

Insight guide: Automotive

Mobility never stands still. The human urge to get from one place to another is constant. We're a species that itches to be elsewhere doing business, being social, seeing new places and things. In just two generations – either side of the turn of the Twentieth Century, the automobile emerged from noisy workshops in Europe and the United States to usher in the era of the internal combustion engine (after early experiments with electric cars that, quite literally, didn't go anywhere). By mid-century, the humorous poet Ogden Nash could quip, 'Everything in life is somewhere else, you get there in a car.'

Introduction: Shifting the Powertrain to Digital

Cars have always been more about lifestyle, personal identity, and status than just getting from A to B. But, amongst Millennials – so the research seems to suggest – those things can be found elsewhere. Owning a car isn't de rigueur anymore and soon driving won't be either.

Disrupters like Tesla have shaken up thinking about how digital can be integrated into the vehicle experience and framework so the car can connect to every other aspect of a passenger's existence, keeping the digital flow of their lives seamless and uninterrupted as they travel. In fact, the vehicle may well become the device itself.

Automotive manufacturers are having to fundamentally think differently about their vehicles and how they fit into these broader societal changes. They're connecting cars, capturing data and using it to get closer to customers and provide a range of services to enhance the in-car experience and complement their lifestyles to give them exactly what they want. They're thinking about the sharing economy and looking at turning not just each vehicle into a digital platform, but their entire businesses, from the production line to enabling streaming services which generate revenues mile by mile, kilometer by kilometer.

From mass transit to personalized mobility, from owning to sharing to hybrids of the two, everything is up for grabs. Making the most of this digital evolution and offsetting falling sales through building stronger direct-to-customer relationships will require automotive manufactures to forge and manage relationships with a myriad of new technology partners and suppliers. They will need this new way of doing business to support the range of new services customers will demand and

to craft new innovative solutions. Balancing all these elements as well as deciding on the services to focus on demands a new business model. This insight guide looks at how to bring together all these elements to create a digital ecosystem that delivers the future, not just technologically, but profitably too.

“The car's already becoming an extension of our mobile phones, but the future could spell connectivity that ensures there will be no interruption to our digital lives while in transit – in fact the vehicle may well become the device itself.”

Our expert contributors

This insight guide will outline those trends and seek to understand how advances in technology and customer demand are reshaping the entire market. It will go through the opportunities and threats for global automotive companies, with contributions from BearingPoint's leading experts in the area, before explaining how BearingPoint//Beyond can help and support a company moving towards a digital platform business model.



Matthias Loebich

Partner & Global Leader Production Industries

Matthias is a member of the Global Management Committee at BearingPoint, specializing in production industries, covering the segments of automotive, industrial equipment, manufacturing, chemicals, life sciences and resources. He is responsible for a multitude of consulting projects for manufacturers, suppliers and trade in the automobile and manufacturing industry.

Throughout his career, Matthias has led international business and IT transformation projects such as new plant set-ups, global supply chain redesigns, lean production implementation as well as large business performance improvement projects.



James Rodger

Partner & Regional Leader UK & Ireland

James is a member of the Global Management Committee at BearingPoint, specializing in automotive, digital strategy, and operational performance improvement. He works primarily in the sales, marketing and the aftersales arena across customer management, supply chain, retail, fleet sales and warranty.

James has worked for a range of blue chip companies across multiple industries with particular specialism in automotive. His client advisory work encompasses developing and operationalizing strategy, target operating model design, operational performance improvement and digital transformation.



Angus Ward

Partner & CEO Digital Platform Solutions

Angus brings 30 years of consulting and solutions experience, helping organizations across many industries transform their business/operating models and use data to add greater insight into customer needs. He has worked with clients across a range of related fields including IoT, 5G, cloud, Industry 4.0, AI and bridging into new topics such as Blockchain.

Angus is a chartered accountant and has worked with many of the leading academics in the fields of digital transformation, business model reinvention and digital platforms.



