The Changing Landscape of Disruptive Technologies

PART 2 OF 4

Innovation Convergence Unlocks New Paradigms

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FOREWORD

KPMG's annual Technology Innovation publication, "The changing landscape of disruptive technologies," provides an outlook of emerging technology trends on a global scale. The publication highlights insights from over 800 leading technology industry visionaries ranging from serial startup entrepreneurs to Fortune 100 tech industry leaders and venture capitalists.

The publication is segmented into four parts, featuring the following topics:

- Global technology innovation hubs
- Innovation convergence unlocks new paradigms
- Barriers to commercializing emerging technologies
- Tech innovation management and startup perspectives

In this segment, **Innovation convergence unlocks new paradigms**, we examine the views of global technology industry leaders regarding the consumer and enterprise technologies with the most potential to disrupt industries and transform business models over the next three years. We also assess the monetization opportunities of these disruptors by region and industry.

In consumer markets, technologies led by the cloud, the Internet of Things (IoT), mobile and data and analytics (D&A) are offering unprecedented ways to improve convenience and enhance health while providing new insights into customer behavior. In emerging and established markets alike, the competition is fierce to innovate and gain market share as disruptive technologies and globalization continue to create opportunities for existing and new companies.

For enterprise markets, a platform-first approach is emerging to combine the power and benefits of cloud, D&A, IoT, mobile, social, artificial intelligence (AI) and robotics to enable profound implications for the transformation of industries and business models.

As the global technology landscape evolves, market leadership will depend not only on innovation, but also on a company's agility to integrate emerging technologies. In this dynamic environment, investing in a cohesive strategy including people, business models and technology, is key to being a market leader.

The tech innovation engine remains strong globally as the United States, China, Israel, Japan, India and other countries compete to develop and commercialize innovation and establish (or continue) their reputation as a global technology hub.

We hope you find this publication insightful, and we welcome feedback and suggestions for the next edition.

Gary Matuszak
Global and U.S. Chair,
Technology, Media &
Telecommunications, KPMG

Richard Hanley
Advisory Leader, Technology,
Media & Telecommunications,
KPMG in the U.S.

Demographics

AND METHODOLOGY

METHODOLOGY

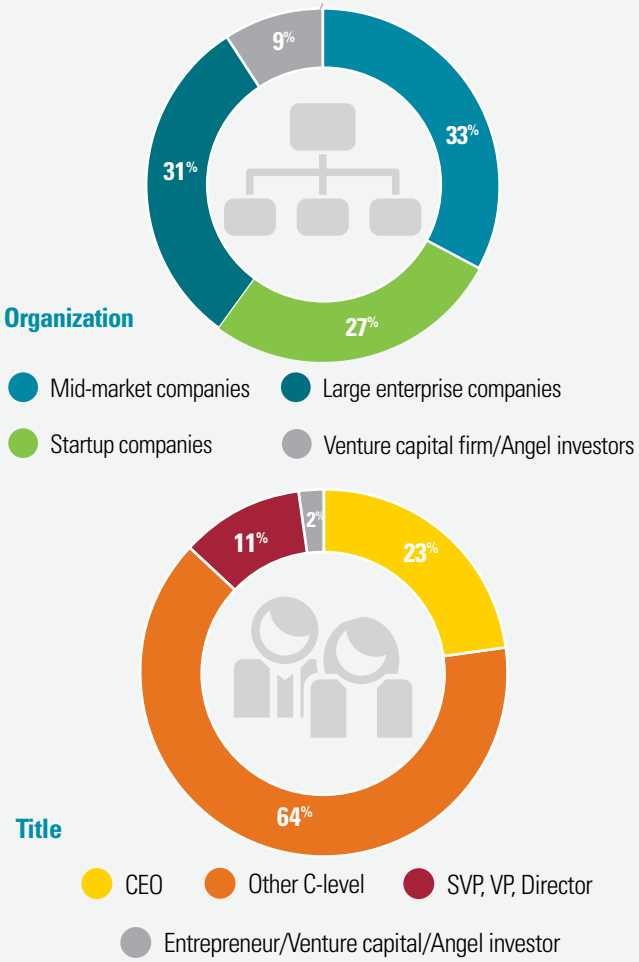
This year's global survey included 832 technology industry leaders. The web-based survey was conducted in August and September of 2015.

DEMOGRAPHICS

The survey spanned the Americas, EMEA and Asia-Pacific markets. Seventeen countries were represented. The U.S. responses amounted to 16 percent of the total, followed by China at 11 percent.

- **Total respondents: 832 technology industry leaders**
- **Most (87 percent) are C-level**
- **Good representation across startups, mid-market and large enterprises**

Q: Which of the following best describes your organization; your title?



Note: not all percentages sum to 100% either due to rounding or because multiple responses were allowed.

Source: KPMG Tech Innovation Survey Year-End 2015

Disruptive Technology Trends

> “A growing global tech innovation engine continues to create rapid widespread disruption across enterprise and consumer markets. The rewards for embracing new technologies run deep. From productivity gains to cost efficiencies, to quicker innovation cycles and increased customer value. The most successful businesses will be those that can most effectively prioritize and monetize emerging technology opportunities as part of their overall company strategy.”

– **Gary Matuszak**, Global and U.S. Chair, Technology, Media & Telecommunications, KPMG

DISRUPTIVE TECHNOLOGY TRENDS

Consumer Markets

"Consumer markets companies globally are racing to advance technology systems, platforms, processes and services to meet two critical business demands: 1) support the kind of superior, omnichannel shopping experience that is now table stakes for retail and CPG companies; and 2) leverage available data to deliver powerful consumer insights that can inform smarter decision-making and power stronger performance."

– **Pat Dolan,** Line of Business Leader, Consumer Markets, KPMG in the U.S.

U.S. SPOTS DIGITAL HEALTH, CHINA HIGHLIGHTS AI, EUROPE LIKES 3-D PRINTING

"The global consumer market leaders in the future will be the companies that recognize the power of alliances between consumer markets/retail companies and tech companies to combine their respective strengths in exceeding customer expectations and building customer loyalty."

– **Pat Dolan**, Line of Business Leader, Consumer Markets, KPMG in the U.S.

In the last three years, KPMG's Technology Innovation survey has showcased the allure of cloud and mobile services as disruptive forces in consumer markets. The survey results underscore an increasing convergence of cloud and mobile, combined with Data and Analytics (D&A) and Internet of Things (IoT), accelerating major technology innovations for consumers that were only on the horizon a few years ago.

Consumers in many markets are demanding connectivity via mobile devices to every part of their customer journey, including their car, house, work and person. At the same time, the volume of data and ability to generate real-time insights is expanding exponentially thanks to the IoT.

Companies that did not compete with each other such as home security, lighting, and appliances are now fighting for leadership in the 'connected home.' These companies also have new competition from the likes of Google, Apple, and Amazon. Product and industry boundaries will continue to blur, at faster rates, as a result of innovations enabled by a portfolio of emerging technologies.

Visionary leaders will ensure their company has the business agility to drive faster innovation cycles to add customer value. They are redefining their business models to gain a competitive edge as a result of new insights into customers' needs and behaviors.

