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EXPLORING THE BUSINESS MODEL CONCEPT – IN SEARCH FOR MARKET INNOVATIONS

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ABSTRACT

Business models have attracted a lot of interest during the last decade, in business practise as well as academia. In this paper we suggest a business model framework that enables a structured way of discovering possible routes to market innovation. The three key elements of the framework are: market offering, technology and network architecture (Mason and Spring, 2011). Market innovation is defined as *new* market offerings.

In the discussion we use generic examples of business models applied in the transport of people e.g. public transport, transport by cars and bikes either owned by their drivers or subject to other ways of access such as rental, leasing or 'pooling'. By elaborating on the elements of the business model framework and on the connections between making, selling, buying and using we suggest a way of unbundling and recombining current and new elements in the search for market innovation.

Key words: business models, technology, networks, market offerings, market innovation

INTRODUCTION

This paper has two starting points: one ‘practical’, or empirical, and one theoretical. From an empirical point of view, transport is an area wherein ‘new business models’ have been identified as a category of means to come to terms with many of the problems that result from transport (EU White book on Transport). New, more efficient and sustainable, transport services are expected to result from these new business models. Theoretically, business models are interesting to scrutinise as a concept in an industrial network setting, i.e. wherein business models are not seen as firm related but as interlinked into wider networks of interacting and interdependent actors and technologies.

The paper aims to inquire into how business models can be conceptualised to support identification of new market offerings in industrial network settings. The basic theoretical assumptions hence rely on interaction and interdependence as key ingredients in how business units, business relationships, products and facilities are related to one another (Håkansson and Waluszewski, 2002). The aim of the paper is to develop a framework of business models that can be used to identify and analyse new market offerings, or ‘market innovations’.

We have chosen to discuss business models applied in the transport of people for several reasons. First, because of its relevance since there is a strong pressure for change in order to reduce the harmful effects of traffic e.g. emissions and congestion. Therefore there is a need to develop not just new technology, but also new ‘market solutions’ to tackle the growing problems resulting from transport. Second, because new ‘sustainable’ technological solutions such as electric vehicles are difficult to ‘package’ into attractive market offerings since they are often relying on very different cost structures compared with conventional vehicles. Third, from the individual traveller’s perspective there is a growing set of options available for transport and therefore there is also a need to consider the possible connections and combinations of market offerings from this demand perspective. The range of options may in itself propel the development of new business models.

The paper begins with a brief review and discussion of some of the literature on business models. Thereafter we present an idea of a framework of business models and how we intend to use it in order to identify possible market innovations. To elaborate on these ideas we then present and discuss a set of different business models applied, and some that might be developed, in the transport of people.

We discuss the identified business models, with particular focus on the market offerings, on three levels of analysis; (1) the technologies (products and facilities) and network architectures (business units and business relationships) involved in individual market offerings (defined by the content of the exchange between a buyer and seller), (2) the set of available business models, and (3) the system level of available market offerings from the perspective of the individual traveller. Finally, we propose some routes for further development of the concept as a theoretical notion and of its potential as an instrument for practice.

LITERATURE REVIEW AND DISCUSSION

Based on a literature review, Zott et al. (2011) conclude that there is no agreement among scholars on what a business model is. They identify four common themes: (1) business models emerging as a new unit of analysis; (2) business models emphasising the system level, i.e. holistic approaches to explaining how firms "do business", (3) firm activities playing an important part in various conceptualisations of business models that have been proposed; and (4) business models seeking to explain how value is created. Furthermore, Zott et al. (2011) argue that the research on business models have been developed in silos and that this hampers "a more unified study of business models" (ibid.: 1020) and suggest that the identified emerging themes could serve as important catalysts for a more unified study of business models.