Robert Horndasch

Partner, Automotive & Transport

Robert is responsible for customer management, customer experience, marketing analytics and networked mobility.

Over the past 20 years Robert has gained significant experience in the telecommunications, high tech and automotive industries. The focus of his activities has always been on the customer interface as well as the necessary processes and systems. The convergence of different industries and his experiences at BearingPoint are an essential building block for Robert to help customers transform the automotive industry.



Petra Krivinskas

Senior Manager, Automotive & Transport

Petra has more than 18 years of automotive OEM experience gained from roles within industry and professional services.

Specializing in customer experience design, digital business model innovation, new services development and revenue generation, Petra has worked with several industry leaders to define their future digital customer experience. She has developed a structured approach to identifying business efficiencies and new revenue opportunities through the understanding and commercialization of customer and vehicle data.



“Manufacturers are having to bring in new technology and tap into expertise more suited to Silicon Valley than the traditional automotive industry.”

A sector in flux

Just as technology is revolutionizing every aspect of our daily lives, the automotive industry is experiencing giant leaps in innovation which are set to change the way vehicles are designed, produced, driven and developed.

Although the global automotive industry continues to perform well (driven by emerging markets and a revived Russia) and sales are predicted to rise (3.6% from 3.3% in 2017¹), investment in the development of electrification and autonomous cars is pushing up manufacturing costs by as much as 20%.

The structure of the manufacturing process is also changing, along with the skill sets required. The increasing use of electronics and software mean manufacturers are having to bring in new technology and tap into expertise more suited to Silicon Valley than the traditional automotive industry. Whether a traditional supplier or a new player, those with the necessary knowledge and experience will thrive. Indeed, many major manufacturers have already launched merger and acquisition strategies with start-ups to strengthen their IT and connectivity divisions to ensure future sustainability.

Those manufacturers that embrace change in the right way will benefit, as innovation in the sector is predicted to boost global profits by almost 50% by 2020². This involves exploiting the major trends of electrification, the connected car, software-over-the-air and new models of ownership and mobility to drive sales and revenue, as well as build closer relationships with customers through the development of digital enablement and services. Indeed, as a whole, the industry is gravitating toward the consumer. The best automotive organizations are really putting the end customer at the heart of their thinking in ways they haven't really ever done before. Furthermore, some manufacturers are also working to build and maintain direct customer relationships; changing the way dealership networks work and their role in the value chain.



Electrification

In essence what we're seeing is a fundamental technological shift in the powertrain right across the automotive sector. Electric vehicles are on the rise, driven by regulators seeking to reduce pollution and improve the environment.

The powertrain transformation will happen, but not overnight. Hybrid vehicles have been around for 20 years and an increasing number of purely electric cars are now entering the market, but whilst customers' preference towards the traditional combustion engine is on the decline, the reality is that the charging infrastructure required to support this electric powertrain is not yet sufficiently mature. That means the shift from ICE to PHEV / BHEV will turn out to be a phased transition rather than a revolution. Longer term, industry executives believe that fuel cell electric vehicles rather than the current battery-driven models will be the answer to electric mobility as this will solve the charging issues.

The recent scandals around diesel engine emissions and tightening environmental policies by international governments mean these types of vehicles are likely to be the first to disappear from manufacturers' portfolios. However, it could also be some time before they are phased out completely as many haulage and transport firms rely on diesel vehicles, along with the farming industry and the transport infrastructure in rural areas in general.

Despite the potential long tail of the internal combustion engine's decline, it's vital for manufacturers to not only shift their focus towards electrification, but also innovate in the space.

This innovation should stretch to building new digitally connected business models and new partnerships, such as Tesla's charging networks, that put the consumer at the center rather than the product. This allows them to capitalize on their well-developed customer networks and get a head start against new market entrants.

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Autonomous vehicles

The rapid progress made in areas such as artificial intelligence, machine learning and deep neural networks make it possible to achieve what until recently seemed utopian – namely the development of autonomous vehicles, which require no human intervention even in complex traffic situations. This will completely redefine the use of individual mobility platforms. New application scenarios are emerging that would have been unthinkable just a few years ago.

