

## EXPLORING REVERSE INNOVATION – A STUDY OF A TRUCK OEM IN INDIA

Lars Bankvall\*; Frida Lind  
Department of Technology Management and Economics  
Chalmers University of Technology  
Phones: +46 31 772 3779\*; +46 31 772 1113  
E-mails: lars.bankvall@chalmers.se\*; frida.lind@chalmers.se

\*corresponding author

### *Competitive paper*

#### Abstract

With reverse innovation, innovative products are developed specifically to meet the requirements of customers in emerging markets. When the products prove to work, they are sold also on a global basis. This way of working and the related concept has received increased managerial attention. In this paper, the meaning of reverse innovation is explored upon in light of selected IMP literature and a study of a Western Truck OEM (made anonymous). The company aims to develop products and services for emerging markets in general, and India in particular. Moreover, they then subsequently intend to also export these to additional, and more developed, markets. For the purpose of this paper, a resource interaction framework is drawn upon to analyse the situation of the Western Truck OEM in India. Supported by this analysis, the paper concludes by discussing which assumptions that reverse innovation rests on and how these can be understood and interpreted when instead drawing upon the conceptual understanding of the IMP approach.

#### Keywords

reverse innovation, resource interaction, emerging markets, industrial networks, trucks

## INTRODUCTION

For many years, firms have developed products for ‘western markets’ and then, after making certain smaller modifications, sold them also in ‘emerging markets’. This trend is sometimes referred to as glocalization, allowing multinational firms to make a trade-off between global scale and local customization (Immelt et al., 2009). This paper deals with a related way of working, called reverse innovation (ibid). In reverse innovation, innovative products are developed specifically to meet the requirements of customers in emerging markets. The resources dedicated to reverse innovation projects are local and thus based in the emerging market context. When the products prove to work, they are subsequently sold also on a global basis (ibid.).

According to Govindarajan and Ramamurti (2011); *“reverse innovation is a promising area for research by international business and strategy scholars because it provides the opportunity to enrich and extend mainstream theories in a number of areas”* (p. 191). In addition, the concept seems to receive increasing managerial attention (Govindarajan and Trimble, 2012). For these reasons, the purpose of the paper is to explore the meaning of “reverse innovation” in business markets. It will do so by building on the Industrial Marketing and Purchasing (IMP) interpretation of business markets (see e.g. Håkansson and Snehota, 1995; Håkansson et al., 2009). It is acknowledged that the notion of reverse innovation is challenging when business is conceptualised as industrial networks of activities, resources and actors. Especially the resource heterogeneity assumptions seem to be vital starting points for exploring the meaning and consequences of reverse innovation. In this paper resources are viewed as heterogeneous and developed in interaction among business actors (cf. Håkansson and Waluszewski, 2002; Baraldi et al., 2012). Given an interactive view on resource development, the boundary between emerging and developed economies suddenly becomes less distinct, and the understanding of how the phenomenon of reverse innovation should be interpreted equally blurred.

Whereas reverse innovation is recognized as a growing phenomenon, it is still in its infancy, and the future potential and possible impact is recognized as uncertain. However, despite this uncertainty it is recognized as a promising area for further research, not least considering its potential to support the supplementation and development of mainstream theories (Govindarajan and Ramamurti, 2011). Govindarajan and Ramamurti (2011) argue further that more research in general and case studies in particular, are needed to establish the true extent of reverse innovation and its future potential.

The adoption of the IMP logic for exploring reverse innovation is believed to have the potential to develop the concept further. The paper uses a case study to illustrate and discuss reverse innovation. The case is a case of the Western Truck OEM (made anonymous) with the ambition to develop products and services for emerging markets in general, and India in particular. Moreover, the Western Truck OEM subsequently aims to take aspects of these developed products and services and introduce them also in a western truck setting.

