

DEALER AND DEPARTMENT MANAGER PERFORMANCE AND  
THE USE OF AN INFORMATION SYSTEM

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ABSTRACT

It is important from an implementation standpoint to understand how information systems are used and what motivates individuals to use them. This paper presents the results of a study of dealership performance and the use of a computer-based information system by an automobile importer. The study reports results at the dealer and the department manager level. Extensive performance data were available from the manufacturer while dealers and department managers completed questionnaires.

A descriptive model of information systems use and performance guided the research. The results of the analysis suggest that the use of reports is more strongly related to performance for dealers than for department managers.

The dealer's style is associated with performance while dealer use of information and perceptions of the dealer's style are associated with department manager performance and information use. The implications of the study for decision makers and systems designers are discussed.

## INTRODUCTION

The design of information systems has proven to be a complex task. Many managers feel the returns from computer-based systems do not justify their costs. The failure of individuals to use advanced systems like those to support decisions or office automation applications is painfully obvious and potentially expensive. The purpose of this paper is to present a study of the use of an information system and organizational performance. How is the use of the system associated with performance? What factors are associated with use?

Many computer-based information systems serve primarily a problem finding role; they alert the user to the fact that a problem exists. Problem finding information is used, for example, by a sales representative who is made aware of the fact that sales this year are lower than last year by 20%. The representative is stimulated to determine the reason for this decrease. Problem finding systems help management control the organization and make a direct contribution to performance.

In contrast, problem solving systems are used to arrive at a solution to a problem. A good example of such a system would be a market research application which help solves the problem of how to introduce a new product.

The systems designer needs to understand how the decision-maker uses information both to find and solve problems. At the same time the manager needs to understand how to obtain the maximum benefit from the information provided by a system. What does the information mean and how should the decision-maker interpret it? How should the information be shared with and used by others in the organization?

A prior study explored the performance of a sales force and its use of a complex, computer-based sales information system (Lucas, 1975). This study found a relatively weak relationship between user performance and the use of the information system. However, the results supported a distinction between problem finding and problem solving information. The study also found personal and situational and decision-style variables associated with the use of a system.

The purpose of the field study reported in this paper is to further explore the relationship between performance and the use of an information system. The present research relates the use of information by the chief executive to overall organizational performance and the use of information by department managers to the performance of their sub-units.

## RESEARCH DESIGN

Background

It is possible to study performance and the use of an information system in the laboratory or the field. In the laboratory one gains control and is able to isolate and manipulate key variables (Dickson, et al., 1977). It is also important to conduct field studies to see how actual information systems are used in a real setting.

The company in the field study reported here is a major automobile importer. The manufacturer has a large number of dealers throughout the United States who own franchises. The manufacturer provides identical sales and financial information to all of its dealers in the same format; however, performance and the use of these data vary widely among dealerships. The data reported in this study were collected as a part of a larger project (Plimpton, 1976) at 37 dealerships in the western region of the United States.

The Information System

The information system provided by the automobile manufacturer features the following reports:

Three Month Trend

Unit and dollar sales by major product lines for new cars, used cars, service and parts departments; gross profits in each department, other income, total operating income for each department. Also total operation expenses by major category year-to-date, current month, previous two months and annual objectives.

Income and Expenses

Total operation and each department: detailed sales, gross profits, and breakdown of expenses for current month, year-to-date, and for composite group of dealers; also annual budget.

Balance Sheet

Standard balance sheet figures for latest month; details of over-age receivables, new and used cars in inventory, parts and accessories, capital assets. Also month by month summary of new vehicles sold and used vehicles retailed and wholesaled for the year.

Management Data

Summary of key financial ratios and percentages for each department for the month and year-to-date.

Monthly Statements

Balance sheet, income and expenses, trend analysis and gross profit analysis.

Daily Sales Summary

One page summary kept day-by-day in some dealerships showing sales in each major department.

Daily Operating Control

Summary kept by some dealers of sales for the day against pro rata expenses for the day according to monthly budget figures.

In total there are well over 3000 operating figures per dealer each month!

