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SALES FORCE AUTOMATION: WHAT DO WE KNOW?

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Abstract

Sales force automation (SFA) describes the application of computerised technologies that support sales people and sales management. The SFA eco-system is made up of three components – software, hardware and associated services. SFA software enables reps and their managers to manage sales pipelines, track contacts and configure products, amongst many other things. SFA is now thought of as being an operational tool that enables suppliers to gain 'competitive parity' in their served markets. Demand for SFA software is set to rise to 2001, according to forecasters. This paper summarises the research on SFA against the four questions figure most significantly in the literature, as follows. Why do organizations adopt SFA? What are the organizational impacts of SFA? What accounts for the success or failure of SFA projects? What accounts for variance in salesperson adoption of SFA? The paper ends with a critique of this body of knowledge and sets out an agenda for further research.

SALES FORCE AUTOMATION: WHAT DO WE KNOW?

Introduction

Sales force automation (SFA) has offered technological support to sales people and managers since the beginning of the 1990's. SFA systems are now widely adopted in business-to-business environments and are seen as a 'competitive imperative' (Morgan and Inks 2001) that offers 'competitive parity' (Engel and Barnes 2000).

SFA provides both a toolkit and reporting structure for sales reps and managers. For companies that want to develop closer relationships with their customers, SFA provides a mechanism for collecting, storing, analysing, distributing and using customer-related data. Customer-related data not only incorporates both transactional and profiling data about customers, but also market data, competitor profiles, product libraries, pricing schedules and other information that can be deployed to win, keep and grow customers. Information such as this is key to the promotion of customer orientation (Lambe and Spekman 1997) and development of long-term mutually beneficial relationships with customers (Grönroos 2000).

Given the penetration and significance of SFA in the business-to-business context it is timely to review what we have learned. We start by defining the field, identifying members of the SFA eco-system and reporting trends in the deployment of SFA solutions. We then offer a review of the research-based literature and identify 4 questions that have been the focus of investigation.

What is SFA?

The term, Sales Force Automation (SFA), is used to describe the application of computerised technologies to support sales people and sales management in the achievement of their work-related objectives.

Hardware and software are both elements of SFA. Hardware includes desktop, laptop and handheld devices, and contact/call centre technology. Software comprises both 'point' solutions that are designed to assist in a single area of selling or sales management, and integrated solutions that offer a range of functionality. The integrated packages can be dedicated to sales force applications only, or can be incorporated into broader Customer Relationship Management solutions that operate over the three front office areas of marketing, service and sales.

All SFA software is designed so that pertinent customer-related data can be captured, stored, analysed and distributed to sales people and sales managers in order for them to become more effective or efficient in the pursuit of their objectives.

SFA applications offer a range of functionality, as listed in Table 1.

account management	pipeline management
activity management	product encyclopaedias
contact management	product configuration
contract management	product visualization
document management	proposal generation
event management	quotation management
incentive management	sales forecasting
lead management	territory management
opportunity management	work-flow development
order management	

Table 1: Functionality offered by SFA software

Although the list above presents a broad set of sales-related functionality, SFA software can be designed for context-specific applications. For example, sales reps selling liquor to a retail store might employ software that recommends planograms, optimises the allocation of retail display space, audits inventory levels, recommends prices, and controls cooperative promotional support. Some SFA vendors offer functionality designed for sales people in particular industries. Siebel, the market leader offers customised solutions for over a dozen different industries ranging from aerospace and defence to transportation.

Most SFA applications can generate a wide range of standard and customised reports, useful to both sales person and sales manager, as shown in Table 2. The reports can be presented in a number of forms – charts, pivot tables, text and dash-board.

cost-to-serve	sales cycles
customer profitability	share of market
lead conversion	share of wallet
pipeline progress	sales person productivity
quotation performance	win rates

Table 2: Reports available from SFA software

Vendors and consultants claim a number of benefits from SFA implementation, including accelerated cash-flow, shorter sales cycles leading to faster inventory turnover, improved customer relations, improved salesperson productivity,

accurate reporting, increased sales revenue, market share growth, higher win rates, reduced cost-of-sales, more closing opportunities and improved profitability. The hard outcomes can be complemented by softer outcomes such as less rework, more timely information, and better quality management reports. Case histories of SFA implementations offer testimonials to SFA's impacts (See Case highlight: Freight Traders). Most vendor publish case histories.

Case highlight: Freight Traders

Freight Traders, a subsidiary of global food manufacturer Mars, Incorporated, is a Web-based logistics consultancy that connects shippers to carriers. The company facilitates the transit of cargo between the two parties. Customers include Kellogg's, Lever Faberge and Sainsbury's Supermarket Group. Garry Mansell is Managing Director

"We had the system up and running in three days," says Mansell. "Within eight days the whole company was using it across multiple countries. Ease of use and speed of implementation were everything I expected of a Web-based solution." Major benefits include far greater customer, lead and prospect visibility. "We operate dispersed account teams and they now have a single view of customers and prospects." Another major benefit is accessibility. "Regardless of where I am in the world, I only have to log on to see how our business is doing," says Mansell.

