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**Year:** 2003

**Source:** 4th International We-B (Working for E-Business) Conference, 24-25 November 2003, Perth, W.A.

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# **CULTURE, TECHNOLOGY AND TEAMWORK: A CASE STUDY OF A MAURITIAN ORGANISATION**

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## **Abstract**

*The aim of this paper is to explore the interaction of culture and technology in teamwork in a developing country. An organisation in Mauritius was surveyed and analysed using Hofstede's cultural framework. The framework appears to be useful in explicating the reticence of Mauritians in using communication technologies extensively in teamwork.*

## **Keywords**

Organisational culture, teamwork, ICTs, diffusion of technology, Mauritius

## **INTRODUCTION**

Mauritius is a developing country, but in terms of technology it has been catching up with developed countries rapidly in the last decade. With the introduction of personal computers and the Internet into households, Mauritians are joining the global village. Given the isolated location of Mauritius in the middle of the Indian Ocean, ICTs have opened a window into the rest of the globe. However, despite this rapid uptake of technologies, Mauritians have a conservative approach to communication technologies and appear to use them only when necessary. In other words, the preferred mode of communication for Mauritians appears to be traditional face-to-face (FTF) communication wherever possible. Although computer-mediated communication (CMC) has been effective in crossing social, organisational, cultural and geographical boundaries (e.g. Kiesler and Sproul, 1992; McGrath and Hollingshead, 1994), FTF communication remains the medium of choice for Mauritians, especially when crossing cultural boundaries. Even though CMC has been found to be efficient and effective in teams (Mabry and Sudweeks, 2003), the Mauritians feel that when working with heterogeneous cultures, a mutual protocol (other than the organisation protocols) needs to be achieved using FTF communication.

Computer-supported collaborative work (CSCW), through the use of virtual teams and groups, has evolved to become a significant facet of organisational life (Scott, 1999). Using teams of workers dispersed over geographical locations and time horizons, yet linked together through access to communication networks, changes the way people work in groups and redefines the nature of teamwork (Jackson, 1999; Lipnack & Stamps, 1997). While there has been a substantial amount of research on the overall effectiveness of ICTs in teamwork, less is known about how culture influences collaborative processes and performance in teams (Pauleen and Yoong, 2001, Yoo and Alavi, 2001).

While group interaction increases in teams using CMC, group processes can be awkward and time-consuming. With advances in communication technologies, FTF communication can, of course, be replaced or complemented with videoconferencing networks. Nonetheless, video-conferencing does not eliminate or reduce the traditional FTF problems of intimidation, shyness, confrontation, and so forth (Walther 1999). Gunawardena et al. (2002) point out that those who feel lacking in writing skills or native language skills may feel disinclined to participate in online communication. Hence, no matter what or how the technology tries to improve or replace traditional communication methods, problems remain.

A case study of an organisation in Mauritius is presented and analysed using Hofstede's (1980, 1991) theoretical framework of national cultural dimensions.

This paper explores the paradox in Mauritius that, on the one hand, access to the Internet and computers is increasing rapidly but, on the other hand, there is an apparent reticence in exploiting communication technologies fully in the workplace. We use Hofstede's (1980, 1991) cultural framework to explore the adoption of communication technologies in Mauritius. In particular, the framework is used to verify whether the dimensions listed by Hofstede have any influence on the workplace in Cellplus Mobile Communications Ltd, a communication service provider based in Mauritius.

## CULTURAL FRAMEWORK

Given the difficulty in defining the concept of culture, we use Geertz's (1973, p. 89) definition: "An historically transmitted pattern of meaning embodied in symbols, a system of inherited conceptions expressed in symbolic forms by means of which men [and women] communicate, perpetuate, and develop their knowledge about and attitudes toward life."

Although culture is generally defined at a societal level, culture impacts on individual behaviour. Culture can be seen to mediate between societal culture and specific individual personality (Hofstede, 1991). Studies attempting to identify societal or national cultural characteristics abound, but one of the most widely used theoretical frameworks is that developed by Hofstede (1980), even though studies using his framework have both supported and refuted his findings (see McSweeney 2002, Smith et al. 1996, Sondergaard 1994).

