

The Influence of Organizational and National Culture on Information Technology

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Abstract: Many IT scholars emphasize that for global organizations to successfully implement information technology, they must understand cultural differences. While we agree with this perspective, we argue that both organizational and national cultures play an even more significant role in shaping how information and communication systems are developed and used.

This paper explores the relationship between culture and IT through four main objectives. First, it defines key concepts including culture, organizational culture, national culture, Hofstede's cultural dimensions, and information technology. Second, it presents a well-known model of organizational culture. Third, it examines the factors that influence the transfer and implementation of IT across cultural contexts. Finally, it discusses the dynamic relationship between IT and organizational culture.

Keywords: Culture, organizational culture, national culture, Information Technology (IT), Hofstede, Cultural Dimensions.

1. INTRODUCTION

In recent years, many studies in the field of information technology have paid increasing attention to the role of cultural differences in shaping how information and communication technologies (ICT) are developed and used. As organizations extend their functioning across different countries; Modern information systems are relied upon primarily to support and organize the required activities. It is important to understand how different cultures can affect the success of this technology in this environment [1].

This paper examines the relationship between organizational culture and information technology through four main points. It begins by clarifying key concepts, including societal culture, organizational culture, national culture, Hofstede's cultural theory, and information technology. The next point presents a well-established and widely accepted model of organizational culture. The paper then explores the cultural factors that can influence how information technology is transferred and implemented in organizations across different countries. Finally, it explains the relationship between information technology and organizational culture, highlighting the key cultural characteristics that shape the appropriate approach to adopting and implementing information technology within business organizations.

2- CULTURE DEFINITION

The concept of culture is a significant topic in scientific research, and specialists have offered numerous definitions of it throughout the years. In 1951, Ole (1995, p. 128) noted that there were more than 164 definitions of culture, indicating the

widespread nature of this concept and the diversity of its aspects.

Gert Hofstede is a prominent figure in this field, having presented several definitions in his books and research. In 1980, he defined culture as "collectively programmed minds that distinguish them from other collectively programmed minds" (p. 25). Following the adoption of this definition, his concept was later expanded, describing culture as "a patterned programming of mental thought, feeling, and applicable behavior" (Hofstede, 1991a, p. 4). His understanding of culture thus focuses on how it shapes the patterns of thought and behavior shared within a group [4][10].

Kiligay (2002) explains a broader term, stating that culture is "a set of values, norms, ideas, and customs shared by a particular group or even a society, which distinguishes it from any other culture." This concept is essentially consistent with Hofstede's theory that culture is a form of collective intellectual programming that distinguishes one group from another (Hofstede, 1983, p. 23). A common theme across these definitions is the notion of "programming." Culture is not something acquired instantly; rather, it develops gradually through socialization and lifelong learning beginning at birth. It involves [6] [11].

Learning values – dominant beliefs and attitudes;
Participating in rituals – shared activities that reinforce group identity; Modeling behavior after heroes – individuals who serve as role models; Understanding symbols – including myths, legends, clothing, language, and other cultural markers. These cultural elements are shaped by various influences such as family, education, religion, peers, media, and literature [5]. Together, they form the foundation of how individuals think, feel, and act within a society.

3- LITERATURE REVIEW

A growing body of research highlights the critical role of culture—both organizational and national—in shaping the success of information systems (IS) and information technology (IT) initiatives. This section reviews key contributions from scholars who have explored this intersection from various perspectives.

Mihaela (2007) emphasizes the importance of understanding and improving organizational culture to enhance enterprise competitiveness. The study argues that awareness and active management of organizational culture are essential for achieving better business outcomes [15].

Jones (2007) critically examines Hofstede's cultural dimensions and their relevance to information systems. While the study supports the applicability of Hofstede's framework, it also calls for ongoing research to refine and adapt these dimensions to the evolving needs of IS practice [5].

Travica (2008) presents a qualitative case study on the adoption of a self-service human resources management system in a utility company. The study reveals that specific cultural factors related to information use and technology significantly influenced the moderate level of system adoption. It contributes to both self-service IS understanding and broader system adoption theory [18].

