Decision Making in Logistics Management

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Abstract. In conditions of globalization it's very important for the logistics decision-making process to stress on knowledge about unpredictability, complexity and chaos of nowadays environment and settings, as well as on the differences concerning multicultural issues and value priorities/orientations of the customers. The purposes of this paper are: to define the central role of customers' value priorities/orientations in the process of decision-making in logistics management, to illustrate different models and approaches to decision-making and to introduce a conceptual framework for decision-making in logistics management.

Keywords: value priorities/orientations, decision – making, logistics management.

INTRODUCTION

In an increasingly global business environment, logistics managers have to interact more effectively with people's different values, behavioral norms and individual ways of perceiving reality and facts about it. Communicating ideas, as a result of cultural diversity (Cox, 1993; Simons, Abramms, Hopkins, 1996; Schrauber, 2001; Dalton et al., 2002; Gardenswartz et al., 2003, Canen and Canen, 2004) [2,3,4,5,13,14], incarnated in different brands of commodities, is a great challenge for logistics management. Cultural diversity encompasses many different dimensions and presents new management approaches. Some forecasts by the U.S. Bureau of Labor Statistics [1] project that in addition to the possibility of having differing educational backgrounds, nowadays employees (and customers) are likely to have language and cultural differences. These same projections also predict that organizations will have to begin successful integration of these people to their work forces. By the year 2006, the average age of employees will climb and this will be accompanied by a significant drop in the younger labor force (people from 25 to 39 years old). There will be a mixed effect, because "the older employees will likely be more experienced, reliable and stable, but possibly less adaptable to change and retraining" [1].

Another dimension of diversity is related to the increasing globalization of many companies, including logistics ones. Defining diversity may take time in differentiating factors, which often go beyond race and language to such things as values and customs.

What challenges and contributions does the increasing cultural diversity of people present? From an overall viewpoint, logistics organizations have to get away from the tradition of "fitting" customers into a single corporate brand. Different people won't have the same preferences and will act in their own way. The choice of commodities (services, products) is bigger and more sophisticated than in the past. Logistics organizations have to be flexible and "must create new human resources policies to explicitly recognize and respond to the unique needs" [1] of individual employees and different customers. This is a very complicated matter which is a specific challenge and requires some important contributions. Communication problems are certain to occur, including misunderstanding the messages among:

 ➢ employees and logistics managers;
 ➢ logistics organizations and customers.

Solutions to these problems may be:

 ➢ an additional training involving work in "translating" verbal and written materials into several languages;
 ➢ basic skills of employees in problem – solving;
 ➢ knowledge of logistics managers about the value priorities of their employees and customers etc.

Greater cultural diversity gives new opportunities for logistics organizations. On the one hand diversity contributes to developing and maintaining an organizational culture that is innovative and "more tolerant of different behavioral styles and wider views" [1]. This is a prerequisite for better business decisions. Byars and Rue [1] point out that another potential payoff is a bigger responsiveness to diverse groups of customers. They identify the increasing diversification as a fact that will necessitate learning to manage effectively cultural differences of both employees and customers. This process will require time and dedication to people as an investment in the future.

In these circumstances, the need to develop intercultural competencies has taken on greater importance than ever before (Gregersen et al., 1998) [6]. We share the assumption that knowledge about different backgrounds, skills, abilities, perspectives – manifested in people's values, attitudes, beliefs and behaviors is a strategic resource for the process of decision-making in the area of logistics management.

Knowledge about values in logistics management

Knowledge as a common category has been widely recognized and accepted as a strategic resource in the area of logistics (defined by European Logistics Association (ELA) in 2004 [in 11] as the planning, execution and control of the movement and placement of people and/or goods and of the supporting activities within a system organized to achieve specific objectives). Some notes are made about it in the literature [11].

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First, successful operation of a supply chain does not only depend on the intensity and quality of materials and information flows in a supplier – customer relation. In general, this is strongly affected by the kind and quality of collaboration between human resources involved in it on both sides of the partnership based on knowledge, understanding and trust.

Second, to support logistics planning with a variety of methods and software tools is not enough. As Neumann [11] thinks "they quite often dominate the planning person and prevent him/her from creative problem-solving".