## RESEARCH MODEL

Figure 1 presents the model used to guide the research. The model has been adapted for this study from Lucas (1975). The top half of the figure predicts dealer performance while the bottom half is concerned with individual department managers, for example, the new and used car managers.

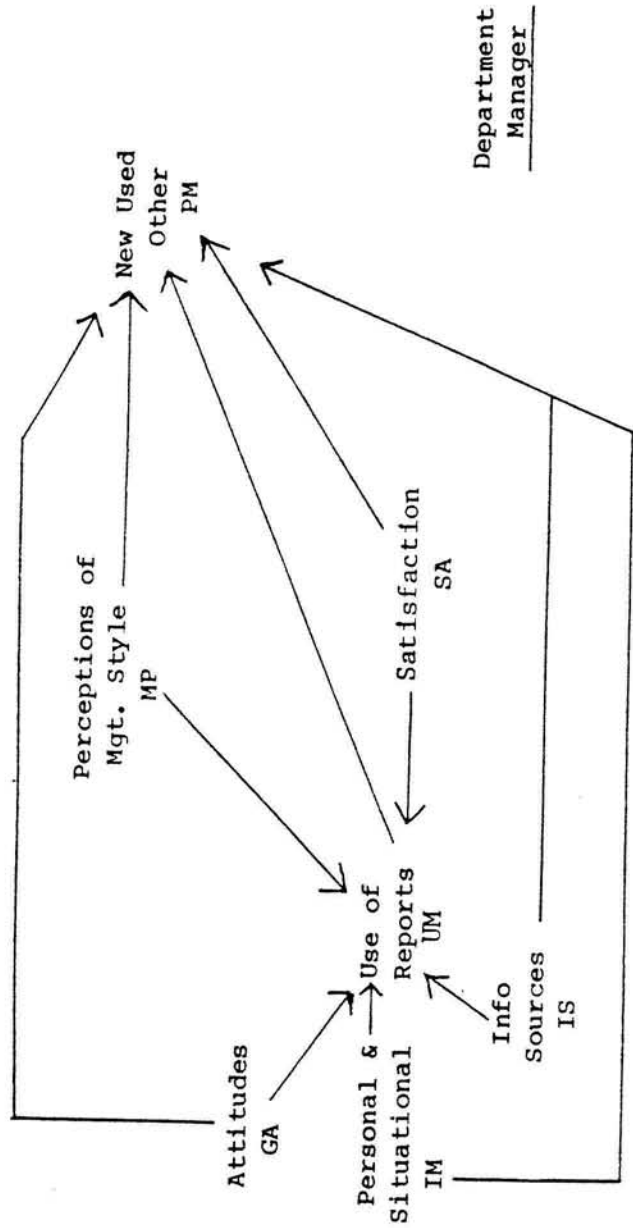
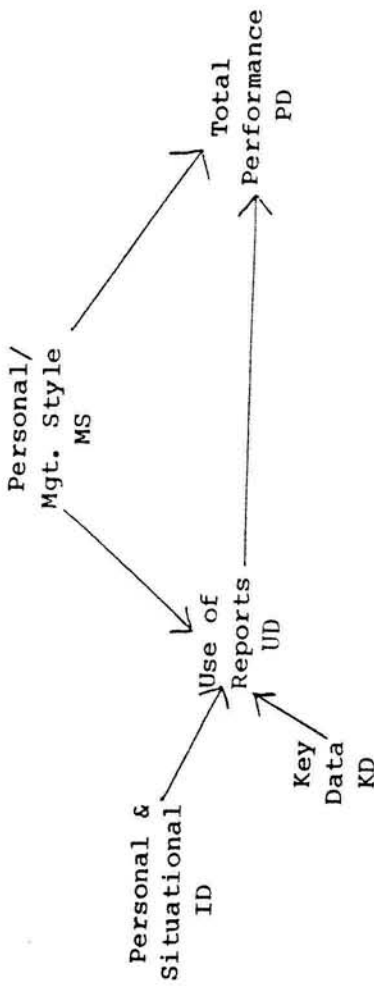
The dealer focuses on the overall performance of the dealership. The research model hypothesizes that dealership performance is a function of the manager's style and use of reports.