Q: Select the top technology that in the next three years will enable the next indispensible consumer technology.*

Technologies	Global	U.S.	China	Japan	ASPAC	EMEA
Cloud – SaaS/PaaS/IaaS	**11%**	14%	**15%**	**13%**	**11%**	6%
Mobile – platforms and apps	9%	9%	3%	10%	8%	11%
Internet of things/M2M	9%	8%	9%	3%	9%	9%
Data & analytics	9%	14%	3%	10%	7%	8%
Biotech/digital health/healthcare	8%	**15%**	3%	3%	7%	7%
3D printing	7%	2%	4%	3%	6%	**12%**
Cyber security	6%	5%	8%	10%	7%	7%
Robotics	6%	5%	6%	3%	6%	8%
Artificial intelligence/cognitive computing	5%	4%	**15%**	10%	8%	2%
Social networking/collaboration platforms	5%	4%	4%	3%	4%	6%
Digital currency platforms (e.g., bitcoin, payment systems, etc.)	4%	2%	6%	7%	6%	5%
Nanotechnology	4%	3%	6%	3%	4%	4%
Wearables	4%	3%	6%	3%	4%	3%
Virtual reality/Augmented reality	3%	4%	2%	3%	3%	3%

*Partial list of technologies shown

Source: KPMG Tech Innovation Survey Year-End 2015

“The cycle of change has shortened significantly for companies of all sizes. If a company develops a point of differentiation, the shelf life of that differentiation is much shorter than it was five years ago. Technology is increasing productivity, but it’s also impacting the way competitors can deliver the product or develop new business models.

Along with technological innovation, true success relies on business model flexibility and agility. The ability to monitor technological innovations and to adapt to changing marketplace shifts have become critical for B2B as well as B2C enterprises. Companies that cannot keep up with innovation and changing patterns of usage will have a problem delivering their value proposition.

On the consumer side, I can foresee a time where each individual has a data account, a digital footprint that they own as an asset. That data has value to a company and to the individual.”

– **Sid Mohasseb**, Strategy Innovation Leader, KPMG in the U.S.

CONSUMER MARKETS

REGIONAL TRENDS

Cloud scored universally high, but a number of interesting variations can be observed in country and regional differences. The EMEA region ranked 3-D printing tops, while China named AI and the U.S. singled out biotech and digital healthcare.

Biotech in the U.S. ranked high (15 percent) as the category that will enable the next indispensable consumer technology in the next three years. The healthcare market in the U.S. has been undergoing dramatic transformation as consumers take more control over health-related decisions. There are many innovations in the pipeline in the biotech space including continued advancements in fast, low-cost gene sequencing for consumers. The opportunities from genetic data will continue to grow. Other innovations in biosensors and fitness trackers will continue to be adopted by consumers as new ways to manage and maintain their health. In a country where healthcare costs are an ongoing challenge, consumer technologies that reward healthy behavior are adding value to customers across all age demographics.

In Europe, the strong ranking for 3-D printing is driven by the opportunity retailers have to lower manufacturing cost and develop new business models including enabling manufacturing to be done in the hands of the consumer. Another market opportunity driven by 3-D printing is to enable consumer innovation. Office solutions retailers such as Staples are already providing 3-D printing services in its U.K. and Ireland retail outlets, and offering consumers and small businesses a chance to try out one-stop 3-D printing services for quick, affordable prototypes.

In Asia, technology innovation is very much focused on the consumer. The fast-paced adoption of smartphones and IoT by tech-savvy consumers in Japan, China and Southeast Asia will continue to drive new innovations. In a region where individuals are known to carry multiple mobile devices, cloud, IoT, AI and mobile are seen as the technologies that will enable the next indispensable consumer technology. Companies that embed cyber as a strategic product or service differentiator will have a competitive edge.

The high (15 percent) finding in China for AI could be linked to a forward-looking initiative led by China’s search market leader Baidu and supported by the Chinese government. China is angling to make AI development a national priority, much like the Apollo space program was for the U.S. decades ago.

"With wearable devices becoming mainstream, we'll see a substantial upswing in individuals understanding themselves intimately, which has massive behavioral impact. As consumers change their work patterns, buying preferences, nutrition and other choices that will have purchasing and customer loyalty implications."

– **Anthony Coops**, ASPAC D&A Leader, KPMG in Australia

CONSUMER TECHNOLOGIES—INTERNET OF THINGS

IoT and big data will increasingly reveal customer behavior. IoT, through the sensors on phones, and the sensors on products, shelves, cars, etc., is going to give us much clearer visibility into purchase behavior through the entire purchase cycle. How this information gets used will continuously change our relationships with companies and products: real-time product usage war rooms, responding in real time to customers' problems, innovations drawn from customer behavior, and real-time product updates.

Q: Choose the top benefit for consumers who adopt Internet of Things or Machine to Machine technologies.*

Consumer Benefits	2015	2014
Increased efficiencies from connected home technologies	**46%**	**42%**
Easier access to personalized real-time information	13%	18%
Increased personal productivity	13%	12%
More effective purchasing across channels	9%	8%
More convenient access to entertainment	5%	8%
Better identity management	5%	0%
More valuable social/collaboration experience	4%	4%
Better healthcare options	4%	8%

*Global: Among Those Who Selected Internet of things/ M2M As The Top Consumer Technology

Source: KPMG Tech Innovation Survey Year-End 2015

In an IoT world, where new features and functionality can be delivered to the customer over the network, based on their needs in real-time, the entire approach to product innovations and services changes. The consumer market will continue to be transformed and the companies with the most insight into their customers' journey and needs will be in the driver's seat.

DISRUPTIVE TECHNOLOGY TRENDS

Enterprise Markets

> “Cloud technology makes much of today’s current technological innovation possible. Forward-thinking business leaders who understand the interplay of cloud and emerging technologies—such as digital and mobile, robotics and automation, the Internet of Things, 3D printing, wearables, gamification, smart grids, and social media—will help their organizations keep pace or remain one step ahead.”
>
> – **Rick Wright**, Technology Innovation Leader and Digital and Mobile Services Leader, KPMG in the U.S.

ENTERPRISE MARKETS

"The alignment of technology and people investments to allow the redeployment of a workforce to its highest and best use, and to solve previously unsolvable problems, is key for companies to succeed in the future. IoT and D&A are enabling enterprises to have new insights about their supply chain and customers' experience in real time. You can't wait until the end of the month before something's flagged on a report to take action. The whole rhythm to manage the enterprise across functions will continue to change."

– **Richard Hanley**, Advisory Leader, Technology, Media & Telecommunications, KPMG in the U.S.

Cloud, which has appeared in these annual rankings consistently as a key driver of innovation, is still ranked highest, but has slipped in the last four years. With mobile and cloud firmly established, innovators are developing powerful new ways to leverage these platforms to help the next tech ideas break through.

The connected rise of cloud, IoT, mobile and D&A will continue to drive unprecedented business transformation opportunities in the enterprise market. Robotics and artificial intelligence (AI) are gaining momentum, scoring stronger this year (6 percent and 5 percent respectively) as key technologies reshaping enterprise markets in the next three years.

At the same time, the rising sophistication of consumers using emerging technologies in all walks of life will continue to increase pressure on the enterprise market to deliver innovative products and services for their customers and employees.

Companies across many sectors are on the path to becoming software providers, blurring the lines between products, services and industry categories. Speed and agility to innovate and iterate are key to gain and keep market leadership.

