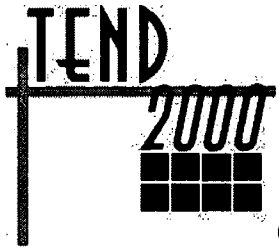
DOCUMENT RESUME

ED 446 285 CE 080 908

AUTHOR Ghamari-Tabrizi, Behrooz
TITLE Islam and High-Technology: Global Communications and Cultural Re-Inventions.
PUB DATE 2000-04-09
NOTE 13p.; In: TEND 2000: Proceedings of the Technological Education and National Development Conference, "Crossroads of the New Millennium" (2nd, April 8-10, 2000, Abu Dhabi, United Arab Emirates); see CE 080 883.
PUB TYPE Opinion Papers (120) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Adult Education; Communication Research; *Cultural Context; Cultural Differences; Cultural Maintenance; Developing Nations; Foreign Countries; Futures (of Society); Information Technology; Intercultural Communication; *Islamic Culture; *Social Change; Technological Advancement; *Technological Literacy; Technology Transfer; *Traditionalism; World Wide Web
IDENTIFIERS *Islamic Countries; *Technology Role

ABSTRACT

This paper problematizes the bifurcation of technology and tradition and its implied unidirectional transformative authority of technology. It divides the multitude of responses to the relation between technology and culture into these three categories: technology as the messenger and the message, technology as a messenger without an inherent message, and technology as a messenger unaware of its message. A study is reported that used examples from 48 Islamic World Wide Web sites and suggests that Muslim identities are incessantly being reinvented and reconstructed via, rather than despite of, new technologies. The paper reports that the study demonstrates that a conscious appropriation and appreciation of technology not only does not undermine cultural distinctiveness, but it may also enhance the production of a more vibrant cultural environment. It sees technology as neither bad nor good, but both a blessing and a burden. It also argues that the proponents of the technology-tradition binary perceive tradition as a set of static practices, a social order incapable of generating and adapting to change. (Contains 16 references.) (YLB)



Crossroads of the New Millennium

Islam And High-Technology: Global Communications and Cultural Re-Inventions

Prepared and Presented

By

Mr. Behrooz Ghamari-Tabrizi

Assistant Professor

Department of Sociology

Georgia State University

email : socbgt@langate.gsu.edu

Sunday 9 April, 2000

Workshop 1

Abstract

Conventional views consider technology to be a historical phenomenon with culturally transformative authority. According to this view, not only does technology transform local cultures towards a universal/western homogeneity, it also provides solutions to its own negative social and environmental consequences. Since the beginning of the industrial age, western proponents of industrialisation, on the one hand, and the advocates of the integrity of local cultures, on the other, have rendered technology and tradition irreconcilable. That is to say, technology undermines the social significance of tradition. With the advent of computer-based business administration, mass-communication, and entertainment, this assertion has gained more prudence. The so-called post-industrial development further complicates the predicament of the unregulated technology, both in terms of the sovereignty of the nation-state and of traditional modes of social organisation.

In this paper I would like to problematise the bifurcation of technology and tradition and its implied unidirectional transformative authority of technology. Through using examples from forty eight Islamic web sites, the operations of which I have been following for four years, I shall argue that Muslim identities are incessantly being reinvented and reconstructed via, rather than despite of, new technologies. My study demonstrates that a conscious appropriation and appreciation of technology not only does not undermine cultural distinctiveness, but it may also enhance the production of a more vibrant cultural environment. I shall also argue that the proponents of technology-tradition binary perceive tradition as a set of static practices, a social order incapable of generating and adapting to change.

Islam and High-Technology: Global Communications and Cultural Re-Inventions

INTRODUCTION

This workshop is held under the general theme of "Culture at the Crossroads." The crossroads to which this general theme alludes is the technological transformation at the turn of the millennium in the ways of learning, communicating, transferring and storing knowledge, and envisioning socio-economic development. Each of these distinct spheres of technological transformations, the theme suggests, poses a threat to the integrity of "Culture" —here used deliberately in the singular. My goal in drawing attention to this singularity is by no means a lexical quarrel or an editorial comment on the English grammar of the conference documents. Rather, I would like to problematise the theme by arguing that culture is a set of social practices and rituals in a particular universe of meaning within which these practices are legitimised, maintained, and perpetually reinvented. As such, culture, both temporally as well as spatially, is plural and invariably in the state of becoming. Therefore, regardless of their historical epoch, cultures exist at crossroads.

