OXFORD ECONOMICS

The New Digital Economy

How it will transform business



A research paper produced in collaboration with AT&T, Cisco, Citi, PwC & SAP

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Preface

This white paper provides insights into how corporations are responding to the key economic and technology megatrends reshaping the global marketplace. To ensure the rigor of our research, we undertook a blend of quantitative and qualitative analysis, including:

- A global survey of 363 c-suite executives representing over $256 billion of global turnover and covering a broad range of industries, including financial services, retail and consumer goods, manufacturing, life sciences and TICE (technology, information, communication and entertainment).
- Oxford Economics' integrated global economic and industry models to forecast trends, explore alternative scenarios and gauge economic impact.
- Oxford Economics' extensive databank containing 25-year forecasts and 30 years of historical data on 190 countries and 85 industrial sectors, as well as market data and forecasts from secondary research sources such as eMarketer, IDC and Gartner.
- A series of in-depth personal interviews and panel discussions (in New York, London and San Francisco) with over 35 senior executives, consultants and policy makers involved in digital strategy and corporate decision-making, including heads of marketing, IT, strategy, social media, finance and operations.

We thank all the executives who took part in both the survey and the qualitative research. We also thank AT&T and Cisco for the use of their Telepresence suites and advanced virtual technology to host our thought leadership panel discussions.

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Oxford Economics carried out the research. The study is the sole responsibility of Oxford Economics and does not necessarily represent the views of the sponsors.

June 2011

Executive summary

International leaders face an era of unprecedented change. The recession and financial crisis that ended in 2009 caused a seismic shift that has reshaped the global business landscape. The world economy is now characterized by sluggish growth in the West, a shift in power to the East, and value-driven customers and rising risks everywhere. At the same time, the downturn has hastened the adoption of key technologies—mobility, cloud computing, business intelligence and social media—that are transforming businesses and sparking a new wave of wealth creation, particularly in the emerging world.

Current economic conditions are fostering investment in technology as emerging markets ramp up their demand for technology to fuel growth, and advanced markets seek new ways to cut costs and drive innovation.

Economic growth and technology are inextricably linked. Current economic conditions are fostering investment in technology as emerging markets ramp up their demand for technology to fuel growth, and advanced markets seek new ways to cut costs and drive innovation. This becomes a virtuous circle as digital technologies drive consumer income and demand, education and training, and efficient use of capital and resources—leading to increased economic growth, particularly in emerging markets.

Executives must be aware of the new challenges facing their firms as market momentum accelerates. Rising middle classes in places like China and India offer extraordinary potential for companies that understand their needs. Emerging markets are also spawning rivals that are unencumbered by legacy systems and corporate bureaucracy—with their sights set on advanced economies.

Against this backdrop, we foresee six significant shifts firms will need to address over the next five years:

1 **The global digital economy comes of age.** The internet has set in motion a third wave of capitalism that will transform many aspects of the global marketplace—from consumer behavior to new business models. Mobility, cloud computing, business intelligence and social media underpin this shift, which is taking place in both developed and developing economies.

2 **Industries undergo digital transformation.** As a result of the maturing digital economy, companies across a range of industries have seen their business models upended as they contend with the twin forces of technology and globalization. Over the next five years, many sectors, including technology, telecommunications, entertainment, media, banking, retail and healthcare, will continue to be reshaped through the application of information technology.

3 **The digital divide reverses.** With economic power shifting to the East, cash-rich companies in the developing world are now investing heavily in technology—often outpacing their counterparts in developed markets. CEOs in advanced economies will need to deal with a new competitive challenge—aggressive technology-charged firms from emerging countries.

4 **The emerging-market customer takes center stage.** Rapid economic growth, along with rising populations and income levels, are putting emerging markets at the center of corporate growth strategies. Customers in emerging markets—including the consumer, business and government sectors—offer huge opportunities for Western companies that can adapt to their needs.



5 **Business shifts into hyperdrive.** The ever-changing global marketplace, fuelled by fast-growth economies and new technology, has accelerated the speed of most business activities, from product development to customer response. Real-time business intelligence and predictive analysis will be required not only for faster decision-making, but to cope with unexpected market risks and opportunities.

6 **Firms reorganize to embrace the digital economy.** To operate on the global digital playing field, where new rivals are unencumbered by rigid policies and thinking, astute Western firms are moving away from hierarchical decision-making and toward a network structure that is more market-like and organic.

These shifts will have profound implications for corporations in the years ahead. Our research reveals a number of imperatives for corporate leaders. For example, executives should have a forward-looking mobile strategy for emerging markets, where the phone is the primary means for internet access. At the same time, they must consider how to improve data analytics to anticipate rapid global market shifts. Remember that in a fast-moving world, the threat of security breaches increases; companies must build stronger safeguards into their operations. Finally, while emerging markets are growing quickly, companies should remember to protect market share in their home countries—rivals in emerging markets will be looking to play in your backyard.

Survey profile

This global survey of 363 business executives was conducted in December 2010. Of the respondents, 19% hailed from the US, 20% from the UK, 15% from India, 14% from Japan, and 8% each from China, Brazil, Mexico and Australia. The survey represented a broad range of industries, including financial services (26%); manufacturing (19%); technology, information, communication and entertainment (18%); retailing and consumer products (15%); and life sciences and healthcare (11%). More than half (52%) of respondents worked at firms with revenues of more than $1billion; 25% had revenues of $500 million to $1billion; and 23% had revenues under $500 million. Approximately 46% held c-level titles; 27% were senior vice presidents, vice presidents or directors; and 27% were heads of their business unit or department.



The virtuous circle of technology and growth

Tectonic shifts in the world economy, combined with leaps in technology, are irreversibly transforming the global marketplace. The 2008-09 global recession accelerated market trends already set in motion by the internet and other forces: greater consumer cost-consciousness, transformation of industries, globalization of markets, and greater business uncertainty and risks. This realignment is overturning conventional thinking on fundamental issues—where to find growth, how to meet customer needs and how to go to market.

Though sometimes thought of separately, economic growth and technology are inextricably linked.

Though sometimes thought of separately, economic growth and technology are inextricably linked. In emerging markets, industrial expansion, rising wealth and increasing populations have ramped up the demand for technology. In advanced economies, meanwhile, the investor's quest for higher rates of return reinforces the need for cost savings and greater innovation. Regardless of location, firms looking to grow must engage with the parts of the economy that are flourishing—the digital marketplace and the emerging world. This creates a virtuous circle that is propelling the digital marketplace in both emerging and advanced economies.

In today's interconnected environment, this virtuous circle can lead to rapid market transformation unlike anything seen in the past. Historically, most firms in advanced economies modernized inside the framework of a domestic strategy, growing first within their own borders and then replicating their business elsewhere. Today's emerging economies, however, are doing so at a time when technology has made it much easier to gain access to global capital, talent and other resources, allowing them to instantly plan for a global market.

Governments in these countries are nurturing growth by leveraging state-of-the-art technologies as they build out their "hard" infrastructure—from high-speed transport systems to ultra-fast wireless networks. Of course, these nations often still struggle with building the effective "soft" infrastructures seen in the West, such as transparent regulation and accountable public administration. But new digital technologies, especially mobile communications, are helping firms and their customers steer around such bottlenecks.

Against this backdrop, it is no surprise that executives who participated in our research believe the world market is undergoing radical change. Specifically, our study identifies six dramatic shifts for which firms will need to prepare:

- The global digital economy comes of age.
- Industries undergo a digital transformation.
- The digital divide reverses.
- The emerging-market customer takes center stage.
- Business shifts into hyperdrive.
- Firms reorganize to embrace the digital economy.

This report examines these shifts and what they will mean for businesses over the next five years. It concludes with a checklist of imperatives for senior management.





The global digital economy comes of age

Throughout history, economies have been reshaped by revolutionary inventions. These breakthroughs—such as the telegraph, railroads and the automobile—each sparked a virtuous circle of growth for the economies that could take advantage of them. The difference with the internet is that it is inherently global, benefitting both developed and developing economies.

"The internet is triggering a third wave of capitalism that will transform business and government and lead to extraordinary wealth creation."

John Sviokla, Partner, Strategy and Innovation Advisory Group, PwC

Says John Sviokla, the business leader for PwC's strategy and innovation advisory group: "The internet is one of the most complex things ever created. It takes human organization to another level." As such, the digital economy is "triggering a third wave of capitalism that will transform business and government, and lead to extraordinary wealth creation" around the world.

The best description of the internet, he says, comes from David Reed, one of its early framers. The internet, according to Mr. Reed, consists of three conceptual "clouds": the connectivity cloud, for the transfer of information; the resource cloud, for the storage of data; and the social cloud, for networking and collaboration. These clouds, which can be public, private or semi-private, provide the infrastructure for the digital economy. They enable the creation of new markets, and provide the conduit for the fluid movement of resources and demand. As a result, firms and individuals worldwide can participate in innovation, wealth creation and social interaction in ways never before possible.

Dr. Sviokla compares this third wave of capitalism to two earlier stages. The first wave came from the creation of the shared stock company, in which owners could spread the risks and rewards of setting up new ventures. The second wave arose from the twin innovations of the telegraph and railroad, which created a communications and coordination platform for large-scale industry.

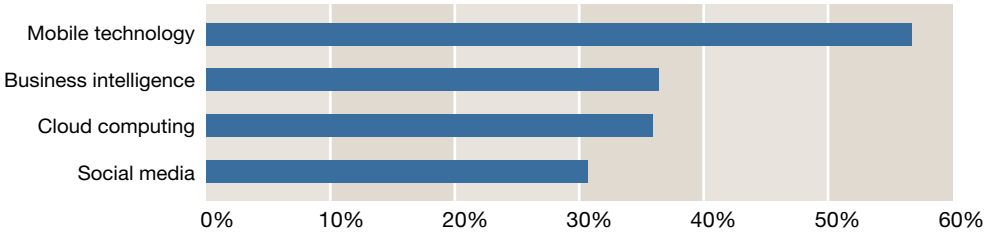
Like previous incarnations, this third wave provides a unique platform for the collective absorption of risk, self-organization of resources and wealth creation. But in Dr. Sviokla's opinion, because of Reed's law—which postulates that the value of a self-organizing network increases exponentially as the number of network members grow (2^N, where N is the number of network participants)—this third wave can propel rapid and exponential growth. And unlike the first two waves, both of which occurred first in the West and later in the East, this third wave—because of its digital backbone—is happening simultaneously everywhere across the globe. Indeed, this new wave will get a turbo boost from the billions of new mobile customers in emerging markets.