Q: Select the top technology that will have the greatest impact in driving business transformation for enterprises.*

Technologies	Global	U.S.	China	Japan	ASPAC	EMEA
Cloud – SaaS/PaaS/IaaS	**11%**	**13%**	9%	13%	**10%**	**10%**
Internet of things/M2M	9%	8%	**14%**	0%	9%	**10%**
Data & Analytics	9%	**13%**	8%	3%	**10%**	6%
Mobile– platforms and apps	7%	5%	5%	7%	7%	**10%**
Robotics	6%	4%	8%	3%	7%	8%
Cyber security	6%	10%	5%	7%	4%	5%
Biotech/digital health/healthcare IT	5%	8%	3%	3%	4%	4%
3D printing	5%	4%	5%	7%	6%	5%
Artificial intelligence/cognitive computing	5%	8%	9%	**23%**	6%	3%
On demand marketplace (e.g. Uber, Airbnb)	5%	5%	3%	0%	4%	5%
Social networking/collaboration platforms	4%	4%	1%	7%	3%	5%
Digital currency platforms (e.g., bitcoin, etc.)	4%	5%	5%	3%	6%	4%
Biometrics; gesture, facial, voice	4%	4%	12%	3%	6%	3%
Virtual reality	4%	1%	1%	3%	5%	4%
Nanotechnology	4%	1%	2%	3%	4%	5%

*Partial list of technologies shown

Source: KPMG Tech Innovation Survey Year-End 2015

ENTERPRISE MARKETS

"Companies that successfully put in place the structure, process and governance that will allow their supply chain to evolve into hardware, data, software, and services will gain a significant competitive advantage. This integration infrastructure will enable companies better connect the dots to increase innovation cycles and create new customer experiences. They are most likely going to be the winners in the market."

– **Tim Seitz**, Value Management Leader, KPMG

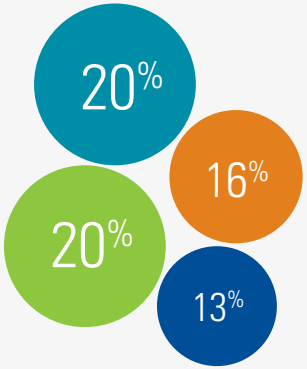
REGIONAL TRENDS

In looking at the enterprise market, China-based technology industry leaders ranked the Internet of Things (IoT) ahead of cloud as the disruptive technology that is expected to have the greatest impact on driving business transformation in the next three years. EMEA findings revealed that IoT leaped past several technologies to join cloud and mobile as the most impactful business transformation drivers. In the U.S., technology industry leaders viewed data and analytics and cloud as having the most impact during the next three years.

In Asia's manufacturing oriented centers, a focus on using AI and sensors, combined with robotics, is continuing to evolve at a rapid pace. Countries like Japan have invested in these technologies for years and now D&A, cloud and mobile are enabling a wide range of use cases that will continue to transform enterprises and drive innovation. In Japan, robotics and AI innovation is also an answer to a shrinking workforce. These technologies will continue to automate or augment performance.

Biometrics scored highly in China, seen by 12 percent as a leading force in transforming enterprise markets in the next three years. As most services and products are mobile, web enabled and connected to IoT and AI platforms, biometrics will be a key technology to solve many existing challenges in authentication and cyber.

Q: Choose the top benefit for businesses who adopt IoT or M2M technologies.



- **Improved efficiencies/higher productivity**
- **Faster innovation cycles**
- **Product/service differentiation**
- **Cost reductions**
- 10% Increased profitability
- 6% Enhanced customer adoption & loyalty
- 6% Increased market share
- 5% Accelerate time to market
- 3% More effective R&D

Source: KPMG Tech Innovation Survey Year-End 2015

ENTERPRISE TECHNOLOGIES – INTERNET OF THINGS/ M2M AND D&A BENEFITS

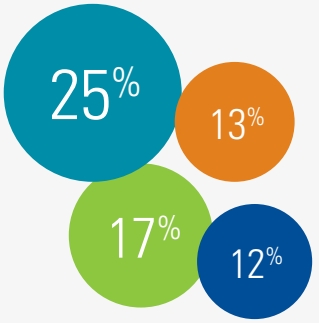
Operational benefits in adopting IoT and D&A showed up in the survey findings, including improved productivity and greater efficiencies. There is a bridge between the IoT and real-time monitoring and management decisions. Gone are the days where a calendar cadence dictates when decisions are made. There's a decoupling of the notion of a rudimentary accounting period, say month-end or weekly reporting, and it's no longer acceptable to manage a business along static time frames.

Other key benefits in the adoption of IoT and D&A include faster innovation cycles and product/service differentiation. IoT and D&A are going to give us much clearer visibility into customer behavior; how this information gets used could drive new innovation paradigms and change the entire approach to products and services iteration.

"There's a great imperative to harness the value of the data that an organization is capturing. For example in risk management there is an opportunity to start tapping into data to be an early indicator. Leaders who understand the importance to develop comprehensive strategies to tap into these early business indicators will add significant new value across an organization by increasing operational effectiveness and creating new growth opportunities."

– **Richard Hanley**, Advisory Leader, Technology, Media & Telecommunications, KPMG in the U.S.

Q: Choose the top benefit for enterprises who adopt Data & Analytics technologies.



- **Faster innovation cycles**
- **Improved efficiencies/higher productivity**
- **More effective R&D**
- **Product/service differentiation**
- 11% Increased profitability
- 9% Increased market share
- 4% Cost reductions
- 4% Accelerate time to market
- 4% Enhanced customer adoption & loyalty

Source: KPMG Tech Innovation Survey Year-End 2015

POV POINT OF VIEW

NAVRINA SINGH, QUALCOMM, Head Innovation Program (ImpaQt)

Which do you see as the next promising technologies that will lead to disruptive innovations globally over the next three years? It's about pushing the envelope with mobile connections to make sure every device, every human being is always connected for an immersive, personalized experience. An example is mobile devices that can respond to and recognize different languages, voice and touch. What enables this evolution is the integration of intelligent software and intelligent hardware.

The long-term objective is to make machines more human-like. This is happening with advances in machine learning, artificial intelligence and access to data coupled with cheaper storage and more efficient computing power. As machines and humans work more closely together, we are moving from programming to learning to comprehending.

What innovations are you excited about coming from outside the U.S.? I'm very impressed with the sophistication of technology coming from Israel and the entrepreneurial culture there. Japan is about five to 10 years ahead in robotics. In India, it's about creating value, keeping the cost low to scale up adoption. There are more infrastructure constraints in India than in advanced markets. One example of the kind of technology that is working in India comes from the healthcare field. There are advances in portable ultrasound machines that can be used in rural areas where there is no power. The data can be captured locally, relayed to a central hub, diagnosed by doctors, with nurses providing individual care in remote clinics.

What is your vision of the future for how robotics will impact lifestyles and work? The advances in smart machines will provide more opportunities for robotics to be a critical member of the workforce and even in our households. This will free up humans for more creative and intelligent roles.

What new features is Qualcomm developing to build into mobile phones of the future? We are working on improving the user experience, with eye recognition, voice recognition and touch recognition. In a few years, we will see phones that recognize and continuously authenticate the user through multi-modal and multi-factor biometrics. For instance, for families using shared devices, there can be different levels of access to features – such as online banking for parents and YouTube for kids.

POV POINT OF VIEW

NOVA SPIVACK, BOTTLENOSE, Cofounder and CEO

D&A is probably the most important new technology opportunity for the information age. In the tech sector we have already solved many of the daunting storage and computing challenges we faced in prior decades, and now, on the basis of that, D&A is the next pressing problem and opportunity to go after.

How do you see the fit between the Internet of Things and D&A? Unstructured streaming data is the fastest growing category of data today. This data is being produced by all manner of applications and devices – but the Internet of Things will amplify data volume, variety and velocity to unprecedented levels. Every device we think of today will soon have an IP address and will be spooling out streams of data. This will create a massive amount of new streaming data. To cope with this, and to harness it, enterprises are going to need next-generation D&A technologies that are natively designed for streaming unstructured data intelligence.

How do you envision people adopting this? Big data, of course, is already a very large market, but within that, there are numerous subsections, including the Internet of Things. There is also a huge category of big data around mobile devices and apps: there are billions of mobile devices and apps constantly collecting and sending out all kinds of telemetry and other data streams.

