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Salesforce automation and the adoption of technological innovations by salespeople: Theory and implications

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Introduction

This paper is concerned with the adoption of salesforce automation (SFA) systems by organizations and their salesforces. SFA systems consist of centralized database systems that can be accessed through a modem by remote laptop computers using special SFA software (which is often company specific). The modem can be connected to either a conventional phone line or a cellular phone line. Thus, in an SFA system, a salesperson can access a centralized database system at any time through their laptop computer to get constantly refreshed information regarding various facets of the job, e.g. contact information, inventory and shipping statistics (to avoid backorders), customer service information, transportation logistics, and even immediate access to commission figures (Blodgett, 1995a). An SFA system also enables a salesperson to file regular reports electronically without having to travel to the central office in person. The result is greatly improved efficiency and productivity (Colombo, 1993; McLachlan, 1992; Swenson and Parrella, 1992; Taylor, 1993a, 1994).

Centralized system

It is of some importance to mention that the mere fact that some salespeople individually own and use laptop computers, electronic notepads or cellular phones does not imply that the salesforce is automated. In order for a salesforce to be automated, the salespeople must be able to remotely communicate with a centralized system that is constantly being updated with current information on a variety of attributes that are of interest to the salesperson. The salesperson must be able to access needed information as well as file their own report (and thereby serve to update the centralized database). Hence, an SFA system is often a fairly large database and networking system costing, at times, millions of dollars (e.g. Slater, 1993).

In 1992 over a billion dollars were spent on SFA annually; by 1997 this figure is expected to exceed 2.7 billion dollars (Verity, 1993). Thus, it is clear that an increasing number of companies are adopting SFA systems in order to gain an edge in the highly competitive global marketplace. Yet, very little attention has been focused on SFA in the academic literature. This is of especial concern because there is evidence that a substantial proportion (almost 75 percent) of SFA projects end in failure (Blodgett, 1995b).

Salesforce automation systems

The purpose of this paper is to identify and discuss factors that can influence the adoption and implementation of salesforce automation systems. To do so, we draw from diffusion theory and the SFA trade literature, and synthesize these fields to develop a managerially meaningful set of factors

affecting SFA. In this paper, we contend that automating a salesforce is a two-stage process. Initially, an organization makes a decision to adopt an SFA system, which in many cases can be extremely elaborate and expensive.

Once the organization adopts the SFA system, the next stage involves the use of the SFA technologies by the individual salespeople. Hence, in contrast to the one-step process that characterizes most consumer adoption situations, SFA is complicated by "dual adoption," with both organizational and individual factors influencing the process and the ultimate utilization level of the system.

In the sections that follow, we begin with a discussion of the dual adoption concept. Next, we discuss factors that influence organizational adoption of SFA systems. This is followed by a section on the adoption of SFA systems by individual salespeople. We conclude with managerial implications and directions for future research.

Organizational salesforces

Dual adoption

Unlike the conventional diffusion paradigm, where a product is adopted solely by individual consumers, the adoption of SFA systems by organizational salesforces involves two stages. First, an organizational-level decision has to be made to adopt an SFA system. Second, the individual salespeople within the organization have to adopt the system. However, the second stage can only occur after adoption at the first stage has occurred. This is because SFA systems are centralized database systems. It is not possible for a salesperson to make use of SFA technology unless organizational adoption occurs, i.e. the centralized database is in place. Hence, organizational adoption is a prerequisite to individual adoption. We refer to this phenomenon, where the system must *first* be adopted by the organization and *then* by individual salespersons, as "dual adoption."

It should be noted that the dual-adoption situation implies that organizational adoption restricts individual adoption in that salespersons cannot adopt an SFA technology effectively before the organization does. Past researchers have recognized that one of the most restrictive assumptions that underlies the diffusion of innovations concept (and its close cousin the product lifecycle concept), is that the product is adequately available to potential adopters. Existing literature supports the contention that the diffusion framework is a demand-driven concept that ignores the strong impact of supply restrictions on product adoption (e.g., Lambkin and Day, 1989; Mahajan and Muller, 1979; Simon and Sebastian, 1987). Supply restrictions, in turn, imply that the related diffusion pattern may not be the traditional sigmoid pattern (Parthasarathy *et al.*, 1994; Rogers, 1983).

Adoption of SFA systems

Specific to the situation at hand, even though organizational adoption of SFA systems may depict a smooth sigmoid pattern as expected by traditional diffusion research (e.g. Gatignon and Robertson, 1985, 1989; Kotabe, 1990; Rogers, 1983), adoption by salespeople will take place in spurts, with each spurt occurring as individual organizations adopt SFA technologies. These spurts will be especially marked in oligopolistic situations where few large firms characterize the market (an organizational situation, as will be subsequently discussed, especially conducive to the adoption of SFA technologies).