Hence, there are many different descriptions of what a business model is. What most researchers seem to put into the concept of a business model are the answers to: How to create value?, How to make customer pay for that value?, and How to convert payment through firm-internal operations into profit? (Teece, 2010; Morris et al., 2005; Chesbrough and Rosenbloom, 2002). Business models are also described as stories that explain how enterprises work and should answer the questions: Who is the customer? How do we make money? What underlying economic logic explains how we can deliver value to customers at an appropriate cost? (Magretta, 2002: 86).

Studies of business models have mainly taken a firm perspective with a typical focus on technology-based and/or entrepreneurial firms. For instance, Zott and Amit (2010) conceptualise a firm's business model as a system of interdependent activities that transcends the focal firm and spans its boundaries. Taking a somewhat broader scope into consideration, Zott et al. (2011:1020) suggest that "the business model is a new unit of analysis that is distinct from the product, the firm, industry, or network; it is centred on a focal firm, but its boundaries are wider than those of the firm…". An explanation to the focus on firms may be the massive use of the term to explain the business logic of new web-based ventures during the Internet boom in the 90's. Mason and Spring (2011:1032) point at the use of business models in Internet-based businesses in which "firms were being understood from the outset in terms of their position and role in business networks".

Doganova and Eyquem-Renault (2009) explore what business models do and show that business models can be analyzed as 'market devices'. A market device (with reference to Callon et al., 2007) is "a market-enabling instrument that operates empirically for the enhancement of socially situated practices of calculation and decision-making" (ibid.: 1561). Doganova and Eyquem-Renault (2009) also point at that investigating what business models do implies scrutinizing what they are made of. They suggest that business models can be seen as boundary objects.

Moreover, 'dynamic' views of business models have also been suggested. Based on a study of Arsenal Football Club, Demil and Lecocq (2011) study business model evolution by looking at the interaction of the components of their "Penrosian" business model framework: Resources and competencies, organizational structure and value propositions in which voluntary and emerging changes are identified. Another approach to 'dynamic business models' (see e.g. Mason and Leek, 2008) relies on the resource based view of the firm and conceptualise dynamic business models as "the emergent outcomes of preconceived network structures built through the development of routines that guide problem solving" (ibid.: 774).

In contrast to Zott et al. (2011), who suggest that there is a need of a unified approach to business models, we propose that the differences among definitions and approaches to business models need to be resulting from them resting upon different theoretical assumptions of business life. In this paper we aim to develop the business model concept in the industrial network setting wherein firms, or business units, are not seen as independent and thus their business cannot be assumed to relate to the individual firm but has to be considered in its network context wherein different actors are involved in making, selling, buying and using interrelated products or technologies.

Mason and Spring (2011) suggest a business model framework consisting of three main elements as illustrated in Figure 1.

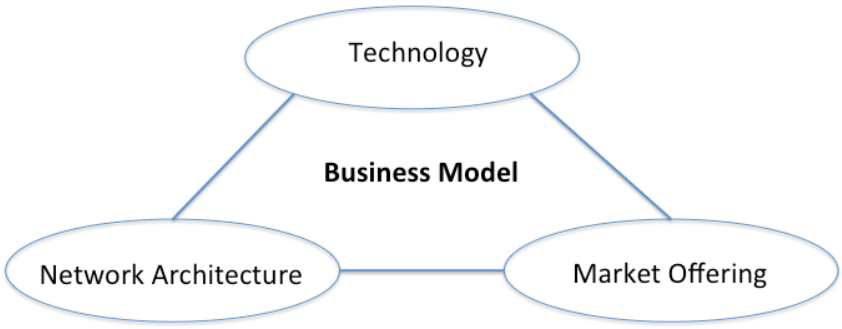

Figure 1. Business model elements (Source: Mason and Spring, 2011)

In the model suggested by Mason and Spring (2011) the technology element of business models contains four dimensions of technology: product, process, core and infrastructure technology. Firms in the network have different degrees of control over these technologies but since they are all influencing business models they should not be treated as 'environmental variables' but "as part of the network of internal and external actors that practice the business model" (ibid., 1034).

