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Con esta serie de documentos de trabajo se pretende difundir los resultados de investigaciones que están en proceso de elaboración. Busca estimular el intercambio de ideas y contribuir a un diálogo que enriquezca el resultado final de la investigación. En tales artículos se reflejan solamente los puntos de vista de su autor y pueden citarse conforme a las reglas académicas.

This series of working papers presents the results of ongoing research. It intends to stimulate the exchange of ideas and contribute to dialogue that may improve the quality of research. These documents solely reflect the point of view of the author and may be cited in accordance to academic rules.



Cultura organizacional y sostenibilidad en entornos turbulentos.

Reflexiones a partir de un estudio de caso en profundidad de una empresa minera en Colombia.

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Organizational culture and sustainability in turbulent environments.

Insights from a case-study of a large mining MNC in a Latin America country

Resumen

Más allá de la reconocida dificultad para definir el concepto de cultura organizacional, se identifican en la literatura al menos dos asuntos de importancia que requieren de mayor investigación para superar el nivel especulativo que, en buena parte, caracteriza actualmente su tratamiento. En primer lugar, está el interés en entender la relación que existe entre la cultura de una organización y su sostenibilidad y desempeño. En segundo lugar, se encuentra la polémica pregunta acerca de si la cultura puede ser intervenida en forma deliberada y si la gerencia tiene el derecho y la habilidad para hacerlo. Moviéndose en esta dirección, este artículo, basado en un estudio de caso en profundidad de una compañía minera que opera en Colombia (Cerro Matoso S.A.: CMSA), muestra como los empleados a través del tiempo se han suscrito a un conjunto de valores comunes jugando así un papel importante en la sostenibilidad de esta empresa en un entorno de alta incertidumbre.

El artículo está estructurado en seis partes. La primera parte presenta la metodología que se utilizó para adelantar el estudio de caso. En la segunda y tercera partes se presenta una información básica sobre la empresa y su entorno. En la cuarta sección se muestra el proceso a través del cual se han ido configurando en el tiempo algunos valores distintivos de la cultura organizacional de CMSA: dos de ellos a través de esfuerzos de creación colectiva y otro, mediante

Abstract

A "strong company culture" has been usually deemed the sine qua non of success in organizations. As a consequence, the interplay between organizational culture and company's performance is a critical issue in organization studies needed of empirical research to surpass management conventional wisdom. Moving in that direction, this paper -based upon a in-depth study of a large mining MNC operating in rural Colombia- shows that organizational culture has played an important role in the company's sustainability for over three decades (1970-2003) in a particularly conflicting and turbulent environment. The case study was based on a qualitative methodology that included the realization of almost one hundred in-depth interviews with a variety of stakeholders, field observations, and a review of secondary sources on the company.

The paper consists of six parts. The first part presents the methodology employed in conducting the case study. The second and third sections present basic information about the mining company and its environment. The fourth part shows the process through which, over time, certain distinctive values of the company organizational culture emerged: two of these through collective creative efforts and the other through deliberate efforts by management. The fifth part brings together theoretical elements proposed by W. Ouchi to demonstrate that the values cited, together with the bureaucratic and technological characteristics of the organization, make

*This paper draws on a research project carried out at the School of Management, Universidad de los Andes, directed by the author. The research team is made up of four other members: Carlos Dávila, Amparo Jiménez, Laura Milanés y María Isabel Rubio. Their contribution to the project as well as the support provided by the School of Management, its Research Committee, and the collaboration of the people interviewed and the management staff of CMSA is acknowledged. Developing Countries.



esfuerzos deliberados de la gerencia. En la quinta sección se traen a colación los elementos teóricos propuestos por W. Ouchi, para mostrar que los valores antes mencionados unidos a las características burocráticas y tecnológicas de la organización configuran un elaborado sistema de control, que es a su vez una competencia nuclear y fuente de la ventaja competitiva que CMSA mantenía en 2003. Finalmente, se presentan las conclusiones y se discute la importancia de este estudio para futuras investigaciones.

Palabras claves: cultura organizacional, sostenibilidad, control en la organización

up an elaborate control system, which in turn is a core competency and source of competitive advantage that the mining company maintained in 2003. The final section presents conclusions and a discussion of the importance of this study for future research.

Keywords: organizational culture, sustainability, control in organizations.

Organizational culture and sustainability in turbulent environments. Insights from a case-study of a large mining MNC in a Latin America country¹.

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Beyond the recognized difficulty of defining the concept of organizational culture, the literature identifies at least two important issues requiring major research to overcome the speculative nature of the subject's current treatment. First is the interest in understanding the interplay between an organization's culture and the organization's sustainability and effectiveness³. Second is the polemical question concerning whether direct and deliberate intervention in the culture is possible and if management has the right and ability to do it⁴. Moving in those directions, this paper -based on a in-depth study of a large mining MNC operating in rural Colombia (Cerro Matoso S.A.: CMSA)- shows how the employees over time have subscribed to a set of common values that have played an important role in the company's sustainability⁵ for over two decades (1970-2003) in a particularly conflicted and turbulent environment.

The paper consists of six parts. The first part presents the methodology employed in conducting the case study. The second and third sections present basic information about the company and its environment. The fourth part shows the process through which, over time, certain distinctive values of the CMSA organizational culture emerged: two of these through collective creative efforts and the other through deliberate efforts by management. The fifth part brings together theoretical elements proposed by W. Ouchi to demonstrate that the values cited, together with the bureaucratic and technological characteristics of the organization, make up an elaborate control system, which in turn is a core competency and source of competitive advantage that CMSA maintained in 2003. The final section presents conclusions and a discussion of the importance of this study for future research.

1. Methodology

This article is based on an in-depth case study that sought to identify the organizational characteristics specific to CMSA that had allowed it to survive in a complex and unstable environment⁶. To do this, it was necessary to conduct a retrospective longitudinal

analysis of the organization's path over three decades. The study unfolded under the premise that in the life of an organization, evolution is not necessarily lineal and progressive, but can exhibit a striking correspondence on its trajectory⁷.

1 Paper presented at "Latin American European Meeting on Organizational Studies". Commission: Managing culturally diverse organizations. Puebla, Mexico, 2006.

2 This paper draws on a research project carried out at the School of Management, Universidad de los Andes, directed by the author. The research team is made up of four other members: Carlos Dávila, Amparo Jiménez, Laura Milanés y María Isabel Rubio. Their contribution to the project as well as the support provided by the School of Management, its Research Committee, and the collaboration of the people interviewed and the management staff of CMSA is acknowledged.

3 Jones (2004).

4 Hatch (1997).

5 A sustainable organization is one which endured over time, responding to a social need, offering products and service of competitive cost and quality. At the same time, it has developed stakeholder relation strategies through it distributes wealth or value among these groups.

6 Dávila, J.C., Dávila, C., Jiménez, Milanés & Rubio (2004).

7 Chandler (2001).



The study was based on a qualitative methodology⁸ that included conducting 91 semi-structured and in-depth interviews; the research also included field observations and a review of secondary sources on the company. For convenience, the interview population consisted of a sample selected not for its statistical representation but to obtain information about the perspectives of diverse actors who directly or indirectly participated in building relations between CMSA and its stakeholders. The 91 interviews break down thus: 70 were employees (including 14 managers, 16 professionals, and 18 supervisors and rank-and-file-workers) or former employees of CMSA (equal to approximately 8% of the work force) and 21 interview subjects represented various sectors of the community.

