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SALES FORCE AUTOMATION TOOLS FOR SMALL BUSINESSES

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ABSTRACT

The field salesperson is the small businesses' primary contact with customers and must be well-informed and responsive to customer needs. Information technology tools can help the salesperson meet these needs. However, the question of exactly which tools are instrumental in providing the salesperson sufficient levels of responsiveness needs to be answered. Given the investments associated with the various forms of software and hardware, firms need to know which forms will make a difference. Thus, this study compared users to nonusers of various forms of hardware and software. These results suggest investments in some software (such as e-mail faxing and e-catalogs) will be effective. Users of various forms of hardware, however, did not find their information system to be more effective. Future research efforts may find the explanation for this lack of effectiveness may rest with either the task performed (e.g., administrating the sales territory versus serving the customer) or the context (e.g., desk-based versus wireless mobile technology).

INTRODUCTION

Smaller competitors are currently using information technology in their selling efforts. Armed with quick access to relevant data, sales representatives can outmaneuver their larger counterparts and provide customized sales solutions. Accordingly, small firms are investing in higher levels of information technology to support their field salespeople (Kleindl, 2000; Riemenschneider & Mykytyn, 2000). These investments are substantial, estimated to be over $7,000 per salesperson and expected to grow (Rivers & Dart, 1999; Vijayan, 2003). Small businesses are making these investments in a wide array of information technology tools to support their field sales force. These forms range from phone and fax to more sophisticated use of e-mail and electronic data interchange (Erffmeyer & Dale, 2001). Given the cost differentials associated with these forms,

small-to-medium sized enterprises may benefit from knowing which forms yield desired results. One of the purposes of this study, therefore, is to identify forms of information technology that are associated with higher levels of system capabilities.

To achieve this purpose, we first describe those higher levels of system capabilities. Following this description, we substantiate our expectation that users will believe their system is more capable. Thus, part of our study sought confirmation of this expectation. More importantly, however, we wanted to test to see if the various forms of hardware and software all fell into this expected pattern (i.e., users rating the system as more effective than nonusers). To examine these expectations and comparisons, we gathered and analyzed survey responses from manufacturers with sales of less than $101 million and fewer than 250 employees.

SMALL BUSINESSES SALES STRATEGY AND INFORMATION TECHNOLOGY

Small businesses can respond to customer needs with more speed and use in flexible formats than their large counterparts (White, 1998). Information technology plays a vital role in the sales strategies of small businesses (Khazanchi, 2005). When an information system is truly providing field sales support, it is focused on the needs of the customer (Holmstrom & Drejer, 1996). Since these needs vary, the salespeople may be better able to service customers when they can readily access information from various department and sources. Additionally, a sales information system that facilitates and encourages salespeople to use this infor-mation in flexible formats (to customize sales presentations and support material) has been a primary goal (Siebel & Malone, 1996).

The field salesperson is separated physically from but dependent upon other departments such as shipping, credit, or manufacturing. The salesperson must provide buying organizations necessary information about product, inventory, shipping, or credit. In the field sales setting where the salesperson operates at the boundaries of the organi-zation, this type of inter-departmental and intra-departmental integration can provide a competitive edge (Belich & Dubinsky, 1999; Ingram, LaForge, & Leigh, 2002). When information is easily shared between many departments, the sharing of information takes many directions. A system characterized by multiple directional sharing of information can be critical to the field salesperson (who does not enjoy the benefit of daily face-to-face interaction with other organizational members). When the sharing of information is restricted, sales managers and upper management may not be making the most of their strategic strengths. Typically in the field sales setting, the salesperson may be feeding information to upper management concerning market conditions but may not be fully informed as to strategically important internal issues (Pelham & Lieb, 2004). Thus, an important repeating theme in describing capable systems is the existence of a high level of sharing and information sharing.

