


## R3 – Resilient, Regional, Retail: Implementation of SusCRM Approach within a Local Retail Platform

Sarankumar Haridas<sup>1</sup>, Richard Schulte<sup>2</sup>, Mattes Leibenath<sup>3</sup> and Benjamin Wagner vom Berg <sup>4</sup>

**Abstract:** Current consumption patterns in offline and online retailing pose challenges in terms of sustainability aspects such as overcoming the last mile, and product-related and energy-related environmental impacts. In the last decades, customers have changed their mindset from money to sustainability which includes e-Commerce neglecting the greenhouse gas emissions which is linked to the last mile delivery. Alternative choices of delivery method and individual mobility are resulting in different emissions. To bridge the gap this work investigates how to apply a SusCRM (Sustainability Customer Relationship Management) to a local retail platform to meet both customer expectations and sustainable and conscious consumption. An overview of potential incentive systems for implementation within a local e-marketplace is presented.

**Keywords:** SusCRM, Incentive model, Last mile, Energy Management, Retail, Sustainability, Marketplace

**Addresses Sustainable Development Goal 12: Responsible consumption and production**

### 1. Introduction

#### 1.1 Motivation

The increment in innovation gives great openings to the dealer to reach the client in a much quicker, less demanding, and financial way. E-commerce is tremendously increasing in the last few years. In recent days the retail sector is booming with help of the internet. Thousands of people shifting towards online shopping. On the contrary, still people are going to the local retail shop and purchasing their things which is very important for the local retail shop to survive [Rh22]. Many consumers decide to buy things in a local shop to have a look at them and acquire ownership of the item only after paying for it. Due to digitalization, the Retail sector is constantly growing and this change is a well-known

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<sup>1</sup> Hochschule Bremerhaven, Smart Mobility Institute, An der Karlstadt 8, Bremerhaven, 27568, sarharidas@smail.hs-bremerhaven.de

<sup>2</sup> Hochschule Bremerhaven, Smart Mobility Institute, An der Karlstadt 8, Bremerhaven, 27568, rschulte@hs-bremerhaven.de

<sup>3</sup> Hochschule Bremerhaven, Smart Mobility Institute, An der Karlstadt 8, Bremerhaven, 27568, mleibenath@studenten.hs-bremerhaven.de

<sup>4</sup> Hochschule Bremerhaven, Smart Mobility Institute, An der Karlstadt 8, Bremerhaven, 27568, benjamin.wagnervomberg@hs-bremerhaven.de,  <https://orcid.org/0000-0001-6976-9625>

phenomenon across the retail industry [HK18]. People who are convenient choose the online shopping platform. In the report of PWC, around 56% of German people choose online shopping platform because of their convenience [PW18].

Contrastingly around 35% of German people said cost was the only reason for them to move towards online shopping. This effect was clearly shown in 2020 global e-Commerce sales. Several studies have already been conducted on the environmental impact of online retailing, but only a limited number of these studies address the environmental impact of FMCG products ordered online. These studies are often limited in scope, comparing an online retail system with traditional shopping and ignoring important impacts such as associated consumer travel. Failed deliveries, product returns, trip chaining (to what extent is the shopping trip embedded in another transport destination, e.g. commuting to and from work, going to school, etc.) and rummage trips (a trip to check out a product before buying it online) can be an important contributor to environmental impacts (estimated as a carbon footprint) [EJ09].

Businesses, politicians, and the public are increasingly realizing that our resources are limited and that numerous problems in the economic, social, and ecological dimensions of our society result from our economic activity and consumption. In its groundbreaking strategy paper on corporate social responsibility, the EU Commission sees it as a central task to support consumers in sustainable consumption behavior [BP21]. The biggest CO<sub>2</sub> polluters in the EU are road transport with a share of almost 27%, which is quite a lot [AE21].

Growing CO<sub>2</sub> emissions are seen as the main cause of global warming and related climate change. The Intergovernmental Panel on Climate Change has formulated the 2-degree target to reduce greenhouse gases in order to prevent climate change and its consequences. The mobility sector plays a central role in terms of energy consumption and CO<sub>2</sub> emissions and is one of the most relevant implementation areas for sustainable consumption. Mobility has strong negative impacts here in both the ecological and economic dimensions of sustainability. Canzler and Knie exaggerate the role of mobility in the CO<sub>2</sub> problem as follows: Transport is the big problem for a successful decarbonization strategy [CK16].

