

# Information technology utilization for industrial marketing activities: the IT–marketing gap

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## Abstract

**Purpose** – This study aims to investigate the possible gap between the logic of these information technology (IT) systems and industrial firms' marketing practices. Industrial firms rely extensively on IT systems for their business.

**Design/methodology/approach** – Based on the contemporary marketing practice (CMP) model, which depicts firms' marketing practice as ranging from transactional to more relational and networked-based, the logic of IT systems and how users in industrial firms adopt them are amended to create an extended model. The extended model is used to analyze an in-depth case based on 63 interviews regarding one industrial firm's business with customers and suppliers and how IT is utilized in this setting.

**Findings** – Results show that industrial firms' relationship-oriented business is poorly supported by currently used IT systems. This gap between the IT systems, which are transaction-focused, and industrial firms' marketing practice, which is relationship-based, has severe effects on adoption and efficiency of IT systems. The marketers prefer local, non-integrated, IT with limited usefulness on an overall firm level while resisting the firms' comprehensive IT systems. This forms an IT–marketing gap given that current IT does not match the marketing practice of relationship-oriented industrial firms.

**Originality/value** – This study applies an extended CMP model in a novel way focusing one industrial firm, its customers and suppliers and the IT used in this setting. The study shows that all marketing practices of the CMP model can be found in one firm's business, albeit one category, i.e. interaction marketing (a relationship approach), is dominating. The use of the CMP framework offers new and valuable insights into the fundamental cause to the industrial marketers' limited use of integrated IT.

**Keywords** Information technology, Database marketing, Contemporary marketing practice, Interaction marketing, Network marketing, Transaction marketing

**Paper type** Case study

## 1. Introduction

Industrial firms have for a long time endeavoured to gain a comprehensive overview of their business activities as well as of their customers and suppliers (Anjard, 1995). Information technology (IT) systems can support internal coordination of marketing and purchasing activities that are beneficial for the customer-focused company (Fournier and Avery, 2011; Trainor *et al.*, 2011; Sheth *et al.*, 2009). Gardiner *et al.* (2002) argue that integrated company-wide IT systems can speed up marketing cycles and enhance customer service, which can be beneficial for the relationship-oriented and networking company (Achrol and Kotler, 1999). To fully support an industrial firm's business, its IT systems must:

- have a certain degree of integration (i.e. so that data can be added through multiple and cross-functional touch-points

and information can be easily shared) (Forslund and Jonsson, 2010; Davenport *et al.*, 2004);

- consider the varying needs of different business partners (Ekman *et al.*, 2014; Salo, 2007); and
- be aligned with the firm's marketing strategy (Jayachandran *et al.*, 2005; Stein and Smith, 2009; Rapp *et al.*, 2010; Wei and Wang, 2011).

However, the full benefits of industrial firms' IT systems are seldom realized. The most technically complex and company-wide IT systems, such as integrated customer relationship management (CRM) and enterprise resource planning (ERP) systems, are rarely fully implemented. Instead, firms first select internally focused software, and only subsequently consider inter-organizational IT solutions (Trainor *et al.*, 2011; Davenport *et al.*, 2004; Shehab *et al.*, 2004). Most firms also live with a mix of old legacy systems in parallel with state-of-the-art IT. In addition, it is argued that

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marketers have not embraced the full potential of IT and that actual use is rather low, which limits the effectiveness of industrial firms' IT systems (Brady *et al.*, 2008; Brookes *et al.*, 2004). The implementation of common IT systems often meets resistance due to imposed controlling dimensions that require all users, no matter what their function is, to adhere to the stipulated routines (Fowler *et al.*, 2004; Walsham, 1993). User resistance can also occur because IT can impede regular interactions between users and partners (described as "affiliates" by Lamb and Kling, 2003).

Previous research has shown that the effects of IT on industrial firms may be limited due to its complexity, resource-demanding implementation and migration and user resistance. We contribute to this research stream on industrial firms' IT and challenge existing research results by proposing that the fundamental premises when trying to understand the potential of IT systems for industrial firms are to be found on a deeper level. The basic idea behind company-wide IT systems is to align the company with the needs of customers and to make exchanges with suppliers efficient. Moreover, IT should support both sense-making and organizational learning (Krush *et al.*, 2013; Stein and Smith, 2009) to give the company a better understanding of its actual business undertakings in the long run. However, IT systems may impersonalize business relationships (Stein and Smith, 2009; Ryssel *et al.*, 2004), and they often lack the flexibility to accommodate the various marketing efforts directed to specific customers or suppliers.

Therefore, we propose that there is a gap between how IT systems function and the marketing efforts of industrial firms. Essentially, there is a trade-off between extensive use of IT systems and relationship-specific benefits. This study approaches IT with a marketing theory lens and analyzes the inherent marketing logic of IT systems in relation to the marketing *practice* actually used by industrial firms. The study is, therefore, a response to "the lack of focus on information technology (IT) usage in business marketing" (Salo, 2012, p. 554). Even though IT-oriented studies have been performed in a business-to-business context, further research is needed (Sheth and Sharma, 2006). By using a theoretical framework that outlines different marketing approaches, we argue that the fundamental premises behind industrial firms' marketing practice in relation to their IT can be better understood.

Studies in marketing have led to a number of schools of thought (Shaw and Jones, 2005; Sheth *et al.*, 1988), and recent marketing approaches include the concept of relationship, services and networks (Lagrosen and Svensson, 2006; Vargo and Lusch, 2004; Sheth and Parvatiyar, 1995; Håkansson and Johanson, 1992). Basically, there has been a shift from transaction-oriented marketing schools of thought to more relational and networked approaches (Lindgreen *et al.*, 2004). Coviello *et al.* (1997) addressed the need for a better description and classification of contemporary marketing practices and developed a contemporary marketing practice (CMP) framework that they later evaluated through a survey of 308 firms. Their results showed that "contemporary marketing practices are dominated by the practice of transaction and interaction marketing, and database and network marketing are implemented to a lesser degree"

(Coviello *et al.*, 2002, p. 43). Thus, firms seem to either follow a transactional – arm's-length – strategy where a generic market is penetrated, or a relational strategy that emphasizes interaction and a long-term orientation towards the business partners.