Sales force information technology goals include achieving use of flexible formats in shared information. In-depth interviews with small-to-medium sized enterprises found that use in flexible formats is a characteristic of highly capable information technology systems (Wagner, Fillis, & Johansson, 2003). This use in flexible formats is one of the strategic strengths of smaller competitors and places these firms in a position to more quickly meet unique customer needs (Gagnon, Sicotte, & Posada, 2000). While meeting these needs is the goal of many small firms, those who are most successful tend to rely heavily on information technology (Fuller, 1996). One would expect a highly capable sales information system to be one in which a salesperson can quickly and easily customize support material.

Investments in information technology are part of a small businesses sales strategy. As a result, higher levels of information technology investments should help the salesperson move from restricted to multiple sharing of information. Additionally, these investments should help the salesperson move beyond providing standardized to customized forms of sales support material. A highly effective sales information system will play to the competitive advantages offered by a smaller vendor by increasing the levels of sharing and using the information.

ACHIEVING STRATEGIC OUTCOMES: SALES FORCE AUTOMATION TOOLS

If the field salesperson were making use of the firm's investment in software and hardware, one would expect the salesperson to describe their system as providing higher levels of information sharing and use in flexible formats. This expectation is grounded in both the reality of buyer demands and theories of technology acceptance.

Industrial buyers are becoming more technological sophisticated and expect the same of their vendors (Fitzgerald, 1999). In a

growing number of cases today, industrial buyers require their vendors to use specific forms of software and hardware (Egan, Clancey, & O'Toole, 2003). The field salesperson is the first line of contact with buyers and receives daily reminders of this reality. Moreover, these buyer demands are frequently a predominant and driving force behind the adoption of information technology by small-to-medium sized firms (Poon & Swatman, 1997). When buyers require specific forms of information to be provided, field salespeople know that their ability to respond is the difference between keeping and losing a customer. The reality of keeping or losing a customer may explain the differences between users and nonusers perceptions.[1] Salespeople who are using information technology to adapt to each customer are getting confirmation of this choice in a very tangible way; they are enjoying repeat business (MacDonald & Smith, 2004).

This reality suggests salespeople who are *not* adopting technology are engaging in self-defeating behavior and are willingly placing themselves at a competitive disadvantage. Nonusers may face practical hurdles such as cost and limited availability. Small businesses restrict the use of information technology to more internal functions such as accounting or production before progressing to more externally oriented functions such as marketing and sales (Thong & Yap, 1995; Kagan, Lau, & Nusgart, 1990). Those small businesses that have not yet extended their use of information technology tend to be less successful and less competitive (Fuller, 1996). Salespeople that are not using information technology to meet customer demands are often aware of the competitive disadvantage, but simply are not yet fully supported by their firms.

While daily reminders of buyers' expectations may differentiate users from nonusers, theoretically, these perceptions could be self-validating. Users may describe their system as more flexible and capable because these were reasons for initially trying to use technology. The Technology Acceptance Model claims salespeople will be motivated by the belief that the technology will be useful (Parasarathy & Sohi, 1994). The Technology Acceptance Model, based on the Theory of Reasoned Action, examines attitudinal precursors and offers an explanation of why individual employees will accept and use technological innovations (Ma & Liu, 2004). The Theory of Reasoned Action suggests human behavior is predicated on an individual's attitude toward the behavior, that is "an individual's positive or negative feelings about performing the target behavior" (Ajzen, 1991). In the context of technology adoption, this behavior can be seen in the use of some given information system. To provide a model specifically centered on technology acceptance, Davis (1989) combined the theoretical underpinnings of attitude theory, self-efficacy, behavioral decisions, and adoption of innovation According to this model, salespeople will use a form of software or hardware when they expect it will provide desired results. Thus, the ratings of a more effective system by users may reflect users' preconceptions (Igbaria et al., 1997).

