

UNIVERSITE DE DROIT, D'ECONOMIE ET DES SCIENCES D'AIX MARSEILLE
UNIVERSITE PAUL CEZANNE
INSTITUT D'ADMINISTRATION DES ENTREPRISES

CENTRE D'ETUDES ET DE RECHERCHE
SUR LES ORGANISATIONS ET LA GESTION

SALES FORCE AUTOMATION :
A QUALITATIVE ANALYSIS OF BENEFITS
FROM THE BUYERS' PERSPECTIVE

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W.P. n° 757

April 2006

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SALES FORCE AUTOMATION : A QUALITATIVE ANALYSIS OF BENEFITS FROM THE BUYERS' PERSPECTIVE

Abstract

Companies invest substantial amounts in sales force automation systems in hopes of enhancing productivity, communication and customer relationships. While previous research has focused on the issues of adoption and diffusion of SFA tools and on their impact on salesperson's performance, no research has yet analyzed the benefits of these applications from a customer's perspective. After having reviewed both IS/IT and SFA literatures, we conduct a qualitative exploratory study among buyers to identify perceived benefits linked to the use of SFA systems by their vendors. We combine three methods, i.e., thematic content analysis, lexical analysis and cognitive mapping to uncover the most valued perceived benefits. Results suggest that customers benefit from the use of SFA solutions on four main dimensions: salespeople's professionalism, interaction quality, responsiveness and salesperson-customer relationship quality.

Key words

Sales force automation - buyer/salesperson relationship quality - thematic content analysis - lexical analysis - cognitive mapping

L'AUTOMATISATION DE LA FORCE DE VENTE : ETUDE QUALITATIVE DES BENEFICES PERCUS PAR LES ACHETEURS

Résumé

Dans un contexte caractérisée par une forte concurrence, l'automatisation de la force de vente représente un levier incontournable de la productivité commerciale et l'amélioration de la relation client. Alors que la majorité des travaux sur le *SFA* se sont intéressées aux problématiques d'adoption et de l'impact sur la performance des vendeurs, aucune recherche n'a encore étudié les bénéfices de ces solutions pour les clients. Une revue de la littérature des bénéfices liés aux TIC et au *SFA* a servi de base à une étude qualitative exploratoire réalisée auprès d'acheteurs industriels. Trois méthodes ont été utilisées : analyse de contenu thématique, analyse lexicale et cartographie cognitive. Les résultats indiquent que les clients perçoivent les bénéfices du *SFA* à quatre niveaux : professionnalisme des vendeurs, qualité de l'interaction, réactivité et qualité de la relation acheteur-vendeur.

Mots-clés

Automatisation de la force de vente - qualité de la relation acheteur-vendeur - analyse de contenu thématique - analyse lexicale - cartographie cognitive

INTRODUCTION

In today's competitive environment, success increasingly hinges on the means of developing and maintaining customer relationships. Consequently, firms are attracted by the CRM-related technologies capacities and among them by the sales force automation systems (SFA). Through its boundary spanning activity, sales force plays a critical role in building mutually beneficial long-term customer relationships (Weitz and Bradford 1999). For this reason, SFA which represents the CRM application in support of selling tasks is of great potential for collection and dissemination of market information and the creation of valuable customer relationships (Day 1992). In fact, SFA encompasses a set of tools related to a variety of tasks and functions such as communication, presentation generation or customer information management. Initial research factored cell phones, faxes, and answering machines into the SFA equation (Harris and Pike 1996), while later researchers evolved toward new and sophisticated computer applications and wireless internet tools. Experts now state that SFA must involve a constantly updated centralized database with instant remote access by field salespeople (Parthasarathy et Sohi 1997).

Early research in the domain of SFA has focused on the issues of adoption and diffusion of the technology and has been followed by research concerning the impact of SFA on salespeople's performance. In recent years, the issue of SFA technology benefits has come to the forefront of trade journals and academic research. While managerial literature advocates the potential benefits of SFA in terms of productivity and customer interaction quality, no strong academic support is found for these assertions. Despite many calls for empirical research on SFA (Caudron 1996; Manssen 1990; Parsons 1983; Trumfio 1994; Wheatley 1998), scientific research results remain scarce in terms of demonstrating benefits associated with SFA adoption and use.

While some studies have shown some benefits for managers or salespeople (Barnes and Engle 1995; Ahearne and Schillewaert 2001), results remain inconclusive. Furthermore, no research has been interested in the customer's perspective. However, the customer point of view is of great importance in that sense that it might reflect the real impact of SFA from an objective side (Ahearne, Srinivasan and Weinstein 2004; Honeycutt et al. 2005).

The purpose of this article is to fill this gap by providing insight on SFA benefits from the buyers' perspective. Borrowing from the information systems/information technology and SFA literatures, we examine what types of benefits buyers perceive from SFA implementation and use. We conduct then an exploratory qualitative study to identify the benefits as perceived by the buyers using a thematic content analysis, a lexical analysis and cognitive mapping. The results are discussed and future research avenues are proposed.

THE BENEFITS OF SFA

The introduction of information technology into the selling function has been shown on many occasions to result in superior returns for a company. Some of SFA systems were reported to increase sales 10% to 30%, or more, while generating investment returns of over 100% (Moriarty and Swartz 1989). Practitioners and scholars suggest SFA technologies enhance performance by increasing the efficiency and productivity of salespeople and by improving both the quality and quantity of communications between the salesperson, the buying organization, and the selling firm (Srinivasan 1985; Davis et al. 1989; Leonard-Barton and Deschamps 1988; Colombo 1993; Swenson and Parella 1992; Keillor, Bashaw and Petijohn 1997). However, Brynjolfsson and Yang (1997) suggested up to 90% of the benefits of computer capital are found within otherwise unobserved intangible assets. Borrowing from IS and sales literature we identify the main cited benefits focusing on those concerning salesperson-customer interaction and which are likely to be perceived by the buyer. These benefits are classified in five categories : task performance, information processing, communication, competence and customer relationship.

Task performance

One of the main objectives of SFA is to help salespeople better accomplish their daily activities. Proponents of technology use by sales force have long advocated the potential for SFA to increase productivity (Moriarty and Swartz 1989; Wedell and Hempeck 1987; Hitt and Brynjolfsson 1996). One study that suggests relationships between information technology use by sales managers, sales management activity, and sales performance (Barnes and Engle 1995). Also, a number of well-developed models, including DeLone and McLean (1992) and Goodhue and Thompson (1995) address the causal relationship between general information technology

and performance. Generally, SFA occurs when firms computerize routine tasks or adopt technological tools to improve the effectiveness and efficiency of sales force activities.