Third, team building to be used as a way to master complex problems in logistics planning and operation. It will be possibly if the team consists of people with adequate to the problem to be solved knowledge, experience and competence. Within well - balanced teams, a range of individual strengths are accumulated in overcoming the individual weaknesses for a jointly better performance at a high level.

Fourth, logistics itself doesn't have many traditions in the very dynamic field of knowledge and science. That's why there exists a necessity of a new content, methods and tools as well as a current frame of modern logistics education and training oriented towards future needs and requirements, which are significantly being changed. According to us, the one of the most important accents, in this direction, is on different values of nowadays employees and customers - treated in the literature and described from three viewpoints:

➢ **values that are related to the organization** (Harmon, 1996; Aaker and Joachimsthaler, 2000; Kunde, 2000; Gad, 2001; Ind, 2001) [in 15]. Gad (2001) accepts corporate values as "rules of life". Kunde (2000) defines the expression "corporate religion" which is "the set of values that unites the organization around a mission and vision". Credo is in a close relation with an organization's values (Ind, 2001). Collms and Porras (1998) call an organization's values core values and describe them as "the organization's essential and enduring tenets – a small set of timeless guiding principles that require no external justification; they have intrinsic value and importance to those inside the organization" [in 15]. Nedyalkova (1999, p.123) points out that core values are those which stem from the mission and goals of the organization and guarantee their successful achievement [10]. Harizanova (2004, p.91) considers that organization's values represent all that is desirable for the individual and the team and has influence on the choice of methods and instruments for operations' realization [7]. Knox et al. (2000) use the term "unique organization value proposition" in a relation to the core processes of the organization. Jensen (1999) explains organizational values as a storytelling. Edvinsson and Malone (1997) consider values as a component of intellectual capital [in 15].

➢ **values that summarize the brand** (Upshaw, 1995;Macrae, 1996; De Chernatony, 1999; Aaker and Joachimsthaler, 2000; Reast, 2005) [in 15,12]. The term "brand essence" is used by Aaker and Joachimsthaler (2000). They talk about it as a part of identity: "The brand essence can be viewed as the glue that holds the core identity elements together…". Macrae (1996) studies the relation "brand essence – value adding". Upshow (1995) considers the brand essence as an inner value. "…the core of the core – the brand essence". Randazzo (1993) likens brand essence and core values and writes about the brand soul: "The brand's soul is its spiritual center, the core value(s) that defines the brand and permeates all other aspects of the brand". Kapferer (1992) uses kernel to explain the core of the brand. De Chernatony (1999) develops an interesting idea about the distinction between core values and peripheral values [in]. Reast (2003,2005) connects brand trust with the similar values in his two component model of brand trust correlates [12]; and

➢ **values as they are experienced by customers** (McCracken, 1993; Jones and Morgan, 1994; Knox and Maklan, 1998; Urde, 2003) [in 15]. McCracken (1993) contends that "brands have value, it turns out, because they add value. De Chernatony et al. (2000) discuss about added value and demonstrate the lack of terminology consensus in the literature. Knox and Maklan (1998) use the term "customer value" to explain what the customer is prepared to exchange for a brand. Itami and Roehl (1987) explore "added value" as durable competitive advantages from a strategic perspective. Jones and Morgan (1994) consider the matter of "adding value" in the aspects of the process in developing brands.

Urde (2003) summarizes different views and contributions in order to suggest a model "that can be used for a discussion that will lead to the establishment of a corporate brand value foundation". He defines and divides values into three main areas (added values, core values, organizational values).

Urde considers that the identity can also be divided into three levels and they are: the identity of the organization, the identity of the brand and the identity of the customer. He thinks that there is a continuous interaction between value and identity at the three levels and illustrates the connection between them in this way:

- added values – identity of customer;
- core values – brand identity;
- organizational values – organizational identity [15].