This research did not use a specific a priori theoretical framework, nor did it define a hypothesis to validate

or refute, nor did it begin from explicit assumptions about the distinctive characteristics of CMSA. The study employed an inductive-deductive methodology that facilitated moving from the information collected toward identification and generation of the theory - grounded theory - which "underlies the socio-cultural study and which arises directly from the empirical information"⁹. Information processing included production of summaries of theoretical documents and reviews of articles; codification of interviews and documents, and identification of the reasons for the company's sustainability explicated in the form of "statements." The codification of the interviews was done manually and was processed with the qualitative data processing software ATLAS/ti, which facilitated classification, relation and interpretation of a large volume of relatively diverse information.

2. The Organization Studied

Cerro Matoso S.A. is a nickel mining company chartered and located in Colombia. It was created in 1979 as a company with both foreign capital and Colombian State interests. Construction and installation of the plant began in 1980, and operations got underway in 1982. At the end of 1997, the Colombian State sold its interests (47.69%) in the company, which is currently 99.8% held by BHP Billiton- "the largest diversified international resource group in the world."¹⁰ CMSA is part of the stainless steel division; its principal objective is the exploitation of nickel and the production of ferronickel. BHP Billiton's head office handles sales¹¹.

The company (mine, processing plant and administration), which occupies 32th place among the 100 most important companies in Colombia¹², is located in the municipality of Montelíbano, in the Department (province) of Córdoba, in the Caribbean coastal region of northern Colombia. The mine is considered world class, with one of the largest lateritic deposits of nickel in the world. It contains more than forty million tons of mineral with an average tenor of 2.2%¹³. A second production line built between 1999 and 2001 increased production capacity by 17,554 tons during the first year of operation¹⁴. In the last financial year (July 2002 to June 2003) CMSA

8 The qualitative investigation "involves emphasis on processes and meanings that are not measured in terms of quantity, intensity or frequency. Qualitative researchers stress the socially constructed nature of reality, the intimate relationship between the researcher and what is studied, and the situational constraints that shape inquiry. In contrast, quantitative studies emphasize the measurement and analysis of causal relationships between variables, not processes." Denzin & Lincoln (1998), p. 8.

9 Glaser & Strauss (1967), p. 6.

10 According to BHP Billiton: "Around the world, daily, they supply the commodities that are used to manufacture a multiplicity of products that contribute to the quality of life. From computer parts to high-precision surgical instruments." BHP Billiton (2003), p. 2

11 Marketing the product has not been in the company's sphere of activity. Billiton Overseas undertook this in 1979 and since the privatization it is done in the Home Office (BHP Billiton)

12 Revista Dinero (2005), no. 231, p. 38.

13 BHP Billiton (2002), p. 1.

14 "In financial year 2002 CMSA's production reached a new historic record: 40.415 tons of nickel in the form of ferronickel. This is a 27.3% increase compared to financial year 2001, which was also a record year." CMSA (2002b), p. 14.

produced 46,900 tons of nickel,¹⁵ with gross earnings of US\$ 199 million and net profit of US\$ 109.4 million¹⁶ of which the Colombian government receives US\$ 15.6¹⁷ million in the form of royalties¹⁸. In 2002 the company had 915 workers, 890 contractors and 163 employees of the foundations sponsored by CMSA, that is, direct employment of 1,968 persons¹⁹, making it the largest employer in its zone of influence (the municipalities of

Montelíbano, La Apartada and Puerto Libertador)²⁰. From the beginning CMSA has supported three foundations: the Montelíbano Educational Foundation (Fundación Educativa de Montelíbano -FEM-); the Panzenú Foundation, which provides education and health services to the company's workers and their families, and the San Isidro Foundation (Fundación San Isidro -FSI-), which focuses on community support.

3. The environment

Colombia is a developing country that has had less foreign investment than other Latin American nations²¹. The country has a highly changeable legislative climate²² in the mineral field (concessions) and regarding energy resources, especially electricity. The country has been stable in macroeconomic terms. Politically, it has endured 50 years of uninterrupted democracy, while suffering an internal armed conflict for nearly as long. This bloodshed was initially a product of partisan violence but has evolved into a cynical struggle among guerrillas, drug traffickers and paramilitaries²³. Colombia is deeply problematic from a social stand point, and this has worsened in recent years. Evidence can be found in the extreme disparity of this is the wide gap in income distribution²⁴ and the widespread poverty, which affects 59,3% of the urban population and 74% of the rural population²⁵. Pervasive corruption²⁶ and high, sustained unemployment contribute to the vicious cycle²⁷.

The problem is at its worst in the region where CMSA is located. The area is one of the most depressed in the country, with a lack of basic necessities in the areas of sanitation (water and sewer), electricity, employment, health, education and housing²⁸. The clientism that has characterized the country's political life is particularly pronounced in this region. Currently the department of Córdoba - traditionally a rural farming and fishing area at the confluence of two large rivers, the San Jorge and the Sinu - is on the road to deagriculturization and reduced fishing²⁹. This is due in part to a paucity of sources of formal mass employment, such as that provided by industrial enterprises, and the presence of drug trafficking and illegal groups (guerrilla and paramilitary). The latter have contributed to a high level of migration³⁰.

15 Tabla *Review of operations*. BHP Billiton (2003), *op.cit.*, p. 8. Note: Financial year 2002/2003 is from July 2002 to June 2003.

16 CMSA (2003b), pp. 54, 56.

17 CMSA (2003b), p. 71.

18 The additional contract signed in 1970 called for CMSA to pay 8% royalties on production at the mouth of the mine. Later this was increased to 12%, beginning in 2007.

19 *Econometría* (2003), p. 15.

20 In 1993, Montelíbano had 44,097 inhabitants and Puerto Libertador had 16,207 inhabitants. Regarding La Apartada no information exists from the latest census. Dane (1993).

21 World Bank (2000), pp. 352-355 y CD ROM *Indicators of Foreign Direct Investment Net Flows*; Del Corral y asociados (2001), p. 94, table 9-8.

22 "The government of Colombia does not have the capacity to formulate medium and long term policies because the necessary coordination does not exist among its governing entities, stability at its management levels is minimal and the budgetary systems bear no relation to the planning process." *El Tiempo* (marzo 19 de 1987), p. 7A.

23 Echandía (1999).

24 López (2003), p. 106 y World Bank, [*CD ROM Gini Index*].

25 López (2003), p. 106.

26 *Transparencia internacional* (2003).

27 World Bank (2000); Banco de la República (2004a).

28 López y Abello (1995), pp. 19, 22 y 37.

29 López y Abello (1998), p. 7.

30 Forced displacement caused by the internal conflict. *Tierra Alta*, Córdoba occupies ninth place for displaced persons in Colombia, with a percentage of 1.63. FNUAP (2000).