Ali (2007) traces the roots of cultural studies to disciplines such as sociology, social psychology, and anthropology. The paper highlights how cultural anthropology, in particular, has become increasingly relevant to IT management. Through a normative literature review, Ali outlines key milestones in the study of culture within the IS discipline, reinforcing its growing importance [1].

Sivunen (2005) investigates critical success factors (CSFs) in ERP implementation within the Chinese business context. By comparing state-owned and foreign-invested companies, the study explores how organizational culture influences ERP practices and outcomes, offering insights into culture-specific implementation strategies [17].

Kelegai (2002) explores the social, cultural, and industry-specific factors that shape IT education in less developed countries (LDCs). The paper proposes principles for designing culturally appropriate IT education models, emphasizing the need for contextual sensitivity [6].

Beruvides (2000) addresses the challenges of researching organizational culture in developing nations, particularly within the multicultural environment of international business. The study proposes a conceptual model to better understand and navigate these complexities, highlighting the need for more focused research in this area [2].

Table 1 Summary Literature Review

No	Subject/Title	Purpose/Objective	Researcher
1	The impact of Organization Culture over the Competitiveness of Contemporaneous companies	this present article, we tried to identify the impact that organizational culture, over the enterprises' competitiveness, observing the fact that knowing this concept, being aware of organizational culture existence, as well as preoccupation towards its improving become very important, in the view of achieving better results	Michaella, 2007
2	The Cultural Impact of Information Systems – Through the Eyes of Hofstede – A Critical Journey	The paper finds support for the dimensions promoted by Hofstede in regard to information systems, but recommends continued research to provide greater clarity and continued applicability of his espoused dimensions	Jones, 2007
3	Influence of Information Culture on Adoption of a Self-Service System	This article discusses a qualitative case study of adoption of a self-service based human resources management system in a utilities company by taking a perspective of information culture.	Travica, 2008
4	Culture and IS: National cultural Dimension within IS Discipline	The study of culture is rooted in sociology, social psychology, and anthropology. In particular, cultural anthropology seeks to understand the similarities and differences among groups of people in the contemporary world.	Ali, 2007
5	Organization Culture Implementation in China	This paper intends to investigate the critical success factors in ERP implementation in a Chinese business context, in order to evaluate whether organizational culture affect the CSFs, and how organizational culture affect ERP implementation practices in China.	Sivunen, 2005
6	Information Technology Education in Papua New Guinea: Cultural, Economic and Political Influences.	In this paper we examine a number of social, cultural and industry factors that influence IT education, and postulate several principles that are useful in developing an IT education model suitable for LDCs.	Kelegai, 2002
7	The Impact of Organizational Culture on the Management of Technology in Developing Nations	Beruvides, looks at these issues and develops a conceptual model in which to deal with this promising and much needed area of research.	Beruvides, 2000

4- ORGANIZATIONAL CULTURE

Every organization—regardless of its size or industry—develops its own unique organizational culture. This culture is shaped by the organization's history, its approach to problem-solving, and its management practices. It reflects the personalities and leadership styles within the organization and influences how tasks are carried out, how decisions are made, and how change is managed. In essence, organizational culture forms the "personality" of the organization and contributes to its psychosocial climate [15].

A helpful analogy is to think of organizational culture as the personality of an individual. Just as personality is shaped by interpersonal relationships and life

experiences, organizational culture emerges from interactions at all levels within the organization.

One of the most important aspects of a clear organizational culture is the sense of shared responsibility that emerges among employees. When employees share the same values and standards, these indicators significantly influence their behavior and guide their decisions in a shared and agreed-upon manner. Many organizations strive to build this shared responsibility using various tools such as employee evaluation manuals, ethics memos, and clearly defined company values and customs [12].

Figure 1 illustrates how organizational cultures are formed and the role of managerial leadership, shared experiences, communication methods, and internal practices in shaping the cultural environment.