Concerning effectiveness, Verity (1993) identifies several benefits from SFA including the reduction of errors common with manual sales processing, reduced support costs, improved close rates and a raising of the average selling price through more accurate and timely pricing information. According to Pullig, Maxham and Hair (2002), an effective SFA implementation may lead to enhanced productivity through better account prospecting, development, and buyer profiling. A salesperson would have more and likely better (e.g. more timely, more accurate) information to work with when using SFA tools, resulting in an increased capacity to formulate alternatives, make effective decisions, stimulate more effective customer relationships, and thereby increase productivity (Hill and Swenson 1994). Finally, technology researchers argue that IT can facilitate interpretation and analysis (Huber 1990) and favorably impact personal effectiveness (Igarria and Tan 1997).

In addition to enhancing sales effectiveness, Keillor et al. (1997) and Pullig et al. (2002) theorize that using technology tools should improve salesperson efficiency. Rivers and Dart (1999) indicates that SFA aims at (1) reducing time spent on support activities and (2) providing faster access to timely information. Thus, SFA tools may remove slack from the typical sales day. For example, automated routers can interface with planners to identify downtime in the salesperson's schedule and direct new leads to the salesperson during such time (Khandpur and Wevers 1998). Contact management tools can enhance salesperson efficiency by allowing the salesperson to easily organize all contacts by region (act.com 2004). During sales trips, automated salespeople can more easily plan and make sales calls to all accounts in a given area during a specific trip (Wedell and Hempeck 1987; Ahearne, Jelinek and Rapp 2005). Finally, a company may expect SFA to deliver faster response time (Gilbert 2004).

Information processing

SFA systems are one approach to increased productivity due to their ability to gather and synthesize a wealth of customer and competitor information. In fact, these technological tools enable the creation and flow of large amounts of information. The improved information flow is having a faster access to detailed product information, account history, competitive offerings, and new leads that result in individual success. SFA means also increased prominence with customers, i.e. being first in mind of the customer by staying ahead of the competition

(Honeycutt et al. 2005). Salespeople will be able to deliver richer product information, more accurate order fulfillment, and allow the organization to offer more services and products and perform account analysis. Moreover, when initiating customer contact, technology can aid salespeople by giving them quicker access to better information. Taylor (1994) reports that SFA provides salespeople with faster access to information thus reducing the time required to prepare for a client presentation and reducing the number of follow-ups when further information is requested. Salespeople who use technology can sift through customer data and better find and focus on critical information, putting them in a better position to sell. For example, automated tools can easily track customer account history, enabling salespeople to better identify those who might be good candidates for cross-selling and up-selling efforts and those who may no longer be viable sources of revenue.

Communication

Sales researchers claim that automation systems should enhance the salesperson's ability to communicate clearly to customers and contacts (Rice and Blair, 1984; Sproull and Kiesler 1986) and thus improve their ability to win business. For example, interactive presentation tools enable salespeople to make more effective comparisons between their products and competitive offerings and automated sales configurators facilitate on-the-spot access to customer-oriented solutions (Khandpur and Wevers 1998). Along these lines, Ahearne and Schillewaert (2001) found a positive effect of SFA on sales presentation quality and adaptive selling behaviors. SFA effect also include easier communication due to fewer communication inhibitions, the easier maintenance of personal business relationships, increased communication to geographically isolated individuals, and improved speed of communication. The greatest potential of SFA systems is the sharing of contact information and increased coordination across the firm's various customer service functions. Firms that utilize SFA systems to form superior market-sensing and customer-linking capabilities are in a position to inform and guide the internal processes of the firm that are responsible for creating customer value (Pullig, Maxham and Hair 2002). Customer needs also are more easily understood across functions. The combined result is a more knowledgeable and competent salesforce and support staff.

Competence

Competence is the buyer's perception that the salesperson is knowledgeable in important areas such as specific customer needs, product knowledge, industry trends and competing products. By increasing both the volume of these various types of data and the speed which it can be assessed, the salesperson actively using technology can increase their perceived competency. A recent survey of sales managers shows these individuals believe technology can aid in the buyer's perception of the salesperson's competency. It has been reported that 90 percent of the surveyed sales managers made the decision to automate the salesforce with technology because it made the salesperson appear more professional and competent (Colombo 1994). Thanks to SFA, salespeople can review past customer purchase and payment histories in order to ask questions that improve their understanding of existing customer needs as well as address future requirements. Ahearne and Schillewaert (2001) found positive correlations between SFA usage and market and technical knowledge. Alternatively, greater access to knowledge held elsewhere in the sales organization can be crucial in helping the salesperson build customer trust and commitment as well as ward off competitors. These arguments all suggest an indirect effect on customer relationship quality (Park, Holloway and Deitz 2005).

Customer relationship quality

Customer relationship quality refers to a bundle of intangible value related to the interchange between buyers and sellers (Lagace, Dahlstrom and Gassenheimer 1991). Crosby et al. (1990) studied various aspects of relationship quality and defined it as being a buyer's trust in a salesperson and satisfaction in the relationship. Similarly, Morgan and Hunt (1994) propose that successful relationships are characterized by high levels of mutual trust and commitment between parties. Hitt and Brynjolfsson (1996) found that overall information technology investment leads to increased customer value. Fisher (2001) stated that the people side of CRM is probably the most important part. The technological changes can heighten interaction between individuals in terms of time, intensity, and emotions (Kasper-Fuehrer and Ashkanasay 2001). In selling context, SFA can facilitate the development of buyer-seller relationships through its impact on trust. In other words, the effect of technology on the sales process suggests that it may enhance the development of trust in the salesperson by the buyer (Keillor, Bashaw and Pettijohn 1997). Five factors have been identified which increase the potential for trust developing between salespeople

and buyers (Hawes, Mast and Swan 1989), namely customer orientation, honesty, dependability, competency and likeability. Technology may also be capable of assisting the salespersons in shortening the time it takes to establish trust and improving the quality of that trust, by directly impacting their ability to demonstrate behaviors in some of these areas.

