

# Advanced Technologies Management for Retailing: Frameworks and Cases

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# Chapter 7

## Frameworks for a Consumer's Group Knowledge Representation

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### **ABSTRACT**

*This chapter discusses three main objectives: (1) the contribution to the body of literature of consumer behaviour demonstrating that consumer groups' knowledge (i.e., two-person dyads, families, peer or friendship groups, teams, and other social units) is relevant for study by consumer researchers; (2) the development of an integrated conceptual representation of consumer's group knowledge including the influence of collective variables on decision making process; (3) the investigation of scientific inquiries regarding the role of advanced technologies in relation to conceptual representation. The approach introduces a new framework applicable both as a tool for enhancing the understanding of consumer's group knowledge, and as a useful guide to future research on consumer knowledge as a whole. The content discussed herein attempts to establish the building block toward the development of a theory of consumer's group knowledge. The study offers direction toward a potential path that could evolve into an established theory regarding consumer's group knowledge in the marketplace.*

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## **INTRODUCTION**

For both researchers and practitioners, consumer's knowledge is a critical factor in creating competitive success over time. Competitive advantage, particularly in the last two decades, is no longer measured solely by the amount of resources that are readily accessible or by material production. Having exclusive access to consumer's knowledge can become an integral part of the firm's core competencies. It is commonly acknowledged that intangible resources such as consumer's knowledge can lead to firms being more flexible and thus more competitive in Business System (de Vita, Mercurio & Testa, 2007). To remain economically viable, a firm must constantly meet the needs and wants of consumers while providing superior services and products more effectively than its rivals. Consumer's knowledge though allows firms to strategically place themselves in a better position than their competitors in providing these services. Constant access to new knowledge provides the firm with flexibility to create new products or services or innovate on current products, services, and processes.

Thus, understanding what consumers know has been a topic of enduring interest for scholars of marketing science (Deshpande, 1983; Peter & Olson, 1983; Wilkie & Moore, 2003).

A growing body of literature published over the last three decades attests to the importance of consumer knowledge as an area of investigation that deserves merit and continuum in the field of scientific research. This same literature, however, also suggests that consumer knowledge is extremely complex and that traditional measures may tap only a portion of its richness (Myers, Greyser & Massy, 1979; Pfeffer, 1993; Summers, 2001; McInnis, 2004, Levy, 2006). Consumer's knowledge, in fact, includes several schools of thought (consumer culture theory school, transformative consumer research school, social cognition school, motivation research school and

behavioural decision theory school) and several disciplinary approaches.

An analysis of published literature reveals that over the past several years the emphasis was substantively on attitude toward choices among a set of close substitutes. Particular emphasis was evident in assessing the practical importance and the impact of marketing mix elements, specifically, price, promotion, and, (mass) advertising. Theoretically, instead, the dominant paradigm has been borrowed from the field of psychology (cognitive and social in particular) and, to a lesser extent, economics. Nevertheless, the evolution of consumer's knowledge shows that a "theory of consumer" (Teas & Palan, 1997; Summers, 2001) is still not available and scholars' struggles swing from a very ambitious goal of building a comprehensive theory to a less aspiring one of developing theories.

Within the scope of consumer's knowledge, the first part of this chapter discusses how scholars develop the knowledge of a single consumer and the knowledge of a group of consumers in their field of research through published literature on consumer knowledge and on organizational behaviour. In analysing the context it becomes evident that there is a gap in the consumer's knowledge literature. Although published literature recognizes the importance of the consumers as a source of knowledge, it fails to recognize the importance of a "group of consumers" as well. Indeed scholars have not generally included a group of consumers as a level of analysis.

Over the years, several articles published in top tiers management journals have focused primarily on intra - individual behaviours, especially cognitive processes measured accurately by studying the performance of individuals in purchasing goods for consumption (Bagozzi, 2000). There have been only a few analytical attempts to determine if interpersonal interactions of a consumer's group do influence consumer behaviour (Bagozzi, 2000; Briley & Wyer, 2002; Thomas-Hunt, Ogden & Neale, 2003; Cummings, 2004).

Hence, augmenting organizational behaviour literature with research on expertise, effects, and conceptual development, we illustrate a theoretical proposal for improving the current consumer's knowledge representation through integration of one important perspective as our level of analysis: the group (Thomas-Hunt, Ogden & Neale, 2003; Cummings, 2004). We construct a conceptual representation of consumer's group knowledge which includes important collective variables of a group and incorporates the direct effects of these variables on decision making process of consumer's group. We also present a depiction of the decision making process of a consumer's group as a problem – solving process including a continuous flow of reciprocal individual and collective interactions among environment factors, cognitive and affective process and behavioural actions. This innovative approach adopts a sort of “human capital interpretation” (Ratchford, 2001) in which the human capital is a consumer's group and our objective is to investigate its dynamics relevant to “consumer's knowledge models”.

Successively, we discuss the possible role of advanced technologies and its impact on our theoretical representation which is an evolution of consumer's knowledge models for the development of a theory of consumption as a fruitful ground.

Technologies are a worthwhile opportunity to improve the efficiency of purchase decision making, and consequently, if well applied, the accuracy of consumer knowledge (Thomas-Hunt, Ogden & Neale, 2003; Chi, 2009; Pantano, 2010). Today the development and use of advanced technologies for supporting and influencing consumers during their shopping experience plays a key role for both retailers and researchers (Chi, 2009). We present three scientific inquiries about how advanced technologies could be quite effective in helping a group of consumers make decisions about a purchase. We close the chapter by discussing limitations and future researches of this work.

This effort constitutes an initial step as a building block yet far from completion of what is considered a theory of consumer's knowledge. Nevertheless we present some useful insights and posit that it might be fruitful in the development of such a “group knowledge theory”.

## **BACKGROUND**

Knowledge is a renewable, reusable and accumulating resource of value to the organization when applied in the production of products and services. Knowledge however cannot, as such, be stored in computers; it can only be stored in the human brain. Knowledge has the highest value, the most human contribution, the greatest relevance to decisions and actions; it has sense of power and the greatest dependence on a specific situation or context (Poston & Speier, 2005; Tanriverdi, 2005; Wasko & Faraj, 2005).