If we look at the transport mix, the so-called modal split, we see that a large part of our spatial mobility is still realized by motorized individual transport today, while at the same time this usually has the most negative effects in terms of sustainability. While the annual growth rates in the Federal Republic of Germany have even been declining in some cases since the beginning of the 21st century, this does not apply to the global perspective. Especially in emerging countries such as India, the number of cars is increasing due to further industrialization and the broader prosperity of the population, and the associated negative impacts are also increasing rapidly. This results in an acute need for action.

## 1.2 Background

Within the project "R3 - Resilient, Regional, Retail in the Metropolitan Region Northwest", a platform for regional retail and a sustainable and competitive supply and logistics structure is to be conceptually developed that strengthens regional retail against large online platforms. The project started on June 1<sup>st</sup> 2021, and is planned for two years. The project is being carried out by the University of Applied Sciences Bremerhaven while the applicant for Funding by the Metropolregion Nordwest was the Erlebnis Bremerhaven GmbH (society for marketing and tourism for the strengthening of the city of Bremerhaven / who are also a marketing partner). The project is supported by a large number of partners, ranging from companies, associations, societies, cities, municipalities, districts, and the state of Bremen. In the project, a platform is first designed with the various stakeholders and then engineered in software terms. Competitive advantages such as sustainability and regionality, competent consulting as well as delivery and pick-up services are going to be integrated within the platform. In this platform, a SusCRM-approach is implemented, in which stakeholders, such as consumers, retailers, institutions, and logistics providers shall be incentivized to more sustainable acting.

The platform approach aims to lead to more orders from local retailers, who are participating in the local marketplace. Therefore, an increase in traffic resulting from retail last-mile logistics and individual mobility is expected. Sustainable aspects of the last mile have to be evaluated regarding the different delivery options, as well as the individual mobility to local retailers.

## 2. State of Art

In today's world, customers have so many options to choose what they want to buy. Because of digitalization, they have enough pathways to purchase what they desire to buy. For example, due to the introduction of mobile commerce and e-commerce, there is a lot of rivalry between different channels and because of this, we need to realize what makes customers buy from one channel to another. The main research direction identified explores the evaluation of product sustainability.

In recent years, consumers have had an unprecedented choice when buying goods and services. Research has examined the impact of consumer choices on carbon consumption, greenhouse gas emissions, and climate change. The research also shares the consensus, that consumer decisions are carbon-emitting. However, some consumer choices, decisions by logistics and supply chain providers, transport, and even technical solutions contribute to more greenhouse gas emissions [DF20]. Our aim is to understand the environmental footprint of consumer's retail behavior. As the purchase and delivery of goods has expanded to multiple channels, we want to measure the role of retail, transport, and energy consumption. The aim is to help those involved in the delivery and receipt of goods to minimize their carbon footprint [MZ17].

A study by the German Federal Environment Agency compares stationary and online

shopping. While a 5 km shopping trip by car causes 600-1,100 g of CO<sub>2</sub>, the CO<sub>2</sub> emissions for going to a local shop by bicycle or by walk are zero. But when it comes to online shopping it emits around 200-400 g of CO<sub>2</sub>. These low emitted methods are related to car driving where it has better space to allocate things, utilization of car to the fullest, proper transportation routes, and use of EV mode of transportation. The most important aspect of a retail shop is the usage of energy and mode of transport. The immense disadvantage in online shopping is package waste and last-mile delivery. [Ub22]

Over the past quarter-century, the retail sector has changed a lot driven by technological advances, supply chain innovations, and ever-changing consumer behavior. While consumers used to flock to suburban malls and brick-and-mortar shops in cities, e-commerce - combined with the possibility of next-day delivery - has completely changed the way we buy all kinds of goods. In parallel with this change, climate change has reached a point globally where it is undoubtedly impacting our environment, our economy, and our resilience as a society. The question we now need to ask ourselves is which of these forms of consumer behavior will lead to lower carbon emissions and be better for the world we live in [DF20]. The energy efficiency of commercial buildings is becoming more and more important due to the annually increasing number of commercial buildings [MZ17].

The strategic orientation of companies towards their customers and the associated maintenance of customer relationships is often viewed in a purely economic dimension. The main objective of "Sustainable Customer Relationship Management" (SusCRM) is to extend this traditional approach with an ecological and social dimension, which can provide the customer with alternative options for more sustainable consumption.