The paper is structured as follows. Below the concept of reverse innovation is reviewed, followed by the framework for the paper focusing on interactive resource development in business markets. Thereafter, the method and the case description is presented. Then the case is analysed and the paper ends with some concluding remarks.

## THE CONCEPT OF REVERSE INNOVATION

When emerging economies, such as for example Brazil, Russia, India and China, become increasingly stronger, firms become more and more aware of the specific potential residing in such markets (Govindarajan and Ramamurti, 2011). However, to exploit this potential requires adapting to the specific market prerequisites characterising such markets (Sheth, 2011). Differences between emerging and ‘western’ markets relate both to business models and various market specific challenges (Cappelli et al., 2010). For example, a comparison between the business climate in India and the U.S. highlights a number of India specific market challenges; e.g. enforcing of contracts, trading across borders, getting credit, employing workers etc. (Cappelli et al., 2010).

Sheth (2011) highlights some specific characteristics of emerging markets. These are recognized as inadequate infrastructure, market heterogeneity, socio-political governance, unbranded competition, and chronic shortage of resources. These, in turn, relate to the identified differences between developed and emerging markets. Here, Govindarajan (2012) identifies five principal differences, also recognized as “gaps”, between developed and developing markets; performance, infrastructure, sustainability, regulations, and preferences. It is further recognized that these differences in market characteristics require the need to rethink existing marketing theories, strategies, policies and practices (Sheth, 2011).

Due to these differences, multinational companies from developed countries face several challenges when entering developing or emerging markets, for example related to the aggressive price-performance ration required in an emerging market context (Hang et al., 2010). This is identified as one of the most important dimensions on which developing countries differ from developed economies, due to the difference in per capita income of average consumers (Govindarajan and Ramamurti, 2011). With far smaller per capita incomes, these consumers are believed to be content with solutions that deliver 50 % performance at only 15 % of the cost (compared with the developed market equivalent) (Immelt et al., 2009).

Moreover, there are also other specific resource constraints displaying themselves in developing markets that require considerations as they condition the demand of individual customers. For this reason, which capabilities can be acquired in the local context is critical as these are conditions for success (Hang et al., 2010). In essence, all these identified differences emphasize the need of developing products and services that suit local conditions. As recognized by Govindarajan and Ramamurti (2011), this then requires fundamental rethinking of the business model necessary for success in developing markets.

In light of this need for rethinking, several strategic concepts for developing market entrance and establishment have been developed. Traditionally, the notion of glocalisation, implying the flow of innovations from developed to emerging markets, has been dominating the strategy of multinational companies (Govindarajan, 2012). With glocalisation, the offerings for home markets are modified, often striped off many of its features, before being distributed around the world at a substantially reduced price. However, according to Govindarajan and Ramamurti (2011), this is now starting to change as emerging markets are no longer just borrow innovations from developed countries; from time to time they also contribute innovations to the rest of the world.

Recognizing the specific requirements of customers in developing markets the term “reverse

innovation”, where innovative products are developed specifically to meet the requirements of customers in emerging markets, has therefore received increased attention (Immelt et al., 2009). This notion lies at the core of reverse innovation, to develop innovative new products and services that meet the specific needs and budgets of customers in developing markets (Immelt et al., 2009).

With reverse innovation, devoted resources are native and as such based in the developing market context. After the developed products and services have been proven to work they are subsequently sold on also a global basis (Immelt et al., 2009). There are multiple examples of developing market innovations, for example microfinancing solutions and development of inexpensive cellular phones. Some of these have already diffused also to a developed market context, while other innovations may do so in the future. Nevertheless, it is recognized that innovative activities in developing markets is greater than ever, and that the resulting innovation will to an increasing extent find their way to also developed markets (Govindarajan and Ramamurti, 2011).

