakening currency can cause capital flight, as evidenced by the recent significant capital outflows from China. Meanwhile, government debt yields in these markets have increased significantly, and the cost to insure foreign government debt via credit default swaps has also risen, further disincentivizing emerging market investment. In light of all this, even mature currencies in economies such as China, which have been used successfully as hedging strategies in the past, now require a careful revisit and additional investor scrutiny (see Spotlight below).

Spotlight on China

China's recent decision to devalue its currency and the subsequent global economic consequences embody the reality of global connectedness and highlight the significant effects of government policies on currencies and capital flows worldwide. The decision has had major impacts in established and emerging economies alike (see Brazil and South Africa example above). China's shares of world GDP and global trade in 2014 were 13.3 percent and 14.3 percent, respectively. Even countries that don't often trade directly with China have been and will continue to be affected by the devaluation of the yuan, because they export to countries that trade extensively with China.

Back in 2005, China's decision to allow the yuan to appreciate eased fears that the country was a "currency manipulator." The recent devaluation once again resurfaced skepticism. This action by the Chinese government and the resulting uncertainty no doubt will affect the investing habits of those who have relied on China's steady "fixed rates" as hedging mechanisms. Over the last decade, China had strongly encouraged the use of the yuan in investment strategies – including structured financial products that involve bets on the currency's future value against the dollar. Such bets are much riskier now: One Hong Kong-based retailer anticipates a currency loss of 60 million Hong Kong dollars (US$7.7 million) because of the recent devaluation, due to the fact that its deposits included 1.2 billion yuan.

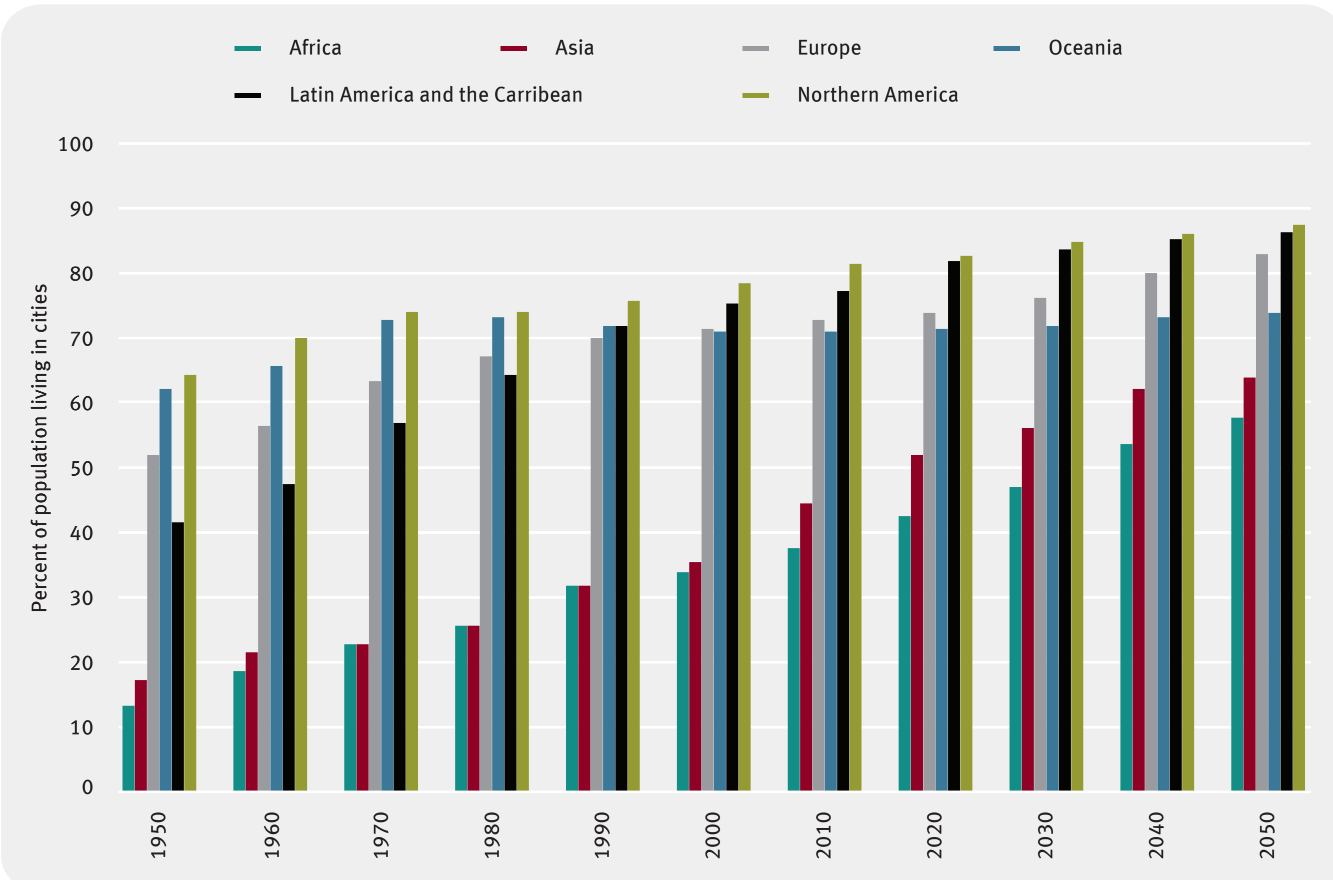
Although the recent volatility creates uncertainty about China's economic future in the minds of many, it's worth noting that the yuan has appreciated by 15 percent over the last year (accounting for inflation) against the International Monetary Fund's basket of global currencies. As such, concerns about the yuan losing 3 to 4 percent of its value may be exaggerated.

