KPMG

# Clockspeed-capable procurement

**Five key strategies for managing the automotive innovation ecosystem**


kpmg.com

# About the contributors

**Gary Silberg** is the national automotive leader at KPMG LLP (KPMG), as well as the global lead partner for Delphi Corporation and Ford Motor Company. With more than 25 years of business experience, including more than 14 years in the automotive industry, he is a leading voice in the media on global trends in the automotive industry. Gary advises numerous domestic and multinational companies in areas of strategy, mergers, acquisitions, divestitures and joint ventures. For the past five years, he has focused on the intersection of technology and the automotive industry, with groundbreaking research on self-driving cars, connectivity, and mobility-on-demand services.

**Tom Mayor** is the national strategy leader for KPMG's Industrial Manufacturing practice. With 25 years consulting experience, he focuses on supply and manufacturing strategy, operations turnaround, purchasing, and supply base management, with a focus on automotive, aerospace, and industrials.

**Bill Lakenan** is a principal in KPMG's Strategy practice. With more than 25 years of consulting experience, he focuses on operations strategy, business model design, operations turnaround, and supply base management. His consulting experience includes work with commercial and military aerospace OEMs and suppliers, the automotive industry, train and ship builders, and other industrial manufacturers.

**Brian Higgins** is a principal in KPMG's Product Operations and Procurement practice focusing on strategy and operations management consulting. He has deep experience with competitive strategy and operational design and brings nearly 20 years of industry and consulting experience.

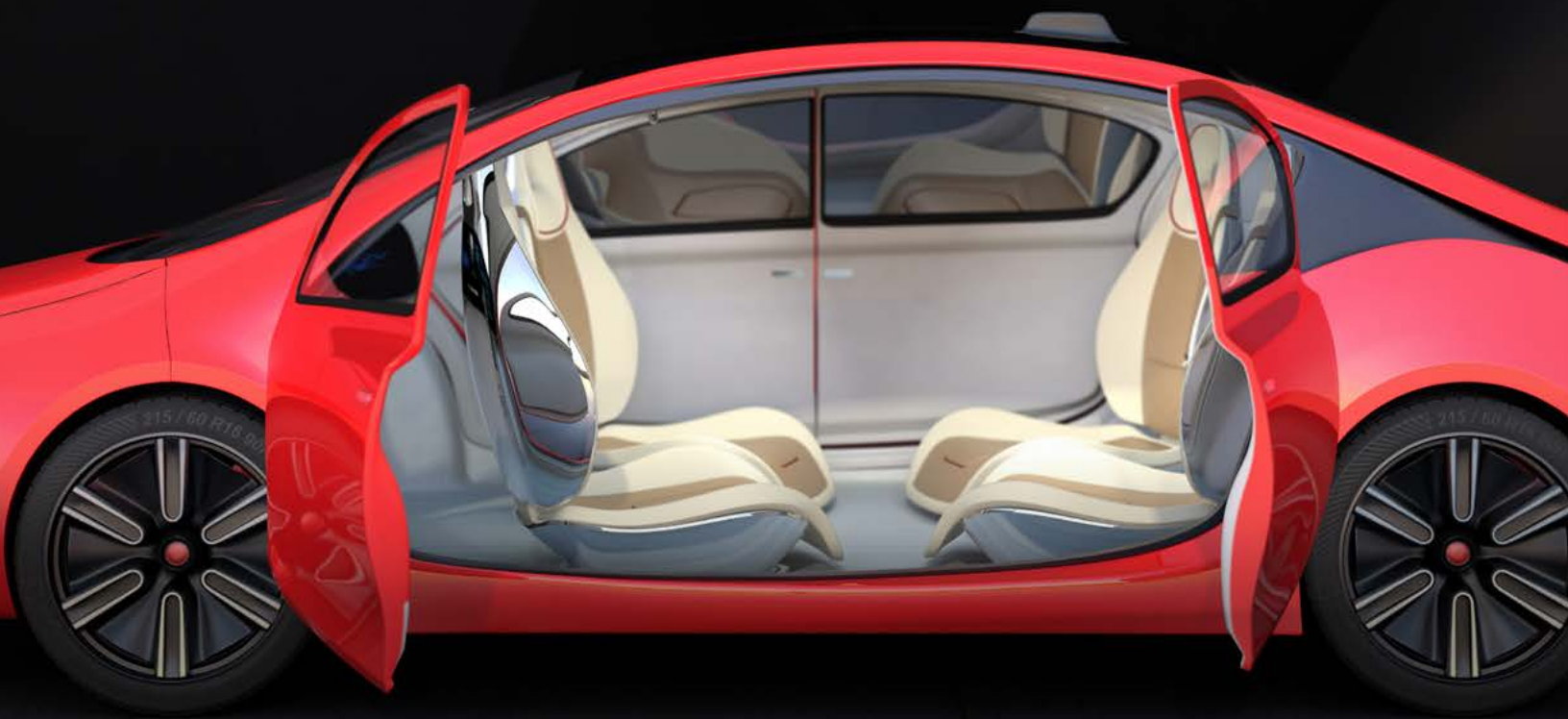
**Eric Logan** is a managing director in KPMG's Strategy practice. With nearly 20 years of experience working in the industrial manufacturing sector, Eric primarily leads projects that focus on supply chain optimization, manufacturing strategy, and operational effectiveness at aerospace and industrial clients.

**Kevin Prevost** is a director in KPMG's Strategy practice. He has more than 15 years of professional and consulting experience across industrial manufacturing, energy, and natural resources companies. He has helped clients across industries with corporate and business strategy, growth strategy and market analysis, supply chain, and manufacturing operations transformation.

KPMG

# Contents





"Einstein said that 'Imagination is more important than knowledge.' Hence, you need to be open and willing to search out new ideas from nontraditional sources. You never know where groundbreaking innovation may come from."

*— Gary Silberg*
*Partner, National Automotive Leader, KPMG*

"Our research suggests that autonomous mobility services will become a dominant transportation mode in cities and inner suburbs. Winning—or even playing—in that market will require automakers to establish new types of relationships with new tech suppliers and other disruptive forces. Today's procurement models must shift to adapt to this new reality."

*— Tom Mayor*
*Principal, National Strategy Leader, Industrial Manufacturing, KPMG*


KPMG

# Driving innovation forward

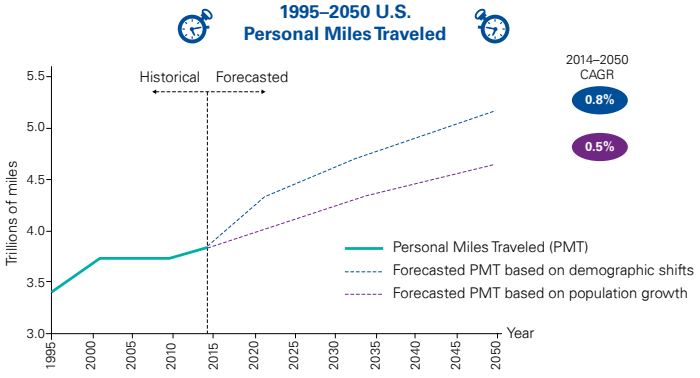
Evolve and adapt quickly—or perish. That's a resounding message in most industries today, and auto manufacturing is no exception.

Shifting demographics, new consumer demands, and breathtaking technological breakthroughs are forcing the auto industry to transform in order to meet the rapid pace of change. Meanwhile, increasing competitive pressure from nontraditional and diverse market entrants, ranging from video game creators, defense industry suppliers, existing tech giants, or small tech start-ups, continues to disrupt business-as-usual.

As discussed in KPMG's white paper, "The Clockspeed Dilemma," the coming convergence of autonomous vehicle technologies and mobility services will drive tremendous growth in vehicle miles and personal miles traveled. (See Figures 1 and 2)

**Figure 1 – Increase in personal miles traveled**

The chart below shows the predicted increase in the number of personal auto miles traveled by 2050.

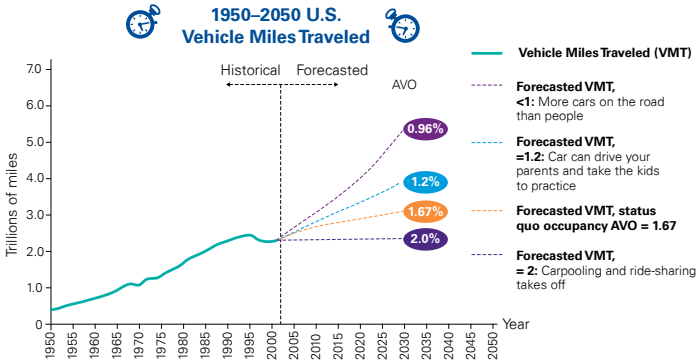



Note: (a) Discounted 25% from U.S. BTS total VMT for 1995, 2001, 2009, 2014 (assumed to be commercial miles, (b) Multiplied by NHTS occupancy rates applied 2009 rate to 2014 numbers.