## THEORETICAL FRAMEWORK

This paper focuses on firms developing innovative products for one particular (emergent) market to be used also in other settings. Resources are crucial to that development in many different ways. For example, the availability and nature of resources in different network contexts are crucial. Resources are also important for firms to be able to exchange products and at times those products may need adaptations to fit to the customer needs. Or a business exchange takes time, there may be test buys or modifications and over time business relationships with customers develop. Those customer relationships may also be seen as resources (Håkansson and Waluszewski, 2002; Aaboen et al., 2011). Some characteristics of resources and especially their development, in addition to some characteristics of industrial networks (representing different “market” contexts) form the starting point for the theoretical framework. The first part is centred on basic assumptions of resources including a model for analysing interactive resource development and in the next part research issues are formulated.

### Basic assumptions of resources

Viewing resources in relation to other resources is one of the cornerstones within the Industrial Marketing Purchasing (IMP) literature. A basic theoretical understanding is that the value of a resource is not given but depends on how it is used or related to other resources. This view of resources goes back to Penrose (1959) who in understanding firm growth, argued that the value of a resource is dependent on the services it can render. This is also in line with the theory of teamwork (Alchian and Demsetz, 1972), suggesting that the results of resource combination are impossible to know in advance but have to be learned. The assumption of resource heterogeneity extends the boundaries of firms and, hence, the resources of a firm are considered as embedded in the resources of other firms’ – in the resource constellation (Håkansson and Snehota, 1995). Therefore, the combining of resources is central to make the most out of existing resources even though it may be unclear which resources are needed and how they are to be combined. New combinations of resources originate from interaction between companies (Håkansson et al., 2009; Håkansson and Snehota 1995), e.g. between providers and users or among the members of an inter-organisational development project. Resource combining thus not only occurs within companies but also in business relationships and it means that combining and recombining

resources in new constellations is a way of developing resources.

Recently many studies have approached innovation in terms of resource development in interaction (e.g. Wedin 2001; Håkansson and Waluszewski, 2002; Baraldi, 2003; Gressetvold, 2004; Hjelmgren, 2005; Lind, 2006; Perna et al., 2012; Chou and Zolkiewski, 2012). Håkansson and Waluszewski (2002) suggested a model to enable analysis of how resources are developed through interaction. Relationships and interaction among firms are crucial in business markets, as pointed out above. The interaction between actors, such as business units, creates a confrontation of individual resources, referred to as resource interaction. The connection points between individual resources, the resource interfaces, are crucial in this development. The model referred to as 'the four resource entities model' is centred on technical and organizational resources and enables analysis of how resources involved in interaction influence each other and each other's development.

### Research issues

Resource development through interaction forms the base for our framework to be used to explore reverse innovation in an industrial network context. In our case, the Western Truck OEM is the focal business unit, offering several products to be exchanged through business relationships with customers in India. We have formulated two research issues; one regards the interaction between the product and other relevant resources in an emerging market setting. The other regards discussing the meaning of reverse innovation.

The two research issues are the following:

*The first research issue regards the pattern of resource interaction between the product and other resources in an emerging market setting.*

*Given the observed pattern of resource interaction, the second research issue regards the subsequent meaning of reverse innovation.*

## RESEARCH METHOD

In this paper we present findings from an ongoing joint project between Chalmers University of Technology, Gothenburg, Sweden, and the Western Truck OEM (made anonymous). The focus of this project is on developing innovative business models for the Indian truck market and reverse innovation has also been part of the project description and thus an ambition from the Western Truck OEM's point of view. So far, there have been no obvious reverse innovations resulting from the project. However, the ongoing work in an emerging market, India in this case, form base for discussion about reverse innovation.

### A case study approach

This paper has undertaken a qualitative research method and uses a single case study methodology (Easton, 2010). The main reason is that we needed a method that allowed us to get a deep understanding of the truck business in a developed market context (Sweden) and truck customers in the Indian context representing an emerging market. To ensure quality, matching (Dubois and Gadde, 2002; Dubois and Gadde, 2014) of the emerging framework and the empirical data have been a central concern. The starting point in the literature has been the IMP tradition to be able to make sense of the concept reverse innovation. We have used empirical data from this ongoing joint research project with the Western Truck OEM.

