Combining RFID technology with social media marketing – a value network analysis

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Abstract: This study focuses on the potential for value creation in combining radio frequency identification (RFID) technology with social media marketing. We analyse a value network comprising an RFID technology provider, a software supplier, a sports centre adopting the system, and the sports centre’s end customers. The findings suggest that value creation related to new technology requires deep collaboration between the suppliers, as they need to develop value propositions that motivate companies to adopt new systems and end customers to use these systems. The threat to the end customer of losing privacy when RFID technology is employed, and the interactive nature of communication in social media, means that the value created by a system combining RFID technology and social media is highly dependent on the end customer’s motivation to be involved in value creation.

Keywords: radio frequency identification; RFID; social media; social media marketing; social network; value network.


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1 Introduction

Radio frequency identification (RFID) technology has typically been used to improve supply chain and inventory operations (Kim et al., 2008). Recently, RFID technology has also begun to emerge in customer facing processes to improve customer service (Tsai and Chung, 2011; Lee et al., 2008). RFID provides new opportunities to track customers and collect customer information in customer relationship management systems (Bayraktar et al., 2010).

Customer-oriented RFID technology is employed, for example, in healthcare (Lee et al., 2008; Chao et al., 2007) and in the retail sector (Müller-Seitz et al., 2009; Moon and Ngai, 2008). However, there are few studies focusing on customer-oriented RFID technology (Bayraktar et al., 2010; Slettemeås, 2009; Heim et al., 2009; Lee et al., 2008) and RFID’s potential in the service sector (Ferrer et al., 2010; Smith et al., 2009). Also the level of integrating RFID applications into other systems has been low (Thiesse et al., 2009). We argue that an intelligent customer tracking system, combining RFID technology with social media marketing, could result in both more effective marketing and better customer relationship management. In order to evaluate the potential for combining RFID technology with social media marketing, we analyse the value network of an RFID technology enabled social media marketing system.

Social media offer a new platform to interact with customers and increase brand awareness and customer loyalty (Trusov et al., 2009; Hoffman and Fodor, 2010; Kozinets et al., 2010). The impacts of new technologies on marketing are attracting an increasing amount of academic attention (e.g., Jayachandran et al., 2005), and the value creation opportunities offered by social media have been recognised in the context of consumer markets in particular (Mangold and Faulds, 2009; Hoffman and Fodor, 2010). However, the value creation opportunities in RFID-enabled social media marketing remain unexplored. The purpose of this study is to address that gap and examine the value creation opportunities arising from combining RFID technology with social media marketing. We aim to answer the following research question: What are the characteristics of value creation in a value network that deploys RFID technology in social media marketing?

We seek to answer the research question by analysing the value network comprising actors involved in the production and use of an RFID-enabled social media marketing
system. The actors include a technology provider, a software supplier, a sports centre implementing the system and the sports centre’s customers. The system comprises both RFID technology and social media marketing software, which together offer a system that tracks customers and deploys the collected data. Value creation is studied through the value network, since it has proven to be an adequate framework for the analysis of value creation related to new technology (e.g., Pagani and Fine, 2008; Kauffman et al., 2010; Helander and Kukko, 2009). We describe the value network and analyse what kinds of value the system creates for different members of the network.

Our findings suggest that the value created through RFID-enabled social media marketing is highly dependent both on the system and software suppliers’ collaboration, and the end customers’ value producing actions. Firms implementing RFID in customer facing processes should recognise the end customer’s decisive role in value creation, as their perception of benefits defines their willingness to adopt the new technologies. Our study provides an illustrative example of RFID technology employment in social media marketing, and contributes to the literature on customer-oriented RFID applications (Lee et al., 2008; Bayraktar et al., 2010; Slettemeås, 2009; Müller-Seitz et al., 2009) and to the emerging literature on social media marketing (e.g., Mangold and Faulds, 2009; Hoffman and Fodor, 2010; Palmer and Koenig-Lewis, 2009; Kozinets et al., 2010; Trusov et al., 2009).

The paper is structured as follows: First, we review the existing literature on RFID technology and social media marketing. Secondly, we introduce value networks as a framework for the analysis of value creation. Thirdly, we explain the methodology used in this study. Fourthly, we introduce and analyse the value network of the RFID enabled social media marketing system. Finally, conclusions, managerial implications and suggestions for further research are presented at the end of the paper.