Knowledge must exist before information can be formulated and before data can be processed and measured to form information. As such, raw data does not exist if thought or knowledge processes that lead to its identification and collection have already influenced even the most elementary part of data.

It is argued that knowledge which exists, when articulated, verbalized, and structured, becomes information which in turn, when assigned a fixed representation and standard interpretation, becomes measurable data (Alavi & Leidner, 2001).

Critical to this argument is the fact that knowledge does not exist outside an agent (a knower); it is indelibly shaped by one's needs as well as one's initial accumulation of knowledge. Knowledge is thus the result of cognitive processing triggered by the inflow of new stimuli.

One of the reasons that knowledge is such a difficult concept is because this process is recursive, expanding and often discontinuous. According to Grover and Davenport (2001), many cycles of generation, codification and transfer

are concurrently occurring in businesses. These cycles feed on each other. Knowledge interacts with information to increase the state space of possibilities and provide new information, which can then facilitate generation of new knowledge. The knowledge process acts on information to create new information that allows for greater possibilities to fulfill old or possibly new organizational needs. This process is often discontinuous, where new needs and their fulfillment mechanism could be created.

In resource-based perspective of knowledge, data are raw numbers and facts. Information is processed data and knowledge is information combined with human thoughts. As mentioned earlier knowledge is indeed the result of cognitive processing triggered by the inflow of new stimuli. Information is converted to knowledge once it is processed in the mind of individuals, and the knowledge becomes information once it is articulated and presented to others. A significant implication of this view of knowledge is that for individuals to arrive at the same understanding of information, they must share the same knowledge framework. Understanding the content and structure of human knowledge is an ongoing challenge to cognitive scientists.

In the following section we discuss the frame structure approach to the topic of consumer knowledge and describe the content and organization of consumer knowledge extrapolated from published literature.

Within the scope of this scenario, consumer knowledge can be defined as the subset of the total amount of information stored in memory that is relevant to product purchase and consumption (Blackwell, Miniard & Engel, 2001). Numerous studies have been conducted in the field of marketing to investigate consumer knowledge and to explore its influence on the individual differentials in consumer behaviour, and to identify the consequences of those differentials on the behavior of the firm. Furthermore researches published in consumer knowledge literature show overwhelm-

ing concern about individual processes, attitudes, information processing, judgment, and choice.

The standard depiction of a consumer knowledge structure shows a network of concepts that are linked to each other without any restrictions placed upon membership to the network (Rulke, & Galaskiewicz, 2000). Possible types of associations include the target concept's characteristics, related products, product uses, attitudes and other summary evaluations, as well as purchase-related associations including store and price information, and second-hand memories from such sources as advertisements and word-of-mouth.

Marks and Olson (1981), describe knowledge structures as containing factual knowledge, evaluations, affect, purchase criteria, and decision rules. Russo and Johnson (1980) developed a five-level classification scheme based upon presumed stages in a brand choice process. A factor analysis suggested that three factors were operative: knowledge of product attributes, knowledge centred on situational usage that would distinguish experts from novices, and personal knowledge.

While all these types of aspects have been proven to exist, many other aspects of consumer knowledge have been neglected (Bagozzi, 2000). One of these aspects is exactly the study of a "consumer's group". Consumer's group are in so far assumed to be simply an additive function of the individual activities or, more commonly, are totally ignored. The individualistic bias limits generalization of theoretical propositions and empirical findings across consumer knowledge because a significant proportion of consumer information processing is done not by individuals acting alone but by two or more persons in interaction (Granbois, 1968).

In fact a research study conducted in the late 60s by Granbois (1968) about the in-store behaviour of shoppers identifies some differences between group and individual shopping. The research found that shopping parties of at least three persons deviated more from their original purchase plans (they bought either more or less

than originally planned) than did either single shoppers or two-party groups. Furthermore two or more people shopping together were almost twice as likely to buy more than planned than if they had shopped alone.

Over the last three decades studies on consumer's group have been rare. Witt (1969) discusses the influence of small, informal social groups on member brand choice. Rudd and Kohout (1983) drawing on small groups research, sociology, and consumer information processing research, compare information acquisition depth and decision time across individuals, ad hoc cross-gender dyads, and married couples, while Ward and Reingen (1990) analyse how social group's structure influences cognitive structure and how shared cognitive structure influences choice. This perspective is applied to how a group (with several subgroups) makes a consumer decision with consequences for the entire group.

A single pioneer study of great significance was conducted by Ratchford (Ratchford, 2001). The study was about the theoretical and empirical investigation of the "human capital interpretation" in consumer behavior. Within this context "human capital" refers to the accumulated and embodied knowledge, skills, and expertise, which have been acquired and preserved by consumers. In essence it is a variable accumulation of knowledge which could reflect all those qualities of consumers that affect their capacities to reach objectives. In this study, the term knowledge is used as synonymous of ability, attribution, capability, competence, experience, interpretation, intuition, know-how, persuasion, skill, and tradition. Also within this context, a great importance is given to human resources "consumers" which, according to Ratchford (2001) contribute to: (1) better rational choices that have direct effect on the purchase; (2) more effective interactions for the best possible purchase deals; (3) better informed consumers decision-making processes. This is one of the first studies that focused not on one individual consumer but on multitude of consumers.

Following Ratchford's study, we have focused specifically on the role of group's consumers (Bagozzi, 2000; Briley & Wyer, 2002; Thomas-Hunt, Ogden & Neale, 2003; Cummings, 2004). There have been also several analytical attempts to determine if such group interactions do in fact influence consumer behavior (Grier and Deshpandé, 2001). These perspectives suggest that, while knowledge is "owned" at the individual level, the integration of this knowledge to a collective level is necessary. This integration of knowledge typically takes place in groups. Marketing men have conceded that such group factors (as dimension, social class, and ethnic groups) all play some role in consumer decision making (Briley & Wyer, 2002; Okhuysen & Eisenhardt, 2002).