## Data collection and analysis

We have gathered information from the Western Truck OEM, their joint venture partner in India, existing customers in Sweden, existing and potential customers in India. In total, our study builds on 37 semi-structured interviews as well as other sources of data. The Western Truck OEM has selected which dealers and customers to interview and organized the interviews in India. Most likely, the Western Truck OEM selected customers that they have good relationships with, which may result in us getting a somewhat unreliable view of the characteristics of the typical truck operator. However, during the interview occasions, the interviewees were very outspoken regarding various issues related to the customers' needs. Consequently, after fulfilling the interviews in India, we experienced that we had been able to gain a fair understanding of the prerequisites of the Indian truck customers. Interviews have been conducted, both in Sweden and subsequently also in India. An initial interview round was conducted in Sweden, including both the Western Truck OEM's internal employees and external stakeholders, such as a fleet owner and an owner-operator. These initial interviews allowed us to form an understanding of how trucks are marketed and sold on the Swedish market, representing a developed and mature market in which the Western Truck OEM is very well established and understands the requirements of its customers. We then continued with collecting data related to the Indian transport customers, both larger fleet owners and smaller owner-operators. This second round of interviews was conducted in cooperation with the Western Truck OEM and employees both in Sweden and in India were involved in interviewing. Besides making interviews, we have also had access to company records, market reports, as well as other documents describing the India truck context, both from the perspective of the Western Truck OEM, and more in general.

There were some challenges associated with this data collection. The challenges relate to the distance (in several dimensions) to the focus market in India. In the project we have tried to overcome them by developing interview guides, having at least two people attending each interview, one of which was a native Indian. The interviews have in some cases been tape-recorded and transcribed and in some cases have only notes been taken that have been transcribed just after the interviews. The transcripts/notes have always been checked with the representative of the Western Truck OEM that was present during each interview, which did in some instances result in additions and changes. From the interviews we also in some cases received other types of material such as books and brochures. Photographs were also taken to understand the truck settings. Analysis of the empirical material started already during the data collection. We have continuously built a case description that has been an important base for discussion of reverse innovation and its meaning.

### THE CASE OF THE WESTERN TRUCK OEM ENTERING

This case description gives account of a market expansion initiative of the Western Truck OEM (the focal company in this case description, made anonymous). This initiative has involved several phases of trial and error aiming to establishing themselves on the Indian market. Recently, as part of their market insight work, they have also explicitly expressed an ambition to develop innovative service concepts targeted specifically at the Indian market. Furthermore, the ambition also includes thoughts of reverse innovation, wanting to test the developed service concepts also on selected western markets.

The case description is organised as follows; first a brief general background to the business of the Western Truck OEM is given, then the expansion initiative into the Indian market is described, including various attempts at penetrating the market. Thereafter some of their on-

going market insight work is described, being part of the research project related to this case description.

### The business of the Western Truck OEM

The Western Truck OEM has during the last decade strengthened its position as a global truck manufacturer. It has acquired several other truck OEMs and also established various joint ventures with domestic truck OEMs in for example China and India. As a result, the company has grown considerably and is now one of the world's largest truck manufacturers, operating under several different brand names. The brands are positioned differently, both geographically and with regard to the various applications of truck operators. When entering into new geographical markets, it is therefore always challenging to decide how to approach prospective customers. For example, it is important to identify if these customers are primarily the truck operators, or the actual buyers of transport services. Moreover, decisions have to be made with regard to what range of products should be offered to these customers. The products do not only relate to the trucks as such, but also, and increasingly, various so-called 'soft products', or services. The Western Truck OEM has expressed a long-term ambition to increase the share of 'soft products' to approximately 50 percent of total sales. This ambition highly affects the sales and marketing activities of the company.

