The differentiating impact of design and its talent implications

How to Create Competitive Advantage in Mobility
Executive Summary

The mobility revolution is well under way, and automotive companies, as well as companies in adjacent industries, are establishing themselves in a new ecosystem that prioritizes total mobility solutions over vehicle ownership.

We see design thinking and design-driven culture as key assets for car companies in the quest for competitive differentiation and value creation in this nascent space.

Design thinking is not a new concept, but its adoption by the automotive industry has been fragmented at best. "Design" as discussed in this paper goes beyond the shaping of an object, and even beyond consistent branding, to an encompassing understanding of the fundamentals of mobility needs and the holistic and connected solutions that can meet those needs. It’s about remaining human-centered when integrating user experience with technology and mechanics in physical space: the goal is to optimize the human experience.

Integrating design thinking into the organization requires from the organization's leaders creativity, balance between pragmatism and disruption, acceptance of failure as a learning experience, discovery of meaning in the process rather than the outcome, and dedication to value for the user.

Our discussions with senior executives in automotive companies and in leading design think tanks have made it clear that infusing design thinking into the organization will mean disrupting existing modes of thinking and working. In this paper we discuss the role of the chief design officer (CDO), their organizational positioning, and define the unique capabilities required for success in the role.

To be effective, design thinking cannot be left to a single department or a person. The chief design officer collaborates with R&D, marketing, information technology, finance, and other functions within the organization. These functions escape their silos and gain value when they work in collaboration to solve specific problems. The organization becomes a modular system of perspectives—engineering, marketing, and more are redirected to focus on human value, which has a definitive impact on the bottom line. The CEO's task is to set the company's overall strategy and to gain commitment from the entire organization to the design-thinking process in pursuit of the goal.

“My job as chief design officer is to shape the brands through a holistic approach. The transfer of our design philosophy to all touch points of the brand has contributed significantly to the success of the company.”

Gorden Wagener, Chief Design Officer, Daimler AG

Commitment to design thinking will also lead to the appointment of design leaders to the executive management team, as their role in helping to steer the overall direction of the company is key. Already 33 percent of the leading original equipment manufacturers (OEMs) globally have appointed the most senior design leader at the company to the executive management board. We predict that by 2020, 60 percent of leading OEMs will have a leader on the management board whose organizational role is to drive design thinking in collaboration with others across the entire organization.
By adding design thinking to their existing strengths, automotive companies can pull ahead decisively in the race to differentiate their offering and can become leaders in the mobility market. Best-in-class design thinking talent has been nurtured in industries like the technology and consumer sectors, but those executives usually lack experience with safety-critical offerings, which are core to automobiles and future mobility solutions.

Nevertheless, this talent is crucial to establishing a design-thinking culture, and executives that blend that best-in-class design thinking with knowledge of safety issues will be able to manage the contradictory requirements of speed and safety. Automotive companies will need to look at the entire design universe to find the best design-leadership talent, and we predict a number of these appointments will come from the technology and consumer sectors.

Our advice to mobility ecosystem companies:

1. **IDENTIFY THE DESIGN MANDATE** Organizations need to articulate and commit to a clear design mandate, which must be realistic, but also sufficiently ambitious to enact real changes. This design mandate is crucial to the effective hire and retention of a qualified and motivated chief designer.

2. **DESIGN THE RIGHT ORGANIZATION** We recommend a central design capability with presence in each of the organization’s key functions and business units, ensuring a consistent top-down vision and real-time bottom-up feedback, which will lead to the most effective and efficient solutions possible.

3. **HIRE A DESIGN LEADER** Organizations should seek a leader trained in design disciplines who can see beyond individual components and processes to help bring the organization’s mobility vision for the future to life. The design leader’s key skills will include an ability to look beyond what customers are asking for today to what will best meet their needs tomorrow.

4. **DEVELOP DESIGN TALENT** Design is a permanent mind-set and a differentiating factor. A design leader alone is not enough: to institutionalize commitment to design thinking, the organization must retain and develop a pipeline of design leadership talent.