Each one of these spurts indicates that soon after the organization adopts the SFA system, the salespeople are required to use it. Most organizations that spend a substantial sum of money adopting an SFA system will require that salespeople make use of this system so that the fruits of improved efficiency

can more than pay for the system itself. Some salespeople will welcome this change, while others will resist it. For the latter category of salespeople, the adoption of the new technology will be very similar to forced adoption. Since, in this context, adoption is against their will, these salespeople will tend to use the system to the minimal extent, if only because they are required to. In the second section of this paper, we discuss the characteristics of the salespeople most likely to underutilize the SFA system and what can possibly be done to increase their level of utilization.

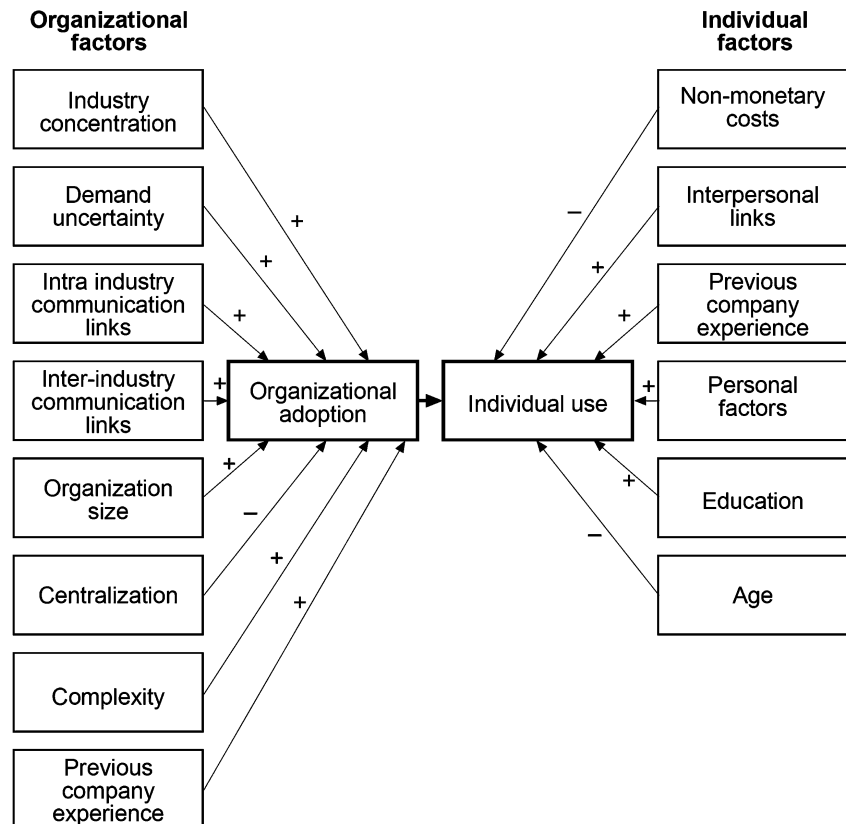
Potential organizations

In what follows, factors that govern organizational adoption of SFA innovations, and industry situations most conducive to SFA system adoption, are discussed. This may help marketers identify organizational situations most conducive to SFA adoption and will enable SFA system providers to better identify potential organizations for their products. Following this, factors that influence individual salesperson utilization and resistance behavior are presented. This section will help organizations identify salespeople who are most likely to adopt SFA technologies early and, more importantly, those who are most likely to utilize such systems to their potential. It will also help organizations identify individuals most likely to resist SFA innovations. Both the organizational and the individual factors are summarized in Figure 1.

Factors influencing organizational adoption of SFA systems

The decision to automate a salesforce can be quite difficult, since most centrally controlled SFA systems can cost millions of dollars and take years of invested time to set up, making cost justification very complicated (Slater, 1993). Further, SFA technologies consist of computer-based equipment, which can rapidly become obsolete. Hence, there is a substantial continuous expense if the SFA system

Figure 1. Factors that influence the adoption of SFA systems



is to be kept up to date over the years. The decision to automate the salesforce is made even more difficult because in the short run it is difficult to measure most of its benefits (except lower costs) in dollar terms and hence difficult to quantify the gain that can be enjoyed by the adoption of such a system. In what follows, we contend that SFA innovations will benefit certain firms more than others. The characteristics of these firms and the external environment that they compete in are now discussed. These include the competitive environment, communication patterns within the industry, organizational characteristics and other factors. This section will help a firm identify if the adoption of an SFA system would be beneficial to it in the long term, given the industry and the environment that it competes in.

