KNOWLEDGE MANAGEMENT IN DAIRY HERDS: ACTIONS FOR IMPROVING TIES: THE CASE OF THE 'MAR Y SIERRAS' REGION OF BUENOS AIRES PROVINCE IN ARGENTINA

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Abstract

The dairy sector had a great importance in the livestock economy of Argentina, both in food production and in the social aspect of the labour involved. It is essential to have a level of personal education and adequate training to make decisions that lead to meet the demands. The theoretical framework for studying concept of ties, your advantages and disadvantages had in the communication process in the Argentine dairy enterprise and that are important to the success of knowledge management. This case involves the study of personnel of dairy farms in Mar y Sierras Area (Buenos Aires, Argentina). In effect a total of 49 dairy farms were surveyed between 2007 and 2012, belonging to 40 owners. Social networks and the degree of strength of their ties determine the flow and quality of information and also impact the daily tasks of dairying, these links are formed and disseminated in unexpected ways. In this framework some questions arises: Is it possible to promote such ties? Are these ties generated naturally? From the analysis of the interviews and experience with relevant interlocutors, courses of action it emerges to improve the links between human resources management processes improve knowledge of Argentine dairy systems.

Keywords: dairy farms, knowledge management, argentine dairy systems, communications, ties

"If you want to create a business that lasts a year, cultivated grains, but if you want it to last a hundred years, grown to your people"
Lao Tse, Chinese philosopher

1. Introduction

The modern dairy is one of the most dynamic agricultural enterprises and has a permanent challenge for technicians, producers and dairy personnel who must handle a major source of information and expertise to achieve greater efficiency and profitability of the system. Moreover, it is known that in milk production there are no holidays, strikes or bad weather, you should always be milking, which is a great physical effort for all stakeholders that should be taken into account when analyzing the company.

To work in a high milk production system, requires, as in any other system of production, labour commitment, perseverance, sacrifice and constant improvement. It should be noted that the "routine work" is one of the most important risks that milk production has, it is perhaps a good reason for the discouragement of people and one of the negative factors of importance when assessing the work of a dairy farm for young people seeking employment. In this framework where efficiency, the predisposition and the training of personnel involved are essential in the dairy production system, we ask:

1) What role do interpersonal ties has in achieving the goals and successes of the strategy?
2) Is it possible to implement measures to strengthen these ties?

In the search for answers, we propose to characterize the dairy personnel of the Mar y Sierras milk area, establishing the methodology to be used, making a bibliographical review to establish the conceptual framework, characterize the ties and its relation with the knowledge management and propose actions to strengthen the ties identified.

2. Feature of human resources from dairy farm on Mar y Sierras area

The dairy sector is of great importance in the country's economy, because it is involved in the food industry and as it requires a skilled workforce, needs a strong interest in the social aspects. The industry represents the 17% of GDP from the national food sector, the third most productive sector in Argentina and the 1.6% of total national GDP (FAO, Cappellini, 2011). It is essential to have a high level of personal education and adequate training to make decisions that lead to meet the demands.

Table 1. Time related to the activities

Activity aplication of workforce	Dairy herd	Dairy herd + other activities
Staff Hierarchy (owner, manager)	23.8 %	76.2 %
Nonhierarchical Personnel (tractor driver, bootes, mechanic, manager rearing, inseminator heat detector,	77.3 %	22.7 %

Table 2. Education attained and distribution

Education maximum attained	Distribution
Primary not finished	15.2 %
Primary finished	53.5 %
Secundary not finished	15.6 %
Secundary finished	6.4 %
Terciary	1.2 %
University	8.1 %

Table 3. Staff involved in specific training for dairying

Personal training processes involved in dairy farms	Distribution
Yes	64 %
No	36 %

This study was conducted between 2007 and 2012 on 49 dairy farms of Mar y Sierras area, which covers 23 districts of the Province of Buenos Aires (Argentina), consisting of 241 dairy farms, representing 2% of the country's total, producing 4% of the total volume of milk (FAO, Cappellini, 2011).

According to the study, we can infer that the tasks of the staff of the companies surveyed are distributed in Table 1.

According to the level of education, the staff can be classified as follows, showing a strong emphasis on the poor education of the people (Table 2).

Human resources have been involved in different processes in training, with the following distribution (Table 3).

In age, the average employee's age was 36 years (median), with a minimum of 23 and maximum of 64 years. 85.3 % of the staff surveyed were male. Marital status: 66.3% were married, 19.8% cohabiting, 11.4% separated and only 2.5% were single. In terms of seniority, the median was 10 years with a minimum of 2 months and a maximum of 45 years.