$$(1) \quad PD = f(UD, MS)$$

For the department manager, performance is more narrowly defined, for example, sales of new cars are one appropriate measure for the manager of the new car department. The figure suggests that performance by department managers, in addition to the use of reports, will be influenced by several other factors. An important variable is anticipated to be the subordinate's perception of the dealer's management style. What are the key variables emphasized by the manager? One also expects that the department manager's overall satisfaction is likely to have an impact on performance, as well as the kind of information the department manager uses from non-report sources. The hypothesized relationship is stated in equation 2.

$$(2) \quad PM = f(UM, SA, GA, IM, IS, MP)$$

Dealer



Department Manager

The Research Model  
Figure 1



What influences the dealer's use of information? The personal and situational factors of the dealership are likely to be important as are his or her personal and management style. Plimpton found a wide variance among dealers ranging from highly intuitive entrepreneurs to analytic business-like managers (1976). One expects the dealer also to be influenced by the data which are considered key in the success of the dealership:

$$(3) UD = f (MS, KD, ID)$$

The model suggests that the use of reports by the department manager will be influenced by the perceived style of the dealer, given the importance of leader behavior as a model for others in the organization. General attitudes about the department manager's work and satisfaction are also likely to influence the use of the system as are personal and situational factors and information sources. The anticipated relationship is presented in equation 4.

$$(4) UM = f (SA, GA, IM, IS, MP)$$

Variables

Table 1 contains a list of the variables in the study. The data on performance for the dealership and each department within the dealer was collected from the manufacturer's records. A large number of highly correlated indicators were available for dealership performance. The dependent performance variables of 1971 and 1972 dealership profits as a percentage of sales have been adopted in this study. For department managers the percentage of dealer profit from sales of new and used cars respectively were employed as performance measures for these two departments. The service, parts and other categories were combined into a single group and their performance was measured by subtracting the percentage of dealer profit on new and used cars from the gross dealership profit percentage.

The data on the use of the information system and the other variables in Figure 1 were collected from a questionnaire administered to the dealer and department managers. The variables related to the use of reports are a simple summation of the number of ways in which the respondent uses the report, such as for identifying problems, general use, specific analysis, etc. The usefulness of a given report is the respondent's subjective evaluation of the report, and time spent is a self-report of the length of time the decision-maker spends looking at the report.

Table 1  
Variables in the Study

Variable Class	Variables	Source
	Performance (PD= <u>P</u> erformance of <u>D</u> ealer)	
	PD <sub>1</sub> 1971 Dealer profits & sales	Manufacturer records
	PD <sub>2</sub> 1972 Dealer profits & sales	Manufacturer records
	PN <sub>1</sub> 1971 New car profits & sales	Manufacturer records
	PN <sub>2</sub> 1972 New car profits & sales	Manufacturer records
	PU <sub>1</sub> 1971 Used car profits & sales	Manufacturer records
	PU <sub>2</sub> 1972 Used car profits & sales	Manufacturer records
	PO <sub>1</sub> 1971 Other profits (Gross profit % - PM <sub>1</sub> - PU <sub>1</sub> )	Manufacturer records
	PO <sub>2</sub> 1972 Other profits (Gross profit % - PM <sub>2</sub> - PU <sub>2</sub> )	Manufacturer records
	Use of Reports (UD= <u>U</u> se of <u>D</u> ealer)	
	UD <sub>1</sub> Three month trend use	Dealer Questionnaire
	UD <sub>2</sub> Three month trend usefulness	Dealer Questionnaire
	UD <sub>3</sub> Income and expense use	Dealer Questionnaire
	UD <sub>4</sub> Income and expense usefulness	Dealer Questionnaire
	UD <sub>5</sub> Daily operating control use	Dealer Questionnaire
	UD <sub>6</sub> Balance Sheet use	Dealer Questionnaire
	MS <sub>1</sub> Own feel for figures	Dealer Questionnaire
	Management Style (MS= <u>M</u> anagement <u>S</u> tyl)e)	
	MS <sub>2</sub> Use of written objectives	Dealer Questionnaire
	MS <sub>3</sub> Written objectives for sales volume	Dealer Questionnaire

