

THE ORGANISATIONAL PURCHASE INTELLIGENCE

Traditional views of organisational buying have lacked comprehensiveness and often err by emphasising variables such as emotion, personal goals, and internal policies that are involved in the industrial organisational buying decision process but which are not related to the goals of the buying task. The literature of economics, purchasing, and marketing (to a limited degree) has emphasised variables related to the buying task itself and has emphasised "rational", economic factors with such purchasing objectives as minimum price or the lowest total cost-in-use to strive for. Sometimes buying task models focus on non-economic factors such as reciprocal buying agreements and other constraints on the buyer such as source loyalty' ¹. The reason for these differing perspectives arise due to the complex and multi-faceted nature of industrial organisational buying.

This work will tackle the differences between consumer and industrial marketing. The organisational buying process is analysed before delving into to the description of the organisational buying behaviour. An exposé will also be made of the four classes of variables which determine the organisational buying behaviour, namely the individual, the organisation, the buying centre, that is, the social or group variable, as well as the environment, while integrating pertinent research analysis and findings. A synopsis of the different types of buying models is presented prior to wrapping up the with the implications for marketing management.

DIFFERENCES BETWEEN CONSUMER AND INDUSTRIAL MARKETING

Any organisation is a value adding entity that buys inputs from suppliers (individuals and organisations), adds value, and sells output to buyers (individuals and organisations) with these transactions occurring within the surrounding environment. Supplier and buyer organisations likewise engage in market transactions for inputs and outputs, and therefore the entire economy is a web of value-adding organisations transacting with one another in a value-adding chain in which each organisation constitutes a link. The chain comes to an end with a final transaction in consumer markets (where individuals or households buy for personal consumption, and subsequently do not act as sellers), with all transactions that occur at intermediate stages in the value-adding chain prior to the final transaction being business market transactions, usually involving organisational buyers, expected to subsequently play a sellers role in other transactions, using in turn the purchased product to make products for subsequently selling in other buyer markets². The distinction between consumer and business markets depends, therefore, on the transactions being final (transactions also occur in consumer markets even though value-adding by firms may have occurred, if no further transactions take place after the product was bought) or intermediate (business markets) and not on either the nature of the buyer or the product exchanged³.

The four sources of industrial marketing uniqueness are⁴:

1. Functional interdependence: Changes in market strategy in an industrial company more often involve either capital commitments for new equipment, shifts in development activities, or departures from traditional engineering and manufacturing approaches, resulting in company wide implications, whereas, in contrast with a consumer-goods company, major changes in marketing strategy, through for example, changes in promotion emphasis/type, advertising emphasis/weight, and package design, can be both made and carried out within the marketing department. Industrial marketing effectiveness depends to a greater degree on other business functions, especially manufacturing, inventory control, R&D, and engineering, as it is much closer to overall corporate strategy and has a higher degree of *functional interdependence*. Industrial marketing for a marketing-oriented industrial company, often more customer oriented and knowledgeable about its customers and their needs than a typical marketing-oriented consumer company, calls for, and creates conditions leading towards a more complete application of the marketing concern than consumer marketing.

2. Product complexity: Industrial firms are normally excessively more engineering, manufacturing, technical and product oriented than their consumer market counterparts because of the greater technical complexities of the product orientation problem to be solved, as well as the required greater supplier flexibility.
3. Buyer-seller interdependence: A significant negotiation process is often the most important regulator of the buyer-seller relationship in industrial marketing because of the crucial high degree of interdependence between buyer and seller for continued assured supply of, for example, raw materials, components, subassemblies, maintenance and repair parts, including skilled repair service for capital equipment, efficient order handling, delivery, and usually, extensions of credit terms. In consumer marketing this is done at "arm's length".
4. Buying process complexity: For the industrial marketing firm greater complexity exist in the organisational buying process (comparing like types of buying decisions: straight rebuy or routine purchase, modified rebuy, and new rebuy: the larger number of individuals involved, the influence of the formal organisation, the complex technical and economic factors to be considered, the firms operational environment, and the frequently large sums of money involved in the transaction). Because of the characteristically longer time lags between the application of marketing efforts and the resulting buyer response, the problem of relating buying response to marketing strategy is more complex than in consumer markets. In industrial markets, demand for industrial products consists of "derived demand" which result in fewer sales transactions for much larger dollar amounts. The customers are often concentrated geographically and there is normally only a small number of potential customers with tremendous ranges in customer size.

The measurement problem in industrial marketing is fundamentally more difficult than in consumer marketing and remains one of the most significant challenges in developing rigorous analytical approaches. Consumer markets have large data bases describing consumers, households, and purchases, as well as consumer panels, retail store audit data, shared syndicate services, consumer surveys, sophisticated observational and experimental techniques for sample selecting and gathering data. In industrial marketing specifying the variables is difficult because of:

1. The complexity of the buying process;
2. The measuring problem has several dimensions reflecting the nature of the buying process;
3. The problem of multiple buying influences, including many individuals engaged in the decision process; these buying influences uses distinct and different buying criteria and relies on different sources of information about products and vendors;
4. These influences interact with and influence one another as part of the organisational buying process so the formal and informal patterns of interaction among them must be analysed. Results at one point in time may produce results which cannot be duplicated at a different point;
5. Because of buyer-seller interdependencies, any information provided to the seller by the buyer has the potential to be used in bargaining and negotiation. Buyers may be reluctant to provide information because of the issue of competitive secrecy, as a salesman may, unwittingly or otherwise, divulge sensitive customer information to competitors. Aggregate data base, such as industry trade associations or media-sponsored studies are distrusted as this data may suffer "doctoring" before they are provided to trade associations so that a company's relative strength within the industry is disguise. When compared to consumer markets, industrial marketing simply does not have the same quality of data, whether it be from primary or secondary sources⁵.

The four key concepts for understanding the nature of industrial market selection and product planning are:

1. The decisions related to the choice of a market or markets to serve are the most important decisions in planning marketing strategy;
2. In developing market strategy, planned and designed product options to serve customers must be evaluated and the best option selected to serve the needs of a particular market. The form of the product is, therefore, a variable and is not a given;

3. The product is the total package of benefits the customer receives on the purchase thereof (it is what it does, including functional utility, assurance of dependable supply, product service, supplier's reputation as a promotable advantage for the customer to use, and a range of personal and technical relationships between buyer and seller organisations;
4. An important aspect concerning both market selection and pricing is the fact that the product, in this broad sense, will have different meaning to different customers⁶.