The chief design officer has a unique challenge. The automotive industry is predominated by a culture of precision, efficiency, and subsequently, perfectionism and conservatism. The chief design officer must be a culture-change leader, capable of influencing leaders in the organization and inspiring all employees to participate in the organizational transformation. The transformation must be organization-wide, meaning senior leaders all the way up to the CEO and board must commit to the design thinking journey or risk falling behind in the pursuit of rapid technological and social innovation.

“The litmus test for design thinking is where it is positioned in the company’s structure and how it is actually employed across the company. In our three global future centres in Europe, North America, and Asia, we foster close collaboration between all design areas including customers and end-users.”

**Johann Jungwirth**, Chief Digital Officer, Volkswagen Group
Design thinking: how car companies can become mobility leaders

In an industry that has no shortage of extraordinary engineers, marketers, and business leaders, how can a function like design make a significant difference? We need look no further than the consumer technology company Apple, which was once viewed as a potential major disruptor of the automotive industry, though that talk has died down. Apple’s success is due in large part to its knack for introducing capabilities that excite customers and add differentiated value, as well as its ability to design an extraordinary ecosystem for its consumers. The excitement surrounding rumors of Apple’s potential automotive venture suggests the market intuitively views its design–driven approach as an appealing way forward for the future mobility market.

“Technologies are changing rapidly and our designs must remain flexible enough to accept them quickly. But it is important to remember that no company will have a technological advantage for long. Creative design will continue to be a great differentiator in the marketplace.”

Ed Welburn, former Design Chief, General Motors

MORE THAN BEAUTIFUL OBJECTS

Car companies have produced truly beautiful cars for many years. The best practice design approach is based on the understanding that people need their interactions with technology and other complex systems to be simple, intuitive, and pleasurable.

“Theory, that principle—of making things simple, intuitive, and pleasurable—is a straightforward prescription for the changing automotive industry, but in practice it is rarely applied. Take, for instance, the commonplace problem of functional isolation, which results from companies’ decision to manage complexity along the lines of functions and processes, rather than along the lines of the customer's journey. The result is neatly packaged departments which hand off complexity and consequently frustration to the customer: the purchase of a car requires filling out complex forms and disjointed financing, warranty, and other paperwork, which takes the magic out of the car purchase experience. A Forbes article aptly noted: “The customer feels the pain of these

Design thinking seeks to rectify the problem not only to make the customer journey a pleasure, but to also benefit the organization.

A look at the car itself will show that automotive companies have moved well beyond the most cursory and functional use of design—where it is an afterthought—to the point of producing what Malabuyo calls “objects of desire.” Developments in service design, customer experience design, and more have contributed to this advance. The automotive industry as a whole appears to be at a stage just short of true design thinking: they are beginning to recognize the importance of customers’ journeys and the layers of customers’ experience in interacting with the company’s brand, products, and services. Cross-functional teams built around these layers of experience have succeeded in creating additional value for the customer.

**SIMPLIFICATION AND ACCESS**

Most mock-ups of “future cars” will show windshields aglow with numbers, intelligent prompts, and a wealth of detail, but it could be that the future dashboard will be significantly less bold and distracting. The car of the future will undoubtedly be connected to the Internet and capable of responding to drivers’ and riders’ need for information, but the method of delivery—the user experience—will determine whether that technical capability is a potentially dangerous nuisance or an integral part of the journey from point A to point B.

“The designer’s charge is to convert what’s technologically possible into customer value. This applies to objects as well as to services.”

**Thomas Ingenlath**, Senior Vice President, Design, Volvo Cars

Website developers are very familiar with the idea of “sticky” user interfaces (UI), which are designed to make customers linger longer on a website and to influence them into making a purchase. The opposite, or “slippy” UI, is a possible way forward for automotive. Wiring a car to enable it to access a search engine is straightforward, if technically advanced, but the value-add is in providing such information insightfully and based on a variety of inputs—context such as the car’s location, driving speed, and even passengers’ known preferences. This, too, is a matter of purposeful design.