"The reporting tools are really useful to our business," continues Mansell. "We don't need to waste time chasing sales teams for reports. Once we put in the information, reports are automated and can be tailored to our requirements." Mansell finds these reports a valuable tool to the running of the business. It helps the company focus on maximising resources, by identifying where and when the best sales opportunities arise and responding to them.

Freight Traders uses salesforce.com to communicate best practices across the organization. "Because the system is so transparent we can show clearly what works best with a particular company, country or industry and share that vital intelligence across the organization. All the information is contained in our salesforce.com account."

Source: Salesforce.com
http://www.salesforce.com/customers/casestudy.jsp?customer=ft (accessed 26 August 2005)

The SFA eco-system

The SFA eco-system consists of SFA software vendors, hardware and infrastructure vendors, and service providers as illustrated in Figure 1.

SFA software vendors can be classified in a number of ways. Some vendors are SFA specialists. They compete against CRM suite vendors that offer SFA modules and enterprise suite vendors that offer a full range of IT solutions to support business, including supply chain management, (SCM), enterprise resource planning (ERP) and customer relationship management (CRM). A number of illustrative examples are tabled below (Table 3).

Some SFA specialists focus on particular areas of functionality within SFA. Selectica, for example, builds customized configurators. A configurator is rule-based engine that allows companies to configure complex products and services for clients. Sometimes, customers interact directly with configurators. For example, the Dell Computer website allows customers to build their own PCs. Configurators guide users through the buying and specification process, offering only valid options and features at each step. This can deliver benefits both to customers, sales people and management. Customers can define and build their preferred customized solutions, reducing cost and meeting specifications. Sales people no longer need
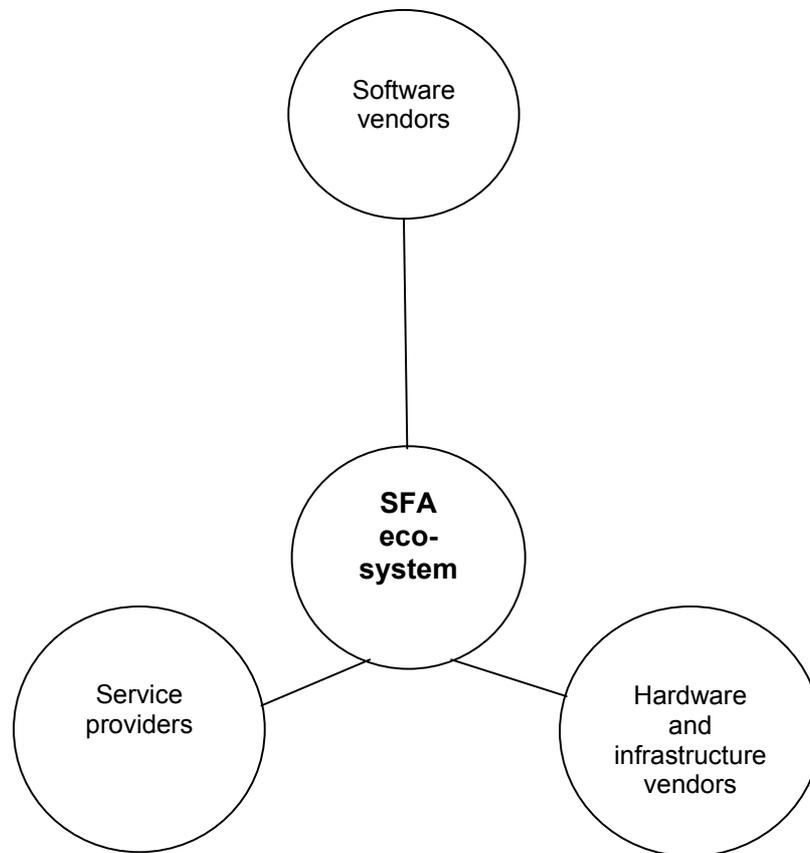
Figure 1: The SFA eco-system

to master comprehensive product or service technical data, because these are built into the engine. Training costs for sales people are therefore reduced. The potential for incorrectly specifying a solution for a customer is decreased. Configurators enable mass customization.

SFA specialists	SFA as part of CRM suite	SFA as part of Enterprise suite
Selectica	Siebel	Oracle
EzRoute	Onyx	SAP
Salesnet	Pivotal	Epicor
CallWizard	Salesforce.com	Deltek
Selltech	SalesLogix	Fourth Shift
CyberForms	ACCPAC	Orion
HEWSales	NetCRM	Intentia

Table 3: Classification of SFA vendors

Many of the vendors offering SFA as part of broader CRM suites started out as SFA specialists - Siebel and salesforce.com, for example. These vendors now offer a wide range of marketing, service, contact/call centre and sales automation.

Case highlight: General Motors.