2 RFID technology and social media marketing

RFID technology has been extensively studied as a means of tracking materials in supply chains for example in retailing (e.g., Papakiriakopoulos et al., 2009; Thiesse et al., 2009; Subramanian and Iyigunoglu, 2006; Prater et al., 2005) and in manufacturing industry (Irani et al., 2010; Ngai et al., 2008b; Chao et al., 2007). Applications in service businesses have attracted fewer researchers’ attention (Ferrer et al., 2010; Slettemeås, 2009; Smith et al., 2009). Recently, business applications of RFID technology have begun to spread into the service sector and customer facing processes but more research is needed in this area (Heim et al., 2009).

RFID technology is used to improve the customer experience, for example, in hospitals (Lee et al., 2008; Chao et al., 2007), in libraries (Lee et al., 2008) and in the retail sector (Zhou et al., 2009; Müller-Seitz et al., 2009; Moon and Ngai, 2008; Ngai et al., 2008a; Uhrich et al., 2008; Smith, 2005). All of these studies emphasise RFID technology’s potential but there are several possibilities for RFID utilisation that have yet to be addressed (Irani et al., 2010). It also appears that the applications developed for service businesses are still in their early phases of adoption (Ferrer et al., 2010).

From a marketer’s perspective, RFID technology is attractive for its capability to collect real-time customer information. Collected information can be used also to provide more customised services (Tsai and Chung, 2011). The potential of RFID technology in
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Marketing has already been recognised, but customer-oriented applications are still waiting for large-scale adoption (Bayraktar et al., 2010). Low adoption rates for RFID technology can be explained through the lack of studies focusing on the actual business or organisational applications (Ngai et al., 2008b). In addition, customers’ concerns about privacy impact their acceptance of RFID technology which is dependent on individual traits (Pramatari and Theotokis, 2009; Heim et al., 2009; Müller-Seitz et al., 2009). It seems that companies are reluctant to pioneer customer facing RFID technology and are waiting for others to test the systems (Bayraktar et al., 2010). This suggests that producing examples of RFID-based applications and integrating RFID technology into more complete customer relationship management systems might help persuade companies to adopt the technology.

Similarly to RFID technology, social media offer marketers attractive application opportunities. Social media comprise a large number of online forums such as blogs, discussion boards, chat rooms, product or service rating websites and social networking websites (Mangold and Faulds, 2009). In the existing marketing literature, social media has been studied mostly as a platform for creating and spreading information by word-of-mouth in blogs and discussion forums (e.g., Kozinets et al., 2010; Palmer and Koenig-Lewis, 2009). However, social networking sites are now also attracting marketers as they occupy an increasing amount of internet real estate (Trusov et al., 2009). On social networking sites, individuals can create a profile, display their connections to others and view their own and others’ connections (Boyed and Ellison, 2008). Facebook is the prime example of a social networking site, with more than 800 million active users. Typical ways to share experiences with friends in social media include status updates, tweets, blog postings and online reviews. Consumers and firms can launch fan sites in Facebook and, for example, Coca-Cola and Pepsi have used them to build their brands and develop new products.

Social media marketing benefits are substantial. Exploiting social media as a marketing channel can produce cost savings in a marketing budget, more relevant marketing research as well as increased brand awareness and deeper brand engagement (Hoffman and Fodor, 2010). As a marketing channel, social media are effective in spreading word-of-mouth and in co-producing marketing messages in tandem with the customer (Kozinets et al., 2010; Trusov et al., 2009). Colliander and Dahlén (2010) argue that social media can generate even higher purchase intentions than traditional media because the marketing message spreads between friends or people who share the same ideologies. On the other hand, social media marketing also has its drawbacks as negative customer experiences spread swiftly with companies unable to control communications between customers (Palmer and Koenig-Lewis, 2009).

