
Value Co-creation as Key to Customer Satisfaction in Digital Services Sales

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1 Introduction

Efficient, safe, and green transport systems are indispensable for many areas of human coexistence and the economy. Rail transport contributes significantly to this. Simply getting from A to B quickly and efficiently is presupposed nowadays. But passengers expect more, and cities, operators, and industry must respond to this. As a provider of overall solutions and also as a system integrator, Siemens Mobility bundles all the necessary competencies and is thus able to fulfill passengers' wishes with the help of innovations. This is done by equipping the providers of the transportation systems with the means to make optimal use of their infrastructure and vehicles.

The constantly increasing demand for mobility requires efficient traffic concepts. Siemens Mobility is constantly developing new intelligent mobility solutions that increase the availability of rolling stock and rail infrastructure, optimize route utilization, and hence create a new quality of travel. By electrifying, automating, and digitalizing infrastructures and vehicles, the company is setting standards for the mobility of the future.

In recent years, Siemens Mobility has focused not only on traditional but also strongly on digital services. Whether it is guaranteed availability, maximized throughput, or the realization of new business models, digital services from Siemens Mobility deliver all of this. From sensors and intelligent algorithms to precise analytics, Siemens Mobility offers the entire basis for optimized maintenance and operation—underpinned by decades of practical experience of the experts in rail transport. The foundation for digital services is “Railigent,” the application platform for smarter asset management. Railigent is providing monitoring, analytics, and

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predictive services, and at the same time, it is an open platform for partners as well as customers, with over 130 projects and over 80 customers worldwide.

Our comprehensive solution portfolio offers ready-to-use solutions/applications as well as individually tailored solutions for our customers. Our digital service organization works closely with our customers to offer reliable solutions in a fast and agile way throughout the entire life cycle of the assets (stock and rail infrastructure). To achieve this, digital services have their own sales structure. The reason is to have dedicated sales resources to enable the company to create new services in close cooperation with the projects, customers, and partners.

Customer value co-creation is not in itself a newly developed method. As early as the end of the 1980s, people started using co-creation to involve the customer in their production. At Siemens, the methodology experienced a revival when the trend toward digitalization kicked into gear. In the traditional business, people were sure which proven sales channels used to work. This was not any longer the case in the new era of digitalization. To develop the right solutions and services for the customers and to bring them to the market, co-creation was and is the tool that allows us to involve the customers directly. In the beginning, the company focused on customers who were already prepared and knowledgeable to participate in discussions in the field of digitalization. Furthermore, the sales competencies of Siemens had to be expanded. While in conventional and traditional business, the salespeople have to be sophisticated with rather pushy communication, co-creation is different. It is absolutely necessary to listen to and understand customers' pains and take on a more consultative role. In the past, companies welcomed customers into a showroom to demonstrate the products available for selection. Today, they are invited to the Digital Lab. But nothing is shown there anymore, and the products are not necessarily already marketable or even existent. The goal now is more about developing and creating the future together. New technologies, such as digital whiteboards and writable walls, are available, which allow the co-creation process to be carried out more easily and creatively.

2 Digitalization Changes the Way We Work, Do Business, and Interact

Transporting goods and people by rail is one of the great innovations in history. The rails themselves cannot be digitized, but the rest of the business faces the effects of the digital revolution. The digital transformation is changing the competitive environment. In the case of the transport sector, this is taking place on four fronts: the transformation of the customer experience, the transformation of operational processes, employee training, and the transformation of the business model. Some of the innovations we hear about today in different contexts have already been introduced by the railways for some time now, but the mobility sector is moving toward new challenges. Here is one example: Today, there is much talk of connected and autonomous cars, something that in passenger rail transport has been a reality for many years now.

Nevertheless, digitalization provides the advantage of using new technologies in our industry. The capabilities offered by data analytics, artificial intelligence, cloud, and platform technologies, as well as cybersecurity, play an important role in digital services. But the key question we are facing daily is, how do we create value for our customers with these fancy technologies? Notably, customers in our B2B industry are also asking themselves how digitalization affects their business. As a result, customers, as well as suppliers, are experiencing very similar challenges during the current digital age. It must be taken into account that customers have uncertainties in the digital era. These uncertainties can be reflected by various questions such as the following: “What is the impact of digitalization on my business?”, “How do I develop new competencies to be successful with digitalization?”, “Is my supplier the right partner to accompany me in the digital era?”, or “How do I earn money with digitalization?”