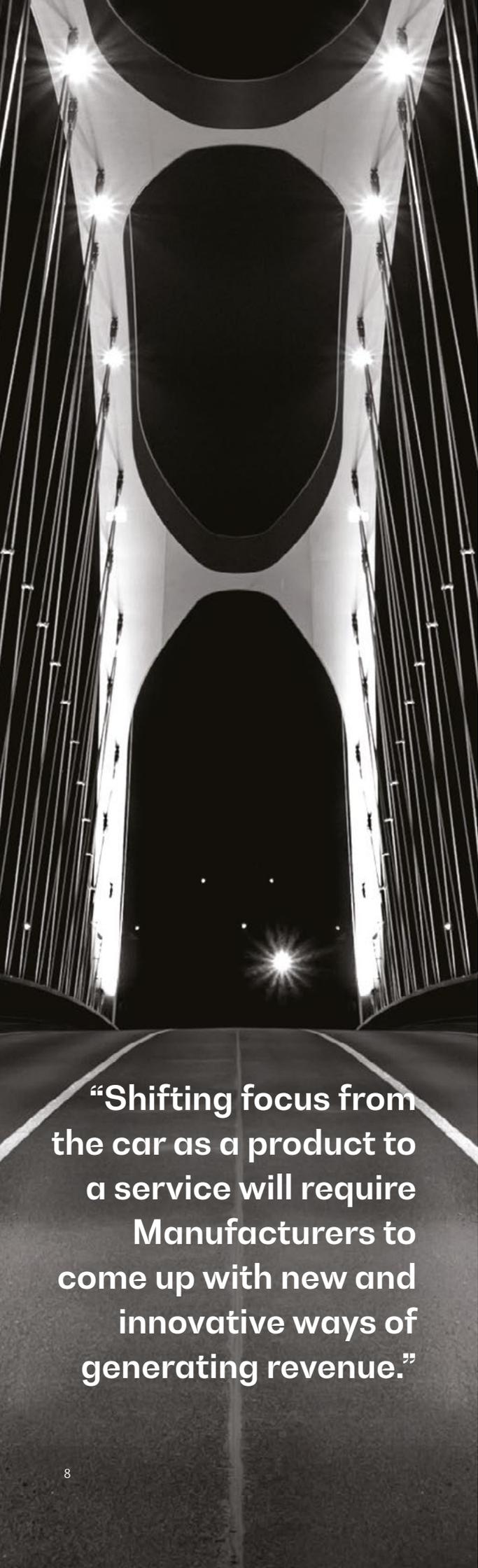
The arrival of 5G will help accelerate autonomous driving, and although the development of the self-driving car may increase manufacturing costs, if business model thinking is firmly embedded within the engineering design thinking it could be a major driver of new revenues for manufacturers. First it will accelerate change in ownership models. It will also de-personalize the car, which will become simply a way of getting from A to B, so there will be less of an imperative to actually own a vehicle. This opens up more leasing opportunities for manufacturers, making the customer a more constant revenue stream, building alternative solid business models.

Second, no one will be a driver anymore, but simply a passenger. This shifts the legal responsibilities of driving from the driver to the manufacturer. Therefore, it is possible to capture the 'former' driver's attention and provide them with additional offerings such as movies, internet services, advertisement and more. This is only possible, if the driver is no longer responsible for driving safely. And of course, former drivers will have more free time while on their travels to search for and consume content. In fact, with the constraints of driving removed, they will be free to do all the activities they usually conduct outside the car, from work, to shopping to socializing.

Of course, this relies on building trust in the safety of autonomous vehicles, and manufacturers are already coming up with sensors, patterns, and light systems that warn driverless cars when it's their turn to go ahead. They are also developing smart road-sensor systems including radars, integrations with cruise control, and pedestrian ("obstacle") detectors to turn the concept into reality.