Smart cities are another huge IoT initiative. All the mobile carriers are working on it. Every device in a city will have sensors to measure traffic. They're tracking the power grid down to the household level while also looking at neighborhoods and substations. They're tracking weather. They're tracking the economy. They're tracking crime, traffic and more.

All of this is being instrumented with IoT technology and will be tracked to provide a live, real-time holistic view of what's happening in a city with the goal of not only detecting problems, but also predicting them so they can be solved before they occur.

Are you seeing people use the data that's being collected to achieve business advantage? Where analytics comes into play is connecting all this new streaming unstructured data to important business decisions, from discovery to forensics to optimization to decision support to business process automation. Most enterprises really aren't making much use of this data yet, but they will need to get better at this to remain competitive. The question is, how do they get insights from streaming big data? How do they make sense of it and connect it to business decisions in anything near real time?

When enterprises can get real-time data from almost everything they touch, what becomes possible? How does business change? It's a huge, new opportunity.

What if you were an enterprise CEO? What would you do in your company today that you're not doing that would prepare your company for this new world? Companies are sitting on a potential goldmine of big data. But are they getting the full potential value out of it? Big data is a potential asset now, and some companies are better at collecting it and utilizing it than others. What enterprises need, and what CIOs and CEOs need to be thinking about, is what's my enterprise-wide solution for managing streaming unstructured data? How can we derive valuable, high-impact insights from that? To implement an enterprise-wide strategy for streaming unstructured data, that scales across every kind of data type and application, including the Internet of Things, business leaders have to start preparing now.

DISRUPTIVE TECHNOLOGY TRENDS

Emerging Technology Trends

"Ignoring the tidal wave of changes in consumer preferences and tastes means that consumer markets/retail companies are likely to get swept away as yesterday's news. Their ability to better track and anticipate these preferences will separate the winners from the losers."

– **Pat Dolan**, Line of Business Leader, Consumer Markets, KPMG in the U.S.

TECHNOLOGY TRENDS – INDUSTRY DISRUPTION

> "Over the next five years, new opportunities will emerge that are detectable now, through signals like changing demographics, technology innovation and start-up activity. Business leaders who harness trends accurately stand to be big winners in the marketplace while others can quickly fall behind."
>
> – **Mike Nolan**, Vice Chair of Innovation & Enterprise Solutions, KPMG in the U.S.

LOOK FOR RETAIL MARKETS TO GET TECH SMART EVEN FASTER

When technology industry leaders were asked which industry is going to be transformed the most, 24 percent of respondents pointed to their own. Considering the tech sector is the driver of technology disruption across all sectors and an early adopter of emerging technologies it is no surprise the tech industry is expected to have the greatest transformation in the next three years.

Tech industry innovation leadership is also changing at a fast pace. Many of today's technology industry leaders will likely be displaced by new players developing next-generation breakthroughs that can enhance economic value. Thanks to these emerging technologies and their global adoption, the tech sector is an engine of growth, profitability and innovation.

Q: Which industry will have the greatest transformation in the next three years as a result of emerging technologies?*

Industry	Global	U.S.	China	Japan	ASPAC	EMEA
Technology	**24%** 21%	**31%** 25%	**30%** 22%	7% 3%	**22%** 18%	**20%** 16%
Consumer markets/retail	11% 12%	11% 17%	16% 10%	**13%** 9%	15% 14%	7% 7%
Telecommunications	10% 8%	11% 7%	2% 8%	**13%** 12%	9% 8%	11% 10%
Energy	9% 9%	3% 9%	8% 6%	**13%** 12%	9% 8%	11% 12%
Manufacturing	8% 10%	3% 5%	12% 21%	3% 15%	12% 13%	8% 7%
Healthcare	8% 11%	14% 19%	4% 5%	**13%** 6%	6% 8%	7% 12%
Financial services	8% 6%	8% 2%	13% 9%	7% 6%	9% 8%	6% 5%
Automotive/transportation	7% 10%	4% 8%	6% 11%	**13%** 32%	7% 11%	10% 10%
Government	4% 1%	3% 0%	3% 0%	3% 0%	4% 1%	5% 1%
Media	4% 1%	2% 2%	2% 0%	7% 0%	3% 1%	7% 1%
Education	4% 6%	7% 4%	1% 6%	0% 3%	3% 6%	4% 7%

*Partial list of industries shown Smaller, gray numbers indicate percentages from 2014 survey. Source: KPMG Tech Innovation Survey Year-End 2015

In China, the technology industry ranked at the top (30 percent), a pronounced finding that reflects the competitiveness of the tech sector where customer loyalty and churn keep market leaders and startups focused on coming up with the next, new thing. The China 2025 government plan prioritizes many emerging technology initiatives and investments to position China as a global tech industry leader.

Consumer markets is the next sector most prone to disruption at 11 percent. The whole customer experience, online and in stores, is being changed dramatically.

Financial services in China and healthcare in the U.S. were also ranked as markets undergoing significant change in the next 36 months.

POV POINT OF VIEW

LIOR SUSAN, ECLIPSE VENTURES, LLC, Founder & General Partner

What is your VC fund investment approach? The market is changing dramatically. We see a world where hardware, software, data and services are no longer four separate business models. Rather, they are the four pillars that define the successful companies of the future. We are investing in companies that have these four pillars.

What do you see as the most promising tech innovations in the next three years? The greatest innovation is what I call "the modern company." The next wave of companies that want to be at the top of the food chain must have integrated hardware, software, data and some sort of services model. What used to be four or five different technology companies can converge into one company. Many of these companies will be driving innovation by using software algorithms, machine learning, data, web, mobile and some hardware elements.

Is this shift transforming some industries more than others? All industries are changing as a result of disruptive technologies.

In healthcare we see huge trends of moving technology and services from the hospital to the home. Things that were only available in the hospital will be available at home and provide increased convenience to the user at lower cost. At the same time more data will be collected and enable new types of services that were either a luxury for wealthy people or were only possible inside physicians' offices or hospitals.

Companies with the four pillars – hardware, software, services, data – will be positioned to change the way the way that you interact with your hospital; you will have access to integrated technology and new services at your home. If your baby is sick, your physician can access your baby's data via a digital device and tell you exactly what's happening. A new type of service is created and the interaction between you, your doctor and insurance company is transformed.

Another interesting industry is manufacturing and the convergence of robotics and AI where humans are controlling and interacting with robotic systems remotely. You can have 200 robots in a high-cost-labor location being controlled by 20 operators in a low-labor-cost market, and you've created a new type of service. We're super-bullish on the AI side of things. Because of the AI layer, when an operator is doing something with the robot, the AI platform is learning this behavior.

How are business models changing? When you you think about NEST, they didn't invent a new technology. They rebuilt the thermostat from scratch. We think this model to redefine products and services is going to accelerate. We have a company that rebuilt a kitchen oven. Adding machine learning, vision systems, and other technologies, the oven can turn the heat, "sense" the type of food, and cook it according to the user's taste. Everything looks amazing, and there are child-proof protections.

Technology is allowing you to take physical location out of the equation and build a platform that allows companies to design, prototype, operate, manufacture and deliver almost anywhere. Think about the transformation opportunities for the supply chains of the world and the concept of inventory. Inventory is equal to inefficiency in a supply chain. Manufacturing can be done near the customers and that's an area we are definitely watching very carefully. There is also the "renaissance of the new e-commerce companies" that now become modern logistic companies (and this is their core model vs. only selling stuff over the internet).