Organizational (or internal) values are "an important point of departure for the core values, which in turn summarize the brand's identity". The most significant task of the core values is "to be the guiding light of the brand building process" [15]. Core values have to be built in the brand (or the product) and must communicate with customers. If they successfully fulfill their role and function, they will have an effect in behavior of both customers and "brand-making" employees. According to Urde [15] the exchange and the advantages that a customer associates with a brand have to be regarded as added values. Added values may be functional, emotional and/or symbolic. They are in a close relation to core values and organizational ones. This means that added values build an important link between the internal and external process. Added values have a direct bearing on the identity of the customer. This information is of a great significance for the logistics managers and may be used on the basis of

Hofstede's Five Dimensional Model of Value Orientations, i.e. added values may be viewed as the basic bipolar dimensions of people's cultural differences in Hofstede's model.

G. Hofstede's Five-Dimensional Model of Value Orientations

Hofstede [8] has introduced one of the most structured models of cultural diversity (variability) in values and elicited five basic bipolar dimensions of cultural differences:

    A. **Individualism – Collectivism;**
    B. **High Power Distance – Low Power Distance;**
    C. **Masculinity – Femininity;**
    D. **High Uncertainty Avoidance – Low Uncertainty Avoidance;**
    E. **High Long – Term Orientation – Low Long – Term Orientation.**

A. Individualism – Collectivism

It's the most frequently mentioned distinction among cultures. The typical individualistic values support individual activities and behavior rather than group. In such societies, people are more or less on their own and are expected to take care of themselves and their families.

In individualistic cultures:
People:
- value the opportunity of having more personal time in their jobs, more freedom and emotional independence from the company;
- prefer small companies;
- aspire to leadership and variety;
- seek input from the others but take individual decisions;
- value autonomy in their work.

Nationalities with collectivistic cultures stress on family, professional, religious and other different forms of social relationship.

In collectivistic cultures, people:
- prefer large companies and loyalty to the group above everything else;
- are deeply involved with the company life;
- give preference to group decisions rather than individual ones;
- contribute to the group and receive care from its members;
- aspire to conformity and orderliness;
- value security in their work;
- seek for group decisions.

B. High Power Distance – Low Power Distance

Power Distance measures human inequality and refers to the extent to which members of a society accept that power is distributed in such a way.

A High Power Distance ranking indicates that large inequalities of power and wealth exist.
People:

- prefer to look at the manager's decision – making process without participation;
- fear of disagreeing with superior;
- follow strict work regulations;
- do not believe in social equality;
- value children obedience, etc.

A Low Power Distance ranking indicates the equality and opportunity for everyone in the organizations. **People:**
- believe that superiors are not fundamentally different from inferiors;
- prefer non – autocratic management, etc.

C. Masculinity – Femininity

Masculinity stressed the degree the society reinforces, or does not reinforce, the traditional masculine work role model of male achievement, control and power.

High Masculinity scores emphasize on competitiveness, assertiveness, power dependence and materialism, and indicate a high degree of gender differentiation in the society. In these countries:
- the successful manager is aggressive, competitive, tough;
- employees stressed the earnings, recognition and advancement;
- work is more important to people than their spare time;
- achievement is defined in terms of wealth and professional success
- employees and managers prefer money rather than fewer working time.

In feminine societies people share a set of social values – relationship-orientation, concern for quality of life, modesty and caring. **A High Feminine** score indicates a low level of differentiation and discrimination between genders in the society. People:
- value co – operation and security;
- define the achievement in terms of human interactions.

D. High Uncertainty avoidance – Low Uncertainty avoidance

Uncertainty avoidance focuses on the degree people reinforce, or do not reinforce, uncertainty and ambiguity within the society. Cultures with High Uncertainty Avoidance tend to follow formal rules and requirements, traditional values and clear instructions. There is a high level of uncertainty and ambiguity in such countries and this reflects in a high concern for regulations, controls and issues with career security.

Employee:
- need to be sure about their future;
- avoid drastic changes, risks and ambiguity;
- try to keep the status quo in their professional activities;
- prefer specialist careers, non – conflicting and uncompetitive

professional environments, older managers, clear hierarchical structures.

Cultures with high uncertainty avoidance try to minimize the anxiety with a thorough set of strict laws and behaviour norms. Organizations create rules, rituals, technology and corporate goals aiming at predicting the evolution of the market.