Salespeople may be perceived as being customer oriented by buyers through the stressing of benefits over features, through solving buyer problems and making themselves readily available to the buyer. Technology may help the salesperson to more effectively communicate benefits to the buyer through interactive and participatory presentations that can place the product within a context or situation directly relevant to the buyer (Ahearne and Schillewaert 2001). Access to centralized databases will allow to identify the proper data enabling to help solve buyer problems. This ability to address customer problems and questions quickly may increase the salesperson's credibility in the buyer's mind and ultimately, the trust they place in the seller. Finally common technology such as e-mail, fax machines, voice mail and cellular phones gives the buyer easier access to salespeople which may reduce the time it takes to deal with a customer concern or difficulty.

Dependability, on the other hand, refers to the the buyer's perceptions and expectations, that their salesperson will keep the commitments to the buyer. The issue of dependability has a substantial relational component as salespeople cannot immediately demonstrate dependability, it must be developed over a period of time. Technology, for example in the form of contact software, can aid the salesperson in identifying, remembering and following through on customer requests, and maintaining regular contact. This enables the salesperson to keep the commitment and contacts with buyers, thereby giving an increased perception of dependability.

SFA might also contribute to better satisfy customers through an enhanced meeting of their expectations. If these qualitative relational outputs are realized, then monetary benefits will be of consequence. There is some evidence that the implementation of SFA tools leads to higher revenues due to increased closure rates and high customer retention that stems from enhanced customer satisfaction (Fisher 1998).

After having identified from the literature potential benefits of SFA implementation and usage from the buyer’s perspective, we wish both to confirm the existence of these benefits and to possibly uncover other ones. We therefore conduct a qualitative exploratory study on a sample of industrial buyers in contact with salespeople using SFA tools.

RESEARCH METHOD

The qualitative study consisted of seven semi-structured interviews with organizational buyers from different industries (Table 1). Participants were asked what benefits they perceive from the use of SFA tools by their suppliers’ salespeople. The main objective was to assess the relevance of the pre-listed benefits and to uncover new ones.

Table 1. Buyers’ sample characteristics

Company	Industry
ALCATEL	Telecommunications
CAP GEMINI	Consulting
HENKEL	Consumer goods
L’OREAL (BIOTHERM SOFAMO)	Cosmetics
CHEVRON ORONITE	Manufacturing
KRAFT FOOD	Consumer goods
IKEA	Retail

All interviews were transcribed and content analyzed using established qualitative data analysis techniques (Miles and Huberman 1994). The overarching objective of this investigation was to identify the benefits of SFA as perceived by the buyers. The interviews’ corpus was analyzed combining three methods: thematic content analysis, lexical analysis and cognitive mapping.

DATA ANALYSIS AND RESULTS

Thematic Content Analysis

Thematic content analysis is the process by which the transcribed interviews are dissected in meaningful semantic units called themes or codes (Bardin 1993; Allard-Poesi 2003). This semantic units represent thematic categories deriving from a coding process inspired by our

research question. Following Miles and Huberman (1994), we adopted a two-step coding procedure. The first step consisted of comprehending, synthesizing and sorting inductive themes using the *NVIVO 2* software. In the second step, we refine our thinking about codes by theorizing and generating meta-thematic categories matching up themes (nodes for *NVIVO*) and concepts identified in literature. The assignment of themes to meta-categories (see Table 2) was subject to an inference mode based on the proximity to the concepts definition (Miles and Huberman 1994).

Table 2. Generated meta-thematic categories

Themes	Meta-thematic categories (perceived benefits)	Coding frequency	% of total
First level coding			
Salesperson image	Professionalism	43	23,5
Argumentation relevance			
Professionalism			
Salesperson organization			
Salesperson relationship			
Information exchange	Customer interaction frequency	35	19,1
Customer information			
Offer knowledge			
Responsiveness	Responsiveness	30	16,4
Effectiveness			
Service			
Trendiness	Supplier image	27	14,8
Brand image			
Corporate image			
Trust	Customer-supplier relationship	19	10,4
Supplier relationship			
Recommendation			
Commitment			
Satisfaction			
Customer knowledge	Customer knowledge	9	4,9
Adaptive selling	Adaptive selling	7	3,8
Decision making uncertainty	Decision making uncertainty	5	2,7
Availability	Availability	4	2,2
Proactivity	Proactivity	4	2,2

Lexical Analysis

The objective is now to (1) characterize the corpus by indicators and statistical measurement and (2) aid to rapid understanding of the corpus through lexical approximation (Gavard-Perret and Moscarola 1996). We focused our attention on the most frequently cited words by buyers when evoking benefits.

Table 3 shows some of the key words which represent all together about 75% of the whole main words carried in the lexical analysis.

Table 3. Most cited words

Words	Citation frequency	% of total identified words
Presentation	54	17,65
Customer	25	8,17
Time	17	5,56
Image	16	5,23
Quality	15	4,9
Response	15	4,9
Exchange	13	4,25
Computers	13	4,25
Information	10	3,27
Reporting	10	3,27
Sales call	10	3,27
Management	8	2,61
Communication	7	2,29
Comprehension	6	1,96
Effectiveness	6	1,96
Commitment	6	1,96

Cognitive Mapping

Cognitive mapping is first carried out at the individual level so as to represent the cognitions of each interviewed buyer. We then aggregate the data so as to produce a cognitive map of the phenomena under scrutiny at the group level (all buyers).

Individual Cognitive Mapping

In order to gain an in-depth understanding of buyers' perceptions of SFA benefits, we carried out a cognitive mapping procedure using *Decision Explorer (3.2.0)* software (Ackermann and Eden 2005). The term 'cognitive map' was firstly used by Tolman in 1948 and since then it has been widely used by the researchers in psychological sciences. In organizational studies the term traces back to Axelrod (1976) who used it for analysing the decisions of politicians and decision-making bodies. Langfield-Smith and Wirth (1992) supposed that each cognitive map contains 'individual beliefs concerning a particular domain at a point in time'. In the present research, cognitive mapping allowed us to capture in detail buyers' thoughts and ideas about SFA benefits, to explore them and gain additional insight. The software generates a comprehensive qualitative models through maps building. Given our research question, we were interested in identifying the benefits stemming from SFA usage. Consequently, we adopted causal mapping to underline these links. To do so, we adopted a non-structured method (text based (Cossette 1989)) exploring the interviews corpus and looking for causal indicators. Then we represented, using the software, the structural relations between the concepts. As in a research model, every variable is called *concept* or *node* and each arrow refers to a causal cited relation (Axelrod 1976). We drew individual maps for each buyer and present here an example of a causal cognitive map showing the representation of SFA benefits as perceived by a particular buyer (Figure 1).