As the largest company in the region, CMSA has had a considerable impact on its area of influence. Economically, this is evident in the purchase of non-consumables, which, between 1982 and 1999, pumped \$172 million into the regional economy³¹. Additionally, between 1973 and 1993, the population

growth in Montelíbano was 1.3% higher than the average of Córdoba³². During construction of the second production line (1999-2001), there was a floating and fluctuating population of workers that, at its peak, reached 3,000 in a municipality of about 44,000 inhabitants³³.

4. The path of CMSA and the building of an organizational culture³⁴

The results of the case study on which this article is based suggest that CMSA has succeeded in surviving competitively in the midst of a turbulent environment. This would appear to be attributable to a set of organizational capabilities that the company has developed over the years. While the objective of this research was not to study the company's culture, it revealed that one of these capabilities is related to the concrete activities and practices of its employees, which appear to be based on common values, deeply rooted, whose formation and socialization have taken place day by day over the more than three decades of CMSA's existence (1971-2003). It becomes possible to approach some of these cultural characteristics of CMSA.

Evidence gathered throughout this research shows that values such as the workers' sense of belonging, their commitment to and solidarity with the company, the attention to safety and an awareness of the company's past are important cultural dimensions for the CMSA workforce. Six factors stand out as dominant influences in the formation and internalization of these values: 1) the geographic isolation of life in the residential community; 2) development of the technical capacity allowing the company to create, put into operation and stabilize the process of exploiting and processing the mineral; 3) the shared experience of having overcome

difficult conditions in the early years (1981-1987); 4) the accelerated "Colombianization" process that sustained the aforementioned factors; 5) working conditions that developed over a span of more than 30 years; and 6) the respect that a series of shareholders have shown for CMSA's local practices. Each of these aspects receives close attention in the rest of this paper. Two related subjects also enter the discussion: the internalization by the worker of the value related to physical safety and the interaction between the local culture and the organization.

A. Geographic isolation

The company's geographic isolation, which also characterizes life in its community, and its nature as a *company town*³⁵, are natural conditions that intensify and consolidate beliefs, values and practices suited to the organizational culture of CMSA. In this type of organization, in which the border between personal life and work is indistinct, life revolves around the company 24 hours a day. The majority of employees live in assigned houses in one of the neighborhoods that make up the community. Transportation from house and mine is by busses provided by the company; lunch is taken in a common hall and sports and social life are pursued in clubs established by the

31 *Econometría* (2003), p. 11.

32 From 1973-1993, the population grew annually by a greater percentage than the rest of the Department of Córdoba: 3.9% Montelíbano and 2.9% in its area of influence versus 2.6% for the rest of the department. With respect to the total variation in the population between 1973-1993, Montelíbano had growth of 114% (from 24,475 to 52,549 inhabitants) while CMSA's area of influence had growth of 77% and the rest of the department had growth of 51%. *Econometría* (2003), p. 26.

33 Interview with director, no. 92, Dec. 17, 2003 (concerning the number of workers) and Dane (2003), (concerning the municipal population).

34 "Organizational culture involves the members of an organization in a socially constructed reality. Organizational members share this reality in the dual senses of similarity and difference. The elements upon which cultural sharing is based include artifacts, symbols, values and assumptions, and physical, behavioral, and linguistic symbols. These cultural elements are interrelated in a web of interwoven meanings – a set of core values and a worldview – accessible to all members of the culture". Hatch (1997), p. 236.

35 A *company town* is a town with only one employer: a town whose residents depend on a single business for employment, housing and shops. Boyd (2003).

company. It is in this setting, with the focus on company activities, that the bond between CMSA and its employees is constantly renewed and where the workers socialize and spend a substantial part of their time. These circumstances tend to develop a sense of unity, as well as a sense of belonging to a collective and being committed to it³⁶, in this case CMSA.

B. Development of technical capacity and the difficult circumstances experienced 1981-1987

During its first 16 years (1971-1988), CMSA developed a technical capacity that allowed it to create, start up and stabilize the production process. In the first step of developing this capacity, during the design phase of the Project (1971-1976), knowledge was acquired about the process through successive steps. Initially, there was research to understand technical procedures in use globally for exploitation of lateritic deposits and processing the mineral. This had major relevance because the deposit, in contrast to others of the same type, lacked uniformity in its nickel content and in its physio-chemical composition³⁷. Based on this research, and on designs and tests conducted at three pilot plants (two in the US and one in Norway) the most appropriate process in terms of equipment cost and compliance with the parameters proved to be the pyrometallurgical RKEF (Rotary Kiln Electric Furnace) and this process was adopted³⁸.

Nevertheless, once the operation began in Colombia (1982), it became clear there was a need to expand the plant's technical capacity since the level reached at that time was not sufficient to overcome serious deficiencies that arose during the startup. In effect, the period 1981-1987 saw "considerable annual losses" resulting from the conjunction of various factors: the process was technologically new, margins for error in the process were narrow, the mineral had a very high fusion point and the company was using the largest electric furnace existing at that time³⁹. These

difficulties appeared to be exacerbated by the lack of specific knowledge and experience on the part of personnel. One director commented: "The first five years were controversial and difficult because we did not have knowledge of the process. The people who came to work here had good resumes, but no experience in this specific type of process. We wound up in a mess with the system's own designers unable to find a way to move."⁴⁰ Neither the partners nor Hanna Mining, the American company in charge of providing administrative and technical support on the project, had the know how for this type of deposit.

The technical problems culminated in a damaging rupture of the electric furnace in August 1985. In effect, this loss of a great amount of mineral "was a wake-up call for the entire organization, from the board of directors to the operators"⁴¹ and lent immediacy to the need to give more attention to preparing personnel and conducting research into the production process.⁴² The rupture of the furnace produced enormous losses for CMSA and brought it to the brink of bankruptcy. For this reason, "the plant was taken out of operation for five months and production only reached 25.1 million pounds of ferronickel for the year, instead of the 38 million budgeted."⁴³

In the face of the crisis precipitated by the technical problems and the huge financial losses they generated, the decision took hold gradually in 1985 to give priority to stabilizing the process more than trying to meet established production goals. The stabilization strategy brought with it a new philosophy: "work slowly; don't be in a hurry." For example, "each time we were going to take a step to increase the megavatio [of the furnace's power], we met, analyzed the graphics, the activity, the indicators and the variables⁴⁴." This strategy, while conducive to improving technical ability, produced lower than budgeted yields. The Colombian employees "began to learn to see positive results, to find the explanation for many phenomena that they did not understand

36 Porteous (1970), p. 62.

37 Melo (1986), p. 62.

38 Melo (1986), pp. 63-66.

39 Interview with former director, no. 66, Oct. 28, 2003, p. 2.

40 Interview with director, no. 43, July 31, 2003, p. 11.

41 Interview with former director, no.66, Oct. 28, 2003, p. 3.

42 Interview with former director, no. 66, Oct. 28, 2003, pp. 3-4.

43 Address delivered by Sergio Restrepo Londoño, Manager of the Instituto de Fomento Industrial – IFI, June 18, 1986, p. 11.

44 Interview with director, no. 43, July 31, 2003, p. 2.



before⁴⁵." As mentioned, production during this period reached 75% of predicted goals⁴⁶.