E. Long – Term Orientation versus Short – Term Orientation

Long-Term Orientation focuses on the degree the society embraces, or does not embrace, long-term devotion to traditional, forward thinking values. **High Long-Term Orientation** ranking indicates the country prescribes to the values of long-term commitments and respect for tradition. This is thought to support a strong work ethic where long-term rewards are expected as a result of today's hard work. However, business may take longer to develop in this society, particularly for an "outsider". **A Low Long-Term Orientation** indicates the country does not reinforce the concept of long-term, traditional orientation. In this culture, change can occur more rapidly as long-term traditions and commitments do not become impediments to change.

What may the conclusions for the logistics management be?

Customers and employees have different preferences, choices and value priorities/orientations. Hofstede's Five Dimensional Model is appropriate to:

1. compare certain selected groups of people from different cultures on the practical basis of commonly shared values;

2. explore advantages and disadvantages for the logistics organization in a certain cultural environment of a specific city/region/country;

3. assess the opportunities for making profits;

4. discover the coincidence's area of value orientations of the personnel – incarnated in different commodities, as well as, the priorities of end – customers in their commodity (product, service) choice;

5. promote cultural symbols and specific brands;

6. communicate and add new contacts and relationships with the foreign customers etc.

Strategic level decisions and decision – making process in logistics management

Logistics managers have to cope with the uncertainty of the global business environment and make strategic level decisions. Peter Wanke and Walter Zinn (2004) consider that logistics managers are involved in three strategic level decisions [16], i.e.

➢ make to order versus make to stock;

➢ push versus pull inventory deployment logic;

➢ inventory centralization versus decentralization.

If we accept the thesis of the Council of Logistics Management [17], i.e. the statement that "

…logistics management is an integrating function, which coordinates and optimizes all logistics activities, as well as integrates logistics activities with other functions including marketing, sales manufacturing, finance and information technology", we'll have to add some more strategic level decisions. In an attempt to find their target groups, logistics organizations must:

➢ define precisely value priorities/orientations of their customers;

➢ build up the image and identity of the corporate brand in a close relation to the customers' value priorities/orientations;

➢ give the desired form of their commodities as a true reflector of the customers' opinion etc.

Decision – making within an organizational context has become an increasingly complex part of leadership (McKenna, Martin-Smith, 2005) [9]. For the individuals who are committed to decision-making process, it's not an easy job to understand, to plan and to control efficiently all the resources. Because of the importance of decisions, they are often a subject to influence by personal, organizational, political and societal considerations and constraints [9]. According to Nutt (2001, 2002) half of the managers' decisions fail because of incorrect approaches to the decision tasks. Vroom (2003) recommends managers to use intelligently the participation in the decision-making process [in 9].

Classical and behavioral models of decision-making are appropriate for a relatively stable and consequently linear environment. Decisions made by logistics managers have to point out the complexity and uncertainty due to the growth of organizations and the increasing globalization on a world scale. As McKenna and Martin-Smith (2005) consider "this is further complicated by the devolution of power and decision-making within organizations which may be spread to many parts of the world with a diversity of cultures." That's why there is a fundamental shift in the corporate environment (Friedman, 2000) [in 9].

The conventional models of decision-making follow clear sequential steps, i.e. identification of the problem, generation of alternative solutions, evaluation and choice, implementation. There are four approaches for this process based on well known situation [Nutt, 2002]:

➢ analysis;

➢ judgment;

➢ bargaining; and

➢ inspiration.

During the 1970s, Mintzberg argued that **the simple linear model** is inadequate for important decisions "identifying cycling back and time lags" as basic elements in the process, and emphasized on political choice approaches and authorization. Later researchers at Bradford University developed a new approach (during 1970s and 1980s) identifying complexity and political influence as key issues in decision-making (Rowe, 1989). Whilst both the Mintzberg and Bradford approaches improved the reality of the model, linear organizational strategy was incapable of meeting such challenges as the promotion of

learning, creativity and innovation necessary for new future concepts.