By integrating safety, alert and sensors into the autonomous vehicle, the vehicle will become an important member of a wider ecosystem including traffic lights and traffic controls, toll roads, road landmarks, smart cities and more. These ecosystem dynamics can open new opportunities for the OEM or the fleet managers who will embrace these partnerships and co-create advanced services, for example, avoiding packed services areas during a journey back home from a mini break, or traffic jams on the way to a very important business meeting. Each of them can be monetized in a different way.

There are already a number of key players racing to become early movers in this space – most notably Waymo, Uber, General Motors, Ford, BMW, Tesla, Baidu and Volvo – whilst other automotive manufacturers are looking to partner. The winners in the autonomous race will be those companies that maximize the potential of the technology by creating a strong business ecosystem with the customer at the center.



“Shifting focus from the car as a product to a service will require Manufacturers to come up with new and innovative ways of generating revenue.”

Changing ownership values

The sharing economy is likely to have one of the most profound effects on the current product-focused automotive industry business model. Millennials – the new generation of car users – are deterred by the high cost of car ownership (particularly fuel and insurance) and have a predilection to invest in experiences rather than ‘things’. What’s more, purchase behavior and trends indicate that increasing numbers are concerned with the personal perception of actually owning a vehicle more than older age groups. Unsurprisingly then, car-sharing and ride-hailing are becoming increasingly popular ways of getting around, especially in urban areas, alongside a rise in personal leasing, where consumers can upgrade their vehicle regularly, rather than outright purchasing. From houses to cars there is no longer a stigma around renting.

Whilst Uber’s current business model is geared to employing drivers, it has long been part of its strategy to move quickly to a driverless model where owners can turn their cars over during the day or at night to be autonomous cabs charged “by the journey” as an incentive not to own.

Since the automotive industry revenue model traditionally relies on selling high volumes of vehicles, the resulting fall in sales is likely to disrupt the industry dramatically. To compensate for lost revenue, manufacturers need to come up with new and innovative ways of generating recurring revenue, such as subscription-based mobility services and personalized car packages and making those options widely available and easy to adopt.

One way to get there is for manufacturers to open their vehicles and turn them into platforms for ecosystem innovation, similar to the way Apple and Google did with their devices. This can help generate new ideas and services that will increase car value and generate ongoing incomes or alternative revenue streams. For fleet managers, this might mean maximizing the efficiency of the vehicle. For example, during the day it can transport employees, while in the evening it can deliver food and goods.

Shifting focus from the car as a product to a service will require attracting and building an ecosystem of partners and suppliers to continually innovate, not simply keeping up with the demands of the connected consumer but driving it forward.



The connected car

Smartphone-ready vehicles featuring wi-fi hubs are already making waves, but the latest advances in technology and the 5G network will push connectivity into far more advanced use cases such as in-car entertainment, driver safety, real-time information and data analysis through telematics, all driven by the increasing importance of digital in people's everyday lives.

The connected car also presents new ways to collect information, from the route a customer takes to which radio station they prefer. This data presents opportunities for manufacturers to refine their strategy and increase growth. Each vehicle will provide two main data sources: the customer and the vehicle itself. Both will generate vast amounts of information that manufacturers can not only monetize using the right technology platform, upsell parts and services, but also use to continually review their business model and build closer links to customers.

Naturally, customer data has to be collected by consent to comply with stringent regulations (like GDPR), and the best way to ease that process is to offer bespoke services which add ever greater value to the customer's relationship with both the car and its maker. That could be augmented way-finding and concierge style services where there's a direct connection with a call center where agents – or even AI bots like Alexa – can facilitate all kinds of things, including booking hotels, restaurants and event tickets on the go. It could also be the security that comes with emergency cover that's much more than a breakdown service; it could enable predictive maintenance through to swift connection to emergency services in the event of an accident (either because the driver has called or there's a sudden loss of movement etc). Connected services could also range from Spotify (linked to manufacturer accounts) through to backseat entertainment streamed from the likes of Netflix or Disney to keep the kids occupied.