Hofstede surveyed an international sample of IBM employees between 1967 and 1973 with the intention of measuring work-related values and thus was able to identify national-level cultural characteristics. He found that national cultures vary on five dimensions:

- *Power distance* is defined as the extent to which less powerful members of institutions and organisations accept an unequal distribution of power. Some cultures emphasise a centralised authority while others emphasise a decentralised authority. Within a high power distance environment, subordinates usually fear to express disagreements or differences to their superiors. In low power distance environment, subordinates and superiors have a closer relationship with privileges and status more equally distributed. Teboul et al. (1994) suggests that technology increases power distance, however with the current widespread diffusion of technologies, this may no longer be the case.
- *Uncertainty avoidance* is the extent to which members of a culture feel threatened by ambiguity and risk. Cultures ranked low feel more comfortable with the unknown and motivation for work comes from achievement. Cultures ranked high prefer formal rules and motivation for work comes from security.
- *Individualism-Collectivism* refers to the degree to which members of a culture focus on the individual or the group. In individualistic cultures, individuals prefer self-sufficiency, management is done at the individual level, and tasks prevail over relationships. In collectivist cultures, on the other hand, individuals recognise their interdependent roles and obligations to the group, management is done on a group basis and relationships prevail over tasks. Collectivist cultures regulate behaviour through shame or loss of "face". Workers may prefer anonymity and group/team work. These differences in management and work related issues seriously influence issues of motivation and job design.
- *Masculinity-Femininity* refers to the degree to which social gender roles are clearly distinct. Masculine cultures tend to have distinct expectations of gender roles and are generally aggressive. In the workplace, values tend to be materialistic with high earnings and recognition for task achievement being important issues. There is also a strong work role model of control and power. In feminine societies, gender roles overlap and emphasis is placed on relationships, equality and solidarity. In the workplace, managers use intuition and strive for consensus.
- *Long-short term orientation* is based on Confucian ideals. The characteristics of long-term orientation cultures include thrift, savings and perseverance. Short-term cultures emphasise social obligations regardless of cost. These societies are typically concerned about status and will overspend to keep up appearances. This dimension was added to Hofstede's framework for his second survey and is not tested in this study.

## MAURITIUS

The Republic of Mauritius is a group of islands in the South West of the Indian Ocean, consisting of the main island of Mauritius, Rodrigues and several outer islands located at distances greater than 350 km from the main island. Mauritius was once known as the Mascarene Islands, named after the Portuguese admiral Pedro

Mascarenhas, who was one of the first Portuguese explorers of the area. Mauritius has been successively a Dutch, French and British colony. It became independent of Britain in 1968 and acceded to the status of Republic within the Commonwealth in 1992. The official language is English, but French is widely spoken.

The population of the Republic of Mauritius is estimated at 1.2 million and reflects the global gender distribution of slightly more females than males (50.5% female vs 49.5% male). Literacy rates are also fairly evenly distributed with an estimated 88.7% of the male population being literate compared with 81.5% of the female population. The Republic, with a total area of 2,040 km<sup>2</sup>, has an overall population density of 596 persons per km<sup>2</sup> (Central Statistics Office).

About 48% of the area is allocated to agriculture, 13% is occupied by built-up areas and 2% by public roads. The remainder consists of forests, scrub land, grasslands and grazing lands, reservoirs and ponds, swamps and rocks. During the past thirty years, the Mauritian economy has diversified from a sugar-cane monocrop economy in the 1970s to an economy based on sugar, manufacturing (mainly textiles and garments) and tourism. Mauritius has also been turning towards offshore and Freeport activities. The economy in 2000 grew by 8.9% and the Gross National Income per capita at market prices reached 101,948 rupees. The unemployment rate for 2000 is estimated at about 8.0% while inflation stood at 4.2%.

Due to its chequered history, Mauritius has a variety of cultures, which are unequally represented. The main ethnic divisions are Indo-Mauritian (68%), Creole (27%), Sino-Mauritian (3%) and Franco-Mauritian (2%) (CountryWatch, 2003). Although the figures indicate that the majority of the population is Indo-Mauritian, many other cultures have blended, with most individuals likely having at least two cultural backgrounds. Therefore, it is difficult to categorise individuals into specific ethnic groups. There is also a diversity of religions including Hindu (52%), Christian (28%), Muslim (17%).

Each culture uses its own language to communicate. Although English is the national language, French is widely used. Other languages used are Hindi, Urdu, Hakka and Bojpoori. Historically, the Mauritian community has developed a local Creole based on French and mixed with all the languages used in Mauritius. In today's Mauritian community, Creole and French are widely used.

## CASE STUDY – CELLPLUS

Cellplus Mobile Communications Ltd (Cellplus) is one of only two mobile communication service providers in Mauritius (Cellplus, 2002). Cellplus launched its cellular network on 1 October 1996. The company uses leading edge technology developed in partnership with the telecommunication giants of Europe and adopted by other leading telecommunications operators throughout the world. Cellplus provides the best GSM Cellular coverage over the island and is the market leader in Mauritius although it has been in operation for only three years. In 2002, Cellplus had a customer base of over 50,000 and is continually upgrading its network to provide its customers with the latest developments in the cellular field. The objective of the company is to provide world-class cellular telecommunication systems and related products and services to satisfy the needs, requirements and expectations of all its stakeholders.