In sum the lack of theoretical and empirical research on consumer group knowledge led us to the development of our conceptual representation. Our study starts by considering the group variables as an important step in understanding consumer's group knowledge. Group variables are seen as a major determinant in attitude formation and attitude change, as well as for other phenomena of importance to the collective level. Subsequently, we analyse the influence of these group variables on the most important process at the base of consumer knowledge: the decision making process. Given the organizational behaviour orientation of this text, we emphasize consumer's group decision making process regarding a purchase.

## **CONSUMER'S GROUP KNOWLEDGE REPRESENTATION**

In response to growing demands for efficiency and flexibility, organizations shift from individual to group-based structures. Groups bring assets, adding knowledge and creativity, increasing the understanding and acceptance of ideas (Tosi, Mero, & Rizzo, 2000). Numerous studies have demonstrated benefits for groups that engage in information exchange and communication within the



group (Keller & Staelin, 1987; Gruenfeld, Mannix, Williams & Neale, 1996; Rulke & Galaskiewicz, 2000). Though successful groups take advantage of the perspectives, talents, and ideas of different members, a well-designed group also creates a common understanding of the purchase context through the sharing of knowledge.

The most common definition of group is “a collection of two or more interacting individuals with a stable pattern of relationships between them who share common goals and who perceive themselves as being a group” (Davenport, 1999). This definition can be applied also to consumer's groups conceived as two or more people in social interaction who share common goal: purchase decision making. The final purpose of a consumer's group is to satisfy a need across buying consumer goods. Cartwright and Zander (1968) suggested that the following statements can be applied to a consumer's group: “when a set of people constitutes a group, one or more will characterize them: (a) they engage in frequent interaction; (b) they define themselves as members; (c) they are defined by others belonging to the group; (d) they share norms concerning matters of common interest; (e) they find the group to be rewarding; (f) they pursue interdependent goals; (g) they have a collective perception of their unity; (h) they tend to act in a unitary manner.

The work of Allen (1977) indicates that people prefer to turn to other people rather than interpreting documents to obtain information. Allen (1977) found that engineers and scientists were approximately five times more likely to turn to a person for information than to an impersonal source such as a database or file cabinet. When information is held by multiple members, not only more people within the group possess the information, but group members who possess the information may also provide retrieval cues to each other to aid the introduction of the knowledge and decision making (Ward & Reigen, 1990; West, Garrod & Carletta, 1997; Bagozzi, 2000). More recently, this same tendency has been found even for people

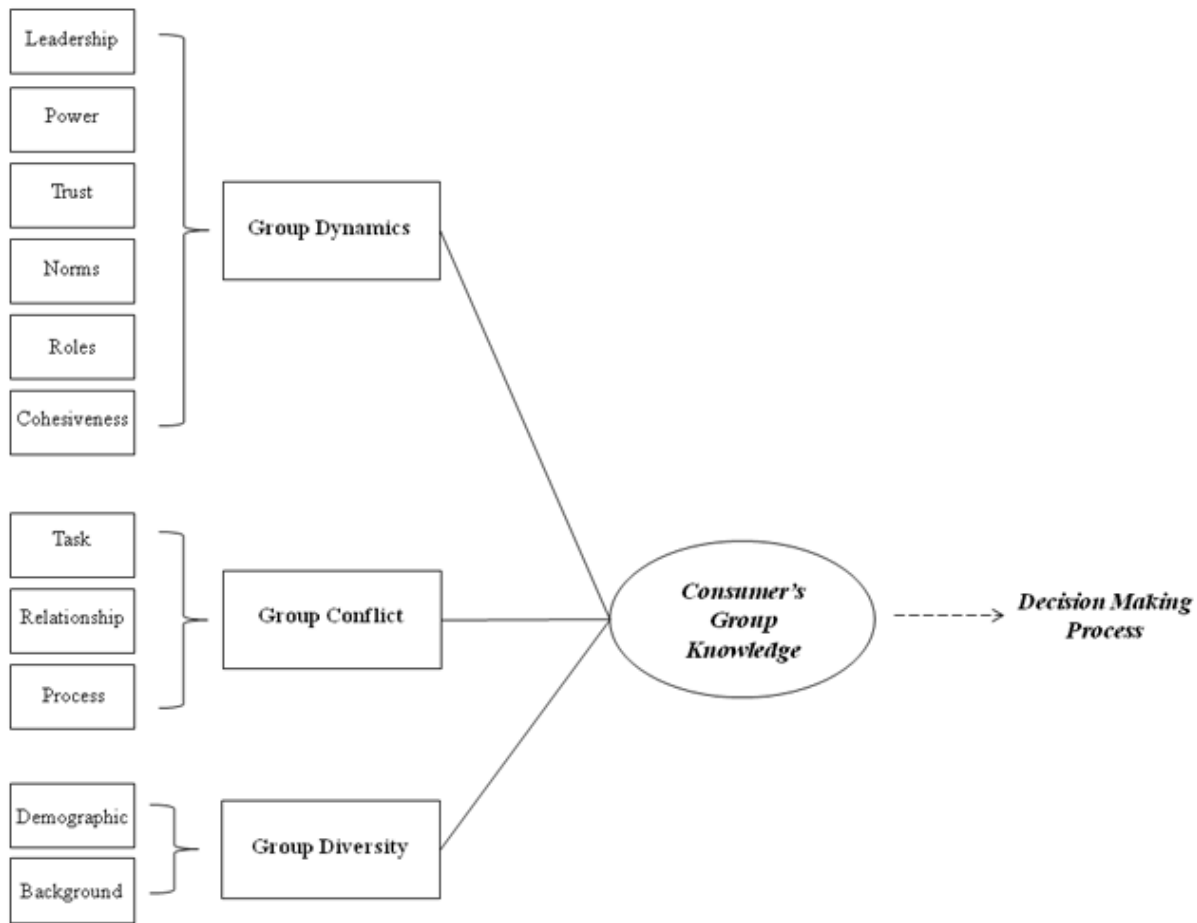
with ready access to the Internet and their firm's extensive intranet (Cross & Sproull 2004).