### **3. Methods for Sustainable approach in Retail store**

SusCRM can be understood as any CRM approach that supports the continuous development of inter-company and customer relationships, considering the environmental, social and economic value of stakeholders and third parties involved. SusCRM strategies can identify sustainability values and goals as key differentiators for customer relationships and present a CRM process designed to increase loyalty as well as to motivate its target group to interact in a more sustainable business model. [BW15]

Within the approach an incentive model for the realization of the SusCRM strategy is implemented. This incentive model introduces measures, which can incentivize the consumer to adopt a more sustainable shopping and mobility behavior. Each incentive can be assigned to one of the four categories:

1. Information-based incentives
2. Game and competition-based incentives
3. Social incentives
4. Reward-based incentives

Based on Wagner vom Berg, information-based incentives include all those incentives that lead to a change in the customer's shopping behavior by passing on information to the customer. At this point, however, it must be stressed that the mere provision of information on sustainability is not sufficient for a change in behavior. It must be supplemented by the identification of attractive alternatives and further incentives for action.

In the case of social incentives, the motivation for changing behavior arises from the "expected reciprocity". This limits the individual's desire to elevate his own status in the community to satisfy his need for social attention.

The effectiveness of game- and competition-based incentives is based on a person competing with himself or with others. The performance of the others and/or the self-imposed performance limits are intended to motivate a person extrinsically or intrinsically to improve his own performance in a certain area.

In addition to the information-, game- and competition-based incentives already described, as well as the social incentives, reward-based incentives are also to be integrated within a local retail platform. Here, the focus is on material and non-material rewards in order to influence the purchasing behavior of end customers. Material rewards can be divided into monetary, such as credits and discounts, and non-monetary rewards (e.B. vouchers). Non-material rewards do not influence behavior through material value but relate more strongly to social incentives. Motifs to take part in a SusCRM approach can be intrinsic, extrinsic, and extrinsic-instrumental [BW15].

In this project, the following action areas can be identified to be suitable for the implementation of a SusCRM-approach within a local marketplace scenario: energy management in retail stores, use of sustainable products, and sustainable last-mile approaches.

## **4. Application of SusCRM Approach within a Local Marketplace**

### **4.1 Energy Management in Retail Store**

Savings in the environmental impact of a retail shop's energy consumption can be achieved by improving energy efficiency and using renewable energy sources. For example, choosing a renewable energy plan can reduce CO<sub>2</sub> emissions from energy consumption from 1.2 tonnes to 0.08 tonnes per year in a 2400 kWh consumption scenario, a reduction of over 90 percent. [Cw22]. Energy efficiency in buildings means the ability of buildings to reduce energy consumption by using efficient technologies or methods. Proper planning for the buildings is needed to achieve maximum efficiency. Retrofitting buildings is one of the practices of energy management in buildings (e.g. replacing window frames) [GE11]. Awareness of energy consumption and the behavior of users (e.g. owners, managers, tenants, and customers) can also influence the energy efficiency of buildings. There are different technologies for energy saving, such as energy-saving lamps, BEMS

(Building Energy Management System) or BAS (Building Automation System), and renewable energy systems (e.g. photovoltaics and energy storage). Sustainable solutions such as decentralized energy generation (e.g. wind turbines or PV solar panels) are installed in buildings for various reasons, e.g. power outages [HM15].

## **4.2 Use of Sustainable Products**

Sustainability is increasingly becoming a standard of living for many people. Not only companies are changing their processes, but individuals are also changing their lifestyles. Given the state of our planet, it is imperative that manufacturers, businesses, and individuals work together to protect the earth's natural resources. A sustainable lifestyle reduces your carbon footprint and improves the entire supply chain by reducing energy consumption, protecting valuable ecosystems, and reducing pollution. We can work towards sustainability by making responsible choices for the products we select for ourselves and our families. The current economic model is still based on the "take-make-replace" principle. It depletes our resources, pollutes our environment, and damages biodiversity and the climate. It also makes Europe dependent on resources from other countries. To solve these problems, the EU wants to move to a more circular economic model based on more sustainable products. Some of the approaches, which can likely be used in the project's platform approach, are as follows [Cc22]:

- Avoid products with excessive packing
- Buy products with certified Eco-labels
- Use products made from recycled materials
- Buy environmentally friendly cleaners
- Use products that are biodegradable
- Buy products that use less water
- Buy products that reduce energy consumption