Oligopolistic environment

Competitive environment

Industry type. The adoption of technological innovations is likely to be greatest in industries operating in an oligopolistic environment because, under oligopoly, the benefits of adoption increase when competition decreases (Reinganum, 1981). The reasons for adoption of SFA innovations by large firms operating in an oligopolistic environment may be twofold. The first is to gain a competitive advantage, especially if other firms within the industry offer similar products at similar prices and use similar marketing strategies. Put differently, if intratype competition is strong, then SFA may give the firm the competitive edge by reducing costs, increasing information responsiveness, enhancing customer retention, and by equipping the firm with the ability to react more quickly to environment changes. Second, the adoption of technological innovations by firms operating in oligopolistic situations may also be used to maintain (or develop) barriers to entry. In this manner, SFA can be a tool used to prevent new competition from entering the marketplace.

Most firms adopting SFA innovations are likely to be comparatively large, resourceful firms, especially since SFA systems can cost millions of dollars. Further, costs of automating the whole salesforce can be quite prohibitive, given that the total per-rep investment in hardware and software may be around \$5,000 (Colombo, 1993). Small firms operating in price-competitive environments may not be able to afford such an outlay. Furthermore, firms competing on price will be less receptive to adopting an SFA system since the huge expenditure necessary to obtain such a system and the constant costs of updating would greatly increase short-term costs and, therefore, place such firms in a less-than-optimum position in a price-competitive world. Further, as Porter (1979, 1980) indicates, firms competing on price will be less receptive to adopting new innovations for their salesforces because high competitive price intensity drains the industry's financial resources.

Competitive vulnerability

Demand uncertainty. Robertson and Gatignon (1986) argue that uncertainty of demand increases perceived competitive vulnerability and makes a firm more susceptible to innovation in its quest for competitive advantage. Indeed, as Ettlé (1983) indicates, higher uncertainty is related to greater need for changing technology and a faster rate of adoption in order to survive. Therefore, one can expect this logic to be true for the adoption of innovations by the organizations too. That is, one can expect firms that operate in an industry characterized by considerable demand uncertainty to adopt SFA-related innovations more quickly than firms that operate in relatively stable environments, more because of necessity than anything else.

Communication links within and between industries

Research suggests that organizations are more likely to adopt an innovation when they are integrated into the external information environments (Kimberly, 1978). Thus, organizations that have communication links that look outward from their own industry to other industries for information are more likely to be innovators (the first to adopt an innovation) within their own industry with respect to the adoption of new technologies. Indeed, diffusion research lends support to the fact that although homophilous influence (in this case, within-industry influence) is more predominant, heterophilous influence (external to the industry) is common among innovators (Barnett, 1953; Granovetter, 1973; Rogers, 1983).

Communication links

The whole notion of between-industry and within-industry communication links can be related to diffusion networks and the notion of communication proximity, which is the degree to which two organizations have communication networks that overlap (Rogers, 1983). Organizations that are connected together by strong networks can be termed as "cliques." Thus, firms within an industry, especially in an industry characterized by communication openness, may form a large clique. Different cliques may be connected together by a "bridge tie" which is considerably weaker than the ties within cliques. These links are heterophilous and of low proximity (Czepiel, 1975; Granovetter, 1973). It is through these weak ties that information regarding information travels among different industries. It is the strength and openness of ties within industries that partly determines the rapidity with which these innovations are adopted by individual firms.

In the context of SFA, it must be realized that most innovations (e.g. laptop computers, cellular phones) have wide relevance and cross industry boundaries. For these innovations, messages may not be confined to the industry itself, but may come from a large number of sources outside the industry. Also, the more competitive the industry, the greater the likelihood of the members turning to outside sources of information. Thus, for SFA, the structural equivalence model of communications (Burt, 1987; Midgley *et al.*, 1991) would indicate that each firm within an industry would try to find ways to outdo the other firms and gain information about new innovations from third parties or by observation. Communication may include information from "suppliers, customers, consultants, or industry groups" (Midgley *et al.*, 1991). In sum, apart from communication openness within the industry, firms that have communication links (however casual) with firms in other industries (or otherwise outside the immediate line of intracompetition) will have quicker access to information about new technological innovations, and would consequently be earlier in adopting the innovation for their salesforce.

Acceptance of innovations

Organizational characteristics

Organizational characteristics can facilitate the adoption of certain types of innovations, but not others. Gatignon and Robertson (1989) argue that centralization facilitates the acceptance of innovations that require organizational standardization for their complete and proper adoption. SFA systems depend on organizational standardization in order to earn productivity gains, because its value is tied to the standard hardware, the standard software and the standard training that must be associated with such a system if it is to be of use to a large salesforce. Therefore, large centralized organizations are more likely to adopt technological innovations for their salesforces than small non-centralized ones.

Similarly, organization complexity may promote the adoption of innovations, because complex organizations are more likely to have specialized wings dealing with specific areas of operation. These specialized wings are more likely to be aware of and open to new technological innovations, including SFA systems (Baldrige and Burnham, 1975).

