



Institute of  
Innovation and  
Entrepreneurship



## Reshaping Vehicle and Mobility Ecosystems: Mapping the terrain for strategists, regulators and academics

**November 14 & 15, 2017:** Invitation-only workshop organized  
by the **London Business School**

Supported by LBS' Institute of Innovation & Entrepreneurship and Higher Education Investment Fund  
and the Program for Vehicle and Mobility Innovation (PVMI),  
Mack Institute for Innovation Management, Wharton School, University of Pennsylvania

The transformation of the mobility sector -- encompassing not only the automotive sector (incumbent OEMs; Tesla) and new entrants from the technology sector, e.g. Google's Waymo but also the providers of mobility services, e.g. Uber, Lyft, Didi, Zipcar, car2go, blablacar -- has captured the attention of established incumbents, aspiring entrepreneurs, analysts/consultants, policy makers and activists. After a long period of stability, the automotive sector, and, perhaps more important, the broader ecosystem where this sector is embedded, is going through a period of rapid and drastic change. The confluence of new technologies (autonomous driving, electric cars, connectivity within and across vehicles and with the cloud), new business models (usage-based "mobility-as-a-service" as opposed to leasing and full ownership), and the evolution of societal needs has caused considerable ferment and excitement for mobility "ecosystems".

This excitement has led to a vast outpouring of venture capital and R&D investment by the private sector, partly motivated by staggering valuations of new ventures such as Tesla and Uber, and leading to new entries virtually by the day. In response, governments are considering their strategies in providing complementary infrastructure to advance public policy goals for mobility (including more safety, fewer accidents and deaths, less congestion, and reduced pollution) while reconsidering virtually all aspects of how vehicle testing/validation, ownership and use are regulated. It has also led to an increased appreciation of the significance of mobility experiences as sources of value at the intersection with other sectors, from healthcare to food delivery.

Yet this unusual era of ferment has, so far, provided with more excitement (and, at times, hype) than understanding. This places us in a unique time, where a structured collaboration between engaged academics and practitioners could yield fruits for all involved. From the practitioner side, we will aim to move beyond the excitement of the buzz of the current moment and provide a framework on how to think about the complex web of interrelated changes. These discussions will help elucidate the changing boundaries and structures of sectors; emergence and operation of ecosystems in interrelated segments; the structure of business models in quickly shifting environments; the current patterns of value creation, migration, and appropriation.

A better, deeper mapping of this complicated set of changes that combines a view on strategic repositioning, regulatory changes and the engagement of civic society (including concerned activists) can yield a clearer narrative to communicate to all these actors. This narrative, in turn, can help provide a basis for dialogue that can advance progress on common goals and support needed debate where interests diverge. Finally, this workshop will help separating the substance from the hype on "ecosystems," as applied to mobility. We are pleased to be bringing together an international set of participants with a wide range of perspectives for what we anticipate will be a most stimulating two days.

# Reshaping Vehicle and Mobility Ecosystems:

## Mapping the terrain for strategists, regulators and academics

FINAL DRAFT AGENDA (v. 4.7, 13 November)

### Tuesday, November 14: Mapping the Terrain for Vehicle and Mobility Ecosystems

**Session 1:** **Introduction to the Workshop: From Retrospect to Prospect and the role of Ecosystems**  
**9:30-10:00** Michael G Jacobides, *LBS* (and John Paul MacDuffie, *Wharton/PVMI*)

In this introductory session, we will consider how the automotive sector changed, how it has resisted change, and how value migrated (or not) as a result. We highlight the role of structure- a key consideration that will shape the sector's future. We then move to prospect, articulating recent changes, such as broadening up of the sector to encompass mobility. We also highlight way in which new services and technologies are starting to form ecosystems, so as to motivate the workshop and outline our approach.

**Session 2:** **Why Is Mobility the Big New Ecosystem?**  
**10:00-11:15** Juergen Rees, *Accenture*; Alex MacKenzie-Torres, *Toyota Research Institute*; Martin Bruncko, *Steam Capital*; facilitated by JP MacDuffie, *Wharton*.

François Ortalo-Magné, Dean, *LBS*, brief welcome

After a brief welcome by our Dean, our opening panel explores what lies behind the recent upsurge of excitement with mobility. Why such excitement and funding galore? Which are the unmet customer needs that make mobility so special? What are the underlying enabling technologies both within and outside the world of vehicles propelling such optimism? Is it vehicle technology advances, new smartphone-enabled business models, fundamental price/performance improvements, environmental and social push, or just investors seeking the next unicorn? Where are the boundaries between hype and reality?