Published literature categorises two macro - types of groups: formal and informal group (Levine & Moreland, 1990). In this study we use the concept of informal groups which better adapts to consumer's groups. From the standpoint of consumer knowledge, informal social groups are generally more important to the marketer, since their less clearly defined structures provide a more conducive environment for the exchange of information and influence about consumption – related topics (Thomas-Hunt, Ogden & Neale, 2003). One key factor in the formation of informal groups is that membership is voluntary; it is not dictated by the organization, rather encouraged by an expression of common interests. Certainly, sometimes the interests that bind individuals together are far more disperse. Groups may develop out a common interest in participating in sports, or as for consumer's groups, in going shopping together. Friendship groups, for example, consist of people with natural affinities for one another. They sit together, take breaks together, and even do things together. Friendship groups provide opportunities for satisfying the social needs of individuals that are so important to their well being; therefore those types of informal groups are an important part of social life. In these and related ways, informal groups can provide their members with social satisfactions, security, and a sense of belonging. For example, each of the following illustrates common usage of informal consumer's group concept: two friends “discussing via chat on a social network (as facebook) about the purchase of an MP3”, a family “making a purchase of a bedroom with the assistance of virtual salesperson of IKEA”, and a music band “making a purchase of an electronic guitar on e-bay”. In this point of view, we discuss that knowledge of the consumer's group lead to richer content and can help explain why consumers do what they do.

The term “group dynamics” refers to the mechanisms of relationship that take place within a



Figure 1. Consumer's group knowledge representation



group (Shaw, 1981; Stewart, Manz & Sims, 1999). In general, researchers have found group dynamics to be important for acquiring information (Keller & Staelin, 1987; Gruenfeld, Mannix, Williams & Neale, 1996; Rulke & Galaskiewicz, 2000), for disseminating useful knowledge (Schermerhorn, Hunt & Osborne, 2008), for solving complex problems (Rulke & Galaskiewicz, 2000) and for influencing decision making process (Yoon et al., 2009).

The primary purpose of this chapter is to explore the influence of informal groups dynamics on the decision making process of their members and to develop an integrated conceptual representation of consumer's group knowledge. In addition we

enhance our representation by including two other important group variables: group's diversity and intragroup conflict. Figure 1 describes the group dynamics and group's variables included in our representation.

One of the most important group dynamics is leadership. Published theoretical and empirical literature in behavioural sciences fully supports the notion that groups, and particularly certain individuals within the group, influence member behaviour (Rulke & Galaskiewicz, 2000). Within the scope of this study we define leadership as "the process by which an individual of a group influences others" (Bass, 1990) in order to facilitate their purchase decision. In other words,

subordinates accept influence from leaders because they respect, like, or admire them as well as because they hold positions of authority (for example a father of a family).

Leadership is connected directly to power. Power is defined in organizational science as the ability to get someone to do something you want done or the ability to make decisions in the way you want them to (Knights & Willmott, 2007). In our representation we consider power as the participation in the making of important decisions which involve severe deprivation of values. This interpretation is consistent with our intention of using power as a weighting function for group decision-making. A unique property of power within this concept is that power is a relationship between two persons and not an absolute attribute of a single individual. This definition of power is closely analogous to autonomy or the ability to achieve one's goals without interference from others. In terms of dependency (Thibaut & Kelley, 1959), it is suggested that power may derive from the ability to help others achieve goals that they otherwise would not be unable to meet, thereby creating dependency in others.

Another variable of group's dynamics is trust. Trust has been defined as a state of a positive, confident, though subjective expectation regarding the behaviour of somebody or something in a situation which entails risk to the trusting party (Currall & Judge 1995). Although the concept of trust has been viewed at different levels (group, organization, society), here we focus on trust among group members, which is defined as the extent to which a person is confident in, and willing to act on the basis of words, actions, and decisions of another. The trust literature provides considerable evidence that trusting relationships lead to greater knowledge exchange and to better decisions. Trust groups are defined as groups with close, interpersonal ties and positive, amiable pre-existing relationships among members (Dirks & Ferrin, 2001). When trust exists, people are more willing to give useful knowledge and are

also more willing to listen and to absorb others' knowledge (Levin 1999). By reducing the need to verify information, trust also makes knowledge transfer less costly. For example, Levin (1999) found that strong trusting ties usually helped improve knowledge transfer between scientists and engineers. Instead affect-based trust is typically found to be important in the context of social relationships for informal group of consumers.

Groups have norms and values that explain much of a group's decision making. Norms, values, and standards of behavior guide people's judgments and decisions and have often been conceptualized in terms of individualism and collectivism (Postmes, Spears & Cihangir, 2001). In our representation we consider trust as a collective concept, that it is often reflected in a disposition to think of oneself as a member of a group or collective and to evaluate one's own attributes and behavioral outcomes in relation to others. Subsequently norms became the beliefs, moral rules, and values, which guide members to decide a product between several alternatives. Group norms code describes acceptable purchase and influence consumer's group decision making.

Every member of a group plays a certain role within that group. Roles are coherent sets of behaviours that tend to be adopted by the different members of a group, partly as a matter of personal inclination but also as a response to the expectations of others (Fisher, Hunter & Macross, 2001). We presuppose that different roles may emerge and affect the relative participation of members to the decision making process within the group. They also include relationship roles, such as the group encourager, as well as task roles related to the practical aspect of the group such as decision making process.

The nominal definition of cohesiveness is the total field of forces which act on members to remain in the group (Leana, 1985). Two classes of this concept are distinguished and conceptualized: (1) the attractiveness of the group for its members and (2) the extent to which the group

mediates goals for its members when cohesiveness is biased in terms of interdependency. Cohesiveness is the last definition included in the group dynamics of our representation. Dirks and Ferrin (2001) highlight the importance of cohesiveness for the success of knowledge transfer because it increases the effort in reconstructing the transferred information and in applying them in terms of knowledge. Group members' desire to remain in their group and have confidence in decisions of others members can create a group mind-set. This mind-set leads group members to make purchase decisions that minimize the risk of negative outcomes for both themselves and others, thanks to a sense of responsibility each member feels for the group. This is because negative outcomes of group-relevant purchase decisions (e.g., failure, disgrace and embarrassment) or the possibility to have more unfavourable consequences for some members can erode group cohesiveness. This may force group members to be closer together. For these reasons, feelings of group cohesiveness may increase cautiousness and cause a stronger tendency to avoid purchase making decisions that could have negative consequences for one-self and other members (Aaker & Lee, 2001).