Reaching adulthood

While the digital economy has been operating for several decades—few companies today operate without an e-commerce platform—our survey identifies four key technologies that are now bringing it into adulthood: mobility, cloud computing, business intelligence and social media.

Figure 1: Digital megatrends

Which do you believe will have the greatest positive impact on your business over the next five years?



A majority of respondents (57%) say that **mobile technologies** will have the greatest positive impact on their business over the next five years. The mobile phone offers a valuable new marketing channel, particularly in emerging markets. According to the World Bank, for example, every 10 additional mobile phones per 100 people in a typical developing nation results in GDP growth of roughly 0.8%. Survey respondents across companies of all sizes see mobility as a game changer, and more than half of respondents within each industry say their firms will invest heavily in mobile technologies over the next five years.



Currently, eMarketer estimates that 4.3 billion of the world's population use mobile phones (Africa is the fastest growing market) and expects that figure to swell to 5.8 billion (72% of the total population) by 2015. As a sign of the times, in 2010 eBay customers bought and sold more than $2 billion in goods over their phones, up from $600 million in 2009. Juniper Research, the technology advisory firm, expects mobile payment transaction volume to reach $630 billion by 2014.

Following mobility, **business intelligence** is expected to provide the greatest business benefits, according to our survey (37%). Business intelligence now underpins nearly every aspect of business operations, from supply chain and risk management to marketing and product development. To succeed on the digital playing field, where speed to market is critical, global companies must move closer to operating in real time. As such, the ability to analyze information rapidly to inform decision-making will be essential. Emerging developments such as in-memory analytics, in which summary data is stored in RAM rather than databases, may help in this effort.

Our survey reveals a number of ways in which firms benefit from business intelligence. Approximately 61% of executives cite its importance in better understanding their customers and their businesses. A similar proportion indicates it helps them make strategic decisions and react in real time to market events. These benefits transmit to all aspects of operations—including reaching new customers, reducing costs and improving supply chain management.



Meanwhile, 36% of executives say that **cloud computing** gives them more flexibility to respond to market opportunities, improves the accessibility of their brand, and makes it easier to do business.

As a result of these benefits, 46% of companies in our survey plan to invest heavily in cloud computing in the future. Tellingly, executives in emerging markets are far more enthusiastic about the cloud than their counterparts in advanced nations. Our survey figures show that 71% of firms in the developing world are re-appraising their computing platforms to take advantage of the cloud, compared with only 46% of firms in the developed world. In fact, technology research firm Gartner estimates that the global public cloud computing market (including software as a service, platform as a service and infrastructure as a service) will grow from $68.3 billion in 2010 to $148.8 billion by 2014, with half of those revenues to come from outside the US.

Figure 2: Where executives will invest in technology

Which do you believe your company will be investing in most over the next 5 years?

	Total	Financial Services	Life Sciences	Manufacturing	Retail & Consumer	TICE*
Mobile technology	57%	51%	66%	52%	70%	59%
Business intelligence	39%	44%	26%	50%	38%	30%
Cloud computing	38%	39%	29%	49%	17%	47%
Social media	29%	17%	42%	15%	51%	33%
Collaborative technologies	23%	28%	26%	22%	17%	23%
Telepresence technology	14%	21%	11%	13%	8%	8%

* Technology, Information, Communication and Entertainment

Social media, meanwhile, has become a cultural phenomenon. Facebook now has over 650 million users, and Twitter's volume of visitors is rising at over 80% a year. Despite this, our survey reveals a debate among executives over the business value of social media. Thirty-one percent of respondents believe social media will have the greatest impact of any technology on their business—yet 35% consider social media to be irrelevant.

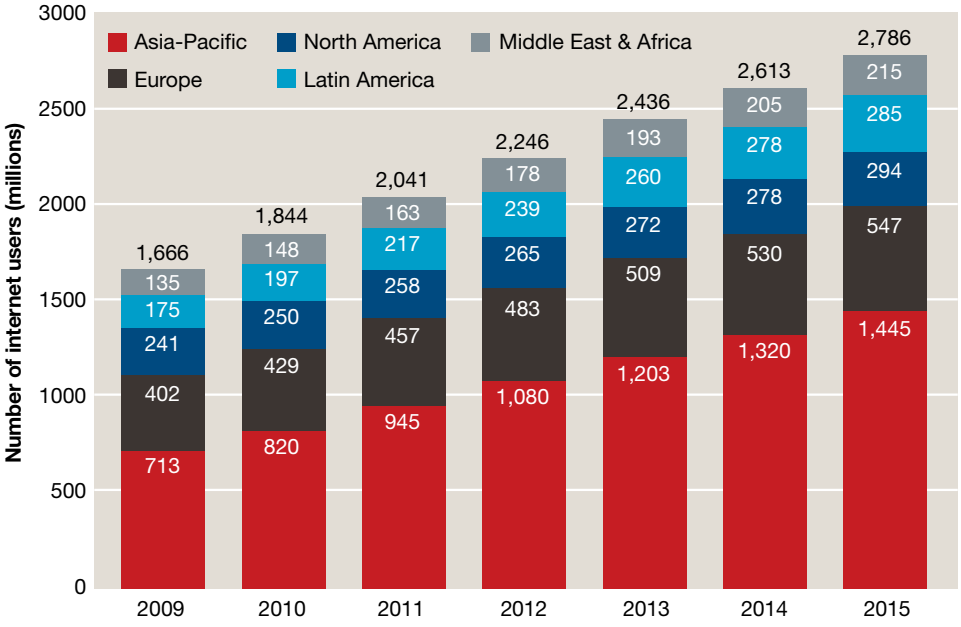
Our survey uncovered a growing number of firms—such as GE Energy, Forbes and security software provider AVG—that are using social media to build brand awareness and customer loyalty, especially in emerging markets. "All customers want is to be able to talk to you," says Jas Dhaliwal, head of communities at AVG. "They want to be able to connect with you, to share what they like and dislike." Listening to that feedback, he says, is a key to success.

Sizing the market

According to research firm IDC, the size of total worldwide e-commerce will be $16 trillion in 2013.

How big will the digital economy get? According to eMarketer, an estimated 1.8 billion (nearly 27%) of the world population now uses the internet, and that number will grow to almost 2.8 billion (about 38%) by 2015. Not surprisingly, the biggest spike will be in Asia, which will account for more than half of world's internet users by 2015. At the same time, J.P. Morgan expects business-to-consumer e-commerce (excluding travel) to jump from $572 billion in 2010 to over $1 trillion by 2014. However, these figures do not include business-to-business and online travel sales, which constitute the far bigger slice of the e-commerce pie.

Figure 3: Internet users worldwide



Note: Individuals of any age who use the internet from any location via any device at least once per month; numbers may not add up to total due to rounding
Source: eMarketer, March 2011

According to research firm IDC, the size of total worldwide e-commerce, when global business-to-business and consumer transactions are added together, will equate to $16 trillion in 2013. When added to the global market for digital products and services—which IDate, the French technology research firm, estimates at $4.4 trillion in 2013—the total size of digital economy is estimated at $20.4 trillion, equivalent to roughly 13.8% of all sales flowing through the world economy. Given the magnitude of these numbers, it is clear that the digital economy is coming of age.

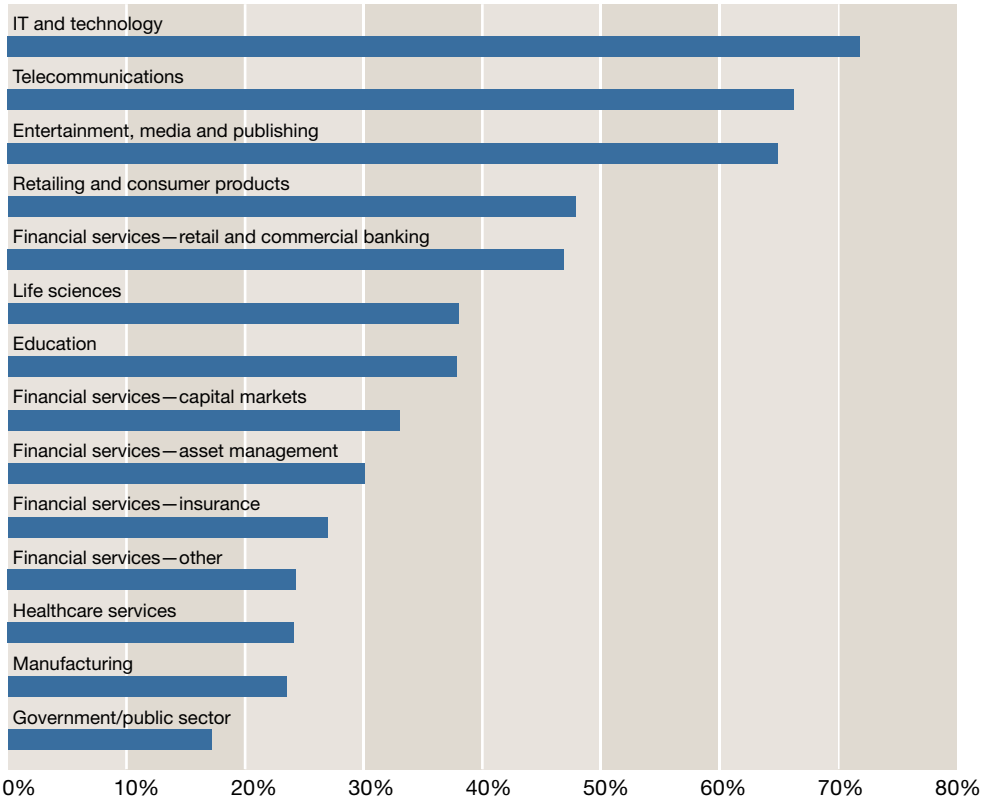


Industries undergo digital transformation

The virtuous circle is not just restructuring the world economy; it is leading to a new phase of industrial transformation. Indeed, to compete on the global stage, and reap the benefits of the digital marketplace, executives agree that industries will continue to see sweeping changes over the next five years, particularly in IT (72%); telecommunications (66%); entertainment, media and publishing (65%); retail (48%); banking (47%) and life sciences (38%). "There is wishful thinking that if we can just 'get through this,' things will go back to normal," says Bruce Rogers, Chief Brand Officer of Forbes. "Those days aren't coming back. That is the nature of technology, for both good and bad—it destroys old ways of operating that aren't as powerful anymore."