Lou Adler is responsible for helping car dealers configure, order and price cars. For more than 15 years he lugged 3 binders between dealerships. One binder listed current models. Another listed available options. The third listed price information. It took Adler 20 minutes to configure each vehicle. Some dealerships asked him to configure 300 vehicles per sales call. It took a long time, and ultimately about 25% of orders were rejected by the factory as impossible to build. Today, Adler takes 2 minutes to configure, price and order each car. He uses a product configurator called GM PROSPEC which has virtually eliminated factory rejection.
(source: Caudron 1996)

Software vendors are only a portion of the overall SFA eco-system. SFA software must run on hardware such as Unix or Intel-based computers. SFA is often required to integrate with

communications infrastructure such as telephony and email systems. A SFA project might require the deployment of a number of servers – for example, for email and Internet applications. Hardware and infrastructure presents as another important component of the SFA eco-system.

As highlighted in Table 4, the architectural and performance requirements of SFA applications can create significant challenges for both hardware and infrastructure. Whereas office-bound sales people and sales managers might be happy to use desktops or laptops, field sales reps might prefer lighter handheld devices such as the Palm Pilot or Blackberry. Where companies have geographically dispersed external sales people, SFA systems must be able to operate out of the office and over the web. Mobile solutions are necessary, as the data held on

Challenge	Architecture Solution
Single customer view across the organization	Multichannel CRM across a single database
Suitability for customer-facing situations	Usable, flexible, high-performing architecture
Complex, many-to-many relationships, varying across customers and industries	Flexible data modelling
Deployment to field operations	Mobile and wireless
Efficient changing and upgrading of the system	Business Rules Repository (metadata)
Unstructured, widely dispersed information	Knowledge Management
Deployment outside the organization	Web Browsers
Effective modelling of customer-facing processes	Workflow and assignment
Information flow with the back office and infrastructure	Integration

Table 4: SFA architecture issues
(Source: Buttle 2004)

portable devices must be regularly synchronised with the central database. SFA applications often need to integrate with a number of communication channels which use different technologies (web, email, telephone). In growing industries and companies, SFA applications must be supported by hardware and infrastructure that can sustain increased numbers of users.

Hardware vendors such as IBM, Dell and Hewlett-Packard provide a range of solutions across the hardware spectrum, whilst infrastructure providers such as Avaya, Genesys and Siemens provide telephony and SFA-related infrastructure solutions.

The services component of the SFA eco-system is very diverse. When a SFA project is completed, service costs may be of an order of magnitude that adds significantly to overall project expenditure. The hardware and software for a SFA project may account for between 10% and 50% of overall costs. The balance is made up of service costs. SFA project leaders might buy services from providers that reengineer selling processes, manage projects, train salespeople, consult on organizational structure, or conduct customer portfolio analysis. Service providers can contribute significantly to SFA project success. Table 5 classifies the main types of service providers.

Service	What do they do?	Examples
Strategy consultants	Consulting support for the formulation of customer strategy, contact strategy, channel strategy.	McKinsey, Peppers and Rogers
Business consultants	Services around business process re-engineering, process improvement, and best practices for SFA.	Accenture, Bearing Point, CGEY
Application consultants	Design and development of application modifications, project management of SFA software implementation and training.	SFA vendors, Accenture, CGEY, Bearing Point, IBM
Technical consultants	Design and implementation of technical infrastructure, and integration of this infrastructure with the existing business processes and applications.	Unisys, IBM, Logica
Outsource service providers	Technology outsourcers and business process outsourcers.	EDS, IBM, CSC, Acxiom

Table 5: SFA service providers

(Source: Buttle 2004)

Demand for SFA software

According to eMarketer's review of research on CRM spending and trends (eMarketer 2005), spending on customer-facing solutions worldwide is expected to grow at 11.1% CAGR between 2004 and 2014. License revenues had fallen from the turn of the century, but stabilised in 2003. Now, they are growing again. The anticipated growth is being driven by both supply and demand factors. On the demand side, a return to economic growth and improved business profitability has meant that companies are prepared to spend more on their IT investments. On the supply side, vendors have invested in improving the ability of their solutions to integrate with back office applications and have tailored them to meet the needs of particular industry verticals. Furthermore, hosted solutions such as salesforce.com and Siebel OnDemand have become more popular.

This projected growth is across all sales, marketing and service applications. According to a Datamonitor report cited in eMarketer (2005), spending on SFA applications in the USA is projected to grow from US$534 million in 2003 to US$608 million in 2008, as shown in Table 6. By some estimates, the USA market accounts for about 50% of worldwide CRM spending, indicating that the current value of the SFA market worldwide is in excess of US$1.1 billion. Siebel and Malone (1996) predicted that the market will be worth $10 billion.

