

Information and Communication Technologies – and Culturally Sensitive Systems

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ABSTRACT

This paper discusses the perceptions of Egyptian minority groups in relation to information and communication technologies with which they feel empowered to protect, affirm and communicate about, what they feel to be an oppressed existence, on both local and global dimensions. The research employs qualitative methods and interpretive analysis, to focus on the use of information and communication technologies tools by Egyptian minority groups, in particular, their online platforms and chat rooms, and the related issues associated with these practices and usages. The paper argues that cyberspace is used by specific minority groups in Egypt as a “gateway to freedom” in which it constitutes an ally to establish newly founded cyber identities that provides them with space to exercise their human rights of - freedom of thought, speech and expression. The paper thus examines cyberspace a medium or tool for the carrying out of information exchange without the traditional fear of politics and power. In this way, these minority groups are analysed as the newly conceived human information systems (HIS). In addition, recommendations are made in relation to the implementation of culturally sensitive systems through information and communication technologies. The paper proposes an adaptive and culturally sensitive model of human information systems as well as human information systems development life cycle (HISDLC) to aid in establishing effective processes of information exchange and creation, hence assisting in the emancipation of conflicting parties residing in Egypt, and elsewhere in the Middle East and globally.

Keywords

Information and communication technologies, adaptive Human Information Systems (HIS), human information systems development life cycle (HISDLC), culturally sensitive.

INTRODUCTION

The beginning of the 1990's witnessed a new social and technological phenomena with the wide spread of internet information and communication technologies and what is now commonly known as cyberspace. Digital communication

developed exponentially, with the introduction of a range of network infrastructures at the forefront of new revolutions in communication bringing to the phenomenon of globalisation a communicative and cultural dimension through popular internet based chat tools and forums.

Internet Technology in Egypt has recently had a levelling out of “owners”, it is available not only to the best connected and most affluent, but has also become accessible to all, even those who the elites may consider to be inferior and of lower status or class. Cybernetics has in turn empowered a considerably large portion of the Egyptian community to participate in information sharing, and established communication bridges between social actors who had previously been isolated on both local and global contexts.

This paper draws on qualitative methodology and interpretive analysis of information and communication technologies, which allows some minority Christian Egyptian and other participants to publicly express themselves on political, social, cultural and religious issues.

Some Coptic Christians, amongst other groups in Egypt, claim that they would face interrogation, torture and possible imprisonment if they attempt to debate such issues in public forums, which they believe are regularly presented and misrepresented by Egyptian Media. Hence; taking into consideration the level of sensitivity associated with these particular types of chat rooms that were examined for the purpose of this research, it was very difficult to use quantitative methods of surveying and statistical analysis due to the highly sensitive political context surrounding the issues discussed which in turn caused participants to maintain their anonymity and indeed change their fictional names on regular basis to avoid being recognised and consequently identified to authorities. In addition, the scholarly community are continuously researching and updating their knowledge of Management Information Systems (MIS) from the technical as well as organisational perspectives. The most recent developments in MIS have seen the formation of the concept of a “global village”. However, it is not entirely clear that such developments have meant anything for the suggested mental view in this paper, of an emergence of human information systems (HIS) in cyberspace and that new information technologies allowed end-users to become “the information system” of the “the platform” in light of “globalisation.”

Consequently, the paper suggests that this recently introduced “gateway to freedom” may promote intellectual growth, freedom of thought and expression - on the other hand, it may become a destructive and exploitative environment.

Information and communication technologies have changed much of our life style and has become a forum that is used to promote information sharing, knowledge creation, collaboration and intellectual growth. In the case of Christian Egyptian minority groups, the impact of information and communication technologies on end-users has been more sentimental in value. Consequently, this paper proposes that the success of information and communication tools, information sharing and ingenuous knowledge regarding spiritual topics depend on establishing adaptive human information systems and information exchange processes. In order to ground the need for culturally sensitive systems to reside on information and communication technologies, it is essential to establish the context surrounding and leading to the proposed model in this paper.