Figure. 1. Organization Cultures Form.

Based on this idea, Alvisson (1989) argued that the focus should be on the fundamental characteristics rather than on the various definitions of organizational culture. These characteristics are considered integral to an organization's identity in terms of its behaviors and values, and they essentially reveal what aligns with the overall organizational personality.

Figure 2 illustrates the key characteristics of organizational culture, including shared values, norms, communication patterns among employees, the influence of management leadership, and the internal climate of the organization. These characteristics determine how employees influence one another, make key decisions, and adapt to organizational conditions.



Figure. 2: Characteristics of Organizational Culture [13]

5- NATIONAL CULTURE

The importance of national culture lies in its role in shaping the values and behaviors of individuals within society. demonstrates that national cultures contribute to the formation of value systems that connect different segments of society. These values can vary significantly from one society to another, even among different groups within the same country. Therefore, the concept of "national culture" may not fully encompass the diversity present within a single country [12].

Michael (2002) also emphasized the complexity of culture, highlighting the difficulty in defining it precisely. He explained that culture is composed of both overt and covert elements that may manifest in individuals' behaviors, values, norms, and implicit assumptions. Previous studies have identified three important types of national culture: "One-dimensional" models, which focus on a single cultural characteristic or value as a fundamental pillar. "Multi-dimensional" models, which focus on multiple cultural dimensions. Meanwhile, socio-historical models reveal how historical and social models influence the formation of cultural development within a society [14]. Despite the diversity of approaches, a significant portion of information systems studies still relies on Hofstede's theory. Hofstede's cultural theory is considered one of the most widely applied models in management and multicultural research. The following section will explain Hofstede's model in more detail to understand its significance and how it can be applied more broadly [9].

6-RELATIONSHIP BETWEEN ORGANIZATIONAL AND NATIONAL CULTURE

The relationship between organizations and national culture is more complex in multinational corporations. In these companies, the company itself may function as a single, overarching organizational culture, encompassing individuals from diverse national backgrounds, while specialized offices may focus on their respective subcultures, shaped by the customs and cultural values of the host country. These dynamic challenges the traditional hierarchical model of cultural stratification [7]. The assumption that national culture dominates corporate culture is not always accurate in global companies. A company's customs, values, and practices can either align with or even surpass local cultural expectations. Gallivant et al. caution that over-reliance on simplistic cultural models may obscure the complex and evolving nature of cultural interactions [8].

7- HOFSTED'S NATIONAL MODEL

In 1980, Ljåger Hofstede published influential studies and research on national culture [3]. His study was based on a large-scale survey of over 116,000 questionnaires, encompassing more than 60,000 IBM employees from 50 different countries. The study, conducted between 1967 and 1978, was a qualitative analysis of diverse cultures within an organizational context [11].

Hofstede analyzed this data, focusing on 32 questionnaire items distributed across 40 countries. His analysis revealed four fundamental cultural dimensions that constitute the concept of national culture:

Scope of Authority – the extent to which individuals accept and expect an unequal distribution of organizational authority.

Individualism and Collectivism – how employees perceive themselves as independent individuals or as part of a larger group.

Authority Distance – how employees perceive themselves as independent individuals or as part of a larger group. Avoiding uncertainty—specifically, the satisfaction or dissatisfaction a culture feels toward unstructured uncertainty.

Masculinity versus femininity distribution—based on emotional gender; cultures with a higher masculinity focus primarily on competition and achievement, while femininity-based cultures reflect priorities in caregiving and cooperation.

These dimensions constitute Hofstede's systematic and insightful classification of national cultures [5]. Consequently, Hofstede's model has become one of the most widely applied and used in multicultural research, particularly in international business management and management information systems. Table 2 summarizes Hofstede's cultural dimensions.