We expand our representation and add two group's variables to the group's dynamics. The first variable is group conflict. Group conflict may be defined as "a tension between group members due to real or perceived differences" (Jehn & Mannix, 2001). An abundance of recently published literature (Jehn, Rupert & Nauta, 2006; Franco, Di Virgilio & Di Pietro, 2006) has indicated that some types of conflicts may actually be less detrimental (and even beneficial) to group decision making. Therefore, a helpful contribution to the development of our conceptual model is the distinction between different types of conflicts, being (Jehn & Mannix, 2001) relationship, task, and process conflict.

Relationship conflict is a perception of interpersonal incompatibility and typically includes tension, irritation and hostility among group

members (De Dreu & Van Vianen, 2001). Task conflict is generally task oriented, depersonalized, and is focused on judgmental differences on the best solution in key decision areas (Jehn & Mannix, 2001). Process conflict is the conflict about how tasks should be accomplished by the group, including the distribution of responsibilities and the delegation of tasks and resources among their members. These three types of intragroup conflicts have different consequences both, negative or positive on group decision making.

Relationship conflict has been theorized to have negative effects on several group outcomes (Jehn, Rupert & Nauta, 2006) as decision making process. Literature suggests that relationship conflict promotes inefficiency and ineffectiveness, leads to a loss of perspective regarding the objects, inhibits individuals' cognitive functioning in assessing new information provided and processing complex information, encourages stereotype listening, and induces the freezing out of iconoclasts from important discussions (Jehn, Rupert & Nauta, 2006). Moreover, Jehn e Mannix (2001) found that relationship conflict diminished decision creativity and quality and decrease knowledge, which hinders the completion of organizational tasks. Time is often spent on interpersonal aspects of the group rather than on technical and decision-making tasks.

On the other hand, several researches show that task conflict has positive impact on group outcomes. Also interaction techniques which force group members to disagree and debate the merits of different alternatives produce superior decisions. Jehn and Mannix (2001) noted that task conflict contributes to decision quality because the synthesis that emerges from the contesting of the diverse perspectives is generally superior to the individual perspectives themselves. Task conflict appears to be positively related to the increase of constructive interpretation of information and to the selection of alternatives to make decisions (Jehn & Mannix, 2001).

There is no consensus in the empirical literature concerning the impact of the process conflict on group decision making. Jehn and Mannix (2001) found that high levels of process conflict had a dysfunctional effect in the group's performance. However it is almost impossible to identify a positive or negative influence of process conflict on group decision making.

Group diversity is another important group's variable part of the knowledge process. Lawrence (1997) suggested that diversity can be studied across at least four different categories of variables: visible demographic attributes (such as gender); relational attributes (such as organizational tenure); status attributes (such as marital status); and personal attributes (such as personal beliefs and perceptions). Jehn and Bezrukova (2004) consider group diversity along six demographic dimensions: age, gender, race, and tenure with the company, level of education, and functional background.

In this context however we adopt the perspective of other authors (Pfeffer 1983; Shaw & Barret-Power, 1998) who suggest that there are two macro - types of diversity which is a better fit to our use of informal group: demographic (or primary) diversity and background (or secondary) diversity.

The term demographic diversity refers to the degree to which a unit (e.g. a working group or organization) is heterogeneous with respect to demographic attributes. Attributes classified as demographic generally include immutable characteristic such as age, gender and ethnicity; attributes that describe individuals' relationship with group, such as group position (leader, follower, etc...).

Background diversity is referred to a difference in the amount of knowledge accumulated in a group, for example the specialization in different problem-solving domains found in Benbasat and Weber (1996) between actors, or when the members of a group have dissimilar belief structures, priorities, assumptions about understandings of

alternatives, based on previous training and experience (Shaw & Barret-Power, 1998).

Scholars examining diversity in groups have primarily focused on the consequences of demographic diversity for processes such as communication and decision making (Jehn & Mannix, 2001; Franco, Di Viriglio & Di Pietro 2007). The consistently negative effects of demographic diversity on group processes are likely the result of heightened member emphasis on social categories rather than project-relevant information. Therefore, we posit that demographic diversity should not increase the value of intragroup knowledge and of decision making process.

Background diversity has been hailed as a competitive advantage because minority views "can stimulate consideration of non-obvious alternatives in decision making groups" (Shaw & Barret-Power, 1998). In fact homogeneity limits the variety of views within a group and may decrease the numerous alternatives to purchase a final product. Accordingly, we assume that background diversity should increase the value of intragroup knowledge and of decision making process.

The need for a theoretical representation was born out of the determination that little theoretical research is available on consumer's group knowledge. Conceptual papers are rapidly declining despite the fact that they are critical to the development of knowledge. We therefore hypothesize that an empirical bias could be the main reason behind the lack of conceptual papers. Scholars may imply that papers are only viewed as scientific if they have an empirical component. This bias creates a paradox: scholars tend to focus their efforts on empirical studies that are very often considered inadequate from a theoretical perspective when submitted to an academic outlet. This becomes one of the main reasons for rejection and, in turn, drives many scholars to use rhetorical contortions in order to include theoretical justifications in their empirical studies (Summers, 2001; McInnis, 2004, Levy, 2006, Mari, 2008).

## **CONSUMER'S GROUP DECISION MAKING PROCESS**

In our consumer's group knowledge representation we assume that all group's variables have influence on the decision making process. Studies in this area have focused on individual cognitive processes and the results have shown relatively little concern with how others may influence these decisions or with the possibility that decisions should be studied from a group as well as from an individual perspective (Bagozzi, 2000; Briley & Wyer, 2002; Thomas-Hunt, Ogden & Neale, 2003; Cummings, 2004).