The technology companies leading in the future are going to be the integrators of the hardware, software, data and baseline services. With today's technology, you can do everything by using open source and off-the-shelf components. Essentially you become an integrator where 5 percent of your company is the secret sauce and 95 percent is off-the-shelf stuff, but the result is that you find yourself in the very top of the pyramid because you can control the value chain. The rise of the innovation integrator will redefine the next wave of technology industry leaders.

TECHNOLOGY TRENDS - DIGITAL CURRENCIES AND PLATFORM DISRUPTION

"Tremendous levels of investment in the FinTech sector and changing customer demographics will continue fueling new ways for customers to interact with financial products, both from the financial side as well as the technology side. The sheer global diversity will drive innovative and evolving business models from rapidly scalable technologies on mobile platforms, expanding ways we lend, invest, transact, and insure, among others."

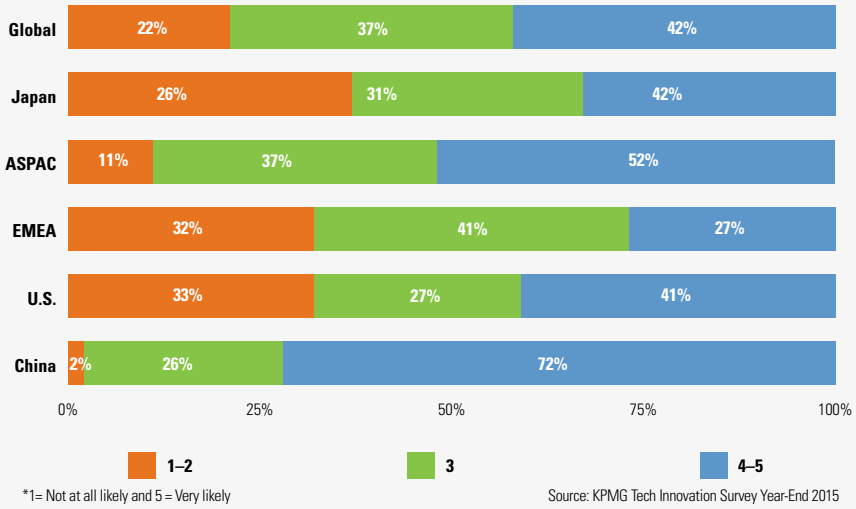
– **Fiona Grandi**, Financial Services FinTech Leader, KPMG in the U.S.

When queried if digital currencies will disrupt banking and payments in the next three years, some 42 percent globally concluded, yes, it's very likely. China, at 72 percent, is the most bullish about its potential. The U.S saw the biggest shift, with 41 percent foreseeing big impact from digital currencies, nearly triple the percentage a year ago.

The growth of cross-border transactions is likely to increase the benefits of having a global currency and digital currencies could play this role. Banks are starting to create their own digital currencies and financial institutions are looking to the blockchain ledger to track more than electronic tokens.

The evolution of digital currencies is part of the innovation and disruption driven by the tech industry. The arrival of bitcoin acceptance in all continents and increasing interest in adopting the blockchain ledger, across a number of applications including digital currencies, are creating global opportunities to redefine how people and businesses do transactions.

Q: What is the likelihood that digital currencies and platforms will disrupt banking and payments in the next three years?*



*1= Not at all likely and 5 = Very likely

Source: KPMG Tech Innovation Survey Year-End 2015

"Asia Pacific generally has been an early adopter of mobile payments and e-commerce. The region may be more comfortable using digital currencies. With the massive rise of the consumer in China, there are significant innovations taking place in FinTech."

– **Edge Zarrella**, Clients and Innovation Partner, KPMG in China

POV
POINT OF VIEW

MELISSA GUZY, ARBOR VENTURES, Founder

How do you think FinTech will transform the financial industry? What will be the biggest change? I see big data being the big game changer in FinTech. Big data creates opportunities to address a variety of issues faced by the financial sector including new paradigms to identify fraud, manage insurance, corporate documentation and KYC. I believe blockchain will be a technology platform for the financial sector. Block-chain's transparency and easily traceable features can redefine areas such as fraud detection and AML.

What Asian country is leading the FinTech innovation and staying ahead? Countries in Asia are driving innovation at different speed. Each country has its own FinTech focus. The Japanese government and banks are investing more into Blockchain technology and payments. The focus in the Philippines is digital wallet and in Singapore is wealth management and insurance innovation. In my opinion, Australia's FinTech sector is the most advanced. The quality of proof-of-concept and engineering in the country is good and Australia has developed regulations that are well defined and easy to follow which enables innovation. Given these factors, Australia is becoming one of the leaders in this space.

TECHNOLOGY TRENDS - KEY FACTORS FOR DIGITAL CURRENCIES TO SUCCEED

The financial world has woken up to the commercial potential of digital currencies and distributed ledger technology. Banks around the world are starting to experiment with bitcoin and other decentralized database systems. But the momentum gained by digital currencies has also raised a series of adoption challenges.

Security and accessibility are key to the success of digital currencies. As bitcoin and other digital currencies gain accessibility and general acceptance, security will be a must for consumers and businesses to realize the benefits of their use.

Q: What is the critical factor for digital currencies to succeed?*

Factors	Global
Security	**22%**
Accessibility	15%
General acceptance/international integration	14%
Technological development/ innovation	14%
Economic development	11%
Credibility	5%
Cost	3%

*Partial list of factors shown.

Source: KPMG Tech Innovation Survey Year-End 2015

Important pillars for future mass adoption include:

- **Ease of use**
- **Safety**
- **Price stability**
- **Governance**
- **Regulation**

POV POINT OF VIEW

PETER SMITH, BLOCKCHAIN, LTD., Cofounder and CEO

Despite considerable public and media attention, questions and confusion remain about the powerful advantages bitcoin can offer to consumers and merchants, and the opportunities bitcoin enables to expand financial services to underserved regions of the world and optimize global transactions.

The bitcoin network is made up of computers called miners. These computers are located around the world and their function is to verify and process bitcoin currency transactions on the network. All bitcoin transactions can be viewed and checked on the bitcoin blockchain, which is a public ledger. Individuals who operate miners receive a monetary reward for processing transactions, which is used to incentivize them to continue ensuring the security and function of the bitcoin network.

Although it isn't a government issued currency, bitcoin is a viable form of money that is increasingly being accepted globally. Anyone with an internet connection can learn about bitcoin and how to purchase it in their area. Bitcoin allows for instant transactions and quick confirmation of purchases, along with minimal to zero fees involved in each transaction. Merchants and consumers can benefit by achieving significant long-term transaction savings, and lower costs associated with global e-commerce.

Bitcoin allows consumers and companies to take control of their finances without having to depend upon a middleman, like a bank. This will prove especially important to regions of the world where banking services are challenging to obtain or use. As more of these previously underserved regions are connected to the Internet through mobile devices, financial services powered by bitcoin become an important next step to providing economic development opportunities.

There are several things that need to happen for bitcoin to achieve mass disruption and build on our success to date. The interface and experience of bitcoin applications and services, for instance, is continually evolving to become easier for general consumers to understand and use. This evolution is critical to driving broader acceptance and adoption.

Building secure systems at a software level that scale to serve average consumers is a key challenge for Blockchain and any other bitcoin companies. To date, security has not been a huge issue for us – our current challenge is making security more intuitive to the user.

Bitcoin offers a vast potential to disrupt financial services while making routine transactions more accessible and less expensive to consumers and companies globally. With digital wallets and transactions expanding worldwide, digital currency is a necessary complement and component in a new global commercial ecosystem.

TECHNOLOGY TRENDS - IOT MONETIZATION OPPORTUNITIES

> "Innovative companies, across sectors, are building strategies around the future of these connected, smart devices. Unprecedented, ubiquitous understanding of customer and employee behavior and motivations will reveal opportunities for new services and products."

