



McKinsey Quarterly

# Ford's evolving sense of self: An interview with Hau Thai-Tang

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The company's global head of product development and purchasing explains today's radical changes and how Ford can tap into its 115-year legacy to win in the century ahead.

**I**n 2005, Ford Motor Company's Hau Thai-Tang led a redesign of the Ford Mustang. This effort, aimed at refining one of the icons of the American road, was buzzworthy: it suggested an understanding by Thai-Tang and his team of what separates a great car from a good one, as well as an ability to go beyond giving customers what they wanted to surprising them with things they didn't know they needed.

It wasn't the first time Thai-Tang and his colleagues proved adept at reading the road ahead. Since joining Ford as a trainee, in 1988, fresh out of Carnegie Mellon, Thai-Tang has played an important role in Ford's mission—to make cars “fast, fun, and affordable”—overseeing, in various capacities, elements of both product development and purchasing for Ford's cars, trucks, SUVs, and crossover vehicles, not to mention serving as a race engineer for the company's 1993 Newman–Haas IndyCar team, which claimed six victories, 11 podium finishes, and overall driver's and manufacturer's championships.

Today's epic shifts in the emerging mobility ecosystem now put Thai-Tang's three decades of experience to the test: Can he help Ford reenvision the very idea of what a car is and might become? As Ford's global head of product development and purchasing, Thai-Tang is at the forefront of the company's efforts to make sense of connectivity, autonomy, electrification, sharing, and other shifts in technology and consumer behavior. McKinsey's David Schwartz spoke with him recently to hear what all this means for Ford, its products, and its understanding of itself as a company.

**The Quarterly:** When you think about 2018 versus 1988, what's changed?

**Hau Thai-Tang:** This industry has seen more changes in the past decade than perhaps in the prior hundred years. That's due to a combination of things. One is ubiquitous connectivity and the internet, which changed how people procure, consume, and enjoy goods and services. Electrification is another major change. For the past century, the ability to master the internal-combustion engine has been a huge barrier to entry for the automotive business. Now, anybody can buy a motor, match it with a battery, and become an automotive manufacturer. Advances in technology, such as autonomy, are also a huge disruptor for the way drivers interact with the vehicle and what their expectations are. Sharing and contextual ownership are important changes as well.

But it's the combination of all these things—connectivity, autonomy, electrification, and sharing—that has really changed the business landscape. It forces us to step back and rethink our value proposition as a company. And in the next ten years, the pace of change will accelerate even more.

**The Quarterly:** Are your customers changing as well?

**Hau Thai-Tang:** What's great about our industry—and what attracted me and many of my peers into the auto business—is the diversity of our products and the way our customers perceive them. We have customers that look at vehicles as something that's very much an appliance: “Get me from point A to point B in the most efficient, reliable, safest, and

lowest-cost way.” And then we have the other end of the spectrum, where vehicles become almost a mythical self-expression of who you are. Some customers have the Mustang pony tattooed on their biceps. And we have customers that fall everywhere in between.

For many years, we tended to think of it as a bell curve—you aim for the middle. But now, it's becoming almost bipolar, and the two ends are going to continue to grow. If you and I just want to get to the airport, a ridesharing model is very appropriate, and that becomes commoditized. You don't really care what vehicle brand shows up to pick you up, as long as it's safe and reliable and predictable. But there are still times when you're going out on the town and you want that car to be a representation of you, of who you are as a person. We really have to look at both ends. And you have to do that under conditions where advances in technology occur at a pace like Moore's law: massive and rapid improvements in performance, and cost reductions.

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— Hau Thai-Tang

**The Quarterly:** How does change on that scale affect your conception of what a car should be and how it should be put together?

**Hau Thai-Tang:** These disruptive forces are forcing us to step back and rethink our value chain, our business model, and our reason for being. Historically, we've started with the product, and our definition of product excellence has been grounded in traditional attributes like styling, vehicle dynamics, fun to drive, fuel efficiency, safety, reliability, and quality. Those things are now becoming the ticket to entry. You take something like exterior styling, which we used to think of as being brand unique. It can be commoditized. A lot of the start-up OEMs are purchasing great designs either by hiring designers from established OEMs or by outsourcing them to design houses in Italy, like Pininfarina.

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So we're trying to focus beyond just the product to ask how we leverage technology to deliver enhanced services and value to the customer. We've coined it “smart vehicles in a smart world.” Once vehicles become connected to the Internet of Things, a much broader array of services opens up that we can couple with an outstanding product to enhance value to customers. That's going to create incremental value and profit streams beyond just the initial transaction point of purchase.

And that context forces you to think about the make-buy strategy. What should we be doing ourselves? What should we be outsourcing? Is it brand differentiating? Is it an area where we think we can deliver better value than the supply base? It's really forcing us to go back and think through our relationship with our supplier partners.