Following a large body of research that depicts industrial firms as engaged in creating and maintaining business relationships (Ritter and Ford, 2004; Turnbull *et al.*, 1996; Metcalf *et al.*, 1992) as well as acting in business networks (Johanson and Vahlne, 2011), this study more specifically addresses how industrial IT systems support such relationship-oriented interaction. There are arguments for greater involvement of marketers in the adoption and utilization of IT in business (Brady *et al.*, 2008), but to do this, the IT needs to adhere to their everyday marketing practice. Thus, our study contributes to the business marketing discipline by examining how IT systems fit industrial firms' marketing practices. This study addresses this through two research questions:

- RQ1. What is the (dominant) marketing logic of the industrial firm's IT systems?
- RQ2. How do these IT systems correspond to the relationship-oriented and networked industrial firm's marketing practice?

The research questions support the overall aim of the study, which is to explore how IT systems are aligned with the industrial firm's marketing efforts. This paper continues with a literature review which discusses IT systems and marketing practices, followed by a description of the research methods, the empirical results, and the conclusions of the study.

## 2. Industrial IT systems and marketing practice

This review begins with a discussion of IT in industrial firms, the nature of different IT systems and how firms adopt IT. This is followed by a section discussing the CMP framework in which each marketing approach is related to how an IT system would need to be structured to support that marketing practice.

### 2.1 Industrial IT systems – adoption cycles, functionalities and organizational challenges

Industrial firms often have an abundance of IT systems that can facilitate their everyday business activities. Ryssel *et al.* (2004) described IT systems based on whether they were used internally or externally (internal IT or shared IT) and whether their use was mainly for information, communication or decision support. However, most firms actively strive towards a single integrated IT system (e.g. SAP) to avoid multiple data entries and data redundancy, as well as for security reasons. Thus, firms strive towards shared and integrated applications rather than local ones (Ross *et al.*, 2006). An updated version of the classification (Ryssel *et al.*, 2004), which divides the internal IT into internal local IT and internal integrated IT, maintains the external shared IT and adds external open IT (e.g. social media and cloud computing), is shown in Table I. Numbers in parentheses in the text in this section refer to the IT system classification in Figure 1.

Table I Marketing classified by exchange dimensions and potential IT utilization

	Transactional approach Transaction marketing		Database marketing	Relational approach Interaction marketing	Network marketing
<b>Coviello et al.'s description</b>	Managing the marketing mix to attract and satisfy customers	Using technology-based tools to target and retain customers	Developing interpersonal relationships to create cooperative interaction between buyers and sellers for mutual benefit	Developing intercompany relationships to allow for coordination of activities among multiple parties for mutual benefit, resource exchange and so forth	
<b>Purpose of exchange</b>	Economic transaction	Information and economic transaction	Interactive relationship between a buyer and a seller	Connected relationships between companies	
<b>Nature of communication</b>	Company to mass market	Company to targeted segments or individuals	Individuals with individuals (cross organizations)	Companies with companies (involving individuals)	
<b>Duration of exchange</b>	Discrete (yet perhaps over time)	Discrete and over time	Continuous (ongoing and mutually adaptive, may be short or long term)	Continuous (stable yet dynamic, may be short or long term)	
<b>Managerial intent</b>	Customer attraction (to satisfy the customer at a profit)	Customer retention (to satisfy the customer, increase profit and attain other objectives such as increased loyalty, decreased customer risk and so forth)	Interaction (to establish, develop and facilitate a cooperative relationship for mutual benefit)	Coordination (interaction among sellers, buyers and other parties across multiple companies for mutual benefit, resource exchange, market access and so forth)	
<b>Managerial focus</b>	Product or brand	Product/brand and customers (in a targeted market)	Relationships between individuals	Connected relationships between companies	
<b>Managerial investment</b>	Internal marketing assets (focusing on product/service, price, distribution, promotion capabilities)	Internal marketing assets (emphasizing communication, information and technology capabilities)	External market assets (focusing on establishing and developing a relationship with another individual)	External market assets (focusing on developing the company's position in a network of companies)	
<b>IT utilization</b>	<i>Inertia and application role are similar:</i> to keep track on the buy/sell transactions (i.e. handling ordering and sales data)	<i>Inertia role:</i> database (keeping track of sales, segments and so forth). <i>Application role:</i> data mining (i.e. analyzing and learning from consolidated business data)	<i>Inertia role:</i> interactive catalogue site, two-way emails. <i>Application role:</i> technical chat rooms for individuals	<i>Inertia role:</i> simple document exchange through intranet/extranet. <i>Application role:</i> Sophisticated information exchange between groups	

Source: Based upon Coviello et al. (1997, 2001, 2002), Brookes et al. (2004)

An influential *internal local IT* is what can be broadly classified as (1) office automation. A typical example of such an IT system is the Microsoft Office package (Word, Excel, etc.). These IT systems are mainly designed for a single user even if the documents can be shared both internally and externally. However, the absence of integration means that there may easily be several versions of a document in circulation, which means that there is a risk that a user receives out of date and invalid information. Thus, internal local IT systems such as office automation systems are valuable for the individual user, but they come with a risk (of fragmented or redundant information) for the organization.