Adoption of technological innovations

Other factors

Several other factors may also influence a firm's propensity to adopt new innovations for the salesforce. It has been argued that organizational adoption of technological innovations is enhanced when the firm is part of a well-coordinated vertical marketing system (Robertson and Gatignon, 1986; Kimberly, 1978) that permits information flow between the channel members. This is perhaps due to the fact that an integrated SFA system can provide information that can enhance the performance of the entire vertical system, and not just one of its members. Hence, some cost advantage may also result if many entities can make use of a single SFA system.

Similar to individual adoption, previous experience with the innovation may serve to hasten the speed and time of adoption. For example, organizations that have previously adopted computer technology for other functions (e.g. accounting, marketing information systems, etc.) may be more open to the adoption of laptop computers and associated systems for their salesforces. By the same token, if a large percentage of employees have previous experience with similar innovations, they may be more open to the adoption of the innovation under study, leading to earlier adoption by the organization. Highly computerized firms may be more innovative than others when it comes to the adoption of laptop computers for the salesforce, because employees and decision makers have been exposed previously to the benefits of computerization. Further, the firm may be able to save costs if it already has a centralized database-oriented management information system in place, and if an SFA module can be developed for such a system.

Decision makers' general outlook

Within the firm, the decision makers' general outlook toward innovations may be reflected in the decision that is finally made. It must be realized that although organizational decision making is more complex than individual decision making in that it may involve several individuals, the personal characteristics, demographic characteristics, openness to different communication channels (e.g. mass media and interpersonal influence), and cultural background of these individuals may partly influence the decision that is made.

Factors influencing adoption of SFA system by individual salespersons

Once the organization adopts the SFA system, individual salespersons have to learn to use the system and change their work behavior to make full use of the system. While some salespersons may be more willing and able to make this change, others may symbolically resist the new system, leading to underutilization of its capabilities. Hence, an extremely important task for the proper and complete implementation of an SFA system is to try and identify employees most likely to accept and fully utilize the SFA system, and also to identify those employees who resist the innovation and use it only to its basic minimum level because they are required to. The latter group can then be the target of special training programs and other strategies that reduce the perceived costs and risk of adopting the new technology.

Salespeople are like individual consumers when it comes to adopting innovative products. Their overall utilization of the system may be governed by a number of factors. Based on the existing literature, we classify these factors into three groups: (1) nonmonetary costs of adoption; (2) personal, demographic and environmental factors; and (3) interpersonal communication.

Utilization of the innovation

Nonmonetary costs of adoption

Salespeople find themselves in a unique position regarding the adoption of technological innovations. On one hand, the adoption of a new technological innovation can improve productivity and efficiency, leading to more fruitful exchanges with clients. Laptop computers may provide benefits such as better customer information, improved communication, better reporting and customer continuity (Colombo, 1993). On the other hand, adoption of the innovation may involve substantial nonmonetary costs. Nonmonetary costs may include the time and effort that must be expended for the proper utilization of the innovation. In the case of the laptop computer, this may involve understanding the basic functions of the computer (for total computer novices) and learning the specific software packages that may be required for greater efficiency on the job. For some complex software packages (such as large, customized SFA systems), the nonmonetary costs may be very high with over 100 hours required for their mastery (Conner and Rumelt, 1991).

The nonmonetary costs of adoption can be particularly high for salespeople because they are a function of available spare time. Since the phrase "time is money" can be applied aptly to most salespeople, it seems likely that a busy salesperson will have little time to spare for the learning of an innovation that *may* improve job efficiency at some future date. Therefore, the average salesperson may be averse to spending long hours learning the workings of a new product, time that can be spent on more productive activities. Stated differently, an average salesperson will be more sensitive to nonmonetary costs than the average consumer, leading to greater nonmonetary elasticity of demand. This, in turn, will result in a natural prejudice against the adoption of complex new technological innovations unless there is evidence that the benefits of the innovation far outweigh its costs.

Nonmonetary costs of adoption

In sum, if the nonmonetary costs of adoption are high, which is likely to be the case for most computer-based SFA systems, the initial adoption of such innovations by salespeople is likely to be low. Indeed, there is support for the contention that the initial adoption of personal computers was slow among salespeople and that "not so long ago many believed that salespersons wouldn't take to PCs" (Taylor, 1993b, p. 20). There is also evidence to suggest that salespeople tend to resist all but the most basic computerized systems and, when part of an SFA system, underutilize SFA products (Blodgett, 1995a, 1995b; Kay, 1995).

However, nonmonetary costs decline when more and more salespeople make full use of the system, making it proportionally more beneficial for the underutilizers to use the system more fully. The greater the number of others who are experts in using the system, the easier it is for a salesperson to ask other users about the system. Thus, if several others are familiar with the sales software on a laptop computer, a salesperson can reduce learning time by asking these individuals for help with the

commands and other functions of the system and therefore need not spend endless hours browsing through the manual or attending training sessions.