3. Methodology

Between the years 2007-2012 the multidisciplinary team of researchers from PROANVET (FCV – UNCPBA) conducted closed surveys from dairy farms of Mar y Sierras milk area (Buenos Aires, Argentina). Respondents were business owners, managers and personnel responsible for several tasks of dairy farming work.

Personal surveys were carried out with 329 individuals, with a mean of 6.71 persons per farm (with a median of 7 and a range from 2 to 14 persons).

Closed surveys consisted of 30 questions ranging from data position in the company, seniority, level of education and training, among others, through relationships within and outside the business unit, origin of them, durability and observed changes, to technical details useful for evaluating aspects of productivity and efficiency. These last issues are not discussed in this paper.

The quantitative data analysis was conducted using the Soft Stata with regression analysis and, in case of closed surveys, describing the situation of the activity for Mar y Sierras milk area has relied on the use of Soft Atlas-ti, which has permitted the development of networks with strong conceptual basis in founded theory.

4. Review of the literature

Most dairy cattle farms in Argentina are developed as family businesses, they have several generations of experience. When studying the processes of knowledge management in these companies it is necessary to explain the vision that the owners have for the future and its objectives should clearly reflect its values and ideals.

The explicit objectives often reflect the stages of the life cycle of the owner and his family in the business and agricultural activities cover both itself and the properties in which they have invested.

The challenge for a company with little bargaining power, as is the medium and small dairy farm in Argentina, is to develop appropriate business and achieve aspirations aligned to their human resources in the framework of the proposed strategies.

Operational effectiveness and strategy are essential to superior performance, which after all is the main objective of any company. However, these elements function in very different ways (Porter, 1999). This author's argument was that the benefits of groups derives from the existence of personal relationships that facilitate connections and foster both, open communication and confidence.

There are multiple factors that affect the success of the communication process and the implementation of strategies, such as organizational barriers and the legal forms they assume in the market, the attitudes and behavior of people, generating a culture of trust and commitment, among others. However, there is a need to understand that certain relationships give scope for innovative processes and others, of apparent strength, do not originate them. These elements arise and multiply in interpersonal networks, transcending the boundaries of groups inside and outside the business unit.

It has been established that the strength of a link between different people is the combination of the amount of time, emotional intensity, mutual trust and reciprocal services which characterize the tie (Granovetter, 1973).

There are strong and weak ties across social networks, originating from hierarchical structures, working relationships, formal and informal networks of communication, friendship and/or family, and even those casual ties exists between the people who make up the company.

Karl Weick (1976) suggests that there are loosely coupled systems when they have few common variables are weak, even retain their identity and separation. These weak links are manifested when they occur from time to time, not significantly and indirectly. They suggest that any location in an organization contains interdependent elements which vary in number and strength.

Factors that may lead to weak links can create uncertainty, critical results, the fragmentation of the external environment system, the dispersion of encouragement, bureaucracy, cultural diversity, among others (Weick, 1976).

Knowledge is formed and integrates the resources and capabilities of the company. Lawrence and Lorsch (1967) suggest that "an organization is defined as a system of related human behaviors of people performing a task, to be distinguished from each other by way of subsystems. In turn, these subsystems are integrated to achieve efficient system performance as a whole."

We discuss the effect of factors that this problem generates, but the most important topic is taking an independent position or self-sufficiency of the subsystem.

When, from our role as researchers, studying the processes of knowledge management and its importance in the development of strategies in the agricultural business of dairy farming, we found a very particular world where communication mechanisms are recognized and knowledge transfer represents a real challenge.

One of the important aspects in the study of these agricultural organizations is to analyze the characteristics of the business model of Argentine family dairy farm. The contributions of Max Weber's concept of bureaucracy are very useful in understanding human relationships within the said business model and the legitimation of power based on the family tradition. In this respect Weber argues that the modern bureaucracy model envisages the division of tasks in assigned areas of authority and a clear hierarchical authority headed by the head of the family and the establishment of formal rules and relationships deeply rooted in family tradition.

Tradition is precisely what gives strength, power and authority in hierarchy in the social figure of the family and therefore in the family business.

Argentine laws are based on the Civil Code, which provides a solid legal basis for the figure of "succession" in ownership of the company, without giving way to the possibility of choice, the ability to drive as a good businessman or the real interest of the person who takes the lead, the determinants of candidate selection in the context of the interests of the firm.

Another livelihood to legitimize that authority is the story of family heads leading the direction and decisions of the family business, often at odds with the objectives of both organizations (company/family) and, on many occasions, making the interest of one over the other prevail.

Knowledge is an important strategic resource and not replaceable, which is characterized by heterogeneity and high mobility.