**Coffee Break**  
**11:15-11:45**

**Session 3:** **One or Multiple Mobility Ecosystems? What will the Mobility Ecosystem Strategic Dynamics look like and why?**  
**11:45-13:00** Nikolaus Lang, *BCG*; Jörg Lamparter, *Daimler*; Philippe Colpron, *Wabco*; Alessandro di Fiore, *ECSi*; facilitated by MG Jacobides, *LBS*.

This session will start with some framing of the issue, based on recent research on ecosystems. We will then consider the potential shape and structure of the future mobility ecosystem: Will it be dominated by a few large players, and if so, where? Do we think there are network externalities or customer stickiness which will empower the dominant players in each part of the value chain? Are the assumptions behind the stratospheric valuations of firms like Uber reasonable? What do we expect the strategic dynamics of the sector be like, within the narrow production value chain and in the broader mobility ecosystem?

**Lunch:** *Discussion Tables (Topics to match morning session themes- see attached list and instructions on table allocations)*. Facilitators: MG Jacobides, *LBS*; JP MacDuffie, *Wharton*; M Sako, *Oxford*; C Fine, *MIT*; F. Veloso, *Imperial*; V. Atluri, *McKinsey & Co* (TBC)  
**13:00-14:15**

**Post-lunch Debrief:** Group feedback on lunch conversation, plenary discussion, and next steps for research  
**14:15-14:45**

**Session 4: Who Will Orchestrate Vehicle & Mobility Ecosystem(s)?  
14:45-16:00 Tech vs. Auto vs. Coalitions**

Kevin Reynolds, *Ford*; Hubert Lalanne, *IBM*; Elisa Balestra, *GSMA*; Nick Reed, *Bosch*; facilitated by David Keith, *MIT*.

We are now starting to understand some of the coordination challenges in terms of vehicles, autonomous and electrical driving infrastructure, but also communication and the host of other complementary services. This panel will consider both what are the main issues at hand, and, more to the point, what will be the organizational structures that will dominate. Will collaborative solutions be subsumed by large, vertical integrated (even if new-age) automobile OEMs? Will the leadership of orchestration shift from OEM to innovative suppliers? Will technology firms or other specialized participants take the lead? Who will drive software development in cars? How will this drive sector dynamics? What will we see in different national contexts, e.g. China where governments (central, regional, city) are likely to play a direct orchestrating role?

**Coffee Break:  
16:00-16:30**

**Session 5: Who Will Shape (and Contest the Shape of) Vehicle & Mobility Ecosystems?  
16:30-17:45 Central Governments vs. Cities vs. Civil Society vs. Corporate Coalitions**

Iain Forbes, *Centre for Connected & Autonomous Vehicles*; Charles Fine *MIT/ASB*; Michael Hurwitz, *Transport for London*; Eric Thun, *Oxford*; facilitated by Francesco Zirpoli, *University of Venice*

How will these new ecosystems be governed? We will start by considering the long-term adaptation of the automotive sector to the new dynamics of mobility, focusing in particular on how the sector may be governed. The panel will delve further into the systemic challenges we face, with different actors focusing on different objectives. Firms (or industry groups) would want to create bottlenecks to capture value and/or improve their plight. Central governments want to stimulate value creation, prevent undue dominance and improve the environmental footprint. Cities want to gain an edge improving transport overall, stimulate innovation, and equalize access. How will these pressures combine as we see ecosystem dynamics unfold? Who will be calling the shots and what will be the shape of ecosystem governance to come?

**Day Wrap-up: Michael G Jacobides, *LBS* and John Paul MacDuffie, *Wharton*.  
17:45-18:15**

**Trip Routemaster Bus to Reform Club  
18:20-18:40** An opportunity to experience a 1950's double-deck Routemaster en route to Pall Mall

**Drinks: Reform Club, 104 Pall Mall  
18:45**

**Dinner: 19:15** The Reform Club ([www.reformclub.com](http://www.reformclub.com)) is one of the most architecturally impressive of the London's private membership Clubs founded by the supporters of constitutional reform in the 1830's. This is the place where, in the early days of excitement with mobility, *Jules Verne's* Phileas Fogg, a fictional member, set the bet for the trip around the world in 80 days. Actual members include Henry James, H.G. Wells, Arthur Conan Doyle, William Beveridge, Kiri Te Kanawa, Camilla Parker-Bowles and Richard Attenborough. True to form, gentlemen will be required to wear jacket and tie, and ladies equivalent business attire.

