



cutting through complexity

Mobilizing Innovation

The changing landscape of disruptive technologies

Executive Summary
KPMG Technology Innovation Survey 2012

Highlights

Cloud computing, the mobile internet.... the pace of technology innovation is at a speed today that is unparalleled, and the global impact is greater than ever before.

Innovations are transforming a variety of sectors in ways that could not have been imagined a couple of years ago in this switched-on era: smartphones, tablets, social networking, digital media, mobile commerce, nanotech and the ubiquitous cloud. All are shaking up our lifestyles and workplaces.

Countries that were not part of the technology innovation map are emerging with talented entrepreneurs. Well-known technology innovation leaders such as Amazon, Apple, Facebook, Google, and Microsoft are being joined by upstarts such as Baidu and Tencent from China. Visionary technologists like Masayoshi Son from Japan and Jack Ma from China are attracting headlines outside their home country. The US is respected as the world's technology innovation center but as technology innovation becomes more global, countries like China are gaining momentum to become another technology innovation leader.

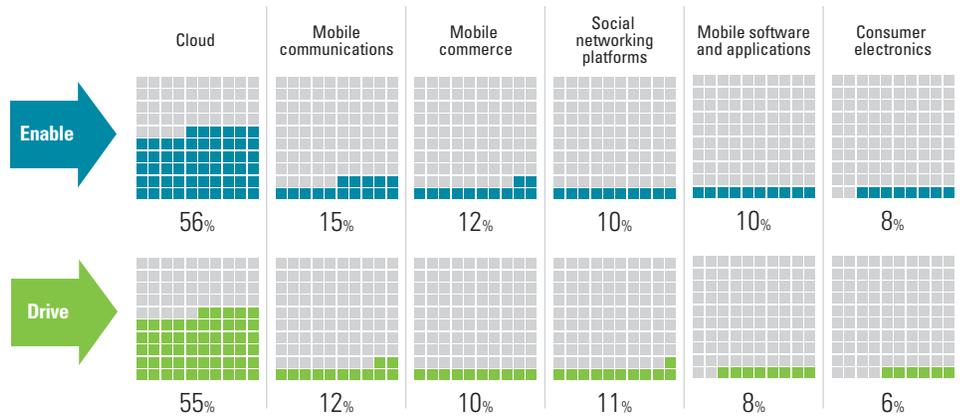
KPMG led a global survey to identify disruptive technology innovations and to gauge the scope of change over the next three to four years. The survey was conducted among 668 global technology leaders, representing 10 of the most technologically innovative countries. The mix included technology startups, mid-market enterprises, large technology companies, venture capital firms and angel investors.

Three key takeaways of the study's findings include:

- The undeniable impact of cloud-based computing to unleash innovations and streamline business activities.
- The still-developing potential of an always-on mobile communications era.
- The emergence of China as a force that will compete with the US to foster tech innovation and gain leadership.

Select the top two technologies that will enable the next indispensable consumer technology and have the greatest impact in driving business transformation in the next three years.

Global (n = 668)



Source: KPMG Technology Innovation Survey, 2012.

“Technology leaders in countries where innovation is thriving believe that the cloud represents a technology tidal shift. They are placing a huge bet on cloud, as it has multiple benefits for providers and users such as generating revenue, improving operational efficiency, reducing costs and time to market, and enabling other disruptive technologies such as mobile and social applications.”

Gary Matuszak

Global and US Chair,
Technology, Media &
Telecommunications, KPMG.

The cloud floats above all in storm of tech disruptions

Of all the lightning-speed bursts of technology innovations, cloud was ‘off the charts’ as the biggest technology transformation enabler for the next three years. Indeed, more than half of the respondents pointed to the cloud — software as a service (SaaS), infrastructure as a service (IaaS), platform as a service (PaaS) — as the next indispensable consumer technology and the greatest driver of business transformation. SaaS scored as the most predominant service mentioned within the cloud-based technologies. As cloud emerges as a widespread alternative to in-house computing for both small and large enterprises, the transformation in business and consumer markets will continue to be a major trend to watch.