As suggested by Polanyi (1966), this knowledge generator of advantages is tacit knowledge, which is built from experience and plays a key role in the process of learning and value creation. This tacit knowledge, based on the premise that they are shared by people who base their relations on mutual understanding, trust and the sharing of certain rules, beyond the existence of physical proximity between them.

Knowledge management bases its development on the transferability of the implicit or tacit knowledge and converts it into explicit knowledge. In this process linkages are dominant social networks which are the ways where such transfer occurs.

It is therefore vital to establish the degree of importance of the links to understand the behavior of people and their real ability to transfer knowledge, thereby generating outsourcing processes and levels of innovation in the company.

Social networks and the degree of strength of their ties determine the flow and quality of information (Granovetter, 2005). In this framework, we can ask: Is it possible to promote such links or are they generated naturally?

Dairy farming in Argentina is an economic activity, comprising a social phenomenon that is solidified in a series of premises such as habits, tradition or trust.

People who share a daily activity, beyond its location in the hierarchy, are in an environment in order to improve and strengthen relationships of trust mechanisms. This scenario has been called embeddedness (Granovetter, 1983).

The concept of trust which will have an important role in defining the mechanisms of communication, inward or outward from the company, as studies such as Katz and Lazasfeld, 1955 (quoted in Granovetter, 1973) have established that communication processes based on personal ties are more effective than massively distributed information and that which does not know its origin and authenticity. So if you can set and measure confidence in a leader, we retrospectively establish the ability to predict and affect the behavior of the subordinates of the company.

5. Strong ties and the strength of weak ties

When analyzing organizations from the point of view of sociological theory, the concept of link or loop has been suggested to establish two types of social networks involved in the processes of diffusion of knowledge (Granovetter, 1973).

Firstly an interconnected network shows the existence of many relational lines, giving rise to the so-called strong links, and secondly a low density network consists of relational lines existing between individuals and the group of acquaintances, giving rise to the so-called weak links.

It has been argued that those with few weak links have an important restriction on access to information from the social system and in cases of initiatives to get a new job, may be disadvantaged in the labour market, either because they are isolated from new ideas or fads, or ignorant of the current job openings at the time of the search (Granovetter, 1983). It is precisely this type of bond that allows a greater flow of information between groups, serving as a bridge to link and giving a sense of community.

In line with this position, it has been suggested that strong ties may provide access to redundant information (Hansen, 1999), but from the existence of weak ties that greater and updated information, one that leads to processes of innovation and move in circles outside by itself, have access to information other than that which is usually accessed.

The generators of weak links are groups that share work duties and formal organizations, including those where the object is recreation.

When in the agricultural enterprise we face heterogeneous groups, often formed by way of different business units (e.g. Dairy A, Dairy B), weak ties can be achieved to facilitate the communication processes of knowledge, and even get to act intergroup bridges as true, as the context permits training the people involved. In that sense it is suggested that the links between people without links to others are called local bridges (Feld, 1981).

For these reasons, and in line with what is suggested by Granovetter (1983), weak ties may be more useful for the purposes of the individual and the organization, if they have the strength to become useful bridges rather than become strong links.

Some academics (Granovetter, 1983; Wegener, 1991) argue that weak ties have the disadvantage of limiting access to information by individuals, or at least be less efficient under certain circumstances and therefore are disbelievers of volume and quality of the information circulated through them. That is why the dependency relationships with friends or individuals deeply rooted links tend to be more successful in the process of covering a labour need.

Other authors suggest that the complex processes of information flow, even when dealing with tacit knowledge, the effectiveness of weak links is questioned (Teece, 1977; Hansen, 1999).

An issue related to the promotion of ties has to do with the cultural differences of the individuals involved and the associated costs to maintain over time such links or ties, to which the scientists suggest that strong ties undertake higher costs, since they rely on the base formed by the permanent interaction between people, usually those who are called friends.

So frequent visits or meetings require sacrifices, not only of money, but of valuable time and generate reciprocal obligations whenever some vital information is entrusted to us.

According to the last paragraph, and to the extent that those obligations of reciprocity become more enforceable, a strong bond can become an obstacle for the company as you run the risk of losing the necessary autonomy in innovation processes.

6. Knowledge management and its relationship with links

In an organization, such as the dairy farming operation in Argentina, the fact that learning involves the existence of different ways to construct and organize knowledge and/or routines around their activities and within culture, provides a gradual recognition of this process, its activities and results, as contributing to the establishment and maintenance of a competitive advantage. Knowledge is recognized as the most important result of organizational learning (Senge, 2000).

There are several theories to explain the processes of knowledge management, but one can understand the process of knowledge generation and transfer through the so-called spiral of knowledge conversion (Nonaka and Takeuchi, 1995).