Figure 4: Industries most affected by digital transformation

In your view, which of the following business sectors will be most transformed (for the better) by information technology over the next 5 years? (% stating "greatly transformed")



While new firms will embrace the digital marketplace straight away, established firms will need to transform how they sell, price, produce and deliver products and services. Executives indicate this digital metamorphosis ultimately will help their firms provide more responsive customer care (60%), reduce the time required to complete tasks (60%) and improve employee productivity (58%).

For executives whose companies are undergoing this shift, the first order of business is to become a truly digital company inside the firm's existing footprint. Companies in a number of industries have already made the leap. The section below explores how the rise of the digital marketplace will affect three key industries: media, entertainment and publishing; banking; and life sciences and healthcare.

Media, entertainment and publishing

The new digital playing field has all but obliterated the old working models for the music, publishing and film industries. Movies and television shows can stream on demand to any digital device, and news, books and other publications are moving to mobile phones and tablets. In fact, Amazon.com announced in May that it now sells more ebooks than hardcover and paperback books combined. With information becoming a commodity, some media firms are switching from subscription fees to "freemium" pricing, a business model that combines free services with paid-for premium services.

"We have virtually re-architected our whole product perspective around the internet."

Bruce Rogers, Chief Brand Officer, Forbes

To maintain relevance in an era where anyone can be a publisher, and to reach new switched-on segments in emerging markets, companies need to rethink their approach. At Forbes, that meant throwing out the old way of producing magazines and adopting a new operating model. Two years ago, according to Mr. Rogers, Forbes had separate editorial teams for print and online. "The thinking was that the print writers needed to go away for two months and write a story, while the web writers needed to write 10 stories per day." This, he admits, was an antiquated way of thinking. "You can do incredibly in-depth, investigative reporting and still have a voice on the web. The best writers create a constant content stream around their expertise." Editors also realized that readers wanted to be more engaged with Forbes' content and authors.

As a result, says Mr. Rogers, "We have virtually re-architected our whole product perspective around the internet." To make the shift, the company redesigned its web site, hired a new chief product officer and invested in a new content management system built with social media in mind. Readers can now follow their favorite authors and create their own content. Writers are encouraged to respond to readers' feedback and participate in reader conversations. Using the "Called Out Comment" feature, writers can encourage debate by highlighting readers who offer particularly insightful feedback.

Figure 5: New directions in worldwide media advertising (in billions)

	2009	2010	2011	2012	2013	2014
Online ad spending	$55.2	$61.8	$68.7	$79.0	$87.4	$96.8
% change	2.0%	11.9%	11.1%	15.0%	10.6%	10.8%
% of total media ad spending	11.9%	12.8%	13.9%	15.1%	16.1%	17.2%

Note: Includes banner ads, search, rich media, video, classifieds, sponsorships, lead generation and e-mail; excludes mobile ad spending
Source: eMarketer, June 2010

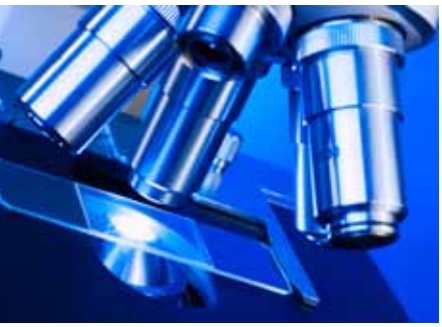
Still, the transformation was not an easy one. Forbes now has fewer on-staff writers than it did two years ago, opting instead for a larger network of contributors—approximately 500 to date, with plans to expand to 1,000 by the end of this year. Figuring out how best to cede control of online content was also an initial concern. "To be effective on the web, you have to be in the moment, and write about what's happening right now on the topic that matters to you. But you still need quality control," says Mr. Rogers. But it's a strategy that has paid off—with 18 million monthly unique visitors to its site, 30% of which comes from outside the US. "Ironically," Mr. Rogers adds, "our digital footprint helps us grow our print and conference business outside the US." Forbes now has 16 international editions, including China, India, Russia and Poland. Mr. Rogers says the new approach has generated more site traffic globally—that equals more revenues.

"With all this technology, some marvelous things are happening in healthcare."

Dr. Richard Popiel, President & COO, HHI

Life sciences and healthcare

The global need for affordable healthcare makes medical care a prime target for technological transformation. The emerging world has long suffered, and partly due to the recession, many citizens in the developed world can no longer pay for proper healthcare. Waste alone is a massive drain on resources. In the US, as much as 30% of annual spend on healthcare—which was $2.5 trillion in 2009—goes to unnecessary procedures, fraudulent claims and duplicative tests. Reducing that figure by even a fraction can mean significant improvements in care.



Change isn't easy for the healthcare industry. This is why Horizon Blue Cross Blue Shield of New Jersey created a separate subsidiary to lead a transformation in New Jersey's healthcare. The new entity, Horizon Healthcare Innovations (HHI), is tasked with rethinking how health insurance companies work with providers, patients and other stakeholders. Its mission is to collaborate with others to change and improve the healthcare system, creating new models of care designed to improve quality, affordability and patient experience while leveraging technological advancements. This includes the use of new technology to remotely monitor the chronically ill. Since its launch in September 2010, HHI has focused on several areas: mobile health, remote monitoring, care coordination and payment reform. Already, five pilot programs have been rolled out, according to Dr. Richard Popiel, its president and COO. "With all this technology, some marvelous things are happening in healthcare," he says.

Improving patient outcomes and greater efficiency hinges on coordinating patient care, sharing information and engaging patients. Several of HHI's pilot programs aim to help physicians access data more easily by sharing it in a user-friendly, timely fashion. Dashboards that record patients' wellness and risk factors like body mass index and chronic health conditions give physicians a valuable big-picture view of their patient population. Similarly, HHI is leveraging technology in a consumer engagement pilot focusing on remote patient monitoring to promote self-management and timely treatment. Bluetooth-enabled scales to monitor weight, and pulse oximeters to measure oxygen levels are placed in the homes of congestive heart failure patents. This technology immediately transmits those results to a dashboard monitored by Horizon nurses. If a patient is well, it's noted. But if oxygen levels are off and weight is inconsistent, the advanced system sends an alert requesting patient and physician notifications.

Some may view this as unconventional, but improving care coordination and engaging consumers through the use of innovative technology will improve patient care and ease the mammoth financial burden that everyone shares. "We're not at the top yet," says Dr. Popiel. "But by improving quality outcomes using technology, we can begin to extract significant waste and inefficiency from the system."



Financial services

Technology has always been critical for back-end operations in financial services. Now it is moving front and center as a way to acquire and maintain customers while providing them with improved financial services. Mobile commerce and peer-to-peer lending is forcing the banking industry to reinvent itself, particularly in emerging markets. According to Berg Insight, a Stockholm-based research firm, the number of mobile banking users is expected to reach 894 million by 2015—the majority of whom will hail from Asia, Africa, the Middle East and Latin America.

For evidence of digital transformation, look to Saxo Bank. A tiny brokerage firm 19 years ago, today it is one of the world's top 20 foreign exchange trading firms. Tapping into a Scandinavian appetite for early adoption—and foreseeing that globalization and the digital economy would take hold—Saxo began streaming real-time foreign-exchange data to customers who executed trades by phone. By popular demand, Saxo added online execution to the mix. Almost overnight, it went global.

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Saxo's digital approach resonates with emerging market investors—more than four in 10 customers hail from the developing world. Says Albert Maasland, CEO of the London branch that covers the UK, North America, Sub Saharan Africa and India: "We see a higher proportion of people in markets that experienced rapid growth prepared to manage their own money, as opposed to giving it to third parties."

Over the past decade, Saxo extended its online trading capabilities to other asset classes, including equities, futures and "contracts for differences" (CFDs). A single pool of cash collateral allows customers to take online positions in any asset under Saxo's virtual roof. Real-time analytics allow customers to trade any asset at any time at current prices. Leverage capped at 100 to one (for foreign exchange) means that $1 million in collateral can support up to $100 million in invested assets, though accounts very seldom approach that lofty ratio.

According to Mr. Maasland, one of the most dramatic shifts in banking is happening with client acquisition. Rather than making cold calls, Saxo finds new customers through referrals, online marketing initiatives and social media. Sophisticated tracking software follows every customer click on Saxo, from the first passing visit. "We see that social communities are often the last touch before clients open an account," he says. As a result, Saxo purchased a stake in Euroinvestor, a listed online investor portal with more than one million customers who log into its forum to exchange investment ideas. "People trust each other more than they trust institutions," Mr. Maasland says.

What does the future hold for financial services firms? The biggest challenges are legacy systems—and legacy thinking.

As testament to the merits of an online strategy, business flourished in 2010. Operating income jumped by 50%, topping $653 million. Net income more than tripled, to more than $126 million. Assets under management and clients' collateral deposits nearly doubled, to $12.2 billion.

What does the future hold for financial services firms? The biggest challenges are legacy systems—and legacy thinking, says Mr. Maasland. "There are banks with a range of service models desperately trying to convince people to keep paying high fees to be able to face a person. I'm not sure that's sustainable."