The Technology Acceptance Model claims nonusers may not adopt technology because they feel that it does not play to their strengths. Salespeople may feel the use of information technology weakens rather than strengthens selected interpersonal skills needed to develop personal relationships with buyers (Speier & Venkatesh, 2002). If nonusers hold this belief, they are less likely to adopt. Nonusers may see the selling process as one in which "interpersonal liking" is more important than informational exchanges, or that trust and face-to-face interactions are more important than timely and accurate data. In short, nonusers may be fully aware that information technology can provide efficiencies in the format and timing

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[1]Salespeople who are not using IT seem to be equally aware of this competitive disadvantage. Surveys of both European and United States samples (Leek, Turnbull, & Naude, 2003; Wilson & Vlosky, 1998) support this notion since a cross-section of salespeople were all similarly aware of the importance their buyers place on the use of various forms of information technology.

of information but they do not feel these goals are worth pursuing.

Both the buyers' reality and salespersons' perceptions may explain why users will rate their system as more capable than nonusers. Both users and nonusers must interact daily with industrial buyers who are becoming more technologically sophisticated. Non-users may be reflecting the feedback from their buyers when they rate their sales support system as less flexible or accessible. The salesperson that has adopted and is using a form of hardware or software may have done so because they believed it would provide higher levels of use in flexible formats and information sharing. These business conditions and theoretical proposals suggest salespeople who are using a specific form of hardware or software will rate their system as more capable than salespeople who do not.

Unfortunately, few studies of sales force automation tools have tested this expectation at the individual tool level. As a result, while we would expect all forms to share this pattern (users feel they have a better system), we have been rather assumptive about just which forms of hardware and software will fall into this pattern. If some forms do not, then this may suggest the investment is less than optimal. Because previous research indicates hardware and software components do not consistently follow the same patterns, the subsequent hypotheses states these expected relationships separately (Cragg & King, 1993).

> *H1: Users of each form of hardware will describe their system as more capable (of sharing or use in flexible formats of information) than nonusers.*

> *H2: Users of each form of software will describe their system as more capable (of sharing or use in flexible formats of information) than nonusers.*

METHOD

Sample

Surveys were sent to 341 industrial salespeople directly employed by manu-facturers[2] located in a southeastern region of the United States. The sampling frame was restricted to firms that directly employ and support their own field sales force. This restriction allowed researchers to focus on relevant characteristics: SME manufacturers with responsibility for sales personnel employment and the provision of IT hardware and software to their geographi-cally dispersed field salespeople. Using the American Business Directories database, each manufacturer was solicited via phone call. Each firm that agreed to participate was mailed an introductory cover letter addressed to the sales executive and a packet of materials for each field salesperson directly employed by that firm. To assure confidentiality, responses were mailed directly to the researchers' university address. A follow-up request was sent three weeks later to nonrespondents only. This process yielded a total of 112 complete usable responses. A response rate of 32.8 percent (112/341) compared favorably with similar studies (Dennis, 2003; Rivers & Dart, 1999).

Response bias was examined by comparing early to late respondents. No significant differences were uncovered in terms of any of the variables of interest (that is, use of information technology, system use in flexible formats, or system sharing). Early and late respondents shared similar levels of experience, compensation, and territory size. This comparison suggests the data is untainted by nonresponse bias.

The typical respondent tended to be a college-educated male between the ages of 35 to 44 years old. Over half of these salespeople held their current position less

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[2]The sample frame was restricted to manufacturers since past studies have uncovered significant differences in computer use and software sophistication between manufacturers, retailers, wholesalers, and service providers (Kagan, Law, & Nusgart, 1990).

than seven years and worked in their current industry less than seventeen years. (See Table 1 for Demographic Profile of Respondents). The annual revenues of half of the firms employing these salespeople fell into the range of $20 million to $50 million (See Table 2 for Profile of Respondent Companies). This set of responses reflects a cross-section of high labor-intensive manufacturers (nine percent of the total sample had an annual revenue of $20 to 50 million and employed between 250 and 499) and those generating this same level of revenue with fewer employees (four percent of the total sample had an annual revenue of $20 to $50 million and employed between 20 and 49 employees). The sample drawn includes a wide array of selling situations: from the commodity of mass-produced items to the more specialized labor-intensive products.