Aggregate Cognitive Mapping

We then aggregate buyers' cognitions using average mapping (Bougon et al 1977; Ford and Hegarty 1984). This method of collective mapping consists of generating a causal composite map representing the average shared vision of SFA benefits from buyers perspective. To identify the average underlined links, we indexed (for each map) the mentioned causal links between every couple of concepts in a disjunctive similarities table (Daniels et al. 1993). This comparative table represents relations between concepts in rows and interviewees in columns. The existence or lack of the causal link in each interviewee's speech is then binary coded. We coded 1 when the interviewee indicates the relation and 0 when he didn't mention it.

Figure 1. An example of an individual causal cognitive map

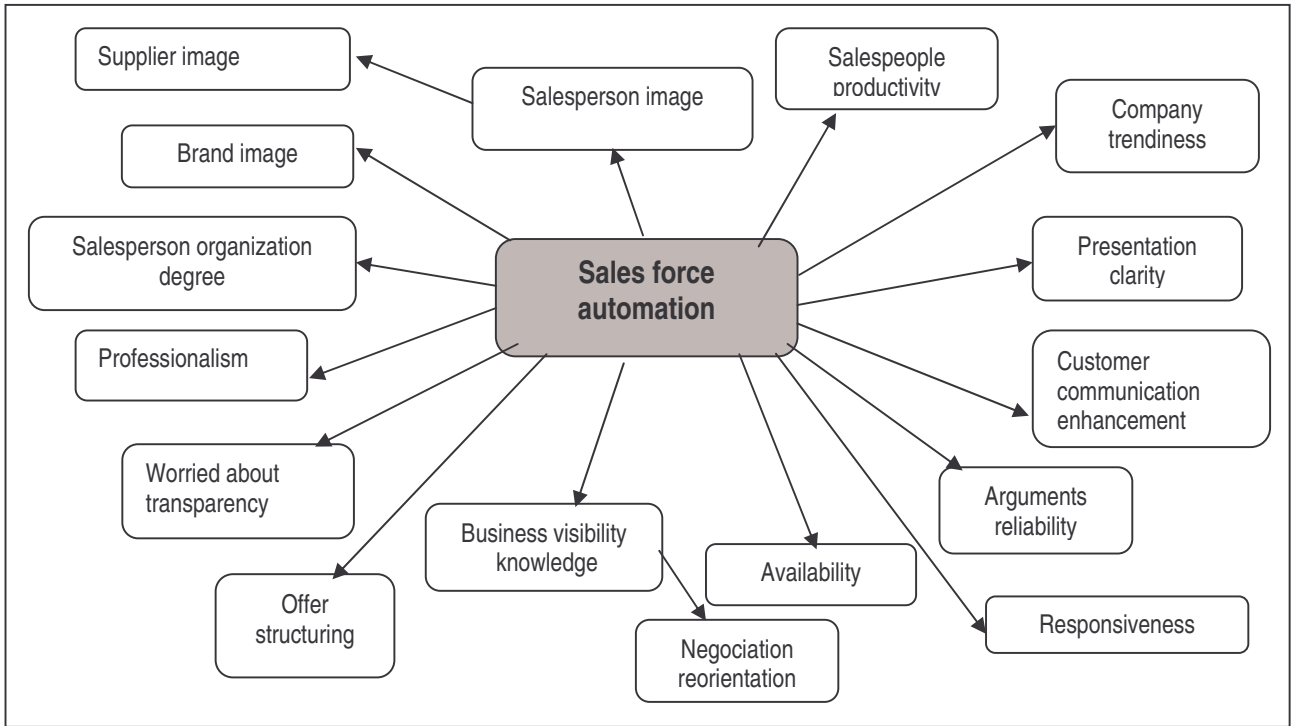
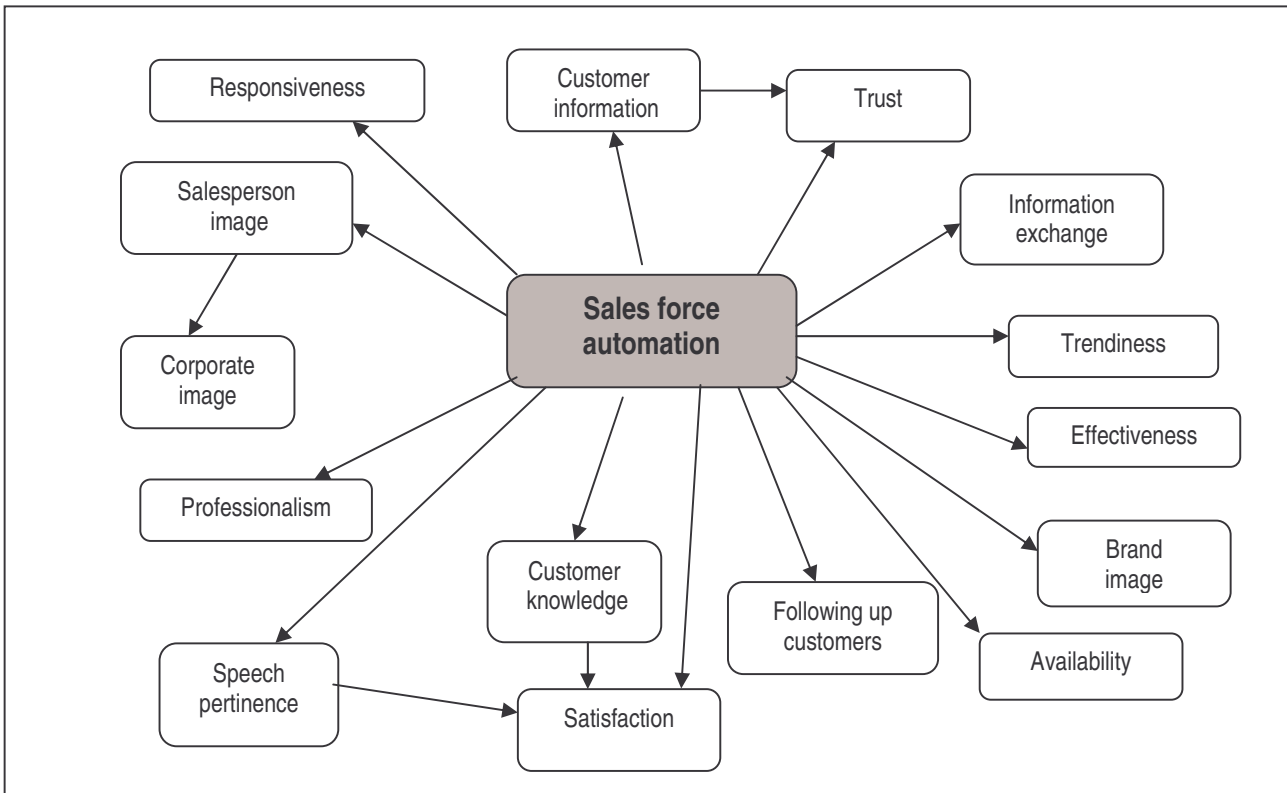


Figure 2. Buyers average causal map



MAIN RESULTS

The qualitative exploratory study and data analyses bring some of the major SFA perceived benefits to the forefront. Citation frequencies represent the importance of those benefits for the buyers.