The key factors in implementing the marketing concept in industrial marketing are:

1. Improving profit performance as a goal. In comparison with consumer marketing, sales volume and market share, as such, is not as important;
2. Identifying customer needs. This requires understanding the economics of the consumer's operation, the structure of the industry it belongs to, and how it competes therein;
3. Selecting customer groups for emphasis: the classic problem of market segmentation which takes on special meaning in the industrial market because of the high degree of buyer-seller interdependence after the sale;
4. The design product/service package since the product must often be 'invented' when there is seldom a standard product, and the accompanying bundle of services is often more important than the product itself⁷.

'A failure to recognise these differences is one reason why management scientists in marketing have had trouble applying models and measurement techniques, developed in consumer marketing, to the problem of industrial marketing⁸.

Sachi⁹ carried out a study on 261 manufacturing and 14 non manufacturing categories to determine if

business and consumer markets differ with respect to structure characteristics comprising seller concentration, technical barriers to entry, product differentiation, buyer and supply structure, growth, and capital intensity. The 'results suggest that the buyer structure and product differentiation variables are the most powerful discriminators between business and consumer markets. Of less importance are seller concentration, minimum efficient scale, and supplier dispersion; while product R&D, supplier concentration, capital intensity, cost advantage, and growth are of little or no importance . . . Thus business markets vis à vis consumer markets are characterised by more concentrated buyers dispersed among a greater number of industries and lower distribution and advertising expenses¹⁰.

THE ORGANISATIONAL BUYING PROCESS

No two companies will follow exactly the same procedures in even highly similar purchase decisions nor will two buying decisions in any given company likely to be alike¹¹. 'The organisational buying process is a form of problem solving, and the *buying situation* is created when someone in the organisation perceives a problem – a discrepancy between a desired outcome and the present situation – that can be potentially solved through some buying action'¹².

Group joint decision making of the industrial purchasing decision includes:

1. The initiation of the decision to buy as the buying situation is defined and identified, being usually initiated by a continued need of supply (typically from production personnel by way of a requisition slip) or is the outcome of long-range planning (by the planning unit's formal recommendation to an ad hoc buying committee);
2. The information-gathering and the evoked set of alternatives is a function relegated to the purchasing agent, with repetitive decision for standard items, requiring little information gathering while capital expenditure items and entirely new purchase experiences requiring considerable active search. The feasible set of alternatives (product feasibility) is shaped by environmental constraints (e.g. physical, technological, economic and social) and organisational requirements (e.g. technical and financial)¹³;
3. The Evaluation of alternative suppliers (by assimilation and deliberations of information), and resolving conflict among the parties (with different educational backgrounds, buying motives, expectations, goals, perceptions and company reward policy for specialised skills and viewpoints);
4. The joint decision¹⁴.

Choffray and Lilien developed an industrial market response model involving the different stages of the purchase decision process designed for new industrial product entry into existing markets, adequate for product updating and re-positioning decisions from the perspective of key inputs for design of industrial products and the development of communication strategies and programmes. They address issues such as: differences in potential customers needs requirement and specification dimensions; differences in the composition of their buying centres (different number of individuals, their different specific responsibilities and the different ways of interacting); information determining specific product features to be incorporated; evaluation of organisational need-specification dimensions; assessment of design trade-offs in terms of market potential; pricing decisions; optimisation of industrial product features based on data pertaining to R&D, production and distribution costs. The model identifies which categories the decision players will most likely be involved in the buying decision process, providing an accurate description of structure of the purchasing decision process, the number of decision phases in each category of participant, their frequency of involvement and the number of participating categories in each stage.

Their model is subdivided into 4 sub-models, which are:

1. Awareness model: The communication consumption and awareness for each participant category linked to marketing support such as advertising, personal selling, technical service and spending rates;
2. Acceptance model: The screening out of alternatives set by environmental constraints, organisational requirements and product selection characteristics and criteria (e.g. price limits, reliability, payback period etc.);
3. Individual models: The decision participants perceptions, evaluation criteria and preferences related to the evaluation of product design characteristics;
4. Group decision model: The microsegment characteristics relating group choice to the preferences of the categories of individuals involved taking the interaction process into account¹⁵.

THE ORGANISATIONAL BUYING BEHAVIOUR

Organisational buying behaviour is a complex *process* (rather than a single, instantaneous set) and involves many persons in interaction with other people, multiple goals, and potentially conflicting decision criteria within the context of a formal organisation, taking place over an extended period of time, requiring information from many sources, and encompassing many interorganisational relationships¹⁶. The organisational buying behaviour is determined by four classes of variables (individuals, organisation, social or group, and environment), and is affected by three distinct aspects, these are:

1. The psychological world of the individuals involved in the buying decision;
2. The conditions which precipitate joint decision making;
3. The process of joint decision making, the conflicts, and the resolution thereof by means of an array of tactics¹⁷.

I. THE INDIVIDUAL

'In the final analysis, all the organisational buying behaviour is individual behaviour since, only the individual as an individual or a member of a group can define and analyse buying situations, decide, and act. In this behaviour, the individual is motivated by a complex combination of personal and organisational objectives, constrained by policies and information filtered through the formal organisation, and influenced by other members of the buying centre. The individual is at the centre of the buying process, operating within the buying of the broader environment. It is the specific individual who is the target for the marketing effort, not the abstract organisation¹⁸. Over and above the purchasing agent, individuals most often involved in industrial buying situations tend to come from those departments most often involved in the different phases of the purchasing decisions, involving considerable interaction among them and often resulting in joint decision making. These are: engineers (quality control), production or manufacturing managers (users) and others not typically involved (e.g. the president or CEO).

Consumer and social psychology reveal that different factors affect the individual expectations and decision making process, such as:

1. Background of the individuals: The first factor, the background and task orientation of each of the individuals (purchasing agent, engineers, and plant managers) involved in the buying process differ due to their different educational backgrounds, generating substantially different professional goals and values, with the resultant different task expectations (educational and task differences are comparable to demographics in consumer behaviour) generating conflicting perceptions of one another's role in the organisation. Expectations pertain to the *perceived* potential of alternative suppliers and brands to satisfy a number of both explicit objectives (relative importance, product quality, delivery time, quantity of supply, after-sale service and price) and implicit objectives (reputation, size, location and reciprocity supplier relationships, personality, technical expertise, salesmanship and life style of sales representatives). Because each different class of individual involved consider different salient criteria in judging the supplier or the brand, expectations will differ amongst them (purchasing agents emphasise maximum advantage and economy for price, shipping and forwarding; engineers emphasise product quality excellence, standardisation, and engineering pre-testing); and product users such as production managers are more

interested in prompt delivery, proper installation and efficient serviceability)¹⁹.