Moreover, Mason and Spring suggest four dimensions of network architecture: capabilities, transactions, markets and standards, and relationships. Capabilities include indirect ones based on the idea that a firm can access and utilise the capabilities of others within the wider business network. The ease with which firms can access their counterparts' capabilities is influenced by the existence and development of markets and standards. The structure, content

and governance of transactions (suggested as a definition of business models by Amit and Zott, 2001) link this dimension of network architecture to relationships.

Market offerings concern the nature of the producer-user interaction, rather than features of a particular product or service (Araujo and Spring, 2006). For the purposes of this paper we define 'market innovation' as new market offerings. Hence, within the scope of this definition these offerings may be new combinations of 'old' technologies. This is in line with Mason and Spring (2011:1035) characterising the market offering as:

> *"…consisting of the value-creation opportunity arising from alternative combinations of artefacts, access to suppliers' capabilities and capacities, and activities performed by the supplier(s) on the customer and/or its property."*

While Magretta (2002) and others focus on the supply side of business models, following from a suggested focus on *making* and *selling*, we will also consider the buying side by including *buying* and *using*. This links to the critique of the suggested 'transition' from (physical) products to services (Araujo and Spring, 2006: 804):

> *"It often involves new forms of organisation, new value propositions to customers, new ways of making services tradable, novel pricing strategies and business models. The challenge is not just to reorganise corporations but also to find new ways to connect sets of capabilities within and across suppliers' and customers' boundaries."*

Hence, we include both buyers and suppliers in the shaping and performance of business models. Furthermore, we assume that every business exchange, wherein the market offering is the subject of exchange, can be translated or interpreted in terms of a business model. That is, we take a starting point in that the business model concept is generic, i.e. that it can be used to describe the business logic and content of any exchange. Moreover, we assume that this may involve network partners (and relationships between them) and technologies that are not directly part of the specific business exchange between a buyer and a supplier.

The framework that we will elaborate further on in this paper, in order to develop ideas on how market innovations can be approached based on the business model concept, is illustrated in Figure 2. Furthermore, we discuss the identified business models on three levels of analysis; (1) the technologies and network architectures involved in individual market offerings, (2) the set of available business models, and (3) the system level of available market offerings from the perspective of the individual users. Since we will use business models involved in the transport of people as examples, the user, or demand, side focuses on the travellers' perspectives.