*Source: U.S. BTS data, NHTS data, U.S. Census data, KPMG Analysis*

**Figure 2 – Increase in vehicle miles traveled**

The chart below shows the predicted increase in the number of auto miles traveled by 2050.




Note: (a) Discounted 25% from U.S. BTS total VMT for 1995, 2001, 2009, 2014 (assumed to be commercial miles, (b) Multiplied by NHTS occupancy rates applied 2009 rate to 2014 numbers.

*Source: U.S. BTS data, NHTS data, U.S. Census data, KPMG analysis*

What's more, a host of today's currently underserved user groups will have fresh access to mobility—and will use it. We will no longer have to take the keys from our aging parents, nor will we have to burden our children with that same agonizing confrontation with us.

Tapping into these new customers will be hugely profitable for those automotive companies that embrace the opportunity. To lead the way, however, they must quickly and effectively partner with tech players in new ways to develop and scale this newfound autonomy/mobility.

Those automotive companies that embrace the opportunity and evolve—by quickly and effectively partnering with tech players, establishing new supply relationships, and leading the way into the future—will be winners. The ones that fail to evolve, and do so rapidly, will likely fall by the wayside.

"The Clockspeed Dilemma" foreshadowed the challenges introduced with this new reality in the automotive space. The robust industrial machine and the sexy dynamic experience embody the different and distinct collections of user expectations, technological platforms, and development and production processes that need to be brought together.

What does this mean for procurement? One of the competitive strengths of most auto companies lies in their supply chain. Procurement is already tasked with selecting and managing vendors and suppliers, as well as ordering items needed to assemble cars. So, a rich and well-developed skill set for supplier management exists at most original equipment manufacturers (OEMs).

However, managing an innovative, disruptive ecosystem of nontraditional vendors comes with distinct challenges and a host of complications. The new procurement organization will need to restructure operations, enhance skills and capabilities, and adopt new approaches to work effectively with disruptive innovators, many of which have limited or no experience dealing with the auto industry.

"Procurement and supplier management should be the functions that take the point in discovering who these new vendors are in this expanded ecosystem, learning about what they do and how they work, developing a relationship with them, and teaching them how to become an 'automotive-capable' supplier," noted Bill Lakenan, Strategy Principal at KPMG. At a minimum, procurement will need to work closely with other groups within an organization, like corporate development or strategy, in executing these new tasks.

At the same time, procurement will still need to continue managing its existing commodity suppliers, ordering products like castings, rack and pinion units, water pumps, ABS units, axles, etc. As Lakenan points out, "It doesn't change what you do, it adds to what you do."

For an industry so steeped in tradition, evolving procurement's traditional role to one that manages multiple clockspeeds of innovation will not come easy. And a misstep along the way can set a company back for years, even decades—or, in some instances, can even be fatal.

So, where do you start? This white paper aims to offer a roadmap to follow, with practical steps to help you avoid pitfalls and keep your procurement transformation on the fast track.

# What is the clockspeed dilemma?

For over 60 years, the automotive industry has organized itself around a predictable 7-to-10 year product lifecycle and mid-cycle refresh. Business strategies, product development, capital investment plans, procurement contracts and even personal career choices – "I want to see this program through to Job 1 before I retire" – have been structured around it.

There are compelling reasons why the industry has aligned around this cycle. Developing the mechanicals for a safe, reliable, long-lived car is an arduous and expensive process. Huge investments are made in tooling stamping plants, final assembly plants and powertrain facilities for a new vehicle program. It requires a full 7 to 10 years to earn a return on the development, tooling and other launch costs of a vehicle, so the industry has built itself to operate at that clockspeed.

But today's advances in vehicle technologies are rapidly changing that. The sensors, actuators, modems and graphic processing units (GPUs) that support Advanced Driver Assist Systems (ADAS) evolve at the pace of the consumer electronics and videogaming industries that birthed them. The Deep Learning and other software systems that will bring us autonomous vehicles evolve at "app-speed," with seemingly real-time advances in functionality and sophistication.

As a result, automakers now live in a multi-clockspeed world and face a clockspeed dilemma. Operating at a single pace will not work. While different, every one of the clocks is correct, driven by fundamental truths about technological evolution and supply economics.

The auto industry must reshape its organizational models, business strategies, planning approaches and operations to build a new, integrated business model that operates seamlessly and simultaneously at multiple speeds. It still must pay back development costs and investments in the mechanical vehicle over a 7-10 year cycle, but within that cycle, it must design processes for:

— Affordably refreshing the electronics in order to maintain competitive capabilities throughout the life of the vehicle

— Supporting over-the-air updates throughout the life of its vehicles; this includes everything from new robust certification and release programs to building in bandwidth, memory and processing speeds for the last mile driven, rather than designing strictly to Job 1.

Thus, we have the clockspeed dilemma; the need to serve multiple paces at once.

KPMG

# Accelerating new opportunities

The automotive industry is changing dramatically—and at ever-increasing speeds. For procurement departments, the push to launch cars that are essentially "computers on wheels" requires new relationships with many different types of companies.

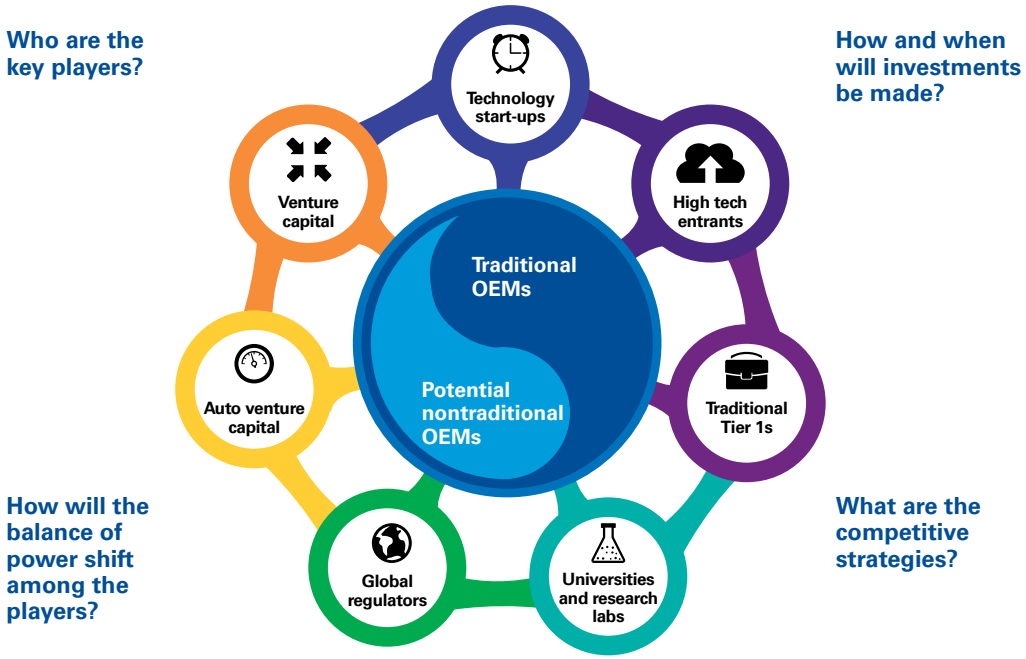
Moreover, the pace of the introduction of new technologies demands that the auto industry push out products incorporating new innovation much faster than in the past. These new technologies include:

- Graphics Processing Units (GPUs)
- Light/Laser Detection and Ranging (LIDAR) systems and other advanced sensors
- Deep learning software
- Advanced battery technologies
- 5G connectivity and telematics
- Digital Thread and other component registration technologies.

And this innovation is coming from multiple avenues, many outside of the traditional supply chain, such as the Tier 1 suppliers that automakers deal with on a regular basis.

**Figure 3 – The evolving technology ecosystem**

The chart below illustrates the evolving tech ecosystem and poses some key questions that accompany this changing reality.



"Sourcing from start-up or consumer technology companies often means teaching them new skills. They need to learn about meeting automotive quality and durability standards—every time. They also need to understand the OEM's volume, warranty, and aftermarket support requirements and processes.

It's a lot to learn, and very different from free-wheeling Silicon Valley interactions. On one hand, OEMs need to go fast and need these technologies. But they also have to be sensitive to the personalities and culture of the tech companies, as the power balance may be fundamentally different than with traditional suppliers. We've seen start-ups and tech innovators walk away from the table when presented with an OEM's standard terms and conditions agreement."

