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# National Culture and Technological Development from Historical to Future Perspectives

Roger D. Posadas

Research and Innovation Center, Lyceum of the Philippines University - Cavite Campus, Gen. Trias, Cavite, Philippines

***Abstract:*** **This discusses the past, present, and future roles of nati0nal cultures in promoting or deterring the technological and economic development of a country.**

***Keywords:*** **National Cultures, Technological Development.**

## I. INTRODUCTION

Since the beginning of human history, the interplay of technology and culture has always played a key role in the development of human societies. Because of major technological advances have led to significant changes in culture and society, many historians and other scholars have tended to focus on the impacts of technology on culture and to mark off certain historical eras in terms of its dominant technology rather than its dominant culture. Thus some historians talk of the stone age, the Bronze Age, the Iron Age, the Steam Age, The Space Age, and the Information Age, reflecting a belief in technological determinism that views technology as the driving force of history. [1,2, 3]

In recent years, many writers have analyzed the impact of technology on culture in relation to national development [4,5]. While many others have expounded on the developments in the arts brought about by computers and other side of the technology-culture nexus: the influence of culture on technology.

In this paper, I shall discuss the role of national cultures in the development of technology from the historical and future perspectives. In particular, this paper will try to answer the following questions: In what ways has a national culture affected a country's technological development? Will national cultures continue to affect technological development in an era of globalization? How can an Asian Renaissance in culture and technology be engendered?

## II. NATIONAL CULTURE AND TECHNOLOGICAL DEVELOPMENT IN HISTORY

I shall adopt the anthropological definition of culture as the way of life of a social group. Culture, therefore, is a complex whole that includes a society's belief and ideas, norms and values, attitudes and outlooks, language and artistic expressions, custom, and behaviors, tools and techniques.

Even at an abstract level, one can already see why culture is a necessary factor in technological and economic development. Every Technological innovation or economic activity involves people making choices, interacting with one another, indicating their preferences and priorities, acting on their belief s and values, or in brief, expressing their culture. [6, 7]

It is therefore not surprising that scholar have tried to find culture factors behind such major technological development in history as the Scientific Revolution in the 17th century and Industrial Revolution in the 18th century. For example, Robert F. Merton (1968) believed that ascetic Protestantism was instrumental in promoting the development of science, arguing that the puritan ethic" so canalized the interests of seventeenth century Englishmen as to constitute one important element in the enhanced cultivation of science." [9,10] At the same time, cultural factors, principally Confucian culture, have also been cited by some scholars as probable reasons for the failure of China to undergo a scientific revolution and an industrial revolution of its own, despite its technological parity with Europe up to the 16th century. [11,12]

Japan 's successful rapid industrialization and modernization after the Meiji Revolution in 1868 and its remarkable economic performance after second world war have also spawned a number of books and articles ascribing Japan's spectacular techno-economic progress to Japanese culture factors.

Saha believes that Japanese society has been very successful in the national development of technology because of the positive cultural influences of Zen Buddhism, Confucianism, and Shintoism. [13] According to him. Zen Buddhism is probably responsible for the relentless drive of Japanese towards technological self-reliance, their focus on the improvement of the production process and of productivity, and their continuous pursuit of quality and perfection as expressed in Japanese word **kaizen**. On the other hand, Japan's Confucian heritage, in Saha's opinion (Saha, 1994) has been responsible for the long tradition of high-level education of the Japanese people, the obsessive concern of Japanese firms for the training of their employees, the Japanese preference for the latest technology, and strong communitarian attitudes towards R&D, information-gathering, and information-sharing. Finally, Saha believes that the consumer-oriented of Japanese product designs and the Japanese attraction to gadgetry could be traced to Shintoism. [14]

To Lorriman and Kenjo (1994), however, the secret of Japan's industrial success can be ascribed to two key cultural factors: the value system of **bushido** (tradition of rice-farming), with the latter believed to be responsible for the Japanese people's, strong discipline, mutual cooperation, respect for authority, and informal discussions known as **nemawashi**, **Bushido** or " Way of the warrior" refers to the unwritten, Confucian-influenced code of laws of the warrior class--- the samurai, many of whom became businessmen, engineers, administrators, and politicians after the Meiji Restoration in 1868. According to Lorriman and Kenjo, the samurai si dominated Japanese industry, commerce, and bureaucracy that they can be credited with leading Japan's successful modern nation and industrialization and with leaving Japanese industry the legacy of management values that reflect the samurai spirit and culture. [15]