In 2004, spending on SFA applications accounted for about 16% of CRM software sales, compared to 21% on customer service applications and 12% on marketing automation and analytics. Datamonitor compares SFA growth of 3.1% from 2005 to 2006, to 5.2% growth in analytics and 4.3% in marketing

applications. SFA is widely regarded as relatively mature segment of CRM spending, particularly when compared to analytics. However, within the SME segment (Small and Medium-sized Enterprises) SFA remains a popular starting point as they begin to adopt customer-facing software. The SME segment is a relatively late adopter of customer-facing software applications. According to a Bain & Co study reported in eMarketer (2005), although some three-quarters of large enterprises are using CRM software, a much smaller proportion of SME's have entered the market.

	2003	2004	2005	2006	2007	2008
SFA spending	$534	$552	$569	$585	$598	$608

Table 6: SFA Licence Revenue (US$ millions, US market)

In 2004, a survey of 201 IT executives, reported in CIO Insight and cited by eMarketer (2005), identified a number of important benefits were being pursued by companies adopting CRM applications. A number of these were clearly connected to SFA investments. Among the benefits cited were the following: automation of sales processes (52% of the sample reported this benefit), improve the quality of sales forecasting (50%), increase cross-selling (47%) and add new customers (42%). This study also reported that some 45% of companies had already deployed SFA, and that a further 32% planned to deploy SFA within 12 months. Just 12% had no plan to deploy SFA. A Forrester Research study of 339 USA and European companies, also reported by eMarketer (2005), confirms the potential for growth in SFA, with 23% reporting their intention to adopt SFA in 2005.This study also reports the leading software vendors that USA SME's consider when adopting SFA. Microsoft and ACT!, as reported in Table 7 lead the way.

Some 31% of these surveyed SME's plan to implement hosted, as opposed to on-premise, SFA solutions. They are drawn to the hosted solution because it places less demand on in-house IT departments with upgrades and maintenance being handled by the vendor. Some of the early research conducted by the Software Industry Association (reported in eMarketer 2005) suggests that the TCO (total cost of ownership) of hosted solutions is significantly less than the TCO of an on-premise solution in the initial year of implementation, but that the cost differential disappears in subsequent years. The study reports that a 500 user installation would pay annual licence fees of about $750,000 to their hosted solutions provider, but about $775,000 for support and upgrades to an on-premise vendor.

Vendor	% of SME's considering
Microsoft	37%
ACT!	27%
Oracle	25%
Salesforce.com	24%
PeopleSoft	22%
In house	15%
Goldmine	13%
SAP	13%
SalesLogix	11%
NetSuite	10%
Siebel (on premise)	7%
Siebel OnDemand	7%
Onyx	5%
Maximizer	5%
Pivotal	5%
Other	14%

Table 7: Leading SFA software vendors considered by USA SME's
(Source: Forrester Research 2005, cited in eMarketer 2005)

Research into SFA

Since the early to mid-1980's (e.g. Klompmaker 1980-81; Collins 1984; Wedell & Hempeck 1987a, 1987b) there has been trickle of research on the topic of SFA. The few academics that have conducted studies have focussed on the four research questions that follow.

1. Why do organizations adopt SFA?

2. What are the organizational impacts of SFA?

3. What accounts for the success or failure of SFA projects?

4. What accounts for variance in salesperson adoption of SFA?

Given the conflicting reports on the success rates of SFA implementations, it seems anomalous that so little research has been conducted. On the positive side, Siebel and Malone (1996) report that economic returns from SFA are 'immediate', and that the business case for its implementation is 'compelling'[2]. Moriarty and Swartz (1989) report that some SFA implementations have achieved return on investment in excess of 100%. On the negative side, a number of reports signal alarms about the outcomes of SFA implementations. Block *et al* (1996) found that 61% of all SFA implementations fail. Rivers and Dart (1999) and Schafer (1997) have also reported similar failure rates. Morgan and

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[2] The author, Siebel, is Tom Siebel, the founder of CRM software vendor and market leader Siebel Systems

Inks (2001) report failure rates ranging from 25% to 60%, and Blodgett (1995-96) testifies to failure rates of 75%.

It is clear that SFA projects can be both costly and time consuming. Project costs can include hardware, software, and consultancy on business strategy, business processes and technology implementation. Technology costs can be but a small fraction of overall project costs. Although some software vendor case studies suggest that payback is achievable within days, many projects take between 12 months and 24 months to implement, let alone yield a return. Taylor (1994) found that the average implementation period was 21 months, whilst Conner and Rumelt (1991) claimed that users needed over 100 hours experience with the systems before they could claim to have mastered it. Engel and Barnes (2000) found that payback periods were in the 6-7 years range.

The literature review by Bush and Grant (1994) finds that little SFA research has been conducted. They are not alone in calling for further studies (e.g. Engel and Barnes 2000; Jones, Sundaram and Chin 2002). Unsurprisingly, Petersen (1997) suggests that the 'jury is still out' on the value of SFA.

In the analysis that follows I review the SFA literature in relation to the four research questions identified above.

Why do organizations adopt SFA?