Complementary products (e.g. "how to" books, tutorials, on-line training sessions, 24-hour help lines, etc.) may also serve to reduce nonmonetary costs by easing the learning process. The positive role of complementary products in reducing nonmonetary costs and increasing product utilization levels has been documented (e.g. Conner and Rumelt, 1991; Parthasarathy and Hampton, 1993).

Time of adoption

Personal, demographic and environmental factors

Personal, demographic and environmental factors play a role in determining the time of adoption (i.e. whether a salesperson is likely to adopt an SFA system early or late). There is considerable support for the contention that early adopters are heavy product utilizers within the product category, or have considerable experience in similar (substitute) product categories. This finding has been replicated across numerous product categories, e.g. food and personal care products (Frank *et al.*, 1964; Taylor, 1977), consumer appliances (Robertson, 1971), and computers and computer services (Danko and MacLachlan, 1983; Dickerson and Gentry, 1983; Peters and Venkatesan, 1973). There is also considerable research that lends support to the contention that early adopters have higher income, are better educated, are more risk taking, are more venturesome and are usually younger than those who adopt late (Midgley and Dowling, 1978; Robertson *et al.*, 1984; Rogers, 1983).

Based on this, we expect salespeople who are younger, more educated, more venturesome and risk taking, and who have substantial prior experience with regard to computers and computer-related products (especially those closely related to the particular system being adopted) to be more likely to welcome the adoption of an SFA system and also to be the first to utilize it completely. Salespeople who are older, less educated, risk averse, less venturesome, less up-to-date with happenings in the field, and less exposed to computer technology are more likely to resist the new system and under-utilize it. High utilizers have more education and understanding of the scientific method, so they know how to understand the system, its commands and its intricacies, and thereby make full use of its features.

True adoption

Interpersonal communication

Adoption, according to Rogers (1983) is making "full use of an innovation," and true adoption refers more to use than purely initial adoption. It is a known fact that once the number of active adopters (i.e. users) increases beyond some threshold point, interpersonal networks get activated and the adoption curve "takes off" (Rogers, 1983). Research lends support to the notion that interpersonal communication is widespread (King and Summers, 1967), that interpersonal communication is often the most important source of information and influence (Arndt, 1967; Feldman and Spencer, 1965; Grossbart *et al.*, 1978; Katz and Lazarsfeld, 1955, p. 178; Kiel and Layton, 1981; Midgley, 1983; Price and Fieck, 1984), that interpersonal sources are perceived to be more credible than nonpersonal sources (Murray, 1991), that interpersonal information is a very important factor in diffusing information about a product

(Arndt, 1967; Sheth, 1968, 1971), and that interpersonal communication is a key factor in influencing the decision to adopt (Udell, 1966; Price and Feick, 1984). Other research findings indicate that interpersonal communication may be of a verbal or visual form (Edell and Staelin, 1983) and that negative interpersonal influence is much more persuasive than positive influence (see Arndt, 1967; Mizerski, 1982; Mahajan *et al.*, 1984; Richins, 1983).

Rather than seek out information from external sources (e.g., training sessions, manuals, etc.), a salesperson considering an innovation may save time and effort by asking others about the product. This may be considered an easier and, perhaps, more authentic way of collecting information. Thus, a salesperson who initially did not have time fully to use the system, may later find it easier to gain believable information regarding the innovation by asking other salespeople who make full use of the system. In addition, such imitative behavior may aid the salesperson in gauging the effectiveness of the innovation, and deciding whether the benefits (in terms of potential productivity gains) are attractive enough to justify the nonmonetary costs of adoption. Thus, the overall utilization of an SFA system among salespersons will depend on the observability of the system (how easily can a salesperson observe other salespeople benefiting from using the system). Further, by asking other salespeople about their experience with the system, a salesperson can reduce the risk associated with full adoption and actually realize that the time and effort that they were about to expend learning the system was probably going to be worth it.

Implications for management

The ideas put forth in this paper have managerial significance at two levels. First, they may enable the identification of organizations that are most likely to adopt SFA innovations. This will help SFA technology manufacturers to identify organizations most suited to SFA. Further, it will also help organizations to determine if they are in an SFA intensive industry (or in a potential SFA intensive industry) and whether SFA should be an area that needs to be considered.

Second, and more importantly, this paper suggests factors that may influence the acceptance of SFA technologies by individual salespeople. This will enable organizations to identify salespeople most likely to accept and fully utilize SFA innovations and those who will resist its adoption and, if forced, tend to under-utilize its capabilities. In this context, two scenarios can be visualized. In the first scenario, both the organization and the individual salespeople readily accept the SFA system. This, the best-case scenario in which, with adequate training, the salespeople readily adopt the system and use it to its maximum capability. In the second scenario, the adoption of the SFA system is not fully accepted by all the salespeople (this is likely to be a more realistic alternative). In this context, the literature on innovation resistance suggests that there are clearly different strategies that a firm could undertake to ensure greater acceptance of SFA systems by salespeople. Some of this literature and managerial conclusions are now discussed.