**The Quarterly:** That can be challenging for an established company.

Video

### **The innovator's dilemma at Ford**

**Hau Thai-Tang:** Being a company that's been around for 115-plus years has its advantages, but there are potential pitfalls as well. We have a wonderful brand that's recognized globally. Ford has been international almost from the beginning, and in many of those markets they view Ford as a national company. I joke with my British colleagues that they think Henry Ford was a Brit. So that's a huge advantage that we have. Along with that long-standing positive brand halo comes trust. Trust with the consumers is going to be increasingly important as you talk about things like autonomous technology and data privacy. We have a wonderful global franchise dealership network and model.

So those are all things that we can leverage. The potential downside is that we have this business model that has been around for 115 years, and it's going to be disrupted. And we have to be able to challenge our own paradigms and disrupt ourselves. We know about the innovator's dilemma. It's hard to disrupt yourself. If you're a start-up OEM building your own car company from scratch, it's like building a new home: you just put in a smart electrical system. But we have a hundred-year-old home that we're trying to update while we live in it. And that's always the challenge of innovation for the incumbent.

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**The Quarterly:** No doubt the challenge extends to your employees as well.

**Hau Thai-Tang:** Yes, it’s also a challenge for our workforce. Clearly, we see a shift in terms of skill set. Part of it is hard skills: needing to develop the same level of expertise with battery electric vehicles that we have with the internal-combustion engine, for example. But more important is the shift in soft skills: becoming much more agile, learning to work differently, being able to anticipate how the market will change, to take calculated risks, all while maintaining what we do well—executing and being able to scale up efficiently. That’s really the tension that we have to manage.

**The Quarterly:** Let’s go back to the technology for a moment. You mentioned connectivity earlier. Is connectivity differentiating or is it just table stakes—“cupholders 3.0,” so to speak?

**Hau Thai-Tang:** Ford was a leader in connected radio with our first-generation SYNC system. When we first launched it, it was a surprise and delight for customers. Now, pretty much every carmaker has something like it. Most OEMs offer Android Auto or Apple CarPlay for you to integrate your smartphone into the vehicles. The nature of our business is that everything eventually gets commoditized. The key is to constantly innovate so that you don’t become commoditized. For example, how do we manage mobile payments? How do we manage and optimize demand flows and traffic patterns and utilization? How do we manage a fleet of vehicles? We’re building those competencies, and more.

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When a car is connected through a smart electrical architecture, you have the ability to do over-the-air updates. For the last century, when you buy the car, it starts depreciating as soon as you drive off the dealer lot. If I can now provide you enhanced services and upgrades over the air, you may be able to change the paradigm. You certainly can slow down the rate of depreciation. You may even be able to enhance the value of the vehicle.

**The Quarterly:** As cars become more autonomous, it’s easy to see them being faster, since they can move closer together. And perhaps they’ll become more affordable. But will it still be fun to drive in an autonomous vehicle?

**Hau Thai-Tang:** I’m a huge car enthusiast. I love driving. It brings me a lot of joy. That ability to control a car at the limit is magical. But there are a lot of elements of my day-to-day driving where it’s a chore. My daily commute in rush-hour traffic is a chore. If I can delegate that task to a robot, then I can do more meaningful, value-added things. Instead of being stuck in rush-hour traffic, maybe I’m reading a book; maybe I’m having a FaceTime discussion with my daughter, who’s in college. That could give me more satisfaction. And in that context, yes, autonomous cars would be fun.

Video

### **Autonomous driving: More access—and fun—for all**

But the majority of the time, you will still want to drive the vehicle, either for enjoyment or because it’s just the most efficient way. So autonomy is not going to completely cannibalize the driver–machine interface.

**The Quarterly:** What about electrification? Will massive change still happen if cars remain powered by internal-combustion engines?

**Hau Thai-Tang:** Yes. Uber, Lyft, Ola, and DiDi have disrupted business models, for the most part, with internal-combustion vehicles. Nor is connectivity dependent on electrification. You can have vehicle-to-vehicle communication and vehicle-to-infrastructure communication independent of the propulsion-solution choices. And AVs are the same—most of the autonomous vehicles being tested today and prototyped are not battery electric vehicles. They're internal-combustion vehicles.

The one wild card is how you deploy these vehicles into the market, and certainly into congested city centers. That may be legislated by governments to drive zero-emission solutions. So while you can progress those other advances independent of the propulsion system, you may not be able to in terms of the regulatory go-to-market strategy. When I look at AVs, connectivity, and ridesharing, the primary force in function is a pull from the market. Electrification is a combination of push and pull.