In the automotive industry, there is no shortage of opportunities to innovate on how things are done and what is made. However, establishing a differentiated, achievable, and successful mobility vision to guide those innovations and transformations is more complex and more important.

In order for organizations to achieve this vision, it is important to assess the place design currently has in the organization. Do decision-making structures and departmental silos or connections enable or obstruct design thinking attempts? Once a positive environment is established, awareness of and commitment to design thinking can follow. Keeping a realistic sense of the organizational opportunities and challenges involved, executives can then create a design mandate that is both ambitious and realistic, followed by the appointment of the right CDO to take leadership of the task.

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Companies seeking to adopt design thinking must review the way design is currently structured in their organization and where they would ideally situate it. This will have an impact on the shape and scale of the design mandate, the choice of CDO, and the ease or difficulty with which the CDO is able to lead the technical and cultural change needed to bring the company into its mobility future.

The way an organization incorporates design says volumes about its attitude toward design as a capability. In its most tactical form, design is an afterthought applied to objects. It may be as basic as ensuring that all correspondence is in company colors or as complex as beautifying products or enhancing the form of an item enough to command a price premium, such as limited edition consumer products that come in unique colors. In such an organization, there may be disconnected clusters of designers in each business unit, with little or no communication or collaboration between them. Companies that attach little strategic importance to the consumer's experience of their products may quickly find themselves losing market share to competitors with similar offerings who provide a more appealing and effortless experience for customers.

A more popular approach is the application of forward-looking design. Companies favoring this approach may set up a devoted think tank or center of excellence to provide insight and advice on the topic of design. Unfortunately, it is likely that the brilliant concepts generated by the design center never make it into the hands of consumers, as the "ivory tower" is oblivious to the realities of the company's operations and what it takes to enact such a design vision at the scale of the organization. Innovations generated by this peripheral department are too far removed from the C-suite, and design leaders lack the opportunity to educate leadership on its importance to the company's success. To successfully incorporate design thinking, companies must take design out of its ivory tower and recognize it as a strategic and practical capability.

When design is seen as a strategic capability, the effect is powerful. Design is present not only in individual business units but also at the level of senior leadership. This structure enables the creation of a dynamic strategic vision at the top that is then communicated downward. The vision is dynamic in that it responds to bottom-up input as a result of rapid prototyping, which is an important part of design thinking.
Design thinking has already penetrated other industries: IBM has hired hundreds of designers and considers design a key component of its services to clients and in developing solutions. At PepsiCo, CEO Indra Nooyi has stated publicly that design has a voice in nearly every important decision the company makes. Nooyi conceded that in the past the company’s view on design was limited to different shades of blue. The company’s progression to true design thinking has included moving beyond the old approach of “shrink it or pink it” when developing snack products targeted at women and toward rapid prototyping, such as the introduction of new flavor combinations every three months in Japan, where the cost of failure is lower. PepsiCo is also designing solutions customers themselves may not realize they need. Central to PepsiCo’s success is its design leader, who is not only a design maven, but a culture-change leader.

We predict that as design thinking is increasingly recognized as a strategic capability, there will be an increase in the number of design experts appointed (see feature overleaf for examples). However, the organization will still need someone who can bring it all together – a CDO. In order to identify the right design leader for its needs, the organization must clearly articulate what it seeks to accomplish through design thinking.

“I don’t know if consumers know what they want. But we can learn from them … We don’t sell products based on the manufacturing we have, but on how our target consumers can fall in love with them.”