## Wednesday, November 15: Strategy and Policy Challenges in Shaping Mobility Ecosystems

**8:00-8:30**      **Breakfast**

**Session 1:**      **Introduction to Workshop Themes** (review of Day 1; agenda for Day 2)  
**8:30-9:00**      John Paul MacDuffie, *Wharton* and Michael G Jacobides, *LBS*

This session will introduce the challenges that a diverse set of automotive and mobility participants need to tackle, and also consider the implications of different ways that they can coalesce as they try to do so. It will also introduce the work of the PVMI (and IMVP).

**Session 2:**      **Getting the customer needs right and managing pilots in ecosystems**  
**9:00-10:15**      Virginie Boutueil, *Sustainable Mobility Institute, Renault-ParisTech*; Alex MacKenzie-Torres, *Toyota Research Institute*; David Wong, *SMMT*; facilitated by JP MacDuffie, *Wharton*.

Given the changes in the sector, consumers have much more choice, and thus power, than they've ever had. A key challenge, made harder by the partly decentralized nature of the mobility ecosystem, is the need to understand what customers need (and who customers are), drawing on the ever-increasing opportunities offered by technology. How can firms who participate in such ecosystems, whether on the B2B or B2C side, "get the customer" and what are their greatest challenges in terms of insight, data, and understanding the revealed (mobility) preferences? How can they best structure pilots, trials, test runs to generate new experiences, or negotiate for access to Big Data, given the emerging customer landscape? What tools and techniques can help and what holds promise?

**Coffee break:**  
**10:15-10:45**

**Session 3:**      **(City) State as Laboratory: Setting Up Social & Economic Mobility Experiments**  
**10:45-12:00**      Lisa Fütting, *Audi*; Neil Fulton, *Transport Catapult*; Andreas Mai, *Keolis NA*; facilitated by Mari Sako, *Oxford*.

Given the standards issues covered in the previous panel, the question becomes: How should we select them? First, at the level of a country, should there be mandate, a tolerance or support for many (if inconsistent) flowers to bloom? When should there be exceptions? How can we encourage experimentation? Moving a level up, how can we manage the international tensions from different systems? Moving a level down, what can we learn from the significant experimentation from the level of the cities, such as the one in Boston that BCG orchestrated, alongside the WEF? How do smaller cities such as Milton Keynes try to experiment? Should we encourage that, or would we benefit from shifting towards a stronger central body (FAA - universal OS); market-based dominant players (Android -open source) or consortia (eg GSM)?

**Session 4:**      **Getting from here to there: Dealing with organizational history & luggage**  
**12:05-13:00**      Kevin Reynolds, *Ford*, Christophe Pinau and Brigitte Courtehoux, *PSA*, and Mark Platshon, *Icebreaker Ventures*, facilitated by MG Jacobides, *LBS*.

This session we will leverage our participants' insights, considering the strategic and organizational issues in changing ecosystem position, whether as a large company trying to adjust, or as a focused entrant trying to get a foothold in the mobility ecosystem.

**Lunch:**      *Discussion Tables (Topics to match morning session themes- see attached list and instructions on table allocations)*. Facilitators: MG Jacobides, *LBS*; JP MacDuffie, *Wharton*; M Stevens, *Erasmus*; F Zirpoli *U Venice*, M Holweg, *Oxford*.

**Post-lunch Debrief:**  
**14:15-14:30** Group feedback on lunch conversation, plenary discussion, and next steps for research

**Session 5:**  
**14:30-15:45** **Managing scope: How deep, how broad? Organic or via M&A and alliances?**  
Mark Platshon, *Icebreaker Ventures*; Charles Fine, *MIT/ASB*; Max Warburton, *Sanford Bernstein*; Christophe Pinau and Brigitte Courtehoux, *PSA* (via video) facilitated by MG Jacobides, *LBS*.

The discussions on the evolution of ecosystems overall may provide the context for the “map” where firms will move. But, how do they *manage the process*? First, what determines the choice of going wide (broadening offerings, such as Uber) as opposed to focusing resources in going deep to gain foothold in given markets (such as Careem, funded by Abraaj, in given geographies)? Relatedly, when should firms fight for control of a part of the value chain, and where should they concentrate their forces? Second, how should incumbents manage their process? Will models such as Tesla’s integrated organization win out, or is Ford showing the way through a mobility subsidiary? Or will they need to liaise with new ventures through a new generation corporate VC? Will M&A be a better way to adjust given the ecosystem challenges?

**Coffee break**  
**15:45-16:15**

**Session 5:**  
**16:15-17:30** **Shaping the Standards: What will (and should) be the architecture of mobility?**  
Shane Rooney, *GSMA*; Hardy Groeger, *IBM*; John Aloy, *Telefónica UK*; facilitated by Annabelle Gawer, *U. Surrey*.