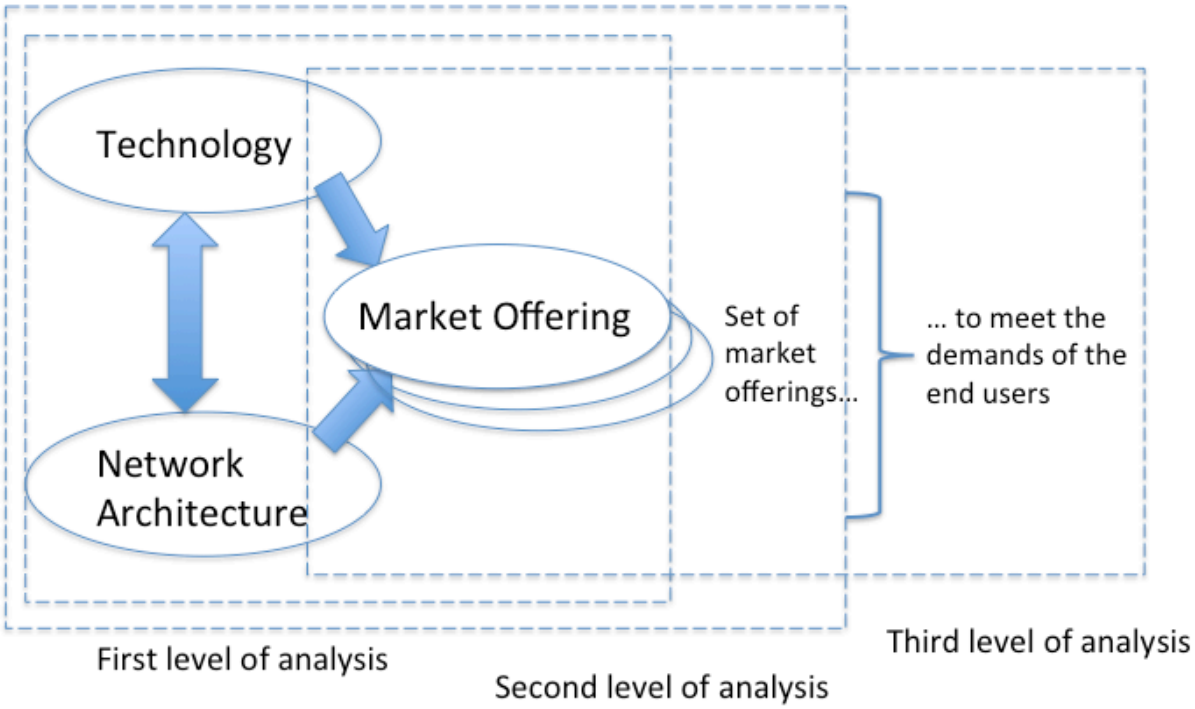

Figure 2. Framework for analysis of business models with particular focus on market offerings.

In the next section we will present some generic examples of traditional as well as new transport solutions for people and relate these to the business model framework.

EXAMPLES OF BUSINESS MODELS APPLIED IN THE TRANSPORT OF PEOPLE

There are several means of transport of people and many different business models involved in creating access to these means. In this section we describe and analyse the basic principles for some of these alternatives in order to set the stage for a discussion of how current business models can be 'unbundled' and 'recombined' into new business models. Moreover, since the alternatives relate to the same broader need or demand, i.e. the transport of people, we will also consider the market offerings together, based on how they connect to the individual traveller's needs and to the transport system in which they are all part, since this enables a greater scope in the search for new combinations and capture the user context in which the alternatives are considered.

Public transport

The market offerings available in public transport contain a broad range spanning from specific trips "from A to B" to access to a public transport network in a city or region during a certain time period. The bundles of technologies and networks behind these market offerings may differ extensively even in relation to similar market offerings. For instance, the actors selling the services provided by the public transport network may buy the actual transport

services from a range of other actors that may in turn own or lease the vehicles used. From the perspective of the traveller these arrangements per se may not be of particular importance. However, the ways in which the buyer-supplier exchanges are organised in the network of actors may have a huge impact on the development of new market offerings and on how these are perceived by the users. For instance, can the same payment system be used for all trips of concern for a particular traveller?

The technologies used in public transport, apart from the actual vehicles such as buses, trams, trains, ferries etc, include infrastructure, both physical e.g. roads and rails, but also information and coordination systems. In some new set ups, such as BRT (Bus Rapid Transit) systems, vehicles and infrastructure components are combined. For BRT systems buses and special bus lanes together make bus trips faster, and thus more attractive, in congested cities. Other solutions to make public transport more attractive to certain travellers are those designed to pick up passengers close to their homes. This may suit travellers who can plan for their travels since these bus trips need to be booked in advance which also requires additional technologies for coordination compared with other market offerings in public transport.

Transport by car

Cars can be accessed in different ways and these can all be translated into market offerings. Ownership, where the actual vehicle is the market offering, is currently the main alternative while leasing contracts, rental arrangements, car pools and ride sharing are also options and ones that may increase the capacity utilisation of individual cars. While the product technology, i.e. the car itself, may be ‘the same’ in all these models, other dimensions of the technologies involved as well as the networks required to put together the market offerings differ. However, new market offerings may also involve ‘unbundling’ of the actual car to enable new combinations of ownership and leasing, e.g. batteries may be subject to leasing for electrical cars which changes the cost structure for the buyer and may have a positive effect on buyers that do not trust the battery technology.