Despite the buzz, big data/analytics did not tip the scales much as a disruptive technology. As cloud, structure and unstructured data models evolve, marketplace awareness will begin to increase. Big data/analytics may hold a more prominent position moving forward.

The upside of the mobile internet

Three key results spotlighted the onward march of mobile:

- Smartphones and tablets led as top technology breakthroughs, followed by cloud computing and storage. What is truly transformational is the combination of the mobile internet connected to the cloud as enablers of new business models.
- Mobile device manufacturers such as Apple outranked other types of businesses for tech innovation leadership within the respondents’ home country.
- About one-third pointed to internet companies (such as Amazon, Facebook and Google) as emerging champions in the fast-developing mobile commerce ecosystem.

These trends are led by the advanced mobile communications markets of Japan and Korea, big and growing mobile bases in China and India, and the fast uptake of next-generation mobile standards around the globe.

Benefits and challenges for *consumers* to adopt cloud and mobile technologies in the next three years

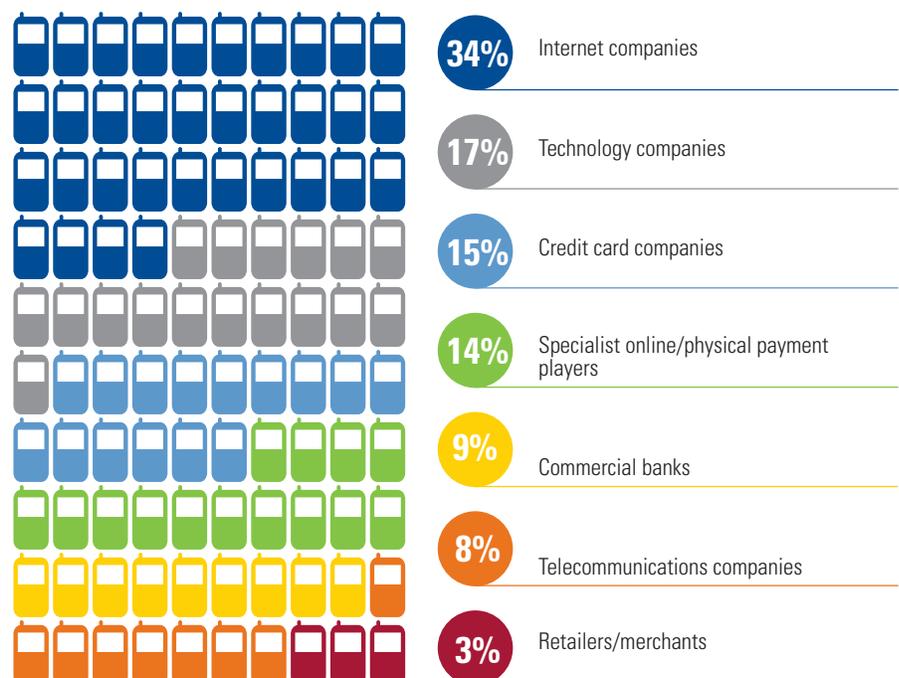
- Pricing outweighs security issues:** Asked what roadblocks limit the uptake of new consumer technologies, 45 percent named cost and pricing, ahead of seven other factors. Coming in close at second place were privacy and transparency concerns, selected by 40 percent. Ease of use was named by less than one-third (31 percent) as a limitation, highlighting industry progress in cracking this challenge.
- Win-win scenario for consumers adopting mobile and cloud technologies:** A wide range of pluses were named such as convenience, better communications, increased productivity, greater savings on purchases, and most of all, easier access to real-time personalized information. Enhanced ability to maintain control over that all-important digital persona also mattered.