Mitroff (1998) suggests **four possible perspectives** (technical, systemic, interpersonal, existential) and recommends perceiving every issue from at least two of them. Stacey (1993) points out three stages in a strategic decision cycle (action, discovery, choice). Mintzberg and Westley (2001) identify **three approaches** to making decisions which are:

> ➢ doing first (craft)
> ➢ seeing first (art)
> ➢ thinking first (science).

Johnson and Scholes (2002) raise the point that there are **three lenses** in decision-making process, i.e.

> ➢ experience;
> ➢ ideas;
> ➢ design.

Stacey (1993) underlines the impossibility to identify which stage comes first – a cycle may start with an action, a choice, or a discovery and then goes on through time [in 9].

According to us, it's very important for the logistics decision-making process to stress on knowledge about unpredictability, complexity and chaos of nowadays environment.

Chaos theory and Model of chaotic dynamic cycle of the decision-making process

Chaos theory refers to the irregular, unpredictable behavior of non – linear dynamic systems, suggesting that simple events can generate behaviors so complex they appear random, yet they are entirely deterministic (Marion, 1999). They will not result in a stable position and when input is slightly changed, the effect varies widely. This applies in social systems equally as well as in mechanical ones. To emphasize this point, "strange attractors" have to be found. In linear systems attractors are linear and stable, and if there appears disturbance, they will return to their previous consistent pattern. Strange attractors, whose non – linear dynamics are "asynchronous" [in 9], show that one variable can generate non – proportional results within the whole system. Such a behavior is entirely unpredictable. Edward Lorenz, the discoverer of strange attractors, called this "sensitive dependence on initial conditions". Minor changes in conditions have the power to magnify the effect of change out of proportion to the causal factors, i.e. as a result there is a butterfly effect.

Customers as bearers of social behaviors can be accepted in an analogue as "strange attractors", because:

> ➢ people's behavior may be stable but never repeats itself;
> ➢ people have the capacity to change their choices;
> ➢ people can display a broader or a narrower range of behaviors.

Chaos theory is an extension of systems dynamics (Stacey et al., 2000) and is primarily about deterministic non – linear systems. However, the organization cannot be deterministic, because of the differences of the individual human beings. The decision-maker cannot observe and manipulate objectively from outside the system. He or she, as a logistics manager, is a participant in the organization and interacts with other members inside and outside the system. As a human, each person has an individual identity and is capable of choice. Chaos theory may have limitations, but is still valid in dealing with the aspects of social systems and human behavior.

There is an interesting model of chaotic dynamic cycle of the decision-making process proposed by McKenna and Martin-Smith (2005). They think that the reasons for complexity and chaos in the environment stem from two perspectives:

> ➢ the nature of change in the environment due to technology, communication, economic, political and others factors; and
> ➢ the nature of behavior of the participants within the environment.

It's a very original stand to use chaos theory in order to explain the irregular, unpredictable behavior of human beings in these conditions. Figure 1 is our attempt, on the basis of McKenna and Martin-Smith's Model, the decision-making process in logistics management to be illustrated in a complex and chaotic environment and as a result of the influence of human beings' interactions in the cycle (see it below). We will try in the future to develop the idea that the "customer value" (Knox and Maklan (1998) defined it as what the customer is ready to exchange for a specific brand) and value priorities/orientations (according Hofstede's Five-Dimensional Model of Value Orientations, 1991) may play a central role in finding the relatively firm part in a dynamic cycle set, i.e. in the decision-making process in logistics management.

Conversation, as a main symbol of internal and external interactions, makes possible human relations between individuals and groups (teams). The decision process is presented as both a cycle of action-discovery-choice (Stacey, 1993) and a cycle of craft-art-science (Mintzberg and Westley, 2001). As McKenna and Martin-Smith underline a choice of lenses (Johnes and Scholes, 2002) reinforces this construct.

Each conversation between customer and logistics organization may reveal:

> ➢ possibilities of both sides for effective communication;
> ➢ abilities in "art, craft, and science" of customers in finding the "perfect" brand for their preferences;
> ➢ exchanges of different value orientations/priorities;
> ➢ opportunities in "discovery, action and choice" of logistics organizations in seeking the right way to "touch" the essence of customers' complexity of beliefs, values, emotions and knowledge etc.