Car travelling through ride sharing may require a different set of technologies (for coordination) and networks (to make car owners/leasers connect with paying passengers). Although this solution seems fairly simple and would potentially entail great reductions in the number of cars on the roads, there are few examples of success. Some cities encourage ride sharing by permitting access to bus lanes for cars with one or more passengers. Hence, infrastructure technology components can be added to ride sharing as part of a ‘market offering’ to promote such travelling.

Another example of a new market offering can be found in the city of Paris where a car pool comprising a few thousand electric cars have been set up and includes parking into the offering. Since parking is increasingly considered problematic, especially in cities, this infrastructure aspect of technology plays different roles in the car-based market offerings. For ownership and leasing arrangements parking is a problem that has to be dealt with by the traveller, while for some rental and car pool solutions this may be part of the market offering.

There are also ways to encourage car owners to park their cars outside of cities and to continue their travels by public transport. The ways in which this can be done, however, differ. For instance, free parking lots connecting to public transport stations in suburbs is one approach while another is to let very costly parking outside the city finance free public transport within car-free city centres. Again, how to deal with cars in combination with infrastructure, especially for parking, seems to be key in car-based business models.

In addition to roads and parking spaces electrical charging systems will become an increasingly important infrastructure component as part of the technologies involved in car based market offerings in the future. How this will be linked to the bundles of other technological components and accessed through different business models depend on technological solutions as well as on how the network structures can be developed.

Travelling by taxi is yet another way of travelling by car, but can also be seen as part of public transport. Taxi rides may be subject to different business models and thus market offerings depending on other technologies such as access to bus lanes, special payment schemes etc.

Transport by bike

As for car transport bicycles are most often subject to ownership. However, recently there has been bicycle pools set up in cities which permit access to bikes in a new way and which opens up new possibilities for travellers to combine biking with other modes of transport since the bikes can be left and picked up at different locations around the city. Hence, this market offering also represents an example of a new business model.
Another example of a combination is ‘bike and ride’ in which free and attractive bike parking with showers, changing rooms etc are offered to travellers who take their bikes to public transport stations.

Transport by foot

Walking may not be subject to any business models per se, but since this mode of transport is part of the mix of transport options available and used in combination with other modes of transport it needs to be included in order to capture the traveller’s perspective. The infrastructure aspect of technology involved and the actor(s) in charge of it are also of importance to consider. In light of other modes of transport, the spaces made available for walking may be seen as ‘competing’ with spaces for bikes, cars and public transport.

DISCUSSION

In order to uncover the possibilities to create new market offerings we need to look at the technologies and networks behind the identified market offerings. Hence, who are involved and how and with whom? We also need to consider the perspective of the traveller or end user. And, we need to consider the 'whole transport system'.

Networks and technologies 'behind' the market offerings

In the previous section we exemplified some of the generic market offerings currently available and touched upon some of the most apparent technologies involved, mainly product and infrastructure technologies in this case. The actors taking part in the networks and who controls or influences the technologies required for each market offering are also of obvious interest and especially the exchanges and relationships they are involved in to 'produce' the market offerings or transport services.

Apart from the traditional actors involved in developing and producing the product technologies i.e. cars, buses, bikes, trams, trains etc there are many other kinds of actors involved in new market offerings. For instance, car pools companies have developed their services to fit with the needs of urban travellers that do not own cars themselves. Combining private customers' weekend uses with firms that use the car pool cars for business trips during weekdays may for instance entail efficient use of the cars that, in turn, entail reasonable costs for the travellers.