The Cultural, organisational, and social factors and personal life styles (and professional life style differences such as, interests, activities and values) of the individual decision makers influence and play an important role in developing differential expectations, being reflected in the individuals previous experiences, awareness of, attitudes and preferences towards particular vendors and products, as well as his particular buying decision models. The organisational buyer is a constrained decision maker since his personality, perceived role set, motivation, cognition, and learning are the basic psychological processes which affect his response to the buying situation, and marketing stimuli provided by potential vendors. The basic unique individual mental process of motivation, cognition, and learning as well as buyer's personality, perceived role set, preference structure, and decision model are influenced by the context of interpersonal and organisational influences within which the individual is embedded. They are dependent upon others for their needs satisfaction since other people define their role expectations, determine their performance payoffs, influence the goal definitions to be pursued, and provide information with which the individual attempts to evaluate both decision risk and outcome²⁰.

2. Information sources and active search: 'The second and third factors in creating differential expectations are the sources and type of information each of the decision makers is exposed to and his participation in the active search. Purchasing agents receive disproportionately greater exposure to commercial sources, and the information is often partial and biased towards the supplier or brand. In some companies, it is even common practice to discourage sales representatives from talking to the engineering or production personnel. The engineering and production personnel, therefore, typically have less information and what they have is obtained primarily from professional meetings, trade reports, and even word-of-mouth. In addition, the active search for information is often relegated to the purchasing agents because it is presumed to be his job responsibility. It is not too difficult to assess differences among the three types of individuals in their exposure to various sources and types of information by standard survey research methods²¹.
3. Perceptual distortion: Since there are substantial differences in the goals and values of purchasing agents, engineers, and production personnel, these individuals make different interpretations of the same information as they strives to make the objective information consistent with their prior knowledge and expectations by selective systematic distortion and retention of available information. This is the fourth

factor in creating differential expectations²².

4. Satisfaction with past purchases: Due to the fact that purchasing agents, engineers, and production personnel have different goals and criteria, it is often impossible for a supplier or brand to provide equal satisfaction to each individuals involved in the purchasing process. Also, each individual is rewarded by the organisation for excellent performance in his specified skills, so the purchasing agent is rewarded for economy, the engineer for quality control, and the production manager for efficient scheduling. This often results in different levels of satisfaction for each of the parties, resulting also in different levels of satisfaction with past buying experiences with a supplier or brand. This is the fifth factor in creating differential expectations²³.

The buyer motivations has both task (task related motives relate to the specific buying problem e.g. right quantity, quality, price, time and source). Nontask dimensions fall into two categories:

1. Achievement motives which are related to personal advancement and recognition;
2. Risk reduction motives of uncertainty providing a critical link between the individual and the organisational decision making-process, a key component of the behavioural theory of the firm). Non task motives (e.g. desire for promotion) may influence task performance since there is often a direct link between task and non task relationships. These do not necessarily conflict since the pursuit of nontask objectives can enhance the achievement of task objectives, although nontask related motives may rarely be more important, where purely personal considerations and criteria, such as dealing with a particular salesman, a special favour or gift from the supplier, may influence the individuals buying decision between two or more potential salesmen offering the same or comparable quality, service and price²⁴.

FACTORS DETERMINING JOINT OR AUTONOMOUS DECISIONS

Since some purchasing processes of industrial buying decisions are delegated to one party, not necessarily the purchasing agent, instead of being made jointly by the various individuals involved, it is important for the supplier to know whether a buying decision is joint or autonomous, and if the latter, to whom was it delegated to. There are six primary factors which determine if a buying decision will be joint or autonomous, with three of these factors being related to the characteristics of the product or service, while the remaining three are related to the characteristics of the buyer company.

The three product-specific variable are:

1. The first, *perceived risk* in a buying decisions refers to both the magnitude of adverse consequences felt by the decision maker if he makes the wrong decision choice, and the uncertainty under which the decision is made. The greater the uncertainty in a buying situation, the greater the perceived risk and the more likely it is that the purchase will be decided jointly by all parties concerned²⁵. In a decision situation, the organisational buyer's perception of risk is a function of uncertainty.

There are three types of uncertainty:

- a) Uncertainty pertaining to available alternatives;
- b) Uncertainty concerning the outcomes associated with different alternatives;
- c) Uncertainty about the way relevant other persons will react to various outcomes due to, for example, possible incomplete information about their goals or evaluation and rewards of an outcome.

'Information gathering is the most obvious criteria for reducing uncertainty, while decision avoidance and lowering of goals are means of reducing the value of outcomes. A preference for the status quo is perhaps the most common mode of risk reduction, since it removes uncertainty and minimises the possibility of negative outcomes. This is one explanation for the source loyalty found in organisational buying and is consistent with the "satisfying" postulate of the behavioural theory of the firm'²⁶.

2. The second product-specific variable is the type of purchase. On the one hand, if the purchase is a first-time purchase or a once-in a lifetime capital expenditure, greater joint decision making is likely. Conversely, if it is repetitive, routine or is limited to maintenance products or services, the buying decision will likely to be delegated to one party.
3. The third factor is time pressure. Delegation to one party rather than joint decision is likely if the buying decision has to be made under great deal of time pressure or on an emergency basis²⁷.

The three organisation-specific factors are company orientation, company size, and degree of centralisation. If the company is technology oriented, it is likely to be dominated by the engineering people and the buying people and the buying decisions will, in essence, be made by them. Similarly, if the company is production oriented, the buying group decisions will be made by the production personnel. Second, if the company is a large corporation, decision making will tend to be joint. Finally, the greater the degree of centralisation, the less likely it is that the decisions will be joint. Thus, a privately-owned small company with technology or production orientation will tend towards autonomous decision making and large-scale public corporations with considerable decentralisation will tend to have greater joint decision making²⁸.

II. THE ORGANISATION

Organisational buying behaviour is motivated and shaped by organisational goals which are constrained by organisational factors such as the firm's technological, financial and human resources which in turn induce individuals to act differently than if they were either alone or working at another firm. Organisations are composed of four sets of interacting variables which define the information, expectations, goals, attitudes and assumptions of individuals in decision making.

These variables are:

1. *Tasks*: The work to be performed in accomplishing the objectives of the organisation;
2. *Technology*: The problem-solving inventions used by the firm including plant and equipment and programmes for organising and managing the work;
3. *Structure*: The subsystems of communication, authority, status, rewards, and work flow;
4. *People*: The actors in the system²⁹.

1. Buying tasks have four dimensions:

- a) Organisational purpose: e.g. buying is to facilitate consumption, production or resale of goods;
- b) Nature of demand: e.g. direct demand, derived demand, demand pattern characteristics such as cyclic or seasonal fluctuations;
- c) Extent of programming and routinisation of the five purchasing decision stages;
- d) Degree of decentralisation and buying authority delegation.