SOCIAL CONSTRUCT

To establish the relevance of the proposed HIS model, the paper examines the nature of the Middle Eastern Culture, particularly in Egypt, to further ascertain the social construct surrounding and encompassing the model.

(Mottahedeh 2003) argues that the legal system in the Middle East is based on Public Islamic rules called “Sharea” and is translated to mean Law. Public Legislation is implemented in courts similar to the practices of the Western World, however, proceedings and legislations are grounded in Islamic beliefs. Consequently, the social construct of the Middle East is instituted on the basis of the Islamic Private Legislative system founded on Ihya' 'Ulum al-Din (The Revivification of the Religious Sciences), which is considered as the most significant work of Abu Hamid Muhammad b. Muhammad al-Tusi, al-Ghazali.

This private legislation suggests the importance of the involvement of the “muhtasib” who is the inspector of the day-to-day life in Islamic founded societies. The “muhtasib” is the Islamic Law keeper on a social level who maintains Islamic practices amongst Muslims and non-Muslims of the majority Islamic populated region. The muhtasib is responsible for controlling the occurrence of what is known in Islam as “munkar” - translated in English to what we would commonly understand as “sin” - amongst the Arabic society in everyday life. Islamic ideology as discussed by Imam al-Ghazali states that “munkar” or not abiding by Islamic “Sharea” in public is a crime, which demands punishment that is in line with the Islamic Law. However, any “munkar” performed behind closed doors i.e. not made public is not a punishable crime under Islamic Law unless “munkar” is reported to the “muhtasib” and the “muhtasib” captures the individual committing the “munkar”. For example if a person was caught walking the streets with a bottle of alcohol and demonstrated signs of consuming alcohol in public, “muhtasib” has the right to enforce the applicable Islamic punishment to this “munkar”. If

this person consumes alcohol behind closed doors then this is not punished in Islamic Law by society. However if the neighbours inform the “muhtasib” in relation to a suspected “munkar” being committed behind closed doors, the “muhtasib” has legal and social authority to enter the house and investigate the matter. If this person was found to guilty of the offence, even though it was committed in the privacy of their own space, they are still subject to the punishment of the “muhtasib” and Islamic Law. This may seem similar to the Western Law enforcement methods pertaining to the facilitation and consumption of prohibited drugs. The contrast mainly resides in the definition of “munkar” in the Islamic “Sharea” and the definition of civil and criminal offences under the legislation of the Western society.

With this in mind, any public or private endeavours made by individuals to share different views of Islam in Egypt that may be perceived as an attempt to “attack Islam”; results in appropriate punishment or consequences, as defined by the Islamic “Sharea”. This has been demonstrated in reported outrages that took place as result of Suliman Rushdi’s publication “Satanic Verses”, as well as, the most recent events pertaining to the Pope’s private lecture, subsequently broadcasted around the globe.

This type of mentality has shaped the social construct of the Middle Eastern region and specifically Egypt. The ability to think, interpret and publicly announce ones’ thoughts in relation to Islam is forbidden in the Islamic religion. Society has the right to inform on, and request the punishment of such people who may behave in a way that is deemed un-acceptable by Islamic “Sharea” and the Arabic society.

Examining scholarly research conducted into the majority Islamic populated region political constructs, the work of Eickelman (2002) emphasises the democracy deficit that the Arabs “streets” face in their daily living. Eickelman (2002) states that the Arab social construct is in fact nothing but a dictatorship practices, masked by democratic theories.

Coptics around the globe built web sites in which they share daily news in Arabic, of how Egyptian Christians are treated by the country’s security officials - a.k.a. “amn el dawla” - when reported to be part of this virtual global community, which answers to Islamic perceptions of Christianity. There have been some recent reports alleging the arrest of an Egyptian chat tool female participant in Helwan - a suburb in Cairo. Anecdotal narratives report that security officials identify participants by first gaining their trust, and allowing the participant to reveal their identities prior to making arrests- as they work as virtual undercover agents.