Indra Nooyi, CEO, PepsiCo

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8 Ibid.
# The rising profile of design leaders

## Examples of board-level design representation

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<th>Supervisory Board</th>
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Taylor is the CEO and cofounder of Quip, which applies design thinking to the fragmented experience of modern knowledge work, putting together email, calendar, chat, cloud storage, and more. He is the cocreator of Google Maps, former chief technology officer at Facebook, and architect of the “like” button.⁹

Morken is executive vice president and general manager of ProConnect at Intuit, a technology company focused on simplifying financial transactions for individuals, small business, and corporations. He has broad experience in companies that provide digital solutions to financial services institutions. Morken is “a recognized leader in design thinking methodologies which focus on driving impact for the end customer.”¹⁰

Bushnell is the founder of Atari Corporation (grandfather of gaming consoles) and Chuck E. Cheese (children’s restaurant/entertainment chain) and more than 18 other companies in the high-tech space, including an industrial-grade virtual-reality immersion company. He employed Steve Jobs as an engineer at Atari before Apple was founded. In 1985 he founded Etak, which pioneered car navigation before the rise of the GPS in 1995.¹¹

Porcini was hired away from 3M by PepsiCo, which sought him for his ability to show the impact of design on the bottom line. At PepsiCo, he was charged with building a culture of design for the organization.¹²

Credited with creating Mercedes-Benz’s “sensual purity” design philosophy, Wagener’s appointment to the board highlighted the value the carmaker placed on design.¹³

Fukuichi’s appointment to the company board in 2014 was unprecedented in the automotive industry, giving a designer a seat at the table and also granting him leadership over the luxury Lexus brand. He is credited with creating a distinctive Lexus look that led to a 42% increase in sales between 2010 to 2015.¹⁴

Ive is the classic example of design brought to the top of the organization. He is often credited with being as responsible as Steve Jobs for the design triumph of the iPhone.¹⁵

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¹³ Gorden Wagener: Chief Design Officer Daimler AG,” Daimler AG corporate website.


Establishing the design mandate

Success in transformational design thinking hinges on two interrelated tasks: first, establishing with clarity the right design mandate for the company, given its starting point and goals, and second, selecting and correctly positioning the right design leader. We have identified three alternative design mandates, each of which has implications for design executives in the automotive and mobility context.

1. Supporting the business

- The design organization is responsible for managing the products’ aesthetics to ensure they support the brand’s positioning and value proposition in an appealing and distinct fashion.
- This charter requires the development of a differentiated design language that is consistently yet dynamically applied across every surface and layer of the company with which customers come in contact.
- What it means for the head of design:
  - The head of design leads the activities of the design team, coordinating cross-functional relationships and managing resources across studios.
  - The head of design must have a strong grasp of the brand’s heritage on one hand and a finger on the pulse of trends and paradigms in design across industries and regions on the other.
  - He or she will exhibit an outstanding grasp of aesthetic proportions, colors, and haptic qualities and the ways in which they support functional value.
  - With the increasing digitization of the car, this leader must also guide and supervise the design of user interfaces and be savvy as to the design opportunities presented by digital. Beyond creating aesthetically appealing interfaces, the head of design must also ensure their user friendliness.

“To create visionary products, it is essential to work closely aligned with the board of management and have a direct exchange of ideas with all its members at eye level.”

Gorden Wagener, Chief Design Officer, Daimler AG
2. Enabling the business

- The design organization is responsible for all touch points with the brand and attends to the customer experience along the entire customer journey and over the whole product life cycle.

- Design is expected to integrate all aspects of marketing, retailing, engineering, manufacturing, and purchasing, by drawing on expertise from across multiple customer experience layers.16

- What it means for the chief designer:
  – The chief designer is in charge of combining all inputs into a holistic brand concept and translating it into a consistent customer experience in a distinctive fashion.
  – The chief designer must excel in consumer centricity. The consumer’s mobility needs are the energizing core of the development process and will guide each aspect of the consumer’s brand experience.
  – The chief designer must ensure that the work of all departments supports the design vision consistently.
  – He or she must possess powers of persuasion so that the design vision is embraced across all internal boundaries.

3. Designing the business

- This design mandate applies design principles to the company itself. In an industry defined by convergence and characterized by complexity and uncertainty, it is important to design an organization that is sufficiently agile and adaptable to participate in the mobility economy, whatever shape it may come to take. At the same time, the organization must have a clear corporate identity and focus and must not be lured into sporadic, disconnected, and low-value innovation attempts.