In social media marketing, customers need to be motivated to engage in interaction with the company and each other (Hoffman and Fodor, 2010). The desire to enhance reputation and share experiences with others have been identified as the main motivators for people to use social media (Palmer and Koenig-Lewis, 2009; Boyed and Ellison, 2008). Thus, in social media marketing the marketer should focus on enhancing the customer’s social status in order to motivate customers to interact. However, personality significantly impacts people’s willingness to interact in social media (Correa et al., 2010), and personality factors are beyond the marketer’s control. Building trust has been found to be a critical factor in the success of banner advertising (Bunker and Bartholomew, 2010), and it is a prerequisite for social media marketing, too.
3 Value networks and networked firms

The value chain (Porter, 1985) had long been the primary concept and tool to analyse value creation in industries. However, in the networked economy, traditional analytical tools based on sequential processes within firms fail to identify the true sources of value. The key to value creation in the networked economy lies in understanding how value is created in relationships (Anderson et al., 1999; Peppard and Rylander, 2006). To address this challenge, new approaches such as ‘firms as networks’ and ‘networked firms’ have emerged (Achrol and Kotler, 1997). In the strategic management literature, the value network approach has been suggested as an alternative to value chain thinking (Fjeldstad and Ketels, 2006; Stabell and Fjeldstad, 1998). In value networks, companies create value by facilitating relationships between their customers with the help of a mediating technology (Thompson, 1967). The value network approach has been applied, e.g., in the contexts of the telecommunications services industry, e-business, and supply management. It has been found especially useful in studying value creation related to information technology adoption (e.g., Gottschalk, 2006; Peppard and Rylander, 2006; Pagani and Fine, 2008; Helander and Kukko, 2009). In adopting new systems related to new technology, the actors such as a supplier and customers collaborate, and their actions are influenced by each other’s actions, which require network analysis to reveal the value produced in the network (Peppard and Rylander, 2006). This is especially true in the complex setting of mobile services (Anderson and Williams, 2004; Salo et al., 2008).

Value networks comprise three activity categories:

1. network promotion and contract management
2. service provisioning
3. infrastructure operation (Stabell and Fjeldstad, 1998).

The first category includes activities to attract and select potential customers for the network, such as sales, marketing and branding activities. The second category comprises activities to establish, maintain and terminate links between customers, and billing for value received. The third category comprises activities associated with maintaining and operating the physical, financial and information infrastructure that allows the company to provide services to its customer base (Stabell and Fjeldstad, 1998). In value networks, the two relevant properties are network size and network composition. The composition (who the other members of the network are), can have a major impact on the end customer’s value perception (Fjeldstad and Ketels, 2006). Thus, the value of a service depends on whom it enables the customer to interact with. Greater customer participation in the value network often means more information sharing. However, the desire for privacy can reduce willingness to share information. The trade-off between privacy reduction and network participation is a critical issue in value networks (Lusch and Vargo, 2010).

In a network approach, the focus of analysis shifts from a single company or the industry to the value-creating system itself, within which different actors (supplier, partners, and customers) co-create value. By understanding each actor’s role and their relation to each other we can better understand the whole value producing system. The fundamental steps of value network analysis begin with an identification of...
the consumption activities, followed by an analysis of the value creating system (Brandenburger and Nalebuff, 1997; Parolini, 1999). The first phase of analysing the network includes the identification of the network and the actors, which is followed by defining the perceived value of each actor and identifying the network influences (Peppard and Rylander, 2006).

3.1 Methodology

Since the research focus was to analyse the value of an RFID-enabled social media marketing system, which is a unique and complex case that is difficult to quantify, it was decided that single case study method would best support the research purpose as it aims for a deep understanding of the phenomenon (Ghauri and Grønhaug, 2010; Yin, 2003; Eisenhardt, 1989). Case studies are appropriate methods for exploratory research (Eisenhardt and Graebner, 2007; Woodside and Wilson, 2003; Bonoma, 1985), which is the aim in this study, as the literature on combining RFID technology and social media marketing is scarce. Previous research has also validated case studies as a suitable method for business network analysis (Halinen and Törnroos, 2005), and the method has been employed in many business network studies related to information technology (e.g., Kauffinan et al., 2010; Helander and Kukko, 2009; Salo et al., 2008).

The unit of analysis is the value network that represents the single case to be studied, and it was limited to comprise only the critical actors which include the software provider, the RFID technology provider, the implementing company, and its end customers. To avoid sampling bias (Miles and Huberman, 1994; Yin, 2003), the case was carefully selected to represent a real life application of the combined adoption of RFID technology and social media.

The primary data comprise semi-structured interviews conducted with representatives of all three companies involved in the production and use of the system, together with selected end customers. Data were collected from all network levels as two of the interviewed companies represent the supplier level with the third at the first customer level implementing the system. In each company, a key manager was interviewed concerning the company’s position in the network, the benefits they gain and the value the network produces. Only the key informants (Kumar et al., 1993) were interviewed because all the network companies are small and the interviewed persons were the only ones in their organisation with enough information about the system.