Research has found also that the characteristics of prior knowledge possessed by group members and how information is distributed within the group affect the decision making process (Levine, 1999). The literature about small groups also indicates that group decision making depends not only on information resources available to the group, but also on the processes or structures which groups use to exploit these resources. Stasser, Vaughan & Stewart (2000) further found that as a piece of information was distributed across more individuals within the group, the retrieval of this information became more likely and thus facilitated group decision making.

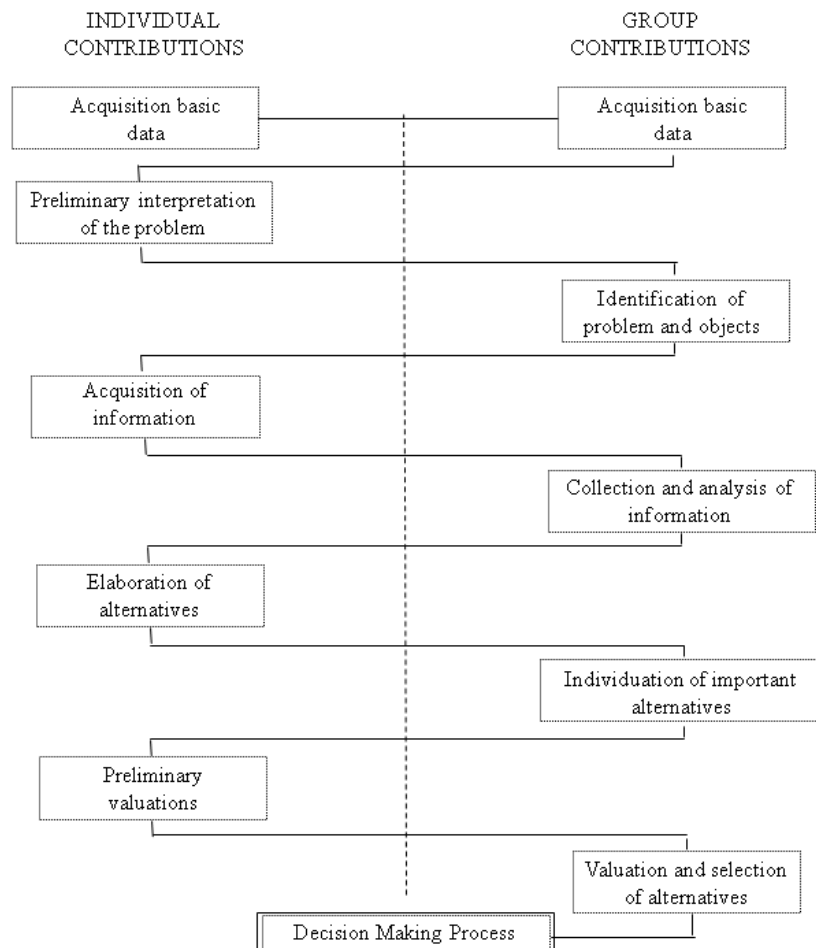
When decision making is conceived as a cycle of interactions between individual members such that each person is seen to give off and to receive attempts to influence others, the perspective is an interpersonal one. Here, group members act or react in coordinated ways, but no notions of collective concepts are incorporated. Rather, analyses are confined to individual characteristics (e.g., personal beliefs) and individual actions. By contrast, when group decision making is seen as a social process of joint formation of goals and intentions, the perspective is a plural subject one. Here members jointly construct mutual understandings and shared volitional commitments to make a group decision and consciously come to see their actions in this way. Knowledge does not

originate solely from the mental processes of an individual; it also originates from the social or collective environment being the group dynamics (Bagozzi & Dholakia, 1999). Such collective concepts as group or social identity become a central variable in knowledge management. Our research is based on the group dynamics or collective approach.

"Literature published over the years concurs that the decision making of a single consumer consists of a multi-step process (Mihal, Sorce & Comte, 1984; Dean & Sharfman, 1996; Knights & Willmott, 2007)." The first step is identifying the need of a product. During this process the consumer could distort, omit, ignore, and/or discount information that provides important cues regarding the existence of product need. This, of course, is problematic because a need cannot be satisfied if it is never recognized. The next step is making a pre-decision purchase; that is a decision about how to make a decision. By assessing the type of need in question, consumer may opt to make a decision. The next step is to individuate possible products to satisfy a need. Because all these possibilities may not be equally feasible, the successive step calls for evaluating alternative products. In the final step, consumer makes a purchase choice. After several alternatives are evaluated, the one that is considered acceptable is chosen.

In this chapter, we consider a different prospective concerning the process of decision making; we present the perspective from a consumer's group point of view and not that of a single consumer as per common research on consumer knowledge. We view consumer decision making as a problem – solving process and assume consumers in general have common goals that they seek to achieve or satisfy. We argue that bringing people together may increase the amount of product knowledge and information available for making good purchase decisions. In other words, the group may be replete with resources available to the members. An additional benefit is that group decisions are likely to enjoy greater acceptance than individual

Figure 2. Consumer's group decision making process representation



decisions. People involved in making decisions may be expected to understand those decisions better and be more committed to carrying them out than decisions made by someone else.

In our representation we follow the thoughts according to Franco (1991), that consumer's group problem solving is a continuous flow of reciprocal, individual, and collective interactions among environmental factors, cognitive and affective processes and behavioural actions. We divided this stream into separate stages at individual and collective level to simplify the analysis and to facilitate the understanding (Figure 2).

When an individual or group decision initiates, following the general and collective acquisition

of basic data, each individual typically begins with a preliminary interpretation of the problem (e.g. set of sub - goals organized into a goal hierarchy, relevant product knowledge) however a problem identification is realized only at group level and serves as a decision frame through which the decision maker views the objects to reach.

Gradually, cognitive processes allow acquiring information at individual level in order to collect and analyse them as an identity. After individual elaborations of alternatives, the group individuates the most important ones. These several alternatives are evaluated and the one that is considered acceptable is chosen. Consequently, in the final step of the process, the group makes a purchase choice.