The promotion of a Colombian engineer to vice president for operations in 1986 played an important role in accelerating the research and knowledge of the thermodynamic and physio-chemical characteristics of the process. The causes of many phenomena were unknown, having gone undetected at the pilot plant. The group of Colombian employees had at this point between five and seven years' experience⁴⁷. This vice president headed an effort by a group of Colombians composed of 28 professionals (with responsibilities of supervisor or higher) and at least 100 rank and file workers, whose mission it was to stabilize the operation. They appeared to have reached their goal by 1987, the first year in which revenues exceeded costs, marking the beginning of a four-year period in which the company "earned around 43 million dollars on average per year⁴⁸."

As recalled by people interviewed, this collective action effort was something that arose from the grass-root up the hierarchy (workers, supervisors and managers) in response to the need to understand and control the production process. It was not a "brilliant idea" hatched by far-off partners, or by the president or by the directors, nor was it an idea that came out of a formal planning and strategic analysis process. It emerged from a latent need by the company to find an urgent solution to technical problems and to "move the company forward." It would appear, then, that the effort involved in the stabilization strategy became lodged in the memory of this organization as a collective project undertaken by those involved in day to day operations and, what's more, it was successful.

The stabilization, however, was the result of both the hard work of this group -"who paid with their blood

for this effort"⁴⁹- and capitalizing on a favorable circumstance: the price of nickel began to rise. At the end of 1987 the price of nickel began a significant ascent: the average price that year was US\$ 3.29/lb., while in 1988 it rose to US\$ 9.01/lb., a historic record, and to US\$ 8.28 in 1989⁵⁰. Thanks to this situation and the leadership of its directors, in a short time CMSA renegotiated its debt and paid off its remaining financial commitments.

Once production was stabilized, in 1988 the aforementioned Colombian vice president for operations was named the company's fourth president (1988-1993). By the end of the 80s, then, the company management and Colombian workers already possessed detailed and exhaustive knowledge about equipment and procedures, and succeeded through their joint efforts in controlling production through the stabilization process and perfection of their technical abilities.

C. The "Colombianization" process

The development of technical abilities as well as the production stabilization strategy at CMSA received support from a process in which Colombian workers, technicians and engineers "were learning and, little by little, were running the company and displacing the foreigners⁵¹." This process, called "Colombianization," began in August 1985, when the second president (1981-1987) decided to, "in as little time as possible, totally 'Colombianize' the operation;"⁵² This decision set in motion a gradual process in which "the administrative function was totally in Colombian hands from the start while the technical part remained in foreign hands while we were learning and later we replaced them⁵³." The mechanism used to implement this strategy was as follows: "A rotation system was established, in which each foreigner had a Colombian at his side; the Colombian assumed responsibility and the foreigner was there to assist⁵⁴." This apprenticeship

45 The oven was designed specifically for CMSA and as such presented a difficult training challenge, since it was not possible to learn from other companies. Interview with former director, no. 42, July 31, 2003, p. 2.

46 Interview with former director, no. 66, Oct. 28, 2003, p. 3.

47 Information supplied by the company, personal communication with the project coordinator for CMSA, June 15 and 16, 2004.

48 Interview with former director, no. 66, Oct. 30, 2003, p. 3.

49 Director's commentary on preliminary text, June 7, 2004.

50 Graphic of nickel prices by year, 1950-2004. Supplied by CMSA, February 2004.

51 Interview with former director, no. 66, Oct. 28, 2003, p.4

52 Ibid, p. 23.

53 Ibid, p. 23.

54 Ibid, p. 23.

system required painstaking dedication and much effort but it bore fruit. In two years the entire operation was for the most part run by Colombians from top to bottom and since then it has remained so⁵⁵.

At the same time, in the period 1986-87 the economic situation turned critical, and because of this the company's president saw the necessity to speed up plans to lay off a group of costly employees, among them some foreigners. These decisions accelerated the Colombianization process. Since then between three and five foreigners at most have been employed at one time, all of them in management and one of them the vice president for finance. According to a former director, the emphasis on the "rapid forced Colombianization" had some negative consequences. On one hand, this process "was one of the reasons why the takeoff of CMSA was very slow" and on the other hand the lack of specific knowledge, as was mentioned, was one of the factors that contributed to increasing the probability of mineral spills⁵⁶. The fourth president (1988-1993), although Colombian, maintained a critical position regarding "Colombianization", attributable in great part to his technical training and to his consequent worry about the operation: "To me it was not important if the person was Colombian or Turkish, what mattered to me was the ability and knowledge profile he or she had for certain tasks." In his view, when he began his presidential term the "Colombianization" was already a *fait accompli*. He maintained it, which is not to say he would not have rotated out some of the Colombians. Nevertheless, he acknowledges: "It was a trend that I had to deal with; there was nothing to discuss. However, making management and technical decisions that favor the people of a country is advisable, not just because of costs but also for technological development⁵⁷."

To the extent that the employees were conscious of having contributed in an important way to solving critical technical problems, they developed a sense of investment in the company. "We built this business ourselves" became more than just a managerial slogan; the feeling grew that, "It is ours." Simultaneously, this sense of ownership generated in the work force a willingness and general attitude toward cooperation with almost no restrictions (at any hour of the day or

night) in the face of any eventuality that might confront the company. These two elements translated into a sense of belonging and in commitment and solidarity with the performance of CMSA, all deeply rooted values that have been transmitted over some time and among the same people, many of whom are just starting to retire, even as the stories and tales that recount these events are passed along to new employees..

The retrospective view presented above reveals evidence that during this time some of the cultural characteristics that CMSA exhibits today were engendered. That is, the necessary process of perfecting technical capacity, the difficult circumstances that confronted CMSA when it faced the threat of bankruptcy and imminent closure, and the process of early "Colombianization" that gathered momentum during this period, all contributed to triggering in the majority of employees a very strong sense of belonging and a degree of solidarity and commitment to the company. As will be seen below this set of values was not just maintained and enriched over the years, but has contributed significantly to the company's sustainability.

D. Working conditions

Another factor that has contributed to consolidation of the CMSA organizational culture is the set of human resource policies the company has adopted. These policies have created relatively favorable working conditions, which have helped to maintain the sense of belonging, the commitment and the solidarity generated during the first years of operation. A number of these conditions have resulted from bi-annual negotiations every two years with a vigorous union, during which there is always the latent possibility of a strike and the fear of the consequences of totally closing the plant. The dynamic of these negotiations appear to have changed since the first (and only) strike in 1998. At that time, after five days of a work stoppage, union leaders quickly saw the serious difficulties involved in supporting such an action, especially with the community pressing for normalization of the situation⁵⁸.

55 Ibid, pp. 23-24.

56 Interview with former director, no. 66, Oct. 28, 2003, p.10.

57 Ibid, p. 11.

58 Interview with director, no. 19, June 9, 2003. p. 5.



There are, then, various elements that have developed as a result of human resources policies and they are characteristic of this scenario in which the aforementioned values have been transmitted and internalized. The first factor has to do with salaries and employee benefits. Salaries at CMSA are higher than the Colombian average and benefits include housing and vehicle loans, seniority premium, and economic support for studies and educational facilities for their children, among others⁵⁹. The average monthly salary of rank-and-file workers at CMSA in 2004 was \$1.96 million pesos US\$ 681 (not including benefits) while the average monthly Colombian salary for 2002 was \$353,590* US\$ 123⁶⁰. One of the directors considers that "economic conditions at CMSA are impeccable compared with the rest of the industry⁶¹." One former president of the union put it this way: "To be employed at Cerro Matoso is a privilege because of the benefits employment brings. It has not been easy to secure these conditions; it has been achieved at the negotiation tables⁶²." It must be noted that this salary structure exists in a business in which "labor costs are only 12% of total production costs for a pound of nickel in the plant⁶³." So, in addition to the good will there is a dose of economic rationality in this generous behavior on the part of the company.