Overcoming resistance

Sheth and Ram (1987, p. 7) identified five customer barriers to new product adoption. These include:

- (1) the usage barrier (products that have to be learned or that otherwise lead to a change in behavior, practices, or work flows will be resisted in direct proportion to the magnitude of the required change);

- (2) the value barrier (if the value of the new system does not substantially exceed the old system's values, it will be resisted);
- (3) the risk barrier (products perceived to be risky are resisted);
- (4) the tradition barrier (a society's cultural and social traditions can play a major role in consumer resistance); and
- (5) the image barrier (innovations that acquire a negative image are likely to be resisted).

In the context of SFA, the most important is the usage barrier since SFA adoption by salespeople is almost forced adoption and hence the other barriers become less important. Therefore, the most important thing an organization can do is to devise ways to enhance usage of the SFA system by prospective salespeople. In this context, the following strategies are proposed.

Target the high utilizer. The more educated, venturesome, group of people are naturally likely to make full use of the SFA system. It is a good idea to target these individuals and give them special training to make sure that they are comfortable, happy and think highly of the new system. If these individuals adopt the system and use it to its full potential, positive word-of-mouth influence initiated by them would make the adoption of the system take off. Others would be convinced of its capability by observing these individuals and may thus utilize the system more fully than they initially did.

Reducing nonmonetary costs. SFA systems are invariably complex and require considerable learning. In this context, any reduction in time or effort needed to learn and use the system will go a great way in enhancing its full use. One way of achieving this is to actually make the system user-friendly with considerable on-line help. On-line tutorials would also ease the learning task and thereby reduce non-monetary costs of adoption. However, two areas of greatest possible benefit are the provision of each salesperson with a simple, concise, how-to manual on operation of the SFA system and constant, round-the-clock, telephone or on-line help. It would greatly enhance acceptability if salespeople could call in if they have a problem with the system. This would especially benefit the potential under-utilizer who may be on unsure ground and may need the extra help.

Undoubtedly, formal training reduces nonmonetary costs by easing the effort needed to use the system. In this context, the behavior modeling approach could be one possibility (Goldstein and Sorcher, 1974). This technique consists of four major learning activities (Kraut, 1976). In the context of salesforce automation, these activities could be as follows:

- *Modeling.* Where the salespeople watch films or actual demonstrations of the products by a trainer.
- *Experience.* The salespeople learn more about the new products and desired behaviors through practice, either alone or in a one-on-one setting with a trainer.
- *Reinforcement.* The trainer provides reinforcement in the form of suggestions and constructive feedback on the use of the products.
- *Transfer of training.* The trainer encourages the salesperson to transfer the knowledge and behaviors learnt in the training session, to on-the-job utilization.

In this form of training, the crucial element is the pseudo-experience, which facilitates the implementation of SFA by highlighting the benefits of the new product, and reducing the nonmonetary costs of adoption.

Make SFA adoption voluntary. During the early stages of implementation, it may be wiser to choose volunteers (who are trained and made happy with the system and who, in turn, persuade others to adopt) rather than to engage in forced adoption. There is bound to be much greater resistance in forced adoption than in the voluntary adoption situation. However, this has to be balanced against the need for quick implementation.

Directions for future research

Future research needs to focus even more on the costs and benefits of SFA. Some of the specific research questions that need to be addressed are: how much will it cost to deploy systems and train users?; how will SFA improve the productivity of salespeople?; will this improved productivity lead to cost reductions or lower levels of support services?; what benefits will the customer obtain from SFA? At times, companies opt for automation with the expectations of future benefits. However, these anticipated benefits may not materialize. Research is needed to identify the circumstances under which the benefits realized from SFA exceed the company's investments.

SFA is only one component of the company-wide automation process. Many organizations are opting for sales and marketing automation (SMA) or even integrated marketing (IM) (see Everett, 1994; Taylor, 1993). This kind of automation enables salespeople to link up, and exchange files with other marketing and management personnel. This is especially helpful in team selling situations, where different members of a team may be located in different parts of the country. But, expanding computerization beyond the salesforce raises the delicate issue of whether the needs of the salesperson will be subordinated, or even overlooked (Taylor, 1993). However, by being part of a larger system, costs may be saved and overall inter-organizational efficiency increased. Research is needed, therefore, to focus on the issues of integrating SFA with the rest of the organizational computer systems.

