

IBM Institute for Business Value

Digital transformation in the automotive industry



Overview

Individuals and businesses alike are embracing the digital revolution, utilizing mobile interactive tools to communicate, make decisions and facilitate purchases. Impacting virtually every industry, this global trend is certainly top of mind for automotive companies. As they rethink what customers value most and create operating models that take advantage of new possibilities for competitive differentiation in areas such as connected vehicles and mobility services, the most pressing challenge for auto companies is how fast and far they can go on their path to digital transformation.

Creating new business models where digital meets physical

Customer expectations have placed tremendous pressure on automakers to change the way they establish their strategies and manage their organizations. New requirements to incorporate information and interactivity quickly drive up costs and complexity. At the same time, the auto industry must be more creative to capture a larger share of the consumer's attention and overall transportation spend – both in and beyond usage of vehicles.

Automotive enterprises have long used information technology to improve productivity and efficiency, reach new markets and optimize supply chains. What's new is that customer expectations have expanded. Empowered consumers everywhere are using social networks to find jobs, restaurants, old friends and even new partners, as well as achieve common political goals. How can automakers best respond to this shift? How can they take advantage of the opportunity to innovate and grow in new directions?

The automotive industry is at a crossroads where the vehicle itself and the consumer's experience with it are rapidly shifting from the physical to digital. Through our research of leading companies and work with automotive clients, we found that companies with a cohesive strategy for integrating digital and physical elements can successfully transform their business models – and even set a new direction for the entire industry. Successful companies move forward by focusing on two strategies: reshaping the customer value proposition and reshaping the operating model.

- **Reshaping the value proposition** – Products and services, information and customer engagement can all be reshaped using new capabilities for mobility, interactivity and information access. The challenge then becomes how to monetize these new customer value propositions.



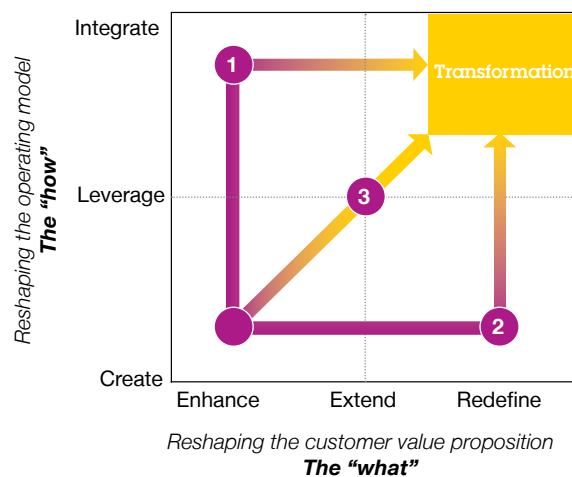
- **Reshaping the operating model** – The operating model can be realigned so that customer preferences and requirements inform every activity in the buying and selling chain. Doing this requires integrating all business activities and optimizing the use of data related to those activities.

Until recently, most organizations focused on one of these areas at a time based on specific initiatives. Taking a more holistic and integrated approach, a third path combines the two focus areas, simultaneously transforming the customer value proposition and organizing operations for delivering that value (see Figure 1). Determining the best path to transformation requires a thorough understanding and evaluation of several factors:

- Where products and services are on the physical-to-digital continuum in the industry
- Customers' mobility and social media adoption levels
- Strategic moves by other industry players
- The degree of integration at every stage of the transformation and in the complex automotive value chain – between new digital processes and legacy physical ones.

- Path 1**
Create and integrate digital operations first. Then address the customer value proposition to achieve full transformation.
- Path 2**
Enhance, extend or reshape the customer value proposition with digital content, insight and engagement. Then focus on integrating digital operations.
- Path 3**
Build a new set of capabilities around the transformed customer value proposition and operating model in lock-step.

Paths to digital transformation



Source: IBM Institute for Business Value analysis.

Figure 1: Digital transformation requires strategic development of the value proposition and the operating model.

For the automotive industry, two emerging opportunities relating to the move to digital are connected vehicles and mobility services. Automakers across all segments are developing fresh strategies, building innovative solutions and introducing new offerings in an attempt to reshape the customer value proposition. Digital solutions play a growing role in providing advice to consumers on how they should move around. As these new offerings are introduced to the marketplace, the development of new services models and internal operational transformation will be just as important as technology investment to the success and profitability of these solutions.

