

## INTERACTIONS IN THE DMU

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### ABSTRACT

Two classic participant observer studies are compared to several empirical, multivariate statistical studies investing the composition and interactions of the members of the Decision Making Unit (DMU). The applicability in this context for issues such as gender, race and age, suggests something has been lost as the literature shifts towards research based on questionnaire data.

### INTRODUCTION

Organizational buyer behavior research often seeks the identity of the members of the Decision Making Unit (DMU). Who the central actors are and why they choose as they do offer basic information blocks upon which a business marketing strategy builds. Scores of studies across dozens of industries describe the composition of decision making units including users, gatekeepers, influencers, specifiers, deciders, buyers and other role players across sets of behaviors leading to a purchase decision (Webster and Wind, 1972).

The growing body of research examines the size of the DMU in various industries, the job titles most likely to influence the purchase decision and the differences in evaluative criteria by job function and level in the organization (Moriarty, 1983; Johnston, 1981). Survey research methods across samples of industrial companies offer useful generalizations about DMU composition for market segmentation, mass communications and other marketing functions.

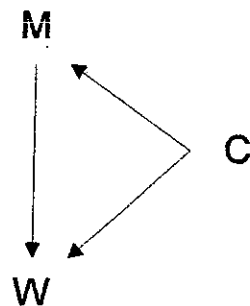
Organizational buyer behavior research focuses on two questions about the DMU: Who participates and who has influence? The search for an answer produces a list of people with personal histories, personalities and idiosyncratic behaviors that often eludes questionnaire methods. For intrafirm and interpersonal inquiries participant observer methods offer a more complete description. In this vein two classic studies stand as guideposts: Whyte's study of the restaurant industry and the Robinson, Faris and Wind study of industrial purchase behavior. Both added greatly to marketers understanding of the interactions in organizations. However the thrust of the industrial buyer behavior research shifted away from observations to questionnaire data and statistical analysis, focused on summarized specifics about decision participants. A sense of the purchase process may have been lost with the abandonment of participant observer methods utilized in these classic studies.

## HUMAN RELATIONS IN THE RESTAURANT INDUSTRY

Near the close of World War II William Foote Whyte (1948) completed a one year study of twelve Chicago restaurants, where the interviewers spent from one to six months performing various restaurant jobs, interviewing employees, supervisors and executives. The twelve Chicago area restaurants form part of the American social system where relationships follow from rank and social class.

Whyte (1948) offers five stages of development in the human structure of the restaurants observed, from coffee shop to chain restaurant. The human structure diagrams characterize relationships between all the employees and the managers. Figure 1 shows stage one, the small cafe dispensing short orders over a counter and stage two, a slightly larger cafe with the beginnings of a division of labor.

Stage 1



Stage 2

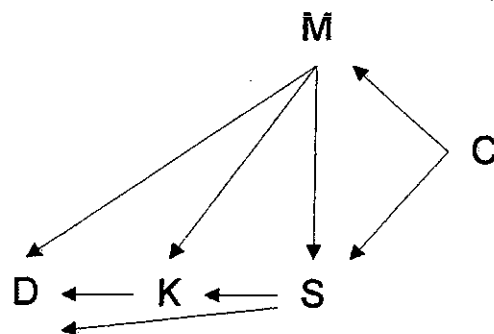


Figure 1

M - manager  
C - customer  
W - waitress

S - service employees  
K - kitchen employees  
D - dishwashers

Social standing in a restaurant depends upon five factors: social background, skill, wages, seniority and work flow. These factors determine an employee's rank in the organization as does the prestige value of the materials handled. At the poultry station, white meat ranked above dark meat. Vegetables also have status with luxury items such as parsley, chives and celery. Green beans lead spinach and carrots while sweet and white potatoes and onions rank at the bottom. The working supervisor of the fish station ranked towards the top of the kitchen on all five factors yet her status in the kitchen was low.

Increasingly complex human structures would parallel organizational interactions leading to a purchase decision, with senior management once removed from functional responsibilities. The diagrams indicate the interactions and characterize relationships between employees of all kinds. Such diagrams could just as well describe the DMU decision making patterns if the topic investigated were purchases.

Figure 2 shows a stage three restaurant where the management no longer has close daily relationships with customers -- there are too many. As a result groups of employees are responsible for not only food production but also for customer relations. While management has a link to the customer, time permits only intermittent interactions. The midlevel supervisor and the waitress provide the constant customer contact, not unlike their counterparts in an industrial setting.