Beyond making life easier and more fun for passengers, the connected car will allow manufacturers to monitor and update the increasing amounts of vehicle software via Software Over the Air (SOTA). This will enable them to fix, maintain and improve vehicles through remote software updates downloaded to the vehicle from a cloud-based server, making it faster and more convenient for car owners, as they will need to make fewer visits to the dealership. It could switch on additional services that are manufactured in but latent until purchased with digital keys relayed using SOTA e.g. an advanced traction control system or increase in engine power.

Outside of the clear consumer benefits, this importantly provides manufacturers with a solid roadmap to a sustainable future and on-going commercial success. The new paradigm of the connected, shared car offers a way to compensate old sales-driven revenue models with a new source of sustainable income. Car manufacturers can sell the car as a personalized service with recurring, subscription-based revenue models. The customer can be offered a custom made package where they can choose services and content appropriate to their lifestyle and needs. This could include insurance, finance planning, parking alerts, predictive maintenance, and more.

Towards a new business model

As we've seen, the leaps in technological innovation that will change the automotive space beyond recognition also provide the route to building and operating a new way of working for manufacturers; an agile ecosystem that is responsive enough to meet customers' immediate and future needs.

Falling sales through the shift to usage over ownership demands a move from a product to service-led business; from selling cars to becoming the destination for consumers' 'travel' needs. To do this, manufacturers need to connect directly with both their customers, externally, and internally with a raft of service partners through implementing a digital platform business model, thereby precipitating some changes to the current franchised dealer model. The dealership will continue to be the physical embodiment of the manufacturer's brand and also become part of a range of engagement options for customers.

Online has already enabled customers to gather information earlier in the buying cycle and turn up at showrooms much better informed. This means that dealers will no longer be the only source of vehicle specification and pricing data – but can still have a significant role to play in providing test drives or aftersales support. Equally with the growth of sites such as webuyanycar.com (part exchange) and carwow (price negotiation) we're seeing a 'digital deconstruction' of the traditional car buying process and the disintermediation of the traditional dealer.

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After sales

In the future, the car will remain connected once it has been sold on to the second and third owner, and beyond, transforming after-market sales by significantly extending the customer lifecycle by giving visibility of the new owners.

Currently, second owners tend to service their car at an independent garage rather than a franchise dealership, which means the manufacturer loses revenue. But with the connected car, they have a potentially permanent connection to the vehicle throughout its lifetime, with the possibility of further customization opportunities and developing new customer relationships.

Historically, new vehicles come with a warranty period and once it comes to an end, the manufacturers don't typically retain those vehicles within their franchise network for ongoing routine servicing and repair. However, if the manufacturer remains connected to the vehicle, they could follow the vehicle into its second ownership cycle and offer the next owner new updates and services, leading to new revenue streams. What's more, leveraging the increased amounts of data the connected car brings together with more sophisticated analytics delivers a deeper understanding of customers' needs and therefore additional cross and upselling opportunities.

If the manufacturer remains connected to the vehicle, they could follow the vehicle and offer the owner proactive updates and services, leading to new revenue streams. Maintenance, repair and warranty are important topics when vehicle numbers are set to decline with autonomous drive yet journeys driven (by fewer cars) will continue to grow. Likewise, as vehicle components become software related, high margin revenues from spares and repairs will decline – they will just need a free SOTA update – so predictive failure using data becomes more important to meet customer expectations.

Laying the foundations

We are starting to see people experimenting on the car manufacturer side because they can now build direct relationships with their customers. But this is fraught with challenges, mainly structural since the manufacturers have invested heavily over many decades in franchise dealer networks.