Similar views about the influence of samurai values on the Japanese system of management and technology development had been expressed earlier by Masanori Moritani (1982) who also attributed the shortcomings of the American and Chinese industries to their management by "mandarin" ---professional managers with MBA's (in case of the U.S.A.) or technocrats (in the case of China), whose experience with the actual production process is very limited. [16]

The spectacular economic growth, rapid industrialization, and remarkable technological development of South Korea have also led some scholars to look into the cultural factors behind the Korean system of business management and technological development. T.W. Kang, (1989) notes that like Japan, South Korea has also been influenced by Confucianism and lesser extent by Buddhism, but that Confucian influence in Korea came mostly through the authority of a strong, centralized state and its execution of industrial policies. [17] Confucian values, according to Kang (1989), may be responsible for the familial structure and paternalistic management of many Korean firms, the strong Korean emphasis on education and scholarship, and the importance attached to hard work. On the other hand, as Kang points out, Koreans tend to be more individualistic that the Japanese, more tolerant of shortcomings (as expressed in the Korean word **koenchanayo**), more action oriented and fatalistically optimistic (as expressed in the word **chumoktajim**, the Korean equivalent of "go for it") [18]

The phenomenal economic success of South Korea and the other newly industrializing economies (NIEs) of Taiwan, Singapore, and Hong Kong have led some Western scholars to ascribe the "economic miracle" of these NIEs to the Confucian culture. And with the emergence of the next tier of high performing Asian economies (i.e, Thailand, Malaysia, and Indonesia), the Confucian culture was later expanded to the concept of "Asian Values".

However, this notion of "Asian Values", as trumpeted by certain Asian strong men to defend authoritarian rule, has been challenged not only by Westerners but also by Asian academics and leaders who see diversity of values and cultures in Asia and who thus find little kinship between themselves and their Asian neighbors. [19, 20]

I must also point out that not all national cultures in Asian have played a positive role in technological development and economic progress. It could be argued, for example, that Philippine culture is most probably responsible for the sluggish technological and economic development of the Philippine economy because Filipinos are deeply religious and superstitious, generally averse to science and technology, traditionally rebellious and cynical, very complacent regarding mediocre performance of poor-quality products, very weak in discipline and diligence, factionalistic and individualistic, and lacking a strong sense of national commitment and national purpose. On the other hand, there are those who think that there is nothing wrong with Filipino culture and that "the determining factors… is economic policy, not culture". [21] Yet these people seem to forget that economic policy is an expression of certain values and attitudes and so it is ultimately a manifestation of culture.

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## II. METHODOLOGY IN NATIONAL CULTURE AND TECHNOLOGICAL DEVELOPMENT FROM HISTORICAL TO FUTURE PERSPECTIVES

**Critical Review and Analysis of the Relevant Literature on the Topic:**

***National Cultures and Technological Development in the Era of Globalization:***

Today we find ourselves in the midst of the growing globalization of human society as we observe the increasing globalization of business and production, financial markets and transaction, travel and tourism, lifestyles and fashion, consumer tastes and cuisine, sports and entertainment, environmental problems and concerns, religion and cults.[22, 23, 24]

All these various globalization process are being made possible by a technological revolution in computers telecommunications that is pointing towards the following. [25]

The convergence and blending of computer, telephones, television, and information technologies.The development of seamless, wireless, global communication network that will allow anyone to communicate with anybody else anywhere in the world at anytime.

1. The development of portable, personal telecomputers that can function anywhere as a computer, electronics personal assistant, television. telephone, notetaker ( using pen or voice) fax machine, mailbox, appointment calendar, sketch pad, and automatic interpreter.

All these technological developments will obviously transform the way people live, work, communicate with one another, entertain themselves, and transact business, In the future, your foreign colleague, speaking in his/her own language, will be automatically heard by you in your own language and vice versa. Thus, the telecommunications revolution will break down barriers of time, distance, and language between countries and ethnic groups even as we are witnessing today the crumpling of economic borders by the expansion of international free trade.