The Western Truck OEM perceives the requirements of truck operators to vary extensively, depending both on geographical markets and applications. At present, their trucks are used for long-hauling, regional transports, as well as city distribution. In addition, some trucks are used for specific applications, for example within mining and for hauling extremely heavy loads. As a result, all trucks require some kind of customization, developed in interaction with the specific customer. In addition to the actual trucks, the main building blocks of the offer of the Western Truck OEM are; parts, maintenance services, financial solutions, service contracts, driver development, transport information systems, and accessories.

### The Western Truck OEM expanding into India

The Western Truck OEM has been present in India since early 2000, making the company one of the first western truck manufacturers to establish themselves in the country. Initially, they entered the market with an expensive premium product. The majority of the perceived potential customers had little interest in a truck with the specification and cost initially offered by the Western Truck OEM, however some customers were found in a particular application, mining, where dependability and strength is highly rated. As stated by one dealer, describing the cost sensitivity of its customers by referring to the safety reputation of the Western Truck OEM; "with a [Western Truck OEM brand] the driver lives, but the owner dies". As a consequence of the limited sales, the company entered into a joint venture with a local truck manufacturer recognized as the Indian Truck OEM (made anonymous). The Indian Truck OEM had since long been established in the so-called mass-market segment of the Indian market, producing and selling low-specification trucks at an 'affordable price'. Combining the quality and safety reputation of the Western Truck OEM with the affordability and extended service network of the Indian Truck OEM was the rationale for entering into the joint venture, believed to have the potential to attract a wide range of Indian customers.

Previously, the Western Truck OEM (and potentially also other OEMs) divided the Indian market into two primary segments; the more expensive premium segment, in which most western truck manufacturers are positioned, and the less expensive mass-market segment, primarily occupied by domestic OEMs. Recently, the Western Truck OEM identified also a

third segment with a considered growth potential, called the ‘value segment’. As the segmentation is primarily based on price, the value segment consists of both downgraded premium trucks and upgraded mass-market trucks, and variations thereof. The joint venture with the Indian Truck OEM is believed to support the development of new truck models suitable for marketing towards this “new” value segment.

In order to reach new customers, new (and current) trucks need to be developed in line with the specific requirements of the Indian truck business. To meet this challenge, the Western Truck OEM perceives a need to better understand the changing requirements of potential future customers. Consequently, the company has conducted several studies in order to increase their ‘market insight’. The research project underlying this paper represents one such study and focuses on the requirements of the Indian truck customers.

#### Market insight at the Western Truck OEM

In line with the overall ambition of the Western Truck OEM to increase the share of ‘soft products’ to approximately 50 percent of total sales, the market insight work associated with this research project focused on the identification and development of new innovative service concepts, targeting the Indian market. In addition, the company aims at subsequently exploring the opportunities of reverse innovation connected to these identified service concepts, wanting to subsequently establish them also on developed western markets.

The Western Truck OEM initiated the market insight work by identifying potential truck customers on the Indian market. Here, an initial market segmentation was made in order to address those customers believed to have the specific operational requirements and financial capability to purchase the truck in question. This truck, in turn, was specified within the joint venture, and represented a partly new truck model, believed to combine characteristics from both the Western Truck OEM and the Indian Truck OEM. Thus, the market insight work took departure in a specific truck model, wanting to explore how this model should be specified in order to cater to the requirements of the Indian customers. In total, two principal stakeholders were identified as crucial when marketing the truck. First and foremost, the truck operators, identified as companies that perform various types of transport services, were recognized as key users. In addition, the dealers/workshops were also identified as important for understanding truck requirements and developing desirable specification.

Thus, the market insight work started with interviewing representatives from all these user groups. Based on these interviews, a number of market specific characteristics revealed themselves, important for understanding the Indian truck context.