– **Kes Sampanthar,** Executive Director, Innovation Lab, KPMG in the U.S.

The IoT market is growing as networks of low-cost sensors are exponentially converting physical goods into virtual goods. As a result there is a proliferation of smarter products with more autonomy including cars, drones and the connected home. Wearables will continue to delight consumers with fashion and function.

Visionary business leaders understand a key value and competitive differentiator is the IoT information. Companies with more data about customer behavior and preferences will still need to synthesize this data to positively impact the customer experience without overwhelming the people who have to provide that experience at the front lines. Data analysts will have to figure out the meaning and use of that data to make doing business easier and faster. The next three years will bring continued evolutions in IoT technology and business models.

Q: Which vertical has the greatest monetization potential as a result of the adoption of Internet of Things in the next three years?*

Industry	Global	U.S.	China	Japan	ASPAC	EMEA
Consumer markets/retail	**22%**	**21%**	**34%**	3%	**25%**	**18%**
Technology	13%	20%	8%	10%	10%	10%
Aerospace & defense	10%	5%	18%	**20%**	13%	10%
Education	10%	10%	4%	7%	9%	10%
Automotive/transportation	9%	5%	16%	3%	10%	9%
Healthcare	6%	11%	1%	3%	4%	6%
Financial services	6%	4%	3%	10%	6%	6%
Telecommunications	6%	5%	0%	17%	6%	6%
Energy	5%	4%	3%	13%	4%	6%
Manufacturing	4%	3%	4%	3%	5%	3%
Media	4%	4%	2%	7%	1%	6%
Services	3%	2%	1%	0%	3%	5%

*Partial list of verticals shown

Source: KPMG Tech Innovation Survey Year-End 2015

Opportunities for the Internet of Things by focusing on people:

- There will be an unprecedented ability to understand consumer behaviors and needs better than ever before.
- This will be important for consumer products, and also for enhancing security, a key barrier.
- Motivational design could play a key role in adoption, particularly as it relates to ease of use and simplicity.

> "Putting people back into the 'Internet of Things' means a whole new level of complexity and opportunity. Through these smart, connected products, companies get to see the whole picture of how people buy, use and discard these products. This provides an unprecedented level of insight into the entire behavioral landscape of people, and it will give companies the opportunity to truly understand what people want."
>
> – **Dave Wolf,** Managing Director, Digital and Mobile Solutions, KPMG in the U.S.

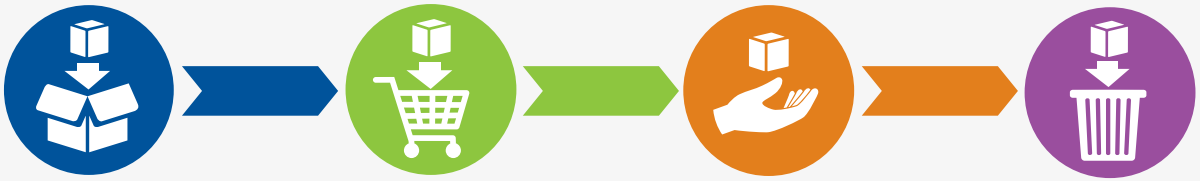
Smart, connected devices that can be embedded into anything and everything are bringing the power of digital to the physical world. If everything in the physical world had the same capabilities, awareness and intelligence as objects in a digital world, we would move close to an omniscient world.

THE OMNISCIENT WORLD

IoT through D&A allows us visibility into a world we have not been able to see. By making every product, machine and widget a smart, connected device, we get to see every step in the manufacturing process, from the source of materials to creation of products through the distribution and sales of the product. More importantly, we get to see a side of business we have never had a clear visibility into: what happens after a product is purchased. Now we have the opportunity to track products from cradle to grave:

The retail market is seen as the most likely vertical to capitalize on these advancements. A proliferation of startups are driving new consumer demand. Sensors on products, shelves and people provide a much clearer picture of consumer behavior that will help retailers and brand marketers to shift strategies based on evolving consumer needs and buying habits. The competition is fierce for dominance of the consumer market.

Another industry that will continue to be transformed is automotive, with driverless cars emerging and impacting related sectors such as insurance.



Cradle — manufacture of the product from source materials through to distribution and sales

Sales — the entire sales lifecycle — advertising, marketing, through to shopping cart and purchase

Usage — How the product is used in the customer's hands or businesses

Grave — through the cycles of break/fix/update to its eventual disposal

TECHNOLOGY TRENDS – AI MONETIZATION OPPORTUNITIES

"The era of cognitive computing has arrived. Combined with data & analytics, robotics, cloud and other emerging technologies, cognitive represents a new form of 'digital labor' that will assist and augment human expertise and knowledge in ways that have rarely been contemplated."

– **Cliff Justice,** Innovation & Enterprise Leader, KPMG in the U.S.

Q: Which vertical has the greatest monetization potential as a result of the adoption of AI/cognitive computing in the next three years?*

Industry	Global	U.S.	China	Japan	ASPAC	EMEA
Technology	**17%**	**23%**	**26%**	10%	**17%**	**12%**
Aerospace & defense	11%	14%	6%	13%	10%	9%
Automotive/transportation	10%	11%	4%	13%	11%	10%
Consumer markets/retail	8%	8%	12%	3%	9%	8%
Education	8%	5%	6%	3%	6%	10%
Financial services	8%	7%	8%	3%	9%	7%
Healthcare	7%	7%	10%	3%	8%	8%
Energy	7%	3%	3%	**17%**	6%	10%
Manufacturing	6%	7%	6%	3%	5%	5%

*Partial list of verticals shown

Source: KPMG Tech Innovation Survey Year-End 2015

Most industries will be transformed by the growth of cognitive computing systems that can predict, infer and, in some ways, think and learn by experience much like humans do. With deep domain expertise, cognitive computers will act as a decision support system to help human experts make better decisions based on the best available data, whether in healthcare, finance or customer service.

Global industry leaders are figuring out how to use artificial intelligence to supplement decision-making and foster closer customer relations through leveraging deep data domains. Businesses that leverage massive amounts of data to identify and define associations—the foundations of machine learning—will gain an edge over their competitors.

"Organic growth alone will not meet the needs of tomorrow's mobility culture, and automotive OEMs must shorten innovation cycles to bring new products and services to the market. In the crucial battle to attain customers' loyalty, automakers will have to cooperate with companies offering innovative technologies and services."

– **Gary Silberg,** Americas Head of Automotive, KPMG in the U.S.

POV POINT OF VIEW

DR. ADAM COATES, BAIDU, Director of Silicon Valley AI Lab

How is Artificial Intelligence being transformed and what are its implications? Artificial intelligence is evolving very rapidly. It's an incredibly exciting moment for AI and the set of problems that deep learning can solve is expanding quickly. One area that the Silicon Valley AI Lab is focused on short term is making devices much more natural to use through speech recognition. We can see this having a lot of value for cars and mobile devices, or someday interacting with robots. What we are ultimately figuring out is how to make machines interact with people as easily as people interact with each other.

How does the AI Lab prioritize research areas? We have a mission-oriented culture. We think hard about what are the most important problems and we drive toward solutions that will be big enough to make a difference. We work with the product teams and development teams on prototyping so we don't get too far from the end product. The opportunities are so enormous that it can be a challenge to figure out what to tackle first.

What's the mission of the AI Lab? Our goal is to work on research projects that will let us have a significant impact on at least 100 million people — a number we chose to focus the team's efforts on solving big problems that people care about. We talk about it so much that our team coined the term "1 HMU" to refer to this threshold. We want to take AI technologies from basic research all the way to that 1 HMU scale. One of the areas we're working on is enabling people to work with devices through speech and language, which will transform how people interact with technology.