The Effects of Urbanization

Key Industries Impacted: *Financial Services, Consumer Products & Services, Industrial Products, Government, Technology, Healthcare & Life Sciences, Retail, Utilities*

Six-and-a-half decades ago, a mere one-third of the world's population was living in incorporated areas with 2,500 people or more; today, more than one-half of people do. By 2050, the ratio is projected to be two-thirds urban and one-third rural. The vast majority of this urban growth has occurred, and will continue to occur, in emerging markets around the globe. A staggering 90 percent of the urban growth between now and 2050 is projected to take place in African and Asian countries. With rapid urbanization come numerous implications and opportunities, including increased need for infrastructure and consumer products. Established incumbents with an eye on competing for future growth ignore this trend at their peril, for they will surely cede global market share to their more focused competitors.

Urban Growth by Continent, 1950-2050



Source: *World Urbanization Projects, 2014 Revision,* United Nations, 2014: http://esa.un.org/unpd/wup/Highlights/WUP2014-Highlights.pdf.

Key Considerations and Implications:

- **Demand for consumer and industrial products will grow rapidly.** Generally speaking, urban environments in emerging markets attract younger and educated populations who can fill the influx of available jobs. These individuals have a higher disposable income due to employment, and will reach their peak earning power within approximately 20 years from now.
- **Investment in mortgage products presents a huge opportunity.** The percentage of GDP contributing to mortgages in emerging markets is currently about 10 percent, compared to approximately 75 percent in the United States. The numbers are growing in emerging markets, however. For example, since 2000, the Chinese mortgage market has been growing at more than 40 percent annually. For financial services, the growth in wealth opens the floodgates for foreign direct investment in financial products like mortgages. Because interest rates around the world are generally much higher than those in the U.S., there is a huge opportunity for well-established financial institutions domiciled in the U.S. or other developed countries with lower rates to compete. Banks with subsidiaries in emerging market economies are particularly well positioned.
- **Demand for infrastructure will continue to grow.** One of the most pressing issues of growth in emerging markets is the need for infrastructure. This includes paved roads, electricity and piped water. To illustrate, the United States spends about 2.4 percent of its GDP, or US$435 billion, on transportation and water infrastructure; by contrast, China is spending as much as 9 percent of its GDP, or approximately US$932 billion, on the same. These numbers highlight the difference in the need for these services and the opportunity for industrial products companies to become involved as demand grows and governments respond.
- **Institutional investors will be needed to fill the void left by public funding shortfalls.** Some emerging economies' governments and banks may hold back on large-scale infrastructure projects due to lack of money, and many of these countries lack local investors who can fund such projects. This opens the door for foreign institutional investors to fill the void. Studies show that, globally, investment institutions currently allocate less than 2 percent of their portfolios to the infrastructure sector. An increase to approximately 4 percent could, S&P research suggests, close the looming gap in infrastructure funding left by public sector budget shortfalls to promote economic growth in nations around the globe and create further opportunities for investors.