The most influential IT system for firms, after the Internet, has been the (2a) ERP system (Shanks et al., 2003). ERP systems integrate most business transactions in a virtual common database, which means that there is only one point of

entry and support for a common view of the business (Sumner, 2005). ERP systems are good examples of *internal integrated IT* that result in commonly accessible information, and their process orientation means that they can also function as a communication medium within and between departments. However, studies have shown that firms seldom implement the full functionality (Davenport et al., 2004), and subsequent studies have shown that the ERP system is often complemented by more or less integrated added systems, some of which can function as (2b) inter-organizational systems (IOS). One example of such an IOS is an e-CRM system that offers web-shop functionality or other web-based access from external partners (Pan and Lee, 2003). Traditionally, industrial firms have also made use of (2c) EDI connections to important suppliers – these now come integrated with the ERP package. Finally, some firms make

Figure 1 IT system use and functionality

	Internal local IT	Internal integrated IT	Externally shared IT	External open IT
Information	(1) Office automation	(4a) Data warehousing (3a) Intranets	(3b) Extranets	(5b) Cloud computing
Communication		(2a) ERP systems (3c) Groupware (2d) Transaction processing systems	(2b) Inter-organizational systems (IOS) (2c) Electronic Data Interchange (EDI)	(5a) Social Media
Decision support		(4b) Executive Information Systems (EIS) and Decision Support Systems (DSS)*		(5c) Big data

use of (2d) transaction processing systems (TPS) that have a specific task, e.g. keeping track of warehouse inventory, dealing with electronic payments, etc. These IT systems can also, to a large extent, be integrated with the firm’s ERP system.

While the ERP system can primarily be seen as an IT system for increased efficiency, there are other IT systems that can be used to increase effectiveness and knowledge sharing (Newell *et al.*, 2003). One example is the (3a) intranet, which can store documents and share information internally within the organization. An (3b) extranet has similar functionality, with the difference that the information offered is based on the needs of an external partner. Some firms also have (3c) groupware such as e.g. IBM Lotus Notes or Microsoft SharePoint. These are even more complex IT systems that support both information sharing and online communication through, e.g., chat or video conferencing.

More functionally complex forms of decision-supporting IT systems are (4a) data warehouses, (4b) executive information systems (EIS) and decision-support systems (DSS). Data warehouses are used to collect and store business data in a manner that renders it useful for data analyzes, and they are mainly used within the organization. The value of such data is traditionally heavily dependent on the initial setup of the data warehouse, i.e. it is only possible to perform data analyzes on stored data, and thus decision-making is based on historical data. In other words, data that have not been stored will be missed in future analyzes. However, the boundary between transactional IT systems like ERP systems and decision-support systems is becoming increasingly blurred. The world’s largest ERP vendor SAP, for example, is offering a memory database named HANA that allows for real-time decision analyzes. This means that tomorrow’s ERP systems may contain and thereby replace several of the above-mentioned IT systems.

Finally, the classification is complemented by the development in the past few years of web-enabled applications, which we label *external open IT*. The first such application is (5a) social media – a phenomenon that has received much attention in the last few years. These range from mainly private applications such as Facebook and Instagram, through applications that are used privately and professionally such as Twitter, to more professional

applications as LinkedIn and professional communities (Chaffey and Smith, 2012). Social media has gained a lot of attention with respect to word-of-mouth (sometimes referred to as “word-of mouse”) (Swani *et al.*, 2013; Brown *et al.*, 2007), but its importance has also been recognized within business-to-business settings (Michaelidou *et al.*, 2011). There are an increasing number of non-proprietary IT systems that are available online such as e.g. Google Docs or Microsoft Office 365. These IT systems – often described as (5b) cloud computing – can be used as a part of a company policy, but may be used just as often as a result of the individual user’s preferences. This comes with a risk – web-based applications are not part of the company’s backup routine and there is also a risk of data theft and other security issues. Finally, the concept of (5c) big data describes a form of decision-making system that makes use of the abundance of information in all forms of data that are available online including social media, accessible databases, etc. (Verdino, 2013). These added external open IT systems are outlined with broken lines in Figure 1 to indicate their openness. The classification outlined in Figure 1 is a simplification of real-life IT systems, as an individual use can include all of information, communication and decision-making.

The updated Ryssel *et al.* (2004) categorization covers a large proportion of industrial firms’ IT systems even though they use even more applications (e.g. CAD/CAM systems) in their everyday operations. Any adopted IT system takes time to master, and short periods of radical change are followed by long, stable periods once a technology is installed and the basic features are learned (Tyre and Orlikowski, 1994). Thus, the resources needed, the organizational change caused and the technical expertise needed for each IT system lead to a situation where only parts of an IT system are implemented or used and hence only partial benefits can be expected. Different IT systems also have varying impacts on the company. Coviello *et al.* (2001) presented the roles of IT as an inertia role, an application role or a change role, following the description by Orlikowski (2000). Thus, IT can have a reinforcing, enhancing or transforming role. Time also influences the levels of IT system use. Markus *et al.* (2003) breakdown an IT system’s life-cycle into phases: the project phase, the shakedown phase and the onward and upward phase. The project phase may not require much use, while the onward and upward phases are characterized by extensive use



(if the technology has been accepted by the users). However, early studies indicated that even long-implemented IT systems could be the subject of workarounds due to reluctant users (Walsham, 2001). Such a situation reduces the effects of the IT system. This study adheres to the description by Coviello *et al.* (1997, 2001) of IT as having an inertia (limited) role or an application role (which has a stronger impact on business practice).

## 2.2 Contemporary marketing practices

The theoretical rendering above shows that IT in business is not a static entity – instead it is a partly fragmented and dynamic entity that spans from individual to group-wide use and from internal to external use. The following section outlines how contemporary marketing practices can be described and reconnects these marketing perspectives to potential IT system effects. Coviello *et al.* (1997) presented the CMP framework that offers an understanding of firms' marketing practices. The framework ranges from basic transactional marketing to relational approaches. The following sections outline the different marketing practices and the role IT systems can play in each type of practice (see Table I for a summary). Note that the four different marketing practices (transaction marketing, database marketing, interaction marketing and network marketing) should not be seen as totally distinct – a firm might have marketing practices that touch upon all four types.