The development of a borderless global economy has led some people to see a diminishing role for nations and national cultures and even the end of the nation-state. [26] Others, however, see the nation-state persiting and enduring as the basic unit of geopolitics. [27] John Naisbitt (1996) also makes the point that "although people want to get together to **trade** much more freely, they also want to be **independent** politically and culturally." [28]

In his influential book. ***The Competitive Advantage of Nations***, Michael Porter (1990) emphasizes that "globalization makes nations more, not less, important."[29] even as he points out, that though firms nowadays can increasingly source labor , materials , components, and technology in the global market, the influences of national culture and environment have become more critical as competition has become more knowledge-intensive for the simple reason that national culture shapes the ways in which opportunities and treats are perceived, the priorities given to the development of human resources, the modes of acquiring technologies, and types of technologies to acquire.[30]

As to the coming global economic battles of the 21st century. Lester Thurow (1993) foresees a "head-to-head" competition between two capitalist cultures: the individualistic capitalist culture of the U.S.A. and Britain and the communitarian capitalist cultures of Japan and Germany.[31] In the former variant of capitalism, importance is given to individualistic values—"the brilliant entrepreneur, Nobel Prize winners, large wage differentials, individual responsibility for skills. Easy to fire and easy to quit, profit maximization, hostile mergers and take-over", while in the latter form of capitalism, importance is given communitarian values as business group; social responsibility for skills; teamwork; firm loyalty, sharing of information; industrial policies; and producer economies.[32]

Hampden-Turner and Trompenaars, However, identified at least seven cultures of capitalism, implying that each capitalist economy represents a particular capitalist culture or value system for creating wealth.[33] In their survey of 15,000 executives in seven capitalist country (U.S.A., Britain, Japan, Germany, France, Swede, and the Netherlands), they found that the firm's culture of origin is the most important determinant of values that regulates economic activity and forms "the bedrocks of national identity and the source of economic strengths- and weaknesses."[34]

There is no doubt, therefore, that in the face of the increasing globalization of business and technology, national cultures will continue to play a key role -- either positive or negative – in the technological development and economic competiveness of firms, industries, and countries.

## IV. CONCLUSION

What I have tried to show is that in the past national cultures had played a key role in either promoting and accelerating or deterring the technological and economic development of a country and that in the future national cultures will continue to play a very important positive or negative role in country's attainment of technological mastery and global competiveness. It is therefore important to nurture and foster national cultures that can effectively improve the ability of countries and firms to meet the challenges and demands, opportunities and threats of highly informatized, and technologized world in the 21th century.

For about half millennium prior to the Renaissance in Europe, Asia was technologically and culturally superior to Europe, with the International transfer of technology proceeding in the direction of East to West. However, after the Renaissance, which gave birth to Scientific revolution and paved the way towards the Industrial Revolution, Asia somehow stagnated technologically, culturally, economically, and militarily for the next a millennium or so, with the international transfer of technology going in the reverse direction of West to East.

Then over the past 120 years or so the East Asian countries undertook the difficult national tasks of acquiring, assimilating, and mastering Western technologies, catching up with the west economically, and modernizing their societies, while fostering their own national cultures. Starting with japan in 1868 and then followed by the NIEs in the 1970s and now by the other high performing Asian economies, the countries of East Asia have achieved such a spectacular economic progress that the World Bank has called it the "East Asian Miracle". Indeed, this part of the globe has now become the fastest growing and most dynamic economic region of the world.

And John Naisbitt goes even further by describing the current situation in Asia as follows:

*" Asia is on its way. Asian economies have reached a critical mass, from which there is no turning back. In the 1990s, Asia came of age. And so we move towards the year 2000, Asia will become the dominant region of the world: economically politically and culturally. We are on the threshold of the Asian Renaissance."* [36]

Can we really look forward to an Asian Renaissance in the next century? Will Asia become the world's center of culture and technology as it once was? Will the new century be an Asia-Pacific Century? How can we engender an Asian Renaissance or an Asia-Pacific Renaissance?

In my view, and Asia-Pacific Renaissance can come about only if all the countries in this region will open their doors to mutual exchange and sharing of their arts and sciences, their cultures and technologies even as each one will strive to develop to the fullest its own national arts and culture and its own national scientific and technological capabilities. And this is where the universities of the Asia-Pacific region can play a vital role. Our perspective universities can pave way towards an Asia-Pacific Renaissance by forming an Asia-Pacific network of sister universities; helping each other develop international and area studies programs through which we can understand and appreciate each other's society and culture: exchanging students and faculty and artistic groups; and undertaking joint research or cultural activities.

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