Data triangulation was employed to reduce informant bias (Arksey and Knight, 1999) by asking the same questions of each company’s representative and then comparing the answers. Details of the 14 interviews conducted are shown in Table 1. The interviews lasted from one to two hours and, in the case of two companies, second interview sessions clarified uncertain aspects and, building on the first interview round, more detailed descriptions of the value network were created. Company interviews were conducted in December 2010 and January 2011. In addition, 11 end customers were interviewed in order to gain a full understanding of the value creation potential in the network. The end customers were chosen using information obtained during an RFID enabled social media marketing system meeting in January 2011, with the aim of selecting a purposive sample best representing the usual group of customers in the implementing sports centre.
In addition to the interviews, secondary data were collected from the companies’ marketing materials, phone calls with the interviewed persons, and from the CEO of the software provider. The acquired data were analysed by qualitative means using thematisation (Miles and Huberman, 1994). The next section describes the system and its key components.

4 Case study: combining RFID technology and social media marketing at a sports centre

4.1 Description of the RFID enabled social media marketing system

The social media marketing system is based on RFID technology and social media software, which sends messages to a social networking site. Figure 1 introduces the system components and their tasks. When a customer enters the sports centre, the RFID reader automatically recognises them from the RFID tag equipped customer card, and registers the customer’s entrance. The technology provider’s server stores the information and sends it to Facebook with the help of software developed by the software supplier. The customer’s presence is recorded on the counter display on the sports centre’s Facebook profile, showing real-time data on the number of customers on the premises. With the end customer’s permission, the system also automatically sends a status update of their entrance to the sports centre to the customer’s Facebook profile.

The collected data help the end customers avoid traffic at the sports centre and choose the optimal timing for their workout by checking the user counter on Facebook. The status updates create brand awareness for the adopting company and attract members of the end customer’s social network to work out at the same sports centre. The collected data can also be used for customer relationship management in mobile or e-mail marketing, customer loyalty programmes, rewarding frequent customers, or measuring marketing efficiency. The system has the potential to be implemented in several locations where recording and sharing information about people’s presence could be valuable.

The studied value network comprises actors who are involved in the provision and use of an RFID-based social media marketing system. The case network comprises the RFID technology provider, the software supplier, the sports centre adopting the system and the sports centre’s end customers. The technology provider supplies the RFID-based access control and hardware maintenance, and also data warehousing as the collected customer information is stored on the technology provider’s server. The software supplier’s value creating activities include building the necessary software and designing...
Facebook applications. The implementing company (sports centre) provides marketing information and interacts with the customers by providing information about its value propositions. End customers create value by acquiring new customers through their social networks. These value creating activities are the minimum requirements for the proper use of an RFID-enabled social media marketing system. The value created for each network actor is analysed below.

**Figure 1** Components of the RFID-enabled social media marketing system (see online version for colours)

4.2 *Value for the RFID technology provider and software supplier*

Previously, the RFID technology provider had focused on selling technology for RFID-enabled access systems with the software supplier supplying only software and marketing services without hardware. Thus, a social media marketing system offers opportunities for both supplier companies to expand their business. The marketing system enables the RFID technology provider to acquire customers who would not buy RFID technology for access control, and the software supplier to be able to sell entire solutions instead of only software and services. With this integrated system, both supplier companies can focus on the part of the business they know best; the technology provider
on RFID technology development and the software supplier can invest in finding new applications for the system. This is important because both supplier companies operate in industries with rapidly changing technology, which requires a continuous understanding of current trends. Today, Facebook is the channel to target millions of people, but tomorrow there might be an even better channel that would require new software. As the technology provider stated:

“We need to be involved in everything new as we cannot know what the trend is for tomorrow. We need to collaborate with the software supplier as this (new) system might be the one that breaks through.”

The rapidly changing environment can also be seen as a threat to value creation because either of the suppliers could find a better way to acquire profits and focus their resources on some other system. In the early phases of the collaboration, the threat is severe as the actors have not yet invested deeply in the relationship and strengthened the ties between them. Also, profit sharing may cause problems. At this point, the companies trust in collaboration but the business is still small with no significant monetary profits being created. As the business expands, the companies will need to start dividing the profits which may cause problems. Thus, the value creation potential also causes a value sharing problem which, together with the continuously developing technology, may produce challenges.