References

- Arndt, J. (1967), "Role of product related conversations in the diffusion of a new product," *Journal of Marketing Research*, No. 4, August, pp. 291-5.
- Baldrige, J.V. and Burnham, R.A. (1975), "Organizational innovation: Individual, organizational, and environmental impacts," *Administrative Science Quarterly*, No. 20, June, pp. 165-76.
- Barnett, H.G. (1953), *Innovation: The Basis of Cultural Change*, McGrawHill, New York, NY.
- Blodgett, M. (1995a), "Staying in touch," *Computerworld*, Vol. 29 No. 51, p. 45.
- Blodgett, M. (1995b), "Vendor tries to simplify sales force automation," *Computerworld*, Vol. 30 No. 1, p. 62.
- Burt, R.S. (1987), "Social contagion and innovation: Cohesion versus structural equivalence," *American Journal of Sociology*, No. 92, May, pp. 1287-135.
- Colombo, G.W. (1993), "The next generation," *Sales and Marketing Management*, pp. 67-9.
- Conner, K.R. and Rumelt, R.P. (1991), "Software piracy: An analysis of protection strategies," *Management Science*, Vol. 37, February, pp. 125-39.
- Czepiel, J.A. (1974), "Word-of-mouth processes in the diffusion of a major technological innovation," *Journal of Marketing Research*, No. 11, May, pp. 172-80.
- Danko, W. and MacLachlan, J.M. (1983), "Research to accelerate the diffusion of a new invention," *Journal of Advertising Research*, No. 23, June/July, pp. 39-43.
- Dickerson, M.D. and Gentry, J.W. (1983), "Characteristics of adopters and non-adopters of home computers," *Journal of Consumer Research*, No. 10, September, pp. 225-35.

- Edell, J.A. and Staelin, R. (1983), "The information processing of pictures in print advertisements," *Journal of Consumer Research*, No. 10, June, pp. 45-61.
- Ettlie, J.C. (1983), "Organizational policy and innovation among suppliers to the food processing sector," *Academy of Management Journal*, Vol. 26 No. 1, pp. 27-44.
- Everett, M. (1994), "Integrated marketing: It's no fluke," *Sales and Marketing Management*, April, pp. 67-73.
- Feldman, S.P. and Spencer, M.C. (1965), "The effect of personal influence in the selection of consumer services," in *Marketing and Economic Development*, Bannett, P. (ed.), American Marketing Association, Chicago, IL, pp. 440-52.
- Frank, R.E., Massy, W.F. and Morrison, D.G. (1964), "The determinants of innovative behavior with respect to a branded, frequently purchased food product," in *Proceedings of the American Marketing Association*, Smith, G.L. (ed.), American Marketing Association, Chicago, IL, pp. 312-23.
- Gatignon, H. and Robertson, T.S. (1985), "A propositional inventory for new diffusion research," *Journal of Consumer Research*, No.11, March, pp. 849-65.
- Gatignon, H. and Robertson, T.S. (1989), "Technology diffusion: An empirical test of competitive effects," *Journal of Marketing*, No. 53, January, pp. 35-49.
- Goldstein, A.P. and Sorcher, M. (1974), *Changing Supervisor Behavior*, Pergamon, New York, NY.
- Granovetter, M.S. (1973), "The strength of weak ties," *American Journal of Sociology*, Vol. 78 No. 6, pp. 1360-80.
- Grossbart, S.L., Mittelstaedt, R.A. and Murdock, G.W. (1978), "Nearest neighbor analysis: Inferring behavioral processes from spatial patterns," in Hunt, K. (ed.), *Advances in Consumer Research*, No. 5, pp. 114-8.
- Katz, E. and Lazarsfeld, P.F. (1955), *Personal Influence*, Free Press, New York, NY, pp. 175-86.
- Kiel, G.C. and Layton, R.A. (1981), "Dimensions of consumer information seeking behavior," *Journal of Marketing Research*, No. 18, May, pp. 233-9.
- Kimberly, J.R. (1978), "Hospital adoption of innovation: The role of integration into external information environments," *Journal of Health and Social Behavior*, No. 19, December, pp. 361-73.
- King, C.W. and Summers, J.O. (1967), "Dynamics of interpersonal communications: An interaction dyad," in Donald, F.C. (ed.), *Risk Taking and Information Handling in Consumer Behavior*, Harvard University Press, Boston, MA.
- Kotabe, M. (1990), "Corporate product policy and innovative behavior of European and Japanese multinationals: An empirical investigation," *Journal of Marketing*, No. 54, April, pp. 19-33.
- Kraut, A.I. (1976), "Developing managerial skills via modeling techniques: some positive research findings—A symposium," *Personal Psychology*, No. 29, Autumn, pp. 325-8.
- Lambkin, M. and Day, G.S. (1989), "Evolutionary processes in competitive markets: Beyond the product life cycle," *Journal of Marketing*, No. 53, July, pp. 4-20.
- Mahajan, V., Muller, E. and Kerin, R.A. (1984), "Introduction strategies for new products with positive and negative word-of-mouth," *Management Science*, No. 30, December.
- McLachlan, G. (1992), "Sales force automation," *Computerworld*, No. 26, December 14, pp. Si-S9.
- Midgley, D.F., Morrison, P.D. and Roberts, J.H. (1991), "The nature of communication networks between organizations involved in the diffusion of technological innovations," *Advances in Consumer Research*, Holman, R.H. and Solomon, M.R. (eds), No. 18, Association for Consumer Research, Provo, UT, pp. 635-43.
- Midgley, D.F. (1983), "Journal of interpersonal information seeking for the purchase of a symbolic product," *Journal of Marketing Research*, No. 20, February, pp. 74-83.
- Midgley, D.F. and Dowling, G.R. (1978), "Innovativeness: The concept and its measurement," *Journal of Consumer Research*, No. 4, March, pp. 229-42.
- Mizerski, R.W. (1982), "An attribution explanation of the disproportionate influence of unfavorable information," *Journal of Consumer Research*, No. 9, December, pp. 301-10.
- Murray, K.B. (1991), "A test of services marketing theory: Consumer information acquisition activities," *Journal of Marketing*, No. 55, January, pp. 10-25.
- Parthasarathy, M., Sohi, R.S. and Hampton, R.D. (1994), "Dual diffusion: Analysis and implications for sales force management," *Journal of Marketing: Theory and Practice*, (forthcoming).
- Parthasarathy, M. and Hampton, R.D. (1993), "The role of piracy in the diffusion of a software product: A propositional framework," *AMA Winter Educators Conference Proceedings*, American Marketing Association, Chicago, IL.
- Peters, M.P. and Venkatesan, M. (1973), "Exploration of variables inherent in adopting an industrial product," *Journal of Marketing Research*, No. 10, August, pp. 312-5.
- Porter, M.E. (1979), "How competitive forces shape strategy," *Harvard Business Review*, No. 57, March-April, pp. 137-45.
- Porter, M.E. (1980), *Competitive Strategy*, The Free Press, New York, NY.