*— Tom Mayor*

KPMG

Dealing with these disruptive vendors isn't a matter of choice. The reality is that automakers may not have the expertise or the capital to develop the necessary techno logical innovation on their own; they may need to acquire or gain access to it from an ever-expanding ecosystem of potential partners.

"The OEMs generally have tremendous expertise regarding the heavyweight platform of cars," observed Brian Higgins, principal, Product Operations and Procurement at KPMG. "But when it comes to all of the new hardware and software components—what's in effect, the car's central nervous system—they're just not on the leading edge right now."

This means auto manufacturers—and procurement departments in particular—need to figure out:

- Who these "disruptive" suppliers are and where to find them
- How to recognize potentially beneficial auto technology—even if it may not appear to be car-specific
- How to reach an appropriate agreement on acceptable terms with ecosystem players that have a different mindset and often more bargaining power than traditional Tier 1 suppliers
- How to attract and engage with the disruptors; the ones with "ripe," desirable technology often have a choice of suitors and may elect not to deal with you.

What's at stake? As noted in "The Clockspeed Dilemma," there are trillions of incremental vehicle miles per year at stake. Automakers are racing to create new products that allow them to maximize their share of this new market. Failure to execute will cost the OEMs their most precious commodity—time to market with these new solutions.

Fortunately, automakers can learn from others. High-tech and aerospace companies have long utilized innovative approaches to better manage disruptive technologies and the challenges of integrating multiple clockspeeds. These approaches all incorporate much tighter integration between—and within—OEMs and suppliers, collaborative participation in the development process, and heavy use of prototyping and experimentation to work through trial and error before big capital investments are made.

Auto manufacturers need new capabilities to master these approaches, all of which are designed to better connect innovation, design, and industrialization while minimizing wasted time and effort. Each of the major functions within the OEM—including supply chain, purchasing, planning, product development, design, operations, and support—will need to step up and take on added responsibility for integrating this exciting new technology into the cars of the future.

In this report, we'll take a close look at Procurement's pivotal role in this critical new process.

# Who owns the car's data—and protects driver privacy?

As cars become increasingly equipped with high-tech software and systems, they collect billions of bits of data about driver habits and preferences and real-time vehicle metrics and diagnostics. This data can unlock powerful insights about customers, such as driver needs, driver behavior, and vehicle performance, which automakers can use to drive smarter decisions and improve vehicle safety.

However, protecting this connected car data from loss or misuse is an increasingly important consideration that OEMs need to factor into their agreements with tech suppliers. For example, who owns the data and whose responsibility is it to secure it?

Is it the auto manufacturer, the third party who designed the car's software, the app maker, or the driver's telecommunications provider? "These are risk governance questions the industry still needs to answer," noted Ron Plesco, principal and national lead, KPMG Cyber Investigations.

Privacy is one aspect of this issue; another is profit. While it has not occurred on a widespread basis thus far, we expect that automakers may be able to monetize and sell this consumer data to advertisers, market researchers, or other third parties in the future. This is another issue that needs to be addressed in agreements between automakers and their suppliers.

(For more information on this topic, see KPMG's white paper, "Your connected car is talking. Who's listening?")

# Procurement takes the lead

So, how can procurement truly make a difference amid the changing automotive landscape? By seizing the opportunity to reinvent itself and reinforce capabilities designed to handle traditional suppliers, while also adding capabilities to seek out and build relationships with new disruptive companies that can accelerate innovation for its company.

This new procurement department must understand:

- Where to find the new technologies and how they work
- The relationship between different technology companies
- How their technologies may fit with and enhance one another
- How to monitor, measure, and manage new risks presented by disruptive suppliers, including their approach to IP data, cybersecurity, etc.

This will likely require developing tech-savvy personnel with a better, more sophisticated understanding of emerging technology trends and programming. Procurement must become as knowledgeable and adept at the economics and evolution of software, sensors, displays, and graphic processing units as they are in the traditional spaces of stamping, machining, injection molding, and the like.

Also, keep in mind that traditional procurement organizations and high-tech companies often have very different operating styles, goals, and perceptions about what's important. While both approaches can be successful, they nevertheless can be vastly different.

"For example, Silicon Valley operates very differently than GM," noted Gary Silberg. "Silicon Valley firms develop revolutionary software at incredibly fast speeds. Car manufacturers typically work at slower speeds, often for good reason. But if they're going to work together successfully, they have to recognize these differences and reach some type of accord."

Personnel in the new procurement organization have to be cognizant of these differences and possess the skills to work and negotiate with this new breed of suppliers.

In addition, we often see organizations experience a dynamic tension as they try to balance techniques to manage old and new businesses. We explore this balance between complexity and variety in our whitepaper, *Profitable Business Streams: Balancing the value of variety with the cost of complexity* (See sidebar on page 8)

"If automakers and disruptive suppliers are going to work together successfully, they have to recognize their differences and reach some type of accord."

*— Gary Silberg*

"It doesn't change what procurement does, it adds to what it does."

*— Bill Lakenan*

# How a 'profitable business streams' approach can add value

Innovation is crossing traditional industry boundaries. Boeing increased its 787 production rates faster than any commercial wide-body airplane—in part by adopting high-rate manufacturing techniques perfected in automotive production. Audi, BMW, Ford, GM and others are targeting sensing and adaptive control technologies already being utilized by the aerospace industry in pursuit of vehicle autonomy.

As customers see the "art of the possible" elsewhere, they want more. The Internet has convinced consumers that they can have exactly what they want – they just need a little time to find it.

Today's business leaders see multiple paths for responding to today's challenges. Most are redesigning all or part of their value chains and organizations to provide an expanding feature-and-service set at ever lower costs. There are many techniques to choose from, including redesign for manufacturability, moving work to low-cost countries, continuous process improvement, use of advanced planning tools, industrial automation, and stock keeping unit (SKU) rationalization.

But without an overarching, coordinated strategy, bolting on some or all of those approaches can create challenges throughout the value stream and add complexity that can overwhelm current business models. Automakers need to move beyond these transitional fixes and change the scope, scale, and organization of their operations in order to be successful for the long haul.

Unfortunately, there is no simple solution. Profit pools and drivers of value vary by industry; customer preferences (e.g., service levels, features, cost, etc.) vary as well. Business process redesign of the '90s and enterprise resource planning (ERP) system implementation of the 2000s didn't solve the complexity problem. While those efforts provided tremendous value with real-time operational insight, and even highlighted some value chain structure and policy challenges, neither of them auto-tunes or self-corrects to moving market requirements.

In order to create a truly market-adaptive business model, today's automakers must balance the "value of variety" with the "cost of complexity"—and develop plans to do so quickly. What's referred to as the Profitable Business Streams (PBS) model addresses this continuing challenge. PBS combines a market-backed understanding of valued business requirements with a platform-based delivery system, and creates step-change performance improvement (e.g., decreased per-unit cost, increased revenue) and opportunities for continued learning.

The PBS approach can be applied across the value chain or targeted at specific business functions. The clockspeed dilemma confronting the auto industry provides an ideal opportunity to utilize PBS. For details, see the KPMG whitepaper, Profitable Business Streams: Balancing the value of variety with the cost of complexity.

> "You're not operating in a vacuum. Your competitors out there are trying to find or develop the next great new technology solution."
>
> — *Bill Lakenan*

# Five strategies for success... and survival

As automotive industry success becomes increasingly reliant on disruptive suppliers, procurement departments must master five strategies to survive and thrive.

## Step 1: "Sense" the ecosystem

When we refer to sensing the ecosystem, we're talking about identifying technologies that may be beneficial and play a role in the automotive supply chain, either now or in the future. OEMs need to cast a much wider net to discover and understand potential technology and innovation sources than they've had in the past with a mature supply base.

New ideas are coming from novel and nontraditional sources—frequently small, diverse, and early-stage companies. Procurement must understand who's doing what and quickly develop relationships with candidate firms much earlier in the development process.

They also need to strengthen ties to product development internally. Trying to retask non-auto technologies into an auto platform requires an open mind and a drive to connect the dots, technologically speaking. Procurement cannot do this in a vacuum. They need to work closely with product development to explore potential business relationships and the "art of the possible."

As an example, NVIDIA was a computer video board manufacturer prior to becoming a force as a supplier of navigation systems and automated driving systems.[1] But it took vision to understand how video game technology could enhance automobiles.

Another great example is Mobileye, an Israeli company that developed software for defense industry use. The firm believed its technology could also be applied to auto driving safety detection, and it approached several traditional auto suppliers. But the company was turned away.