As noted above, software vendors and consultants promote a number of benefits from SFA implementation, including accelerated cash-flow, shorter sales cycles, improved customer relations, improved salesperson productivity, accurate reporting, increased sales revenue, market share growth, higher win rates, reduced cost-of-sales, more closing opportunities and improved profitability.

These benefits appeal to differing SFA stakeholders:

- Salespeople: shorter sales cycles, more closing opportunities, higher win rates
- Sales managers: improved salesperson productivity, improved customer relations, accurate reporting, reduced cost-of-sales
- Senior management: accelerated cash flow, increased sales revenue, market share growth, improved profitability

Academics Erffmeyer and Johnson (2001) interviewed informants at 40 US manufacturers and service firms to discover their motivations for implementing SFA. As shown in Table 8, the primary motivation was improved efficiency. Ingram, LaForge and Leigh (2002) agree that many companies are turning to SFA to help them manage their customer relationships more efficiently. Erffmeyer and Johnson (2001) also observe that 'a limited number of respondents were able to offer details regarding formalized goals and objectives for SFA'.

Motivation	% of sample reporting
Improve efficiencies	72
Improve customer contact	44
Increase sales	33
Reduce costs	26
Improve accuracy	21

Table 8: Motivations for implementing SFA

(source: Erffmeyer and Johnson 2001)

What are the organizational impacts of SFA?

Kraemer and Danziger (1990) report that SFA implementations have both task (e.g. productivity) and non-task (e.g. control, job enhancement, social interactions) outcomes. Most of the research performed on this topic has studies task-related outcomes.

Although reporting that 50% of SFA adopters make no formal attempts to measure SFA impacts, Erffmeyer and Johnson (2001) identify improved access to information (60% of the sample), improved communication with customers (65%), a more efficient sales force (27%) and faster revenue generation (16%) as realized benefits from SFA implementations. They report that 85% of managers are either very satisfied or somewhat satisfied with the SFA implementation, compared to 80% of salespeople and 50% of the adopters' customers.

Engle and Barnes's (2000) empirical investigation of one pharmaceutical company's operations in 3 countries found a clear relationship between SFA adoption and salesperson performance. They conclude: 'Does the use of sales force automation really contribute to higher sales performance? With overall sales growing, and with 16.4% of the variance in sales explained by the use of sales force automation systems, this study suggests the answer is 'yes'.' However, taking into account the costs of implementing the new system, they compute payback period at 6 to 7 years.

Ahearne and Schillewaert (2001) also found that use of SFA was associated with improvements in reps' selling skills, knowledge and performance. Their research found positive correlations between SFA implementation and sales reps' market knowledge, technical knowledge, targeting skills, adaptive selling and call

productivity. Essentially sales reps with SFA support became more adaptable and productive. Sales reps' use of SFA accounted for a small, yet significant portion (7%) of their sales performance.

What accounts for the success or failure of SFA projects?

Speier and Venkatash (2002) investigated two different firms where SFA technologies had been withdrawn following implementation. They apply a multi-factorial model to explain success and/or failure, drawing on both prior learning about technology diffusion, and identity theory. Among the variables examined were individual characteristics such as age and sex, disposition towards technology, role perceptions and organizational attributes such as management support and user involvement. Measures were also taken of personal perceptions of technology in regards to any relative advantage that it might deliver, its visibility and image, it's compatibility to job roles, its complexity, and the demonstrability of results. The researchers employed a number of scales that had been validated in other contexts. The research revealed that although the salespeople had been 'fairly positive' about the implementation of SFA at the outset, they turned against the system demonstrating their dissatisfaction with increased absenteeism and voluntary turnover. Sales performance did not increase following SFA implementation. The primary reason appeared to be the perceived lack of 'professional fit' between the SFA tools and the sales force. The tools did not 'play to the strengths' of the sales people. The sales team's expectations of relative advantage to be delivered by the SFA tools had been high, but their perceptions of its delivery were much lower. Six months after implementation, organizational job commitment, job satisfaction, perceptions of salesperson-organization fit, and perceptions of salesperson-job fit had also decreased significantly.

Reviewing this small body of research-based literature, authors nominate a number of critical success factors (CSF's). Although these are not always the focus of the researchers' investigations, I report them here.

- A well-developed project plan (Erffmeyer and Johnson 2001)
- Senior management buy-in (Speier and Venkatash 2002; Erffmeyer and Johnson 2001)
- Involvement of user groups such as sales representatives and sales managers (Erffmeyer and Johnson 2001; Morgan and Inks 2001)
- Close fit to the salesperson's role (Speier and Venkatash 2002)
- Involvement of the adopting company's customer (Erffmeyer and Johnson 2001)
- Deployment of a multi-disciplinary team in the project planning phases (Erffmeyer and Johnson 2001; Rivers and Dart 1999)
- Access to a competent IS resource (Erffmeyer and Johnson 2001)
- Management of user expectations (Morgan and Inks 2001; Speier and Venkatash 2002)
- Appropriate-to-task SFA training (Morgan and Inks 2001)

What accounts for variance in salesperson adoption of SFA?