The first marketing practice is labelled *transaction marketing*. It is an approach that builds on the managerial school of marketing that some see as synonymous with the marketing mix. The marketing mix and its 4Ps have occupied a dominant position as the main marketing toolbox, and this has also affected marketing practice. The American Marketing Association (AMA) definition from 1985 even stressed that marketing is “the process of planning and executing the conception, pricing, promotion and distribution of ideas, goods, and services to create exchange”. The marketing mix offers an understandable framework for creating marketing strategies, but the focus is on the economic transaction, and the influence of time is absent (Coviello *et al.*, 1997, 2001; Brodie *et al.*, 2007). Thus, this marketing practice uses price, product and promotion mechanisms to sell to a mass market. This also means that the customers are considered a rather homogeneous group and that the time factor has a limited role. Given that a transaction marketing approach is focused on attracting a customer, the use of IT systems is focused on facilitating that transaction, thus involving, e.g. ERP systems and transaction processing systems. There might be some use of data warehouses and decision-support systems, but such analyzes are probably limited to studying customer segments and measuring which products and services sell the most and yield the highest revenue.

The second marketing practice is *database marketing*. This marketing practice makes use of IT systems to attract customers in a manner similar to the transactional approach. However, through the use of database functionalities that can keep track of individual customers and also provide triggers for different marketing actions (Blattberg *et al.*, 2008), firms using database marketing also work actively on customer retention (Coviello *et al.*, 2002, 1997), which can be done by working

actively with the brand and customer loyalty. The IT systems that function well for this approach store information about customer preferences, and firms with decision-support systems can run advanced analyzes of customer segments, profitable products, etc. Parts of what Coviello *et al.* (1997) describe as database marketing follow the relationship marketing tradition (Christopher *et al.*, 1991). Mattsson (1997, p. 458) scrutinizes relationship marketing phenomena and finds that relationship marketing:

[...] is aided by modern information technology that makes it possible to individualize communication with customers in a “mass market”. In that sense relationship marketing is just an application of marketing management thinking.

Thus, even if database marketing is categorized as following a relational approach, this is a rather artificial categorization.

The third practice is *interaction marketing*, which highlights interpersonal contact. The logic of the interaction model (Håkansson, 1982) has inspired this marketing practice. Interaction marketing puts interpersonal interactions in focus, and exchanges are the short-term entities of the interaction model. Over time, there are various exchanges between the selling and buying firms, which together form an interaction pattern that with time will involve multiple competencies, some of which are more personal and others are more arm's length (Bagozzi, 1974; Enis, 1973). The interaction that takes place allows the partners to learn about and from each other. This process means that the partners develop different degrees of trust and commitment, i.e. they can rely on the partner to fulfil their obligations and not act opportunistically (Aurier and N'Goala, 2010; Garbarino and Johnson, 1999; Morgan and Hunt, 1994). The seller and buyer must believe that the other partner will act as expected and not take other actions (Anderson and Narus, 1990) and past performance becomes a factor that affects the current situation (Tuominen, 1999; Dwyer *et al.*, 1987). The business interaction can, therefore, be seen as a means of reducing uncertainties and transaction costs. However, the investments in such business relationships also mean that there are switching costs, given that the partners may be locked into each other through the jointly created procedures and technologies they have developed, i.e. they make business-relationship-specific adaptations (Brennan *et al.*, 2003). However, the business-relationship investments that the partners make are not all idiosyncratic (Anderson and Weitz, 1992) – some of them can also be used in other business relationships. Thus, each business relationship can be seen as an investment in time, resources and obligations and may limit which other concurrent business relationships the firms can enter, as they are vehicles for knowledge and resources.

The last marketing practice in the relational approach is *network marketing*, which focuses on firms' direct and indirect business with other firms (Coviello *et al.*, 1997, 2002; Brookes *et al.*, 2004). A focal firm's business relationships form the firm's adjacent business network context (Anderson *et al.*, 1994), and the focal firm may also have some knowledge of their connected business network, i.e. their customers' customers and suppliers' suppliers (Johanson and Vahlne, 2011). Concepts like connected relationships (Hadjikhani and Thilenius, 2005, 2009) and network position (Johanson and Mattsson, 1992) become interesting in a network marketing

approach. The most basic systems for such an approach are intranets and extranets, but one may also suspect more advanced roles, such as sophisticated communication systems that allow groups to interact (Brodie *et al.*, 2007).

The CMP framework, together with the theoretical renderings of IT systems, has guided the empirical and analytical work in this study. The applied methodology is outlined below.

### 3. A case study approach

The empirical portion of this study was carried out as an in-depth case study. The choice of the case study method is based on the underlying aim of the study, which is to challenge and expand the current knowledge on how IT systems are used in relation to industrial firms' marketing practice. The case study is considered suitable when researchers aim for a deeper understanding of a contemporary phenomenon (Yin, 2009), while it also offers a contextual awareness (Halinen and Törnroos, 2005; Holmlund, 2004; Johnston *et al.*, 1999; Bonoma, 1985). Thus, the case study methodology is a suitable approach to obtaining an in-depth view of how IT systems are used for an industrial firm's practical marketing activities. A case study approach makes it possible to collect rich information from a single focal organization (Yin, 2009; Woodside and Wilson, 2003). Johnston *et al.* (1999) also stress that case studies may have greater influence on marketing managers than surveys, i.e. the new knowledge a case study offers is also easily transferred to managerial practice. As this study's aim and research questions require a deeper understanding of the role of IT in an industrial firm's marketing practice, the case study approach is applicable.