Figure 1 A Model of the Dynamic Cycle of the Decision-Making Process in Logistics Management
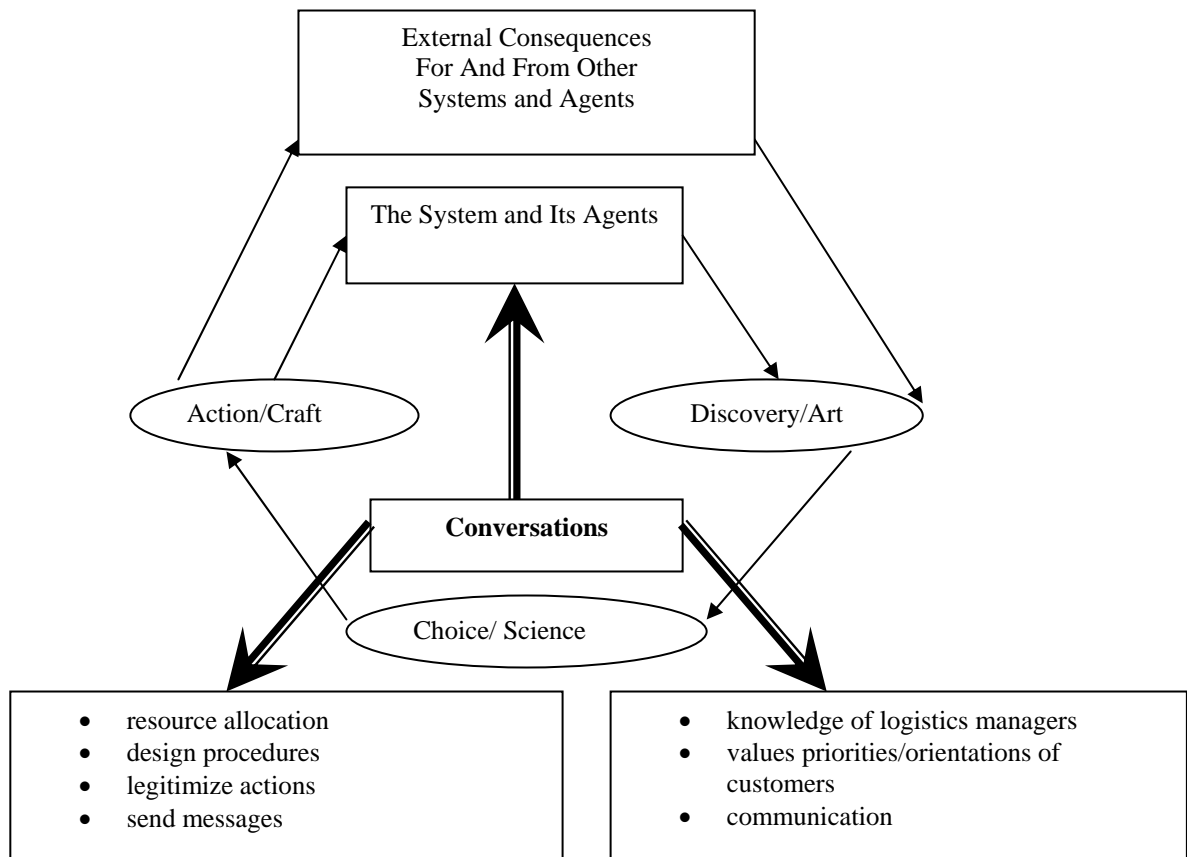
Conclusion

Conventional decision sciences provide tools and instruments primarily for the choice/science stage (see Figure 1). There is a necessity of new research initiatives and alternative approaches in decision-making process in logistics management. Embracing chaos and complexity and recognizing different paradigms of human and social behavior enables more sophisticated conclusions to the problem. Classical and behavioral decision-making models are based on rational, analytical and dispassionate processes. Viewing the world from this angle, as linear and deterministic, is very comfortable but unreal. However, the world is not strictly defined by linear and deterministic processes and imposes restrictions on decision-makers in logistics management, who have to accept and acknowledge complexity, chaos and unpredictability of people, tendencies and business environment.

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