**The Quarterly:** In a pull industry, is there a limit to how far consumers can be pushed?

**Hau Thai-Tang:** Part of this is also consumer education—for example, range anxiety.<sup>[1]</sup> Ask potential buyers of battery electric vehicles, and they'll say, "I want 300 miles of range." That's mostly because of what they're used to with their internal-combustion cars. What they don't realize is that with battery-powered vehicles, the paradigm is different. You can plug in your car at night and top it off during the day. I joke that smartphone manufacturers *could* make a phone that lasts for a week if they wanted to. We just wouldn't like to carry it around, because it would be a lot thicker. So they figured out what the sweet spot is: something that gets you through the day that you can plug into your nightstand at night and top off during the day after that. Consumers learned.

Video

## Making electric vehicles mainstream

There's another factor to consider about consumer perceptions: charging infrastructure. When Henry Ford invented the Model T, there wasn't an infrastructure of gas stations, but that wasn't perceived as a constraint. Back then, the first Model T had a driving range that was probably better than your horse. Today, however, battery electric vehicles don't have a better driving range than an internal-combustion engine, which is the prevalent solution in the marketplace. Electric versus internal combustion is a little bit different than the car over the horse.

**The Quarterly:** The Model T is a fascinating analogy, and one we're quite struck by. The Model T changed the world, and yet so much of that was outside of any carmaker's control. Gas stations, parking lots . . .

**Hau Thai-Tang:** . . . road systems . . .

**The Quarterly:** . . . car washes, mechanics. And that's just to start. As we go forward, will OEMs have more opportunities to help influence how the new mobility ecosystem develops?

**Hau Thai-Tang:** One of the things that really excites us with these disruptive forces and changes in technology is the role that we can play, in partnership with governments and cities, to change the world and make it better. We don't look at this as just a shift of propulsion systems or building better cars. We can actually redesign cities and landscapes.

I'll give you an example. Think about gas stations today. They typically occupy prime real-estate locations. They're on the corners of major intersections and thoroughfares. If you had a battery electric vehicle, and you no longer need to go to a fuel station as frequently because you can top off at home or at work—and if you couple that with autonomy and a vehicle that can actually go, by itself, to charge up while you're doing something else—you probably wouldn't need gas stations in those prime locations. You could repurpose that space.

If we had better traffic management and more accessible mobility, we would probably need fewer lanes for cars. You could repurpose that space to make cities more livable, so we clearly see huge opportunities for us to rethink our value add as a company, not just by selling products and services, but by partnering with cities to create a better environment for people.

**The Quarterly:** How else could your approach to partnerships change? Can any OEM afford to play across all dimensions when so many technologies are involved and so many elements of the technologies are changing so rapidly? That seems like an expensive proposition.

**“Think about gas stations today. They typically occupy prime real-estate locations—you could repurpose that space.”**

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**Hau Thai-Tang:** To not only meet these challenges but also to capitalize on the opportunities of these disruptive forces is going to require resources, whether that's financial capital or human capital. You need to make choices. And you're going to require a strategy about where to play, how to win, and whether or not you have the capabilities to win. We're prioritizing around the shift from internal-combustion engines to electrification in the near term, autonomous-vehicle technology, connectivity, and mobility solutions. When elements within those bins are not brand differentiating, it makes a lot of sense for us to look at alliances. And where we see opportunities that are enabled by technology that can be brand differentiating, we look at how we can move quickly. In some cases, we think we can do it organically. In other cases, we may have to invest in a company or create a partnership.

For example, we know we need to enhance our software capabilities. One of the things we did to meet that need was an agreement with BlackBerry, where we hired 400 of its employees as it shifted out of the traditional handset business. That's been a huge injection of software talent into Ford. Another example is virtual driving. We knew that to really accelerate this, we had to tap into new talent, so we funded a new company called Argo AI, led by two of the key partners in this space, one coming from Uber and another coming from Waymo. It's helping us accelerate our work around autonomy.

**The Quarterly:** Can carmakers continue to differentiate themselves in a world where mobility is autonomous, connected, and available with the swipe of a mobile device? Should their objective be to provide better products or better services?

**Hau Thai-Tang:** The objective should be to deliver better solutions. Solutions are a combination of products and services. And we firmly believe that we can be differentiated. We want to couple our 115-year legacy, the strong Ford brand, and the trust that we've engendered with our consumers all around the world with outstanding products and wonderful services. If we do that well, we will differentiate ourselves in the marketplace.

**How relevant and useful is this article for you?**

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1. The concern that a battery-powered vehicle may run out of power before a driver can reach the next charging point.

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#### ABOUT THE AUTHOR(S)

**Hau Thai-Tang** is the executive vice president of product development and purchasing at Ford Motor Company. This interview was conducted by **David Schwartz**, a member of McKinsey Publishing, who is based in McKinsey's Stamford office.

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