Cellplus was the first company to introduce GSM technology in Mauritius. It provides the best GSM coverage in Mauritius as well as in many countries around the world through its international roaming service. The company keeps abreast of the latest technologies in the GSM cellular field. Since its launch in 1996, it has introduced new services such as access to e-mail and Internet, fax and data, the prepaid service and Short Message Service (SMS). Cellplus is also the local representative of internationally famous brands in the mobile industry, such as Alcatel, Mitsubishi, Motorola, Nokia, Sagem and Samsung.

The organisation consists of 128 staff members in four departments: Human Resources (28%), Marketing (7%), Sales (52%) and Information Technology (13%). The gender distribution is 71% male and 29% women. This gender imbalance in the organisation is at odds with the almost equal distribution of gender and literacy rates in the Mauritius population, suggesting an organisational preference for male employees. The age distribution in the organisation is skewed with a high concentration of employees in the 26-40 age group (Table 1). This bias is no doubt a function of the technological nature of the industry in which young people are in high demand.

<i>Age group</i>	<i>Number</i>	<i>Percentage</i>
< 25	11	8.6
26 - 40	66	51.6
41 - 55	41	32.0
> 56	10	7.8

Table 1: Age distribution of Cellplus employees

The ethnic distribution in the organisation, on the other hand, mirrors the national distribution with 23% Mauritian, 56% Indian, 9% Chinese, 3% French and 9% in other ethnic groups.

Using information and communication technologies (ICTs), Cellplus interacts with international entities. The complex element of ICTs added to the already complicated local mix of cultures is the focus of this research.

## RESEARCH QUESTIONS

The focus of this research study is whether cultural factors influence teamwork in Mauritius where ICTs are being used as the communication medium. Using Hofstede's (1991) framework, the following questions are raised.

- Are Mauritian employees more individualist in their perception of teamwork?
- Do Mauritian employees show greater high power distance in their perception of teamwork?
- Do Mauritian employees show a preference in their need for more structure (or less ambiguity) in teamwork?
- Do Mauritian employees show a preference in their perception of masculine values in teamwork?
- Do Mauritian employees show a preference for face-to-face (high context) communication?

## METHODOLOGY

Data were collected by a survey form consisting of 23 items including demographic questions and variables of interest. A 5-point Likert scale (5 = strongly agree; 1 = strongly disagree) measured the respondents' opinions of cultural values within their organisation and the impact on culture and technology on work relationships. The respondents in this research study were staff members of Cellplus Mobile Communications Ltd. Of the 128 staff members, 115 responded to the survey. The research was undertaken in 2002 in Perth, Australia with all respondents located in Mauritius. Respondents accessed the survey form on a website. The responses were emailed to the authors for processing and analysis.

## RESULTS AND DISCUSSION

Using Hofstede's (1991) framework, the cultural dimensions are tested among the Cellplus Mobile Communications staff members. These dimension tests are used to determine what, if any, influence they have on employee behaviours within work teams. In addition seeking responses to attitudes towards the different cultural dimensions, some items referred to employee attitudes towards the use of CMC in their day-to-day work lives.

For the four items related to the individualism/collectivism dimension, the results show a strong collectivist culture ( $M = 4.19$ ,  $SD = 0.43$  see Table 2). Employees strive to maintain harmony and consensus, and possess a highly developed sense of team spirit where the team effort is more important than personal credit.

<i>Individualism/collectivism dimension</i>		<i>Mean</i>	<i>SD</i>
Q1	When resolving conflicts, I feel it is important to apologise to maintain harmony.	4.64	0.55
Q6	I like it when staff members feel that they are all working together and share responsibilities for the success or failure of work tasks.	4.45	0.74
Q11	I am uncomfortable when a consensus cannot be reached in important meetings.	3.90	0.77
Q16	It is important to me to get good results for a team effort than to worry about who on the team gets credit for them.	3.77	0.86

Table 2: Cellplus employee attitudes on individualism/collectivism dimension (N=115)

For the three items related to the power distance dimension, the results indicate a low score on the power distance index ( $M = 4.16$ ,  $SD = 0.45$ , see Table 3), suggesting that management interacts readily with its employees, and encourages them to participate in discussions and decision making. Again, the strong empathy with team members is evident in the participants' responses.