Technology as a revenue driver

For many companies, technology is taking on a new role—as a driver of revenue and enabler of new business models. Our research has shown many variations on the theme—from the emergence of new cloud-based businesses to the use of mobile phones to reach new clients. One of the best examples of building a new business from a technological advancement is location awareness—the use of GPS sensors in mobile phones to create location-based services. Three years ago, the concept of location awareness was mainly limited to GPS systems in automobiles—drivers used such systems to navigate complicated street routes and find their way out of traffic jams. That all changed in March 2009, when a new service called Foursquare made its first appearance at South by Southwest Interactive, an annual music festival held in Austin, Texas.

With more than eight million users worldwide, 2.5 million check-ins per day and more than 250,000 participating merchants, Foursquare has quickly developed an ecosystem that has yet to be matched by its competitors, most notably Facebook, Twitter and Google. Its founders Dennis Crowley and Naveen Selvadurai credit the success of the platform to its game-like approach—users earn points and "mayorships" for their check-ins, and are ranked on a leader board with their friends. Most recently, Foursquare added an "explore" function to its service that allows users to search for businesses that are close in proximity—restaurants, shops, bars and entertainment venues. The idea is to help users not only announce where they are, but decide where they are going to be: "You're walking down the street and normally you eat lunch," said Mr. Crowley during a recent speech at the Where 2.0 Conference in Santa Clara, California. "Foursquare will tell you that you're close to a sandwich place you read about in the *New York Times* three weeks ago. And that's what you want to try."



The digital divide reverses

Across almost all measured indicators, our survey reveals that firms in emerging markets are more willing to adopt digital technologies than their counterparts in industrial nations.

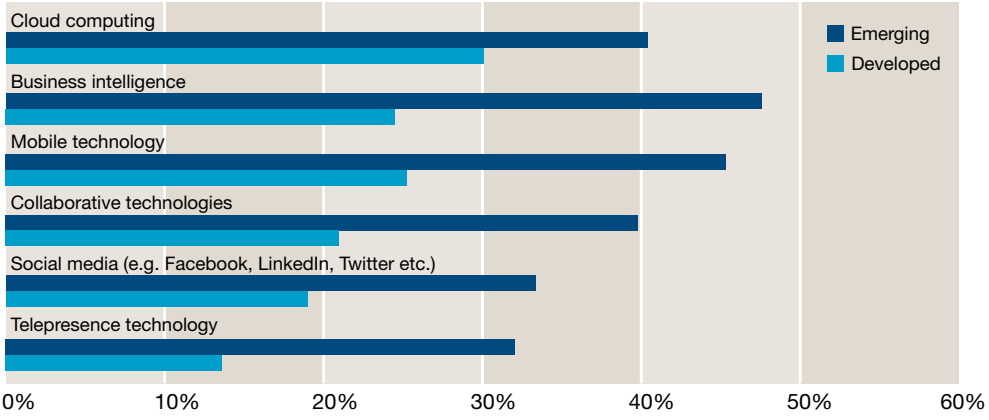
Due to globalization, the virtuous circle is reshaping the world's markets in a way we have never seen before. Developing economies now have easier access to capital, talent, intellectual property and other resources that were unavailable to them in the past. And because they were not as hard hit by the economic downturn, they are in a stronger position for growth. As a result, our study shows that firms in the emerging world are more likely to engage in—and benefit from—the virtuous circle than their counterparts in advanced economies.

In fact, the traditional digital divide favoring the "haves" in the industrial world over the "have-nots" in developing markets now seems to be swiftly reversing. According to Tim Weber, the BBC's business and technology editor, "Emerging markets now have the scale, investment and focus to make use of the digital economy." As a result, he adds, "We are going to see a lot of leapfrogging of technologies, where countries bypass normal technological states of development because they don't need them."

Across almost all measured indicators, our survey reveals that firms in emerging markets appear more willing to adopt emerging digital technologies than their counterparts in industrial nations. There is a greater openness to shift practices, try new technologies and take greater risks. In the view of Mr. Rogers of Forbes, it comes down to entrepreneurial spirit: "The need to get ahead is stronger in the developing world than the developed world. It's just human nature."

Figure 6: Technology adoption in emerging vs. developed world

(% planning to increase expenditure by over 20% over the next five years)



The difference in attitude between the West and East is reflected in their disparate views on digital transformation. For example, two-thirds of executives in emerging markets believe that mobile devices will become the standard method for web applications over the next five years, compared with only one-half of executives in advanced economies. Similarly, two-thirds of emerging market executives expect businesses to embrace social media and networking; just one-third of their industrial-market counterparts share this view.

The number of mobile users in China will jump from 671.1 million in 2010 to over 1.06 billion in 2015.

Figure 7: Mobile phone users worldwide (millions)

	2009	2010	2011	2012	2013	2014	2015
China	574.9	671.1	762.8	851.9	926.7	996.0	1,062.1
India	358.6	516.2	618.4	698.9	781.3	840.7	901.2
Japan	102.9	104.0	105.0	105.9	106.8	107.7	108.5
South Korea	40.3	40.9	41.2	41.5	41.9	42.2	42.5
Australia	14.6	14.9	15.3	15.7	16.1	16.5	16.9
Other	519.0	557.4	600.5	639.2	677.9	717.8	758.4
Asia-Pacific	**1,610.4**	**1,904.4**	**2,143.1**	**2,353.2**	**2,550.7**	**2,720.9**	**2,889.7**
Germany	61.4	62.7	64.3	65.6	66.8	68.2	69.6
UK	51.5	52.4	52.9	53.5	53.9	54.4	54.7
France	45.7	47.3	48.8	50.0	51.3	52.2	53.0
Italy	43.5	45.3	47.0	48.4	49.8	51.2	52.0
Spain	33.5	34.4	35.3	36.1	36.9	37.6	38.3
Other	1,142.8	1,177.2	1,220.2	1,248.5	1,280.3	1,303.9	1,321.1
Europe	**1,378.3**	**1,419.2**	**1,468.5**	**1,502.1**	**1,538.9**	**1,567.4**	**1,588.7**
Middle East & Africa	**343.4**	**381.6**	**422.5**	**460.0**	**496.6**	**526.7**	**563.3**
Brazil	91.4	100.6	109.9	119.3	128.9	136.6	146.5
Argentina	29.0	31.0	32.2	33.3	34.5	35.3	36.0
Mexico	50.0	55.1	59.1	63.2	67.4	71.6	75.4
Other	161.0	167.9	174.3	180.3	184.8	189.1	192.8
Latin America	**331.5**	**354.6**	**375.5**	**396.2**	**415.6**	**432.7**	**450.7**
US	224.6	231.5	236.6	241.2	245.9	250.6	254.7
Canada	18.0	19.1	20.3	21.4	22.3	23.3	24.2
North America	**242.6**	**250.6**	**256.9**	**262.6**	**268.2**	**273.9**	**278.9**

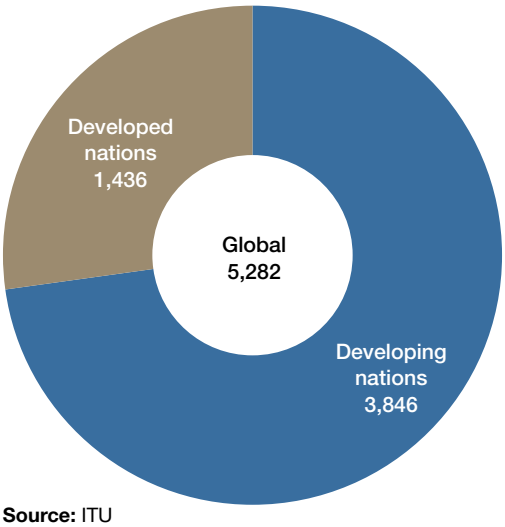
Note: Individuals of any age who own at least one mobile phone and use the phone(s) at least once per month; numbers may not add up to total due to rounding
Source: eMarketer, April 2011

Executives in emerging markets are not just paying lip service: Twice as many companies in developing economies than advanced markets plan to increase expenditures in the latest digital technologies by over 20%. This holds true for nearly every technology included in our study, including mobile devices, social media, business intelligence, collaborative tools and telepresence systems.

The rapid adoption of new digital technology in emerging markets is evident in global mobility trends. Latest statistics from the International Telecommunication Union (ITU) estimate about 5.3 billion mobile subscribers in the world, with about 73% (3.8 billion) located in the developing world. China and India are fuelling most of the growth: These markets added 300 million new mobile users in 2010 alone—a figure greater than the US's entire mobile subscription base. And with mobile costs falling, China and India are likely to see continued meteoric growth. According to eMarketer, the number of mobile users in China will jump from 671.1 million in 2010 to over 1.06 billion in 2015; India's will leap from 516.2 million to 901.2 million over that same period.

The number of people accessing the internet over their mobile devices is also skyrocketing. The ITU expects web access via mobile devices to exceed desktop web access by 2015. Conservative estimates show the world's current 500 million mobile internet users doubling to over one billion by 2015. Much of this growth will come from emerging markets, where the cost of fixed broadband remains prohibitively expensive. Despite lower internet penetration rates, emerging markets—owing to the size of their population—now even enjoy a greater internet user base than industrial economies. For example, the number of web users stands at 642 million in the BRIC countries, compared with only 409 million in the four top industrial nations (US, Japan, Germany and France).

Figure 8: Global mobile subscriptions as of 2010 (in millions)



Source: ITU

The likelihood of emerging markets bypassing older technologies adds yet another competitive threat to Western companies. Legacy systems in the form of physical networks, software, and supplier and support contracts potentially tie developed markets to their existing infrastructure. Going straight to ultra-high-speed mobile is the most obvious example of leapfrogging in emerging markets. Says Mr. Weber of the BBC: "When the G20 summit was in South Korea, a lot of Western delegates found that their phones didn't work because they were too old-fashioned. They didn't work on South Korea's 4G networks."