Connected vehicles

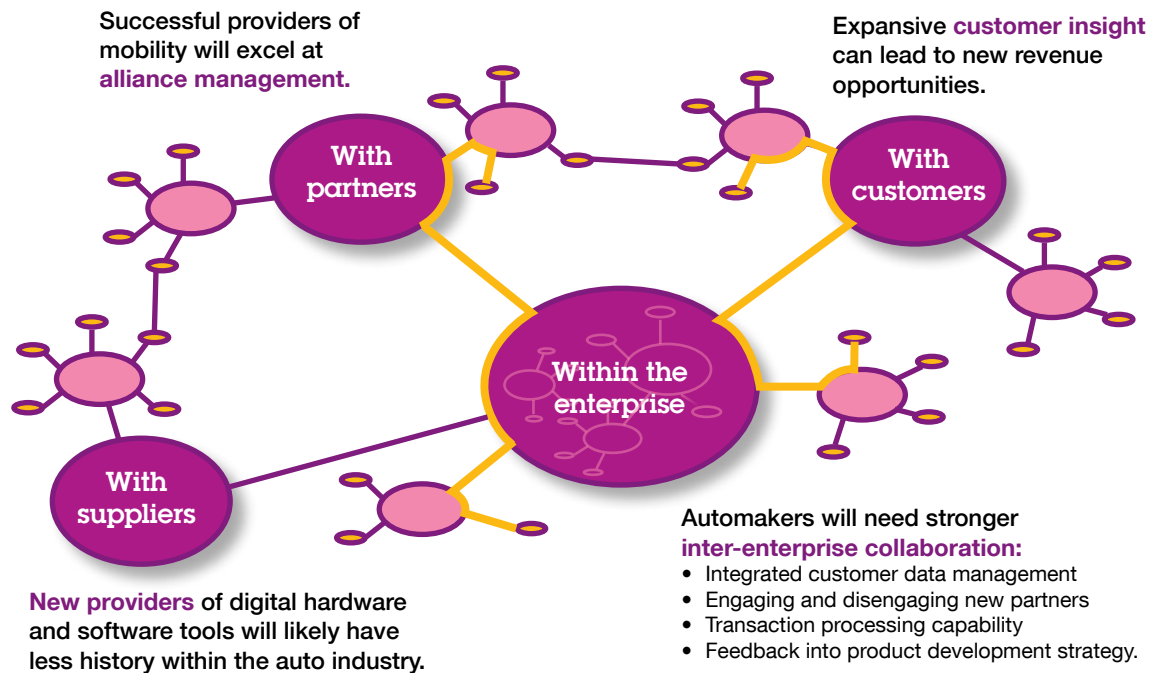
Connected vehicles are a leading area of investment for the auto industry. Before long, every aspect of vehicular transportation will be controlled by telematics and information technology. To varying degrees, connected vehicles already offer services relating to navigation, security, emergency, multimedia and service diagnostics. As these services become more comprehensive and expand to include the home and office, automotive OEMs must also consider how they will transform their business to enable an integrated transportation experience for their customers.

The connected vehicle offers exciting new digital capabilities for consumers, changing how they use and interact with their vehicles. Connected services also open a myriad of opportunities to revisit revenue innovation and to enhance, extend and redefine the interaction with consumers:

- **Enhance** the consumer experience and increase differentiation by offering the right pricing and package combinations
- **Extend** the type of services and capabilities that will generate new revenue streams beyond the traditional vehicle-to-driver relationship by enabling the movement of people between vehicles and modes
- **Redefine** the value to customers by integrating new digital tools for how people move around in increasingly crowded spaces.

Revenue-based innovation will be increasingly important. As automakers balance providing ever-greater connected services with consumer expectations of reasonable and even lower prices, the ability to creatively generate new revenue will be critical.

The necessary technological investments in vehicle connectivity require a host of new partners, and automakers must be increasingly nimble across an ever-more complex network. Automakers must collaborate with partners, suppliers and customers – as well as throughout the enterprise itself (see Figure 2). In addition, many new partners are outside the traditional auto industry and include telecommunications, software and content providers, as well as other electronics manufacturers with traditionally faster innovation cycles. Managing complex alliances with companies that don't have the bulk of their business within the auto industry can be challenging. As services are added from various partners, automakers will want to efficiently engage and disengage new partners, as well as manage a host of alliances in a consistent manner.



Source: IBM Institute for Business Value analysis.

Figure 2: Automakers must manage an increasingly complex network.

OEMs further need to reconcile the dual – and very different – timelines of automobile development and IT development. While automakers are becoming increasingly efficient with new vehicle development, their speed and expertise incorporating much faster IT and telecommunications capabilities are still maturing. The ability to innovate and deploy connectivity solutions to the install base in a shorter timeframe will be a critical operational capability and success factor for automakers.

Mobility services

Just like a variety of other businesses, auto industry companies are determining how to stake their claim in emerging mobility services business models. As congestion, population growth and pollution issues push consumers to consider the limitations of vehicles, greater urban transportation data, smartphones and ubiquitous telecommunications present the opportunity for new, exciting digital offerings. Because most consumers don't want to give up access to vehicles, automakers are challenged to bundle the right mix of cars and other transportation modes into compelling, integrated new offerings. Digital solutions are needed both in the vehicle and outside it.

Within the vehicle, the ability to personalize the electronic experience is rapidly developing, with customized media content, navigation, vehicle adjustments and dashboard modifications increasingly commonplace.