4.3 Value for implementing company (sports centre)

In implementing the RFID technology enabled social media marketing system, the sports centre gains RFID access control, data about customers’ visits, brand awareness in social media and savings in the marketing budget. The implementing company is also able to provide better customer service than others by assisting customers in more effectively planning the timing of their training through the system, which enables the number of real-time users in the sports centre to be checked on social media. In a highly competitive industry, this helps the sports centre differentiate itself from competitors. Additionally, social media help the company engage with its customers as the system encourages them to visit the company’s Facebook profile, in which other information about the sports centre can be found. While visibility in the social media is needed for value creation it is not, in itself, enough to increase profits. As the sports centre manager states:

“Of course we would like to gain more brand awareness but does it bring more customers to the sports center? This is a highly competitive market and therefore we need to use all the possible ways to differentiate ourselves from our competitors.”

The value creation does not rest solely on increased visibility in social media but also on the real potential to attract new customers. The sports centre manager believes that existing customers are the best marketers to attract their own friends to the centre, which is therefore willing to reward those customers who permit automatic status updates.

“…for us, the real benefit is to get access to the customers’ status updates.”

If end customers permit the system to update their social networking site status automatically, the sports centre would achieve notable costs savings in its marketing budget. As the system is integrated into RFID technology which also provides access control, the implementing company can simultaneously acquire both access control and a
marketing system. Due to the automatic nature of the system, it does not increase the centre employees’ workload and can even alleviate the rush hours if customers start to plan their visits based on the user information provided. In the long run, the system may also lead to increased capacity if rush hours diminish as people shift to using less crowded training times at the sports centre.

4.4 Value for the end customer

All but one of the interviewed customers was eager to discover the real-time user numbers at the sports centre, and thus considered the system useful from their perspective. However, only four respondents out of 11 were willing to grant the system automatic status update rights. This is critical to value creation because not even the promised rewards motivated customers to share their presence in social media, mainly due to concerns about privacy. Sports centre customers did not want to be followed by their friends and one customer even stated that the Facebook status updates could attract burglars because they reveal when their house is empty. However, there are several social media systems such as Foursquare or Facebook places applications with millions of users which already share information about people’s locations. This indicates that there should be users for the social media marketing system as well. The customers who were willing to share information about their visits to the sports centre were extremely pleased with the automatic RFID tracking feature and the automated status update.

“I wish this system could be used everywhere I train.”

However, those who liked the automatic status update were not interested in the rewards they would gain by using the system. The easy way to apprise their friends of their workout was reward enough. End customers also mentioned that knowing friends could easily see the amount they work out would probably motivate them to do more. Thus, social status enhancement seems to be the most effective reward for sharing information in social media.

5 Discussion

The RFID-enabled social media marketing system is highly dependent on the actions of the end customers, and the system only manages to produce value when they are willing to share information about their presence at the sports centre with their friends. Therefore, the value is produced in the interaction in which the end customer plays an important role. The value components arising both from the literature and the case study are depicted in Figure 2. The analysis indicates that the RFID enabled social media marketing system produces the greatest value for the company implementing the system.

In the literature, it is argued that networks are needed to compete with new technology (e.g., Parolini, 1999; Peppard and Rylander, 2006), and this statement was supported by the analysed network’s actors who argued that operating in social media, especially with RFID technology, requires collaboration. Both social media marketing and RFID technology are developing at a tremendous pace, which forces companies to identify trends and act quickly. This makes it difficult for companies to find new markets and acquire new competencies without collaboration, although that in itself carries risks as partners might act opportunistically.
The value gained by the implementing company is highly dependent on the end customer’s willingness to share information on the social networking site. The company can generate new customers via the system only if the end customer is willing to reveal their sports centre visits to their social network. Thus, the case analysis reveals that customers’ actions impact the value created at the supplier level. If end customers do not use the social media application, the advantages of RFID access control are diminished.