How far along would you say Baidu is in perfecting speech recognition? We're making very rapid progress and there's a good chance we will be able to match or even outperform humans in a wide range of scenarios. It is a huge challenge though — if we don't make it to 100 percent then we will need another big research breakthrough to make things perfect. If you're talking to a person and they misunderstand one in 20 words, that would be incredibly frustrating. 95 percent isn't good enough; 99 percent or better would change everything.

How does Big Data factor into the equation? We are working with huge amounts of speech data to train neural networks to perform speech transcription. In addition to data, we also need a lot of computing power — the AI Lab has a systems team that helps us tackle that with supercomputing technologies. The challenge for the future is how to work with larger and larger sets of data so that the learning algorithms we use can keep getting better and better.

TECHNOLOGY TRENDS – ROBOTICS MONETIZATION POTENTIAL

Robotics, already mainstream in automotive and manufacturing, are finding their way into many markets, making the work environment safer and more efficient. Robots are replacing humans on the factory floor and doing dangerous jobs such as fighting fires and performing maintenance work on high voltage lines. Robots are also being used by some hotel chains to deliver amenities to guests.

Industrial robotics has been one of the key industries in Japan, and ongoing innovation in robotics technology will continue to drive new breakthroughs. The Japanese government launched an initiative this year to double the use of robotics technology in manufacturing, service industries, agriculture, and inspection and repair of the country's infrastructure. The initiative is designed to connect robotics with Big Data and create a new industry environment.

Q: Which vertical has the greatest monetization potential as a result of the adoption of robotics in the next three years?*

Industry	Global	U.S.	China	Japan	ASPAC	EMEA
Manufacturing	**16%**	16%	**20%**	17%	**18%**	15%
Automotive/transportation	**16%**	**20%**	5%	13%	13%	**19%**
Aerospace & defense	13%	15%	13%	7%	12%	12%
Technology	11%	17%	14%	3%	12%	7%
Healthcare	9%	11%	11%	**23%**	12%	8%
Consumer markets/retail	7%	2%	11%	3%	9%	8%
Education	7%	3%	9%	3%	7%	7%
Energy	7%	4%	5%	10%	6%	9%
Financial services	4%	4%	6%	0%	3%	5%
Government	3%	5%	3%	3%	3%	4%

*Partial list of verticals shown.

Source: KPMG Tech Innovation Survey Year-End 2015

POV POINT OF VIEW

STEVE COUSINS, SAVIOKE, Founder and CEO

What business footprint does Savioke have in the market today? We started Savioke in October 2013. Our first use case is using robots to do deliveries to hotel guest rooms. We are already deployed in five major hotel chains and several independents. Our robots have made almost 13,000 deliveries to guests amounting to more than 3,000 kilometers travelled.

What are the keys to your success so far? Keeping it simple is key. It comes down to focusing on what tasks can be done by the robot, and what use cases it can master. We began with a mobile delivery robot for the hospitality industry. Developing and delivering easy-to-use yet sophisticated robots that are very reliable, is the key to our success.

We've also crossed a barrier with service robots that are now interacting with people and moving around in the real world. The robots take on useful tasks and care for themselves by getting back to their charging dock and running 24 by 7. They are low maintenance from the hotel workers' perspective.

We have also done a lot of integration work. We don't develop sensors ourselves, but we've integrated different sensors to make this work, along with processors, algorithms and mechanical systems. Integration is hard. We have taken the integration design part to do something that hasn't been done before.

In the next 36 months, what is in the roadmap? For us, the next thing is going to be how to expand the set of use cases for the robot while growing the hospitality market. In elder care facilities, for example, we'll start with a simple task like we have done in hotels. We are also looking into how do we might design another robot that does a different use case, maybe with different hardware or technical capabilities.

With robots what is going to be the greatest industry transformation in the next 36 months? I think what you'll start to see is the ability to automate tasks that you never thought could be automated. Robotics design is benefiting from much more flexibility. Sensors are cheaper and we understand much better how to design more sophisticated systems using new technologies.

In the service industry, the direction is to automate tasks that can be done by robots so employees can have more time to improve the customer experience. Robots are part of a computer system so they can be scheduled, monitored and audited so routine, repetitive tasks can be done the right way.

Over time, personal robots will help people to achieve their potential, enhancing our strengths, overcoming our weaknesses, and adding new capabilities we are just beginning to imagine.

How are you innovating your business models? Our monetization model is RaaS (Robot as a Service). SaaS has taken off because it basically puts the upgrades and maintenance burden in the right place. The same thing with robot as a service.

From the customer's point of view, they know exactly what the service is going to cost and they have information to do an ROI analysis. They're getting the value for a reliable service without adding work to the IT staff.

We pioneered this model last year and I think it will be one of the key ways that robotics is offered to the service industry and other sectors. The model of buying hardware and having to worry about maintenance over time may not be the right approach for this business that is so software centric.

What impact did Willow Garage, ROS and the Open Source Robotics Foundation have in the creation of Savioke? One of the challenges with robotics is that it's a combination of complicated disciplines. You need mechanical and electrical engineering, control software, navigation software, and robot and human related interaction disciplines, plus other areas of expertise in each of the development layers. You can't find an expert across all of those different parts of the stack.

The need for an open-ended collaboration framework was felt by many people in the robotics community. Willow Garage, a combination think tank and incubator, provided significant resources to extend the concepts of the Robot Operating System (ROS). ROS is a flexible framework for writing robot software that aims to simplify the task of creating complex and robust robot behavior across a wide variety of robotic platforms. Many of us started using ROS because it's open source and available for everyone to use, and the licensing is open for commercial and noncommercial use. The other benefit of open source is my engineers can inspect and test the system at any time

The Open Source Robotics Foundation is a nonprofit that spun out of Willow Garage with a lot of the original ROS engineers to support the system. The Open Source Robotics Foundation contributes to continuous code improvements and integrates other people's contributions.

As a result, you have an ecosystem for developing robots that is available to everyone in the world. And that's helping to drive the robotics industry forward.

Conclusion

> “Innovation is a critical differentiator as new and existing companies are continually competing to develop the next generation of products and services to add economic value. The interrelated rise of cloud, IoT, D&A and artificial intelligence are reshaping all industries to the point that most companies will become software companies, blurring the lines between product, services and industry categories.”
>
> – **Gary Matuszak**, Global and U.S. Chair, Technology, Media & Telecommunications, KPMG

Key Takeaways:

The unprecedented development and integration of innovative consumer and enterprise technologies is enabling profound changes to industries, business models and societies. Success that was possible five years ago by commercializing one form of innovation now requires integrating several disruptive technologies into a seamless business model.

Innovations in cloud, mobile, D&A, IoT, AI and virtual reality will continue to change consumer behavior and disrupt most industries. As these technologies drive the next wave of innovation, companies have an opportunity to gain new insights throughout the customer journey. Unprecedented, ubiquitous understanding of customer and employee behavior and motivations will reveal opportunities for new services and products. Motivational design will play a key role in commercializing the next wave of innovations.

As the pace of innovation increases, speed and rapid iteration are game changers, but also expected by customers. More than ever, companies need to be agile and have flexibility to adjust to dynamic markets and take advantage of a global ecosystem where you can drive ideation and engineering in Silicon Valley, prototyping in another region, and manufacturing close to your customer's market.

Disruptive technologies and new business models are triggering a formal re-evaluation of enterprise value. Realizing the promise of disruptive technologies requires a disciplined strategy for faster decision-making, identifying new revenue streams, and risk management. The alignment of technology and people investments to allow the redeployment of a workforce to its highest and best use, and to solve previously unsolvable problems, is key for companies to succeed in the future.