### Stage 3

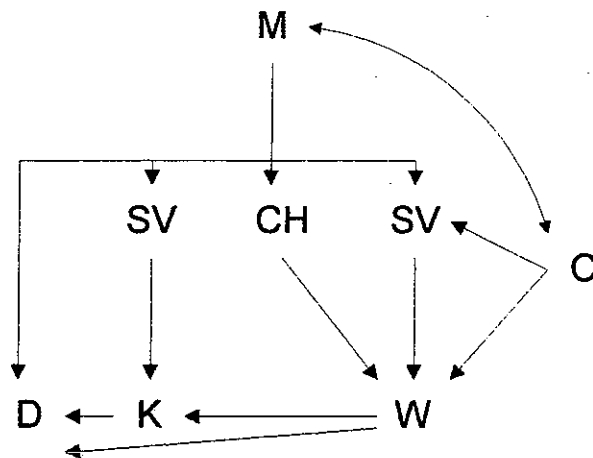


Figure 2

M - manager  
SV - supervisor  
C - customer

W - waitress  
CH - checker  
K - kitchen employees  
D - dishwashers

The social standing of the individual impacts power and influence in the purchase decision, perhaps more so than his or her functional designation or job title. Power might shift noticeably were a junior member of the purchasing staff to replace one with considerable seniority and experience. For complex tasks the new junior purchasing agent would likely wield considerably less influence than the departed senior member. Personal power based on social background, skill, wages, seniority, work flow and the prestige value of the materials purchased might cause wider influence patterns than expected based on organizational position or job title.

The organizational buying literature seems fixed on the function issues, such as price and performance criteria. Yet purchase interactions have a personal dimension, not unlike the observations noted in Whyte's restaurant study. In the research notes in the appendix Whyte (1948) asserts that the study is *not* a survey. He states:

*To come to grips with human problems we need to study them intensively and at close range. We cannot spend a day or week in a restaurant and expect to come out with more than a few fragments of information, meaningless by themselves.*

### Gender, Race and Age

The Whyte (1948) study considered two variables scarcely mentioned in the business marketing literature: gender and race. Sex role issues in the restaurant turn on the order spindle separating the service party, populated by men unaccustomed to taking orders from women, and the waitresses demanding their customer orders. The mores of the forties differ but gender bias still exists in the nineties, albeit with a modern face. With more women in the business workplace, the gender issues in buying center roles extend throughout sales, engineering, manufacturing, purchasing and finance as women enter areas once considered a man's domain.

Racism in company human relations offers continued proof of the extent of prejudice impacting corporate decisions (*The Wall Street Journal*, 1996). It is not difficult to extrapolate human relations issues to purchasing. Whyte (1948) described attitudes toward Negro employees at some restaurants as falling into two categories: loyal ones were dependable, honest and submissive to whites but disloyal ones were shiftless, dishonest and aggressive towards whites. In other restaurants supervisors gained the cooperation of all races. Racism shows another face in the nineties. In a recent discussion about a lost sale a black salesperson explained to a white salesperson, "Yes, I wonder if I said the wrong thing, if I could have presented the product better. But sometimes I can't help but wonder if I lost the sale because I'm black."

To the race and gender issues, age emerges as a nineties issue. Bias against older workers, played out in corporate downsizing, surely affects how older workers interact in buying center roles. For example, some older workers may "play it safe" to insure never making a mistake that might jeopardize retirement benefits. Does age influence the distribution of power and influence, disenfranchising older workers? Provocative social issues must influence a portion of the purchasing process as they influence other aspects of corporate behavior.

## CREATIVE MARKETING AND INDUSTRIAL BUYING

The Robinson, Faris and Wind (1967) study looked at three types of purchases, BuyClasses, in three firms: Company Able, manufacturer of high priced capital equipment; Company Baker, maker of a consumer durable and Company Charlie, supplier of basic materials to general industry standards. In each company purchases in each BuyClass -- a new task, routine task and modified rebuy -- are detailed, examining all the personnel involved and describing their activities at each of the eight BuyPhases leading to purchase. Combining the BuyClasses and the BuyPhases produces the BUYGRID framework, illustrating the length and breadth of the organizational purchasing process.

The Robinson, et. al. (1967) purchase activity descriptions are rich and full of the interactions of the various actors, who talked to whom and what tasks were completed by each individual involved at each stage. As these interaction patterns take place across time during the BuyPhases the various purchase tasks of the decision participants unfold. Despite the sequential depiction, some of the phases may occur simultaneously due, in part, to the information requirements peculiar to the particular buying situation (Robinson, Faris and Wind, 1967). Nevertheless the BuyPhases framework offers a most useful way to organize information about the activities of the DMU.