2. Technology influences what is bought and the nature of the organisational process, defining both the organisation's plant, equipment and the management and information systems of the buying decision process with all placing significant constraints upon alternative buying actions available to the organisation³⁰.

3. The formal organisational structure consists of five subsystems:
 - a) The communication system achieves four crucial functions:
 - i) Information;
 - ii) Command and instruction;
 - iii) Influence and persuasion; and,
 - iv) Integration;

 - b) The authority system interacts with the communication structure to determine the degree of decentralisation in the decision process and defines the power of organisational individuals to judge, command, act and influence the behaviour of others with respect to both task and nontask dimensions, determining who sets goals, determines rewards and evaluates corporate performance;

 - c) The status system is defines the formal hierarchy structure of the organisational chart and affects the informal structure, defining each individual's position through job descriptions, responsibility and authority;

 - d) The rewards system, intimately related to the authority system, determines responsibilities, being the mechanism for relating organisational task accomplishments to individual nontask objectives;

 - e) The workflow system of paperwork drawn up to handle task-related procedures. All these subsystems include task and nontask dimensions.³¹

'So-called "contingency" theorists (e.g. Duncan 1972; Galbraith 1973) have shown that the more uncertain a department's environment is perceived by its members, the more likely it is that the department will be structured in a more flexible, less bureaucratic way in order to permit the free flow of generally novel and nonroutine information regarding the environment. Static and simple environments do not require a continuous gathering and processing of such information, and therefore, the structure of the departments facing them will, according to the contingency theorists, be more rigid and bureaucratic³².

Deep structures of power in the organisation are located in recurring patterns of actions which establish the "rules of the game", define who the organisational members are, what roles they play and how they "fit in" the formal and informal hierarchies, reflecting interaction patterns and sets of relationships which have been nurtured and negotiated over time. Structure thus emerges over time from recurring informal interaction patterns of behaviour and becomes embedded over time³³.

III. THE BUYING CENTRE

The buying centre is a subset of the organisational actors and comprises five roles:

1. The users of purchased products and services;
2. The influencers, directly or indirectly influence the provision of information and the evaluation criteria;
3. The deciders have the authority to make the final decision, being in most cases the purchasing agent and therefore, the target of influence attempts by other members;
4. The buyers have formal supplier contacting authority and responsibility;
5. The gatekeepers control the information and materials flow into the buying centre. Several individuals may have the same role, or one individual may occupy more than one role.

The role set of an individual's role performance comprises of three aspects:

- a) Role expectations (the prescriptions and prohibitions for the behaviour of the person occupying the role and for the behaviour of other persons towards a given role);
- b) Role behaviour (the actual behaviour in the role);
- c) Role relationships (the multiple and reciprocal relationships of the group)³⁴.

'Members of the buying centre are motivated by a complex interaction of individual and organisational goals. Their relationships with one another involve all the complexities of interpersonal interactions'³⁵. The nature of the group involves activities, interactions and sentiments with task and nontask dimensions and is influenced by the individual member's goals and personal characteristics, the nature of the leadership within the group,

the structure of the group, the task performed by the group, as well as external (organisational and environmental) influences. The group problem solving involves both buying action task-oriented problem solving and group members' nontask personal satisfaction and growth³⁶. The resultant interdepartmental conflict is not necessarily bad, however, the type and manner in which the conflict is resolved is important.

Conflict that is resolved in a rational manner will result in rational decision making, whereas, if the conflict degenerates, the organisation will suffer from inefficiency due to irrational criteria and tactics of lateral relationship which are put into practice to the detriment of the organisation.

There are four different ways of conflict resolution. The first two are rational and healthy, whereas the remaining two are nonrational and inefficient:

1. Problem-solving: This arises over inter-party disagreement on expectations about suppliers and brands and may be resolved by extended active search with the problem presented and solved in a problem-solving fashion;
2. Persuasion: This arises due to disagreement on specific supplier evaluation criteria although there is consensus on buying goals and objectives and may be solved by persuasion of the dissenting member to change his criteria in order to attain overall corporate objectives;
3. Bargaining: This arises due to fundamental differences in buying goals or objectives and is resolved through concession using the concept of distributive justice (tit for tat);
4. Politicking: This arises due to differences in style of decision making, bordering on mutual personality dislikes, which results in politicking and back-stabbing tactics³⁷.

Purchasing agents may use five tactics in their "lateral relationships" in order to enhance their power amongst individuals of approximately equal status within the organisational hierarchy. These include:

1. *Rule-oriented* tactics (e.g., appealing to the boss for the enforcement of organisational policy; appealing to rules and formal statements of authority);
2. *Rule-evading* tactics (e.g., compliance with requests from users that violate organisational policies);
3. *Personal-political* tactics (e.g., reliance on formal relationships and friendships to get decisions made and an exchange of favours with other members of the buying centre);
4. *Educational* tactics (e.g. persuading other members of the organisation to think in purchasing terms and to recognise the importance and potential contributions of the purchasing function);
5. *Organisational-interactional* tactics (e.g., change the formal organisational structure and the pattern of reporting relationships and information flows)³⁸.

The bargaining strategies and activities which purchasing agents often engaged in, so as to become more influential (especially in the early stages of the buying process) define the nature and the structure of the social relationship situation amongst members of equal organisational status.

'The organisational buying system includes organisational members drawn from diverse functional areas and representing different levels in the organisational hierarchy who participate in one or more of the purchasing-related flows. The members of this buying system are connected by a workflow and communication network that reflects both prescribed (formal) and emergent (informal) properties³⁹. The buying centre with its group dyads (dyadic are two person interactions) and social dynamics exists as a communication network that derives its configuration and operation from, not necessarily from the formal organisation, but rather from the regularised patterns of communication, reflecting the individuals involved, as well as their relationships. Because of the fact that a small elite group of individuals occupy the highest hierarchical positions, are most influential since they have enormous decision-making authority, tending to dominate both technical and

administrative decisions, an individual may increase others' dependence on himself, obtain valuable information and resources by having access to the dominant reference group, and through this privileged mediating position may control the communication flow.

Available literature on buying centre communications (Robinson et al. 1967; Speakman 1978; and Johnston and Bonoma 1981) suggest that:

1. Higher purchase importance, complexity, and novelty should lead to more involved vertical and horizontal decision making communication nets that are more connected and extensive in their composition;
2. Local variables, pertaining to the purchase situation, for example, should have more influence on buying centre communications than structural aspects of firms;
3. On the one hand, product and service purchases should differ reliably on a number of structural and interactive dimensions, however, services should probably not present any radically different buying centre dynamics from those for equipment purchases⁴⁰.