Second, CMSA's high average seniority reflects the company's permissiveness with regard to longevity. This situation contrasts with a practice common in many Colombian companies during the eighties and early nineties of engineering, by means of manipulative practices, the departure of its employees before they completed ten years in the organization, mainly because of the benefit load that accrues with seniority. Average seniority in CMSA went from 16 years in 1999 to 11 years in 2003, this drop being attributable to the hiring of 200 additional personnel for construction of the second line during the period 2002-2003. In 2002, when the company completed

20 years of operation, more than 200 employees celebrated 20 years of seniority. This is one of the problems facing the company today because "a large group is heading toward retirement⁶⁴." The high seniority rate reaffirms that the conditions CMSA offers are very good, given the country's high unemployment and salary conditions. To be a CMSA employee would be an attractive prospect for nearly any Colombian worker. Current employees at CMSA know that when they made the decision to join this company, they made a decision to accept the isolation and limitations of life in this community as the necessary cost to pay for guaranteeing their future and that of their children. In these conditions of high labor stability, which for all practical purposes translate into lifetime employment, it is understandable that the awareness of the company's past is kept alive. As a consequence, it becomes difficult for recently hired employees to challenge by word or deed the aforementioned cultural characteristics of belonging, commitment and readiness to cooperate with the company. It is not easy to act like an "outsider" in this context. On the contrary, these circumstances become a boon for the germination of the values planted in the company's early years.

The third factor is the opportunities for professional growth that CMSA employees enjoy. A program in which "the worker earns for what he knows and not for what he does"⁶⁵ gives operating personnel the chance to earn more money by developing new abilities required by the company. This system began in 1992 as a negotiated alternative to the automatic reclassification of positions according to seniority that the union was proposing.

At other levels in the company, supervisors, professionals and managers acknowledge the possibilities for professional development at CMSA and its concern for the continued training of personnel. One manager who deals directly with this issue is

59 Interview with director, no. 29, June 9, 2003, p. 9.

60 Information about CMSA: personal communication with the project coordinator, June 2004 (concerning CMSA); International Labour Organization (2004).

* The following clarification should be taken in account: Starting in 1992, the average monthly salary corresponded "...to the average sum of the working days in the year." No information is available for 2003-2004.

61 Interview with director, no. 19, June 9, 2003, p.

62 Interview with rank-and-file worker, no. 41, Aug. 1, 2003, p. 1.

63 Interview with professional, no. 78, Jan. 27, 2004.

64 Interview with manager, no. 21, June 11, 2003, p. 13.

65 Interview with manager, no. 22, June 10, 2003, p. 17.

emphatic on this subject: "The company has invested plenty in training of all types, technical and non-technical. In 2003 it invested a million pesos per year per person (equivalent to approximately US \$500)." Another important indicator is the amount assigned for training: about 4% of payroll, a higher percentage than the 2% that global companies normally invest⁶⁶. Nevertheless, differing perceptions exist about how easily or quickly one can move up or develop a career at CMSA, in spite of these professional development opportunities. Various professionals stated that moving up or making a career in the company is neither easy nor rapid and that a person can spend a long time in the same job. And yet, some of the senior engineers who have reached the highest positions believe that the possibilities are there for all and consider their own success to be exemplary of what is possible.

A fourth factor influencing CMSA's organizational culture has to do with informal relations in the workplace. Management insists that this informality is a reality and CMSA is a company of open doors "in which an employee comes to the office of the vice president or president and does not have to bow. It is a respectful relationship but very informal compared to what is found in other types of organizations of the same size⁶⁷." The use of the same uniform by all employees, including the president and his management staff, and the fact that everyone has to have lunch elbow to elbow in the same hall are arguments used to support this informality. These circumstances may still be a novelty in the Colombian organizational world, but it is difficult not to be skeptical about these affirmations, when one knows that there are various neighborhoods and clubs in the community that are segregated according to employment category (executives, supervisors and operators) and that characteristics of the bureaucratic model, such as the hierarchy and the regular conduct, form an important part of the control system at work at CMSA. While on any given day an operator might dine at the same table as one of the vice presidents or managers who is dressed the same as he, it might be difficult for him to quiet a cynical commentary in his mind: "Sure, we live in the same community, we eat

at the same table and we are dressed the same, but ask this vice president or manager how much he makes, how he lives and where he takes his vacations." Management's interest in promoting respect and informality in relationships is plain. Nevertheless, information from the interviews does not clarify what significance employees assign to elements such as the uniform and the communal cafeteria and whether this meaning references the perceived pretensions of management.

E. Respect and consideration of changing shareholders for CMSA's local practices

Up to 2003 Cerro Matoso has had seven presidents⁶⁸ and various shareholders⁶⁹, among them Hanna Mining (1970- 1979), the Instituto de Fomento Industrial Colombiano (IFI) representing the Colombian State (1970-1996), Shell through its subsidiary Billiton Overseas (1979-1997), the South African group Gencor (1997-2001) and BHP Billiton (2001-2003); and has gone through three different legal forms: joint operation (1970-1979), mixed company (1979-1996) and private company (since 1997).

In this changing context CMSA has had, for all that time and since its beginnings, the respect and consideration of various shareholders toward its local practices. This has allowed it to develop relative discretion and to hold knowledge and the benefits of experience from them, without sacrificing autonomy. This discretion, which has surfaced with varying intensity during different periods in the life of the organization, shows up in the slight emphasis that the directors and managers give to any problems they have had in relations with various shareholders. It would appear there are no great "stories to tell" about the consequences of a change in shareholders.

This autonomy seems to have originated and built during the early years of the operation, a period in which, as mentioned, Colombians learned to manage and control the operation. The confidence in the knowledge and experience of CMSA workers acquired at that time and since the stabilization process began has been essential to the success of this relative discretion. As one director said: "It is difficult to say

66 There is no institutional source for this information, which was obtained in an interview. Interview with manager, no. 22, June 10, 2003, p. 14.

67 Interview with professional, no. 24, June 25, 2003, p. 19.

68 See Appendix 1 presidents-general managers of CMSA (1979-2003), at the end of this document.

69 See Appendix 2 shareholders, at the end of this document.



no to CMSA. The people are very competent⁷⁰." A current BHP Billiton executive acknowledges that "there are no better experts on electric furnaces than those of CMSA" and because of this he considers that the company has much to teach and is a good example for operations in other parts of the world⁷¹. However, "the independence that CMSA has had with respect to the three partners, IFI, Hanna and Shell, was forged from the beginning, and not without effort⁷²."