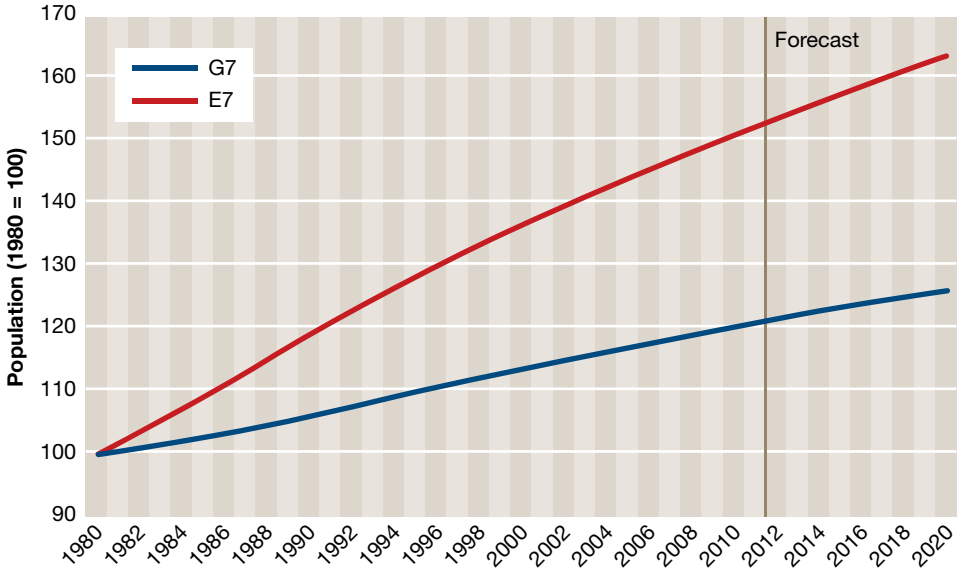
The emerging-market customer takes center stage

The double helix of high economic growth and fast digital adoption in emerging markets is putting their customers at the center of most corporate growth strategies. In markets like China and India, disposable income growth is soaring at 8%, as opposed to just 2% in the US and 1% in Japan. As a result, more consumers in the developing world are entering the middle or upper-middle income class—further fuelling the virtuous circle. Flush with higher wages and greater wealth, consumers are buying more phones, appliances and other products and services, both online and offline. At the same time, they are also altering their lifestyles and improving their education. "Consumer attitudes in the emerging world are very upbeat," says Andrew Curry, a director at the Futures Group.

In markets like China and India, disposable income is soaring at 8%, as opposed to just 2% in the US and 1% in Japan.

Massive demographic shifts are powering emerging-market economic growth. With 3.3 billion people, the E7 now has almost 2.6 billion more people than the G7. With the E7's population growing twice as fast as the G7's, this gap will widen to over 2.8 billion by 2020, according to our forecasts. And while industrial markets are aging, emerging markets are seeing a rapid rise in well-educated, working-age segments.

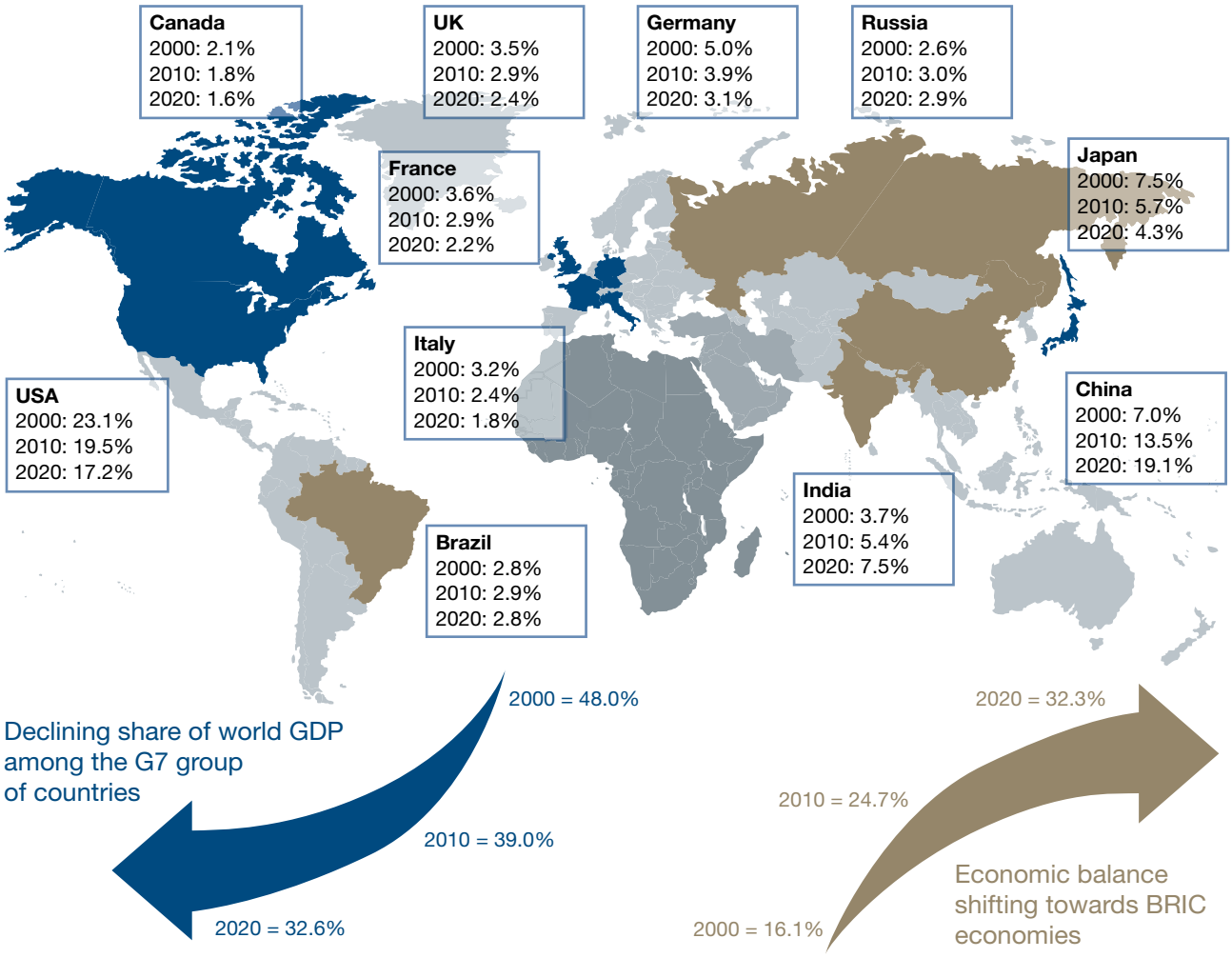
Figure 9: Rate of population growth since 1980



Note: Where G7 population of 615 million in 1980 equals 100, and E7 population of 2.2 billion equals 100.

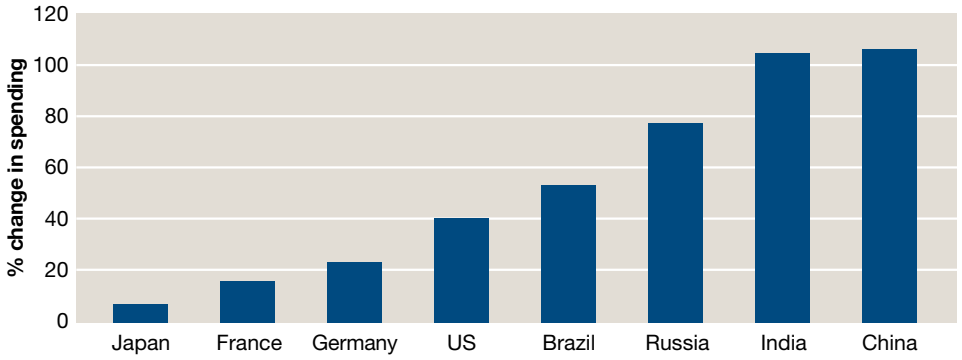
Cash-rich from rapid growth and largely free of debt, many emerging markets are poised to become economic powerhouses. By 2020, the E7 (Brazil, Russia, India, China, Mexico, Indonesia and Turkey) will hold a greater share of world GDP than the G7, and a new tier of emerging markets, such as Vietnam, Colombia, South Africa and South Korea, will take off in their slipstream. Reflecting the enormity of the economic power swing, our forecasts show that China will surpass the US in 2018 to become the world's biggest economy, when measured by purchasing power parity (PPP).

Figure 10: Global GDP growth



But the consumer is only part of the emerging-market story. Fast-growing businesses in the developing world are generating extraordinary growth opportunities for Western firms. With corporate profits and cash positions rising, companies in emerging markets are investing heavily in their future growth. For many firms, this means expanding into new markets through greenfield investments or acquisitions. For others, it involves investment in existing operations to move their business up the value chain and improve its competitive position. In particular, our study shows that local companies are investing in a range of technologies to boost productivity and meet the needs of local consumers. Spending is not limited to the private sector; government organizations are also pumping huge amounts into infrastructure and development programs.

Figure 11: Increase in private and public spending between 2010 and 2015



Tailoring products for buyers in emerging markets

While emerging markets offer enormous growth potential, companies must be fully attuned to local customer needs. Best Buy's recent closure of shops in China is a vivid example of how a Western approach can fall flat on its face in an emerging market.

One company that got it right is MediaTek, a Taiwanese chip manufacturer founded in 1997. In a classic example of how a firm can create products and services specifically for emerging markets, MediaTek realized in early 2000 that the mobile phone market in China was hampered by the high cost of phones offered by international brands.

To create a more level playing field, the company distributed a set of reference guides and software along with its mobile chip, designed to make customizing phone service much easier. MediaTek's novel approach made it easy for local manufacturers to enter the lucrative mobile phone industry in Asia. In fact, many of the firm's early customers had little or no experience in the phone industry and sometimes just a handful of staff.

While many of its original customers were small operators producing generic mobile phones, MediaTek's business has increasingly shifted to better-known manufacturers in the Chinese mobile market. The company shipped 500 million chips last year, more than half of which were exported to markets around the world. Being sensitive to local needs has enabled MediaTek to become the biggest supplier of chips to China. It now has its sights set on the West.