It has been observed that SFA adoption is a two-stage process (Parthasarathy and Sohi 1997). First the organization decides whether to adopt the technology; second, the sales-force decides whether to use the technology. Clearly, SFA can not succeed if salespeople are not prepared to employ it.

A number of researchers have investigated the issue of variance in salesperson adoption of SFA. For example, the research conducted by Morgan and Inks (2001) aims to 'forward understanding of sales force acceptance of SFA'. They sent questionnaires to 387 sales reps in a single organization, receiving 132

usable responses (34% response rate). They found support for three of four hypotheses. First, salespeople were more accepting of the SFA implementation if they believed that training would be provided, and that the costs of attending the training (being absent from the field and reduced service levels to customers) were outweighed by the benefits. Second, they were more accepting if involved in the implementation, this result confirming the conventional wisdom that involvement promotes ownership. Third, if sales reps have accurate expectations about what the implementation will deliver, they are more accepting of the implementation process. Contrary to hypothesis, the researchers found no connection between sales force acceptance of SFA and managerial commitment. They account for this unexpected outcome by explaining that sales people in the field are more autonomous than their office-bound colleagues and therefore less influenced by managerial authority. Furthermore, the sales reps in this study were compensated on a commission-only basis.

Jones *et al*'s (2002) longitudinal study took measures of salesperson intention 2 weeks prior to implementation and salesperson adoption 6 months after implementation. They used two theories to structure their research – the Theory of Reasoned Action (Ajzen and Fishbein1980) and the Technology Acceptance Model (Davis 1989). Data were collected from 164 (intentions about use) and 85 (use behaviours) sales reps for a large American insurance company. Three variables explained sales person intention to use the technology – perceived usefulness of the new system, attitude towards the technology and its perceived compatibility with the current system. However, actual use of the technology was shown to be strongly associated with the personal innovativeness of the sales person, attitude towards the technology and facilitating conditions. It seems that use of SFA technology is both connected to individual differences such as innovativeness and attitude to technology, as well as having access to facilitators such as training, training manuals, and support from a help desk.

Ko and Dennis (2004) point out that SFA systems tend to store formal knowledge about products, customers, markets and competitors, and are therefore more likely to be of value to newer sales reps. Such codified knowledge would, they hypothesised, be of lesser value to high-expertise, more experienced sales reps. This turned out to be not the case. Indeed, high-expertise reps gained 4 times as much value from the knowledge bas than the 'average' sales rep. They explain this by suggesting that the more experienced rep has already assimilated much of the knowledge, and would be able to gain incrementally by identifying and integrating new value-adding knowledge.

Buehrer *et al* (2005) report a qualitative investigation into sales people's use of SFA tools. They obtained data from a convenience sample of 3 firms. The dominant reason for use of the tools was 'efficiency'. For example, the technology enabled sales people to stay in contact with their customers with less effort. A secondary reason emerged as well. Sales reps used the technology because they 'had to'. The reps in one sampled firm had to log on to the system daily. If they did not, their jobs were at risk. Variance in usage among the sampled sales reps seemed to be explained by age – older reps being less likely to use the system. Perceived lack of support – either managerial or technical – also emerged as a strong explanatory variable. Reps reported that would be more likely to use the SFA system if there was continuous or on-demand training. These researchers then conducted a quantitative, web-based, survey, obtaining a 60% response rate (n=130) from sales reps employed by 2 companies. Open-ended questions were employed. The objective of this study was to subject their initial findings to further validation. Sales reps reported 4 main reasons for using SFA software, as in Table 9. The dominant reason was that it enabled them to be both more productive and more efficient. The quantitative study confirmed the importance of management and technical support, and training for increasing sales reps' use of the technology. Respondents also mentioned the scarcity of time (to learn how to use the technology) and money as barriers to their use of the technology. When asked what else management could do to promote their

use of their technology, reps cite improved software, improved hardware, enhanced training and technical support.

Rank order	Reasons for using SFA	% of respondents mentioning
1	More productive/efficient	29.0%
2	Saves time	17.4%
3	Better customer communication	14.7%
4	Required by management	8.3%

Table 9: Why sales reps use SFA

(source: Buehrer *et al* 2005)

Just as Erffmeyer and Johnson (2001) had found that productivity was a important corporate consideration in adopting SFA, so Gohmann *et al* (2005) found that sales reps agreed that SFA had made them more productive. However, the reps' managers had a significantly stronger perception of productivity gains. This research also found that sales reps felt that SFA had been helpful in the achievement of their goals, but once again management had a significantly stronger perception of this outcome.