Professionalism

Professionalism is the most frequent perceived benefit of SFA from the buyers' perspective (Table 2, Fig. 1 and 2). For Knoll and Tankersley (1991), professionalism is a function of three criteria: behavior, salesperson's image and appearance. Many authors stressed also the communication aspect of professionalism (Jackson, Keith et Schlacter 1983; Pilling and Eroglu 1994). In other terms professionalism refers to the general demeanor of the salesperson. Given the SFA tools capacities, they allow the salesperson to show his "know how" in a selling context. Several studies demonstrated the impact of technologies on individual behaviors (sales presentation, adaptive selling, etc). Behrman and Perreault (1982) identified giving high quality sales presentations and working well with customers as an important behavioral dimension of salesperson performance. SFA enables the salesperson giving clear, well thought out presentations (multimedia product demonstrations and graphical visualizations) and addressing the best customer questions (customer profiling and previous calls records). According to the lexical analysis results, "presentation" was the most cited word by buyers when evoking SFA benefits. This can be due to the fact that the sales presentation is one of the most straightforward perceptible behavior of the salesperson. Furthermore, the SFA applications directed at the conception of sales presentations are largely spread among selling companies. Also, Marshall et al. (1999) report that information technology helps in the professionalism by which sales calls are prepared. By offering an access to vast amounts of information, SFA allows sales reps to tailor their sales messages to each customer (Ahearne and Schillewaert 2000). This behavior refers to adaptive selling defined as the alteration of sales approaches across and during customer contacts (Weitz et al. 1986; Spiro and Weitz 1990; Sujana et al. 1988). The automated salesperson will more easily determine which products to prioritize in during the sales call and customize the sales presentation content. These behaviors can be interpreted as a customer orientation denoting the

willingness of the salesperson to care about buyers needs. Thus, the word “customer” was frequently cited by the interviewees to describe SFA advantages. Finally, while professionalism has to do with the general perceived behavior of the salesperson it is also an expression of a perception of the salesperson’s image. The fact of using technology can reflect a trendy and well organized image of the salesperson. In fact, these technological tools have a structuring effect on the salesperson task accomplishment (call planning, presentation conception, offer generation, etc.). The salesperson being the external representative of the supplier, positive image attributes are transferred to the selling company and to its brands. These assertions are consistent with the buyers shared perception represented in Fig. 2.

Customer Interaction Frequency

The second major benefit concerns customer interaction frequency (CIF). The CIF is defined as a mean of communication strengthening the coordination between partners through the dissemination of critical information for relationship success (Frazier and Summers 1984; Mohr and Nevin 1990; Crosby et al. 1990; Lagace et al. 1991). The information exchange plays a crucial role in industrial relations. One of the main functions of the salesforce is information management (Moncrief 1986; Darmon 1993). Due to their boundary spanning role, the salesperson represents a valuable source and bridge of information for buyers. This information concerns different areas: product, market (Behrman et Perreault 1982), promotions, customer behavior, competition, etc. By enhancing information processes, information technology allows the salesperson to better inform his customers (Huber 1990; Grover et al. 1998). In fact, due to its storage, retrieval and network capacities, SFA has the potential to enable and facilitate the processes of information acquisition, dissemination and utilization (Marshall et al. 1999). In other words, SFA systems allow salespeople to draw upon an expansive centralized memory of people and databases, and as such to update their knowledge about the business processes (Day 1994; Parthasarathy and Sohi 1997). The enhanced informing role of the automated salesperson can be of great help for buyers during the decision making process. According to the organizational literature, uncertainty reduction is the most important challenge for decision makers like buyers. Duncan (1982) and Kohli (1989) define decision-making uncertainty as the difficulty experienced by the decision maker in predicting the outcomes of a purchase decision in terms of the likely benefits and costs. For this reason, the better the salesperson is informed and informs the buyer,

the more he is likely to reduce the perceived risks or uncertainty by the buyer (Brossard 1998; Henthorne et al. 1993; Jackson et al. 1984; Moriarty and Spekman 1984). As a relationship-building practice (Dwyer et al. 1987), SFA hold the promise of helping customer making effective decisions (Gao et al. 2002)

The other side of CIF deals with communication, which refers to the information transmission channel and form. Thanks to electronic communication media, the salesperson can access the information base from anywhere including during the sales call and communicate data under almost any form. According to Huber (1990), advanced information technologies enable individuals to (1) communicate more easily and less expensively across time and geographic location (2) communicate more rapidly and with greater precision to targeted groups (3) record and index more reliably and inexpensively the content and nature of communication events and (4) more selectively control access and participation in a communication event or network.

The last dimension of CIF deals with frequency of interaction which depends on call planning (Sujan et al. 1994). By running specific data queries, salesperson can list and sort customers to determine call priorities. SFA applications related to calendar and routing enable the sales rep to effectively manage time, set up appointments accurately and perform sustained planning. Consequently, the buyers will be approached by the salesperson as needed and with a suitable frequency. Calls will be better prepared by the salesman such that the meetings will be more structured and focused, the call object previously communicated to the buyer (by email for example) and follow ups performed. Figure 2 shows that following up customers and availability are seen as important for a majority of buyers interviewed here.

Responsiveness

The information and communication capacities of SFA systems render the salesperson more responsive and available to customer requests. Responsiveness has been defined as the willingness to help customers and provide prompt service (Parasuraman et al. 1988). Thanks to paperless communication, an automated salesperson can answer his customers in real time and offer a good service quality. Our interviews show it is important for buyers to be able to reach the salesperson whenever needed. This refers to the concept of availability defined as the presence of

the salesperson for problem solving during the business cycle (Williams et Seminerio 1985; Cooper, Dröge et Daugherty 1991). In addition, the adoption of SFA tools by salespeople is supposed to help them concentrate more on territory management while automating administrative ones (Wedell et Hempeck 1987).