"If GE's businesses are to survive and prosper in the next decade, they must become as adept at reverse innovation as they are at glocalization."

Jeff Immelt, CEO, GE

In emerging markets, even the low-wealth-income segment represents a growing market opportunity for firms. "In the last five years, the consumption of the very poor has increased," says Isabelle Lescent-Giles, a professor of International Business at the San Jose State University. "Now we are hearing about micro-franchising, with companies really building a whole new business model. It is interesting because it is serving a huge market in India and China—a market of people who are the 'have-nots.'"

Reverse innovation

As emerging-market customers move to center stage, Western companies are increasingly turning to reverse innovation, whereby products and services are created first for customers in emerging markets and then rolled out to the developed world. Reverse innovation is the opposite of "glocalization," where companies develop products at home and then tailor them to the needs and budgets of customers in emerging markets.

GE was an early pioneer in reverse innovation. As Jeff Immelt explained in a 2009 *Harvard Business Review* article, "If GE's businesses are to survive and prosper in the next decade, they must become as adept at reverse innovation as they are at glocalization."

Peter Evans, director of global strategy and planning for GE Energy, explains: "We are now living in a multispeed world, with some regions of the world growing relatively slowly and others very quickly. Over the next decade we expect a significant portion of the world, about one-third centered in the emerging economies, to grow faster than 5% per year. These markets have different dynamics so you are beginning to see a shift from where we design and launch our products. In addition to our traditional markets in North America, Europe and Japan, we are now actively localizing in these high-flying markets."



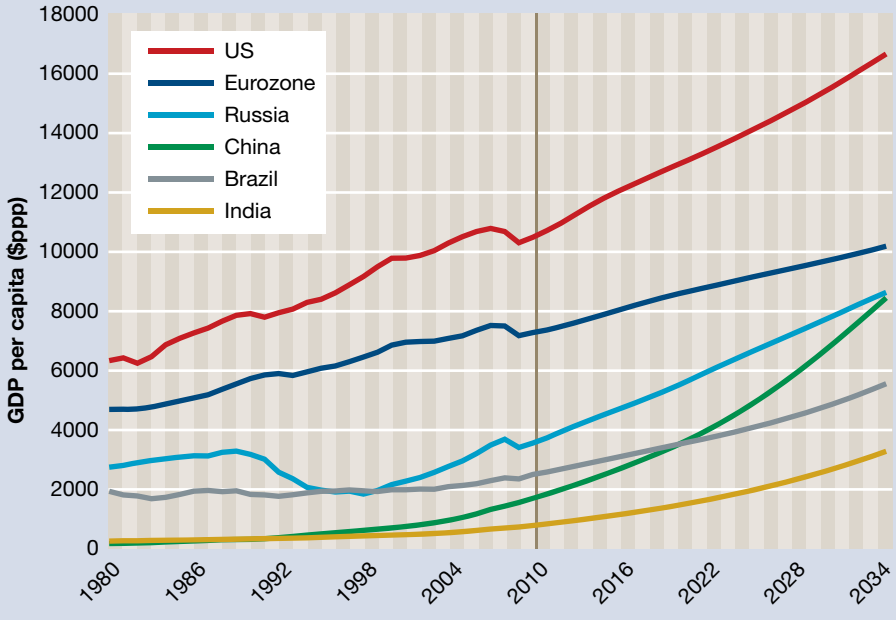
To support this effort, GE has global research centers in emerging markets like China and India; it recently announced plans to launch another in Brazil. "That's where our science and engineers for our longer-term projects and very specialized capabilities reside," says Dr. Evans. One example in GE's healthcare business is the GE MAC 800, an ECG machine developed for poorer populations in emerging markets. The machine carries a price tag of $1,000, a fraction of the cost of machines sold in the US. This low-priced option has proven valuable for accident sites and emergency rooms in GE's mature markets.

Dr. Evans says that a deep connection to the local market is critical in supporting reverse innovation. "We have 13,000 engineers. Under the traditional frameworks, connections between those engineers were challenging because of the transaction costs. Digital technologies allow us to overcome that, and collaborate in ways we couldn't otherwise have done. And that accelerates innovation."

Advanced economies: Don't write them off yet

Economic growth in emerging markets may be burgeoning, but don't write off the advanced economies just yet. It will take decades for average living standards in developing economies to catch up with those in the West. Even in 2020, average GDP per capita (in PPP) in the US will be more than 3.5 times higher than in China and Brazil, and over nine times higher than in India. And many low-income segments in advanced markets, particularly rural areas, will be upping their use of new digital technologies, creating a parallel opportunity in the West to sell to the "bottom of the pyramid."

Figure 12: GDP per capita





Business shifts into hyperdrive

Because of today's symbiotic market linkages, the virtuous circle is also speeding up the pace of change. To compete in a market fraught with greater volatility and uncertainty, all companies need to be nimble and fast. Global firms, in particular, will need to speed up their business and adjust processes, strategies and business models as events unfold. In a world where markets are in perpetual flux, product development and sourcing strategies must realign more quickly. While digital technology is disrupting market dynamics, it also holds the solution for firms that need to operate at warp speed.

Traditional hierarchical decision-making is too slow for the realities of the new digital market. But most knowledge management and reporting systems are not geared to support high-speed decision making. According to our research, corporate organizations and their customers now require real-time tools capable of providing insight and actionable information at just the right time—in fact, 61% of survey respondents agree that huge increases in data volumes will require a new type of business intelligence. Increasingly, competitive advantage and customer value will come from gathering market information from a wide array of sources, including social networks and web-based analytical tools.

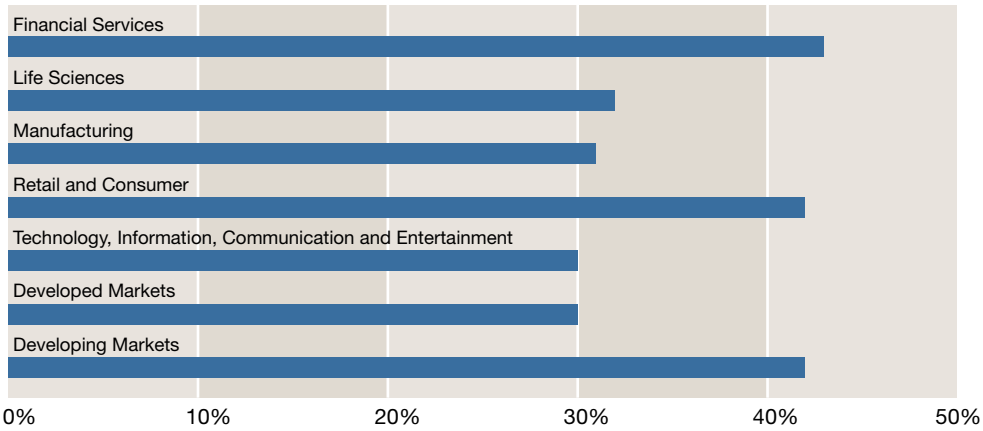
Fifty-seven percent of respondents believe that business intelligence will be important to react in real time to market events.

According to our survey, 57% of respondents believe that business intelligence will be important to react in real time to market events. For some industries, such as technology, media, retail and consumer goods, the figure is even higher. Says Dr. Sviokla, "The increasing amount of data on the business environment gives you the ability to monitor like you've never monitored before." Executives are taking hold of this view: Spending on business intelligence systems increased 13.4% in 2010, to $10.5 billion, according to Gartner.

Despite the need to operate in real time, our survey shows that over one-third of companies still do not have the proper business intelligence tools to do so. In fact, many firms (over 40%) in the fastest-moving industries, such as financial services and retail and consumer goods, say the lack of real-time tools is one of the biggest risks to their business intelligence strategies.

Figure 13: The risk of not having real-time tools to BI strategy

Respondents stating "large" or "significant" risk





Real-time business

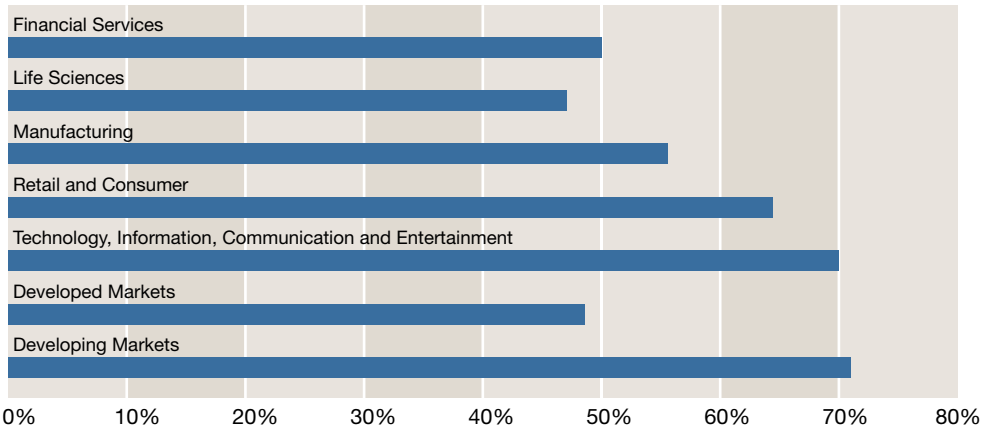
Sixty percent of respondents believe digital technology will help them speed up the completion of various tasks. Business intelligence in particular will be important in helping companies react to events in real time, say 57% of respondents. For some sectors, such as technology, information, communications and entertainment (70%), and the retail and consumer sectors (64%), the figures are even higher. Our research uncovered many real-time applications.

For **industrial enterprises**, such as GE Energy, one big initiative now is to more fully embed sensing software and controls throughout the energy product and service offerings. Dr. Evans explains: "A lot of what we do is to provide the core technology for converting fuels into more useful forms of power." The primary form, he adds, is electricity. As emerging markets continue to grow, "electricity, as part of the energy mix, just will continue to increase."