Spotlight: Foreign Investors in Emerging Markets

Many emerging-market nations have relaxed or eliminated regulations involving foreign direct investment (FDI). This creates market advantages for foreign banks from developed nations, and in many Latin American, Central European and Eastern European countries today, these banks control more than 50 percent of the banking systems' assets. The market reality is that these foreign institutions enjoy higher interest rate margins and profitability, compared to the emerging economy's domestically owned banks.

The penetration of foreign banks into emerging markets is both a positive and a negative from the perspective of the emerging markets themselves. On one hand, there are significant benefits from the introduction of new products, new technologies and increased competition among banks. Foreign banks are also likely to be more stable as their geographically diversified credit portfolios are less likely to be affected by economic turbulence than the portfolios of smaller, domestic banks. On the other hand, a foreign bank may expose the emerging market economy to economic woes for the same exact reason; for example, if its portfolio in a different part of the world suffers disproportionately.

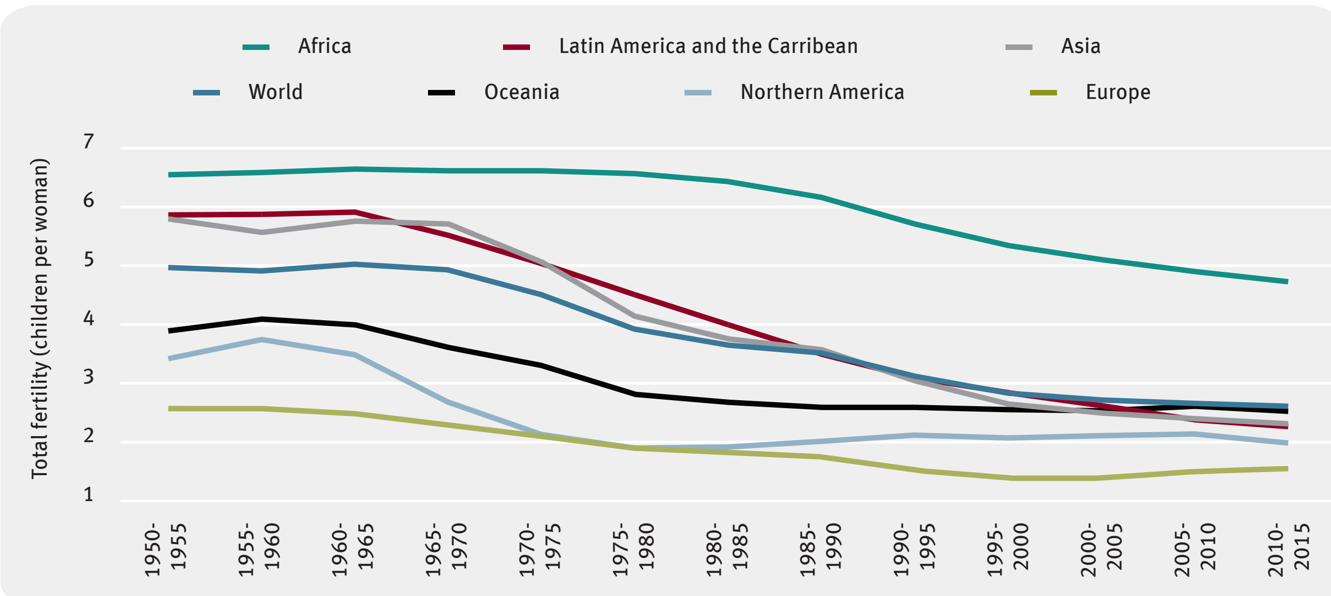
Shifting Demographics: Global Fertility Rates

ECONOMIC & SOCIETAL

Key Industries Impacted: *Government, Technology, Healthcare & Life Sciences, Financial Services, Retail*

After peaking in the 1960s, the global population growth rate has decreased steadily due to declining fertility rates in much of the world. In 2015, the United Nations estimated that 46 percent of the world's population, including much of Europe and Asia, lives in countries with fertility rates below the levels historically needed to replace each generation. This continued demographical shift poses significant, long-term consequences and highlights the key role that policymakers will have in mitigating some of the fundamental economic and cultural implications of this trend.

Total Fertility by Major Area, 1950-2015 (Children per Woman)



Source: "World Population Prospects: The 2015 Revision" (DVD Edition), United Nations, Department of Economic and Social Affairs Population Division, 2015.