MS <sub>4</sub>	Written objectives for sales expense	Dealer Questionnaire
MS <sub>5</sub>	Personal general comparison of std vs. results	Dealer Questionnaire
MS <sub>6</sub>	Personal detailed comparison std. vs. results	Dealer Questionnaire
MS <sub>7</sub>	Expect dept. manager to compare std. vs. results	Dealer Questionnaire
MS <sub>8</sub>	Expect bus. manager to compare std. vs. results	Dealer Questionnaire
MS <sub>9</sub>	Expect distributor to compare std. vs. results	Dealer Questionnaire
MS <sub>10</sub>	Standards from other area dealers	Dealer Questionnaire
Key Data (KD= <u>Key</u> <u>Data</u> )		
KD <sub>1</sub>	Year-do-date figures	Dealer Questionnaire
KD <sub>2</sub>	Last Month's figures	Dealer Questionnaire
Personal Situational (ID= <u>I</u> ndividual Factors for <u>D</u> ealer)		
ID <sub>1</sub>	Percent 1972 personal income from dealership	Dealer Questionnaire
ID <sub>2</sub>	Percent 1972 personal assets in dealership	Dealer Questionnaire
ID <sub>3</sub>	Percent of time on dealership affairs	Dealer Questionnaire

(Table 1, Page 2)

Use of Reports (UM= <u>U</u> se by <u>M</u> anager)	
UM <sub>1</sub> Three month trend usefulness	Dept. Mgr. Questionnaire
UM <sub>2</sub> Three month trend time spent	Dept. Mgr. Questionnaire
UM <sub>3</sub> Management data usefulness	Dept Mgr. Questionnaire
UM <sub>4</sub> Monthly statement time spent	Dept. Mgr. Questionnaire
UM <sub>5</sub> Balance Sheet usefulness	Dept. Mgr. Questionnaire
UM <sub>6</sub> Daily sales summary time spent	Dept. Mgr. Questionnaire
UM <sub>7</sub> Monthly statement usefulness	Dept. Mgr. Questionnaire
Satisfaction (SA= <u>S</u> atisfaction)	
SA <sub>1</sub> Satisfaction with supervisor	Dept. Mgr. Questionnaire
SA <sub>2</sub> Satisfaction with dealer	Dept. Mgr. Questionnaire
SA <sub>3</sub> Satisfaction with work	Dept. Mgr. Questionnaire
SA <sub>4</sub> Overall satisfaction	Dept. Mgr. Questionnaire
General Attitudes (GA= <u>G</u> eneral <u>A</u> ttitudes)	
GA <sub>1</sub> Profits determined by external factors	Dept. Mgr. Questionnaire
Personal/Situational (IM= <u>I</u> ndividual Factors for <u>M</u> anager)	
IM <sub>1</sub> Time at dealership/position	Dept. Mgr. Questionnaire
IM <sub>2</sub> Age	Dept. Mgr. Questionnaire

(Table 1, Page 3)

Information Sources (IS=Information Sources)

IS <sub>1</sub>	Conversations with dealership	Dept. Mgr. Questionnaire
IS <sub>2</sub>	Conversations with distributor	Dept. Mgr. Questionnaire
IS <sub>3</sub>	Trade journals & newspapers	Dept. Mgr. Questionnaire

Perceptions of Dealer's Style (MP=Manager's Perceptions)

MP <sub>1</sub>	Dealer self-confident	Dept. Mgr. Questionnaire
MP <sub>2</sub>	Dealer lenient	Dept. Mgr. Questionnaire
MP <sub>3</sub>	Dealer objective	Dept. Mgr. Questionnaire
MP <sub>4</sub>	Dealer people-oriented	Dept. Mgr. Questionnaire
MP <sub>5</sub>	Presence of written objectives	Dept. Mgr. Questionnaire
MP <sub>6</sub>	Use of expense/financial controls	Dept. Mgr. Questionnaire
MP <sub>7</sub>	Manager knows where he stands	Dept. Mgr. Questionnaire

(Table 1, Page 4)

The dealer's decision style variables are based on the expectations he holds for the department manager, his use of objectives and his personal examination of standards. Personal and situational factors are measured by the amount of income and the extent of assets the dealer has invested in the dealership. The department manager questionnaire also provided information on satisfaction. The single measure of general attitudes is the extent of agreement with the statement that profit is determined by external rather than internal factors. The information sources are the dealership, distributor and trade press. The department manager also completed questions on his or her perception of the dealer's style, confidence in the dealer, whether the dealer set objectives and whether the dealer is control-oriented or not.