Policy actors play several important roles both on the national and local/regional level. They work with regulations as incentives to influence the behaviours of travellers, but they also control key infrastructure technologies or resources that can be made part of different market offerings. Furthermore, public authorities are in charge of the public transport networks. Most often they do not operate these networks themselves but control them by buying the transport services from operators that coordinate the operations of a set of vehicles. This can be dealt with in many different ways, with different scope (geographical, mode specific etc) and with very different content with regard to the exchanges between buyers and sellers of transport services and operation of vehicles. The designs of these exchanges set the terms for 'the freedom' and incentives given to transport service providers to develop their services. There are examples of set ups that aim to involve the operators of public transport in increasing the travelling by public transport systems by incentive schemes wherein increasing revenues are shared between the operator and the authority buying its services.

One important difference between actors co-creating new market offerings in the transport of people is the required scope of their operations. Vehicle producers are most often working on global markets and thus require standards that enable the same solutions to be applied in relation to their vehicles. That is, developing technical solutions that can only be used locally, e.g. in one particular city, is not considered viable by these actors. This may restrain the development of new market offerings since all new combinations of technologies have to be

adjusted to standardised vehicle solutions, which in turn have to be agreed on higher political levels. For instance, since electric cars and infrastructures for parking and electricity charging are inseparable, the networks consisting of industrial actors such as vehicle producers, local authorities, policy makers and the individual travellers will be put under pressure to foster market innovation.

The perspective of the traveller

From the perspective of the individual traveller there are of course many factors that influence the choice of transport solutions used. Travel distance, cost, frequency, location, perceived convenience and many other factors play different roles in their decisions. One issue when the mix of transport solutions is concerned is also how the different market offerings can be combined – and not. Having to take care of a car or a bike in the city may for instance limit the possibilities to combine these travels with other ways of travelling. Payment schemes may also encourage or discourage the combination of different transport solutions. To facilitate certain combinations, market offerings may, e.g. through joint payment schemes, be extended to encompass previously separate transport solutions.

Another important reason for analysing the whole set of market offerings available to the traveller is the question of how demand patterns or travel behaviours change. In view of the complex challenges that transport is subject to it is not simply a question of how to replace one transport mode by another but to consider the changing uses of the whole bundle of current and new options in combination. Hence, the traditional way of considering travellers as either public transport passengers, car drivers or passengers, bicyclists etc is not very productive when tackling modern travel patterns.On the other hand, considering the users' perspectives on 'the whole' transport system is something that require joint efforts by currently disparate actors.

The perspective of 'the whole' transport system

While the whole set of market offerings (transport solutions) may be contemplated by the individual traveller, the 'transport system' does not lend itself to any simple system analysis. That is, each and every market offering is part of its own business system logic and networks of actors and technologies. In this particular case these logics are also very different when the 'business' aspects are concerned. While the business exchange logic is relevant for making, selling and buying the actual vehicles, as well as some parts of the transport services; e.g. car pool access, operation of public transport and taxi services, public transport as a whole is in most places subject to subsidies. Furthermore, walking is 'free' from the travellers' perspective, but is subject to costs for the public since it requires infrastructure. One the other hand, since walking promotes health society gains by making such investments in the long run. Hence, where does 'the business' begin and end? And, can this boundary be affected by market innovations?

Moreover, for the actors that are concerned with 'the whole transport system', for instance in a city, there are not only economic aspects to consider when transport is concerned but also, and increasingly, sustainability aspects. For this reason targets have been set up e.g. to double the travelling by public transport systems. Moreover, since motorised transport are increasingly targeted in discussions of 'external' costs i.e. for the costs of damaging the climate and air quality, and for economic losses owing to congestion etc. the economic dimension may become increasingly intertwined with the (eco-)sustainability dimension. How cost incentives can be used to stimulate more sustainable travel patterns is a key issue that may influence travel patterns in a longer time perspective.

In order to create market innovation that benefit the sustainability of 'the whole' transport system, new combinations of existing and new technologies need to be combined which also require new collaborations and exchange relationships between existing and new actors in the network. To identify new combinations there may be a need to 'unbundle' the components of existing business models whether these are subject to traditional business exchange, public subsidies and/or based on regulations of different kinds.