- The key is rapid prototyping and tolerance for failure, which will be culturally challenging for the extremely fine-tuned automotive industry.

- What it means for the CDO:
  – The CDO’s overriding charge is to convey to the company an understanding of the customer’s needs – current and future – and to chart a way for the company to sustainably and profitably meet those needs.
  – In so doing, the CDO will raise the bar for depth and rigor of customer research. In addition to surveys and physical use-case simulations, the CDO will also apply anthropological, sociological, and psychological research. With those inputs, the CDO will guide the design process and rapidly fine-tune business models that leverage the company’s strengths. The CDO will also propose partnerships of complementary value to ensure a triple win for the customer, the company and the partner.
  – The CDO will take an independent (out-of-the-box) approach to conceptualizing solutions and will demonstrate agility in connecting the dots within complex and dynamic situations, to offer coherent solutions beyond the company’s conventional categories of products and services.
  – The CDO will have strong culture-change capabilities and sufficient gravitas to hold his or her ground when dealing with established industry executives. The CDO must also possess a confidence-inspiring style so he or she can successfully catalyze the organization’s transformation in preparation for its radical journey.

Assessing where your organization is on the design journey

We have explored the complex, interrelated factors that determine where an organization is on its design journey and how ready it is to seize opportunities in the emerging mobility market. A cursory evaluation of the company’s capabilities in relation to its view of design’s role reveals that most companies have weaknesses when it comes to establishing a mobility vision, implementing design thinking, and utilizing it for the highest possible value-add.

What the company offers

- Create an object or solution people need, then make it look nice
  - Stunning must-have cars
- Create a beautiful item or experience and then create demand for it
  - Great driving/riding experience
- Understand the mobility needs, develop the mobility solution and design an organization to deliver it
  - Solutions for mobility needs

How design is structured within the company

- Design as afterthought
  - Separated
- Design as isolated center of excellence
  - Peripheral
- Design as integrated and pervasive capability
  - Strategic

The company’s design mandate

- Beautify products and solutions to create appeal
  - Supporting business
- Ensure consistent customer experience across all touch points
  - Enabling business
- Direct the creation and delivery of all offerings according to insight into root causes of customer needs/wants
  - Designing Business
Differentiators of the future chief design officer

Many design leaders will be eager to be part of a fast-transforming industry and to participate in developing mobility solutions for the future. However, the challenges are not to be underestimated: they include continuously evolving regulatory restrictions, the scale and complexity of the car as a product, the multiplicity of markets and market preferences that come into play, and much more.

“The complexity of the automotive industry and the mission-critical nature of the mobility solution will represent uncharted terrain for most highly-regarded design leaders in the market today.”

Paolo Malabuyo, Design Director, Netflix

The challenges are compounded by the characteristics of automotive executives: a Russell Reynolds study shows that as a whole, automotive executives are perfectionists who abide by established processes, value deep expertise, focus on specific systems or functions, and thrive on incremental innovation. These qualifications remain essential for scaling business, yet they are opposite to the rapid prototyping, failure-friendly, and deeply collaborative culture required in a genuinely design-driven organization.

The CDO must be able to influence a deeply entrenched culture and usher in change across all segments of the organization, however modest or radical the proposed design mandate may be.

WHAT IT TAKES: THE UNIQUE CAPABILITIES OF THE CHIEF DESIGN OFFICER

Radical innovation to answer fundamental consumer needs
The best leaders refrain from jumping to “car” as the answer to consumers’ mobility needs; they look beyond what consumers ask for to what lies at the heart of consumers’ needs and design a mobility solution around that.

Appealing and distinctive identity and solutions
This consists of two parts: a grasp of presiding and evolving trends and intimate knowledge of and ability to express the company’s distinctive identity, both its design and the solutions it offers.

Culture-change capabilities
The ability not just to identify what the game-changing vision may be, but to mobilize the organization to pursue it by influencing relevant leaders and exercising visionary leadership.