## RESULTS

### Dealer

Equations 5 and 6 in Table 2 present the results of a regression analysis on the dependent variables of dealer profits in 1971 and 1972 versus the use of reports and decision style variables. The stepwise regression was terminated when the incoming variable became insignificant at the .10 level. The results show fairly strong negative relationships between the usefulness of the reports and the use of reports compared to performance. The only positive association is the reported usefulness of the income and expense report. It is

Table 2  
Dealer Results

Eq. no	n=37	$R^2$	F
(5)	$PD_1 = -.71^b UD_1 - .67 UD_2 - .28 UD_3 + .54 UD_4 - .35 UD_5 + .79 MS_1$ $(3.19)^{***C}$ $-.45MS_2$ $(1.80)^{**}$ $(2.45)^{**}$	.50	5.46***
(6)	$PD_2 = -.72 UD_2 + .51 UD_4 - .38 UD_6 + .40 MS_1 + .27 MS_3 - .49 MS_4$ $(3.72)^{***}$ $(2.10)^{**}$ $(2.40)^{**}$ $(1.84)^{**}$ $(1.06)$ $(2.42)^{**}$	.35	4.30***
(7)	$UD_1 = .54 KD_1 + .29 ID_1$ $(3.94)^{***}$ $(2.08)^{***}$	.53	21.31***
(8)	$UD_2 = -.41 MS_1 + .56 MS_5 + .43 KD_1$ $(2.89)^{**}$ $(3.43)^{***}$ $(2.15)^{**}$	.59	18.52***
(9)	$UD_3 = .50 KD_2 + .61 ID_1 - .26 ID_2$ $(4.37)^{***}$ $(5.18)^{***}$ $(2.18)^{**}$	.62	20.40***



(10)	$UD_4 = -.16 MS_1 + .81 MS_5 + .19 MS_{10}$	.76	39.89***
	(1.86)** (7.54)*** (18.79)***		
(11)	$UD_5 = -.30 MS_6 + .51 MS_8 + .36 MS_9 + .44 ID_3$	.58	13.60***
	(1.70)** (2.60)*** (2.61)*** (3.92)***		
(12)	$UD_6 = .32 MS_2 + .43 MS_7$	.32	9.28***
	(2.25)** (3.00)***		

<sup>a</sup> Adjusted R<sup>2</sup>

<sup>b</sup> Beta weight = the change in the dependent variable in number of standard deviation resulting from a standardized unit increase in an independent variable with all other variables held constant.

<sup>c</sup> Two tailed probability

\*  $P \leq .10$

\*\*  $P \leq .05$

\*\*\*  $P \leq .01$

(Table 2, Page 2)

interesting to note that the dealer's own feel for figures is positively related to performance in both equations 5 and 6, while the use of written objectives is mixed.

The negative relationships between use and performance are consistent with earlier findings: the reports in this study have immediate value in finding problems. Dealers with high performance tend to rely on their own feel for figures and the most useful report is the income and expense report. When profits are high, it appears that it takes little time to scan these problem findings reports.

Equations 7 through 12 present the results of regressing the use of reports from equations 5 and 6 on the dealer's decision style, personal and situational variables and key data items. The three-month trend analysis is described in equations 7 and 8. The usefulness of this report is positively related to an interest in year-to-date figures and negatively related to one's own feel for standards. Usefulness is positively related to the dealer's personal comparison of results versus standards.

For the income and expense report in equations 9 and 10, use is related to decision style and key data, along with personal and situational variables; for example, the report is more useful if the dealer personally compares results and uses standards from other dealers. The report is less useful if the dealer operates based on his own feeling for figures. Use is positively related to percentage of income from the dealership and negatively to the percentage of the

dealer's assets invested in the dealership.