Sales capabilities must shift from selling products and features to becoming trusted advisers for innovation. Only in this way can we face the aforementioned challenges and help customers find answers to their questions. Thanks to the expansion of the collaborative economy, new ways of doing business and relationships have emerged through the exchange of goods, services, and even knowledge. This new system of relationships, based on trust and collaboration, is significantly impacting the way companies engage their customers in their innovation and sales processes.

The best way to generate value and sell digital services is to involve customers and partners in the process of creating new services. Who knows most about the products we have sold, if not those who consume, use, test, and recommend them? Obviously, our customers. And, therefore, collaboration is much more efficient than the competition.

The term behind our methodology is “co-creation.” Co-creation is a modern and effective way to adjust smart services to the customers’ needs. In addition, co-creation is the activity of jointly creating win-win solutions with prototyping and rapid business impact. The term “co-creation” is widely used in the world of marketing and innovation. It describes a special behavior of companies who by this means enable their customers to improve their service in such a way that the final result is something that is perfectly adjusted to their business objectives and using all the insight of those who contributed to the solution.

Co-creation has been consolidated as a practice that can be applied to diverse scenarios and that, within a business environment, can be defined as the collaborative exercise through which companies work hand in hand with their customers for different purposes, for example, designing new services.

3 What Are the Triggers for Co-creation?

It has been demonstrated that the success of new services and innovations depends on understanding the needs of the clients and the business impact of those needs on the one hand and the required efforts to meet these needs on the other hand.

However, this process is usually difficult because the requirements of customers are complex and cannot always be identified through the traditional methods of market research. The failure of many new services lands on the inability of companies to accurately identify and meet the needs of their customers. To avoid this, Siemens Mobility involves customers more actively in the process of developing innovations. This decision is also based on findings from cognitive psychology, postulating that the intrinsic needs of the human being are more likely to be met if he or she is involved in creative activities. Thus, co-creators can enjoy psychological benefits that would not have been reached with a “standard services sales” approach.

Even though the advantages are quite outstanding, it is important to consider and know the challenges and risks of co-creation. First of all, it is important to consider, and experience shows, that people, industries, and organizational cultures will not change quickly. For this reason, it may well be that it takes a lot of time and patience to establish a co-creation culture in an organization. The co-creation concept can challenge the mindset of managers. Sometimes the mindset of the people in the organization has to be changed to the perspective of an external customer or partner, which is not easy.

In the process itself, companies must filter the ideas of their customers. Sometimes in customer workshops or meetings, the number of suggestions and inputs is immensely high. The challenge will then be to identify the right ones from the flood of information to develop them further in our own organization. During the selection process, care must be taken that the customer does not get the feeling that something has been ignored or forgotten. An iterative process involving customers can counteract this problem.

4 “Customer Value Co-creation” as a Means to Drive and Scale Digital Services

Combining our customers’ business ambition with Siemens’ leading domain and technology expertise by applying value co-creation methods enables us to generate new service businesses together with our customers. Consider the following concrete example. One such customer, who is part of the Swiss railway industry, had the impetus to create more transparency on his fleet operations, to reduce the overall cost of ownership. We partnered with him to design and build a new service that does what it is supposed to do. With this transparency goal in mind, we brought together the customer’s operations management, including operational personnel, with Siemens’ subject matter experts and data scientists for an assisted sequence of workshops. The workshops drew on our customer’s expertise and experience in their business and the processes of their operations.

The first step was to understand the present situation and generate ideas (cf. Fig. 1). This step focuses on the customer’s barriers and gains. We have been good at not thinking about the future service in this step, but to first discuss the current situation. It is important to analyze the present from different perspectives together with the customer.



Fig. 1 Customer value co-creation framework. Own illustration

During the second step, it is important to create a value proposition. The purpose is to identify and detail the specific operational challenges and value drivers. This second step is usually executed by the service provider.

In the third step, the value creation logic is then reviewed together with the customer. If the customer’s decision is positive, design and prototyping are directly carried out. We commonly apply agile development and rapid prototyping to jointly create working software on our rail specific analytics platform, “Railigent.”