In order to successfully tackle the technical and organizational as well as the cultural and behavioral challenge, incoming chief design officers will need to exhibit characteristics and skills that distinguish them from other executives:

1. CDOs understand the fundamental drivers of mobility needs

The focus is on revealing and delineating the need behind observed attitudes and behaviors. This requires CDOs to recognize the way conventions influence how a given behavior is perceived. The designer will complement rational analysis of the utility of a solution and consistency of the brand experience with insight into how the solution resonates emotionally with the target group.

“In a time when technology can do everything, form follows function isn't enough anymore. Instead, function following emotions is the key. Every situation in life is different: places, moments, time, people, responsibilities, emotions are essential. Success will be driven by an ability to create the feeling and not by the facts. Design is the tool to bring these pieces together.”

Caroline Seifert, Chief Brand and Design Officer, Jio

2. CDOs possess Olympic-class commitment and artistic vision

In conversation about the topic, Anders Warming, chief design officer of auto manufacturer Borgward Group, contrasts the work of a painter standing in front of a white canvas with the performance mandate of a competitive athlete and makes the claim that a CDO must adopt the iterative-process and singular-performance perspectives of both.

“Like an athlete, the CDO will likely be defined by the continuous training and competitive platforms to develop the fitness for an ultimate design”.

Anders Warming, Chief Design Officer, Borgward Group

3. CDOs are catalysts of ideas and solutions

The chief design officer’s mandate is not to claim the largest number of great ideas, but to model prototyping discipline and genuinely encourage collaboration and cross-functional deliberation across the organization. At the same time, the CDO must encourage a degree of risk taking so the organization is willing to make an informed bet on dark horse concepts. The CDO must challenge conventional beliefs about what has worked before.

Given the complexity of the automotive industry, putting this capability into practice will require navigating an array of stakeholders across departments in the company and across partners in relevant ecosystems.

4. CDOs deliver distinctive appeal

Taste remains a crucial aspect of design: the ability to generate appealing solutions and products. Beyond the strategic and people leadership skills outlined above, the CDO must have the impeccable taste to ensure that all the components and aspects in play come together as a distinctive, appealing solution.

The chief design officer’s aesthetic judgment goes beyond simply developing products, which become outdated quickly in a fast-paced market, to developing novel solutions and ecosystems that can evolve with the times. The CDO draws inspiration from the constant change in our modern world in a way that remains true to the company’s design identity and consistently provides distinctive offerings to its customers.
What is next?

Today, already a third of OEM designers have a seat at the management table, in comparison with 83 percent of R&D/engineering leaders, 44 percent of sales and marketing leaders and 39 percent of quality leaders.\textsuperscript{18}

We predict that by 2020 design thinking will be more widely regarded as a strategic capability, at which point 60 percent of leading OEMs will have a chief design officer on their management boards. Automotive companies will need to look at the entire design universe to find the best CDO talent, and we predict these appointments will largely come from the technology and consumer sectors.

We can expect to see collaborative ventures between automotive groups and design houses and/or a variety of consumer-facing industries to deliver integrated and differentiated solutions to customers.

The design-thinking transformation will not happen overnight, but we expect it to lead the way into the emerging market for mobility. Chief design officers will have an important role in this transformation and will make essential contributions to the success of the company in the new mobility era.

\textsuperscript{18}Russell Reynolds Associates research into functional representation at the executive management level among top carmakers, 2017. Sample includes 20 carmakers selected based on a combination of total revenues and market share in the passenger car and LCV segments. Sample constituents are as follows: BMW AG, Daimler AG, Fiat Chrysler Automobiles, Ford Motor Company, Fuji Heavy Industries, Geely Automobile Holdings, General Motors, Honda Motor Co, Hyundai Motor Company, Jaguar Land Rover, Mazda Motor Corporation, Mitsubishi Motors Corporation, PSA Peugeot Citroen, Groupe Renault, Nissan, SAIC Motor Corporation, Suzuki Motor Corporation, Tata Motors, Toyota Motor Corporation, and Volkswagen AG.
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