<i>Power distance dimension</i>		<i>Mean</i>	<i>SD</i>
Q2	I like it when the Managing Director is democratic and collaborative.	4.23	0.53
Q7	I like it when the staff, as a whole, define the goal and the task that needs to be accomplished.	3.97	0.98
Q12	It is very important that all members of the staff participate in reaching consensus about the items under discussion.	4.28	0.68

Table 3: Cellplus employee attitudes on the power distance dimension (N=115)

In the uncertainty avoidance dimension, the data ( $M = 3.80$ ,  $SD = 0.58$ , see Table 4) do not show a convincing result. Although staff members prefer to be allocated to specific roles and periodically review ideas, they are not keen to show others how they perform their tasks. However, the overall results do show that employees are inclined to favour more structured environments.

<i>Uncertainty avoidance dimension</i>		<i>Mean</i>	<i>SD</i>
Q3	I like to see a set of clear guidelines explaining how I should perform tasks.	3.20	1.08
Q8	When working with other staff members, I like to allocate specific roles for each of them.	4.36	0.81
Q13	It is important that staff members periodically synthesises and reviews ideas expressed by others.	3.84	1.04

Table 4: Cellplus employee attitudes on the uncertainty avoidance dimension (N=115)

In the masculinity/femininity dimension, the data ( $M = 3.83$ ,  $SD = 0.44$ , see Table 5) are confusing. The results on four of the five questions support femininity, in that respondents are concerned about supporting co-workers. The response to Question 4, though, supports a more masculine organisation. It seems that the employees are not interested in helping their colleagues or trying to resolve conflicts. However, the unequal gender proportion in the sample may have biased the results in this dimension. Certainly, the overall results is in support of a femininity culture.

<i>Masculinity/femininity dimension</i>		<i>Mean</i>	<i>SD</i>
Q4	I usually help my colleagues work through disagreements/conflicts with each other.	2.43	1.19
Q9	It is very important that there is a sense of closure to each project we undertake.	4.51	0.58
Q14	I discuss and give feedback to my colleagues about how well we are working as a team.	3.62	0.98
Q17	It is important that individuals discuss their ideas rather than defend them when they are attacked.	4.44	0.56
Q18	I prefer to work with colleagues to perform an assigned task rather than to work alone.	4.16	1.03

Table 5: Cellplus employee attitudes on the masculinity/femininity dimension (N=115)

For the three items related to attitudes towards communication media, the data indicate that Cellplus employees are not uncomfortable with using communication technologies. While there is a strong preference for meeting socially or at least conveying as much emotion as possible in mediated communication, employees do not find it particularly difficult to communicate by email ( $M = 3.30$ ,  $SD = 0.85$ , see Table 6).

<i>Computer-mediated vs face-to-face communication</i>		<i>Mean</i>	<i>SD</i>
Q5	It is very important that I see my colleagues in the work place and socially.	3.81	0.23
Q10	It is difficult for me to communicate with other people by email if I don't know their background.	2.51	1.27
Q15	In order to communicate my feelings through email, I often use methods that convey emotions such as emoticons, capital letters for emphasis, repetition of exclamation points, etc.	3.57	1.06

Table 6: Cellplus employee attitudes towards CMC/FTF (N=115)

## CONCLUSION

Mauritian organisations are not as simple as one might believe. Having inherited an Asian history and culture along with recent exposure to western societies, the newly developed culture is a blend of both worlds. The preference for collectivism is most likely to have been influenced by Mauritians of Asian background, whereas the low rating on the power distance and uncertainty avoidance dimensions are the consequence of exposure to western societies. The high proportion of the population of Indian origin (68%) could explain the phenomenon of a strong femininity preference. Whereas some Asian cultures (e.g. Japan) are high on the masculinity index, India is in the middle range. The high femininity rating could also be due to an evolution within the Mauritian society, where the traditional “macho man” image is fading. The trend towards a feminine culture is also reflected in the attitudes towards communication technologies in their teamwork, where mediated communication is regarded as functional and efficient but face to face is preferred.

The results of the survey indicate that teamwork in this particular Mauritian organisation is effective with minimal use of communication technologies. Given the strong collectivist and feminist leanings of the respondents, it would be expected that emphasis would be placed on FTF interaction to offer more support to team members.

In summary, Hofstede’s (1980) framework appears to be useful in exploring cultural differences within an organisation. As exploratory research, the results are encouraging but highlight issues that will be investigated further. More organisations engaged in different types of industry will be studied to identify any interaction effects of different cultural backgrounds with acceptance of ICTs as a communication medium. As a multicultural and highly integrated society, Mauritius is a fascinating study.

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