Johnston and Bonoma hypothesised that five dimensions of the buying centre's communication network could be specified and measured, namely:

1. Vertical involvement characterised by the number of levels of the organisation;
2. Lateral involvement characterised by the number of separate departments, divisions or firm functional areas involved in the purchasing decision;
3. Extensivity characterised by the total number of individuals involved;
4. Connectedness of those involved characterised by the degree to which the members of the buying centre are linked with each other by direct communications concerning the purchase;

5. Centrality of the purchasing manager characterised by the sum of the purchasing managers purchase communications flow, that is, both sent and received, weighted by the total number of individuals in the centre.

The variables utilised to analyse the organisation or buying unit were:

1. Centralisation: The degree of concentration of authority, responsibility and power;
2. Formalisation: The extent to which activities are formally prescribed by rules, policies, and procedures;
3. Complexity: The degree of compartmentalisation and functional specialisation;
4. Size: Measures such as revenues and employees.

The number of participants in the buying centre communication network was significantly affected by both organisational structural variables and purchase situation attributes, although local variables of purchase situation attributes were stronger predictors of buying centre communications than were organisational structure variables. The degree of organisational formalization and the complexity of the organisation had a positive effect on the dimension of the buying centre. The more formalised the organisation the greater the extensivity of the buying centre. The purchasing situation affected positively lateral involvement (impressions of importance and novelty of the purchase situation, new task, modified rebuy, straight rebuy), and vertical involvement (purchase class, importance and complexity of the situation), although it did not affect connectedness. The organisational structure affected positively lateral involvement (formalisation increased lateral involvement) and connectedness (the greater the level of written communication in the form of the purchase requisition, the less verbal contact took place). Therefore, 'it was the subjective variables of impression of purchase novelty, complexity, and especially importance which were the most powerful determinants of vertical and lateral involvement, extensivity, and connectedness'⁴¹. The purchase for industrial services revealed to involve fewer vertical layers of organisational authority and fewer managers overall than purchases for industrial capital goods.

Organisational players are centrally located in the buying system, acting as conduits in discrete functional contributions, gaining power as from either being functionally indispensable or due to attaining greater control and access to resources. Situational contingencies or personal attributes, such as personality or an actor's skill in using influence, will shape the influence of a member of the buying system⁴². 'The complex nature of inter-organisational influence is revealed in the interactions, tensions, and conflicts among structural sources of influence originating from the formal structure (e.g. formal rank and departmental membership) and the network structure (e.g. centrality)⁴³. The 'organisational actors derive influence from the structural position they occupy within the buying system. Thus, the structural perspective of influence asserts that it is the position, in addition to the individual, that determines influence⁴⁴. Structural patterns of influence in buying centres remain even after the ad hoc particular decision-making group has dissolved since power exists on the surface (that is, latent influence or perceived ability of buying centre players to affect others or have a say in buying activities' outcome determination) and deep within the organisation's structure (that is, manifest influence). Since power and influence generally are defined as involving a social relationship or some form of interdependence among organisational actors, social network analysis, coupled with a multidisciplinary perspective, holds particular promise in enhancing our understanding of the multiperson nature of the purchasing process⁴⁵.

Ronchetto, Hutt and Reingen analysed a 171-member organisational network to study influence using a framework to explore embedded influence patterns from repeated interactions characterising the ongoing purchase process in the organisational buying system by conceptualising the structure of an organisational buying system of a firm from a social network perspective⁴⁶. They analysed both the buying system work-flow network and the communication network during ongoing buying activities in an electronic firm, instead of using a particular purchasing decision of the buying centre, in addition to the communication and influence flows connecting the respective players in the buying decision process. They focused their research on network structure properties of centrality (the level of involvement in network relations, namely, degree, betweenness, and closeness), distance from organisational boundary and distance from the dominant reference group, with the formal structure being expressed as formal rank and departmental membership. Degree pertains to the number of individuals to whom a certain individual is directly connected to. Betweenness is the extent to which an individual is between pairs of other individuals on the shortest path linking them (that is, the degree to which an individual position dominates other positions being an indicator of the control of the information within the network). Closeness is the summed length of the shortest paths from one individual to all others

within the network, and therefore, the independent access to other persons. 'In other words, the betweenness and closeness dimensions of centrality relate to the acquisition of power . . . The subconcepts of centrality are associated with influence because by 'reducing an individual's reliance on others is analogous to increasing the closeness or access to other network participants. Similarly, increasing the dependence of other network members increases the control exercised by an individual'⁴⁷.

The findings indicate that an organisational actor's influence in the buying system is derived from the formal structural positions as well as the network structures they occupy within the buying system (i.e. influence derived from being in the right place). 'Consistently strong support is obtained for the hypothesis regarding the properties of formal structure, that is: formal rank and departmental membership'⁴⁸. Although the results strongly and consistently support the centrality hypothesis for the properties of network structure, the hypothesis related to distance from the dominant reference group showed less consistent support. 'The results strongly support this hypothesis when influence is measured by the number of nominations as influential in buying related activities, but less support is found when co-worker ratings constitute the measure of influence'⁴⁹. The hypothesis for distance from the organisational boundary was not supported.

The limitations of this research analysis are:

- a) Limitation to generalisability due to being centred on a single buying firm at a particular point in time as oppose to being over time (patterns of influence may endure or shift over time);
- b) Personal characteristics or behavioural strategies which may be shaped by personality and structural factors such as centrality in the workflow, were not measured.

'A rather rigid, highly bureaucratised buying group can be described as highly centralised, by strong rules and procedures and strict division of labour, and with little member participation in decision making. Conversely, less bureaucratic buying groups (i.e. with low levels of centralisation, rules and procedures, division of labour, and a great deal of participation in decision making) are likely to be more flexible and, thus, more open to adaptation and change'⁵⁰. The various tasks within buying groups become less routine and less differentiated

(i.e., less division of labour), as the information needs of these groups increase in response to conditions of higher environmental uncertainty. 'The resultant increase in shared purchasing responsibility contributes to a more flexible organisation design, thereby permitting buying group members to react more quickly, and more easily, to the increased contingencies of a more highly uncertain environment. Similarly, greater participation in decision making connotes the emergencies of additional lateral communication networks, replacing the rigid vertical paths of a more bureaucratised buying group. These networks facilitate the acquisition of more extensive and intensive purchase-related information⁵¹. Individual discretion may be limited by the formal hierarchy through supervision (i.e. centralisation) and/or the behaviour of buying group members may be guided by the formalisation of rules and procedures. It is quite conceivable that firms would attempt to routinise much of the behaviour within these groups seeing that the actions of the buying groups are central to the uninterrupted flow of material in the production process. While in response to greater levels of environmental uncertainty, the buying groups seemingly adapted to their structural configuration (i.e., greater participation in decision making and less division of labour), nevertheless, equal consideration is given to retaining a degree of control over individual discretion. 'Thus, a more bureaucratic configuration would tend to enhance co-ordination among the various organisation units and actors⁵². The resultant co-ordination and control improves workflow efficiency. 'Regardless of the level of uncertainty associated with the purchase of a particular commodity, the composite profile of buying group structure tends to reflect a fairly bureaucratic structure . . . the formal organisation's mechanisms of control and co-ordination influence the perceptions of the buying group members with respect to aspects of their informal interactions within the buying groups. However, the greater the uncertainty and the concomitant need for greater information, the more likely it is that role prescriptions will be relaxed and joint participation in decision making will be emphasised⁵³.