Other researchers have pointed out the negative outcomes for salespeople who are faced with adopting SFA. Rangarajan *et al* (2004) find that salespeople who perceive that integrating SFA technology into their routine selling activities as being complex experience strong and stressful feelings of role ambiguity and role conflict. They feel they are pulled in several directions simultaneously and are overburdened. The researchers find that role conflict is significantly correlated with the amount of effort expended at work. They conclude that 'where trying to use SFA technology increases demands on the job and adequate support is not

provided, salespeople are more likely to spend effort on issues with which they are more familiar.' Their recommendation is that guidelines and training must be offered salespeople faced with implementing SFA. The guidelines, they suggest, should cover: 1. the reasons for adopting SFA; 2. the possible changes to work activity as a consequence of adopting SFA; 3. information about sharing private customer-related information with other parts of the organization; 4. the scope for monitoring the activities of salespeople; and 5. changing expectations on the job as a consequence of SFA adoption.

Finally, the Speier and Venkatask (2002) research shows that the fit of the technology to the salesperson's role and sense of professionalism is very important. Where the fit is poor, SFA tools may fall into disuse, because the tools are seen to offer little, if anything, by way of relative advantage.

Discussion

Since the early 1990'2 there has been a small amount of research published on sales force automation. What has been published has focussed on four questions: Why do organizations adopt SFA? What are the organizational impacts of SFA? What accounts for the success or failure of SFA projects? What accounts for variance in salesperson adoption of SFA?

Even so, it is hard to present any definitive findings. Much of the work has been performed on very small samples, ranging from 1 company (Engel and Barnes, 2000; Morgan and Inks 2001), 2 companies (Speier and Venkatash 2002), to 40 companies (Erffmeyer and Johnson 2001) and, in one case, 210 companies (Rivers and Dart 1999).

There are some additional concerns about the definition of failure and success. Failure and success may be defined in different ways by different constituencies

– salespeople, sales mangers, senior management, academic researchers, IT specialists. For a salesperson, success might mean 'increased commission' or 'more time released from admin tasks for selling.' For a sales manager, success might be 'better management of underperforming reps'. For senior management, success might be 'improved market share and reduced cost-to-serve'. Few of the academic papers make clear what is meant by success, or, for that matter, failure. As noted above, half of the companies that implement SFA do not even try to measure outcomes, perhaps because SFA is increasingly regarded as a 'competitive imperative' (Morgan and Inks 2001), rather than an optional technology investment that should be subjected to return on investment considerations. Furthermore, notions of success and failure are likely to vary across time. Short-term failure may be just the sort of learning experience that is necessary to motivate longer-term success. Given that SFA investments need updating, both hardware and software, setting parameters for the assessment of ROI can be very difficult. Because of the constant upgrades, an SFA project might be though of as never ending.

Another complication is that the impact of SFA may vary between industries. Although the pharmaceutical industry is 'highly profitable', payback periods are still in the region of 6-7 years (Engel and Barnes 2000), perhaps because of the complexity of the sales role which requires a customised SFA solution. A simpler, less regulated sales environment could employ off-the-shelf SFA software with a narrower range of functionality, and expect payback to be very rapid. It has also been suggested that larger companies might take longer to see payback than smaller companies (Taylor 1993), and that more complex projects take longer to produce the desired returns (Moriarty and Swartz 1989).

Even the Journal of Marketing piece (Speier and Venkatash 2002) has serious flaws. Apart form the sample size, no control group was used. We cannot therefore know with any certainty whether absenteeism and voluntary turnover in the studied organizations was any better or worse than in other organizations

where SFA had been implemented and retained. The paper also infers that voluntary turnover is an undesirable outcome. It may not be so. If poor performing salespeople who are not prepared to maintain customer records to a satisfactory level quit, this may be a blessing. Indeed many of the undesirable outcomes that were measured may be accounted for by aversion to change or the change management processes the sampled companies adopted. That SFA was implicated may have been merely coincidental.

Given the scope and limitations of the available research, there are many opportunities to create knowledge. Among the research questions that deserve attention are the following:

1. What are the task and non-task outcomes of SFA implementation – for salespeople and managers?
2. What is SFA success (or failure) from the perspective of the various internal (sales person, sales manger, senior manager, IT manager), and external (vendor and customer) stakeholders?
3. How do definitions or claims of SFA success (or failure) vary across time and industry?
4. What are the organizational and contextual conditions that are associated with the achievement of satisfactory SFA outcomes?
5. Does the implementation model – hosted or installed – make any difference to SFA outcomes?
6. Does SFA deliver initial competitive advantage? Put another way, do competitors with SFA achieve better outcomes than their counterparts without?

References

Ahearne, M. and Schillewaert, N. (2001). *The acceptance of information technology in the sales force*. eBusiness Research Center, Working paper 10-2000. Penn State University.

Ajzen, I and Fishbein, M. (1980). *Understanding Attitudes and Predicting Social Behavior*. Englewood Cliffs, NJ: Prentice Hall.

Block, J.J., Golterman, J., Wecksell, J., Scherburger, K. and Close, W. (1996). *Building blocks for technology-enabled selling*. Gartner Group Research Report R-100-104. Stamford, CT: Gartner Group.