At each phase of the purchase various participants interact, seeking information and communicating same in the completion of purchasing tasks. The buying decision matrix (Choffray and Lilien, 1978) -- where the column headings are the stages of the purchasing process, the BuyPhases, and the row headings are the various participants described by job title -- offers an illustrative way to depict this process. A methodological problem associated with the matrix, summing across similar job titles, assuming all purchasing agents or all engineers behave similarly (Moriarty, 1983; Johnston, 1981), does not occur if the matrix represents the tasks performed by individuals at but one firm. If there is no summing across job titles, the data reflects the individual's activities. The cells contain the tasks performed by one participant at one stage in one company for one product purchase.

Selecting two new task purchases, Table 1 describes Company Able's purchase of a nonstandard lathe and Table 2 describes Company Baker's purchase a standard machine tool. The buying matrix shows what each participant does leading to purchase and provides an understanding of the information requirements of each individual at each stage. Moriarty (1983)

notes the DMU members differ in evaluative criteria by job function and level of the organization. Understandably the criteria differ; different participants perform different tasks. Each has a view of his or her job tasks and few may have an overall sense of the purchase process.

## New Task Buying Situations

### *Company Able: nonstandard lathe purchase*

BuyPhase		Recognize	Determine	Describe	Search	Acquire	Select	Select	Feedback
Advis		Problem	Features, quantity	Features, quantity	for sources	Proposals	Supplier	Routine	Evaluation
Prod Eng	FE	lathe req		consultations					
Manu Eng	ME	lathe req	work req	analyze vendors	vendor facilities	develop specs	consider factors	detail specs	vendor appraisal
Mktg	M	sell new equip							
Buyer	B		request ideas	review vendors	vendor capacity	detail specs	negotiate factors	prepare order	
Staff	S				review vendors				
Man Serv	MS		cap approval						
Adv Eng	AE		future req						
President	P						domestic bias		
Vendor sales	VS		discuss ideas	proposals	basic solutions				
Vendor eng	VE			consultations	user analysis	develop specs		detail specs	
Customer	C				vendor review				

Table 1

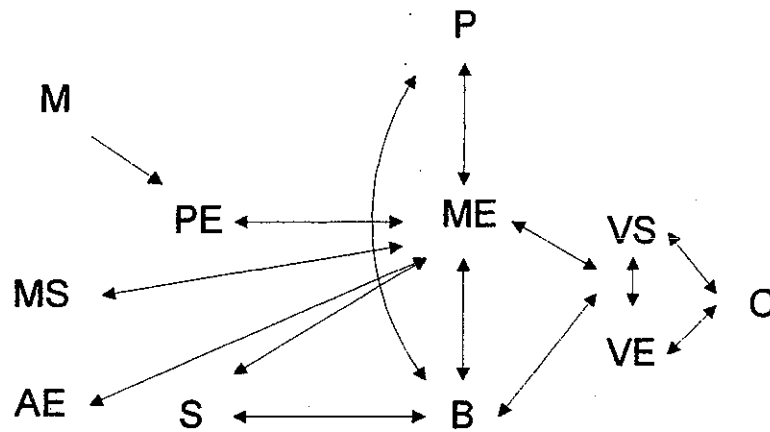
### *Company Baker: standard machine tool purchase*

BuyPhase		Recognize	Determine	Describe	Search	Acquire	Select	Select	Feedback
Advis		Problem	Features, quantity	Features, quantity	for sources	Proposals	Supplier	Routine	Evaluation
Prod Eng	FE	econ analysis	determine need						
Fact Eng	FE			form specs	select vendors	eval proposal	select supplier		evaluate
Fact Buyer	FB			request quote	addl suppliers	invite quotes	negotiate order	prepare order	
Meth Op	MO					eval proposal			
Wkrs Mgr	WM						approval		
Finance	FM						approval		
Supplies	S			prelim discussions		quotes	negotiate order	purchase order	

Table 2

In addition to describing the mechanics of the purchasing process at each company, patterns of interactions emerge, patterns likely unique to the BuyClass. Whyte's (1948) human structure diagrams illustrate the new task process at Company Able and Company Baker.