Spekman and Stern present both a conceptual and a methodological framework for examining organisational buying behaviour from a multiperson level of analysis by focusing the research on the organisational buying group's adaptive structural configuration during the participation by its members in the procurement decision making process in response to varying levels of environmental uncertainty. Using a sample of 20 firms representing 11 industries Spekman and Stern tested four hypothesis which are summarised as: The lower the level of environmental uncertainty, the more highly centralised the buying groups, the more highly specified the division of labour, the higher the degree of rules and procedures, and the less participation in decision making in their buying groups than in firms operating under conditions of higher environmental uncertainty.

The research results, therefore, showed that the purchasing agent's influence increases as the level of uncertainty increases, becoming more turbulent, unstable, dynamic and complex, and that under those conditions the unique boundary spanning position of the boundary role person who sits in the junction of many communication paths becomes central to a firm's ability to effectively gather, analyse and act on environmental informations, being in addition, able to monitor and control the amount of information received by other members of the group members. The organisational boundary is anchored by those boundary-spanning buying system members who have the ability to cope with environmental uncertainty, occupying positions in the workflow network, and being connected directly to the external environment. These individuals act as gatekeepers, establishing a base of influence since power is derived partly from resource dependence and thus are more influential than persons who do not have direct links with the environment. This influence is attributed to the centrality of the position, and the ability to cope with or absorb the uncertainty, while the power resource derived from the increased data gathering, information and the contacts may enhance that potential influence. No significant relationship between either centralisation or rules and procedure and environmental uncertainty was observed, although a strong relationship between uncertainty and participation and a weak relationship between uncertainty and division of labour was found. 'The constructs depicting division of labour and participation in decision making appear to be more amiable to measures of informal structure and, in fact, seem to be more descriptive of the information processing potential of buying groups.

Alvin, Silk and Kalwani examined empirical research on the psychometric properties of measure (participation and influence) used in surveys to identify the composition and structure of organisational buying groups by focusing their attention on the reliability of reports on buying involvement as reflected by the observed level of intra-organisational agreement for such measures. More specifically, the level or degree of consensus pertaining to the purchase influence between pairs of informants from the same organisation with respect to organisational purchasing decisions. The selection of participants in these studies involved the sociometric informant technique used by sociologists and were either based on the comparisons of respondents' self reports and informants' reports of the same behaviour, or the comparison between two or more different informants' reports of a third parties behaviour. Other aspects compared between these research studies were the sample size (in terms of number of buying group, number of organisations and number of respondents), and number of informants per buying group and number of roles rated per informant. Other methodological considerations which the study compared were:

1. The types of decisions (same specific product or different product);
2. Measurement instruments ("specific" or "global", pertaining to whether details involved particular phases or the final phase outcome of the decision process);
3. Response scales in the form of dichotomous judgement (open ended questions or "involved or not involved?" or "who did what?" was most utilised), rating on a pre-specified scale, or rank ordering by persons.

The results showed that:

1. 'Respondents tend to attribute more participation and influence to themselves and/or the positions they hold than other informants attribute to them and/or the same position'⁵⁴. This is as a consequence of the different sources of bias, where with respect to the former (self-reports) may inflate the respondents' role, whereas for the latter the position bias results from limited or selective access on information and opportunities to observe the buying process analysed;
2. 'Between-informants consensus about participation is high for measures pertaining to specific stages in the purchase decision process which require dichotomous judgements versus non-participation'⁵⁵;
3. 'Consensus of influence, whether self-informant or between informant, is low for global measures involving relative judgements in the form of rankings or ratings'⁵⁶.

Alvin, Silk and Kalwani carried out a study to determine whether specific assessments of influence obtained from informants can be shown to have a satisfactory level on intra-organisational consensus and ability to discriminate among stages in the decision process. They found some modest evidence of role differentiation but little indication of discrimination among stages in the decision process: The influence attributed to a role at some particular decision stage tends to be essentially independent of assessments of other roles for the same

stage. However, how influential a role was judged to be at one stage is generally positively related to the judgement made of that role for other stages⁵⁷.

IV. THE ENVIRONMENT

Environmental influences, which influence the buying process by providing information, constraints and opportunities, are subtle, pervasive, difficult to identify and to measure. These are namely: physical (geographic, climate, or ecological), technological, economic, political, legal, and cultural factors, and are exerted through a variety of institutions such as business firms (suppliers, competitors, and customers), governments, trade unions, political parties, educational and medical institutions, as well as trade associations, and professional groups. The nature of these institutional forms are critical to the planning of multinational marketing since these vary significantly from one country to another.

Environmental influences have their impact in four distinct ways:

1. They define the availability of goods and services (reflecting influences of physical, technological, and economic factors);
2. They define general business conditions (the rate of economic growth, the level of national income, interest rates, and unemployment facing the buying organisation, since economic and political forces are the dominant influences on general business conditions);
3. Environmental factors determine the values and norms (dominant sources of values and norms are: cultural, social, legal, and political forces) which may be codified into laws, or may be implicit, guiding interorganisational and interpersonal relationships between buyers, sellers, competitors, buying organisations and other institutions, such as governments and trade associations;
4. Environmental forces influence the information flows (flow of marketing communications from potential suppliers, through both the mass media and other personal and impersonal channels are the most important) into the buying organisation, reflecting a variety of physical, technological, economic, and cultural factors⁵⁸.

Similar to consumer behaviour, the industrial buyer often decides on factors other than rational or realistic criteria of systematic decision making process, with some buying decisions being based on ad hoc situational factors, such as:

- a) Temporary economic conditions (price controls, recession, foreign trade, internal strikes, walkouts, machine breakdowns);
- b) Other organisational changes (merger or acquisition);
- c) Ad hoc changes in the market place (promotional efforts and new product introduction by suppliers)⁵⁹.