With Railigent and corresponding machine-learning mechanisms, the forecasting systems are constantly being further developed. Siemens Mobility uses it to map the complete path of the data from the sensor on the track to the report within an application—including recommendations for action.

The data is analyzed at the Siemens Mobility Data Services Center in Munich Allach (Germany), which today services over 3000 locomotives and train sets in Europe. This generates considerable amounts of data. It is assumed that a fleet of 100 multiple units produces between 100 and 200 billion data points annually, meaning that a fleet of trains generates around 50 terabytes of data.

Diving deeper into the details, we developed a dashboard on Railigent to help the company’s teams visualize the distance traveled by the fleet and distinguish between frequent and less frequent assets. This way, the economic consequences of maintenance planning become more transparent and available to the operations planning team daily.

To achieve this, Siemens combines existing sensor data from the customer with our algorithms. With these insights and the knowledge of available asset capacity, the customer’s operations teams can better optimize their fleet dispatching as an additional benefit. The customer is currently piloting the software prototype. Once approved, the application can easily scale to cover the entire fleet, resulting in the last important step of the co-creation methodology: implementing and scaling.

During the co-creation workshop, the customer was invited to our Siemens Mobility Data Services Center, where it was possible to discuss their pain points and understand the challenges we have to solve. Their feedback provided the

necessary insights to succeed. The data scientist must work on the customer algorithm to receive direct feedback from the customer. This approach avoids the Chinese whispers effect, and the feedback can be directly translated into success. The co-creation workshop cuts off months, or more, of the time and—attendant costs—of a more traditional development approach. During the workshops, everyone who mattered was literally in the same room to compress these cycles into just days. Instead of having to shape large services and risk considerable investments to evaluate a service value logic, the team could make slighter, more speedy iterations and assess with the customer if the resulting new service is meeting the expectations, before committing to deploy it to scale.

5 Why All Should Apply the Co-creation Principle?

Co-creation is a methodology of expanding new services, innovation, and the capacity to value creation of the company, through nurturing the relationships with customers and reducing marketing, research, and development costs. As a result, besides Siemens, more and more companies are adopting strategies that allow them to co-create with their stakeholders to grow with new services, products, or solutions.

Here are some benefits for the customers resulting from co-creation processes:

1. The customers get a service tailored to their needs since it is the customer who designs or chooses the service, product, or solution that will be introduced in the market.
2. Customers have an opinion. They feel more valued when they are involved in the process of creating value.
3. Customers can interact both with the company and with their own customers.

The benefits obtained by companies using co-creation are the following:

1. *Increased productivity*: Since all participants are sitting in one room, time can be saved, crucial questions can be clarified directly, and errors can be eliminated.
2. *Improved service quality*: The customer receives high-quality services, as these have been developed to meet his requirements.
3. *Improvement in customer satisfaction*: We put the customer in focus, and we listen to our customers. Therefore and because of the specific service for the customer, satisfaction will improve.
4. *Risk reduction*: Due to the participation of the customer within the whole process, misinterpretation or bad design of a solution can be excluded, and the risk of delivering anything unwanted is reduced or even non-existent.

Possible risks and challenges using the co-creation methodology:

1. People, industries, and organizational cultures will not change quickly. It will take time for people to become open to experiencing this new approach.
2. Understanding the customer world needs an internal mindset and culture change; this requires time and patience.
3. The quantity of information could be high. It will be challenging to select the right information and not to lose the customer during the process.

Due to the increase of digital products and services and the importance of understanding the unconscious needs of customers, customer value co-creation will play a crucial role in the future. The unconscious needs that customers are unable to articulate are brought to the surface, defined, and expressed using the method described above. The advantages of the customer value co-creation method are very pronounced. The company's sales team will have to learn this new methodological competence in the short to medium term to remain competitive in the market. Companies can address existing and potential new customers and interact with them. They can test new offers for acceptance at an early stage and at the same time build an early fan base. And they can develop market potentials that only arise through the close partnerships of customers and technology providers.

In summary, companies should ask themselves if they want to continue carrying out a practically one-way sales relationship with the customer or, in contrast, as described above, if they are willing to make the customer the main protagonist of a project.