*Company Able: nonstandard lathe purchase interactions*

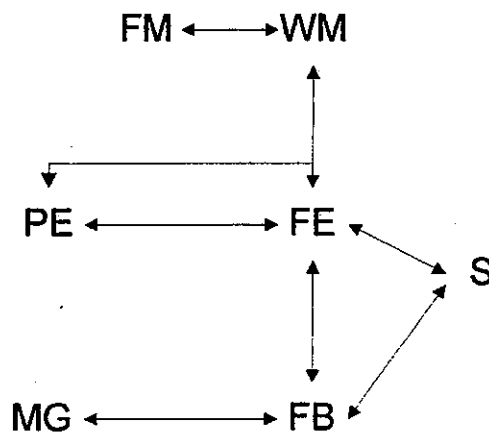


*Figure 3*

Figure 3 describes the new task for Company Able, showing the interactions, the lines of communication between the players in the purchasing drama. The manufacturing engineer holds the central role in many of the information flows. To the extent information is power, the manufacturing engineer would seem to have influence over the purchasing process at Company Able. The President's superior position indicates his role and influence.

Figure 4 shows the interaction patterns at Company Baker for the purchase of a standard machine tool. Here the factory engineer holds the central information role. The impact of financial management through the works manager also shows clearly.

*Company Baker: standard machine tool purchase interactions*



*Figure 4*

While the buying matrix shows who does what, the human structure diagram illustrates the composition of the DMU. Buying Groups differ in composition not only from company to company but from one commodity purchased to another (Spekman and Stern, 1979). Several DMUs exist in each company, depending upon the purchase and the complexity of the task. The size of the DMU varies; one study shows a range in size from 4.6 to 7.9 across business service, transportation, wholesale, retail, finance and manufacturing companies (Moriarty and Bateson, 1982). Not only do different DMUs exist between Company Able and Company Baker, but also differences exist within the companies as well, depending upon the product purchased and the complexity of the task. Because of such differences, the value of survey generalizations across companies and product types comes into question.

## WHO MAKES THE PURCHASE DECISION?

A typical manufacturing company employs a triumvirate of manufacturing, purchasing and engineering personnel to provide multiple organizational inputs into purchase decisions. For capital goods a finance person often adds budget inputs and, in some cases, senior management offers their approval. The process is often characterized as a group decision. Thus the question turns to how these DMU groupings decide. The answer stems from which individuals have responsibility and hold the power to influence the purchase outcome.

Table 1 shows at stage six, selection of the supplier, Company Able's President influences the decision with his "buy American" bias. However, for the American vendor to benefit from his influence at this stage, that vendor had to excel in prior evaluations, becoming the most highly evaluated up to that stage. While the President appears to "make" the purchase decision, various previous selections took place to narrow the choices to two.

From Table 2 factory engineering seems the dominate influence in the process at Company Baker. The factory process engineer recommends the supplier but the works manager and the capital budget committee have final approval. Who makes the purchase decision? The answer spreads across the buying matrix.

## DOES ANYONE MAKE THE PURCHASE DECISION?

The purchase tasks across the buying matrix and the human structures reflecting interactions at each company reveal some defining moments and patterns of influence. A purchasing culture emerges at each company. The central role of Company Able's manufacturing engineer across all the stages and the persistence of Company Baker's factory engineer show the prevailing engineering sentiments at these companies. While Company Able's President insists on buying American, his choice was constrained by the engineering choices presented to him.

The question who influences the decision assumes that someone does, some pattern of personal influence or some application of power takes place affecting the outcome. Alternatively it may be the case that for many stages of the purchase process, only functional fulfillment of job tasks takes place. Task completion differs from power and influence. The completion of the work moves purchasing to the next stage giving the appearance of a "decision." For example, if a production engineer faced the task to evaluate five suppliers on seven criteria, at the completion of this task the production engineer would have "selected" a supplier. Is this an application of influence or completion of a task? The task clearly influences the outcome of the purchase process. But it may be the case that the influence took place when the seven evaluative criteria were chosen or in the choice of the five suppliers to evaluate.

## AN EMPIRICAL SHIFT

While there is mixed support for the BUYGRID classifications in the research literature (Ghingold, 1986; Bellizzi, and McVey, 1983), most researchers agree that collecting data on the entire DMU is so difficult and demanding of resources that single informant methods are usually employed (Anderson, Chu and Weitz, 1987). Cost considerations often lead to one key informant, such as purchasing agents (Jackson, Keith & Burdick, 1984). DMU members or purchase decision participants exaggerate their own importance (Grashof and Thomas, 1976). Decision participants often agree on participation, yet rarely agree on influence (Silk and Kalwani, 1982).