The emphasis on the fluidity of culture and its constant state of becoming gains more relevance when we examine the predicament of the contemporary velocity of technological innovations in the context of Islamic societies. Whereas the most advanced industrial societies struggle with the legal, cultural, and political ramifications of high technology, often, thanks to the legacy of Orientalism, the detriments of the same problems in Islamic societies are regarded more gravely. Whether with good or bad intentions, Orientalists did create a discourse in which Islam, on account of its static, non-historical nature, became the main obstacle to progress for Muslims. According to this discourse, whereas technological innovations and change are integral parts of the advanced industrial nations, Muslim nations inevitably have to either favour their "static" cultures or embrace new technologies and adapt to their culturally transformative authority.

Just to provide one example from a long tradition of the Orientalist depictions of Islam, in his book, *Islamic Fundamentalism and Modernity*, W. M. Watt identifies five reasons for the causes of the Islamic societies' backwardness (all the citations are from pp. 5-20):

(i) The Unchanging Static World. "For Muslims unchangingness is both an ideal for human individuals and societies, and also a perception of the actual nature of humanity and its

environment." While for the western mind the idea of development is an integral part of their consciousness and change is a phenomenon that comes to be part of the general outlook of life, for Muslims there is "no place for development, progress, or social advance and improvement." Muslim thinkers show no conception of development and "the idea of social reform is thus virtually unthinkable for traditionally minded Muslims." Hence, according to Watt, in all areas of human thought and social condition Muslims assume the absence of change. He further speculates that "the concept of the unchangeableness of human nature and the absence of any belief that humanity is capable of developing towards an intrinsically better form of society" might be related to the otherworldliness of Islam. And as the evidence to the otherworldly orientation of Islam, he points to the willingness of young Iranians to face martyrdom in the war against Iraq.

(ii) The Finality and (iii) The Self-Sufficiency of Islam: Islam claims that it is the final religion. This claim is based on the belief that the Jewish and Christian scriptures have been corrupted (altered), and hence, "it is irrational to adhere to them after coming of the Qur'an." Watt contended that "the belief in the self-sufficiency of Islam, together with the suspicion of all that is not Islamic and the reluctance to borrow from alien cultures, continues at the present time. . . Muhammad is reported to have said, 'Seek knowledge, even from China,' but . . . Muslims were unwilling to seek knowledge even from the alien cultures within their empire."

(iv) Lack of Historical Awareness: Nomadic Arabs, according to Watt, had only a very limited historical awareness, they thought in terms of generations rather than of years and decades, and centuries went beyond their ken. "They had no long perspectives, since most tribes had existed for only a few generations. There was no conception of a continuing historical process such as described in the Bible. This lack of historical awareness may have contributed to the absence of a concept of development."

(v) The Idealisation of Prophet Muhammad and Early Islam: Since Muhammad was held to be perfect in every way, associated with the perception of the place of Islam in world history was an idealising and romanticising of the first Islamic state and the whole period of the Rashidun Caliphs. Thus, as long as the idea of state and development is closely connected to the life of Muhammad and his Companions, any deviation from the earlier model of Islamic state, Watt observed, was regarded as heresy by the *ulema*.

Therefore, according to this scheme, social change for Muslims remains an exogenous force to which they ought to accommodate (or conversely to resist, as allegedly in the case of Islamism). This view inevitably creates a binary of the Change-Generating West *versus* Change-Resisting Islamic Societies. As Bassam Tibi (1990), one of the proponents of this viewpoint, reiterated, the main predicament of Muslims is to find ways to culturally accommodate social change, a process which they perceived to be hostile to their "metaphysical and theocentric world view." Therefore, Tibi rhetorically asked, is "Could Muslims appropriate modernity while rejecting the world view related to it?" (1990: 43).