Eventually, Mobileye's owners went directly to car manufacturers like Mercedes, BMW and Audi, who saw the technology's potential and purchased the software. The company is now worth nearly $11 billion.[2] Great news for Mobileye; a missed opportunity by the auto suppliers who failed to recognize the promise in the start-up company and its technology.

Noted Silberg, "You need to be open and willing to search out new ideas from nontraditional sources. You never know where groundbreaking innovation that you can use or adapt may come from."

**So, where should you look?** Technology innovation is coming out of universities and research labs, tech start-ups, established high-tech companies, and more. (See Figure 3). And the tech ecosystem consists of tens of thousands of companies, some of whom you may have heard and many more that you haven't.

Savvy car manufacturers are going where the innovation is happening. "Companies like BMW, GM, Ford, and Toyota have established teams out in Palo Alto, Silicon Valley, Israel, and a few other places around the world," stated Tom Mayor.

"Just having a presence around centers of innovation increases the likelihood that you'll hear something, or run into someone who may know someone working on new technology," he continued. "And being there also lends itself to establishing and building relationships with innovators."

[1] NVIDIA wants to leap from video games to self-driving cars, Reuters, 7/26/15

[2] Mobileye is poised to seal more self-driving car deals, chairman says, Fortune.com, 9/14/2016

KPMG

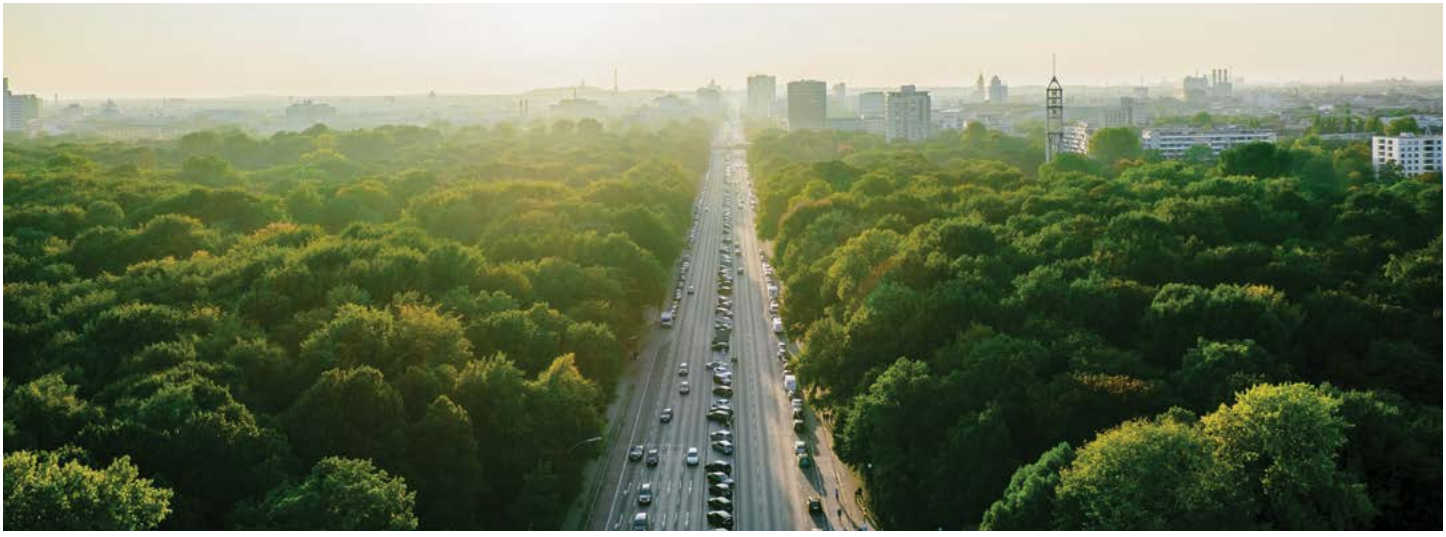
Other effective techniques OEMs utilize to sense the ecosystem and discover where emerging technology is occurring is by following the:

- People and companies: Understand who's hiring talent, where the talent is growing, and what kind of cutting edge skills they're adding to their teams
- Technology: Track patent filings associated with target technologies
- Money: Meet with venture capitalists and find out in which cutting-edge technologies and tech start-ups they're investing
- Industry: Network with technology and industry associations
- Press: Use data and analytics (D&A) to mine reporting for leads on hot, new and emerging technology.

Once the technology that can enhance the automobile user experience has been identified, procurement then needs to understand and evaluate current capabilities against a different capabilities matrix. They also need to start developing a business relationship with the outfit or outfits that can supply the technology. "This is something they're already doing, but now it's like doing it on steroids," stated Higgins.

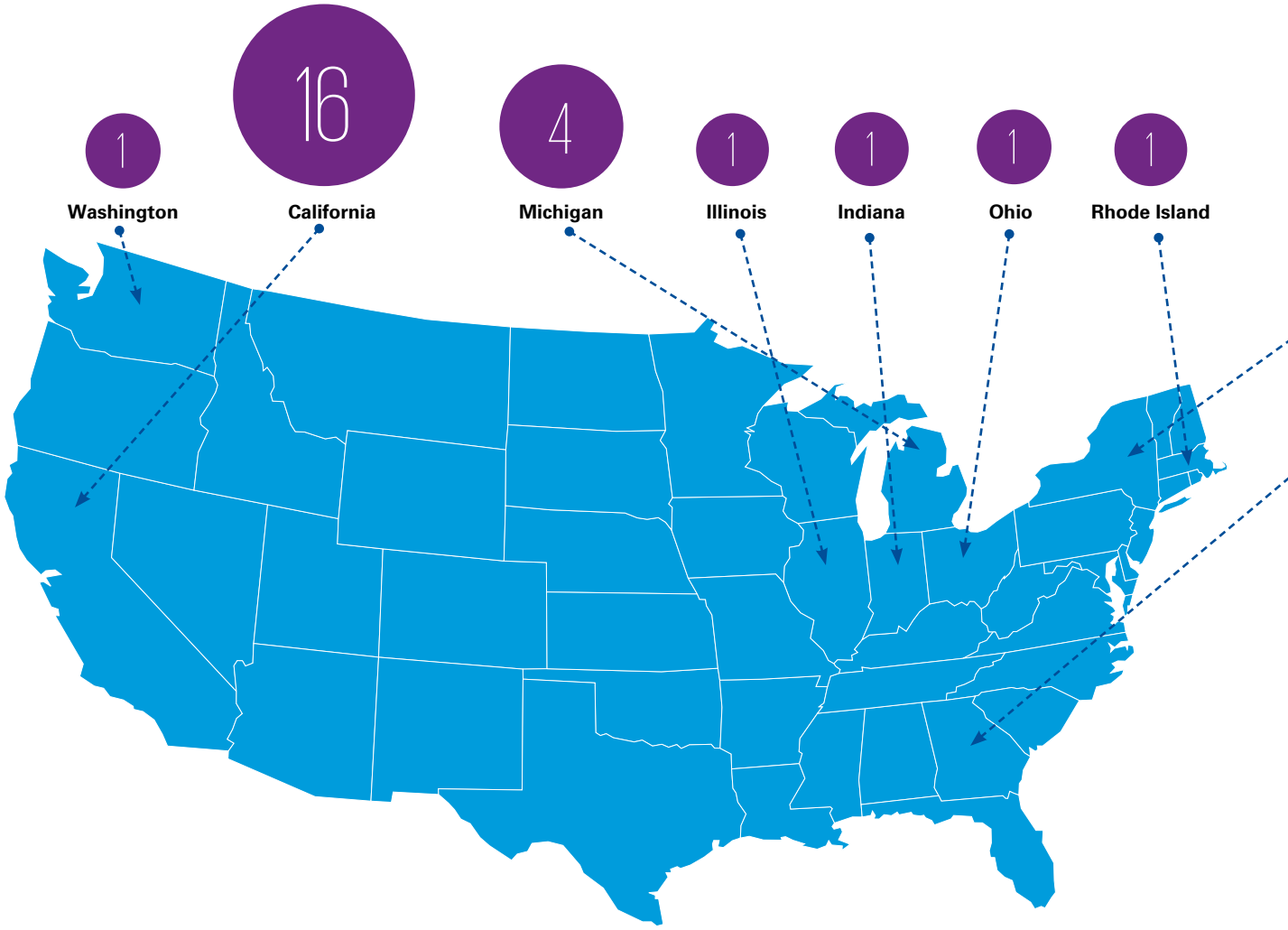
This includes having discussions with tech suppliers. "Inquire about their perspectives on their product and its value," stated Eric Logan, Managing Director of Strategy at KPMG. "Also, ask them about what they perceive to be the opportunities for the integration of that technology into cars or other products."