Generating electricity is a very expensive process. Using data monitoring on a historic and real-time basis optimizes performance and reduces costs. "There is a huge wave of activity that is taking place now around data collection," says Dr. Evans. "We are putting in place the frameworks for better decision-making about how to run these plants at higher performance."

Figure 14: The importance of reacting to events in real time

Respondents stating "very" or "extremely" important



Another interesting project is to leverage the data and intelligence that can be obtained from GE Energy's global fleet of over 1,000 gas turbines. "We remotely monitor in real time operational data from those gas turbines," says Dr. Evans. "So we are putting together the ability for customers who use those units to understand what's happening in the fleet as a whole so that they can benchmark themselves to improve performance." Dr. Evans points out that GE Aviation is doing the same with jet engines it sells to airlines.

For **financial institutions**, real-time operations not only provide security—it creates competitive advantage. For instance, at Denmark-based Saxo bank, customers anywhere, at any time, can trade any asset at current prices. State-of-the-art analytics keep tabs on accounts that stretch credit limits too far, and automatic stop loss orders preserve Saxo's credit and reputation. Full automation that skips cadres of brokers keeps transaction fees low—and that attracts new business. "We regularly see ultra high-net-worth clients moving cash to us from world-class private banks," says Albert Maasland, CEO of the London branch that covers the UK, North America, Sub Saharan Africa and India.

For **retailers** like Zara, the Spain-based clothing outlet, speed is not only critical, it's a core value: It takes the firm just four weeks to turn an idea into merchandise, and items spend no more than two weeks on store shelves. To ensure the approach is a successful one, the company relies on business intelligence and analytics to help manage inventory and make sure that products are being distributed to the right locations based on consumer preferences. This is no small feat: Zara has 5,000 locations in 77 countries. Decisions must be made—and actions must be taken—in an instant.

It's an approach that has certainly appealed to customers. The average shopper visits a clothing store about three times a year—for Zara customers, the average is 17 visits. And a real-time approach to inventory creates another advantage—scarcity. Zara only discounts about 18% of its stock.

As a result of these efforts, Zara saw a 14% increase in net sales in 2010. Its parent company, Inditex, plans to open as many as 500 new stores in 2011, and recently launched an e-commerce site that is now operating in 16 European markets—the US and Japanese versions are to come online in a few months. In yet another bold move, Inditex announced in April that it will invest $342 million to build a new flagship store in New York City, to open in late 2011.



Early-warning and scenario analysis

But real-time monitoring is just one side of the coin. Companies are also applying tools to provide executives with invaluable early-warning and predictive analysis of market risks and opportunities. Companies are extending such tools to predict future trends, identify resource gaps and stress-test their businesses under alternative market scenarios.

Such predictive tools are very important to GE Energy, for example, as it works to improve the world's electricity grids. Being able to predict peak times of energy use for specific geographic regions will greatly boost service delivery. In addition, says Dr. Evans, "the long-term vision of the smart grid is to allow consumers to have more information and control of their energy use."

To plan for risks, GE Energy and other GE units are now doing more sophisticated scenario framing and modeling as part of their global strategy process. Dr. Evans offers examples of scenarios he is working on: "I'm interested in the 'what if Asia stumbles' case. Part of scenario planning is to challenge conventional wisdom; conventional wisdom now is that Asia is invincible. So I like to run downside cases and see what the consequences are."

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Peter Evans, Director of Global Strategy and Planning, GE Energy

Often Dr. Evans needs to provide quick analysis as events unfold, as recently happened with the devastating earthquake and tsunami that hit Japan. "We don't know the long-term consequences yet. We know the immediate impact on the numbers of gigawatts that have been lost in Japan, but we don't yet know how this plays out through the political process, or in the Middle East. There are a range of regions that had plans to build out nuclear energy. Will recent events mean a delay of three weeks, five years, or will those efforts shut down permanently? We are doing that analysis now and preparing for the implications."

Despite the need for better business analytics to deal with a more volatile marketplace, a significant number of companies (33%) do not have a clear business intelligence strategy in place. While the vast majority of firms (83%) in emerging markets have already developed proper BI strategies, a surprisingly high degree of companies (43%) in advanced economies are still doing without them—which could weaken their ability to compete.

Staying secure in a real-time digital world

While the digital economy creates significant opportunities for companies, it also escalates the threat of breaches in cybersecurity, misuse of intellectual property and reputational damage from open communication on the web.

The increasing number of mobile devices, for example, creates risks around the protection of sensitive information such as customer data or intellectual property—in fact, over 60% of respondents consider the security of information as a very or extremely significant risk, much greater than those concerned by, for example, speed or consistency of connectivity.

Similarly, executives remain concerned about the risks inherent in putting their data into the cloud, a fear cited by almost half of respondents. "Regardless of how you approach it, security cannot be overlooked," says Bennett Ruiz, executive director of global segment marketing for AT&T. "Often in the rush to get to the cloud, some organizations look only at the internet, and that can be risky for mission-critical applications." Private clouds add an extra layer of security.

Business intelligence, meanwhile, carries with it the threat of making decisions based on inaccurate or irrelevant data. As Dr. Evans of GE Energy is quick to point out, "Access to the information has improved, but the ability to sort through that and think about the interrelationship between the policy, economics and technology—that still resides in expertise, in judgment. You have to balance speed with the downside risk of being too quick."

Arguably the technology that creates the greatest angst for executives is social media. By its nature, social media connects customers more closely, forcing firms to cede a certain amount of control over brand messaging. It is perhaps for this reason that so many executives have not yet thought about how to incorporate social media into their strategies.

Executives are right to be concerned: Gartner predicts that at least one G20 nation's critical infrastructure will be disrupted and damaged by online sabotage by 2015. This underscores the need for executives to ensure their digital strategies are safeguarded by strong cybersecurity measures, and clearly articulated policies and processes.



Firms reorganize to embrace the digital economy

Today's digital playing field, with its liberalized trade barriers and real-time market linkages, allows firms to quickly become global competitors. Unlike most traditional companies in advanced economies whose growth strategies were first domestic and then multinational, many of today's startup firms—particularly those in emerging markets—operate globally from their inception.

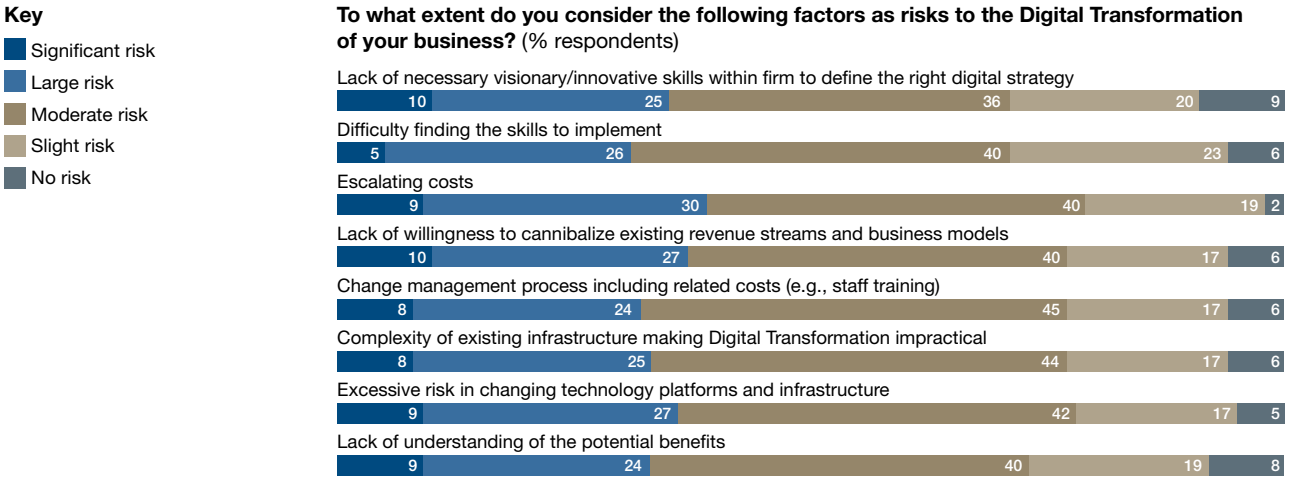
Astute Western firms are moving away from strict hierarchical decision-making and closer to a network structure that is more market-like and organic.

To operate in a fast-changing marketplace, where new rivals are unencumbered by rigid policies and thinking, astute Western firms are moving away from strict hierarchical decision-making and closer to a network structure that is more market-like and organic, not unlike the internet itself. The challenge for today's large multinationals will be to create an organization that maintains the advantages of size while remaining agile enough to stay ahead of competitors. "The better businesses," says Dr. Sviokla of PwC, "will be those that figure out how to organize their production and people to mirror the new structure."

Although the benefits will be significant, it won't be easy: more than one-third of survey respondents indicate that the complexity of existing infrastructure makes transformation impractical. And 35% say their firms lack the visionary skills to define the right strategy.

Figure 15: Obstacles to reorganizing operations

To what extent do you consider the following factors as risks to the Digital Transformation of your business? (% respondents)



While one size does not fit all, there are two organizational forms emerging as successful structures for the new digital playing field.

Globally integrated enterprises

Globalization and technological progress are making the old multinational structure obsolete. A multinational firm that simply links together a collection of national businesses under a global umbrella has become anachronistic. In its place, large international corporations are creating globally integrated organizations that can locate functions anywhere in the world to take advantage of low costs, availability of skills or access to natural resources. Advances in business analytics and information technology also make it possible to monitor performance and market developments more closely than in the past.

Because of their size, multinational firms are adapting to market change not through revolution, but evolution. Back in the early part of the decade, IBM was quick to see how the rise of emerging markets and technological change would transform client needs. So, Chairman and CEO Sam Palmisano began the transformation of Big Blue into what he calls the "globally integrated enterprise." His first step was to impose a consistent set of processes and standards worldwide to find efficiencies and foster collaboration. The company then created "global resource centers of excellence" drawing on the best talent and skills around the world; for example, financial processing is run out of Brazil. The combination of an integrated information system with centers of excellence beyond corporate headquarters allows for more effective decentralized decision-making.