Table 1 – Demographic Profile of Respondents

Experience: Number of Years of experience in current industry	
Less than 5 years	23 %
5 to 10 years	19 %
11 to 16 years	15 %
17-22 years	15 %
23-28 years	15 %
29 or more years	13 %
Experience: Number of Years in current position with current firm	
Less than 1 year	7 %
1 to 3 years	36 %
4 to 6 years	21 %
7 to 9 years	10 %
10 to 12 years	7 %
13 to 15 years	7 %
16 or more years	11 %
Gender	
Male	71 %
Female	29 %
Education	
High School	16 %
Some College	37 %
College Degree	43 %
Some Graduate School	1 %
Graduate Degree	3 %
Age	
Under 25 years	5 %
25 to 34 years	20 %
35 to 44 years	34 %
45 to 54 years	24 %
55 to 64 years	18 %

Measures

To reduce the possibility of order effect, the survey was designed to first ask respondents to provide information about their user status. Respondents indicated which forms of the hardware listed they used in the execution of their assigned sales tasks. Similarly, six forms of software were listed and parenthetically provided examples of each form of software (See Appendix A). Previous studies indicate these forms of

Table 2 – Profile of Respondent Companies

All Proportions are to the base of 108 (4 missing cases)

Number of Employees	Annual Revenues					
	$2.5 - $5 million	$5 - $10 million	$10 - $20 million	$20 - $50 million	$50 - $100 million	Total
20 to 49 employees	15 %	9%	11%	4%	--	39%
50 to 99 employees	2 %	--	5%	16%	--	23%
100 to 249 employees	--	--	2%	21%	1%	24%
250 to 499 employees	1%	--	--	9%	4%	14%
Total	18%	9%	18%	50%	5%	100%

hard-ware and software reflect an appropriate array of technical sophistication and are commonly used by industrial salespeople (Erffmeyer & Johnson, 2001; Widmier, Jackson, & McCabe, 2002).

Following the user status section, the survey instrument asked respondents to evaluate the capabilities of their system. A paragraph described each capability separately, with one paragraph devoted to sharing of information and another paragraph devoted to use in flexible formats. The first sentence of each paragraph provided a general description of the system capability. Semantic differential anchors were provided for the choices offered (See Appendix A). Informational sharing was measured by asking respondents to evaluate the degree to which the computer network system allows many different (or only a few) directional sharing of information. Use in flexible formats of the system was measured by asking respondents to evaluate the degree to which the sales documents were standardized or customized with more flexible systems being assigned a higher value.

RESULTS

We expected users would rate their system as more flexible and capable of high informational sharing; simultaneous comparison of the averages (of sharing and using information) between users and nonusers tested this expectation. Multivariate analysis of variance methods facilitated this compar-

ison and allowed one comparison to be conducted (rather than performing two tests).[3] Relationships between user status and systemic capabilities, such as sharing and use in flexible formats, were tested using multivariate analysis of variances.

To address the need for a rigorous test, a higher level of significance was set. This was set to address the challenge of the imbalance between users and nonusers. The number of nonusers for more advanced forms of hardware, such as wireless personal computers, or software, such as palm synchronization, outnumbers users. To minimize the effect of Type I errors, the critical value for significance was set higher for those comparisons in which the number of users or nonusers was small (See shaded cells of Tables 3 and 4). Each multivariate analysis of variance compared the average perception of user to nonuser to test for differences in either sharing or use in flexible formats. The dependent variable was "user status" and the independent variables were "perceived use in flexible formats" and "perceived information sharing."

Each multivariate analysis of variance compared user to nonuser for each of the six

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[3]Multiple analysis of variance reduces the number of analyses conducted and, thus, reduce the likelihood that a possibly significant difference will be attributable to the increased numbers of tests. Multiple analysis of variance, therefore, provides a more stringent test.