Despite the limitations, the business marketing literature reflects a nearly singular interest in empirical survey results. Researchers typically seek large data samples from multiple respondents. One study analyzed responses to two-stage telephone interviews with 2151 executives in the metalworking industry above the rank of foremen, less those in sales, advertising and marketing, in 878 plants (Lilien and Wong, 1984). The study reports the key decision process influences, described by job responsibility categories, in a seven phase buying decision, summarizing across sixteen product categories. The generalized results from such a large data sample show proper methodologies, but leave unanswered questions about the process. For example, does the number of stages in the buying decision vary from firm to firm or is it always seven phases? BuyClass research would seem to suggest that the company's experience with the product class would affect the purchasing phasing.

Another survey approach uses a series of telephone interviews, first contacting a "focal person" who identifies decision participants. The participants are then telephoned, to verify their participation and identify other participants, who are, in turn, contacted (Moriarty and Bateson, 1982) until all leads are exhausted. The composition of the DMU in 319 companies is reported for five industry groups by functional area and organizational level. Within these generalizations lurks another question -- is a person of similar function and organizational level similar from firm to firm?

Layered on each firm are the interpersonal questions of individual status and the impact of gender, race and age. The answers require direct observation, not questionnaire data. Observational research would compliment the growing body of empirical studies, offering insights on intrafirm and interpersonal behaviors. Yet studies using classic participant observer methods have all but disappeared from the business marketing literature.

To the extent marketing research texts reflect prevailing methodologies, observational methods of all types receive light coverage. Natural and direct observation is but a part of that limited coverage. Considering the number of pages reflects the relative importance of the topic, Table 3 shows the contents of observational methods compared to the length of the book in nine leading marketing research texts. The bulk of these texts cover questionnaire design and statistical methods utilizing the scaled questionnaire data. Clearly observation methods in general and participant observation in particular do not receive much consideration. This shift towards statistical data analysis reflects the methods employed in published research.



### *Observational Methods in Marketing Research Texts*

Author(s)	Date	Observational Methods	Length of Book	
Aaker, Kumar & Day	1995	4	782	0.5%
Blankenship & Breen	1995	3	554	0.5%
Boyd, Wesfall & Stasch	1989	9	785	1.1%
Churchill	1991	7	1,026	0.7%
Crask, Fox & Stout	1995	5	642	0.8%
Malhotra	1996	8	841	1.0%
McDaniel & Gates	1996	10	731	1.4%
Tull & Hawkins	1990	16	742	2.2%
Zikmund	1997	15	739	2.0%

*Table 3*

Some questions about participation and influence in the buying center defy reduction to paper and pencil methods; even empirical studies vary due to methods employed. Asking a question about influence assumes it exists, even if results arise from function and performance, not power and influence. Not all the dimensions of business purchase decisions lend themselves to survey methods. Emotionally charged issues such as gender, race and age would only seem to hasten the termination of a telephone interview.

It may be more important to identify all the players and the tasks each perform across a varying number of stages, than to compute a number for size of the DMU and who "makes" the decision. The operational definition of influence in the purchasing process is a difficult one at best and the data gathered may be unreliable. Observational studies seem to offer more insights into why these results prove so elusive.

## CONCLUSIONS

Whyte (Whyte and Hamilton, 1965) describes the social system of an organization in terms of activities, interactions and sentiments, the study of which requires participant observers. The application to organizational buyer behavior research offers a clear call for more training in observational methods.

Understanding the buying matrix -- knowing the stage of the process, who is involved at that stage and what task each involved participant performs -- may provide more useful information than pursuing the equivocal quest for the most influential person who "makes" the purchase decision. The purchase influence may shift from stage to stage as the participants change and the tasks evolve. Robinson, et. al., (1967) use the term "creeping commitment" to describe the movement towards a preferred supplier, especially in the new task. Although at some moment a purchase order appears, signifying the apparent finality of a "decision," it may result from a process of completed tasks over time.

Inserting the BuyPhase task data into a buying matrix and outlining the interactions in a human structure diagram offers a useful view of each firm's unique purchasing process.

Telephone interviews or mail questionnaires would not provide the data required to describe a buying matrix within a firm. The absence of the observational data required for this task leaves a void in the marketing literature. Perhaps a return to these classic research methods would deepen business marketers understanding of the complexities of business purchases and allow them to consider such troubling issues as gender race and age effects upon the DMU interactions.

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