As a country's or region's fertility rate experiences sustained decline, new generations cannot fully replace the ones preceding them and the country's age profile begins to shift. The result is a larger composition of older people, until the older generations pass and the overall population ultimately shrinks. Europe, for example, which continues to be subject to subreplacement fertility, is projected by the United Nations to have a smaller population in 2050 than in 2015. Meanwhile, on a global scale, the population of people over the age of 60 continues to be the fastest-growing demographic due to both declining fertility and rising life expectancies. It is estimated that by the year 2050, all major areas of the world except Africa will have nearly a quarter or more of their population aged 60 years or older, compared to only 12 percent of the world's population today.

Factors contributing to declining fertility rates include:

- **Family planning practices:** Increased availability and use of contraceptives, especially in the developing world, have allowed for the adoption of family planning practices and the prevention of unplanned pregnancies.
- **Advanced education:** Postgraduate education is becoming increasingly common in many parts of the world, and the time and investment necessary to pursue it often delay marriage and significantly increase the cost of raising a child.
- **Women in the workforce:** The participation of women in the workforce has increased the opportunity cost of raising a child. As traditional gender roles are redefined, time spent away from the workplace to raise a child can translate into a loss of household income.
- **Urbanization:** In traditional agricultural societies, children are viewed as productive assets capable of providing labor. However, in urban societies, children are largely consumers. Widespread urbanization and industrialization, coupled with the high cost of living in cities, have led to smaller families.

Key Considerations and Implications:

Population aging will present challenges for a variety of industries in areas subject to sustained fertility rate decline. At the center of these concerns is a smaller working-age population, which will be responsible for supporting both the economy and a growing, dependent elderly population. Some of the possible solutions to the imbalance, such as raising the retirement age, may have implications of their own, e.g., shifts in workplace dynamics, alternate employee schedules, workplace accommodations. Among the industries affected:

- **Government:** Many government policies and programs, such as public pensions and social security, are structured on the expectation of an expanding population, accurate mortality tables and the realization of expected rates of return on fund assets. A disproportionately smaller working-age population means a smaller tax base to fund these programs, particularly if life expectancies rise and realized returns are below expectations. Policymakers will need to be proactive in devising a wide range of solutions to mitigate the short- and long-term impacts of an aging population, potentially including incentivizing fertility, raising the retirement age, and adopting pro-immigration policies.
- **Technology:** Boosting productivity through use of automation and advanced technologies will be crucial to offsetting the effects of a declining working-age population.
- **Healthcare and Life Sciences:** Demand for healthcare services will skyrocket as the population of older people expands. Healthcare providers, insurance companies and pharmaceutical manufacturers will all be significantly impacted.
- **Financial Services:** A disproportionately larger retiree population may translate into less capital investment, as personal savings and investments are withdrawn to cover the daily costs of living in retirement.
- **Retail:** Shifting demographics will force retailers to evaluate their current product offerings and market segmentation strategies, as they increasingly cater to the wealth of the aging population and a relatively smaller number of younger customers.

Spotlight: Germany and China

Germany and China serve as prime examples of how policy can be used to offset the short- and long-term consequences presented by declining fertility rates. Germany, currently Europe's largest economy, has one of the world's most rapidly aging and shrinking populations. By the year 2060, the country's dependency ratio is expected to rise to almost 60 percent, meaning there will be roughly only two workers to support each retiree in the country. As this looming demographic trend takes shape, pro-immigration policies will play a major role in supplementing Germany's workforce and tax base. The government already has taken steps to implement programs designed to incentivize educated and skilled workers to move to the country, including allowing an influx of young refugees from war-torn areas such as the Middle East and Africa. Meanwhile, China, home to the world's largest population of 1.37 billion people, has reversed its one-child policy, originally implemented in 1980 to slow down explosive population growth and raise living standards. In October 2015, the Chinese government announced it would abandon this policy and allow couples to have two children. This measure can be seen as a direct response to a rapidly aging society experiencing a labor crunch as its working-age population shrinks.

Entrants From Anywhere

ECONOMIC
TECHNOLOGICAL & SOCIETAL

Key Industries Impacted: *Consumer Products & Services, Financial Services, Technology, Media & Communications, Healthcare & Life Sciences, Government*

Disruptive innovation occurs in today's marketplace when a new technology or business model arises that is able to satisfy existing demands for goods or services or create a wholly different customer experience, and scale rapidly, changing the market and imploding the business models of established players. Classic examples include the Ford Model T, Apple's iPod, mobile phones, digital photography and LED lighting.