However, further personalization – such as the ability to integrate a personal calendar or add productivity applications – will further enhance the consumer’s experience.

As this increased customization is achieved, automakers have a chance to differentiate themselves by providing consumers the ability to move these personalized parameters across the automaker’s product portfolio. As the telecommunications infrastructure continues to mature, both smartphone integration and cloud computing solutions will enable automakers to take the next logical step in this progression and allow consumers to move their digital environment with them from vehicle to vehicle. The implications of this are profound – a consumer would no longer be tied to a single vehicle but free to move between vehicles within an automaker’s product portfolio.

Automakers will need to supplement in-vehicle innovation with digital solutions that advise the consumer how to best move around. This includes advice on future traffic patterns, access to other modes, information regarding optimal routes and the ability to find and reserve different vehicles. Guidance to consumers would be based on personal preferences, costs, constraints and other situational needs.

Digital transformation is more than bits and bytes

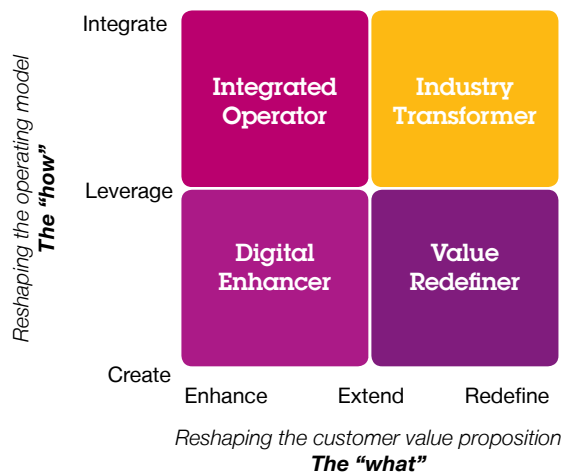
Enhancing and creating new features relating to connected vehicles and mobility services requires extensive internal transformation across an automaker’s operations. To be effective, profitable and efficient, automakers should consider some key factors:

- Demand for interchangeability of vehicles and mobility services could push automakers to expand or potentially rationalize their product lines to respond to new demand patterns.
- The supply chain may need to adjust its manufacturing and distribution strategy to accommodate potentially different demand profiles for vehicles involved in mobility services.
- Captive finance organizations may need to expand their wholesale business to accommodate mobility vehicles and to enable transaction processing capabilities.
- Aspects of the retail model will change as well to develop more relationship-based selling and to intrigue customers with the full product line.
- Elevating alliance management as a critical organizational competency may be necessary to effectively manage new partnerships and extensions of the value chain, particularly as consumer interaction outside the vehicle increases.

To reshape the value proposition, automakers must develop and experiment with new business and operating models. We developed four profiles depicting the extent to which an organization could reshape its value proposition and operating model (see Figure 3). The profiles are based on whether an organization digitally enhances, extends or completely redefines its value proposition to customers. The profiles also assess how far an organization has gone in reshaping its operating model – from creating the new model toward leveraging it and, ultimately, fully integrating it as a core business process.

Whether an automaker focuses on the value proposition or operating model first will depend on the application. Digital solutions placed directly in the vehicle push automakers to become Integrated Operators as they require a strong operations infrastructure and delivery capability to meet customers’ expectations. However, outside the vehicle, automakers must be aggressive Value Definers in testing and piloting new digital offerings before determining where operational investments should be focused. Ultimately, to become differentiating Industry Transformers, investments in innovation along both axes will be required.

New digital capabilities should not simply provide greater efficiency to long-standing practices. By innovating new ways to win consumers and influence loyalty, automakers are well positioned to differentiate and redefine the industry.



Source: IBM Institute for Business Value analysis.

Figure 3: Digital transformation framework.

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Conclusion

In today's digital age, auto companies need to embrace innovation to take advantage of new opportunities in areas such as connected vehicles and mobility services. To help generate new customer value propositions or transform their operating models, these companies need to develop a new portfolio of capabilities for flexibility and responsiveness to fast-changing consumer requirements.

Although the path to transformation will vary in different markets, one thing is consistent: Those able to implement new business models based on consumer input could win first choice of talent, partners and resources. As industry leaders, they are likely to stay far ahead of new and existing competitors.

How can IBM help?

- **Innovation and business value** – Our business strategists leverage a proven approach and a base of deep research to help clients innovate their business model by rethinking how customers define value and understanding the changes organizations must make to their value chain in the digital era.
- **Market and customer management** – Our consultants assess, analyze and build strategies for clients that address new and existing markets; improve marketing, sales and service effectiveness; and optimize cross-channel interactions to create a differentiated customer experience.
- **Operating and organization model** – Our industry subject matter experts help clients design and establish the ideal operating model and processes, supply chain strategy and organization to more effectively connect, collaborate and conduct commerce.

To learn more, download the full IBM Institute for Business Value executive report at ibm.com/gbs/digitaltransformation.



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