To achieve these aims, the object of the case study should have a marketing profile that corresponds to research on industrial firms' marketing behavior – i.e. it should be relationship-oriented and have partial knowledge of its adjacent business network. The firm should also have a representative number of IT systems as well as offer good access to empirical material. These criteria were matched against company profiles from earlier studies within the IMP Group (Håkansson, 1982; Håkansson and Snehota, 1995; Ford *et al.*, 2011). The selected firm, referred to here by the pseudonym ACom, offered full access to our choice of respondents and took an active interest in the research findings. ACom is a Fortune 500 company which well known within its industry and is active in more than 100 countries. The case selection was thus a combination of convenient (access and interest) and purposeful (in line with earlier IMP Group studies and actively adopting IT) sampling. ACom also allowed us to contact customers and suppliers who were each invited to give their view on their business relationship with ACom. These partner interviews helped us gain a better understanding of the context and informed the empirical renderings of relationship-oriented activities. ACom manufactures and sells both standard high-tech components and full system deliveries to industries such as steel, automotive, mining, paper and pulp industries. Their products and services are renowned for good quality and a high technical level.

### 3.1 Data collection

Several data collection techniques were used, with the main empirical material coming from interviews. The empirical methods used allowed the researchers to understand individuals, events, and actions, as well as their context (Pihlanto, 1994). ACom's IT in relation to their marketing practice manifested in their everyday activities with customers and suppliers. The data collection was carried out between 2003 and 2012 and consists of two consecutive studies (a first phase in 2003–2006 and a second phase in 2006–2012). The empirical material consists of a total of 63 semi-structured interviews of managers and operational staff. In total, 28 of the interviews were with ACom staff, focusing their marketing activities and their use of IT systems. To validate ACom's descriptions of their use of IT for marketing practice, 17 interviews were carried out with 8 different customers and 18 interviews were carried out with 7 different suppliers. Thus, different perspectives in the business relationships are taken into consideration, which makes the resulting renderings more reliable (John and Reve, 1982). The customer and supplier firms included in the study were selected as representative for the day-to-day business with the support of key informants (managers) at ACom. Interviews lasted 45–120 minutes and with a handful of exceptions were face-to-face, which also allowed the researchers to observe the IT systems in use. During the interviews the respondents were encouraged to describe the IT systems that they *de facto* used, as well as how and for which business activities they used them. These respondent descriptions also held “non-use” renderings – i.e. IT systems considered to not meet their needs. Central information was collected about the IT systems, everyday business activities, exchanges with customers and suppliers, behaviours in the business relationships with others and other interactions. Interviews were recorded and transcribed in full (with a few exceptions when the respondent wanted to speak “off the record” – in these cases notes were taken). Respondents ranged from managers with insight into the company's strategy and IT architecture to operative staff from different functions (with a focus on marketing, sales and procurement). To promote openness all respondents were assured of anonymity and for confidentiality reasons the identities of the companies in the case study are not revealed.

Complementary empirical data sources – such as archival material like IT strategies and IT architecture blueprints, process descriptions and non-participatory observations of the IT systems as well as of offices and manufacturing plants – were collected following the logic of data triangulation to validate the research results (Yin, 2009) and increase the validity of the study (Eisenhardt, 1989). The transcriptions of the interviews were sent to the respondents for member checking, so that respondents could clarify any misunderstandings. This process resulted in a few alternations, but interestingly also resulted in some respondents offering complementary relevant empirical data. The data collection – with multiple sources for data triangulation – continued until the researchers jointly agreed that the empirical part of the study had reached data saturation.

### 3.2 Data analysis

Qualitative data analysis was performed focusing on the different themes (Miles and Huberman, 1994) of the theoretical framework outlining marketing practices. Thus, the coding procedure was supported by pre-defined themes following the four categories of the CMP framework (Coviello *et al.*, 1997, 2002). The empirically described and observed IT systems used in ACom's business relationships were analyzed in relation to the different marketing practices. The authors jointly analyzed and coded the empirical material. The first step was to classify the IT used according to its use and functionality (Figure 1) to get a sense of the degree to which it was integrated and shared externally. The central codification then focused on mapping the gathered impressions of marketing practices and the logic of the described IT onto the classification scheme offered by Coviello *et al.* (1997) – (Table I). Emerging patterns were scrutinized and findings were elaborated until consensus was reached among the researchers. The results presented in this paper are structured according to the CMP framework, and the empirical renderings include quotes as evidence and to provide insight into what the respondents actually expressed, thus providing a chain of evidence (Yin, 2009).

## 4. Results and discussion

The following presentation and discussion evolves around the IT utilization and marketing behaviours that are evident in the empirical material. This section is structured following the CMP framework (Table I) and presents findings relating to each marketing practice (transaction, database, interaction and network marketing).

### 4.1 Transaction-focused IT systems

At the beginning of the study, ACom's SAP system was used to create product-selection spreadsheets in Excel. There were three different product-selection forms ranging from more standardized basic products (that were sold individually or in packages of several units) to fully customized forms where orders often spanned hundreds of customized products. The product-selection spreadsheets were based on the logical rules that were set in the SAP system, and some combinations of product peripherals ruled out others. The product-specification list was exported to spreadsheets and offered to some customers, but none of the three customers interviewed used these lists. Instead they used their own software to design and simulate the future factory plant installation. ACom's marketers and salespeople used these spreadsheets on a daily basis, but some mentioned that the use of the spreadsheets came with a risk – it was essential to keep track of whether they were using the latest version so that the order could be dealt with by the plant's SAP system. The spreadsheets – which can be categorized as office automation (Ryssel *et al.*, 2004) – thus constitute internal local IT, and they are therefore not useful for cross-functional communication.