Questions such as Tibi's are ideologically laden towards a particular notion of modernity. In this depiction, on the one hand, in the realm of politics, modernity is equated with a secular liberal democracy, and on the other hand, in the realm of economy, it is evaluated on the basis of technological advancement and the efficiency of society's techno-scientific organisation. There is, however, another important implicit assumption in this accommodationist approach which is more related to the topic at hands in this workshop: *the unidirectional transformative authority of technology*. This is one of the oldest predicaments in human society, which is how tools influence human relations and social organisations.

At the risk of simplifying various arguments about the relation between technology and culture, I shall divide the multitude of responses to this relation into three categories:

1. Technology as the messenger and the message: In every historical period, philosophers and politicians as well as masses of people look upon new inventions with skepticism. The skeptics have always argued that technology is not merely a tool to make things easier for human beings. Rather, it sets forth a Faustian bargain, doing things easier, faster, and more efficiently, in exchange for a spiritless, impersonalised society. In this view, technology is not only a messenger, but a message as well; it is not only about *how to,* but also about *what to.*
2. Technology as a messenger without an inherent message. A second group has emphasised the *instrumental neutrality* of technology. That is to say, technology may be appropriated and manipulated under any condition for any purpose. Who has access to and control over technology determines its social implications. In this view, technology is solely a messenger which has nothing to do with the message; *how* to do things is the realm of technology, *what* needs to be done is the responsibility of human agency.
3. And finally, technology as a messenger unaware of its message. Technology professes a transformative authority the outcome of which is unpredictable.

TECHNOLOGY *IS* THE MESSAGE

The idea of technology as the message or an essence is best known through the writings of the German phenomenologist Martin Heidegger and the French social critic Jacques Ellul. Both Heidegger and Ellul argued that technology constitutes a new type of cultural system that restructures the entire social world. In a famous epithet Ellul asserted that "Technique has become autonomous" (1964: 14), that is to say that it has established its own logic and advances independently from human interventions. In a similar manner Heidegger lamented that technology has irreversibly overtaken us and has transformed the entire world, ourselves included, into "standing reserves," raw materials to be mobilised in technical processes (1977: 17). For both Ellul and Heidegger, there are no escapes from the ills of technological societies other than a retreat, "only a return to tradition or simplicity offers an alternative to the juggernaut of progress" (Feenberg, 1991: 7)

Whereas Ellul and Heidegger viewed the transformative authority of technology pejoratively, Marx welcomed technological development as one of the fundamental conditions of progress. In one of his famous aphorisms, Marx remarked in his *Poverty of Philosophy* that "hand-loom gives you society with the feudal lord; the steam-mill, society with the industrial capitalist." This apparent technological determinism constructs technology as a cultural system that restructures the entire social and symbolic world as an object of transformation. In this regard, not only does technology execute our thoughts and ambitions, it also defines and shapes them. In a remarkable passage Marx concluded his treatise on the *German Ideology* by interweaving the symbolic world of culture and rituals to the advent of technology. "Is Achilles possible," he asked,

> When powder and shot have been invented? And is the *Iliad* possible at all when the printing press and even printing machines exist? Is it not inevitable that with the emergence of the press, the singing and the telling and the muse cease; that is, the conditions for epic poetry disappear? (1972: 150)

Marx's attempt to connect the symbolic and cultural conditions of life to technology was neither unprecedented, nor unusual. Before him, as Neil Postman (1993) observed, scholars found it useful to invent taxonomies of culture based on the technological character of an age. Even the most common form of public conception of historical periodisation is based on technological classifications: the Stone Age, the Bronze Age, the Iron Age, and the Steel Age. Today Arnold Toynbee's conception of the Industrial Revolution as the social marker of the last two centuries seems an indisputable historical fact, the same way the Daniel Bell's

notion of post-industrial society has become a foundational basis through which we make sense of our socio-economic and cultural experiences.

Finally, as Marshall McLuhan once declared in the title of his 1967 classic, *The Medium is the Massage.* The life and time of typographic cultures of "the Age of Gutenberg," McLuhan (1994) posited, has been replaced by Electronic cultures of "the Age of the Electronic." I shall return to this topic later.