- Price, L.L. and Feick, L.F. (1984), "The role of interpersonal sources in external search: An informational perspective," in Kinnear, T.C. (ed.), *Advances in Consumer Research*, No. 11, Association for Consumer Research, Ann Arbor, MI, pp. 250-3.
- Reinganum, J.F. (1981), "Market structure and the diffusion of new technology," *Bell Journal of Economics*, No. 12, Autumn, pp. 618-24.
- Richins, M.L. (1983), "Negative word-of-mouth by dissatisfied consumers: A pilot study," *Journal of Marketing*, No. 47, Winter, pp. 68-78.
- Robertson, T.S., Zielinski, J. and Ward, S. (1984), *Consumer Behavior*, Scott Foresman, Glenview, IL.
- Robertson, T.S. and Gatignon, H. (1986), "Competitive effects on technology diffusion," *Journal of Marketing*, No. 50, July, pp. 1-12.
- Robertson, T.S. (1971), *Innovative Behavior and Communication*, Holt, Reinhart and Winston, New York, NY.
- Rogers, E.M. (1983), *Diffusion of Innovations*, The Free Press, New York, NY.
- Sales and Marketing Management (1994), "More reps are entering the automation age," *Sales and Marketing Management*, April, p. 34.
- Sheth, J.N. (1971), "Word-of-mouth in low-risk innovations," *Journal of Advertising Research*, No. 11, June, pp. 15-18.
- Sheth, J.N. (1968), "Perceived risk and diffusions," in Arndt, J. (ed.), *Consumer Behavior*, Allyn and Bacon, Boston, MA, pp. 173-88.
- Sheth, J.N. and Ram, S. (1987), *Bringing Innovation to Market: How to Break Corporate and Customer Barriers*, John Wiley, New York, NY.
- Simon, H. and Sebastian, K-H. (1987), "Diffusion and advertising: The German telephone campaign," *Management Science*, No. 33, April, pp. 451-66.
- Slater, D. (1993), "Payback is difficult to quantify," *Computerworld*, No. 27, September 20, p. 129.
- Swenson, M.J. and Parrella, A. (1992), "Cellular telephones and the national sales force," *Journal of Personal Selling and Sales Management*, Vol. 12 No. 4, pp. 67-74.
- Taylor, J.W. (1977), "A striking characteristic of innovators," *Journal of Marketing Research*, No. 14, February, pp. 104-7.
- Taylor, T.C. (1994), "A handy invention," *Sales and Marketing Management*, January, pp. 77-81.
- Taylor, T.C. (1993), "Getting in step with the computer age," *Sales and Marketing Management*, March, pp. 52-9.
- Taylor, T.C. (1993), "Plugging into the future," *Sales and Marketing Management*, No. 106, June, pp. 20-4.
- Udell, J.G. (1966), "Prepurchase behavior of buyers of small electric appliances," *Journal of Marketing*, No. 30, October, pp. 50-2.
- Verity, J.W. (1993), "Taking a laptop on a call: Technology is turning selling from a black art to a science," *Business Week*, No. 3342, October 25, pp. 124-5.