The SAP system had a functionality that would allow the sellers to make a quotation directly in the ERP system, but, according to the respondents, this was not possible in practice. The marketing and sales divisions acted quite independently from any integrated IT system, and they seemed to like

working in this way. A senior salesperson gave his view on the situation:

[Those who run the production think:] We would like better stability and better prognoses; then we would manage it better. It would be easier. We would like to have the orders earlier; then we would have time to "align" the suppliers and ourselves. And it should be untouched – it should not change. And this is the medicine for the complaints we have today and it was also the medicine 15 years ago when I began. Nothing has changed! And to achieve this [stability] you have to change the customer's behavior. And that is something we never manage to do. That's a behavior that will prevail. We must, instead, create work processes and tools that make us good at acting on, and taking care of, changes from outside.

What seemed more important from the marketers' point of view was the Lotus Notes groupware from IBM. A marketing project manager described what he thought was a important tool:

Then we have Lotus Notes. That is maybe our most important system. It is used for all email communication, internal, bookings, databases [ . . . ] All delivery information is found in the database "delivery situation." And we have, even if SAP is used for all the order bookings, an order database where all the orders from [the sales offices] land. [ . . . ] So you can go into the database and see the specifications, what they have sent in, and all the communication in that matter.

Thus, the marketers needed an internal integrated IT system that would allow them to communicate effectively, but central business information was not shared (Figure 1) – it was scattered around different marketing and sales offices in Excel spreadsheets. The explanation for this was the complex interaction that took place between ACom and its customers. They illustrated this with an example where an automotive customer required hundreds of customer-specific products for a new plant. This required ACom to engage staff from many functions – especially R&D – given that the automotive customer always showed up with many engineers. This type of sale was considered a project – i.e. there was a deliberate organizing to meet the customer demand. The marketing actions could best be described as following an interaction or even a network marketing practice (Coviello *et al.*, 1997), but the IT systems used were at best described as having an inertia role (Brodie *et al.*, 2007), i.e. simple document exchanges supported by the Lotus Notes groupware. Most respondents at ACom described a situation where they acted towards a customer as a group, i.e. their marketing practice followed the logic of interaction or network marketing, but the SAP system was only used for orders – i.e. it kept track of the buy/sell transactions (Brodie *et al.*, 2007) – a situation that meant that the marketers and their colleagues made use of other internal, more local, IT systems.

### 4.2 IT systems with database-marketing functionality

The study also provided examples of customers influencing the adaptation and use of internally integrated IT systems (Figure 1). One customer described a time when employees from ACom did not know that a colleague of the customer had visited them before – i.e. they did not know that a business activity had already been initiated. Thus, the customer wished that ACom was more organized regarding their attendance. This drove ACom to develop an IT system to log every customer visit. Thus, if a service team goes to a customer or if a key account manager visits the customer it is now logged. The development of this internally shared IT system made it possible for ACom to coordinate and keep track of their presence at customers' premises and thereby increases



coordination between ACom employees. This keeping track of what employees are doing is a database marketing inertia role (Coviello *et al.*, 2001).

ACom also started to use social media in the latter part of the study. This use can be seen as following the database marketing logic given that it comprised messages sent to “known” Facebook users who had actively selected “like” on ACom’s Facebook page. ACom used Facebook to publish news about major projects, to present employees that had been seen in the press or on television or to attract new (often young) employees. Social media was thus mainly a general brand-building tool rather than a specific business-relationship-building tool. However, ACom had to learn how social media works. Their Communication Manager mentioned that they had an intern who saw their Facebook page and spontaneously told the marketing and communications team that:

You can’t say it like that on Facebook!

Social media has its own language and practices and ACom became aware that they had to learn more about it. Thus, they were at a very early stage of using social media, which only had an inertia role (Brodie *et al.*, 2007; Orlikowski, 2000).

#### 4.3 ACom’s interaction-marketing practice and IT systems

The majority of respondent renderings followed interaction-marketing practice (Coviello *et al.*, 1997, 2002) – it was a specific customer that the respondent talked about. In the first phase of the empirical study, the customer-oriented activities were poorly aligned with the use of SAP and other internal integrated and externally shared IT (Ryssel *et al.*, 2004). ACom had several complex IT systems that allowed for external access, but the staff who faced customers only used them to a limited extent. One of ACom’s heads of business units explained:

The customers do not buy through the web. No, they buy a full solution for their steel mill, mining site or pulp and paper mill, so it is always a solution that you need to discuss with the customer in order to define it. [...] You can’t describe [such a complex] order online – you need to meet [the customer].

Thus, the IT systems that the respondents at ACom stressed as most used in the interaction with customers, especially for information exchange, were basic ones such as telephone and email. This everyday use of basic IT allowed ACom and its customers to quickly and easily make joint decisions regarding their projects. The key account manager continued:

If, for example, the telephones did not work there would be severe difficulties regarding our relationships with our customers. It is primarily telephone and email that are the most important IT tools.

However, both ACom and their customers stressed that a necessary condition for making decisions by telephone or email is that both parties have had prior business dealings with each other. Both parties must consider the relationship as well established. ACom’s customers often expressed that a phone call sometimes indicates a greater commitment than email, since an email can be sent off too easily. Thus, a contact made by telephone has a stronger character than one made by email, and the telephone is preferred when discussing something critical or sensitive, whereas email is preferred for supporting the ongoing information exchange.

The empirical renderings offered by the respondents showed that personal meetings were the best way to solve problems with customers and suppliers. A head of department elaborated the need of meeting in person:

It is not enough with the telephone and other IT in these types of relationships. Especially when there is a problem, then it is most vital to communicate through human contact. Meetings are still the most important [way to communicate] for developing credibility in the relationship, even though during the last 30 years new technology, like different IT systems, has been introduced that might help to a certain degree.