Tab 2: Hofstede's National Model

No	model	Explain
	• Individualism/Collectivism.	In individualist societies, people tend to have loosely knit social structures, and individual initiative and independence are encouraged. Each person is expected to look after themselves and perhaps their immediate family. In collectivist societies, by contrast, people belong to tightly knit groups—such as extended families, clans, or organizations—where group interests and loyalty take precedence over individual desires. Members can expect strong support from their in-group, and loyalty is considered a key virtue. This distinction essentially measures the degree of interdependence a society maintains among its members—whether people see themselves primarily as individuals or as part of a larger collective.
	• Large/Small Power Distance.	This dimension measures the extent to which members of a society accept that power is distributed unequally. In high power distance (HPD) societies, there is a clear hierarchical order, and everyone has a defined place—this structure is generally accepted without question or need for justification. In contrast, societies with low power distance (LPD) place a strong emphasis on equality and expect any differences in power to be reasonable and well-justified. Individuals in these cultures generally tend to question administrative authority, challenge decisions, and file grievances for clarification when they feel wronged. This distinction highlights the different ways in which organizational societies respond to injustice; some accept it as a natural part of the social structure, while others question it and seek to minimize its effects.
	• Strong/Weak Uncertainty Avoidance.	This dimension reveals the extent to which individuals are anxious about uncertainty and ambiguity. Individual societies that are highly averse to uncertainty exhibit low tolerance for unconventional ideas or practices and often rely on strict rules and procedures to minimize future unpredictability. Conversely, individual societies that are less averse to uncertainty are generally more open to new ideas and practices, more accepting of cultural diversity, and more comfortable with cultural change. Thus, this dimension reflects the degree to which an individual society is willing to deal with risk, adapt to change, and acknowledge the unknown.
	• Masculinity/Femininity.	Masculine societies value achievement, strength, heroism, and material success. This culture emphasizes competition and individual accomplishments, resulting in less emphasis on interpersonal relationships and nurturing. Conversely, feminine societies place greater importance on interpersonal relationships, nurturing, humility, and social life in general. These cultures prioritize cooperation, strengthening vulnerable groups, and maintaining social cohesion. They also prioritize well-being and work-life balance over

According to Hofstede's cultural model, Western countries generally score higher on individualistic measures (Hofstede, 1997). In contrast, Papua New Guinea, as a collectivist society, demonstrates social cohesion and shared responsibilities as core cultural values. However, Western influences—resulting from both colonialism and globalization—have begun to gradually reshape cultural norms in less developed countries, including Papua New Guinea.

This cultural context highlights the crucial role of adopting management information systems and technology. For example, when banks in Papua New Guinea introduced ATM services, customers readily embraced the technology, transferring their accounts from traditional savings books to ATMs. This suggests that some individuals in Papua New Guinea are largely hesitant to engage with the unfamiliar or ambiguous, a cultural characteristic where many feel uncomfortable in situations that are unfamiliar or unclear. Although banks-imposed fines on traditional transactions to encourage the switch, acceptance of this idea remained slow (Killigay, 2002).

8- INFORMATION TECHNOLOGY (IT)

Information Technology (IT), also known as Information and Communication Technology (ICT), is a widespread field concerned with the application of technology to process management information, often within large organizations (Yeghan, 2006).

An IT system comprises computer hardware and software for processing, storing, protecting, transmitting, and retrieving data when needed. Specialists working in this field are known as "IT specialists," and the units responsible for these tasks are called "IT departments" in companies, universities, and various institutions.

The term "IT" is synonymous with "Information Systems" (IS), but there is a technical difference between them. IT includes the following components: computers, servers, networks, software, applications, operating systems, databases, and more.

Understanding IT is crucial for companies adopting and integrating technologies, especially in multicultural business environments.

9- INTERACTION BETWEEN IT ORGANIZATIONAL CULTURE, AND NATIONAL CULTURE

The successful implementation of information technology (IT) in businesses depends heavily on both company culture and national culture.

Corporate culture is shaped by how individuals perceive, accept, and apply IT. Companies that value innovation, learning, and open collaboration are more likely to adopt new technologies and integrate them seamlessly into their daily operations. Conversely, some companies with rigid, centralized management may resist the consequences of technological change, hindering or slowing down technological transformation.