> "Getting the technology right and on time is only part of the battle. You also need to be able to 'operationalize' it."
>
> — *Bill Lakenan*



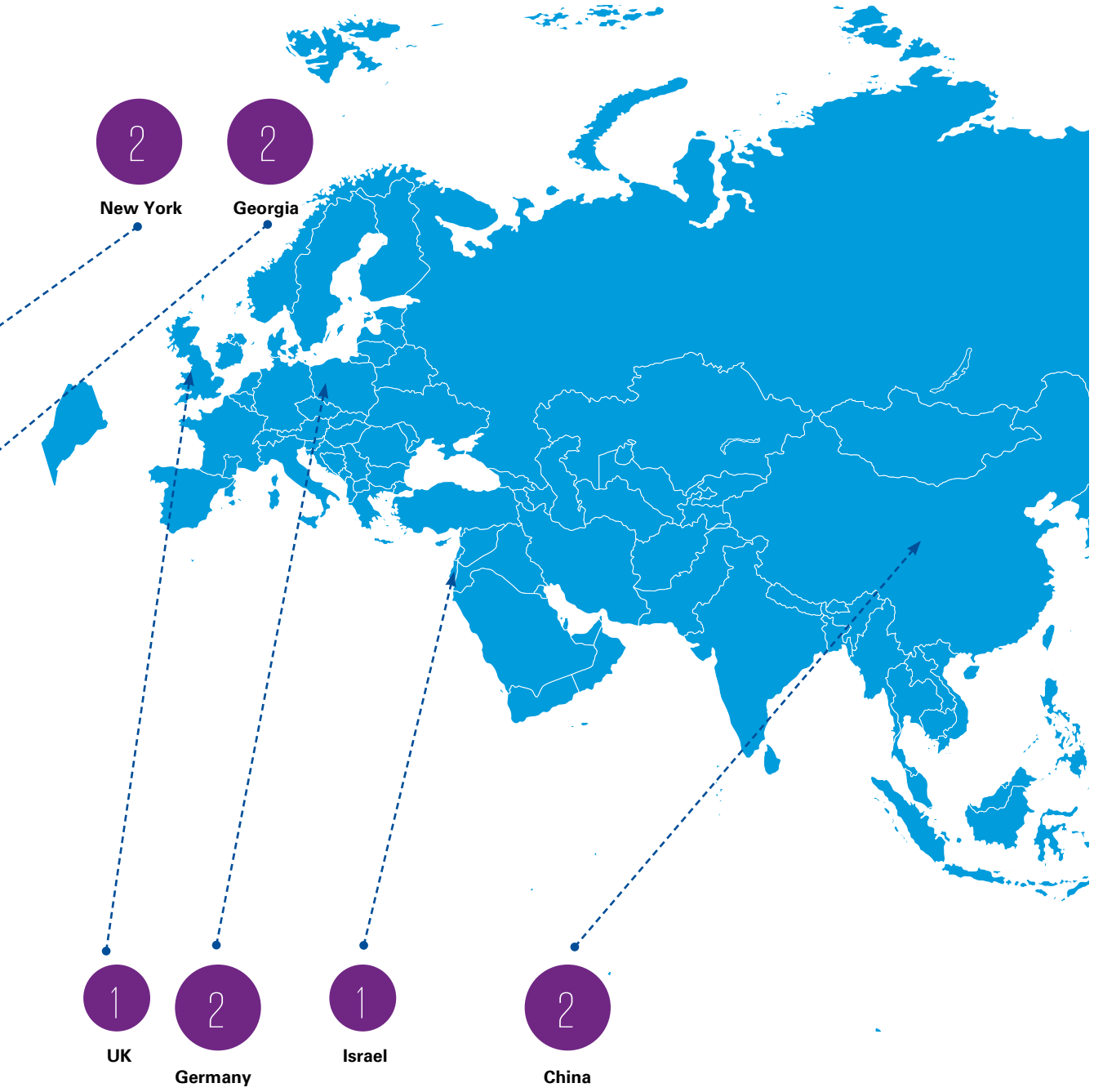
# Where tech innovation is happening

Major auto companies acquired or invested in many start-ups between 2010 and 2015.[3] A disproportionate number were located on the West Coast, particularly in and around San Francisco. But tech innovation can happen almost anywhere. A smaller, but significant number of start-ups were found in Michigan and New York, while still others came out of Germany, China and Israel.




Several of these start-up ventures involve energy (e.g., storage/batteries and renewable), others focus on smart hardware and software, while still others encompass parking, entertainment, and connectivity capabilities.

[3] How BMW, Audi, GM And The Rest Of Big Auto Are Betting On Startups, CB Insights, 9/17/2015 https://www.cbinsights.com/blog/auto-industry-startup-investing/



## Step 2: Develop suppliers early in their life cycles

Once a tech innovator supplier is in the tent, a critical part of procurement's role is to teach the company how to become "auto caliber." For example, early discussions may reveal that many of them don't know much about the auto industry or how to work with an auto company.

Automotive standards are robust and rigorous. Safety standards are paramount. Rebooting a car at 65 mph will never be an option. And environmental conditions in which they need to operate flawlessly, each and every time, can be extreme, from the Mojave Desert to the Arctic Circle.

In addition, production runs are substantial and tightly integrated. So holding up production of a $50,000 automobile for a $10 sensor simply is not acceptable. And the supplier's fantastic new technology must connect to several thousand other components from hundreds of other suppliers—seamlessly and continuously, hundreds of thousands of times a year.

It's easy to underestimate the challenges that kind of integration poses, and the planning and preparation to support vehicle production can easily overwhelm some technologically savvy (but inexperienced) suppliers. So, it cannot be emphasized enough that a critical OEM role is teaching these newcomers how to become auto suppliers.

Over time, OEMs have developed robust approaches and policies to ensure first-time-every-time quality and reliability. They need to share these approaches and teach new suppliers how to perform to necessary standards.

It's important to keep in mind that the process of socializing disruptive suppliers may be easier said than done and will likely be fraught with frustration. "We're talking about teaching a 15-person start-up with cool technology to become a viable reliable supplier of half a million or more units a year of quality components or systems," observed Mayor. "Or you're trying educate a consumer technology company that's used to rapidly developing and retiring products how

> "The process of socializing disruptive suppliers may be easier said than done. You're trying educate a consumer technology company that's used to rapidly developing and retiring products how to design and manage a high-quality production system with aftermarket replacement support that needs to last 20 years or more."
>
> *— Tom Mayor*

# Case in point:

When Boeing began working with Janicki Composite Tooling as part of its redesign of the 787, one of its tasks was to teach the fiercely innovative yacht builder how to become a supplier for a heavily regulated aircraft manufacturer. Boeing partnered with Janicki based on the firm's tooling capability and creativity, but knew it would need to help them become a major aerospace supplier.[4]

Among other actions, it entailed:

- Introducing Janicki to other of Boeing's Tier 1 suppliers so it could see firsthand how they operated[5]
- Working shoulder-to-shoulder with Janicki to help in the design of tools and machinery needed to build required parts
- Guiding Janicki to achieve aerospace-quality certification; for example, helping Janicki improve the traceability of its own supply chain
- Aiding Janicki in financing investments in new equipment and qualified personnel so that it could expand its production capabilities
- Working with Janicki to establish a robust software program for cost accounting to track work orders, schedules, and costs in real time, and to head off potential scheduling issues
- Reinforcing the need to document (1) production processes, (2) measurement criteria and procedures, (3) steps for ensuring quality, safety and corrective actions (if needed), and (4) personnel skill sets
- Encouraging them to invest in duplicate equipment so there would be no production lag in the event of breakdowns
- Collaborating with them in continuously looking for ways to reduce costs for the benefit of both the supplier and the OEM
- Instilling the practice of continuous innovation and improvement, commitment to R&D, and planning for the future.

Today, Janicki is one of the world's largest toolers for the aerospace industry, with customers such as Lockheed Martin, Northrop Grumman, and Pratt and Whitney.[6]

[4] Financial Times, London, Joanna Chung (July 7, 2010).

[5] KPMG International, "Replay: Fast Forward"(November 2009).

[6] ABC News Web site, Politics section, May 23, 2010.