## **4.3 Sustainable Last Mile**

The surge in e-commerce volumes has put enormous pressure on the last mile delivery system, the process by which products are transported from distribution centers to the end consumer. The COVID -19 pandemic has only accelerated this trend as more and more people demand contactless forms of shopping. Some of the sustainable last-mile approaches are as follows [TT22]:

- Market the green delivery and pick-up option
- Pack delivery more efficiently
- Explore sustainable packing options

- Joint delivery system, including networking sorting center

For the delivery option, we still have a sustainable option to deliver the product for example use of EVs and bicycles helps us to deliver in time as well as in a sustainable way. Nowadays packing stations have attracted a lot of consumers, which helps consumers to collect their products whenever they are free. Customers also have their part to play in this entire sustainable option. They have to be very careful in their approach to buying products. They have to purchase environmentally friendly products, reuse most of the online buying products, and particularly purchase with proper sustainable packing. We don't have to always buy a new product. In recent days people started to use second-hand products which are more sustainable and cost-effective.

#### **4.4 Approaches for SusCRM Implementation in a Local Marketplace**

The literature proposes different strategies and instruments that can be implemented by retailers to engage customers for more sustainable acting with their shopping behavior. A local marketplace approach needs to adapt from those methods to be able to promote sustainability in both online and offline sales. Studies in this field identify different approaches to retail marketing interventions [Ba21]. And also provides sustainable choices, staging shopping experiences that enable consumers to make sustainable choices in store

1. Editing choices in favor of sustainable consumption
2. Educating consumers on sustainable consumption
3. Informing consumers about sustainability-related aspects
4. Promoting sustainable shopping and consumption behavior
5. Getting third party certifications for sustainability.

Those approaches need to be shaped for use inside a local marketplace. The implementation of SusCRM with a marketplace provides the opportunity to influence both the suppliers and demand side regarding sustainable behavior. Local marketplaces especially allow to impact the consumers choice of individual mobility traveling to store by implementing incentive models to lead the consumer to a more sustainable choice. Retailers offering sustainable products and services can be promoted within the marketplace to give them a competitive advantage and incentivize sustainable acting. In the following Tab. 1 a selection of incentives is proposed to adopt the SusCRM strategies to a local marketplace:

Incentive system	Example
Information-based incentive	Comparison of the environmental impact of different delivery and pick-up options Certificates and labels for sustainable products, services and energy use
Game and competition-based incentive	Ranking of consumers regarding sustainable shopping behaviour Ranking of retailers regarding sustainable offers and acting
Reward-based incentive	Credit for no return of orders; credits for choosing sustainable alternatives Preference for sustainable retailers in product and store searches
Social incentive	Individual sustainability report that compares to other shoppers and retailers

Tab. 1: Examples of potential incentive systems suitable for marketplace integration

The majority of retailers say they currently participate in flagship retail coalitions, and despite the fact that 3% of them say coalitions have had a really hard impact on their Supportability efforts, there is still a solid belief that collaboration is essential. Around 90% of the supportability groups surveyed accept that engagement and collaboration with peers and others in the community will be critical supporters in moving forward on supportability [SH22]. There are clear opportunities for retailers to work together to avoid exposing problems. Collaborative activities can be particularly useful in creating a standardized approach to vendor metrics, definitions, and information levels across the retail industry. Retailers can then use this information to set baselines, make progress, engage suppliers and educate their customers on climate-friendly products. Other industries have already shown positive results based on this approach. A local retailing marketplace holds the opportunity to create an ecosystem for sustainable acting within retailing by through reciprocal effect on the stakeholders involved.

## 5. Future Outlook

The proposed project has the objective of implementing SusCRM approaches to contribute to sustainable consumption. Since the platform includes both offline and online sales channels, instruments must be found that, in addition to possible delivery options, also influence personal mobility. Furthermore, the other two big contributors to environmental issues resulting from energy and product-level have to be considered.

The implementation of incentive models needs to be executed within the design and conception of the marketplace. Suitable options for the integration of those instruments have to be evaluated in the sense of acceptance of the different stakeholders (customers, retailers, logistics service providers). When talking about information-based incentives it



has to be ensured that provided information is scientifically approved and communicated in a comprehensible way. This means that different delivery and pick-up alternatives need to be evaluated regarding their actual impacts as well as product-related information such as certificates and labels. In the sense of more sustainable energy management executed by retailers, instruments to inform customers about the application need to be found and evaluated. Further research also provides a valuation framework that can be used to assess the values of exact emission of CO<sub>2</sub> for the overcoming of the last mile.

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