It is clear, then, that throughout CMSA's history, its changing shareholders have respected the company's practices, which has permitted it to develop relative discretion, especially in technical and management aspects, and to maintain an adaptive capacity regarding conditions in the Colombian environment. In exercising this discretion, CMSA has moved away from the norm in relations between home offices and their subsidiaries, in which the home office generally prevails in the interaction between cultures. Three factors have contributed to this: the know-how developed by the organization, lack of knowledge about the Colombian environment on the part of multiple and changing multinational investors and finally, the maturity that the management systems have acquired. This discretion - expressed by various of those interviewed in terms of "it is not important who is the owner"-- has contributed to maintaining and deepening the sense of ownership of the company and consequently the willingness to collaborate, the sense of belonging and the commitment to CMSA's performance.

F. The value of the worker's safety and management systems⁷³

To the values mentioned above can be added physical safety, an important corporate value that is closely tied to the risks of the activity itself: the exploitation and

processing of the mineral. Management systems in place since the mid-eighties have contributed decisively to the internalization of this value, reinforcing the central role that physical security plays in the life of the company. The management systems arose over a period of ten years (1989-1999). The first of these, related to the theme of safety (known internally as loss control), began in 1989 as a company policy to reduce accidents. This management system assumed formal status in 1991 based on International Loss Control Institute (ILCI)⁷⁴ methodology principally oriented toward reducing loss through industrial security⁷⁵.

The first hurdle regarding internalization of this management system was how to generate habits and behaviors that would translate into a change in terms of the importance given to physical security. A current employee who has lived around the development of the management systems illustrated the system very well: "The greatest difficulty at the beginning was to generate the habits, first in safety (for example, to use the safety strap on a helmet) and, later, in the handling of documentation. In our culture [Colombia] this is seen as something bureaucratic and a waste of time⁷⁶." While they were identifying possible risks, incidents and accidents, the process instilled motivation on the part of personnel to confront these problems.

The personal protection elements were initially the subject of an order⁷⁷. In the beginning this made many people uncomfortable, but at the insistence of the management committee and with pressure from different supervisory levels it became a matter of habit in the life of the company⁷⁸. The security management system (loss control) is the one with the deepest roots among workers because it has to do directly with the integrity of persons and equipment. "If a person does not comply with a security rule they run the risk of an accident. This involves their life or the lives of

⁷⁰ Interview with director, no. 29, June 9, 2003, p. 5.

⁷¹ Interview with director, no. 45, July 31, 2003, p. 11.

⁷² Interview with former director, no. 82, Jan. 27, 2004, p. 3.

⁷³ "The management systems have been implanted to ensure that all the activities that can affect health, security, the environment and/or product quality are done in such a way that they comply with the policy of control of loss (health and safety), the environment, quality and community; national legislation; the company's governing standards and other applicable requirements. Each one of the management systems implemented has the PHVA cycle structure (plan, do, verify, act)." CMSA (2002c). CMSA has certifications in industrial security, occupational health, environmental management and quality.

⁷⁴ Gándara (1997), p. 84.

⁷⁵ Ibid, p. 93.

⁷⁶ Interview with rank-and-file worker, No 5. , Jan. 13, 2003, p. 2.

⁷⁷ Interview with rank-and-file-worker, No 7. , Jan. 13, 2003, p. 3.

⁷⁸ Interview with rank-and-file worker, no. 1, Jan. 13, 2003, p. 2.

their companions, the integrity of the equipment, the loss of an energy source or damage to the electrical system. Here the benefits are more evident and tangible than in other systems."⁷⁹.

The pioneering importance of this management system and the manner in which the employees have internalized it punctuates a current directive in the area of production: "This is a system that has been internalized, the people handle it very naturally, it is not something forced or obligatory, nor is it a policing system. It is something that is now institutionalized. The individuals can change and the system will continue to function⁸⁰." In contrast to other management systems, the safety system was not born out of an interest in obtaining a certification or to be successful before international audiences. There was a more intrinsic motivation: "Our objective was that the people work in a safe manner, using personal security elements and following the steps involved in the ILCI policy⁸¹." This helped employees to assimilate quickly, because they did not see it as an obligation or a requirement to achieve certification, but as something important for their personal safety and for the company's success. In 2003 the accident indicator was very low; the last fatality occurred in 1995. This confirms that the employees are working with an awareness of safety.

Later, systems for quality (1994), environment (1999) and community (2001) were gradually adopted. The formalization of the management systems was also conducted through publication of a continuing improvement policy since 1995 that "was seeking excellence through a total quality process, oriented to personal development and continual improvement in operations, technology and administration⁸²."

G. Interaction between the local culture and the organization

The referenced values and practices of the CMSA organizational are not monolithic but are renewed

continually in the interaction with the community and in the daily life of the workers. The behavior of workers is, apparently, the reflection of a mix of their personal values, customs and practices and those of the company and the region, which are not all necessarily congruent. Some workers exhibit behaviors that reflect personal characteristics and those of the Colombian and local cultures but which contrast with the behavioral norms of the organization. In some cases, the breach between these activities is so broad that a director of the company commented: "It is as if there were people living in two different worlds; when they enter here they become serious and diligent, but they leave and become someone else⁸³." Aspects of the local culture, such as the mentality of the immediate, of the short term, of "when we wake up we'll see" coexist with strict planning at the corporate level concerning the daily life of the company.

Another case that exemplifies this ambivalence of behaviors is the manner in which the workers manage their incomes and which the company's directors, paternalistically, do not hesitate to brand "disorganized." It is common for workers to acquire obligations that exceed their ability to pay. Some receive pay every two weeks that is less than their salary because they contract debts that are deducted from their paycheck and reduce their buying power. According to an employee who has worked various years in the social area: "The 'Matosero' (Cerro Matoso worker) lives beyond his means. When he receives his pay, he is paying what he already owes. They think the well will never run dry⁸⁴." With respect to the same company directive previously mentioned: "The social worker goes to visit a worker of ours and finds he maintains three homes, lives in tremendous disorder and is in debt. One is left very surprised because at work he acts very different." These behaviors generate friction with members of the community who criticize the wasteful and noisy behavior of some of the company's employees.

79 Interview with rank-and-file worker, no. 2, Jan. 13, 2003, p. 3.

80 Interview with Director, no. 3, Jan. 13, 2003, p. 2.

81 Ibid, p. 3.

82 Gándara (1997), p.11. These systems included the following elements: planning and total control of losses, customer satisfaction, safety, health and environment with priority over production levels, and education, training and commitment of line management to comply with these guidelines.

83 Interview with director, no. 43, July 31, 2003, p. 20.

84 Interview with professional, no. 38, Aug. 1, 2003, p. 14.



The foregoing suggests that although the company's workers assume the values of the CMSA organizational culture and conduct themselves in accordance with them inside the company, which enables them to stay there, local and personal values, practices and customs continue to be evident - albeit contradictory - day to day. CMSA's area of influence is a place with its own historic tradition, where people of different regions coexist and where the social, economic and cultural milieu is the result of interactions among different actors: the company, the local population, people from other parts of the country, and the government. These apparent contradictions between CMSA and its immediate community are a reflection of the ambivalence inherent in the transition from "traditional" values to "modern" values that is imposed by the presence of a "modern" company in a "traditional" environment⁸⁵.