The latter part of the study revealed the use of a rather complex decision-support system (an internal integrated IT; Figure 1) called QlickView. This IT system was first adopted by ACom’s marketers, who started to use QlickView to analyze their business with customers without the IT department’s knowledge. Thus, it offered partial integration on the department level and offered improved insight into customer behaviours and segments. Brodie *et al.* (2007) describe such systems as playing an application role (Orlikowski, 2000) in database marketing, but the ACom employees also used it to better assess their individual business relationships, i.e. in an application role in interaction marketing. Over time, there were so many QlickView users that the IT department had to take over the management and communication with the provider of the system. ACom’s employees used QlickView to gather data regarding customer exchanges and then used the analyzed information in their communications with the customer. For example, if QlickView showed that overall delivery quality was high, ACom’s marketers used this information in the interaction with the customer to build trust in the relationship and stimulate further purchases. Most customers mentioned high delivery quality as one of the most important aspects for building trust in these business relationships, justifying the marketers’ adoption of a decision-support system like QlickView.

#### 4.4 Focused and *ad hoc* network activities

ACom and the studied suppliers and customers provided several examples of when ongoing exchanges within the business relationships were connected to other business relationships – i.e. network marketing practice in the CMP framework (Table I). One specific example concerned ACom’s relationship with a car manufacturer who required circuit components from a specific parts supplier. This meant that ACom had to use the car company’s general agreement with the parts supplier and include the specific components in their product delivery. It also meant that another sub-contractor’s parts had to be re-designed and manufactured with adaptations to the car manufacturer’s specifications. Thus, the relationship with the car manufacturer had connected effects (Hadjikhani and Thilenius, 2005, 2009) on several supplier relationships, and the actions that took place were in accordance with network marketing practice (Coviello *et al.*, 1997, 2002; Brookes *et al.*, 2004). However, this was only supported by the IT systems in use to a limited extent; much of the information was kept in regular binders, and much of the digital communication was limited to regular email. Thus, the IT use followed what Brodie *et al.* (2007) describe as a basic inertia role, and much of what was transmitted was basic office automation files,



which is an internal local IT with limited support for information integration and diffusion within the company (Ryssel *et al.*, 2004).

The study also revealed networked situations where the local integrated IT system (the SAP system) was involved, but the network activities were badly supported. For instance, ACom had an automated function in their SAP system that was connected to a component supplier, i.e. with the function of an externally shared IT system (Ryssel *et al.*, 2004). This ERP function automatically generated an order from ACom to the component supplier as soon as ACom received an order from a customer. On one particular occasion, the component supplier called ACom to ask whether there was a reason for a sudden absence of new orders, as this had never happened before. ACom was in a predicament because they had received a major order from one of their customers and needed parts from this particular supplier. It turned out that the automated function for generating an order to that specific supplier had failed and that the SAP system had no alert function for such events. Fortunately for ACom, the supplier, having long experience of their business involving frequent and ongoing interactions, suspected that something was wrong. If the supplier had not been proactive and called when they did, ACom's delivery to the important customer would have been delayed. The manager summarized the incident by saying:

This could have been disastrous for this project and in the long run for the relationship with this customer.

The empirical results presented in the previous sections are representative of this study – most respondents outlined interpersonal and sometimes networked business scenarios, while the IT systems used were rather narrow and local in their use. The results, therefore, indicate a gap between the IT systems used and the marketing practice. The nature of this gap and its relevance for studies of industrial firms' IT are discussed below.

## 5. Conclusions

The aim of this study is to offer an alternative understanding of why the potential of industrial firms' IT systems is not fully realized. The study is based upon the assumption that industrial firms' relationship-oriented marketing practice is not aligned with the logic of the IT that is used. To achieve this understanding, we propose an alternative use of the CMP framework (Coviello *et al.*, 1997, 2002; Brodie *et al.*, 2007) that is used to analyze and evaluate how the IT systems used correspond to the firm's marketing practice. The results have both theoretical and practical (managerial) implications and indicate the need for further studies of industrial firms' IT utilization.

### 5.1 Theoretical contribution

The first theoretical contribution is a challenge to previous studies of industrial firms' IT. Previous studies have shown that industrial firms have problems in getting the desired utility from their IT investments due to IT selection, implementation and migration problems and user resistance. The main contribution of this study is that it shows that the fundamental problem lies on a deeper level. Following this study's *RQ1* regarding the (dominant) marketing logic of the industrial firm's IT systems, we show that "IT systems are

fundamentally transaction-oriented, based upon code and data tables that follow stipulated rules and regulations". This is poorly aligned with the requirements of the relationship-oriented industrial firm (cf. Håkansson and Snehota, 1995). Thus, there is a structural and logical gap between the industrial firm's marketing practices and IT functionality given that they adhere to different marketing logics. This theoretical proposition needs to be considered in future studies of industrial firms' IT to avoid atomistic results from IT use. However, Coviello *et al.* (2002, p. 44) state that "marketing practice is likely to evolve with technological developments and be tempted by industry conditions". Following Giddens's (1984) structuration theory – where actors and structure are mutually reinforcing – we can expect industrial firms' adoption of IT to result in *either* more transactional-oriented firms *or* more relationship-oriented IT. Either way, this study demonstrates that the gap between the (dominant) marketing logic of IT and marketing practice needs to be acknowledged when theorizing about IT in marketing.

The second theoretical contribution is the novel way in which the CMP framework (Coviello *et al.*, 1997, 2002; Brodie *et al.*, 2007) is used in this study. The CMP framework allows for an understanding of how and where people and artefacts come into play given that industrial firms may use each form of marketing practice (transaction, database, interaction, and network) simultaneously. Following this study's use of the CMP framework, we find that the studied firm's marketing practice is mainly interaction-based (i.e. relationship-oriented). There are also a number of activities that are best described as interconnected, i.e. the business activities take place in a network of business relationships where action in one business relationship affects the others. The ongoing business obviously includes mutual actions, adaptations, trust and commitment (Brennan *et al.*, 2003; Morgan and Hunt, 1994). Thus, the exchanges that take place are more than mere transactional exchanges. Instead, the CMP framework exposes that the firm and its customers and suppliers are involved in interaction marketing and sometimes even network marketing. To answer this study's *RQ2* regarding how the IT corresponded to the industrial firm's marketing practice, the studied firm's extensively used "relationship and network-oriented marketing practices are not well represented in the studied integrated IT systems", which instead followed the logic of the CMP framework's less interactive categories of transaction marketing or database marketing. Thus, this study shows that there was a sharp discrepancy between the businesses' mutually oriented activities and how the IT systems supported these activities.