Such a collective perspective, often advocated but rarely implemented, promotes a broader view of how a groups make decisions than that suggested by traditional studies of information processing.

## **THE ROLE OF ADVANCED TECHNOLOGIES IN OUR REPRESENTATION: SOME SCIENTIFIC ENQUIRIES**

Communication and information technologies are adding new capabilities for rapid and inexpensive consumer input at all stages of the knowledge process. And at each stage of advanced technologies development process consumer's knowledge has experienced enormous improvements (Nambisan, 2002).

Several approaches have been applied to the study of consumer knowledge in the advanced technology environment. A group of researchers applied intention theories to investigate Internet adoptions (Gefen & Straub, 2000; Chen, Gillenson & Sherrell, 2002). Some investigated website characteristics that render a higher quality Internet store (Aladwani & Palvia, 2002, Liang & Lai, 2002). Many were interested in studying types of Internet usage (Ranganathan & Ganapathy, 2002). Others investigated individual characteristics of consumers that affect online purchasing decisions (Bellman, Lohse & Johnson, 1999). In addition to these topics, some researchers have devoted their efforts to categorising products that can be sold on the Internet successfully (Gefen & Straub, 2000), while others have investigated how shoppers transform themselves from non-innovators to innovators (Nambisan, 2002).

The advanced technologies applied to retailing are usually based on pervasive environments and mobile and ubiquitous computing (Pantano & Naccarato, 2010). Retailers have deployed kiosks, interactive displays, handheld shopping devices, computer-enabled grocery carts, and special shopping trolleys to assist with store navigation,

provide detailed product information, offer personalized product recommendations and promotions, and expand the available selection of merchandise (Chang & Burke, 2007). Currently, new researches on the technology applications to retailing focus on the development of a smart mirror (Pantano, 2010). Only few prototypes are available on a limited number of stores across the world. The smart mirror consists of integrated software and a hardware system which recognizes consumer by a web cam and reproduces graphically him/her while wearing the product in the store. This system allows consumers to visualize how they look in any frame of the store or to see their new contact lens, and simulate the effect produced by the chose good (Pantano, Taversine & Viasone, 2010). Another recent innovation in retail are virtual worlds - computer-generated physical spaces - represented graphically in three dimensions, that can be experienced by many users, so called avatar (Kohler, Matzler & Fuller, 2009). They provide companies with a representational-rich-mediated environment that facilitates direct and rich interactions with consumers. In fact, the playful environment of virtual worlds has been described as engines of creation that provide the freedom to experiment and lead to unprecedented rates of innovation. Kohler, Matzler, and Fuller (2009) suggest also incorporating the latest technological advances into open innovation practice, namely the emerging technology of virtual worlds. The technology of virtual worlds could further enrich existing web-based consumers' integration methods, by allowing real time, media-rich and highly interactive collaboration between sellers and their consumers.

All those technologies allow obtaining and cataloguing dates and information on a single consumer to increase the consumer knowledge and to influence positively consumers buying behaviour. However, in this study we ask three important scientific questions regarding the role of advanced technologies and their integration in our

representation of consumer's group knowledge. Hence we posit that:

1. **Advanced technologies** will be able to understand the consumer's group knowledge
2. **Advanced technologies** will interpret group's variables and their influence on consumer's group decision making process
3. **Advanced technologies** can be integrated in our conceptual representation of consumer's group knowledge?

In considering advanced technologies the core question we argue that it is not *if* and *how* advanced technologies can play a role in our representation but what we want technologies to be capable of doing. With the rapid advancement of IT (Information Technologies) and CT (Communication Technologies) we answer to the question that it is not what technology in general can do for researchers and practitioners, instead what we want technologies to do for all players in the market place.

Nevertheless the task of technologies' integration is compelling. In fact several studies have investigated the impact of the information environment of technologies on decision making process. The results indicate that more information is not always better. A 1977 study by Jacoby, Szybillo and Busato-Schach (1977) show that consumers who are given additional product information feel more satisfied and less confused, but they actually make poorer purchase decisions. Keller and Staelin (1987) find an inverted U-shaped relationship between the amount of information available and decision effectiveness. Walczuch and Lundgren (2004) point out that two or three summary attributes would need to be used because of the limitations in consumers' ability to combine many attributes into an overall rating. Similarly, more choice alternatives do not necessarily improve the objective quality of decisions. An increased number of alternatives contribute to

task complexity and too many choice options can produce negative effects.

Despite the limited contribution, other studies indicate that in the evaluation process of the different alternatives, these particular technologies are capable to support consumers. In fact, they have the possibility to easily and rapidly gain detailed and complete information on products and services. Furthermore, consumers can immediately compare different proposals (Berg, van den Arentze & Timmermans, 2009; Pantano, 2010). Haubl and Trifts (2000) demonstrate that in a customizable electronic shopping environment, use of a recommendation agent or a comparison matrix generally leads to an increase in the quality of consumers' consideration sets, as well as enhanced decision quality.

However, at the present time it is very difficult to evaluate the role of technologies on consumer's group because no one is able to learn and evaluate group's variables and understand how to help a group of consumers as of yet. Actually the use of technologies applied to this topic is still in its infancy and is very limited.

For many years firms have been relying on their own intuition or qualitative and empirically based information about organizational behaviour for guidance needed to efficiently sell to consumers. This approach carries heavy financial burdens due to rather expensive investment, especially in human resource. Therefore for the near future the use of advanced technologies must be developed summarising much of this information in a way that gives firms ready access to a wealth of information regarding the consumer's group knowledge. Advanced technologies could be quite effective in helping a group of consumers make decisions about a purchase. The status – quo of the use of technology in group knowledge may lead us to think that the introduction of digital content and advanced technologies that understand group variables may be almost unrealistic. However these technologies would be fascinating to all players allowing consumers to facilitate the

decision making process through a user-friendly interface, by giving information related to products, promotions, new arrivals and collecting at the same time information about consumer behaviour and group's variables. To achieve this one must consider two main characteristics which are the interactivity and the multimodality, in order to achieve an efficient, flexible and meaningful feeling of human-computer interaction.