KPMG

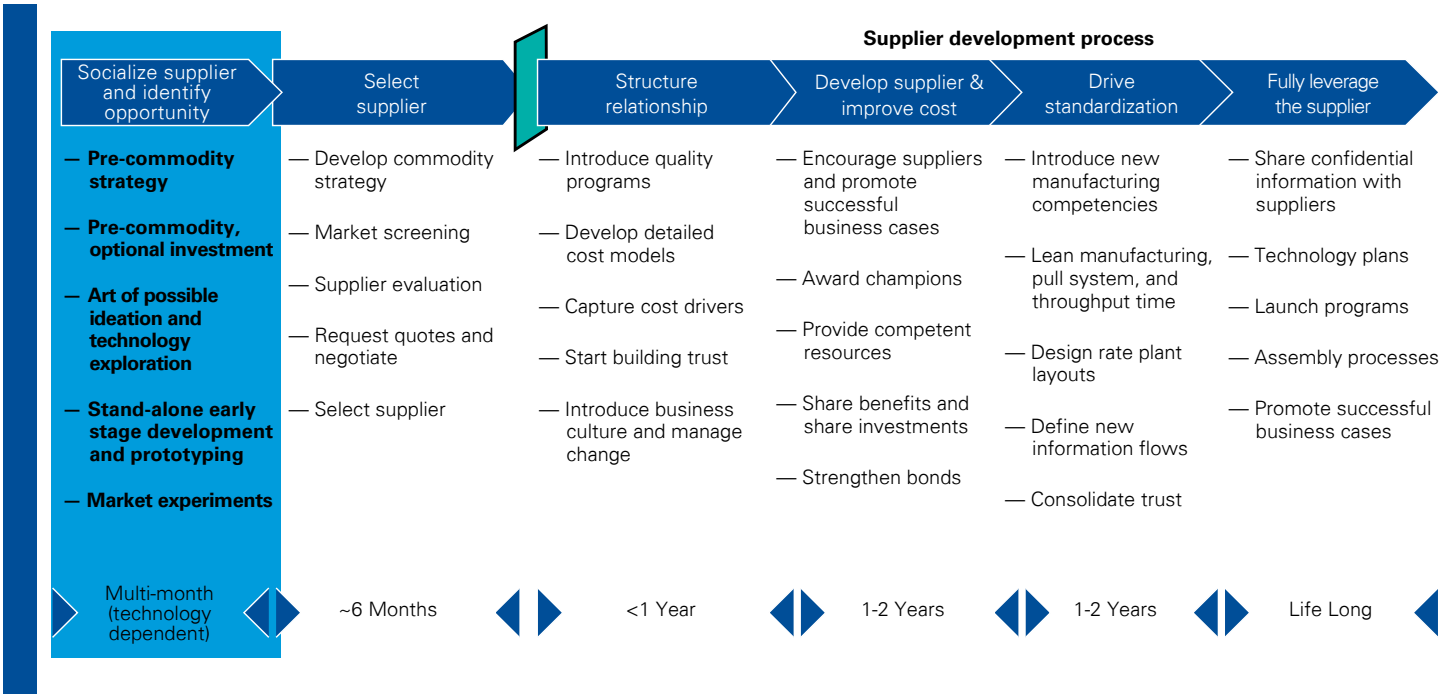
to design and manage a high-quality production system with aftermarket replacement support that needs to last 20 years or more."

Similar to your investments in certain countries, this process will take time and resources, and needs to be done delicately and in a nonconfrontational fashion if the relationship is going work. At a minimum, this will involve:

- Providing support staff to help the supplier build out its core capabilities
- Maintaining a full-time, on-premises presence with the supplier to support launch and industrialization of its new applications
- Continuous coaching and education.

There usually comes a point in the exploratory development process when you get a sense of whether to continue fostering the relationship or to end it and terminate discussions. It's an important decision because who you partner with and how you cultivate the supplier relationship may go a long way in determining the auto company's success—or failure.

***Supplier development – Start earlier with a lifecycle view of disruptive suppliers to continuously grow (or jettison) them***




[6] Zendrive launches fist smartphone-based automobile accident detection service, Finance: Yahoo.com, 4/16/2015; http://finance.yahoo.com/news/zendrive-launches-first-smartphone-based-130000232.html

## Step 3: Learn the disruptive supplier's technology and business

There is a flip side of teaching disruptive suppliers about the auto industry and steering them into becoming better suppliers, as discussed in Step 2. That's the need for procurement to become a student of the supplier.

"Working in the background with the supplier and 'coaching it up' presents you with a unique opportunity to learn about the business and what makes it tick," noted Lakenan. "This heavy interaction lets you gain insight into the economics of the business, its strengths and weaknesses, and its skill sets, systems, and staffing. These become the foundation for effectively driving cost reductions and performance improvements over time."

A key part of this cost reduction/performance improvement process is the OEM and supplier cementing their understanding by jointly developing cost and operational models that explain how the supplier performs and help the supplier plan and scale its business.

These models should capture the fixed and variable costs, activities, and drivers against output to help the OEM understand what's going on, what it needs to protect, and where the process can be improved.

"This isn't about 'open book financials,'" noted Mayor. "You don't care about cost allocation methodology—it's about who's doing what, at what pace, at what yields, and what opportunities are available for improved productivity."

### Trust is a key element

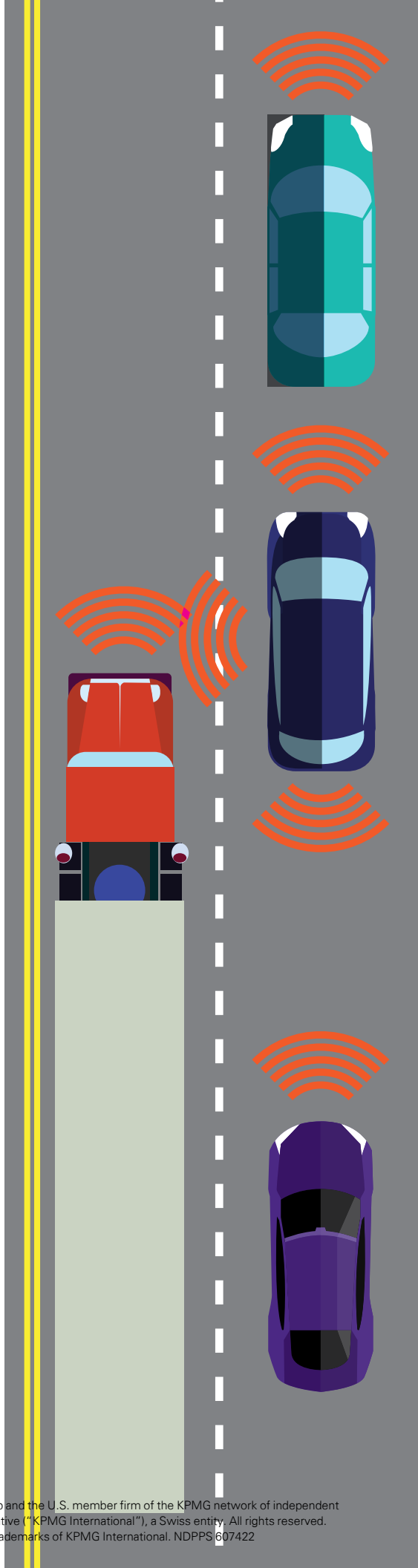
One of the most important elements in building a relationship with a supplier and maximizing value creation is trust. "Trust is at the center of a successful, long-term OEM-supplier relationship," noted Lakenan. "However, the key is trust but verify."

The trust must be supported and continually reinforced by a deep commitment by the supplier and the OEM to work together, share goals, and develop a common understanding of the process and capabilities embedded in the relationship.

In addition, trust is based on mutually assured improvement. The automaker provides stability, a path to prosperity, and teaches the supplier to become auto-capable. The supplier provides the innovative new capability and helps guide and develop technology in an untested space.

Together they can share benefits (each according to their contributions), solve problems together, and improve the solution through a culture of continuous improvement. "If you get it right, it paves the way to creating value for both sides," Lakenan stated. "Suppliers are motivated to innovate for the OEM, and are more willing to allow the OEM to view their inner workings. At the same time, OEMs are more willing to make greater commitments to the supplier."

> "Supplier relationships may be a significant driver of value for an organization.Therefore, companies should consider potential tax implications and opportunities when selecting the legal entity within the organization to enter into such supplier agreements."
>
> *— Steven Davis, Principal, International Tax, KPMG*



KPMG

## Step 4: Spread bets over a portfolio of alternatives

Procurement needs to develop a portfolio of alternative innovative technologies so that the auto manufacturer has multiple paths to success.

A robust portfolio hedges against the possibility that you've placed your only bet on a technology that doesn't pan out or is tossed aside in favor of another innovation (remember the Betamax vs VHS tapes, or the 8-track cassettes).

And even if you do make the right bet on a disruptive supplier, let's not forget that technology is constantly changing; what's state of the art today may be discarded to tomorrow's bargain bin!