The concept of disruptive innovation is not an emerging risk in and of itself; innovation has always been a disruptive force in business. The true emerging risk is the source of these innovations and the rate at which they impact the market.

Key Considerations and Implications:

- **The risk of disruptive innovation has magnified as technology-based business models now allow startups with limited capital to grow and scale rapidly.** These business models have transformed what used to be a normal rate of adoption and transition, often represented by a simple bell curve, into a much steeper curve, capable of displacing businesses, and even entire traditional industries, in a very short period.
- **Startups are seeking more funding than ever before.** According to *Forbes,* at the end of the second quarter of 2015 the number of entrepreneurs globally who submitted applications for funding from early-stage investors was up 26 percent compared to the first quarter of 2015, and up 20 percent compared to the second quarter of 2014.
- **The sources of funding for startups have expanded far beyond the traditional venture capital firm.** Nontraditional seed funding and financing, coupled with crowdsourcing, have allowed startups to source the funds to develop their business ideas in alternative ways, contributing to the ease and speed of startup growth.
- **Companies, both established players and the startups themselves, can no longer survive solely by reacting to new entrants; they must innovate from within.** New products, services or innovative business models and technologies that transform the customer experience can lead to an established company's failure virtually overnight. For this reason, "intrapreneurship" has become a growing trend, with larger companies acquiring or investing in startup accelerators of their own in an attempt to harvest and cultivate disruptive innovations from within. The mentality of "innovate or die" appears to be settling in as a desirable culture for fostering change.
- **Startups must also contend with the unpredictability of the markets they choose to enter.** New entrants that greatly disrupt well-established and traditional markets have caused governments to panic and react quickly to the disruption, typically in the form of local, state or federal regulations or mandates.
- **It is vital to recognize that competition in the marketplace is no longer regional, and that startup ecosystems are no longer contained within well-known startup hubs such as Silicon Valley.** Global interconnectedness has allowed for worldwide competition and the emergence of new startup hubs in unexpected locations; hence, entrants from anywhere.

Spotlight: Startups in Emerging Markets

The high potential for growth in emerging markets has led to increased investment in startups in these markets in recent years, and this trend is expected to continue in the future. China's technology hubs produce around 49 startups each day, and India is trailing closely behind. In the first quarter of 2015, Indian startups raised 300 percent more from investors than in the same quarter in 2014. A study conducted by the Global Entrepreneurship Monitor revealed that sub-Saharan Africa is the region with the highest number of people involved in early-stage entrepreneurial activity.

A World Bank report identifies more than 17 million small- and midsize businesses in emerging markets with unmet credit needs. The shortfall in investment is thought to be between US$900 billion and US$1.1 trillion. Accelerators and seed funds that recognize this potential for startup growth are appearing around the globe, attempting to reduce the funding gap.

Entrants From Anywhere

Startup Hubs Around the World

A global and interconnected startup ecosystem is flourishing around the globe. While in the past almost all technology startups were created in Silicon Valley and other hubs primarily in developed countries, today it is evident that entrepreneurship is emerging around the world.

Global Startup Ecosystem Ranking

The 2015 Startup Ecosystem Ranking Report, published by Compass, a San Francisco-based company that provides reporting and benchmarking tools to startups, ranked the top 20 startup ecosystems around the world based on five key characteristics (listed at right).

1	Silicon Valley	5	Tel Aviv	9	Berlin	13	Moscow	17	Toronto
2	New York City	6	London	10	Singapore	14	Austin	18	Vancouver
3	Los Angeles	7	Chicago	11	Paris	15	Bangalore	19	Amsterdam
4	Boston	8	Seattle	12	São Paulo	16	Sydney	20	Montreal

Startups in Emerging Markets

As emerging markets are exposed to new technologies and environments, there is an opportunity for tremendous societal change. Unlike startups in the U.S., startups in emerging markets are working to make impacts beyond offering increased convenience or another product or service. They strive to address very real and specific problems unique to their areas and situations, such as access to healthcare, education and electricity.

Emaji

Today, more than 250 million people worldwide succumb to diseases related to water pollution. Emaji is a cloud-driven, low-cost water quality monitoring system in Africa that detects and alerts authorities of contaminated water sources in real time. With this system, the contaminated water source is shut down via an electronic solar-powered water valve until the proper channels can provide a solution.

mTiba

Due to distance, excessive wait times and cost, access to health insurance and healthcare services is difficult for the vast majority of Africans. mTiba is a web platform connecting patients to a global network of doctors in order to facilitate remote treatment and health advice. Its cloud base allows patients' medical records to be accessed easily from anywhere and also allows for the aggregation of data, which can be used to track medical trends across the country.