With regard to the Indian truck operators, these consist of both smaller owner/operators and larger fleet owners. Many of the larger fleet owners have mixed fleets; which means that they own trucks of multiple brands. Some are highly specialized, focusing on for example over-dimensional cargo (ODC), mining, vehicle transports and home relocation. These can be very specific in their needs of certain truck features. To be successful towards these potential customers it is therefore important to understand their individual challenges, and develop solutions addressing these. This could for example relate to on-road breakdown service in relation to specific roads, customised bodybuilding, driver education, and different kinds of security solutions.

One example, where the Western Truck OEM has successfully managed to cater to the

specific requirements of its customers is within mining. Truck operators within mining require very dependable trucks that often need to run more or less 24/7. The trucks of the Western Truck OEM are both strong and dependable. They however cost more than many of the alternative truck models on the Indian market. To address this issue, the Western Truck OEM has introduced a payment alternative where the mining customers pay per tipping. This way, they pay for performance, rather than for the truck itself. In addition, the Western Truck OEM has established workshops in the proximity of each mining site, enabling easy maintenance and repairs to ensure maximum up-time of the trucks. Through these specific adaptations, developed in interaction with the mining customers, the Western Truck OEM has managed to come up with solutions to the specific problems and uncertainties of these customers.

In comparison, smaller owner/operators are often less specific in their requirements. They tend to perform different transport services over time, why they need a truck that can facilitate basic general purpose use. Also, their financial flexibility is often less than that of the larger specialized fleet owners.

The Indian transport sector is generally perceived as very price focused, which also affects the purchasing behaviour of most truck operators. The purchasing decision of the truck operators is usually based on the price of the truck, as well as on available financial solutions provided by the dealers, not least considering interest rates. This price consciousness also reflects on the choice of service and repair solutions, where Indian truck operators tend to service and repair their vehicles in unauthorized 'private' workshops, often using parts purchased on the so-called grey market.

From the perspective of the truck operators, the so-called 'uptime' concept that has become crucial on western markets takes on somewhat different forms in India. Poor road conditions and other infrastructure problems mean that the time it takes to reach a certain destination is not primarily a result of the functionality of the vehicle itself, but instead mostly depending on several external factors. For example, between the different regions in India, there are toll stations. To pass such a station can sometimes take several days, meaning that the vehicle and driver simply have to stand idle for a long time. In addition, waiting times when loading and un-loading are often considerable.

In general, the driver is a key concern for the Indian truck operators. Today, a large portion of the Indian truck fleet stands idle due to lack of qualified drivers. Being a driver is a low status profession with poor salary, why it is difficult to attract Indians to join the profession. Due to their low status in society, many drivers are also subjected to harassment from police and other state officials. Whereas different fleet owners try to solve this problem in a variety of ways it is generally considered an issue of great importance, to a large extent deciding the future of the Indian transport industry.

With regard to the Indian dealers/workshops, these consist of both OEM-owned and independent actors. The extent of the service network varies between OEMs. For example, the Western Truck OEM, a premium producer that is fairly new to the Indian market, has a limited number of brand specific dealerships (including workshops). The Indian Truck OEM, on the other hand, has dealerships all over India.

Due to poor infrastructural conditions, most customers consider it crucial to have

dealers/workshops in close proximity to their operations. When a truck breaks down it is often quite difficult to transport it longer distances in order to have it repaired. Therefore, unless there is a workshop in close proximity to the break down, the likelihood increases that the truck is repaired using a so-called 'private workshop', not associated with the brand of the truck. Such workshops are present all over India. Due to their limited knowledge of western truck brands and lack of more advanced tools and equipment, they primarily service and repair domestic brands.

In recent years, it has become increasingly common that special application customers, such as for example mining customers, require workshop presence in the proximity, or even at the actual site, of their operations. As a result, the number of such customer specific workshops has increased. In addition, workshops localized in line with the general flow of commercial traffic, as well as on specific highways, have also become more common.