In equation 11, the use of the daily operating control is positively associated with expectations that department and business managers will compare results with standards. However, interestingly enough, the use of the report is negatively associated with the dealer's own personal comparison of results with standards. In equation 12, the use of the balance sheet is associated with the use of written objectives and the expectations that department managers compare standards with results.

It appears that the dealer who works primarily from intuition is less interested in reports. This individual, however, does focus on key data; year-to-date information is likely to stimulate interest in the reports when a problem is found. An alternative explanation is that the reports have focused dealer attention on these key figures. The more reports-oriented dealer expects managers to emphasize results and compare them with standards.

#### Department Manager

The results of the regression analysis with department manager performance as the dependent variable are shown in equations 13 through 18 in Table 3. For new car managers in equations 13 and 14, the usefulness of the three month trend analysis and the usefulness of management data are positively related to performance, while time spent on the monthly statement is negatively related to performance. For used car managers in equations 15 and 16 time spent on the daily

TABLE 3  
Department Manager Results

EQ no.		R <sup>2</sup>	F
New n = 17			
(13)	PN <sub>1</sub> = .43 UM <sub>1</sub> (1.85)**	.13	3.42
(14) PN <sub>2</sub> = .75 UM <sub>3</sub> - .60 UM <sub>4</sub> (2.69)*** (2.16)**			
Used n = 19			
(15)	PU <sub>1</sub> = -.59 UM <sub>5</sub> (3.15)*** + .46 UM <sub>6</sub> + .54 SA <sub>1</sub> (2.50)** (3.00)***	.45	5.85***
(16)	PU <sub>2</sub> = -.46 IM <sub>1</sub> (2.21)** + .38 IS <sub>1</sub> (1.82)**	.22	3.63**
Other n = 90			
(17)	PO <sub>1</sub> = .21 UM <sub>5</sub> (1.96)** + .42 SA <sub>2</sub> - .20 IM <sub>1</sub> - .42 IS <sub>1</sub> + .36 IS <sub>2</sub> - .27 MP <sub>1</sub> (2.44)*** (1.95)** (2.79)*** (2.65)*** (1.76)**	.13	3.21***
(18)	PO <sub>2</sub> = -.17 UM <sub>2</sub> (1.48)* - .27 SA <sub>3</sub> (2.82)*** (1.97)** (1.69)** (2.62)*** - .56 IS <sub>1</sub> + .45 IS <sub>2</sub> - .31 MP <sub>1</sub> (3.97)*** (3.63)*** (2.17)**	.28	4.89***

New, n = 17										
(19)	$UM_1 = .59$	$IS_3$	$+1.92$	$MP_2$	$-1.84$	$MP_7$			.48 5.88***	
		(2.20)**	(3.86)***	(3.14)***						
(20)	$UM_3 = .42$	$SA_3$							.12 3.22	
		(1.79)**								
(21)	$UM_4 = .72$	$MP_6$							.48 15.76***	
		(3.97)***								
Used, n = 19										
(22)	$UM_5 = .41$	$SA_4$	$+.40$	$IS_3$					.23 3.75**	
		(1.99)**	(1.94)**							
(23)	$UM_6 = .41$	$MP_4$							.12 3.35	
		(1.83)**								
Other, n = 90										
(24)	$UM_2 = -.33$	$IM_1$	$+.21$	$IM_2$	$+.36$	$IS_1$	$-.27$	$IS_2$	$+.24$	$MP_5$
		(3.14)**	(1.85)**	(2.67)***	(2.24)**	(2.22)**				
(25)	$UM_5 = .29$	$GA_1$	$+.27$	$IS_1$	$-.52$	$IS_2$	$+.33$	$IS_3$	$+.35$	$MP_2$
		(2.65)***	(1.83)**	(4.34)***	(2.92)***	(2.55)***	(3.38)***	(1.66)**		
									.29 6.22***	

[Table 3, Page 2]

$$\begin{aligned}
 (26) \quad UM_6 &= .45 MP_2 && .19 && 22.15*** \\
 & && (4.71)*** && \\
 (27) \quad UM_7 &= .29 SA_2 + .39 IS_1 + .24 MP_5 + .16 MP_6 - .31 MP_7 && .65 && 34.28*** \\
 & && (2.79)*** && (4.12)*** (3.18)*** (1.68)*** (3.95)***
 \end{aligned}$$

<sup>a</sup>Adjusted R<sup>2</sup>

<sup>b</sup>Beta weight = the change in the dependent variable in number of standard deviation resulting from a standardized unit increase in an independent variable with all other variables held constant.