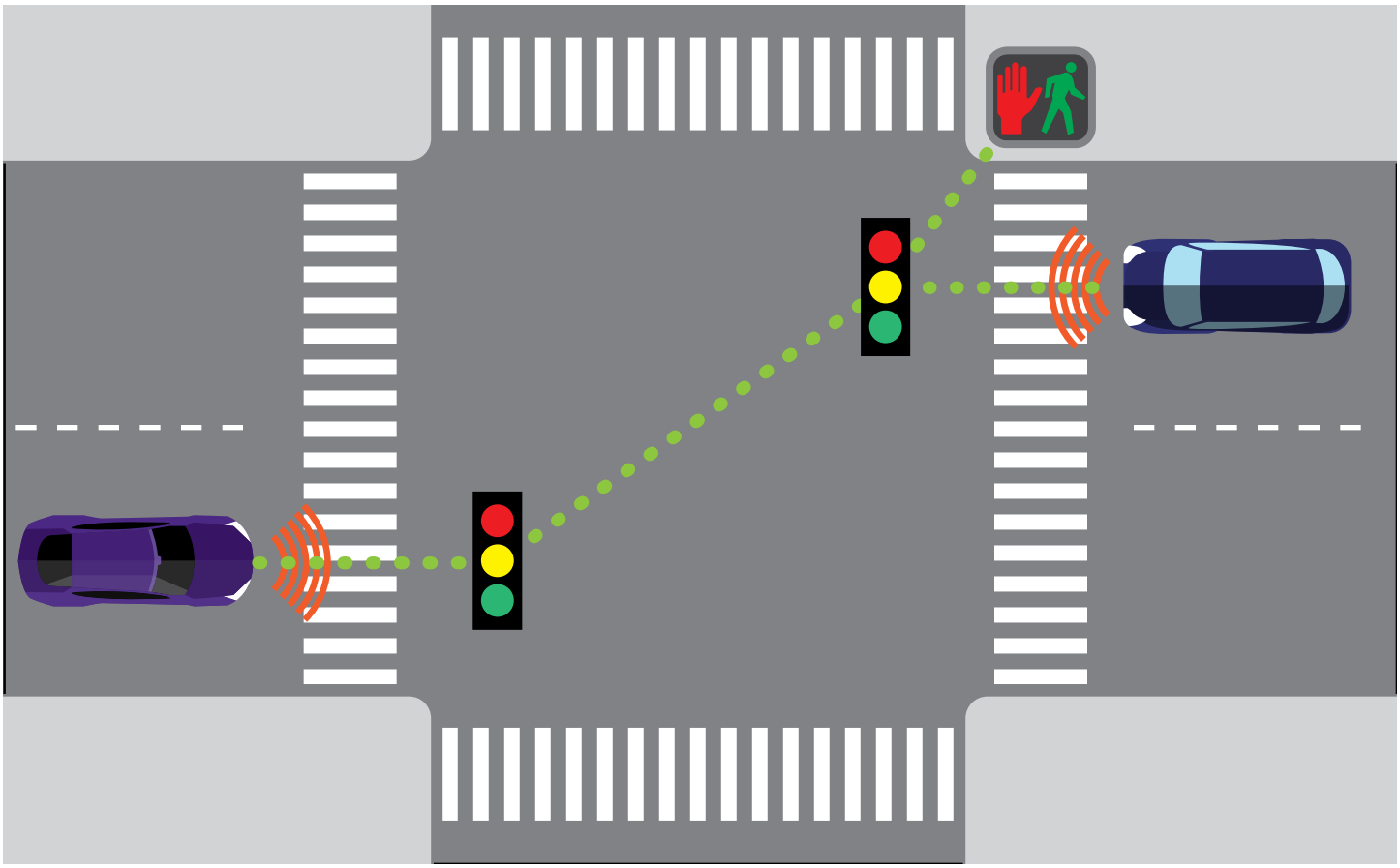
"Working with start-up tech companies isn't like signing up with Johnson Controls or TRW, established vendors that you've worked with for decades," observed Mayor. "This is a world where everything is an option, and even long-term relationships are only long term as long as the technology holds."

Another reason to develop a portfolio of alternative technologies? With your understanding of the market and the underlying technologies, you may be able to combine multiple, adjacent technologies and create an innovation or enhancement that is superior to any one alone.

**Getting procurement "on board":** An important part of procurement's new role will be to understand and evaluate the latest technology and how it fits into the innovation ecosystem. A creative way to support this effort is for the OEMs to place team members on the board of directors of tech companies they've invested in or with whom they've partnered.

"By planting themselves on the boards of these companies in which they've invested, OEMs can see how the technology is maturing, where it's going, and then be in a better position to either stay the course, increase their investment, or move on to something different," noted Logan.

Procurement can try to do this on its own, but more often, it will collaborate with another group in the organization, like corporate development or strategy. In either case, procurement has to develop the skills necessary to interact with board members as well as members of other teams within its organization. "This is what needs to be done," stated Mayor, "but it isn't necessarily what is being done."



## Step 5: Develop a menu of contract and risk management options

You need to have a portfolio of contracts available that's appropriate for the type of company you're dealing with, and provides you with appropriate protection. "It's critical to keep in mind that when you're entering into a contract for tech innovation, you may be dealing with a small, 10-person start-up, not an established vendor you've been working with for 50 years who has an army of lawyers at its back," noted Mayor.

So at least in the start of your relationship, the contract can be something relatively simple that protects your company against clearly wrongful behavior, such as fraud, theft of proprietary information, and things of that nature. At the same time, the contract should allow you access to the company's resources, processes, production system, planning, engineering, data systems, pricing, global compliance documentation, and IP automated designation.

You may also want to spell out conditions under which you can send in people to assist them in developing and meeting standards. And depending on the maturity or nature of the supplier, you may also want to build in price incentives if the supplier meets certain volume or quality criteria.

"But you don't need complicated penalty clauses, provisions that assign liability, or certification processes built that have been developed for established vendors," stated Lakenan. "These start-ups typically don't have deep pockets, and all of the contractual protections won't amount to much if you take them to court and they file for bankruptcy.

"Your best for mitigating risk is during the development phase, when you teach them how to become a reliable, high-quality supplier," he concluded.

In addition, giving a small company a large, complicated contract to sign can have unintended negative consequences. "Dropping a 300-page contract on the table and insisting they review it, when they've been used to three-page contracts, might get you laughed out of their office," noted Logan. "Worse yet, it might sour the relationship entirely, and they'll go somewhere else with the technology you want."

"You don't need complicated penalty clauses, provisions that assign liability, or certification processes that have been developed for established vendors. Start-ups typically don't have deep pockets, and all of these protections won't amount to much if you take them to court and they file for bankruptcy."

*— Bill Lakenan*

"Dropping a 300-page contract on the table and insisting they review it, when they've been used to three-page contracts, might get you laughed out of their office. Worse yet, it might sour the relationship entirely, and they'll go somewhere else with the technology you want."

*— Eric Logan*

"The structure of any technology agreement with a supplier may present several tax planning opportunities that a company needs to consider. In addition, it's important to address the full range of tax opportunities throughout the supplier life cycle.

With recent changes and added emphasis to taxation around the world, relationship and agreement structures are taking on greater roles in value capture and retention. The best time to consider tax strategies is before the deal is signed, when you're in the design and deployment phase of the new value chain relationships and the 'cement is still wet'."