Value Management Considerations:

Ensure technology-enabled business model and process improvements are aligned with your core legal and financial (tax, trade and treasury) strategies.

Identify, document and regularly update your strategic plans, including your development, enhancement, maintenance, protection and exploitation efforts.

Clearly assign ownership of new business models and improved processes with the right legal entities.

Ensure related assets, risk and cost associated with development are aligned with this structure.

Put in place appropriate agreements to ensure relative ownership, development and use relationships are documented.

Create governance for periodic review of the structure and models to ensure ongoing compliance with strategy.

THE BUSINESS IMPLICATIONS OF DISRUPTIVE TECHNOLOGIES FOR THE TECH SECTOR

The disruptive technologies trending as game-changers in consumer and enterprise markets have already made a huge impact across the technology sector ecosystem and will continue to do so in the foreseeable future.

Whether it is in creating new ways to serve and derive value from customers, driving operational innovations to lower cost and improve agility, or transforming entire industries and business models, the pace of change is only going to accelerate with each wave of new disruptive technologies.

Tremendous opportunities exist for companies that can successfully integrate these disruptive technologies to create unique customer value propositions and new ways to compete. For technology companies, whether they are creators of these disruptive technologies, solution providers who use these technologies, or suppliers to companies who create or integrate these technologies, innovation and business agility are key. Profit pools and competitive advantages that exist now are going to be short-lived if boards and C-suites do not address – with increasing speed and agility – disruptive trends that both threaten their existing business models and provide sources of opportunity.

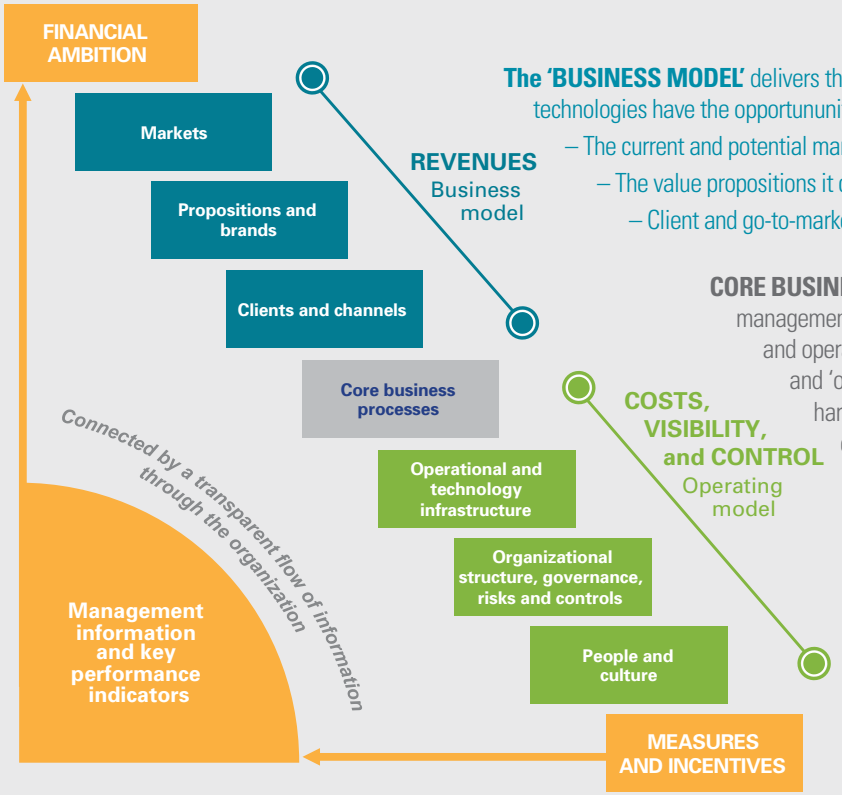
Taking action to harness the opportunity and minimize the threat will be essential to be a high performing market leader. **Forward-thinking executives are leading their companies to have a framework to constantly optimize their business — are you:**

- **Revisiting your company strategy** to understand how disruptive technologies are impacting your suppliers, partners and customers, their value propositions, and how you can monetize incremental value.
- **Rethinking your innovation and business models** to harness these disruptive technologies and the ecosystems around them for new value propositions and competitive advantage.
- **Reconsidering capital allocation** to optimize and balance your funding on current vs. new.
- **Revising your M&A strategy** to take advantage of disruptive technology opportunities, fill technology and capability gaps, and accelerate time-to-value
- **Reinvigorating and transforming your operating model** to capture incremental profits to fund the change, and to improve organization agility to capture new opportunities

HOW KPMG CAN HELP

KPMG 9 LEVERS OF VALUE FRAMEWORK

KPMG's proprietary 9 Levers of Value framework provides a methodical way for companies to think through and respond to the impact of disruptive technologies at an enterprise-wide level that connects strategy with execution.



The 'BUSINESS MODEL' delivers the revenues. Disruptive technologies have the opportununity to fundamentally change:

– The current and potential markets that are available

– The value propositions it can deliver

– Client and go-to-market options to reach customers

REVENUES Business model

CORE BUSINESS PROCESSES, such as product development and management, business development, client service models, communication and operational processing, are the lynchpin between the 'business model' and 'operating model'. Building business and operating models to harness disruptive technologies will likely require major changes in existing and brand new business processes.

COSTS, VISIBILITY, and CONTROL Operating model

The 'OPERATING MODEL' cost effectively delivers propositions and manages clients through the core business processes. New business models brought about by disruptive technologies will necessitate new capabilities, talent, and culture.

KPMG: AN EXPERIENCED TEAM, A GLOBAL NETWORK

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

Our network of professionals in 155 countries, have extensive experience working with global technology companies ranging from the Fortune 500 to pre-IPO startups. We aim to anticipate the short-and long-term opportunities of shifting business, technology and financial strategies.

KPMG operates as a global network of independent member firms offering audit, tax and advisory services.

INNOVATION LAB KPMG IN THE U.S.

Insights and inspired solutions fly among KPMG professionals, top business thinkers, technology innovators, start-up/venture capital specialists and clients at KPMG's Innovation Lab.

The Lab, located in WeWork's SoHo based New York facility, is home to KPMG professionals with deep expertise in a range of subjects directly related to cutting-edge innovations.

To help the firm and our clients adapt for future growth and maintain relevance, the team applies human-centered design thinking to understand changing human behavior. It also tracks technology innovation, venture capital start-up investments and tech giant market activity, to develop new and innovative business models.

Through the work of the Innovation Lab, KPMG can provide powerful insights into a wide range of social and technological forces – forces that are changing the landscape for our clients' customers and competitors, and driving innovation and transformation in their industries.

For more information about the innovation lab, please contact:

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Nova Spivack, Bottlenose, Cofounder and CEO

Lior Susan, Eclipse Ventures, LLC, Founder & General Partner

KPMG: TECHNOLOGY INNOVATION CENTER

KPMG recognizes the importance of innovation. In 2012 we launched a global Technology Innovation Center to identify and evaluate the impact of future disruptive technologies. The center connects leading technology thinkers including entrepreneurs, Fortune 500 technology executives, venture capitalists and KPMG member firm professionals.

Benefits of participating in the community:

- **Tap into unique insights** identifying technologies that will reshape consumer and enterprise markets
- **Access a global network** of tech sector visionaries
- **Join digital and in person programs** with tech visionaries
- **Drive ideas for global research** about emerging technologies
- **Opportunity to be a featured speaker** in KPMG's global tech innovation center and country summits

Join today! kpmg.com/techinnovation

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