So in the interaction between CMSA and its immediate community are rooted or revalued some elements of one and the other. This is apparent, for example, in the decision by CMSA to respect the cultural characteristics of the region and not unilaterally impose values and policies with regard to the community. The results of this way of doing things

show up in the difference between what has occurred with other large mining and energy companies operating in violence-prone area; CMSA has managed to maintain continuity in its activities despite being located in a recognized armed conflict zone. In another example of the ambivalence between the values associated with "tradition" and "modernity" some sectors of the community, in a spirit of autonomy and responsibility ("modern"), asked the company-sponsored school for greater clarity and universality in the rules regarding the selection process for children whose parents do not work at CMSA. This contrasts with the call (with a traditional, perhaps paternalistic, criterion) for greater participation by the company in the municipal administration with an eye toward achieving better and more transparent management of the royalties.

The rootedness of the "traditional" values is also reflected in the "helpless" attitude of the community, expecting individual needs to be met or treated in a particular manner ("each case is a human case, very special"), contrary to what "modern values" seek to reinforce as underlined by the policies of Fundación San Isidro: promotion of general interest projects that are self-sustaining.

5. An elaborate organizational control system: clan, bureaucracy and market

With his hypothesis about clans, William Ouchi⁸⁶ introduces the controversial idea that it is possible to employ organizational culture as a way of exercising control. The approach is simple: given that culture influences behavior through beliefs, values and expectations, management can influence people's behavior by controlling aspects of the culture. The so-called symbolic-interpretive theories challenge this approach, asserting that even though culture controls behavior, intervention in this process is not possible

in the way Ouchi suggests; on the contrary, culture controls management. For its part, postmodern organizational theory takes issue with Ouchi's hypothesis based on the moral implications of using organizational culture as a means of domination⁸⁷.

More specifically, Ouchi defines the control problem in an organization as being related to "achieving cooperation among individuals who have partially divergent objectives⁸⁸." He suggests the existence of

85 The notion of "traditional" and "modern" values of changing one for the other as part of the "modernization" process has been widely treated in the social sciences. Note the prevalence in traditional societies of particularism ("each case is a special case"), attachment (one's legacy, like last names) and economic and social inequality; in contrast, in modern societies (industrialized) the prevailing values address universality ("the law and rules of the game are for everyone"), success ("what matters is the results people obtain, not who they are") and equality.

Existing literature corroborates the reality that no society is absolutely modern or traditional. It also supports the idea that these categories do not imply the superiority of any values over others; it also recognizes the importance of cultural hybridization. See, for example Parsons (1966), Lipset (1967), Weiner (1967) and Inkeles (1966). In the case of Colombia, see Savage and Lombard (1986) and Safford (2002).

86 Ouchi, William G. (1980).

87 Hatch (1997), p. 341.

88 Ouchi, W. (1979), p. 845.

three sources of control available to confront this problem: clan, bureaucracy and market. Beliefs, values and expectations are the primary mechanisms characterizing an organization that uses clan control. It is assumed that once socialized in the values of the organization, employees internalize values in a way that guides their behaviors. Market control holds that products (outputs) of the organization are sufficiently explicit to be assigned a price and that there is competition in prices, which allows ongoing evaluation of productivity. Finally, bureaucratic control is the use of rules, policies, hierarchies of authority, written documentation, standardization and other mechanisms to control individuals' behavior. Ouchi also suggests that the three types of control could appear at the same time in an organization, although generally one of them predominates. In the background of the clan control concept is the assumption that the organizational culture could intervene on behalf of management by means of promoting those values considered to be aligned with the organizational strategy and which guarantee that employees will behave in a certain manner that is in the organization's interests.

In the face of the theoretical debate concerning the use of the concept of culture, the case of CMSA is very illustrative. In the first place, the results sustain the importance of cultural dimensions - in this case the values that are put into practice - in the sustainability of the organization. Second, evidence shows that values such as the sense of belonging, commitment and solidarity with the company are forged as the result of creative collective experiences that last the life of the organization (to the extent that they confront the contingencies of environment) and not as values imposed by management. Third, in the case of the value of physical security it is clear that this was forged through conscious and deliberate efforts on the part of management in order to promote it, through one of the pioneering management systems, with positive results. The message here is clear: reality resists being categorized in one or more theoretical categories. That is, it is

not as simple as some preach nor as complex as others warn. It simply is and transcends academic controversy.

Also, the case of CMSA seems to confirm to a great extent the suggestions of Ouchi in terms of the sources of control that exist in an organization. On one hand, throughout its existence CMSA has been configured as a stable organization over time, characterized by a high degree of formalization in its structure, processes and procedures; by the use of planning and rational calculation as a fundamental management element for various time frames, and by a high degree of orientation toward achieving measurable objectives and results. Examples of this are the structured and coherent policies and strategies system⁸⁹, the central role played by management systems (loss control, environment and quality) and the corresponding national and international certifications obtained⁹⁰. This organizational configuration shows evidence of the use of bureaucratic control mechanisms.

On the other hand, the fact of making available a unique product whose cost is easily comparable to that of its competitors (dollars/pound of ferronickel) allows CMSA to continually monitor its productivity, thus creating clear market control mechanisms. Finally, as shown in the preceding numeral, the internalization achieved over time of values such as safety, commitment and solidarity translate into a subtle but effective social control in the daily life of the organization, manifested in clear codes of conduct recognized the length and breadth of the company. Geographic isolation and its immersion in the life of the community characterize CMSA, exacerbating this social control and the compensations and problems it implies. In this way, it constitutes clan control, whose source is the socialization that in varying ways grows out of the three aforementioned values.

In synthesis, analysis of the information suggests that in CMSA the three sources of control mentioned - market, bureaucratic and of the clan - coexist simultaneously, together making up an elaborate control system. It is also clear that this control system

89 In CMSA there is strict planning and follow-up of projects, activities and budgets at the corporate and individual level, evidenced for example in the rigorous development and implementation of five year and annual plans, which become the company's navigation charts. It is also seen in use of management systems and the SAP information tool which allows different business units to do detailed, real-time followup of budgeted vs actual expenses.

90 Certifications are in industrial security, occupational health, environmental management and quality.



constitutes a *core competence*⁹¹, understood as a skill related to the collective knowing-doing. At the same time, *this core competence* which because of the way it is constituted could be classified as rare, valuable and

difficult to imitate, is turned in the source of competitive advantage that CMSA possessed in 2003: to be producing in the lowest cost range of the industry.

6. Conclusions

The results of the CMSA case study contribute to reflections concerning alternatives for advancing "cultural studies about organizations"⁹². These are not as simple as those proposed by authors who hide behind concepts of "corporate culture"⁹³, nor do they lack importance and academic value by not meeting the demands of time and resources required by an ethnographic study in the full sense of the term⁹⁴. The case confirms the possibility of approaching an understanding of the relevance of aspects of the culture of organizations, without claiming to be putting forward an ethnographic study in the strict sense. In the case of CMSA, the results show the positive consequences generated for an organization when its members begin to subscribe and adhere to common values, without denying the possibility that their individual contributions and experiences will not be identical. These positive consequences had a great influence on the company's sustainability, since they contributed to building a core competence that, at the same time, became a source of competitive advantage.