CONCLUSIONS AND IMPLICATIONS

The theoretical aim of this paper is to develop a framework for analysis of business models in an industrial network context and to contemplate how such a framework can be used to discover market innovation defined as new market offerings. We have put special emphasis on the market offering dimension of the business model framework suggested by Mason and Spring (2011) since this dimension is key to our interest in market innovation. Consequently, we have related to technology and networks as being 'behind' the focal market offerings.

Using the various available transport solutions for people as an example we suggest that the technologies and networks involved in the current set of market offerings need to be 'unbundled' in order to identify new combinations of technological components (Roehrich and Caldwell, 2012). By jointly taking the perspective of 'the whole' transport system, the actors involved may discover new innovative ways to recombine technologies and to organise their exchanges across the boundaries of previous business models. The *buying* and *using* of market offerings (from the end users' perspectives) need to be analysed in view of the *selling* and *buying* of technologies behind the market offerings. This, in turn, connects to the *making* and *selling* of products and services since these may need to be adjusted to new and different uses and users. In the example used in this paper this may concern *buying* and *using* of transport services (from the traveller's perspective) that needs to be analysed in view of the *selling* and *buying* of vehicles and operations behind the market offerings. This, in turn, connects to the *making* and *selling* of vehicles since these may need to be adjusted to new and different uses and users.

Hence, we suggest that the business model framework is indeed a potentially strong tool in order to discover new ideas for market offerings, i.e. to get ideas for market innovations. By taking a starting point in the needs of the end users or 'ultimate consumers' (Alderson, 1965),

the prevailing technologies and network parties can be ‘unbundled’ and analysed as a basis for discussions of new possible ways to combine technologies into new market offerings. As a consequence, the networks of actors and their relationships have to change or develop in order to realise new business models. New market offerings may entail novel ways of linking ‘markets actors’ to societal actors, regulations and policy. Regulations set the terms for the technologies involved and for the business exchanges in each business model. New technologies may have to be developed in order to connect technological components and actors in the system.

The industrial network approach having its emphasis on assumptions of interaction and interdependence among business units, business relationships, products and facilities is a strong theoretical basis for analysis of existing industrial networks. In the suggested framework the industrial network approach is considered as a potential tool for analysis of the possible developments of (an open system of) technological and organisational components. This approach may have potentials when there are needs to find new solutions that require involvement of many actors whose technologies and ways of doing business may have to change in a ‘systemic fashion’ and, hence, where actors need to interact in order to create new technological interdependencies. In the example discussed in the paper the mix of business and societal aspects adds to the complexity of the theoretical modelapplied.

Finally, we offer some tentative implications for the particular setting that we have used as an example, and thus of concern for the actors involved in developing transport solutions for people, especially in urban contexts. There are several principal routes to market innovation in this area. First, by ‘unbundling’ the technologies required for existing market offerings and/or new technologies such as electric vehicles and by considering new ways of ‘bundling’ or packaging these into new market offerings that can meet the demands of some set of travelers. Most such recombining entails a need to establish or change the relationships between the network actors. Second, the scope for new combinations can be broadened by bringing infrastructure technology, and the actors involved in these infrastructures, into the creation of new market offerings. This concerns road use including parking but also information systems for coordination and control of various activities. The challenge is of course that radically new market offerings come with a need to develop bundles of technologies that are controlled by a mix of public and private actors into the new market offerings. Providing access to electric vehicles with parking and electricity charging included in the market offering is an example. That requires city authorities that do not only consider their role as policy makers and as responsible for making traditional public transport available, but also as potential co-creators of new market offerings together with ‘business actors’.Connecting market innovation with sustainability aspects of transport solutions makes this a challenging but also promising avenue for further research, managerial action and policy making.

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