Relationship Quality

When customers benefit from SFA due to enhanced salespeople professionalism and interaction quality, relational outcomes should follow. In accordance with Huber's (1990) theory and several studies in information technology, we consider that the impact of SFA on customer salesperson relationship quality is indirect (Mooney, Gurbaxani et Kraemer 1996; Brynjolfsson et Yang 1996). It follows the enhancement of salespersons' behaviors and competence. Evan and Cowles (1990) state that salespersons' knowledge benefits to the quality of customer relationships. Furthermore, relational outcomes are strengthened over time and multiple interactions. For this reason, they are supposed to happen after the relationship development. The most described dimensions of relationship quality are trust and commitment (Morgan and Hunt 1994). By improving their knowledge, SFA systems allow salespeople to deliver better information to customers rendering them more trustworthy. The average causal map indicates that in the buyers' mind, enhanced customer information improve their trust in the salesperson. Also, the capacity of automated salespeople to solve customers' problems and help them make effective decisions can lead to trust. Meanwhile, a good quality interaction and exchange of valuable information between automated salespeople and customers has an effect on commitment. Concerning satisfaction, Homburg and Rudolph (2001) found that interaction with salespeople was one of the most important dimensions of satisfaction in industrial setting. This concept is defined by Crosby et al. (1990) as an emotional state which occurs in response to an evaluation of interaction experience of the customer with the salesperson. Then, it is likely that SFA tools which help sales force to better meet customer expectations influence satisfaction. The average causal map indicates that satisfaction can follow customer knowledge and reliable argumentation. Finally, when a satisfied buyer assesses positively his relation with a supplier's salesperson, he is more likely to recommend it to other purchasing professionals.

CONCLUSION

The current research aimed at identifying the benefits of SFA from the customer's point of view. Knowing that SFA is increasingly implemented from a relationship building approach, it seems logical to explore customer judgments. Furthermore, most studies on SFA call for customer centric research. To explore the topic, three qualitative methods were combined to gain an in-depth understanding of buyers' SFA apprehension. We performed successively a thematic content analysis, a lexical analysis and a study of cognition through cognitive causal mapping. Cognitive mapping has rarely been used in management and particularly in marketing. Our study dealing with perceptions of buyers and these perceptions pertaining to a domain for which no research results are yet available (perceptions of SFA implementation by customers), we believed that cognitive mapping could be of great interest in revealing thoughts, beliefs and causal interactions. From a methodological standpoint, we demonstrate here the potential of the method to better understand a complex problem dealing both with technology and human interaction. From a substantive standpoint, our findings indicate that the main benefits of SFA as perceived by buyers are professionalism, customer interaction quality, responsiveness and relationship quality. These findings are in accordance with theoretical models developed in the literature. As in other studies on the impact of information technology, our qualitative results support the existence of direct effects of SFA on information and communication processes in sales activities and the existence of indirect effects on relational outcomes.

From a theoretical point of view, this paper contributes to the salesforce literature as it proposes a first empirical test of hypothesized benefits of SFA as found in the literature. Also, this research is the first which analyzes the impact of SFA from the customer's perspective. This sheds light on under-researched and intangible facets of return on investment of SFA. While research mainly has studied the impact of SFA in terms of sales outcomes (turnover, market share), this study reveals the impact on buyer-seller relationships. Relationship quality will lead in its turn to purchase, loyalty and sales levels. We therefore propose that the impact of SFA on sales should be studied through a series of mediating variables including customer relationship quality. We identify here some mediating variables. The exploratory aspect of our study enabled us to reveal several domains through which SFA usage might influence customer relationships. Our results

call for further research both to confirm our findings which are exploratory in nature and to further analyze some of the benefits revealed here such as professionalism, image (brand, corporate), interaction quality or relational outcomes. Also, our analyses of qualitative material led to the identification of a set of concepts (sales presentation, responsiveness, adaptive selling, trust, commitment, etc) which need to be integrated into a research model and empirically tested to ascertain the benefits of SFA from the customer's perspective. The next step is naturally to build and test such comprehensive model of the impact of SFA on customer relationship quality and buying behavior. Finally, from a managerial standpoint, we show how professionals should reconsider studying or communicating impacts of SFA solutions. SFA editors stress the impact of SFA solutions on sales and profits wishing to prove short-term profitability of the systems and most companies invest blindly in SFA to align to their competitors or to improve salespeople sales' productivity. We believe that they should firstly consider the relational dimension and consequences of SFA by analyzing its impact on the customer -the focus of marketing-. This might also favor acceptance and usage of SFA solutions by the salespersons themselves if they can be convinced of the existence of positive consequences which are important to them and to the conduct of their everyday job, that of better interaction with and favored perceptions from their clients.