Benefits and challenges for *businesses* to adopt cloud and mobile technologies in the next three years

- Security/privacy are top of mind challenges in cloud and mobile adoption:** Opinions were mixed on the question of which barriers limit technology progress in the business world, though security and privacy issues were named most frequently (40 percent). A number of other factors got about equal weight: cost was named by 35 percent while technology complexity was cited by 34 percent. There was little difference by region or country.
- Business efficiencies/higher productivity top benefits for cloud and mobile adoption:** Nearly half (46 percent) cited improved efficiencies and productivity as the biggest advantages for businesses upgrading their technology systems. Startups ranked productivity gains slightly higher than respondents from mid-market and large enterprises. Thirty-nine percent of respondents selected cost reductions.

The mobile commerce ecosystem is changing at a fast pace. Which of the following industry players will lead the mobile payments market share over the next two to four years?

Global (n = 668)



Source: KPMG Technology Innovation Survey, 2012.

Potential challenge to Silicon Valley's position as tech innovation leader

More than 4 in 10 said it was likely that the world's technology innovation center would shift from Silicon Valley to another country in the next four years. Of those who believe Silicon Valley will not be the technology leader of the future, 44 percent pointed to China as the world's leading innovation hub by 2016.

The survey revealed a 'disconnect' in opinions along nationalistic lines about this China-US dynamic. Nearly three-quarters of those polled in China compared to about one-quarter of US respondents foresee that China has the most potential for disruptive breakthroughs with a global impact. Not surprisingly, US-based scorers ranked the US in first place. It is no longer a shock to predict China's rapid rise to prominence as a technology leader.

Highlighting this startup Asia trend, India and Japan were ranked third and fourth, respectively. Tech-mighty Israel came in fifth.

The ballots from other markets were split over the US or China as tech epicenter of the future. Voters from the Americas and Israel selected the US as their top choice (34 and 35 percent respectively), while China earned top honors by those in Asia (35 percent) and the EMEA region (28 percent).

Apple still leads as top tech innovator: the tipping point

Apple turned in an amazingly strong performance on the innovation scales. Apple and Steve Jobs led the list of the world's most innovative companies and top visionaries by a wide margin. The legacy of creative maverick Steve Jobs obviously lives on, with his sleekly designed inventions and 'who knows what's next' under the leadership of Tim Cook. In second place was Google while Larry Page ranked fifth as a tech visionary.

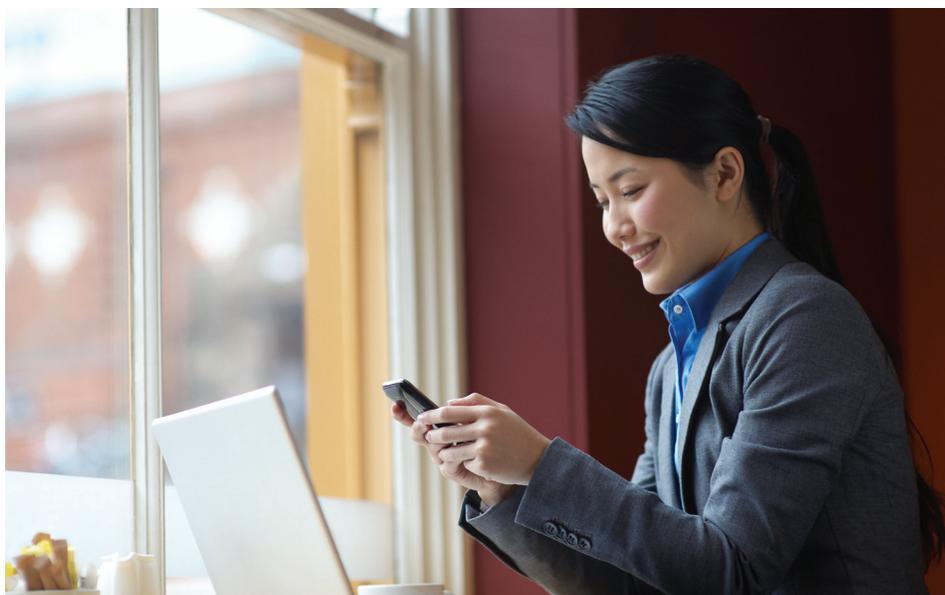
Across the board, Microsoft stood out for progressive innovation leadership, as did IBM/Lenovo. Further down but still showing solid results were Mark Zuckerberg and Facebook, and Jeff Bezos and Amazon.

