

Dialogue, Debate, and Discussion

Forum on Tesla and the Global Automotive Industry

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China, the world's largest market for electric vehicles (EV), has put in play a state industrial policy that is seeking to upend global automakers (see *Financial Times*, October 12, 2017 and May 20, 2018). Exemptions from taxes and subsidy programs have favored the purchasing of an EV, which are also exempt from driving restrictions in large cities such as Beijing and Shanghai. Policies that target manufacturers include meeting production targets for EVs (the so-called dual-credit policy by the Ministry of Industry and Information Technology). China may be on the verge of becoming a global disruptor in an industry that has home market advantages of scale, lower fossil fuel imports, and significant reduction of air pollution in cities while exploiting related technologies such as lithium batteries where China has world class industrial competence. It is in China's national interest to be a game changer in the global automotive industry from fossil fuel to electricity. And building infrastructure – supercharging stations included – fits the government-directed approach that aspires to establish the country as an undisputable global leader in a high-tech sector of global significance.

Amidst this background, it is interesting to consider the implications of success or failure of Tesla, the California-based electronic car pioneer. The discussion found its beginning in the suggestion of Johann Peter Murmann to discuss Tesla as a case that challenges the automotive incumbents' hold on car manufacturing in electronic vehicles. The perspective of Greg Perkins and Johann Peter Murmann is the opening shot. And if Tesla, hailing from Silicon Valley, could break in, why not other well-funded (Internet) companies with strong digital capabilities in the US and China alike? John Paul MacDuffie provides a contest to this thesis based on his prior work (Jacobides, MacDuffie, & Tae, 2016; MacDuffie, 2013).

The Forum has produced an evocative exchange that may have implications beyond the success or failure of Tesla, electronic vehicles, and global car manufacturing. The debate can be seen from the perspective of assessing the limits to entrepreneurship – even as powerful as that of Elon Musk, the Tesla

founder; the boundedness of executive attention in countering new entrants in a rapidly changing industry; and the emergence of China as a disruptive competitor. David Teece in his overall commentary on the debate, discusses whether the incumbents are able to counter the disruptors and engage in competitive counter attacks on multiple fronts, not merely with Tesla but also with Chinese companies aggressively entering the automotive EV sector as described by Hong Jian and Feng Lu. The debate as it stands offers some interesting research questions beyond the automotive industry.

WHAT IS TESLA A CASE OF?

In this debate Tesla is positioned as a refutation of the argument that incumbents with their deep system integrator capabilities prevent significant value migration. At play are also China's national aspirations and state industrial policies that may add leverage to newcomers beyond Tesla. The Tesla challenge remains open as the discussants point to the company's difficulties in mastering mass manufacturing even if its significance as a luxury car manufacturer that has changed some of the basis of competition in electronic cars is admitted. It appears, as Teece points out, that Tesla falls short of ordinary capabilities in mass manufacturing even when it is effectively challenging the dynamic capabilities of incumbent companies!

This then suggests the question of entrepreneurial power together with its limits. Perhaps Tesla manages to change the basis of competition without ever succeeding in mass manufacturing. By making customer experience a key quality, as Jian and Lu suggest, Tesla may contribute to making the car a vehicle for enhanced personal mobility. The "ultimate driving machine" may become the artificial intelligence-enhanced, high-touch living and working design. Tesla may end up as a case of entrepreneurial disruption without ever challenging the incumbents directly on their scale business of mass manufacturing, opening up the way for other entrants. China, however, is using its very scale as a competitive leverage. The market penetration of EVs in China is still small (1.4% of the light vehicle market) but growing rapidly (70% in 2016) (according to McKinsey & Co, 2017).

The Dilemma Facing Incumbent Manufacturers

It is likely that incumbent manufacturers, already invested in emergent capabilities in the car industry, with their significant resources, can counter the competitive threats if picked one by one over time. However, the incumbents may run into the inherent limits of managerial attention when surrounded by disruptive competitors on all sides. Not only do incumbent car firms compete in traditional internal combustion engine-markets but also increasingly in hybrid and electronic vehicles. Not only do they have to pay attention to the further development of system integrator capabilities, they need to learn new digital capabilities fast, including autonomous driving. Ocasio (e.g., 1997, 2011) advanced the attention-based view

of the firm, suggesting limited channels for communications (Joseph & Ocasio, 2012). Laamanen and Wallin (2009) studied the linkages between managerial attention and capability development and found that companies differ in their capability development paths depending on management's focus of attention and sense making of the environment. Managerial attention tends to be prioritized consequentially, which may not give incumbents sufficient time to effectively tackle the near-simultaneity of competitive changes. It is thus likely that the incumbents' key issue in the Tesla-inspired competition is the ability to manage executive attention on multiple fronts simultaneously. Sense making of the ambiguity, underlined important in coping with uncertainty, may become its own entrapment.

The Chinese Challenge

Jian and Lu suggest there might be new 'species' of disruptive competitors emerging in a newly shaped EV industry that represent novel kinds of capability constellations. These competitor ecosystems may become the new value integrators where patterns of value capture are yet to be settled. Something can already be learned from vanguard companies such as Tesla which has been able to drive value with its brand yet is struggling to make it alone, and NIO, a Chinese EV startup with strategic investors that at least initially has outsourced manufacturing to a traditional car manufacturer JAC. Perhaps a new competitive front is already underway involving autonomous, self-driving car-trouble-free lifestyle, rather than emphasizing electricity as a preferable alternative to fossil fuel.

The Forum invites research and discussion on entrepreneurial disruptors that may shift entire competitive landscapes. Such disruptors are also constrained in their ability to deliver on the promise and vision, no matter how formidable the entrepreneur. Nevertheless, their multiplicity may have significant aggregate effects that incumbents will be hard pressed to counter. Incumbents are further challenged by the industrial policy and strategic aspirations of China in dominating the global EV industry. The global automotive industry is on a path-breaker test case of entrepreneurship, state direction, and incumbents' dynamic capabilities in transformation.

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