REFERENCES

- Ackermann, F. and Eden, C., (2005), "Using Causal Mapping to Support Information Systems Development: Some Considerations", in Narayanan, V. K. and Armstrong, D. J., Eds, "Causal Mapping for Research in Information Technology" Hershey, PA: Idea Group Publishing.
- agricultural input supply sector, *Agribusiness*, 12, 4, 317-326.
- Ahearne M., Jelinek R. and Rapp A. (2005). Moving beyond the direct effect of SFA adoption on salesperson performance: training and support as key moderating factors. *Industrial Marketing Management*, 34(4), 379-388.
- Ahearne M., Schillewaert N. The effect of information technology on salesperson performance. Working paper of e-Business Research Center 2000. Pennsylvania State University.
- Ahearne M., Srinivasan N. and Weinstein L. (2004). Effect of technology on sales performance: progressing from technology acceptance to technology usage and consequence, *The Journal of Personal Selling & Sales Management*, 24(4), 297-310.
- Axelrod, R. (1976), *The Structure of Decision: Cognitive Maps of Political Elites*, Princeton University Press, 1976
- Bardin L. (2003), *L'analyse de contenu*, Paris, Presses Universitaires de France.
- Barnes, M.L. and Engle R. (1995), Can sales force automation help you be a more effective manager ?, *Sales Process Engineering and Automation Review*, September, 16-19.
- Behrman D.N. et Perreault W.D. (1982), Measuring the performance of industrial salespersons, *Journal of Business Research*, 10, 355-370.
- Bougon, M. G., Weick, K. E., & Binkhorst, D. (1977). Cognition in organizations: An analysis of the Utrecht Jazz Orchestra. *Administrative Science Quarterly*, 22, 606-639.
- Brossard H.L. (1998), Information sources used by an organization during a complex decision process: an exploratory study, *Industrial Marketing Management* 1998, 27(1), 41-50.
- Brynjolfsson E. et Yang S. (1996), Information technology and productivity, A Review of the Literature, *Advances in Computers*, 43, Février, 179-214
- Brynjolfsson, E. and Yang S. (1997), The intangible benefits and costs of computer investments: Evidence from financial markets, *Proceedings of the International Conference on Information Systems*, Atlanta, GA.
- Caudron, S. (1996). Sales force automation comes of age. *Information Week*, May 20, 146-152.
- Colombo, G. (1994), *Sales force automation*, McGraw-Hill, New York, NY.
- Colombo, G.W. (1993), *Sales force automation using the latest technology to make your sales force more competitive*, Mc Graw Hill.
- Cooper M.B., Dröge C. et Daugherty P.J. (1991), How buyers and operations personnel evaluate service, *Industrial Marketing Management*, 20, 81-85.
- Cossette, P (1989). "Les schèmes d'interprétation idiosyncrasiques de propriétaires-dirigeants de PME : une étude exploratoire de cartographie cognitive". Thèse de Doctorat, Faculté des sciences de l'administration, Laval Québec.
- Crosby L.A., Evans K.R. et Cowles D. (1990), Relationship quality in services selling : an interpersonal influence perspective, *Journal of Marketing*, 54, Juillet, 68-81.
- Daniels, K., Markoczy L., Goldberg, L. and Chernatony, L. (1993), Comparing cognitive maps, Paper presented to the International Workshop on Managerial and Organizational Cognition, Brussels, Belgium.
- Darmon R.Y. (1993), *Management des ressources humaines des forces de vente*, Paris, Economica.

- Davis F. D., Bagozzi R. P. and Warshaw P. R. (1989), User acceptance of computer technology : a comparison of two theoretical models. *Management Science*; 35 N°8 : 57-61.
- Day, G.S. (1992), Marketing's contribution to the strategy dialogue, *Journal of the Academy of Marketing Science*, 20, 323-329.
- DeLone W. H., McLean E. R. Information systems success : the quest for the dependent variable. *Information Systems Research* 1992; 3 N°1 : 60-95.
- Duncan R.B. (1972), Characteristics of organizational environments and perceived environmental uncertainty, *Administrative Science Quarterly*, 17, 313-327.
- Dwyer R.F., Schurr P.H. and Oh S. (1987), Developing buyer-seller relationships, *Journal of Marketing*, (April), 51, 11-27.
- Fisher (2001), New ways to win over fickle clients, *The Financial Times*, London.
- Fisher, J. (1998), The secret's out, *Entrepreneur*, Vol. 26, May, pp. 112-19.
- Ford, J.D. and Hegarty W.H. (1984), Decision makers beliefs about the causes and effects of structure: an explanatory study, *Academy of Management Journal*, 27, 2, 271-291.
- Frazier G. L. and Summers J. O.,(1984), Interfirm influence strategies and their application within distribution channels, *Journal of Marketing*, Vol. 48, Summer, pp 43-55.
- Gao T., Wang Y., Sirgy M.J. and Bird M.M. (2002), An integrative model on the antecedents of buyer decision-making uncertainty in organizational purchasing, In: Zwick, R., Tu, P., editors, *Asia-Pacific advances in consumer research*, Vol. 5, Valdosta (GA), Association for Consumer Research, 41-47.
- Gavard-Perret M. and Moscarola J. (1996), Lexical Analysis in Marketing : Discovering the contents of a message or recognizing the models of enunciation? *Proceedings of the French-German Workshop on "Developments and approaches in consumer behavior research*.
- Goodhue, D.L. and Thompson, R.L. (1995), Task-technology fit and individual performance, *MIS Quarterly*, 19, 2, 213-236.
- Grover, V., Teng, J. T. C., and Cheon, M. J. (1998), Towards a theoretically-based contingency model of information systems outsourcing, in Willcocks L. P. and Lacity M.C. (eds.), *Strategic sourcing of information systems*, John Wiley&Sons, Chichester.
- Harris, K. And Pike, J. (1996), Issues concerning adoption and use of sales force automation in the
- Hawes, J., Mast, K.E. and Swan, J.E., (1989), Trust earning perceptions of sellers and buyers, *Journal of Personal Selling and Sales Management*, 9, 1-8.
- Henthorne T.L., La Tour M.S. and Williams AJ. (1993), How organizational buyers reduce risk, *Industrial Marketing Management*, 22, 41-48.
- Hill, Ned C. & Swenson Michael J. The Impact of Electronic Data Interchange on the Sales Function. *Journal of Personal Selling and Sales Management* 1994;14 (Summer), 79-87.
- Hitt, L. and Brynjolfsson, E. (1996), Productivity, Profit and Consumer Welfare: Three Different Measures of Information Technology's Value, *MIS Quarterly* . (MISQ "Best Paper" Award for 1996. An earlier version appeared as "The Three Faces of IT Value: Theory and Evidence, *Proceedings of the International Conference on Information Systems*, 1994, Vancouver, British Columbia, "Best Paper" award at the conference) *MIS Quarterly*, pp. 121-142.
- Homburg C. et Rudolph B. (2001), Customer satisfaction in industrial markets: Dimension and multiple role issues, *Journal of Business Research*, 52, 15-33.
- Honeycutt Jr. E.D., Thelen T., Thelen S.T. and Hodge S.K. (2005), Impediments to sales force automation, *Industrial Marketing Management*, 34, 313-322.
- Huber G. (1990), A theory of the effects of advanced information technologies or organizational design, intelligence, and decision making, *Academy of Management Review*, 15, 1, 47-71.