Table 3 – Sharing and Using Information as a Function of Hardware User Status

Hardware	# of Users	# of Nonusers	Tests for Overall Differences Multivariate analyses of variance $F_{(probability)}$	Tests for Individual Differences Sharing Information [2] Flexible Use of Information[2] User/ Nonuser　　User/Nonuser	
Desktop PC	99	9	$1.06_{(.3516)}$[1]	3.04>3.00 User>Non	2.81>2.12 User>Non
Laptop PC	69	41	$1.36_{(.2621)}$	3.16>2.86 User>Non	2.85>2.53 User>Non
Palmtop PC	26	78	$3.18_{(.0462)}$[1]	3.13>2.85 User>Non	3.19>2.54 User>Non
Wireless PC	16	85	$2.60_{(.0798)}$[1]	3.31>3.00 User>Non	3.31>2.56 User>Non
Modem	72	32	$3.00_{(.0543)}$	3.10>2.85 User>Non	2.91>2.26 User > Non
Document Scanner	42	61	**4.06***$_{(.0204)}$	2.85<3.25 User<Non	**3.07>2.48 User>Non***

- **Bold indicates differences are statistically significant**

[1]If the number of users or nonusers is less than 30 then the required level to be considered significant was set at a probability of .025 or less.

[2]Interpretation of the averages is based on response scale values. That is, the highest value is 5 and lowest scale value is 1 indicating level of use in flexible formats or sharing of the information.

forms of hardware. While all of the averages were in the direction expected, one form of hardware demonstrated statistically significant differences (See Table 3). Only one of these was significant and this indicated users of document scanners differ from nonusers. The overall F statistic of 4.06 was significant at a probability level of .0204. This result implies either perceived use in flexible formats or perceived sharing differs between user and nonusers. A Scheffe ⎯erchant comparison (using a .05 level) indicates these differences apply to perceived use in flexible formats for users of document scanners. Users of document scanners tend to rate their systems as more flexible than nonusers (Average$_{user}$ 3.07 > Average$_{nonuser}$ 2.48). Only one of the six forms of hardware fell into the pattern expected (i.e. users of document scanners).

This was not the case with the six forms of software. Differences between users and nonusers of three of the six forms of software were significant. (See Table 4). While e-mail was used by the majority of respondents (96), the difference between users and nonusers was still significant (at a probability level of .0164). Further analyses indicate this difference exists in terms of evaluating the information sharing (Average$_{user}$ 3.16 > Average$_{nonuser}$ 2.31). Users of e-mail rate their information system as having better levels of information sharing.

A comparison of users to nonusers of electronic forms of catalogs was significant at the overall level and ⎯erchant comparisons show users rate the information sharing as taking multiple directions (Average$_{user}$ 3.44 > Average$_{nonuser}$ 2.71). E-

mail faxing software users tend to see their information system as more flexible than nonusers (Average$_{user}$ 3.06 > Average$_{nonuser}$ 2.43). Users of contact management, external report generator, or palm synchronizing software did not differ from nonusers. These analyses provide answers and insights regarding the second hypothesis by identifying specific forms of software, which are more likely to be associated with more effective systems.

Table 4 – Sharing and Using Information as a Function of Software User Status

Software	# of Users	# of Non-users	Tests for Overall Differences Multivariate analyses of variance $F_{(probability)}$	Tests for Individual Differences	
				Sharing[2] User/Nonuser	Flexible[2] User/Nonuser
E-mail (e.g. Lotus cc:Mail, Microsoft Outlook or Eudora Pro)	96	15	4.28* $_{(.0164)}$[1]	**3.16>2.31 User>Non***	2.84>2.15 User>Non
Electronic Catalog	50	53	5.64* $_{(.0049)}$	**3.44>2.71 User>Non***	2.94>2.46 User>Non
E-mail faxing (e.g. WinFaxPro or FaxRush)	33	72	3.62 * $_{(.0304)}$	3.06>2.43 User>Non	**3.06>2.43 User>Non***
Contact Mgmt (GoldMine or SalesLogix)	52	56	1.05 $_{(.3542)}$	3.03>3.02 User>Non	2.97>2.58 User>Non
External Report Generator (e.g. Crystal 7.0 or 8.5)	16	88	1.98 $_{(.1434)}$[1]	3.27>3.01 User>Non	3.27>2.58 User>Non
Palm Synchronization (e.g. Intellisync, Companionlink)	17	90	3.40 $_{(.0373)}$[1]	2.88<3.05 User<Non	3.42> 2.57 User>Non

- **Bold indicates differences are statistically significant**

[1]If the number of users or nonusers is less than 30 then the required level to be considered significant was set at a probability of .025 or less.