It will be the aim of this dynamic process called spiral, converting tacit knowledge into explicit knowledge so that it can be properly disseminated and support innovation processes in the company. The knowledge creation process requires a specific context in terms of time, space and relationships to sustain (Nonaka et al, 1998).

Thus the activity and relationships of people and organizational culture permit this context or setting, generate power, quality and better spaces for individual development in converting information into knowledge through the spiral and that new knowledge is created from existing knowledge through the exchange of meanings and contexts.

Here the need for greater understanding of how the organization and the individual come to have shared meanings appears, which are key elements of organizational culture and in turn, required for the successful implementation of strategies. In this context, the recognition of the existence of tacit knowledge and the existence of ties or links, whether strong or weak, play a role in the process and can ensure, or not, the success of these business strategies.

The current development of communications, bureaucratization, the population density and the number of human resources involved in economic activity, promote an increase of a larger number of weak ties.

7. Actions to strengthen the ties

The great advantage of working with agribusiness personnel is its high susceptibility to training, either by their low level of study or social. The study provides very encouraging data (see "Personal Features ..."), since a high percentage of respondents (64%) are prone to training.

Another point to note is that only 9.6% preferred individual training, which shows that 90.4% opt for training in groups. Regarding the place, 78.4% preferred that the training takes place outside the scope of work, for example in the University.

Through training, re-training, team building, research and support of a leader, the power supply with technical meetings, with prizes and, above all, by creating welfare for workers and their families, strengthen linkages are achieved and improve knowledge management processes.

These tasks, which seem so far removed from the administration and management of a dairy stream, have become necessary and intensification of production systems makes it unavoidable.

Some of the issues on which one can work on training projects are illustrated in Table 4, representing six common objectives for dairy enterprises with their specific actions.

When operated from the outside, where what is done is determined and controlled by external factors such actions involve a negative effect, the person is on the defensive, hesitant, does not take risks and is unmotivated.

Conversely, when actuated from inside, driven behaviour causes the internal and personal control activity results charged. The person is more optimistic, confident, accepting the risks better, so we say the person is motivated.

Table 4. Common targets for dairy farms and actions

KNOW-HOW **Skills and talents to the required task** * staff training * specialization of tasks * interaction with the university * owner's training	**STRATEGIC INFORMATION** **Knowledge management** * use of supporting documents * access to computer technology * management of periodic reports	**CULTURE** **Internationalization of the vision and mission. Mind model** * open mind * demonstrate values- * set an example
LEADERSHIP **Mobilizing leader** * humility * recognition of achievements * assess the availability	**ALIGNMENT** **Empowerment** * families job * approach to strategic partner * administration of expectations * identity of the job	**TEAMWORK** **Share knowledge Team spirit** * good practice shared * availability for work * Argentine barbecue

8. Conclusions

From the study in relation to a number of dairy farms in the Mar y Sierras area in Argentina it has been shown that there are multiple factors that affect the success of the communication process, where organizational barriers, attitudes and behavior of people, generating a culture of confidence or commitment can give rise to links that will support knowledge management processes (Granovetter, 1983).

These linkages can be strengthened by the creation in human resources for better working conditions and promoting training opportunities. The paper suggests some actions that serve as a trigger of training processes in the conviction that there is a high staff predisposition to it.

There are different ways to train, although it is advisable to "empower" staff, it is also necessary to enable them to reduce the risks of having and using that power. Bad technical decisions directly affect the costs and results of the company.

There is, in any person, an innate desire to learn. Often this desire is hidden and the lack of motivation prevents its manifestation. But it is also true that the right work is enjoyed for its own quality and it should point to who wants to work with motivation and efficiency. Those eager to learn and to know are the best target to achieve in formal education of any person.

It bears repeating that the training should be continued, the widespread custom of sending staff to a technical talk and consider a course or have already received sufficient instruction on how to do things is wrong. Only supported with lessons to everyday work will make it in efficient and also each training will be a motivating injection. Staff should feel supported, supervised and motivated, if you feel your job is important in itself you will want to do well.

We can say that an organization, with the features described in this paper, can learn which suggests that to sustain the climate of organizational culture that allows innovation spaces achieve an effective knowledge management process, the organization must learn from and of this cultural perspective focus for their efforts on creating mutual support and shared meanings (Schein, 1988).

Finally we must make clear that the development of the conceptual frameworks of this study require the necessary complement of empirical research to validate the claims above, in reality the process of knowledge management in the dairy farming operation in Argentina, to abandon what would a speculative vision of the sector. Empirical models have been developed by Noah Friedkin (1980) and Scott Feld (1981), which establish the structural meanings of weak links and strength in the context of social networks investigated.

These results are encouraging, but are considered inconclusive, so the door is open for future development of new research to illuminate the issues raised.

9. References

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