THE BUYING MODELS

The ideal buying 'model of the organisational buying process would include individual, group, organisational, and environmental variables and both task and nontask considerations'⁶⁰. "Nontask" models emphasise the purchasing agent's interest in obtaining personal favours, attempting to expand their influence, enhance self-ego, reduce perceived risk, including the buyer-salesman interpersonal interaction and the individuals' multiple relationships over time with those involved in the buying process⁶¹. The first six models (below) are task oriented models, and concentrate on the economic aspects of organisational buying behaviour, searches for least cost, as well as recognises purchase price and related costs, while these implicitly assume that the interactions among the members, the characteristics of the decision maker or the nature of the formal organisation have little relevance. Task versus non task models (1 – 14 below) concentrate primarily on one set of variables, either task or nontask, to the exclusion of others, losing sight that work is being performed in pursuit of the buying organisation's objectives. 'Complex models (15 – 18 below) consider more than one variable or set of variables as factors influencing organisational buying responses to marketing effort'⁶².

1. Minimum price model: The simplest of all, attempts to explain behaviour of firms, rather than individuals by maximising profits in obtaining all the factors of production at the lowest price, achieving the most efficient methods of operation while assuming near perfect information, brands are essentially undifferentiated, and competing brands are reasonably close substitutes.
2. Lowest total cost model: Assumes a goal of profit maximisation and a very well informed buyer and is essentially an elaboration of the minimum cost model, adjusting initial purchasing price to reflect additional costs of the product, such as, problems with product quality, and opportunity costs.
3. The rational buyer model: Sees the organisational buying process as a rational economic choice.
4. Materials management model: In this normative and non descriptive model the material management concept assigns to the procurement manager the responsibility, such as for example, the determination of quality and quantity, of all activities concerning the materials flow management.
5. Reciprocal buying model: Assumes reciprocity where the practice of buying from suppliers is made on the

condition that they will in turn purchase the companies products. This practice of reciprocity has been under scrutiny in recent years as it is regarded as a practice which restricts competition and is thus a violation of anti-trust laws.

6. Constrained model: Searches for satisfactory (satisficing) rather than an optimum solution and concentrates on the fact that supplier selection decisions involve choosing from a limited set of potential vendors, yet it recognises that much organisational buying is routine, purchasing managers are busy people and their relationship with vendors is self perpetuating and easily maintained.
7. Nontask-oriented models: This model introduces the human being into the organisational buying behaviour, as well as noneconomic or nonrational factors.
8. Self-aggrandisement model: Emphasises the desire of the buyer to use his organisational hierarchy position in order to increase his income by obtaining favours and gifts from salesman, ignoring the risk of many taking offence as this may offend sensitivities, as well as it is only valid for situations of little differentiation in product offerings.
9. Ego-enhancement model: Attempts to incorporate "emotional" factors into the minimum price or lowest total costs model by recognising that the organisational buyer is an individual with the self concept and the salesman is the source of the ego-gratification of the buyer.
10. Perceived risk model: This nontask oriented model emphasises buyer's uncertainty during the alternative course evaluation, while it recognises buyer's self-confidence and the perceived credibility of the communication source effect.
11. Dyadic interaction model: The dyadic model emphasises the personal relationship between the buyer and the seller, and the influence of role expectations.
12. Lateral relations model: Considers interrelations among members of the buying group (the purchasing agent and other individuals of similar status and rank). It concentrates on the conflicts and tactics used by the purchasing agent to enhance his power and influence within the organisation.

13. Buying influence model: Recognises that there are several individuals and several role sets involved in the buying centre of an organisation, recognising also the complexity of organisational buying decisions as well as the purchasing agent's limited authority and responsibility.
14. Diffusion process model: Includes factors other than the purchasing agent and views the firm as being located in a social system where certain characteristics of the firm exist which may determine the timing of new product release in the market (too early/too late).
15. Decision process model: This complex, descriptive, but low predictive model, incorporates task and nontask variables, the individual, social, organisational, and environmental factors and sees the decision making as a five stage process, emphasising the time dimensions:
- a) Problem recognition;
 - b) Identification of alternatives;
 - c) Evaluation of alternatives;
 - d) Selecting a course of action;
 - e) Implementation.
16. Compact (Competence-activity) model: It is based on three major dimensions:
- a) The activities of industrial purchasing decisions, which include awareness, acquisition, goalseeking, harmonisation, and commitment to product and/or supplier;
 - b) The five levels of organisational scope of planning and decision making, emphasising each individual with its own role;
 - c) The five levels of individual motivational orientation or competence (e.g. physical activity, adaptive behaviour, instrumental performance, system integration, values integration).

17. Buygrid model: An eight stage model distinguishing for the three classes of buying situations (new task, modified rebuy, or straight rebuy) with the virtue of completeness, in the sense that it incorporates individual, social, organisational and environmental factors, but with the weakness of obscuring nontask variables (status drives and role set). It is virtually devoid of predictive ability, offers little insight into the complex task and nontask interrelationships and does not permit inferences on behavioural cause-and-effect relationship.

18. Simulation models: This is a powerful tool, holding promise but is no better than its underlying behavioural model on which it is based, permitting, however, an analysis of the impact of changing parameter values and other variables over time and tracing consequences of change.

IMPLICATIONS FOR MARKETING MANAGEMENT:

Different segments of the market confront different information requirements, employ different buying system structures, and require different marketing strategies, therefore, the industrial marketer needs to identify the kinds of information needed by various purchasing decision makers, the criteria that they will use to make these decisions, those key factors influencing response to marketing effort, and then specify the type and targets for marketing effort. In order for the marketer to appraise marketing opportunities, develop a base for market segmentation, special selling strategies, as well as an account strategy for the organisational customer, he needs to examine selected dimensions of:

1. The organisational buyer's psychological characteristics and especially his predispositions, preference structure, and decision model as the basis for marketing strategy decisions;
2. The formal structure of the organisation, specifically the decision maker's level in the internal status hierarchy (including each member of the buying centre), his responsibility, authority, his departmental membership, the factors that shape the structure of a buying system in a firm;
3. The *commands and instructions* (mostly task-related) flowing through the hierarchy and defining the discretion and latitude of individuals in the buying process;
4. The embedded patterns of *influence and persuasion* (heavily nontask in nature) defining the nature of interpersonal interactions within the buying centre (in order to be better equipped to develop more responsible relationship-management strategies);
5. The degree of lateral involvement and vertical involvement in purchasing decisions. This indicates to the industrial marketer just how many levels of management hierarchy are involved in the decision making process, the potential for diversity of opinion and the possibility for influencing the decision through a number of functional areas within the firm, (required by the marketer in order to plan a successful communications strategy);
6. Formal and social reward structure of the organisation as it affects and is perceived by the members of the buying centre (in order to predict their response to marketing effort);