Regardless of brand, the Indian truck dealers perceive it as challenging to sell service agreements. Usually, the customers tend to return to the workshop of the dealer only during the warranty period; where after they either service and repair the truck themselves, or have a local 'private' workshop do it for less cost compared with the authorized alternatives. In addition, the workshops are challenged by low spare part prices, provided both through the production of pirate copies and the sale of genuine parts, marketed directly on the Indian market by the truck manufacturers' respective suppliers.

Selling service agreements is also perceived to be difficult based on the use uncertainties related to the Indian customers (primarily recognized as truck operators). Due to the nature of transport services in India, the truck operators are considered fairly unpredictable, making it hard to foresee both their future use of the truck and their ability to follow predictive maintenance schemes. Also, the unpredictable operations of most Indian truck operators make it difficult to offer financial services such as operational and financial leasing.

#### Two service concepts for further development

With these market insights related to the Indian truck operators and dealers/workshops, a qualitative analysis of the interview material followed. Here, the analytical approach followed the working procedure of the Western Truck OEM, having an established process for service concept development. The initial analysis resulted in a dozen potential service concepts, concerning issues related to for example tire pressure monitoring, maximum load indication, and various customer relationship management solutions. After a number of company internal workshops, two concepts were chosen for further development; a solution related to fuel monitoring and a suggestion of a Western Truck OEM managed driver pool. The cost structure on the Indian market means that fuel represents a considerably larger part of the total operating costs of a vehicle, at the same time drivers are usually poorly educated in terms of fuel saving driving techniques. Therefore, it was considered crucial to further explore opportunities for fuel monitoring. With regard to the establishment of a driver pool, this concept derived from the insight that the availability of drivers is a key concern on the Indian market. Not only are there fewer drivers than trucks, meaning that a large portion of the Indian truck fleet stands idle due to lack of drivers operating the vehicles. Being a driver is also considered a low status profession and is associated with low pay and poor working conditions. To address these issues, the establishment of a driver pool, consisting of educated and available drivers for long- and short-term assignments could prove a competitive advantage in the marketing of new truck models.

Given the identification of these two service concepts, the current work consists of exploring and specifying them further, thereby subsequently introducing them into the product planning process of the Western Truck OEM. In addition, the project will also assess the potential for taking these concepts and testing them also on developed western markets, according to the principles of reverse innovation.

## ANALYSIS

From the case description above, several patterns of resource interaction regarding trucks and their use in India can be identified. Initially, the market penetration of the Western Truck OEM was limited in the Indian context. However, almost already from the outset there was one particular application in which the technologically advanced trucks proved to fit very well with the needs of the customers. This was in the mining segment. The offering was tailor-made to provide workshops in the close proximity to the mines, which made the downtime very limited. The driving environment is also very challenging, which put high demands on the functionality and performance of the trucks. Specific features of the trucks in combination with certain services added to the truck allowed the Western Truck OEM to develop specific customer relationships to mining customers.

When considering the Indian truck operators more in general, there are several examples of how the truck interacts with other resources in a way that is recognized as specific for the Indian context (compared with a western truck context). Firstly, Indian truck operators are usually relying on mixed fleets of vehicles. This means that the resource collection of the Indian truck operator is more diverse than its western equivalent, which subsequently has an influence on how the truck in question needs to interact with these other resources. The truck in question also needs to interact with the variety of different resources associated with the truck operator's transport assignments. With certain, primarily smaller owner/operators, these are recognized as fairly varied, both in space and time, calling for a truck which is able to address a variety of different requirements, thus interact with several different, and initially unknown, resources.

Also the resource collections of other actors come in play when considering patterns of resource interaction in the Indian context. For example, the capabilities of the bodybuilders conditions the characteristics of the truck, and customer specific solutions are thus enabled by the resource collections of several actors, representing complementary resources. This holds true also for the availability and conditions of financial solutions determines the operator's perception of the truck's value.