Sterio.me

Sterio.me is a mobile education platform designed to connect teachers and students outside of the classroom. This mobile platform can be accessed on basic cell phones without the Internet, and can distribute homework, tests and learning aids to students while providing real-time feedback to teachers of their students' progression. The business was started on StartupBus Africa, and has gained global recognition and accolades.

Glukoa

As diabetes rates have skyrocketed across emerging countries, limited information and poor management practices are causing patients to endure suffering and exorbitant treatment costs. Glukoa is a tool for diabetics and high-risk groups that allows users to self-manage their treatment and connect directly with specialists and healthcare communities via web, mobile and SMS/USSD applications, increasing quality of life and reducing healthcare costs.

Esaja

Esaja is a technological platform that promotes borderless trade in Africa. The platform allows greater access for those seeking to contract African suppliers, products and services. Esaja received funding from U.S.-based Africa Angels Network, is recognized as a Kairos 50 Enterprise and was featured in Inc. Magazine as one of 50 Emerging Global Entrepreneurs to Watch.

Emerging Risk Spotlight: Artificial Intelligence

Key Industries Impacted: *Financial Services, Retail, Technology, Industrial Products, Higher Education*

At its core, automation is streamlining a manual process such that human interaction is minimized or completely removed. Some people view automation as a tactic for cutting costs by eliminating jobs, but its value proposition is much broader, often making a process more reliable and thereby increasing quality.

Automation is not a new concept; in fact, it has shaped and redefined many of the industries that exist today. In the Industrial Age (1920s), when mass production was introduced, it changed the transportation and consumer goods industry by automating production and decreasing the need for human labor. In the more recent Digital Age (1990s), automation has changed the way we create, store and transfer information, leading to a technological global economy. The transformation combined reduced time and costs with increased quality and innovation, and contributed to the globalization of the workforce.

The next generation of automation is artificial intelligence (A.I.). Like its predecessors, this new form of automation will have a significant impact on current industries and employment sectors.

Key Considerations and Implications:

- Automation will only be adopted within selected industries in which the value proposition makes sense. Just because a job can be automated does not mean that it will be; relative costs are a key component in evaluating the automation option. It is estimated that within the next 20 years, 47 percent of the total U.S. employment is at risk of being automated by A.I.; however, jobs that require social skills and human interaction will be safeguarded against such automation (e.g., therapists, teachers, skilled nurses).
- Industries that adopt any form of automation, and especially A.I., will likely be those that can benefit from process efficiencies, labor cost savings and innovative products. However, these industries generally face significant implementation barriers initially, due to the high cost of research and development associated with new technology. For example, Toyota Motor Corporation, one of many car companies working in the "intelligent car" space, recently announced an additional US$50 million investment in robotics and A.I. research supporting its effort to develop such a car.
- The regional impact of A.I. will require nations that have weak science, technology, engineering and math (STEM) skills to revamp their educational system to focus on STEM in order to be competitive in the future employment landscape. Meanwhile, nations with workers who have strong STEM skills must anticipate the industries that will become heavy adopters of A.I. in order to supply these industries with an appropriately trained workforce.
- Employees whose jobs are likely to be replaced by automation must supplement their skills with additional education and specialized training or face barriers to employment. Automation will lead to industry expansion and the development of new products and services, driving downstream job development that requires new skills. Employees must possess the right set of skills to take advantage of these opportunities. Policymakers need to ensure that the necessary education and training programs are available.