7. Organisational actors who are:
 - a) Close to the organisational boundary;
 - b) Central to the work flow;
 - c) Active in communication across departmental units;
 - d) Linked directly to senior managers;
8. Buying process, e.g. the work flow of the paperwork reflects the composition, the authority and communication subsystems of the buying system of the organisational structure;
9. The communication system in industrial organisations *informing* the buying centre about buying problems, the stream of information and network flows that characterise ongoing purchasing processes and the information-processing requirements shaped by the nature of the environment, task characteristics, and task and nontask interdependencies;
10. The involvement and interaction of organisational members in the buying decision process, information transmission and processing in the buying centre, and the importance of purchasing management in the buying centre;
11. The evaluation criteria (both task and nontask related), and alternative sources of supply;
12. Knowledge of a buying group's decision making behaviour (useful in the development microsegmentation strategies), the composition of the buying centre, the locus of buying responsibility, the structure of roles and authority within the buying centre (in order to develop communications programmes which address the joint decision making properties and differential information requirements of the various buying group members);
13. The organisational purpose, the technology, the nature of the demand, the extent of routinisation of the decision process and the degree of decentralisation influencing the organisational buying process. Marketing strategies must be adjusted according to the different number of members of the buying

centre, the different decision criteria employed, and the different information sources that are relevant at each of the five stages of the decision process;

14. Each set of environmental factors, such as for example:

- a) Economic factors reflected in general business conditions: decision to build/reduce inventories in the face of market price fluctuations;
- b) Strategic decisions concerning product policy and promotion due to impacts of technology change;
- c) Analysis of institutional forms for multinational companies taking consideration of government policies and trade union influences) Environmental factors are important determinants of organisational buying behaviour, but may be so basic and pervasive that they easily may be overlooked in analysing the market.

The examination of the above issues enables the marketer to develop and evaluate a differentiated communication strategy, predict the structure of the decision making process for a specific industrial company while taking external characteristics into account, as well as select the appropriate communication vehicles in order to target and concentrate the communication effort on the key categories of individuals whom are most influential in the microsegments, while eliminating those less often involved than would have been expected.

The greater use of a number of different communication vehicles (e.g. manufacturer-generated information at other than the earliest stages of the decision process, personal and impersonal communication vehicles, such as industrial advertising, direct mail, telephone sales, etc.) to supplement the traditional reliance on the industrial salesperson, directed at the experts, opinion leaders, users, gatekeepers and especially at the deciders, can result in heightened synergy and co-ordination among the various elements of a firm's promotional programme⁶³.

¹ Webster and Wind 1972: 13.

² Sashi 1990: 71.

³ Sashi 1990: 69-84.

⁴ Webster Jr. 1978: 22-23.

⁵ Webster Jr. 1978: 24-25.

⁶ Webster Jr. 1978: 23.

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- ⁷ Webster Jr. 1978: 22.
 - ⁸ Webster Jr. 1978: 22.
 - ⁹ Sachi 1990: 69-84.
 - ¹⁰ Sashi 1990: 81.
 - ¹¹ Johnston and Bonoma 1981: 146.
 - ¹² Webster and Wind 1972: 14.
 - ¹³ Choffray and Lilien 1978: 20-31.
 - ¹⁴ Sheth 1973: 55.
 - ¹⁵ Choffray and Lilien 1978: 20-31.
 - ¹⁶ Webster and Wind 1972: 13-14.
 - ¹⁷ Sheth 1973: 52.
 - ¹⁸ Webster and Wind 1972: 18.
 - ¹⁹ Sheth 1973: 52.
 - ²⁰ Webster and Wind 1972: 19.
 - ²¹ Sheth 1973: 53.
 - ²² Sheth 1973: 53.
 - ²³ Sheth 1973: 53.
 - ²⁴ Webster and Wind 1972: 19.
 - ²⁵ Sheth 1973: 54.
 - ²⁶ Webster and Wind 1972: 19.
 - ²⁷ Sheth 1973: 54.
 - ²⁸ Sheth 1973: 54.
 - ²⁹ Webster and Wind 1972: 15-16.
 - ³⁰ Webster and Wind 1972: 16-17.
 - ³¹ Webster and Wind 1972: 16-17.
 - ³² Spekman, and Stern 1979: 55.
 - ³³ Ronchetto, Hutt and Reingen 1989: 52.
 - ³⁴ Webster and Wind 1972: 18.
 - ³⁵ Webster and Wind 1972: 14.
 - ³⁶ Webster and Wind 1972: 18.
 - ³⁷ Sheth 1973: 55.
 - ³⁸ Webster and Wind 1972: 18.
 - ³⁹ Ronchetto, Hutt and Reingen 1989: 51.
 - ⁴⁰ Johnston and Bonoma 1981: 148-149.
 - ⁴¹ Johnston and Bonoma 1981: 154.
 - ⁴² Ronchetto, Hutt and Reingen 1989: 52.
 - ⁴³ Ronchetto, Hutt and Reingen 1989: 52.
 - ⁴⁴ Ronchetto, Hutt and Reingen 1989: 51.
 - ⁴⁵ Ronchetto, Hutt and Reingen 1989: 52.
 - ⁴⁶ Ronchetto, Hutt and Reingen 1989: 51.
 - ⁴⁷ Ronchetto, Hutt and Reingen 1989: 53.
 - ⁴⁸ Ronchetto, Hutt and Reingen 1989: 58.
 - ⁴⁹ Ronchetto, Hutt and Reingen 1989: 58.
 - ⁵⁰ Spekman, and Stern 1979: 54-55.
 - ⁵¹ Ronchetto, Hutt and Reingen 1989: 58.
 - ⁵² Spekman, and Stern 1979: 59.
 - ⁵³ Spekman, and Stern 1979: 60.
 - ⁵⁴ Alvin, Silk and Kalwani 1982: 168-169.
 - ⁵⁵ Alvin, Silk and Kalwani 1982: 169-170.
 - ⁵⁶ Alvin, Silk and Kalwani 1982: 169-170.
 - ⁵⁷ Alvin, Silk and Kalwani 1982: 165-181.
 - ⁵⁸ Webster and Wind 1972: 14.
 - ⁵⁹ Sheth 1973: 55-56.
 - ⁶⁰ Webster Jr., Frederick and Wind 1972: 20.
 - ⁶¹ Webster and Wind 1972: 13.
 - ⁶² Webster Jr., Frederick and Wind 1972: 20.
 - ⁶³ Moriarty and Spekman 1984:137-147.