Despite these challenges, manufacturers need to begin the process of creating or augmenting their direct-to-customer models whilst addressing the pivotal question in the business model that has served the automotive industry since the beginning: who owns (and processes) the customer data (the OEM or the dealership?). This will lay the foundation for launching an ecosystem of wraparound services through leveraging the technology of the connected car. A robust but agile digital platform will be needed to orchestrate the emerging and complex multidimensional partner-supplier-customer relationships that this new evolving ecosystem will demand. Looking at closing the current yawning gap in the disconnected and siloed vehicle buying, financing and insuring process, for example, would be a great place to start developing the ecosystem.

“Manufacturers need to connect directly with their customers, moving away from the current dealership model.”



Rising to the challenge

Historically, automotive manufacturers managed their own value chain. As everything becomes digitalized it is no longer about “walled gardens” but thinking differently because automotive manufacturers may just be one participant in a much broader, more distributed set of conjoined ecosystems and value chains.

It is the synergies between them that offers convenience and better experience for customers, but a revenue opportunity for automotive. That’s a big shift in mindset, let alone powertrain; and it starts with customers and what they want.

The future will be about turning the vehicle into a service platform, like Apple did with the iPhone. This demands partnerships and third-party collaboration to create Anything as a Service (XaaS) and generate alternative revenue streams by quickly capitalizing on new trends and technologies.

For the automotive manufacturer, effective product management has always been a vital component of their business. But with the advent of the connected car and its increasing range of software and customization options, the addition of digital products and services to the physical one will make product management even more complex. This requires digital solutions that are both swift and agile, as well as able to launch new products and services quickly and react rapidly to changing customer requirements.

Against this backdrop, players within the automotive industry need to decide what to offer. This begins with identifying customer needs, deciding which solutions the automotive industry provides itself, what to acquire or deliver through partners and which existing ecosystems to join (e.g. MOBI for mobility blockchain). This requires a different mindset because ecosystems and partnering is a new way of thinking. The risk is swapping technology – a new powertrain – without ever challenging the business model and considering how to deepen customer relationships. Taking the opportunity the trends in this document present will be vital to grow revenue and profits when fewer vehicles are sold and much less money is going to be made from spares.

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Rather than just selling a product, automotive manufacturers have an opportunity to innovate new services for customers that deliver significantly better outcomes. Essentially a new kind of ‘wow’ factor that is taken into the vehicle purchase decision. This is where willingness to experiment with digital business platforms and the new types of business model that they engender comes in. These business models are much more ecosystem based with the digital platforms forming the nexus for the co-innovation of new products and services, orchestration to the customer and successful monetization.

The supply chain lifecycle is rapidly extending from the manufactured vehicle to through life. Software updates and the connected car are opening up the potential for a continuous relationship and a daily interaction with the current owner and future generations. The question now is whether automotive manufacturers wish to exploit this relationship. They can grow revenue and try new business models by selling new digital services and implementing digital business platforms to trial new solutions. New business models and digital platforms are the future powertrain for the automotive industry.

As the Waymo CEO said recently at the 2017 Web Summit conference in Lisbon: “We recently surveyed 3,000 adults across the United States and asked them when they expected to see self-driving vehicles – ones without a person in the driver’s seat – on their roads. The most common answer? 2020. It’s not happening in 2020, it’s happening today.”

“Rather than just selling a product, automotive manufacturers have an opportunity to innovate new services for customers”

BearingPoint//Beyond can support you on your journey towards reinventing your business model, helping you grow from efficiency to innovation.

We help companies grow their revenues through the use of our digital platform solution. It is specifically designed to harness ecosystem collaboration, by allowing different business partners and systems to easily and dynamically exchange and combine offerings; cultivating innovation and the invention of new services at speed. We work together with our customers, linking methodology with technology to quickly identify customer needs; translate them into viable offerings, prioritize them and build the right ecosystem; test them together in the market; refine; launch and expand with minimum risk and cost.

BearingPoint//Beyond is part of BearingPoint, an independent management and technology consultancy with European roots and a global reach. A worldwide consulting network with more than 10,000 people, BearingPoint supports the world's leading companies and organizations in over 75 countries, engaging them to achieve measurable and sustainable success.

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