In a changing ecosystem, standards become crucial weapons for dominance. Google is keen to impose OS dominance, leaving some interesting open challenges in terms of what partnering and standards approach different participants of the ecosystem will want to take. Autonomous Vehicles have a number of interoperability choices (for operating systems and connectivity protocols plus custom vs. standardized lidar, sensors, microprocessors), and while strategic control might be tempting, the imperative for integrating hardware and software so products “just work” exists. How should firms respond? What is the state of affairs and the choices wrt V2V, V2I, V2X? How will the legacy of the automobile sector design (which is closed and integral) relate to the templates of the high-tech sector (which is open and modular)? Which type of architecture will win out? What should different types of actors try to do, and what are *society’s* interests?

**Wrap-up and future agenda:** **Where do we go from here, and what research can help?**  
Michael G Jacobides, *LBS* and John Paul MacDuffie, *Wharton*.  
**17:30-18:00**

**Drinks & Nibbles at the Garden Room, LBS**  
**18:00-18:30**

**Research pitches (optional - for academics)**  
**18:30-19:15** An optional rapid-pitch session of current research projects on ecosystems and mobility. Intended for the academics in the room to share research ideas and projects.

**Dinner (optional - for academics)**  
**19:15-21:00**

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**Lunch breakout sessions and feedback in the Workshop**

**Instructions for Lunch Breakout Sessions:**

**Lunch Breakout Sessions for Tuesday, November 14:**

**Lunch Breakout Sessions for Wednesday, November 15:**

**Interaction Tools: Post-it notes for wrap-up sessions, email and website.**

As a final way of capturing your thoughts will be red and green post-its, so you can write either your unanswered questions or your new insights- which we will share at the end of the event. Also email us at [mobilityecosystem@london.edu](mailto:mobilityecosystem@london.edu) with any open question, answer or suggestions! Shortly after the conference we will have an interactive web-page with further information, resources and slides- as well as the videos of the two introductory sessions (since the remainder is under Chatham House rules.)

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## **Panelist, presenter and facilitators list**

### **Co-organizers**

Michael G Jacobides, Sir Donald Gordon Chair of Entrepreneurship & Innovation and Associate Professor of Strategy, London Business School

John Paul MacDuffie, Director, Program on Vehicle and Mobility Innovation (PVMI), Mack Institute for Innovation Management, Wharton School, University of Pennsylvania

### **Panelists/Presenters**

John Aloy, Managing Partner, Telefónica UK Limited

Elisa Balestra, GSMA

Virginie Boutueil, Deputy Director, IMD (Sustainable Mobility Institute Renault-ParisTech)

Martin Bruncko, Founder and Managing Partner, Steam Capital

Philippe Colpron, Digitization Lead, Wabco

Alessandro di Fiore, Founder and CEO, ECSi Consulting

Charles Fine, Professor, MIT and Dean, Asia School of Business

Iain Forbes, Head, Center for Connected and Autonomous Vehicles, UK Government

Neil Fulton, Head, Autonomous Vehicles, Transport Catapult

Lisa Fütting, Deputy Director, Audi Urban Solutions

Annabelle Gawer, Professor, University of Surrey

Hardy Groeger, Executive Architect Automotive Industry, IBM

Matthias Holweg, Professor, Saïd Business School

Michael Hurwitz, Transport London

David Keith, Professor, MIT Sloan School

Hubert Lalanne, Industry Lead for Automotive, IBM Europe

Jörg Lamparter, Head of Mobility Services, Daimler

Nikolaus Lang, Senior Partner and WEF Mobility Lead, BCG

Alex MacKenzie-Torres, Head of Product, Toyota Research Institute

Andreas Mai, Executive Vice President, Market Development & Innovation, Keolis NA

Mark Platshon, Partner/Founder, Icebreaker Ventures

Nick Reed, Head of Mobility R&D, Bosch

Kevin Reynolds, Director of Strategy, Ford Europe

Shane Rooney, IoT/V2x Director, GSMA

Mari Sako, Professor, Saïd Business School, Oxford University

Axel Schmidt, Global Lead, Automotive Practice, Accenture

Merieke Stevens, Professor, Rotterdam School of Management, Erasmus University

Eric Thun, Professor, Said Business School, Oxford University

Francisco Veloso, Dean, Imperial Business School

Max Warburton, Vice President, Sanford C. Bernstein

David Wong, Senior Technology and Innovation Manager, SMMT

Francesco Zirpoli, Professor, University of Venice