The study's third theoretical contribution is in line with earlier studies of user resistance and marketers' inability to fully grasp the possibilities of IT. This study puts forth that resistance and inabilities are not mainly a result of human reluctance but rather a result of inadequate support from the IT systems for the relationship activities that businesses engage in. The results show that marketers cooperate closely with other organizational functions, internally and in their relationships, and this is essential for the customer-centric company (Sheth *et al.*, 2009). Internally integrated IT systems partly dictate such interactions, but the collected and stored

data are mainly transactional in its characteristics, i.e. marketers and purchasers are reluctant to put what might be sensitive data about a customer or a supplier into an integrated IT system. Thus, the studied IT systems (the SAP system and QlickView) only hold “hard” information about the sold and delivered products, received parts and their prices, etc. Information that might reveal more subtle customer preferences or supplier strengths and weaknesses is gathered solely by the salespeople and purchasers themselves and is seldom shared with other functions. This is probably a result of neither excessively complex technology (Rangan and Sengul, 2009) nor pure user resistance (Namwoon *et al.*, 2010). The answer is probably more in line with Lamb and Kling (2003), who found that IT use is embedded in the users’ interaction with affiliates (i.e. business partners). Thus, even though industrial IT such as CRM and ERP systems comes with a promise of integration, their strong structuring requirements result in limited actual use. Users instead create their own internal local IT (Ryssel *et al.*, 2004), with the result that vital information about customers and suppliers is stored in internal local IT rather than in internal integrated IT systems that allow others to access and use the information.

### 5.2 Managerial challenges

The limited use of integrated and externally shared IT systems can be partly attributed to the impersonal dimensions of transaction-oriented IT systems. The studied business relationships included several occasions of reciprocal behaviours as a means to increase trust and commitment (Stein and Smith, 2009; Ryssel *et al.*, 2004). This might also explain why many IT solutions only have an inertia role – with limited impact – and never gain an application role or become a change agent (Orlikowski, 2000). The respondents in this study reported that critical situations were best dealt with by telephone, complemented with information via email – i.e. trust-building was best supported by very basic forms of IT that allowed the partners to maintain a social interaction. Thus, managers need to be aware of their marketers’ role in developing and maintaining trust in the firm’s business relationships and whether this is supported or hindered by the used IT. The critical manager must assess the nature of their company – as a mainly transactional, relational or networked organization – and then select and tune the selected IT system accordingly. Such an exercise might reveal that a fully integrated IT system is not feasible or desirable.

### 5.3 Study limitations and future studies

This study is based on a larger case study of one focal industrial firm and its customers and suppliers, which limits its generalizability. The studied firms were also mainly relationship-oriented, which has been a common feature of the firms involved in studies carried out by the IMP Group (Ford *et al.*, 2011). A large body of research on industrial firms has focused on their inclination to form relationships with partners (Ritter *et al.*, 2004; Brennan *et al.*, 2003; Anderson and Narus, 1990) and the notion that this process takes place in networks of relationships (Johanson and Vahlne, 2011; Sheth *et al.*, 2009; Turnbull *et al.*, 1996; Håkansson and Snehota, 1995). However, Coviello *et al.* (2002) showed that business-

to-business firms spanned all marketing practices – i.e. the IT marketing gap might not be valid for industrial firms that are transaction-oriented and that act according to an arm’s-length strategy. Assessment of the validity of the IT marketing gap therefore requires further study in different industry contexts spanning firms with different marketing practices.

This study also shows that there is a need for further studies on industrial firms’ IT and marketing. The results show that the promises of internally and externally integrated IT systems (Ryssel *et al.*, 2004) are not well received by contemporary industrial marketing practice. To gain a better understanding of the interplay between business and IT, future studies need to address the discrepancy between marketers’ and purchasers’ activities and IT system use from a marketing practice perspective. In this study, we nuance the suitability of IT systems for inter-organizational use by highlighting that industrial firms’ business relationships involve many forms of interactions, while only a few of these are currently supported by IT systems. The low level of use can best be understood as originating from both technical/functional and behavioural aspects. More specifically, the studied IT systems do not suit or support the more or less idiosyncratic behaviours that have developed between the industrial firm’s employees and specific customer or supplier representatives. There is clearly a need for more information-centric studies on what information industrial customers and suppliers actually exchange in business relationships in order to gain a better understanding of how IT can be aligned with the industrial firm’s marketing practice.

Unfortunately, the empirical data in this study only showed a novelty use of social media. The use of social media and cloud computing marks a distinct shift from relying on proprietary IT systems to accepted use of open generic IT systems that allow users from different organizations to share information and make joint decisions. Furthermore, those with the ability to collect extensive amounts of data and analyze trends in this growing information ecology – often referred to as “big data” – may have an advantage. Future studies should address the potentially ambivalent role of social media for business relationship development.

Today, many forms of IT have become affordable “commodities” (Carr, 2003). This has led to a situation where professionals bring their own IT to work in case their employer does not support them with suitable hardware and software – a behaviour labelled BYOD (bring your own device). Allowing marketers and other employees to bring their personal IT into their profession blurs the boundary between the personal and the professional. Such use will probably affect how the interaction patterns within a business relationship evolve. Thus, more studies are needed to further develop the CMP framework incorporating the practice of the 24/7 digitally connected and networked industrial marketer.

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