National culture provides the broader environment in which companies operate. To avoid uncertainty, individuals may be hesitant to adopt advanced IT systems, relying on established routines for greater security. In a collective culture, conformity plays a crucial role in how IT is introduced and accepted. In contrast, an individualistic culture encourages individual initiative, leading to faster adoption of new technologies.

Interaction and Impact: It is clear that IT requirements necessitate changes in organizational processes and individual behaviors. When these changes align with existing organizational and national culture, implementation becomes easier and more successful [16].

In multinational companies, this diversity of cultures leads to interactions between corporate culture and diverse national cultures, generally presenting both opportunities and challenges. For example, some companies may require their strategic plans to incorporate information technology, necessitating adjustments to align with local cultural expectations or work practices in different countries. As illustrated in Figure 2, successful IT integration depends on the ongoing interplay between IT, organizational culture, and national culture, each influencing how technology is applied across various business areas.

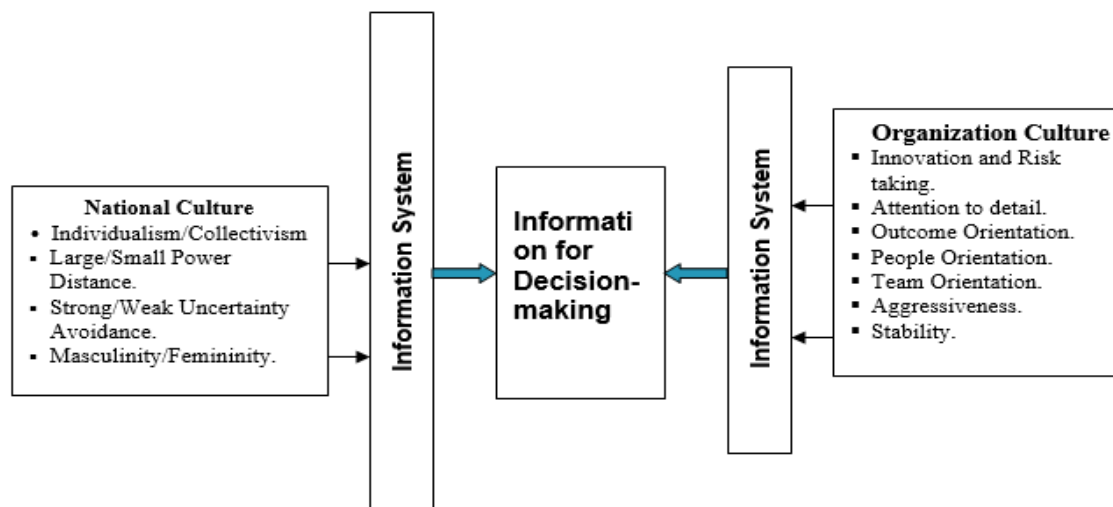


Figure 2. Interaction between IT, Organizational Culture, and National Culture

10- CONCLUSIONS

This paper outlines the perspective of researchers interested in studying the impact of culture on information technology. Through a review of the literature, we present various definitions of culture, the characteristics of organizational and national cultures, and the influence of these cultural levels on information technology. We also explore the dimensions of Hofstede's cultural perspective and its impact on the adoption and application of information technology in different cultures.

The results show that resistance to the use of information technology, whether at the individual or collective level, is a well-established phenomenon. However, the challenges of cultural change are clearly present. This necessitates the development of well-considered strategic plans to manage cultural transformation alongside technological change.

Focusing solely on information technology will not achieve change. A shift in organizational behavior culture related to information systems is essential. Even with funding, such initiatives may face significant challenges or even fail. Therefore, conducting cultural assessments and developing future plans is a fundamental step to ensure the success of change [19].

This paper has identified promising research areas that can be further developed and explored in the future. Future studies should contribute to understanding how organizational culture and information systems can be applied at the strategic level to create sustainable competitive advantages. Therefore, through this alignment, companies can improve their technological capabilities while supporting a culture of innovation and continuous learning.

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