Nevertheless, collective adherence to one or more values does not seem to be in the capricious and all-powerful

hands of management, but bound to the organization's path (path-dependency) and to contingencies of the environment, the company and the business in which it operates. These values are the product of day to day interaction between diverse actors in the organization who make up the various levels and areas. It is possible that in a specific moment, deliberate efforts by management to promote a value find fertile ground and flourish, as occurred with the physical safety values in CMSA, but there are no guarantees. There is also the demand that management have a full understanding based on the organization's cultural context if there is to be hope that promoting a "package of values"⁹⁵ will have any possibility of success.

It is possible and recommended to approach the cultural dimensions of an organization through qualitative longitudinal analysis that recognizes the importance of the organization's path and associated contingent factors. This study suggests an investigative road to advance knowledge and understanding of the cultural organization of specific companies. It is a worthwhile effort, one that will illuminate the academic controversy that usually accompanies the subject of organizational culture.

91 "A core competence is an ability in the value creation activities that allows an organization to achieve higher efficiency, innovation and capacity in response to the clients. The core competencies allow creation of competitive advantages. A competitive advantage is defined as a company's ability to overcome the performance of another, due to the ability to create more value from available resources.

The competitive advantages arise from the core competencies, abilities and skills of managers in value creation activities such as production, R&D, managing new technology and organizational change and design." A long-term competitive advantage is that which is difficult to imitate on the part of the competition. Jones (2004), p. 14.

92 Hatch (1997), p. 221.

93 Schein, (1992).

94 Van Maanen, John. (1988).

95 Le Goff, J. (1992), p. 95.

President-general managers of CMSA (1979–2003).

| Order | President | Period |
|-----------------|------------------|---------------|
| 1 | C. T. Ogrizlo | 1979–1981 |
| 2 nd | R. Gómez | 1981 –1987 |
| 3 rd | C. D. Ragg | 1988 |
| 4 th | L. G. del Corral | 1988–1993 |
| 5 th | H. M. van Breen | 1993 |
| 6 th | F. Jaramillo | 1994–1997 |
| 7 th | L. J. Nacken | 1997–2004 |

Note: Information supplied by the company. Written communication, May 2003.



CMSA shareholders (1963–2003).

| Year | Shareholder |
|-----------------------------|--|
| 1963 ^(a) | - Richmond Petroleum Company |
| 1970 ^{(a), (c)} | - Instituto de Fomento Industrial (IFI) (33.3%) - Compañía de Níquel Colombiano S.A. (Conicol) (66.6%). The company was formed by Chevron Petroleum Company and Hanna Mining. |
| 1979 ^(a) | - Econíquel, a subsidiary of IFI (45%) - Billiton Overseas Ltd., a subsidiary of Shell Petroleum Company Limited (35%) - Conicol (20%). Conicol was an owner of Hanna Mining Company (87.5%) and of Standard Oil of California (12.5%). |
| 1983 ^{(a), (b)} | At the final stage of construction of the project: - Empresa Colombiana de Níquel (Econíquel) (45%) - Billiton Overseas Ltd. (44.23%) - Conicol (10.7%) |
| 1989 ^{(b), (c)} | - IFI (47.69%) - Shell Petroleum Company Limited (46.88%) - Conicol (5.43%) - Note: In 1987 Econíquel was liquidated and, in lieu of payment, IFI received its shares in Cerro Matoso S.A. Billiton Overseas sold its shares to Shell, which bought Conicol to have 52.3% interest in the company. ^(c) |
| 1994 ^(b) | - IFI (47.69%) - Shell, represented by: • Billiton BVI Limited (46.8%) • Conicol (5.3%) |
| 1996 ^(b) | - Fiduifi Fideicomiso Déficit (47.69%) - Shell represented by: • Billiton BVI Limited (46.88%) • Conicol BVI Limited (5.43%) - In 1996 Shell was sold to Gencor and Gencor bought part of IFI. |
| 1997–2001 ^(b) | - Gencor represented by: • Billiton BVI Limited (46.8%) • Billiton Group (BVI) Limited (46.58%) • Conicol BVI Limited (5.43%) - Cooperative sector (1.11%) - In 1997 Gencor split from Billiton, which remained a shareholder until 2001. |
| 2001–Present ^(d) | - BHP Billiton (99.8%) ^(d) - Support sector (0.2%) - In 2001 Billiton merged with BHP, creating BHP Billiton. ^(d) |

Note: The information in this table was compiled from various sources: (a) Gándara (1997), p. 30; (b) *Shareholder historical composition*, supplied by CMSA and personal communication, April 6, 2004; (c) IFI (1995), pp. 116 and 119; (d) BHP Billiton (2003), pp. 3 and 8.

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Galeras de Administración

1

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Un modelo de garantías bajo condiciones de alto riesgo moral

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2

Vulnerabilidades de la economía colombiana: Un examen de los balances sectoriales Colombian Economy Vulnerabilities: A Balance-sheet Approach

Francisco Azuero Zúñiga

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3

The Impact of Stronger Intellectual Property Rights on Science and Technology in Developing Countries

El impacto del fortalecimiento de los derechos de propiedad intelectual sobre la ciencia y la tecnología de los países en desarrollo

Clemente Forero-Pineda

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Agosto de 2005

4

Fundamentos éticos de una política de solidaridad Ethical foundations of solidarity policies

Luis Enrique Orozco Silva

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Septiembre de 2005

5

Dinámicas de transformación de la educación superior en Colombia

Dynamics of change in Colombian higher education

Luis Enrique Orozco Silva

Facultad de Administración, Universidad de los Andes

Noviembre de 2005

6

Change and Organizational Demography: The Case of 30 Colombian Companies Cambio y Demografía Organizacional: el caso de 30 empresas Colombianas

Jaime Ruiz-Gutiérrez

Facultad de Administración, Universidad de los Andes

Noviembre de 2005

7

Scenarios for the Future of Research in Developing Countries

Escenarios de Futuro para la Investigación en los Países en desarrollo

Clemente Forero-Pineda

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Diciembre de 2005

8

Organizational culture and sustainability in turbulent environments. Insights from a case- study of a large mining MNC in a Latin America country

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A "strong company culture" has been usually deemed the sine qua non of success in organizations. As a consequence, the interplay between organizational culture and company's performance is a critical issue in organization studies needed of empirical research to surpass management conventional wisdom. Moving in that direction, this paper -based upon a in-depth study of a large mining MNC operating in rural Colombia- shows that organizational culture has played an important role in the company's sustainability for over three decades (1970-2003) in a particularly conflicting and turbulent environment. The case study was based on a qualitative methodology that included the realization of almost one hundred in-depth interviews with a variety of stakeholders, field observations, and a review of secondary sources on the company.

The paper consists of six parts. The first part presents the methodology employed in conducting the case study. The second and third sections present basic information about the mining company and its environment. The fourth part shows the process through which, over time, certain distinctive values of the company organizational culture emerged: two of these through collective creative efforts and the other through deliberate efforts by management. The fifth part brings together theoretical elements proposed by W. Ouchi to demonstrate that the values cited, together with the bureaucratic and technological characteristics of the organization, make up an elaborate control system, which in turn is a core competency and source of competitive advantage that the mining company maintained in 2003. The final section presents conclusions and a discussion of the importance of this study for future research.

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