TECHNOLOGY: MEANS WITHOUT A MESSAGE

The second category is based on a fundamental distinction between technology and its application. That is, technology lacks the substantive content of its own and serves as a tool in the hands of its users. Formulated both by the liberal proponents of industrial development as well as the Bolshevik advocates of Marxism, this view considers technology to be neutral in its constitution which conveys no inherent agenda for socio-political and cultural change. This view treats technology as subservient to values established in other social sphere, such as politics and culture. Accordingly, the advocates of this view regard technology as a pliable tool, which can be appropriated in a variety of social relations.

The most important implication of this approach is that technology is universal and may be applied in any social and cultural circumstances despite the contexts within which it is implemented.

TECHNOLOGY THE MESSENGER WITH AN UNPREDICTABLE MESSAGE

It is a liberal as well as a socialist naïveté to regard technology a socially neutral tool for the betterment of social and individual life. The socio-cultural implications of technology are ecological. That is to say, a society which introduces private automobiles as the main means of transportation is not the same old society plus cars. A new means of transportation will transform the way people relate to one another through the construction of new conceptions of time and space. But whereas the first approach considers this transformation to be unidirectional and guided by the inherent characteristics of technology, this third view argues that the social and cultural implications of technology are unpredictable.

Since the ancient times, technology has been looked upon with skepticism. This skepticism emanates from the fact that the social and cultural consequences of the appropriation of technology are unknown to its inventors. For example the mechanical clock which has its origins in the Benedictine monasteries of the twelfth and thirteenth centuries was invented to

keep a more precise regularity for the seven periods of prayer during the course of the day. The bells of the monastery were to be rung to signal the canonical hours; the mechanical clock was the technology that could provide precision to these rituals of devotion. And indeed it did. But what the monks did not foresee was that the clock would become a means not merely for keeping track of hours but also of synchronising and controlling the actions of men. And, as Lewis Mumford wrote, "The mechanical clock made possible the idea of regular production, regular working hours and a standardised product" (Mumford, 1963: 15). Simply put, without the mechanical clock, capitalism would not have been possible.

Here the paradox is unmistakable. A tool that was invented to regulate men's devotion to God, contributed to the emergence of capitalism, an economic relation and a social ethos in which the only devotion is to the accumulation of money. A tool, which was to encourage precision in Divine rituals, resulted in a more efficient measurement of economic productivity. A tool, which was introduced to divide up the day into periods of spiritual reflections, became an instrument of the compression of time for the purpose of speed and greed. The same holds for other major inventions in human history, most notably printing press, invented by Gutenberg, a devout Catholic, which played a significant role in the emergence of the Reformation. It was Martin Luther who described printing as "God's highest grace, whereby the business of the Gospel is driven forward."

It is a mistake to suppose that technology has a one-sided effect, either as a *burden* or inversely as a *blessing*. "Every technology is both a burden and a blessing; not either-or, but this-and-that" (Postman, 1993: 5). Every culture negotiates with technology; the question is whether it does it intelligently or deterministically.

The last point is of a major importance. How does each culture negotiate its relations with technology? Are there any moral, political, cultural, or religious values that restrict or guide technological advancement? Does technology follows its own internal logic, or should it be regulated and contained in relation to the specific needs and cultural priorities of different societies? If yes, who does determine these values and priorities and how?

We live in an electronic age. However, technologies which define this historical period, the digital means of mass communication and networking were invented for radically different purposes from what they actually became utilised for. While in its formative stages globalisation was often viewed as an integrative, homogenising force which would assert itself through the transformative authority of high technologies (thus the notion of "the global

village"),[1] it has created a "frame of unity" within which diverse socio-cultural formations compete (Featherstone, 1990).

There are three spheres within which the new technologies have asserted unintended implications: 1) in the sphere of politics, the ways through which global communications undermine national sovereignty and the laws of nation states; 2) particularly in Islamic societies, it has democratised access to knowledge and consequently blurred the distinction between the *'alim* (the expert) and the *'ami* (the layperson); 3) it has also blurred the distinction between the teacher and the technocrat, that is the production and transfer of knowledge from its management and distribution.

Here I would like to focus on the last two points and draw attention to the contradictory role that global communications and high technologies play in the formation of new cultural forms and identities, its blessings and burdens.