[2]Interpretation of the averages is based on response scale values. That is the highest value is 5 and lowest scale value is 1 indicating level of use in flexible formats or sharing of the information.

DISCUSSION AND MANAGERIAL IMPLICATIONS

Overall, these findings suggest software, rather than hardware, may contribute to higher levels of perceived system cap-abilities. Salespeople using more advanced forms of hardware do not see resultant improvements in their ability to be more responsive to customers nor access a wider array of databases. While technology pundits praise mobile forms of hardware (such as

palmtops and wireless personal computing), our results imply smaller businesses may take a more conservative approach. Based on these results, small-to-medium sized enterprises need not rush to acquire the most advanced form of hardware. Smaller firms may wish to invest in hardware components which help convert paper-based systems to electronic forms of documentation, rather than mobile forms of hardware. Industrial buyers for these small manufacturers may place value on vendors who can accommodate both forms of documentation and place less value on the mobile analyses or access.

The results regarding hardware may be attributable to analysis methods that examined use or non-use of one piece of hardware at a time. Given the mobility of the field sales force, this may not reflect actual practice. The field salesperson may be using a desktop personal computer in conjunction with other more mobile forms. By examining the effect of one form of hardware at a time, these analyses may not be reflecting the full effect of use of more than one form. To test this possibility, therefore, a post-hoc analysis was undertaken. The combinations of desktop and laptop, desktop and palm, and finally laptop and palm were tested. Consistent with the logic presented in support of the first hypothesis, the expectation of the post-hoc analysis would be that the use of two forms of hardware might positively affect user perceptions of systemic sharing or use in flexible formats. This expectation was not supported (See Table 5) and like the findings of the initial analyses indicate users do not rate their system as more capable based on hardware use alone. This held true regardless of whether the analysis focused on the effect of one piece of hardware or the use of two types of hardware.

Table 5 – Post-Hoc Analyses Use in flexible formats or Sharing as a Function of Hardware User Status: Combinations of Desktop, Laptop and Palm PC's

Hardware Combination	Neither	Either	Both	Tests for Overall Differences Multivariate analyses of variance $F_{(probability)}$
Desktop-Laptop				
Frequency	6	36	64	
Average Sharing	3.20	2.76	3.17	$1.10_{(.3570)}$
Average Use in flexible formats	2.17	2.67	2.89	
Desktop-Palm				
Frequency	9	67	25	
Average Sharing	3.00	3.13	2.75	$1.52_{(.1995)}$
Average Use in flexible formats	2.00	2.70	2.66	
Lap-Palm				
Frequency	39	41	24	
Average Sharing	2.80	3.40	2.79	$2.86_{(.0249)}$
Average Use in flexible formats	2.63	2.56	3.25	
None of the ☐erchant comparisons were significant (Scheffe test at probability of .05 or less). [a] If the number of users or nonusers is less than 30 then the alpha level required for the overall F test is .025 or less.				

If small businesses are seeking systems which are perceived to be more responsive to each customer's needs or which facilitate the sharing of information, investing and expanding on the use of e-mail applications is worthwhile. E-mail may be providing yet another needed form of communication and serves to increase the sharing of information with buyers as well as within the selling firm. From the salesperson's point of view e-mail use is important. The fact that salespeople believe their system is more responsive to customers when they are using e-mail may put to rest concerns some sales managers have expressed, that the use of e-mail may be suppressing customer interaction (Gilbert, 2003). It appears salespeople see their system as more responsive and providing better information sharing through the use of e-mail.