*— Steven Davis*

*KPMG LLP does not provide legal services.*

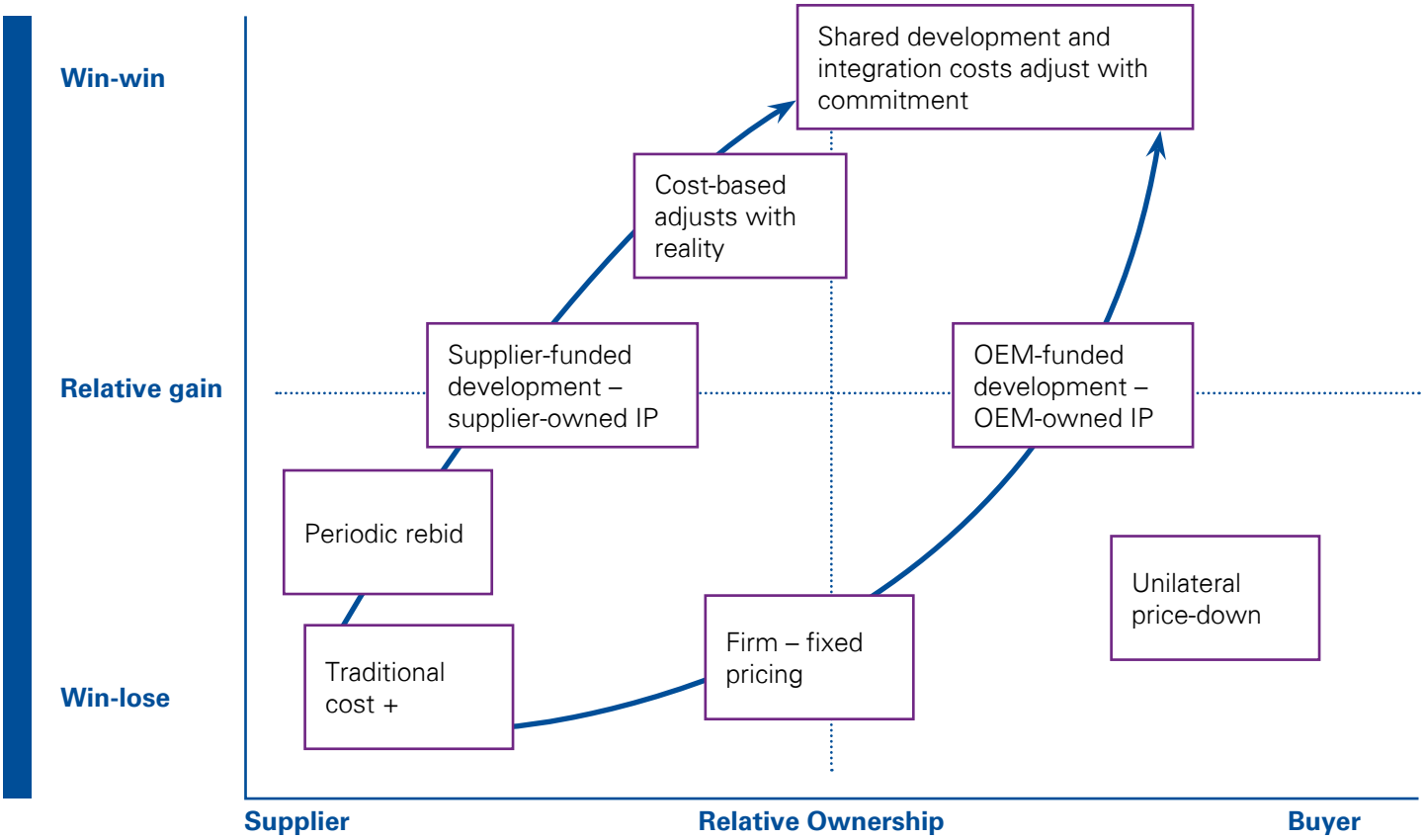
KPMG

Also, as previously noted, keep in mind that the technology portfolio is dynamic. So, as situations and the market changes, you may be shedding some potential suppliers, even before their product has been fully integrated into one of your solutions.

Therefore, your contract should allow you to invest in a development, but also give you multiple paths to shared benefits (see Figure 4 below).

**Figure 4 – Multiple contract paths over time**

The chart below illustrates a variety of contract options that you can implement, along with their implications and relative advantages.




# Final thoughts

The auto industry is experiencing a revolution spurred by new consumer demands and increasingly rapid technological breakthroughs. One outcome is that automakers must seek out and do business with disruptive suppliers and vendors who possess the technical expertise and innovation skills that they need to succeed in the marketplace.

Procurement is best positioned to lead this endeavor. But to do so, it will need to transform. Finding and working with disruptors who likely have no experience dealing with the auto industry will require new skills, new capabilities, and a new perspective on supplier relationships.

Making these adjustments will be challenging, but with the right game plan in place, they're achievable. And if done properly, the payoff will be enormous for both the automaker and the new supplier brought into the process. And the fact is, there is no alternative; OEMs that fail to heed the message will be left by the wayside.

This report is designed to provide a roadmap to follow to help you find these new innovative suppliers and build mutually beneficial relationships with them.

> "Who you partner with, and how you develop the supplier relationship, may go a long way in determining the auto company's success—or failure."
>
> — *Tom Mayor*

KPMG

# Why choose KPMG?

KPMG works with some of the world's largest and most successful auto companies. Our clients also include numerous Tier 1 suppliers for the auto industry and for other industries as well.

We work shoulder-to-shoulder with OEM and Tier 1 procurement departments to develop new, innovative systems and processes that improve efficiency, reduce costs, and allow them to change course with speed and agility in the face of ever-changing conditions. We aim to integrate innovative approaches and unique capabilities to deliver real results.

Our global automotive network, based in our member firms around the world, brings together our audit, tax, and advisory professionals to help us take a broad-ranging and integrated approach to our clients' activities within the industry. We offer proactive, forward-thinking services to our clients to help ensure that they do not miss out on the potential for growth that the industry is currently witnessing and can overcome the issues and challenges it is facing.

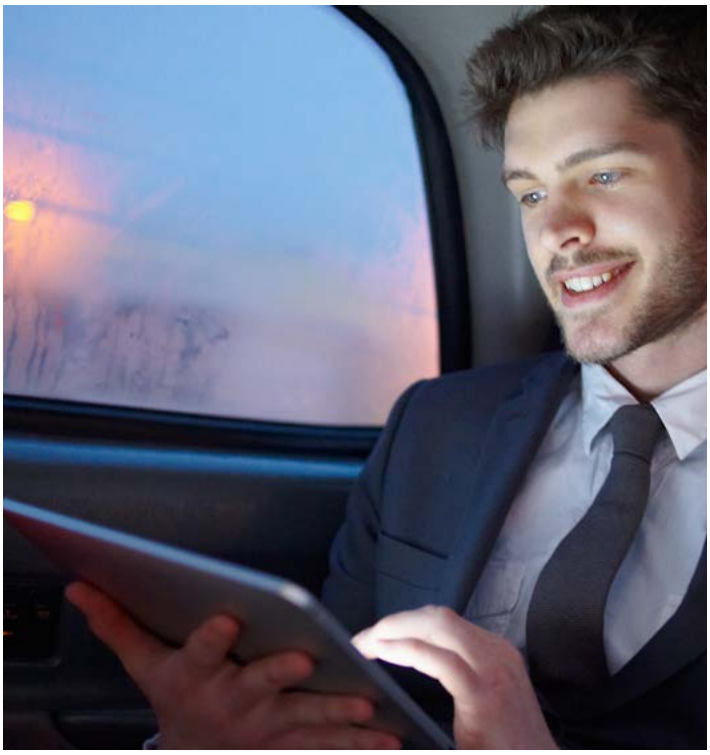
KPMG's automotive services are delivered through 174,000 professionals, including over 9,000 partners, part of a global network of member firms whose presence spans the world's most prominent geographic areas.

Our Procurement Advisory practice, likewise, has a global footprint comprising more than 700 seasoned specialists, also located in all major geographic markets. Our professionals come from a rich background of industry, technology, and advisory experiences, which combine to deliver practical fit-for-purpose designs.

Among their many skills, our Procurement Advisory professionals assist clients in driving structural improvements to the procurement function and help make procurement a source of value and innovation. We take a holistic approach to procurement and transformation, one that balances enhanced business performance through better spend management and productivity gains with internal controls, risk management, and optimization of a company's tax profile.

As our clients contend with unprecedented innovation and disruption in this emerging era of autonomous vehicles, we serve as trusted business advisers, providing tailored insights to them throughout their transformation journey and beyond.

- For procurement departments that are unsure of where to begin the journey, we can help you understand the new technology ecosystem and where to look for needed innovation
- For procurement departments that already are knowledgeable about the new ecosystem, we can help transform your organization, guiding you in the development and implementation of new processes and capabilities needed to compete in the rapidly changing marketplace
- The procurement department of the future can lapse into functioning as two organizations; one dealing with commodities suppliers and one with technology vendors, each with different perspectives. Our change management capabilities can help bring together the traditional commodities and the new technology operations.



# Authors


**Gary Silberg**
**Partner**
**National Automotive Leader**
**T:** 312-665-1916
**E:** gsilberg@kpmg.com

**Tom Mayor**
**Principal**
**National Strategy Leader, Industrial Manufacturing**
**T:** 216-875-8061
**E:** tmayor@kpmg.com

**Bill Lakenan**
**Principal**
**Strategy**
**T:** 404-222-3598
**E:** wlakenan@kpmg.com

**Brian Higgins**
**Principal**
**Product Operations & Procurement**
**T:** 312-665-8363
**E:** bhiggins@kpmg.com

**Eric Logan**
**Managing Director**
**Strategy**
**T:** 216-875-8191
**E:** ericlogan@kpmg.com

**Kevin Prevost**
**Director**
**Strategy**
**T:** 404-614-8722
**E:** kprevost@kpmg.com


# Contact


**Steven Davis**
**Principal**
**International Tax**
**T:** 212-872-2118
**E:** smdavis@kpmg.com


**kpmg.com/socialmedia**

Some or all of the services described herein may not be permissible for KPMG audit clients and their affiliates.