<sup>c</sup>Two tailed probability

\*  $P \leq .10$

\*\*  $P \leq .05$

\*\*\*  $P \leq .01$

[Table 3, Page 3]

sales summary is positively related to performance and usefulness of the balance sheet is negatively related to performance. For the other department managers, the usefulness of the balance sheet is positively related to performance in both years in equations 17 and 18. Time on daily sales report and the three-month trend are negatively related and usefulness of the monthly statement is positively related to sales in equation 18.

For used car managers the information source of internal conversations (equation 16) and satisfaction with supervision (equation 15) are positively related to performance. For other managers in equation 17, internal conversations are negatively related to performance while distributor conversations are positively related. Satisfaction with the dealer is positively related and dealer self-confidence is negatively related to performance.

The reports are significantly less related to performance at the department manager level than at the dealership level. Other factors like satisfaction and perception of the dealer's decision style are related to department manager performance. Possibly it is difficult to have one set of reports for a varied group of managers. Another explanation is that the focus for these managers may be more local, or little emphasis may be placed by dealers on department performance as measured by information on the reports or the profit variables in this study.

The use of reports by department managers is described in equations 19 through 27. For the new car manager, use is positively related to a lenient dealer style and negatively related to the manager knowing where he stands (see equations 19 through 21). Use is positively related to work satisfaction and an emphasis by the dealer on financial controls.

For the used car manager, use is positively related to job satisfaction, to the people-orientation of the dealer and the use of information sources like the trade press (see equations 22 and 23).

For other managers in equations 24 through 26, internal conversations at the dealership are related to use for three out of the four reports and distributor conversations are negatively related to use in two of the four equations. A lenient dealer style is positive related to use as are the presence of written objectives. The knowledge of where the manager stands has a mixed relation to use.

For the department managers, the use of reports seems to be associated with many factors, including the perception of the dealer's management style. Information sources and job satisfaction also appear to be related to report use.

#### DISCUSSION

In general, the results support the relationships suggested by the research model in Figure 1, through the research design does not provide any evidence on causality. Dealer style and report use are more strongly related to dealership performance than department



manager use is to department performance. The information for the reports is basically problem-finding in nature; its use is negatively related to performance in general supporting the interpretation that low performance leads to the use of problem finding data.

A variety of variables are associated with the use of reports. For dealers, the management style of the individual appears to play a key role. For department managers perceptions of the dealer's style seem important. Not only is the manager important as a user of information, he or she serves as a model who influences subordinate through direct and indirect actions.

The major conclusion is that the data support a model in which the dealer's leadership is extremely important. Whatever the dealer emphasizes is what the department manager is most likely to study, similar to the results of Lucas (1978).

#### Dealer

The strongest conclusion which emerged from Plimpton's study (1976) was that dealers who had a clear understanding of the key variables in their business and were disciplined in paying attention to those key variables did well. The poorest performers were dealers who spent time searching through information having no clear strategic picture of the business.

How can the dealer best make use of these reports? The first step is to develop an understanding of the business, an implicit model of what is important for success. Then the information system can be used to learn when and where there are problems so that corrective action can be taken. The income and expense report has a great wealth of detailed data and is probably the most useful report for problem finding. Dealers who are familiar with the report should need little time to scan it when things are going well.

The daily operating control report has a short-term focus and is intended for locating immediate problems. However, it may require a fairly sophisticated business manager to use it successfully. Note that the use of the daily operating control is related to dealer expectations that other people make detailed comparisons and analyses. The larger dealerships have strong business managers capable of financial analysis and can make good use of this report.