The impact of A.I. will depend greatly on how it is implemented across various industries. The jobs that are not replaced by A.I. will be largely complemented by it. In the table below, we highlight some of the ways in which this new form of automation can create opportunities for various industries:

	Financial Services	Auto Industry	Retail Industry	Professional Services
Automation	**Decision models –** A.I. will continue to evolve decision models used by the industry with up-to-the-minute data, and use them to determine credit worthiness and the price of financial products (e.g., loans, credit card rates).	**Dealership service stations –** A.I. will be able to review the on-board systems of vehicles, identify issues within the vehicle and flag a service engineer to issue the necessary over-the-air update before the issue is noted by consumers.	**Predictive product delivery –** A.I. will be able to analyze data from customers' smart home or wearable devices and recommend products based on the information.	**Lawyers/law briefs –** A.I. will be able to automate the process by which law briefs are created, by searching prior case law databases.
	Pricing models – A.I. has improved and will continue to improve the quality of real-time information used to price financial products.	**Driver assistance –** A.I. will be able to assist the driver in avoiding collisions and even drive the car itself.	**On-demand services –** Based on the retailer's database, A.I. will be able to inform the customer of the services that will meet his or her needs.	**Medical symptom diagnosis –** A.I. will be able to review and analyze patients' pictures and descriptions, and provide an accurate diagnosis.
	Online A.I. teller services – A.I. will be able to recommend not only a suitable account type to a potential customer but recommend investment options as well, with further interaction from financial advisers.	**On-call vehicles –** A.I. will be able to pick up and drop off customers based on online requests.	**A.I. call centers/web-based interface –** A.I. systems will be able to answer customers' inquiries and provide them with the necessary service (e.g., account information, sales requests, returns).	**A.I. researchers –** Based on a defined scope of research, A.I. will be able to analyze millions of records to identify patterns and trends, a task which would take a human researcher a lifetime.

On the Radar

The themes of globalization, changing population demographics and expanded interconnectedness discussed in this issue, along with the pervasive theme of enabling digital technologies discussed in prior issues, will continue to loom large for the foreseeable future, spawning the seeds of disruption to established business models. In our upcoming editions we would like to explore topics that further shed light on the risks resulting from these dynamic trends.

Cybergeddon

According to the World Economic Forum, there are reasons to believe that the resilience of cyberspace is gradually being undermined, making it more vulnerable to attackers. Reasons for this include the increased number of devices being connected online, which expands the number of potential entry points for attacks. The problem is underscored by the fact that an attacker still only needs to find a single point to enter a system, while a defender must protect a growing number of entry points.

Another factor in the vulnerability of the Internet is the growing dependency on connected devices, which increases the potential impact of a disruption, plus the fact that the Internet itself is an open, free platform where good and bad players can act with equal ease.

There is need for increased attention to global governance of the Internet, but recent controversies surrounding national security organizations are undermining the trust among parties whose collaboration is necessary to prevent a "Cybergeddon."

The Growing Competition for Natural Resources

A common vehicle for assessing a company's risk profile is to look at its corporate sustainability report, which covers the potential environmental, social and economic impact of its operations on the geographies where it has presence, as well as the impact of these factors on the company's operations. This type of reporting is common in the U.S., Europe and other developed markets, but it is not prominent in emerging economies.

More companies are operating in increasingly uncertain environments, where they rely on natural resources the future of which is unclear. As such, these companies need to understand both the risks they present to the resource area, and the risks a potential scarcity of resources may present to them.

Reputation Risk for Companies With Supply Chains Involved in Human Rights Violations

As outsourced production continues to grow and expand globally, a firm's reputation not only reflects the practices and operations under the firm's direct control but also those of the upstream companies in its supply chains. For a company, the risk of reputational spillover is particularly high when production is outsourced to countries where labor and environmental standards are low. Firms seeking to avoid reputational damage from illegal and unethical behavior at supply chain factories are relying increasingly on private social auditors for strategic information about suppliers' conduct.

Both the United States and the European Union have established trade sanctions on countries with known human rights violations. Companies that do business with these countries must ensure that the sanctions do not limit their ability to conduct business there, and they must abide by applicable laws and regulations to avoid penalties or reputational bruises.

Where to Learn More

Global Connectedness: Investing in Emerging Economies

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The Protiviti View — Continuing the Conversation on Our Blog

The risk areas summarized above will continue to evolve, and there is no question that new risks will emerge and affect organizations globally. We are continuing the discussion we've started in this newsletter on our blog, The Protiviti View (blog.protiviti.com). Our blog features commentary, insights and points of view from Protiviti leaders and subject-matter experts on key challenges and risks companies are facing today, along with new and emerging developments in the market. We invite you to subscribe and participate in our dialogue on today's emerging risks. You also can find additional information on our microsite, www.protiviti.com/emergingrisks.

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Contacts

Cory Gunderson
Managing Director
+1.212.708.6313
cory.gunderson@protiviti.com

Jim DeLoach
Managing Director
+1.713.314.4981
jim.deloach@protiviti.com

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