Finally, the aftermarket conditions are in the Indian context conditioning resource interaction through the existence of private workshops and grey market spare parts. The perceived value of the truck is very much conditioned by the ability to relate it to such existing resource constellations. Here, the Western Truck OEM is challenged by on the one hand retain aftermarket business, while on the other make the focal resource, the truck, compatible also with the existing resource constellations in the Indian context. The perceived value of the truck, from the perspective of the Indian truck operator, is very much conditioned by its ability fit with the existing aftermarket structure.

When instead considering the Indian dealers and workshops there are also examples of specific ways in this the truck interacts with other India specific resources. Most notably is

the overall structure of the aftermarket business in India. The pattern of resource interaction between the individual truck and the resources represented in this aftermarket business is complex and requires that the truck is able to interact with resources of principally different nature. Alternatively, some resource interactions are not prioritized, in which case this might have a negative effect on the perceived value of the truck. Consider for example the existence of private workshops. In one way the ability for the Indian truck operator to service and maintain their truck in one of these workshops will increase their perceived value of the truck. However, it will also have a potentially detrimental effect on the authorized service network, which will then lose valuable business. Moreover, the capabilities of private workshops are often limited, not having the required knowledge and tools to service and maintain more technologically advanced vehicles. These limitations thus influence the possibility for resource interaction between the truck and the resources related to the aftermarket business.

The driver is recognized as a key resource on the Indian market, both for the truck operators and for the dealers/workshops. The perceived value of the truck is entirely dependent on the availability of drivers skilled enough to operate the vehicle. As such drivers are identified as a scarce resource in the Indian truck business, this heavily influences the pattern of resource interaction.

### CONCLUDING DISCUSSION

Currently the Western Truck OEM has, based on the market insight in India, selected two service concepts for further development. These two concepts will be subsequently integrated into the product planning process. Hence, they appear to be promising starting points for services that can be sold not only in India but also in other markets. Making use of resources and learning from how resources are combined and developed in specific contexts in this way is an appealing way of working.

Accordingly, the basic tenet of reverse innovation as suggested by Immelt et al (2009) is very appealing. However, at closer scrutiny it appears as if the concept relies on a number of assumptions that are not made explicit. From the case analysis above focusing on interactive resource development, three such assumptions are identified. First the market in reverse innovation is very much presented as a geographical market with limited discussion of what a market is. This is also inherent in the reverse innovation concept in transferring something from one market to another. In a business market understood through the IMP literature lens, the market as such does not hold any meaning. It is what happens between the supplier and the customer and how that is influenced by, as well as influencing, connected relationships that matter, and this is the second assumption that needs scrutiny. To be able to capture the interaction that is crucial in business markets, the unit of analysis needs to be placed at a lower level (Bankvall et al., 2014), considering instead the interaction that takes place between customer and supplier in light of their individual problems. In a way, this is emphasized in reverse innovation in terms of pinpointing local presence and organizational units (e.g. local growth teams). The third related assumption regards the product and what is actually exchanged. In the reverse innovation concept the product is treated as set, and once it is developed it is ready to be transferred to the market. In the IMP tradition, especially emphasized in the resource interaction framework, the product is exchanged in business relationships and may be subject to adaptation and customization. In comparison, it appears as if the reverse innovation concept as it is approached today rests on more traditional marketing pillars. This distinction between the conceptual understanding of the IMP tradition versus traditional marketing theory is also discussed for example in Håkansson et al. (2004).

Still, if reverse innovation is framed differently, it raises intriguing questions for future research. If the focus of reverse innovation is on developing resources through interaction with customers and other actors in its local environment and reflecting on what can be learnt from this pattern of resource interaction, that brings about very interesting questions for future research with regard to organizing in networks. Especially for a global firm organizing R&D – which activities and resources should be set up when and where? Another interesting question regards how to organize the link between the internal organization and the external network. This study offers some implications for managers considering reverse innovation. One implication is to organize for being local and be able to be present where the interaction takes place as well as be part of the interaction. Another regards the scope for what can be learnt from a certain geographical market to other contexts. A wider scope than single products needs to be taken when to innovate in reverse.

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