## **FUTURE RESEARCH DIRECTIONS**

Given the nascent nature of the study phenomenon, there may be many exciting opportunities that lay ahead for new research. This study contributes to the development of a program of research on consumer's group knowledge. Because only limited research on consumer's group knowledge exists in the field of consumer research, this study can act as a catalyst for future scientific enquiries in this important area.

The issue of how to effectively design and deploy advanced technologies in this group approach is most certainly an additional future research direction. It has become clear that the digital environment offers many opportunities for firms to interact with consumer's group along with the entire knowledge process. A future research direction is to answer to our scientific inquiries regarding the role of technologies and to understand how these technologies can be successfully applied so to interpret the function of the group's variables. Our study could be tested by a group of stakeholders/experts on this topic (e.g. Delphi methodology).

Future studies can expand on the proposed representation by observing other group's dynamics and by distinguishing also between the different levels (high and low) of group dimensions by examining the differential effects on decision making process.

Replete information on group make-up, group dynamics of professional groups, special inter-

est groups, and other group's types are readily available on all search engines of major internet providers. Many studies on consumer behaviour are now conducted over the internet by using these types of groups. They are categorized by industry, by interest, by profession, by demographics and by other characteristics. With the application of E-commerce and M-commerce studying these groups' behaviour becomes useful in researching consumer group knowledge.

Future studies should compare and contrast firms that use this theoretical representation of consumer's group knowledge with those that do not determine the differential impact on consumers knowledge. At a larger scale a comparison could be made in terms of the impact on sales, consumer loyalty, and development of new products.

It is appropriate to note that important implications for policy and marketing decision making may emerge if future research findings indicate substantial differences in the nature of consumer information processing across types of decision making groups. For instance, further research is needed to explore the effect of the type of decision making unit on other information acquisition variables, such as the content and sequence of the information acquired. In addition, research analysing the information processes of various decision making units could be fruitful. It is hoped that the present chapter will help move consumer research into the realm of social information processing and decision making regarding the consumer's group knowledge.

Future research could analyse and develop training system for employees and companies to gather data from the consumers with respect to variables governing the dynamics within a group of consumers. Generally firms have only few opportunities to gather knowledge and sell the company's product or service. This is a concept more clearly understood by firms that sell highly priced products or services. Under these circumstances the firm should be highly trained so that when given this unique opportunity with

a group of consumers it will successfully help the group decision making. Providing the right attitude towards the group of consumers and the right techniques to help the consumers, the firm should have appropriate practices and training on group variables to gather knowledge from the consumers.

This type of research, which provides a rich understanding of the consumer's group, are nonetheless expensive due to high cost of training of employees and salespeople. To understand the group's variables and their influence on a group decision making process, expensive ethnographic and qualitative research techniques are necessary.

Another possible problem is that potential group disagreement over important matters may breed ill will and relationship conflict. Therefore, we may expect that groups will not make purchase decision because of members' intimidation by group leaders. However this may indicate the true nature of human behaviour.

Finally another obvious drawback is that groups are likely to waste time. The time spent socialising before making a purchase decision may be a drain on the group and be very costly to organizations.

## **CONCLUSION**

We recapitulate that the representation we propose will accomplish one important goal with respect to consumer knowledge. Using the human capital interpretation and the group's theory, and guided by the theoretical approaches from related research in consumer behavior and consumption patterns, this chapter provides an analytical framework to explore the consumer's group knowledge investigating the influence of group variables on decision making process.

Our study shows that there are some important potential applications of consumer's group knowledge representation in the study of consumer behavior, with an outline of the major theoretical

approaches to these applications. Gaining and utilising consistent knowledge by consumers is not a simple or straightforward task. It is a highly involved and multidimensional process, which is seldom complete or errorless. Furthermore, different elements of this process may separately or jointly exert varying, and sometimes, conflicting influences on the normally complicated decision making process for consumers.

Practitioners can use this conceptual representation to evaluate knowledge of a group of consumers and better target future knowledge management interventions towards those groups most likely to benefit. In fact, the outcome of this study is of benefit to both, the consumers and the firms. From a better understanding of the consumer's group variables, a company will have greater understanding of the true needs and expectations of consumers. The firm learns from its consumers about the knowledge that will assist in product innovation and improvements of processes. Since the firm has a better understanding of the consumer's group variables it will be able to improve service and thus achieve consumers' satisfaction and retention. All that leads to increased sales and the acquisition of a new group of user.

To understand interactions within a group of consumers as a source of knowledge can help the firm also attain a competitive advantage in product and service innovation. Therefore, firms do not need to wait for the time consuming marketing research efforts to stay tuned to the changing nature of the market and need not remember the frequency of knowledge acquisition. It's necessary only to change the level of analysis.

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## KEY TERMS AND DEFINITIONS

**Advanced Technologies:** Pervasive environments and mobile and ubiquitous computing.

**Conceptual Representation:** A graphical representation of the most important variables of consumer group knowledge structure.

**Consumer Knowledge:** A subset of the total amount of information stored in memory that is relevant to product purchase and consumption.

**Consumer's Group Knowledge:** The knowledge of consumer's group variables relevant to product purchase decision making on the base of "human capital interpretation".

**Decision Making Process:** Problem-solving process, a continuous flow of reciprocal individual and collective interactions among environment factors, cognitive and affective process and behavioural actions, which allow group consumers to reach objective and satisfy a need.

**Group Diversity:** Difference respect to demographic attributes (demographic diversity) and in the amount of knowledge accumulated in a group (background diversity) which influence positively and negatively decision making process of a consumer's group.

**Group's Dynamics:** The mechanisms of relationship that take place within a group important for influencing decision making process: (1) leadership; (2) power; (3) roles; (4) norms; (5) cohesion; (6) trust.

**Intragroup Conflict:** A tension between group members due to real or perceived differences that may be detrimental (relationship conflict) or beneficial (task and process conflict) to consumer's group decision making.

**Scientific Questions:** A process of developing an explanation of questions about the role of advanced technologies on our consumer's group representation. It's a technique for investigating our topic and for acquiring new knowledge.