According to IBM, the move to global integration has already saved the company $5 billion by removing redundancies.

The ROI has been enviable: According to IBM, the move to global integration has already saved the company $5 billion by removing redundancies. The change also has given the century-old firm a new spring in its step: It responds quicker to market shifts, provides higher-quality service and even manages risks better.

To make the new organization work, IBM needed to build up a set of core workforce capabilities, and relied on technology to get its global teams on board. The firm used its intranet and social networks to share knowledge and encourage collaboration. For example, the firm hosted a series of companywide "jam" sessions on its intranet—two- to four-day, around-the-clock brainstorming events that attracted up to 50,000 employees worldwide to exchange views on predefined topics. Moderators helped facilitate the online discussion and ensure a good cross-pollination of ideas.

Several years ago, IBM added another twist to its global organization by creating a "growth markets" group. Headquartered in Shanghai, this unit's mandate is to drive growth in emerging markets. The unit has already almost doubled the size of its operations in key emerging markets such as China, Brazil and India. With emerging markets now accounting for 21% of IBM's revenue, the growth markets group aims to reach 30% by 2015.

Edge-based organizations

But some firms are pushing their organizations beyond global integration to an even more flexible networked structure: an edge-based organization. Under this organizational structure, executives and their teams are empowered at the edge of an organization, where the firm interacts with the market. These edge-based companies are characterized by their ability to self-organize, widely distribute decision-making and quickly adapt to market changes. Dr. Sviokla of PwC likens these organizations to "special force" units, where "everyone has situational awareness, skills to take action, shared values, and decision rights to empower the edge to take action."

According to Dr. Sviokla, President Obama was the first politician to use the internet to create an edge-based organization—and thereby raise more money than any politician in history and sweep 364 electoral votes. Dr. Sviokla says that Mr. Obama used the internet to provide his campaign organization with all the tools needed to self-organize and to get out the message effectively through digital means.

The Obama campaign sent its constituents constant alerts and updates on the issues and progress in individual states—complete situational awareness. Says Dr. Sviokla: "By providing the proper tools to the edge of the organization to assemble gatherings, send mailings, gather information and coordinate messaging, campaign managers gave out decision rights that normally would have been kept closer to the center." Of course, he adds, "those at the edge of the fight for Obama had the same shared values as those inside."

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Social media is an important catalyst for the creation of edge-based organizations because it forces executives to rethink how they connect with their clients and generate demand. Netherlands-based AVG, a software antivirus firm, is one example. Executives realized in early 2009 that social media would be an important part of its strategy, says Jas Dhaliwal, the firm's head of communities. AVG already understood the power of viral marketing and word-of-mouth—the company was the first to offer a free online antivirus product, and now boasts 110 million users worldwide.

Mr. Dhaliwal is not only responsible for ensuring that communities are active; he must make sure that the insights gleaned from those discussions find their way back to the appropriate departments inside the company so that strategies can be re-evaluated. "It's my job to go to the executives and internal members of the team and evangelize social media—really explain how it can help with each part of their business," says Mr. Dhaliwal.



That strategy has three legs: feedback, advocacy and support. Feedback opens two-way communication between AVG and its customers, inciting them to share opinions regarding product improvements and security issues. Engagement is a critical source of early-warning business intelligence that hones product and marketing strategies. Advocacy reinforces online community relationships. It hinges on learning who customers are, what it is they want and how AVG can provide solutions. The third leg, support, marshals AVG's resources to implement solutions expeditiously. "Today, our customer service teams are fully engaged within social media, as are our marketing and product teams," says Mr. Dhaliwal.

The approach has seen some important results. Late in 2010, AVG's online community began buzzing about a bug in a separate online security program that compromised the effectiveness of AVG's software. AVG's internal teams sprang into action immediately, working with the company in question to resolve the issue. Mr. Dhaliwal says the company is now looking into other ways to embed social media and analytics into other parts of the business to further support distributed decision-making. "There are finance- and expectation-based models we'd like to apply," he says. "That's the next stage in our journey."



CEO imperatives

Senior executives around the world agree that the recession has accelerated the transition to a digital marketplace where emerging economies will increasingly become a center of gravity. These executives need to fully understand the one-time event we are all witnessing—the creation of a new global playing field arising from the virtuous circle of technology and emerging market growth. The winners in this new marketplace will be companies that challenge their conventional thinking on product innovation, customer engagement, corporate organization, strategy, business models and the role of technology within their enterprise. The benefits of global digital transformation are myriad—yet not without their organizational and business obstacles. But inaction can be catastrophic to the future of your business.

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As the digital economy expands, there are a number of key action points the C-suite should consider to succeed in a future fraught with uncertainty—and remarkable opportunity.

- **Prepare for the East, but protect the West.** In 2020, the E7—Brazil, Russia, India, China, Mexico, Indonesia and Turkey—will account for a greater share of global GDP than the G7. Companies that do not have strong positions in these and other fast-growing markets may fall far behind the curve. These regions are not only producing new potential customers—they are creating new rivals, many of whom will have a better sense of how meet the specific needs of low-income and rising middle classes.

  These new competitors aren't content to remain local—the digital economy enables all companies to be global. As Dr. Sviokla of PwC says, "Everybody thinks they are going to grow in someone else's backyard." Despite their sluggish growth, the US, Europe and Japan remain the world's most stable markets—an attractive target for growing companies in developing economies. Largely free of legacy infrastructure and blessed with an outsider's perspective, competitors from emerging markets can often be more nimble and responsive—and deliver more affordable products and services.

- **Remember that every company today can be a digital competitor.** Advances in cloud computing have made technology far more accessible, both for customer-facing and back-office operations. It is no longer necessary to make massive investments in proprietary systems—companies can now access such resources through the cloud. The rise of on-demand computing has greatly reduced the capital costs—and therefore the barriers to entry—associated with becoming a digital company. Be prepared for small companies in peripheral locations that can compete with your firm by leveraging new hardware and software with minimal fixed investment.

  According to Bennett Ruiz, executive director of global segment marketing for AT&T, executives will likely adopt a hybrid cloud computing strategy that combines both private and public clouds. He suggests adopting a policy of "try, buy and scale," gradually integrating cloud services into existing internal processes and IT services. Larger corporations, however, should more rapidly explore the cloud's potential for reducing cost, raising flexibility and improving data flow to compete with a new range of cloud-enabled competitors.



- **Make sure you have a forward-looking mobile strategy.** The explosive growth of mobile telephony will open a huge market opportunity for companies in the years ahead. This is especially true in emerging markets, where the smart phone will allow many to move straight to the mobile internet just as the cell phone leapfrogged fixed-line telephone connections. Remember these mobile digital consumers will in many cases be inaccessible through traditional, PC-based web environments.

  This is not merely about creating a new app. Mobile marketing opens up an important revenue channel and helps firms penetrate a new set of emerging market customers—many of whom do not have access to the internet through other means. Mobility even promises new ways to connect to the physical world. Location-based services, for example, can increase foot traffic to a brick-and-mortar store. In just a short time, Foursquare brought together online social networking, product comparison and gaming to amass a traffic-generating customer base that could soon exceed one billion.

In shifting the focus from West to East, executives may discover new approaches to organization and process innovation.

- **Think innovatively about innovation.** Innovation is no longer just about making new discoveries in a Western lab, introducing them in high-income markets and then diffusing them to emerging markets when the costs come down. In a global economy where the East is taking center stage, companies need to re-evaluate the way they approach product and service development. Reverse innovation can help firms design products and services for poorer economies and then roll them out in cost-conscious developed markets.

  At the same time, however, do not lose sight of the rapid growth of the high-net-worth segment in emerging markets. For example, Lamborghini expects China to be the biggest market for its luxury sports cars in 2011. In shifting the focus from West to East, executives may discover new approaches to organization and process innovation. IBM, for example, cut costs and boosted sales from relocating specific functions to emerging markets. Such thinking can drive greater efficiencies and performance across the firm.

- **Embed social media into all parts of your business.** Many executives still do not understand the various uses of social media. Even worse, some think it is irrelevant to their business. This is a blind spot in the industrial world, where only one-third of executives believe mobility and social media will become a standard tool in five years, compared with two-thirds of their counterparts in emerging markets.

  Social media is a versatile tool that can improve product development, facilitate internal collaboration, mitigate risks and boost customer sales and retention. As firms like AVG and Forbes have learned, taking a holistic approach to social media can reap substantial rewards not only in raising customer goodwill and loyalty, but in tangible bottom-line increases. In today's networked environment, customers follow the advice of online colleagues far more readily than corporate marketing messages. Executives must ensure that insights gleaned from virtual conversations find their way back to the departments who can most benefit.

- **Anticipate global market shifts—in real time.** As the pace of business accelerates and the cost of data storage falls, business analytics can dig deeper into data for early identification of market trends. Equally important, such tools can now help executives stress-test and even future-proof their businesses through scenario and predictive analysis.

  Successful business analytics depends on the quality of the data fed into the system. Timely and reliable systems for capturing, pooling and cross-checking data are an essential prelude to mining them for patterns and trends. If your business intelligence system does not actively draw on the internet, or leaves data in silos, you risk falling behind your competitors.

Gartner predicts that at least one G20 nation's critical infrastructure will be disrupted and damaged by online sabotage by 2015. How safe is your corporation?

- **Install safeguards to manage next-generation business risks.** The shift of economic power from West to East brings with it higher uncertainty. Mired under the biggest debt burden since World War II, advanced markets are struggling to avoid continued high unemployment, further economic slowdowns and even sovereign defaults. While emerging markets are in far better shape, their fast-growth trajectory ushers in economic worries of overheating and asset bubble bursts, along with concomitant geopolitical, regulatory and infrastructure risks.

  The rise of the digital economy also exposes companies to the escalating threat of breaches in cybersecurity, misuse of intellectual property and reputational damage from open communication on the web. Consider this: Gartner predicts that at least one G20 nation's critical infrastructure will be disrupted and damaged by online sabotage by 2015. How safe is your corporation?



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