Blodgett, M. (1995-96). *Vendor tries to simplify sales force automation*. Computerworld Vol 30(1), 62.

Buehrer, R.E., Senecal, S. and Pullins, E.B. (2004). Sales force technology usage – reasons, barriers and support: an exploratory investigation. *Industrial Marketing Management,* Vol 34(4), 389-398.

Bush, A.J. and Grant, E.S. (1994) Analysing the content of marketing journals to assess trends in sales force research: 1980-1992. *Journal of Personal Selling and Sales Management*, Vol 14(3), Summer 57-68.

Buttle, Francis (2004). *Customer Relationship Management: Concepts and Tools*. Oxford: Elsevier

Caudron, S. (1996). Sales force automation comes of age. *Information Week*, May 20, 146-152.

Collins, R.H. (1984). Microcomputer applications in selling and sales management: portable computers: applications to increase salesforce productivity. *Journal of Personal Selling and Sales Management*, Vol 4, November, 75-79.

Conner, K.R. and Rumelt, R.P. (1991). Software piracy: an analysis of protection strategies. *Management Science*, Vol 37(2), February,125-139.

Davis, F.D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, Vol 13(3), September, 319-339.

eMarketer (2005). *CRM Spending and Trends*. http://www.emarketer.com/Report.aspx?crm_aug05. Accessed 21 August 2005.

Engle, R.L. and Barnes, M.L. (2000). Sales force automation usage, effectiveness, and cost-benefit in Germany, England and the United States. *Journal of Business and Industrial Marketing*, Vol 15(4), 216-242

Erffmeyer, R.C. & Johnson, D.A. (2001). An exploratory study of sales force automation practices: expectations and realities. *Journal of Personal Selling and Sales Management*, Vol 21(2), Spring, 167-175.

Gohmann, S.F., Guan, J., Barker, R.M. and Faulds, D.J. (2005). Perceptions of sales force automation: differences between sales force and management. *Industrial Marketing Management*, Vol 34(4), 337-343.

Grönroos, C. (2000). *Service marketing and management: a customer relationship management approach*, 2nd edition, Chichester: John Wiley.

Ingram, T.N., LaForge, R.W. and Leigh, T.W. (2002). Selling in the new millennium: a joint agenda. *Industrial Marketing Management*, Vol 31(7), 559-567

Jones, E., Sundaram, S. and Chin, W. (2002). Factors leading to sales force automation usage: a longitudinal analysis. *Journal of Personal Selling and Sales Management,* Vol 22(3), 145-156.

Klompmaker, J.E. (1980-81). Incorporating information from salespeople into the marketing planning process. *Journal of Personal Selling and Sales Management*, Vol 1(1), Fall/Winter, 76-82.

Kraemer, K.L. and Danziger, J.N. 91990). The impacts of computer technology on the worklife of information workers. *Social Science Computer Review*, Vol 8, Winter, 592-613.

Lambe, C.J. and Spekman, R. (1997). National account management: large account selling or buyer-seller alliance? *Journal of Personal Selling and Sales Management*, Vol 17(4), Fall, 61-74.

Morgan, A. and Inks, S.A. (2001). Technology and the sales force. *Industrial Marketing Management*, Vol 30(5), 463-472.

Moriarty, R.T. and Swartz, G.S. (1989). Automation to boost sales and marketing. *Harvard Business Review*, Vol 67(1), Jan-Feb, 100-108

Parthasarathy, M. and Sohi, R. (1997). Salesforce automation and the adoption of technology innovations by salespeople: theory and implications. *Journal of Business and Industrial Marketing*, Vol 12(3/4), 196-208

Petersen, G.S. (1997). *High impact sales force automation*. Boca Raton, FL: St Lucie Press.

Rangarajan, D., Jones, E. and Chin, W. (2004). Impact of sales force automation on technology-related stress, effort and technology usage among salespeople. *Industrial Marketing Management*, Vol 34(4), 345-354

Rivers, M.L. & Dart, J. (1999). The acquisition and use of sales force automation by mid-size manufacturers. *Journal of Personal Selling and Sales Management*, Vol 19(2), 59-73.

Schafer, S. (1997). Supercharged sell. *Inc*, Vol 19(9), 42-48.

Siebel, T.M. & Malone, M.S. (1996). *Virtual selling: going beyond the automated sales force to achieve total sales quality*. New York: Free Press.

Speier, C. and Venkatash, V. (2002). The hidden minefields in the adoption of sales force automation technologies. *Journal of Marketing*, Vol 66(3), July, 98-111.

Taylor, T.C. (1994). Valuable insights on sales automation progress. *Sales Process Engineering and Automation Review*, December, 19-21.

Wedell, A.J. & Hempeck, D. (1987a). What if we automated our sales reps to show the value of our automation. *Marketing News*, May 8, 11.

Wedell, A.J. & Hempeck, D. (1987b). Sales force automation: here and now. *Journal of Personal Selling and Sales Management*, Vol 7, August, 11-16.