With the preponderance of consumer technology companies such as Amazon, Apple, Facebook and Google reaching high on the innovation ladder, the survey reveals that consumers are continuing to lead tech innovation adoption versus business-to-business.

Time to quit class and join a startup?

The survey's findings about whether educational systems can adequately prepare a new generation of inventors could be interpreted as a wake-up call. Less than half globally said that their country's classrooms can help develop tomorrow's generation of innovation leaders – clearly leaving room for improvement over this heated issue.





Differences uncovered as to who leads the charge for innovation progress

Nearly one-third globally said the innovation buck stops with the CEO (not with corporate development, think tanks, innovation teams or business units) though 4 in 10 said R&D is where innovation is most often spotted and nurtured. One twist to this finding came from China, where more than half named a distinctly Chinese function, the chief innovation officer, as the company's innovation leader.

Championing innovation: the carrot and the yardstick

How is innovation championed in the business world? Money was a key driver, with 4 in 10 answering that bonuses and salary increases are the most effective incentives. How do the survey's technologists measure the value of innovation? More than half responded that revenue growth is the best metric – understandably so – followed by ROI and market share. Surprisingly, the number of patents, a typical gauge for inventiveness, was ranked low.

Conclusive forecast: hyper-tech era

Gaining a competitive edge in the technology world today is increasingly challenging. The pace and scale of innovations, the shift of power to emerging economies, the arrival of better smartphones and tablets, increasingly addictive social networking services, must-have cloud computing services, not to mention nanotechnology and biotech breakthroughs, all point to the need to be tuned in to keep that leading edge.

Transformative changes are spreading out from the Silicon Valley epicenter to technology hubs around the world. Asia is leading the charge in mobile communications and commerce, skipping past the PC generation of the West. Software parks have sprung up in Beijing, Bangalore and beyond as emerging markets vie to move up the innovation ladder from manufacturing or outsourcing centers. China is already the world's second-largest economy, and as micro-innovations unfold, it is well positioned to be a technology innovation leader.

Those visionaries who can dream and develop the next must-have device, mobile application or chip, those optimists who dare to invest vast sums on R&D without an immediate financial return and those strategists who can figure out a money-making model for future technology innovations will be the tech leaders of tomorrow. The businesses that have the flexibility to adapt, respond and change their business models as disruptive technologies emerge will lead the technology sector for the years to come.

About KPMG

An experienced team, a global network

KPMG's technology professionals combine industry knowledge with technical experience to provide insights that help technology leaders take advantage of existing and emerging technology opportunities and proactively manage business challenges.

Our network of professionals have extensive experience working with global technology companies ranging from Fortune 500 companies to pre-IPO start-ups. We go beyond today's challenges to anticipate the potential long and short-term consequences of shifting business, technology, and financial strategies.

KPMG Technology Innovation Center

This survey is the first project of the KPMG Technology Innovation Center, a global network created to identify and evaluate the impact of future disruptive technologies that may result in business transformation for the technology industry. The Center connects leading technology visionaries including entrepreneurs, Fortune 500 technology executives, venture capitalists and KPMG professionals.

The KPMG Technology Innovation Center will be headquartered in Santa Clara (Silicon Valley), California, US, and will have physical hubs in other cities including Cambridge, Massachusetts, US, and Bangalore, India. The global network includes China, Israel, Japan, Korea, Singapore, Russia, Canada, the UK and other countries.

For more information visit: www.kpmg.com/techinnovation

Contact us:

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Designed by Evalueserve. Publication name: Mobilizing Innovation: The changing landscape of disruptive technologies. Publication number: 120823 Publication date: June 2012