- Igbaria M. et Tan M. The Consequences of Information Technology Acceptance on Subsequent Individual Performance. *Information and Management* 1997 ; 32, 113-121.
- Jackson Jr D.W., Keith J.E. and Burdick R.K. (1984), Purchasing agents' perceptions of industrial buying center influence: a situational approach, *Journal of Marketing*, (Fall), 48, 75-83.
- Jackson Jr D.W., Keith J.E. et Schlacter J. (1983), Evaluation of selling performance: A study of current practices, *Journal of Personal Selling & Sales Management*, 3, 2, 42-51.
- Kasper-Fuehrer E. and Ashkanasy N.M. (2001), Communicating trustworthiness and building trust in interorganizational virtual organizations, *Journal of Management*, 27, 3, 235-254.
- Keillor B. D., Bashaw R. E., Pettijohn C. E. Salesforce automation issues prior to implementation : the relationship between attitudes toward technology, experience and productivity. *Journal of Business and Industrial Marketing* 1997; 12 N°3/4 : 209-219.
- Khandpur, N. and Wevers J. (1998), *Sales force automation using Web technologies*, New York: John Wiley & Sons Inc.
- Knoll, H. and Tankersley, C.B. (1991): "Building a better images"; *Sales & Marketing Management*; February.
- Kohli A., (1989), Determinants of influence in organizational buying: a contingency approach, *Journal of Marketing*, (July), 53, 50-65.
- Lagace, R. R., Dahlstrom, R. and Gassenheimer, J. B. (1991), The relevance of ethical salesperson behavior on relationship quality: The pharmaceutical industry. *Journal of Personal Selling and Sales Management*, 11 (4), 39-47.
- Langfield-Smith, Kim. and Wirth A. (1992), Measuring differences between cognitive maps, *Journal of the Operational Research Society* 43: 1135-1150.
- Leonard-Barton, Dorothy & Deschamps Isabelle (1988), Managerial Influence in the Implementation of New Technology. *Management Science*, 34 (10), 1252-65.
- Manssen, B.L. (1990), Using PCs to automate and innovate marketing activities, *Industrial Marketing Management*, 3 August, 209-213.
- Marshall G.W., Moncrief, W.C. et Lassk F.G. (1999), The current state of sales force activities, *Industrial Marketing Management*, 28, 87-98.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis*, (2nd ed.). Thousand Oaks, CA: SAGE.
- Mohr, Jakki and Nevin, John R. (1990), Communication strategies in marketing channels: a theoretical perspective, *Journal of Marketing*, 54(4), 36-51.
- Moncrief, William C. (1986), "Selling Activity and Sales Position Taxonomies for Industrial Salesforces," *Journal of Marketing Research*, Vol. 23 (August), pp. 261-270.
- Mooney J.G., Gurbaxani V. et Kraemer K.L. (1996), A process oriented framework for assessing the business value of information technology, *The DATA BASE for Advances in Information Systems*, Printemps, 27, 2, 68-81.
- Morgan et Hunt (1994), The commitment-trust theory of relationship marketing, *Journal of Marketing*, 58(July), 28-38.
- Moriarty, R.T. and Spekmen R.E. (1984), An empirical investigation of the information sources used during the industrial buying process, *Journal of Marketing Research*, 21, 137-147.
- Moriarty, Roland T. and Gordon S. Swartz. (1989) "Automation to Boost Sales and Marketing," *Harvard Business Review*, January-February.
- Park J.E., Holloway B.B. , and Deitz G.D. (2005), The Benefits of sales force automation: an empirical examination of SFA usage on relationship quality and performance, *Proceedings of the National Conference in Sales Management*, 4-7.

- Parsons, G.L. (1983), Information Technology : A new competitive weapon, *Sloan Management Review*, 1(Fall), 3-14.
- Parthasarathy M. et Sohi R.S. (1997), Salesforce automation and the adoption of technological innovations by salespeople : theory and implications, *Journal of Business and Industrial Marketing*, 12, 3/4, 196-208.
- Pilling B.K. and Eroglu S. (1994), An empirical examination of the impact of salesperson empathy and professionalism and merchandise salability on retail buyers' evaluations, *The Journal of Personal Selling & Sales Management*, Vol. 14 N°1, Winter, 45-58.
- Pullig C., Maxham J.C. et Hair J.F. (2002), Sales force automation systems : an exploratory examination of organizational factors associated with effective implementation and salesforce productivity, *Journal of Business Research*, 55, 401-415.
- Rice, R.E. and Blair, J.H. (1984). New organizational media and productivity. In Rice, R.E. & Associates (Eds), *The New Media*, Beverly Hills, CA: Sage.
- Rivers M., Dart J. The acquisition and use of sales force automation by mid-sized manufacturers. *Journal of Personal Selling and Sales Management* 1999; 19 N°2 : 59-73.
- Spiro R. et Weitz B. A. (1990), Adaptive selling : conceptualization, measurement, and validity, *Journal of Marketing Research*, 27, février, 61-69.
- Sproull, L., and Kiesler, S. (1986), Reducing Social Context Cues: Electronic Mail in Organizational Communication, *Management Science* (32), pp. 1492-1512.
- Srinivasan, A. (1985), Alternative measures of system effectiveness: Associations and implications, *MIS Quarterly*, 9(3), 243-253.
- Sujan, H., Weitz B. A et Sujan M. (1988), Increasing sales productivity by getting salespeople to work smarter, *Journal of Personal Selling & Sales Management*, Août, 9-19.
- Sujan, H., Weitz B. et Kumar N. (1994), Learning orientation, working smart, and effective selling, *Journal of Marketing*, 58, Juillet, 39-52.
- Swenson, P.J. and Parella A. (1992), Cellular telephones and the national sales force, *The Journal of Personal Selling & Sales Management*, Vol. 12, N°4.
- Taylor T.C. Valuable insights on sales automation progress. *Sales Process Engineering & Automation Review* 1994; December : 19-21.
- Tolman, E. C. (1948). Cognitive maps in rats and men. *Psychological Review*, 55, 189--208.
- Trumfio, Ginger (1994), The future is now, *Sales and Marketing Management*, 13 (November), 74-80.
- Verity, J.W. (1993), Taking a laptop on a call, *Business Week*, (October 25), 124-135.
- Weathley, M. (1998), Selling IT to salesmen, *Management today*, (March), 72-74.
- Wedell & Hempeck Dale. *Sales Force Automation-Here and Now*. *Journal of Personal Selling and Sales Management* 1987; Vol. 7 N°2, August, 11-16.
- Weitz B., Sujan H. et Sujan M. (1986), Knowledge, motivation and adaptive behavior: a framework for improving selling effectiveness, *Journal of Marketing*, 50, 174-191.
- Weitz B.A. et Bradford K. (1999), Personal selling and sales management : A relationship perspective, *Journal of the Academy of Marketing Science*, 27, 241-255.
- Williams J. et Seminerio J. (1985), What buyers like from salesmen, *Industrial Marketing Management*, 14, 75-78.