It is superfluous to say that Muslims neither practice a single tradition, nor do they follow the same cultural norms and values (Asad, 1986; Gilsenan, 1982). Although the attempt to construct a universal canonical Islam is not new, the new means of global communication and electronic networking have made it more feasible to construct a simulacra of the *ummah* (global Muslim community) and authenticate its premises with references to the Islamic Text and the Prophetic Tradition (with a capital "T"), albeit with an inauthentic language (Al-Azmeh, 1993).

The invention of a universal Islamic tradition and its manifestation in a global mass movement is one of the consequences of the postmodern means of communication and networking. As one observer remarked, "The message of Islam is not simply available from a preacher at a local mosque. Sermons and religious education from leading preachers and writers can be transmitted to every city and village" (Esposito, 1984: 212). The unprecedented number of pilgrims to Mecca, the spread of the "message of Islam" by cassette tapes and electronic mail are contributing to the construction of the concept of Islam as a uniform traditional practice and a cultural system. In Michael Gilsenan's words, "in the name of tradition many traditions are born and come into opposition with others" (1982: 15).

---

[1] This image is largely promoted by the mass media to the extent that "it is as if," as Ronald Robertson observed, "the printing press largely promoted *Gesellschaft,* and the satellite dish — and its potential miniaturization— is promoting global *Gemeinschaft*" (Robertson, 1992: 396).

The formation of large post-colonial Muslim communities in Europe, and the rapid influx of Muslim students in the mid 1970s, due to the sharp increase in the oil prices, have created a significant Muslim Diaspora in Europe and North America. The Muslim Diaspora is one of the main sources of production of this perceived universal Islamic culture. The Muslim Diaspora's construction of a universal cultural identity in the West is, one the one hand, an attempt to take part in the cultural politics of the "multi-cultural" West, and on the other hand, it is an effort to sway the national politics of their home country.

In the last ten years, numerous web sites have been established through which the claim to Muslim cultural universality is constructed and maintained. A typical cyber-Muslim site on the web carries news about Islamist movements; organises discussion groups about controversial religio-political and cultural issues; discusses politics of assimilation in the West; utilises (humanitarian) support for Palestinians and Bosnians and Albanians (during the civil war), answers frequently asked questions about Islam and Islamic rituals; announces prayer times; and finally broadcasts the audio version of Friday sermons.

While the spread of cassette tapes and other forms of electronic communications contributes to the construction of a homogenous Muslim culture, we need to examine who has access to the production of knowledge, how is this knowledge maintained, legitimised and reproduced; and finally who is benefiting from its production.

As I mentioned earlier, one of the implications of global communications is the emergence of a new generation of Muslims who are not trained in seminaries and other traditional institutions of Islamic learning. Whereas this transition democratises access to religious knowledge, it could potentially transfer the authority of the learned teacher to the skilled technocrat. This is an important point when we consider the possibilities of long-distance learning in higher education. Knowledge of Islam and its legitimate practices can also be acquired in the comfort of one's home as well as in the remote corners of seminaries. Moreover, more and more people now claim authority to the interpretation of the Divine text and its implications for the contemporary social and cultural life.

Mr Amir Jafri is one of the people who were instrumental in producing *'Alim Software*. The production of knowledge is becoming more and more a technocratic endeavor, as the producer of this particular piece of software has no formal training in Islamic theology or jurisprudence.

As a way of concluding, I would like to reiterate the points I made in this brief introduction that technology ought to be negotiated and defined in every cultural context. There is no authority inherent in technology which transforms societies towards a predetermined form of social and cultural order. Indeed, history has proven that the inventors of new technologies often are unaware of the actual ways in which those technologies transform societies. Technology is neither bad nor good, it is a blessing *and* a burden, how to alleviate the latter and take advantage of the former is the topic about which I would like to invite all the participants to share their views and thoughts. Are there any specific examples in the area of your expertise that culture and technology have been negotiated successfully? Can you offer any examples of community-building through digital means of networking? Are there any particular experiences of cultural devastation induced by technological change? Are you aware of any specific examples of regulating technology based on political and cultural considerations? Questions are many and time is short, the floor is open.