The data as well as Plimpton's earlier analysis suggest that the dealer has either an analytic or intuitive decision style. Figure 2 depicts one interpretation which fits the data. This two-by-two table arrays an analytic or intuitive manager against having an understanding or lack of understanding of the reports. In the first cell of the table one finds the analytic dealer who understands the reports. This dealer is likely to use the reports as a primary control and communication tool with department managers. The dealer might be one who emphasizes objectives, asks department managers to

	Understands Reports	Does Not Understand Reports
Analytic	<p>1</p> <p>Management by Objectives</p>	<p>2</p> <p>New Dealer</p>
Intuitive	<p>3</p> <p>Glance at report, personal communication with department managers</p>	<p>4</p> <p>Reports not used or not used well</p>

Dealer Style and Report Understanding

Figure 2

agree to them and then keeps track of performance. This type of dealer was in the vast minority in the Plimpton study.

The analytic manager who does not understand reports in cell 2 is represented by the new dealer with little experience. The intuitive dealer in cell 3 who understands the financial reports is not likely to use them as a primary management communications tool, either personally or through department managers. These dealers glance over the financial reports themselves and if everything meets expectations, spend no more time with them. Such individuals are not likely to share information easily with department managers or to focus on results versus standards. These dealers are much more likely to emphasize specific operating issues personally with the manager. The last type of dealer in cell 4 is an intuitive one who does not understand the reports. He probably does not make very good use of them himself nor does he use them extensively with department managers.

#### Department Managers

The financial reports do provide detailed information which is useful at the departmental level, particularly the statement of income and expenses which is broken down by department and shows detailed revenue and expense items. The balance sheet contains management data with key ratios on it and important inventory figures for various departments.

It appears that the use of reports at the departmental level does depend very much on the dealer's decision style. Some dealers have even been reluctant to share the departmental data with their own managers. Training is also required to extract meaning from figures and many department managers are not that sophisticated, or lack training in the use of abstract reports. It is unlikely that the department manager would make more sophisticated use of the reports than the dealer (Plimpton, 1976).

The trend analysis and management data may be useful to the new car manager in showing the overall pattern of what is happening in the marketplace. Probably the new car manager should not be too concerned with detailed expense items. To the used car manager there is very little of interest in the balance sheet except the used car inventory position; however, daily activity is critical and attention to the daily sales summary makes sense for the used car manager. For service and parts, the monthly statement is by far the most useful report. One can speculate that higher performing dealership concentrate most heavily on new and used car sales leading to satisfaction on the part of the new and used car managers and possible dissatisfaction for service and parts.

## IMPLICATIONS

How can a designer develop a system to assist managers with varying decision styles and levels of understanding of data? Is a custom-tailored decision support system the only answer? Will decision style be such a constraint that computer-based information systems and management science will be unable to aid these managers (Huysmans, 1960)?

One design challenge is to determine how and if intuitive managers can be assisted and then design systems to support these managers. For the more analytic, report-oriented manager, the designer can look for key success factors proposed by Rockhart (1980). Such data can help improve the utility of information for the decision maker.

An important finding from this research is the role of the designer in influencing other managers in the firm. It is important for the designer to stress the importance of the behavior and action of senior management in influencing subordinates: implementation begins at the top level of the organization.

Another major implication from the study concerns the complex relationship between the use of information, its importance and performance. Time spent on a report is not necessarily a sign of the value of the information to the decision maker, especially for problem finding data. The decision maker may scan important reports looking for critical indicators. If everything is satisfactory, for example

this year's sales are ahead of last year's or ahead of plan, then the report can safely be ignored. However, if a problem arises, the report is used heavily and much time may be spent on it. To estimate the value of a report, one must look at how it is used and its potential use, not the time spent on average each month examining the report.

For the designer it appears that much information overload could be eliminated through an inquiry system displaying only key data values. One could go to the point of reporting key values if and only if they differ from some pattern specified in advance by the decision maker. When a problem surfaces, the full report is produced.

Future research should examine the complex relationship between the use of information and performance. One working hypothesis is that the most successful information systems, especially decision support systems for senior management, will be those where the designers have first built a model of the decision makers problem finding and problem solving processes and then designed a system that is compatible with this model and the decision style of the user.

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