Electronic forms of catalogs apparently also provide the opportunity for sharing of information across organizational boundaries. E-catalogs in disk or web pages formats may be instrumental in reducing the barriers to sharing information for both the buyer and the salesperson. It is interesting to note that the findings concerning e-catalogs were significant for perceptions concerning the sharing of information but was not significant for use in flexible formats. This may imply the effect of electronic catalogs extend beyond providing the buyer easy access to an improved capability for many departments to access and share information. Electronic forms of catalogs facilitate information sharing between salespeople and other departments such as shipping, inventory or customer service.

FUTURE RESEARCH

Given the investment of both time and money represented in the acquisition and use of hardware, additional research is needed to examine why more forms of hardware were not significant. The suggested research may examine the possibility that a base level of computing is integrated into perceptions of system capabilities. A desktop personal computer may not offer higher levels of responsiveness above other computing forms such as a Laptop personal computer. The results may suggest that, in the current environment, advanced forms of hardware may not contribute to the specific system attributes of sharing and use in flexible formats. Salespeople may not be making full use of the new technologies to adapt to changing customer needs and competitive actions. Additionally, if salespeople are using information technology for administrative tasks rather than more customer-focused problem-solving tasks, then use may not be linked to flexible systems. An intriguing area of research may be an analysis of critical incidents, which describe the effective/ineffective use of hardware components in solving customer problems or shortening a sales cycle.

Findings here have highlighted the importance of e-catalogs as an area worthy of additional research. For example, future studies may want to compare hard copy to compact disc to web-based forms of electronic catalogs or compare the various forms of web-based electronic catalogs. One might expect, for example, that the passive, read-only or static forms will differ from those that are active, searchable, respond to customers, and are, therefore, more dynamic. The significant differences found in this study concerning e-catalogs suggest adoption of this form of software carries advantages. Given the various forms e-catalogs can take, additional research may focus on this form of software to explore both the initial adoption and subsequent diffusion. If, as the findings of this study suggest, e-catalogs carry distinct advantages, one might expect the more active, searchable, and responsive forms, such as web-based interactive, will exhibit a rapid pace of diffusion. This pace of diffusion, however, can only take place after cost, security, and implementation challenges are addressed (Gupta & Hammond, 2005). Electronic forms of catalogs are not now fully adopted and this may reflect the need for small businesses to develop or acquire sufficient programming expertise.

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Appendix A – Scales, Response Categories and Coding

These items were framed by asking salespeople to estimate how long they used the listed hardware or software **in the performance of their current sales responsibilities.**		
Hardware	Desktop PC	Response Categories coded 0=never used 1=used 1 year or more
	Laptop PC	
	Palmtop PC	
	Wireless Access for PC	
	Modem	
	Document Scanner	
Software	E-mail (for example Lotus cc:Mail, Microsoft Outlook or Eudora Pro)	
	Electronic Catalog	
	E-mail faxing (for example WinFaxPro or FaxRush)	
	Contact Mgmt (GoldMine or SalesLogix)	
	External Report Generator (for example Crystal 7.0 or 8.5)	
	Palm Synchronization (for example Intellisync or Companionlink)	

Using Information in flexible formats

Evaluate the degree to which the sales documents you need to perform your job are standardized or customized. Standardized forms of catalogs, proposals or sales reports do not change frequently and take the same format for each application or customers. Customized forms of documents, on the other hand, can be changed by the salesperson for each sales call or for each customer.

Highly Standardized	Somewhat Standardized	Equally Standardized & Customized	Somewhat Customized	Highly Customized
☐	☐	☐	☐	☐

Sharing of information

Evaluate the degree to which your computer network system allows many different (or only a few) directional sharing of information. A network system, which only allows you to input data but not access data, is described here as "one-way" (salesperson→headquarters mainframe). A network system which allows you (and other departments such as shipping, credit or production) to input data as well as quickly access other databases is described here as providing "multiple directions."

Strictly One-Way (From Sales-person to Hdqrts)	Usually One-way	Equal proportion of One and Multiple	Usually Multiple Directions	Always Multiple Directions (From and to Salesperson)
☐	☐	☐	☐	☐
Coded as 1	Coded as 2	Coded as 3	Coded as 4	Coded as 5