REFERENCES

- Asad, (1986). *The Idea of an Anthropology of Islam,* Centre for Contemporary Arab Studies, Occasional Papers Series, Georgetown University.
- Azmeh, (1993). *Islams and Modernities,* London & New York: Verso.
- Ellul, Jacques (1964). *The Technological Society,* trans. J. Wilkinson, New York: Vintage.
- Esposito, (1984). *Islam and Politics,* New York & Oxford: Oxford University Press.
- Featherstone, (1990). "Global Culture: An Introduction", *Theory, Culture, and Society,* No. 7.
- Feenberg, (1991). *Critical Theory of Technology,* New York, Oxford: Oxford University Press.
- Gilsenan, (1982). *Recognising Islam,* London: Croom Helm.
- Heidegger, (1977). *The Question Concerning Technology and Other Essays,* translated and with an introduction by William Lovitt, New York: Harper Torchbooks.
- McLuhan, Marshall, (1994). *Understanding Media: The Extensions of Man,* Cambridge: MIT Press.
- McLuhan, Marshall, (1967). *The Medium Is the Message,* New York: Hardwired.
- Marx, Karl, (1972), *The German Ideology,* New York: International Publishers.
- Mumford Lewis, (1963), *Technics and Civilisation,* New York: Harcourt Brace Jovanovich.
- Postman, Neil, (1993). *Technopoly,* New York: Alfred A. Knopf.

- Robertson, (1992). "Globality, Global Culture, and Images of World Order," in H. Haferkamp & N. Smelser, eds. *Social Change and Modernity,* Berkeley & Los Angeles: University of California Press.
- Tibi Bassam, (1990). *Islam and Cultural Accommodation of Social Change,* Boulder, San Francisco, & Oxford: Westview Press.
- Watt W. M., (1988). *Islamic Fundamentalism and Modernity,* London & New York: Routledge

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
National Library of Education (NLE)
Educational Resources Information Center (ERIC)

REPRODUCTION RELEASE

(Specific Document)

I. DOCUMENT IDENTIFICATION:

Title: TEND 2000 CONFERENCE PROCEEDINGS

Author(s):

Corporate Source: HIGHER COLLEGES OF TECHNOLOGY

Publication Date: APRIL, 2000

II. REPRODUCTION RELEASE:

In order to disseminate as widely as possible timely and significant materials of interest to the educational community, documents announced in the monthly abstract journal of the ERIC system, *Resources in Education* (RIE), are usually made available to users in microfiche, reproduced paper copy, and electronic media, and sold through the ERIC Document Reproduction Service (EDRS). Credit is given to the source of each document, and, if reproduction release is granted, one of the following notices is affixed to the document.

If permission is granted to reproduce and disseminate the identified document, please CHECK ONE of the following three options and sign at the bottom of the page.

The sample sticker shown below will be affixed to all Level 1 documents

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

Sample

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

1

Level 1

☑

Check here for Level 1 release, permitting reproduction and dissemination in microfiche or other ERIC archival media (e.g., electronic) *and* paper copy.

The sample sticker shown below will be affixed to all Level 2A documents

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN MICROFICHE, AND IN ELECTRONIC MEDIA FOR ERIC COLLECTION SUBSCRIBERS ONLY, HAS BEEN GRANTED BY

Sample

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

2A

Level 2A

☐

Check here for Level 2A release, permitting reproduction and dissemination in microfiche and in electronic media for ERIC archival collection subscribers only

The sample sticker shown below will be affixed to all Level 2B documents

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY

Sample

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

2B

Level 2B

☐

Check here for Level 2B release, permitting reproduction and dissemination in microfiche only

Documents will be processed as indicated provided reproduction quality permits.
If permission to reproduce is granted, but no box is checked, documents will be processed at Level 1.

I hereby grant to the Educational Resources Information Center (ERIC) nonexclusive permission to reproduce and disseminate this document as indicated above. Reproduction from the ERIC microfiche or electronic media by persons other than ERIC employees and its system contractors requires permission from the copyright holder. Exception is made for non-profit reproduction by libraries and other service agencies to satisfy information needs of educators in response to discrete inquiries.

Sign here, please

Signature:

Printed Name/Position/Title: ANTHONY BILLINGSLEY SUPERVISOR PUBLIC RELATIONS

Organization/Address: PO BOX 25026 ABU DHABI, UAE.

Telephone: (971-2) 6814600 FAX: (971-2) 681 0830

E-Mail Address: anthony.billingsley@hct.ac.ae

Date: 22.10.00