The value perceived by the end customers impacts their varying degrees of willingness to share information on social media. Thus, value creation is based on the network’s ability to support the end customer’s own everyday actions. For example, today’s increased appreciation of health and physical fitness gives users the opportunity to enhance their social standing through exercise-related status updates, which in turn creates the potential for fitness companies to engage their customers as co-marketers. Also, the ability to keep records easily of their training times would encourage customers to give permission for the automated status update. The automated training log enables workout data to be saved without customer effort and constitutes an added service provided by the sports centre. The ability to check the number of customers using the sports centre at a specific time would encourage people to avoid rush hours and save time in exercising with less traffic at the centre. This would also help the sports centre increase capacity. These types of mechanism have implications for value creation at the network level.
While the RFID technology eases customer identification by automating the identification process, which customers appreciate, it seems that value creation is shaped by social forces and personality affecting consumers’ willingness to share information about themselves. Some people are more willing to interact than others, and no amount of perceived value or reward can change customers’ attitudes towards the tracking devices, or their willingness to interact in social media if it is contrary to their way of thinking. Social media and RFID technology are regarded as distinct by customers with concerns about their privacy. These feelings of losing privacy might stem from people’s primitive desire for safety and are thus difficult although not impossible to change.

6 Conclusions

The research focused on revealing the characteristics of value creation by combining RFID technology with social media marketing. RFID technology and social media marketing need to be researched simultaneously because social media is a channel through which to apply the data collected by RFID technology for marketing purposes. The findings reveal that each actor in the value network, including end customers, plays a part in value creation and, in systems based on RFID technology and social media, the end customers’ actions are critical to value creation.

The findings of this research contribute to two emerging discussions. First, the research contributes to the discussion on the use of RFID technology in customer facing processes (e.g., Tsai and Chung, 2011; Ferrer et al., 2010; Lee et al., 2008). Companies have been reluctant to adopt customer facing RFID technology but this research suggests that the integration of RFID technology and social media with more complete customer relationship management solutions would boost the adoption of the new technologies. Secondly, the research contributes to the emerging discussion on social media marketing (e.g., Kozinets et al., 2010; Mangold and Faulds, 2009; Hoffman and Fodor, 2010; Palmer and Koenig-Lewis, 2009) by suggesting that RFID technology should be combined with a social media marketing system. Value creation in RFID technology enabled social media marketing rests on interaction and is dependent on the end customer’s willingness to be tracked and to share information in social media. It appears that systems that have new technological elements such as RFID and social media are attracting customers, but only if they can still control their privacy. Collaboration at the supply level is needed to create value propositions that motivate customers to interact in social media by encouraging them to enhance their social status through social networking. However, the customers who are most worried about losing privacy will most likely refuse to use social media and RFID tracking.

6.1 Managerial implications

The RFID technology enabled social media marketing system sets an example that both social media and RFID technology provide marketing opportunities that are still underestimated. To adopt the full potential of RFID and social media marketing, four actions are suggested for managers. First, companies should adopt systems based on RFID technology and social media marketing because these systems can help companies differentiate themselves from their competitors. Secondly, RFID technology and social media marketing should be more deeply integrated with customer relationship
management systems as they are means to collect and share customer information. Thirdly, managers should focus on motivating customers to use the new technologies. Rewards do not work in social media and RFID tracking because people’s personality factors define whether or not they are willing to use new technology. Thus, managers should try to find ways in which to boost people’s self esteem via social networking and emphasise RFID’s benefits to customers for example, by offering more customised service. Fourthly, privacy issues related to RFID technology and social media marketing must be carefully considered. Customers need to have a choice on how much they are willing to reveal about themselves, because there will always be customers who want to control their privacy.

6.2 Limitations and future research avenues

This research opens a new thread of discussion on how RFID technology can be combined with social media marketing, and the issue must be studied further because companies need illustrative examples of how to use RFID technology and social media marketing. The data were collected from a single case in its pilot phase, and a longitudinal study is needed to reveal the value components that can arise after people have familiarised themselves with the system and found all its positive and negative aspects. Since this was the first study endeavouring to depict value creation through the combined adoption of RFID technology and social media marketing, more studies are needed in this area. Privacy issues are the main concern of customers unwilling to accept RFID technology and social media, which offers many potential future research avenues. Future research questions might read as follows: How does trust between the service supplier and customers impact customers’ willingness to share information in social media or allow RFID tracking? Also, how could the service supplier motivate customers to use social media and allow RFID tracking? Future research should also focus on solutions that deploy customer-oriented RFID technology, because its adoption in customer facing processes is being slowed by the lack of suitable applications. Possibilities to integrate RFID and social media marketing to more complete customer relationships managements should be studied further in order to increase the understanding of the vast opportunities that these offer for managing customer relationships.

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