When observing such chat forums, the first and foremost warning that one receives is not to reveal one’s identity under any circumstance. Despite such reported risks it became apparent over the period of three years of observing the chat forums that there were a few participants who refused to be intimidated by such practices.

Studies of Arabic Middle Eastern culture as described in the work of Zakaria et al. (2003) have three foundational and core

cultural values, these are: (1) collectivism; (2) honour; and (3) hospitality. Collectivism is strongly supported in Arab society and it enhances unity and deeply founds a stable construct because it promotes the common good of the community over individual needs. Zakaria et al. (2003) states that social life in the Arabic world is signified by mutual co-dependence as well as collectivism, rather than self-reliance or individualism. Loyalty to one's extended family as well as the larger community overtakes individual needs and objectives. Consequently, "the Arab culture is neither as individualistic as the USA nor collectivistic as Japan" (p. 13), yet it is found to be strongly driven by assuring family security. In addition, "Honour is also a value factor in the Arabic culture and is grounded in "the modesty code" by which family members must abide and, which also pertains to collective property of the family" (p. 13). Also the Arabic culture is based on strong family ties that protect the honour of their families at any cost. Finally, hospitality, which symbolises status is also found to be a main factor in constructing Arabic cultures.

Egyptian Christian research participants endorsed the validity of the scholarly research established above and categorised them as social, political and cultural constructs of the "norms" found in Egypt. They also expressed frustrations encountered as a result of such social construct to which they belong. The ability to express opinions and practice their human rights of freedom of thought and expression is largely undermined by the established social construct and traditions. Minority Christian groups feel that these practices and traditions are oppressive.

Christian Egyptian minority groups would often speak of the long lost "Coptic" land, which historically belonged to them. They would re-iterate that Egypt was once a Christian country that was invaded and occupied by the Arabs.

Coptic Egyptian minority groups claim that the Egyptian media regularly and subjectively misrepresents the Christian faith and their God. Furthermore they report feeling marginalised and believe that they are not given the opportunity to publicly respond to media and religious leaders claims about Christianity. On the other hand, this research also found that Muslims in Egypt, who may hold different values and perceptions to the majority, are also not provided with the space to voice their concerns.

This could be based on Ghazali's Public and Private Law in the Islamic faith, which over the years developed a culture founded on collectivism that emphasises the common good of the community before personal advancement.

By speaking with some Muslim participants in relation to the retribution bestowed on those that counter argue the Islamic views of Christianity, the response given was that the reproof fits the offence. Under Islam such individuals are considered as 'spies'. Hence; those individuals are deserving of being reprimanded accordingly.

This response may trigger a certain level of curiosity and an endeavour to try and further ascertain whether Islam is a spiritual practice, or is it better to be understood as a formation of an earthly nation/kingdom rather than 'religion' *per se*?

INFORMATION AND COMMUNICATION TECHNOLOGIES – "GATEWAY TO FREEDOM"

As discussed above, Christian minority groups in Egypt claim that their faith has been misrepresented through the Arabic media and by Islamic religious leaders. The minority Christian groups contend that they cannot publicly discuss and address what they perceive to be unfounded perceptions about Christianity, and in addition, the minority groups report that they find the Middle Eastern social construct as oppressive to the marginalised voices of their society. These frustrations and concerns resulted in the demand for a different and relatively safe medium that Egyptian minority groups can utilise as space for their voices.

Information and communication technologies, with its unfamiliar global notion was an ideal vehicle for information exchange. This paper explores the human information systems; HIS, that use such technologies to transmit information in simpler and cheaper ways as well as in real time. They include such infrastructure of modern technology as ISP, VPN, DSL, Broadband, computer terminals, Chat rooms, Discussion boards, Messengers, modem connections or dial-up accounts and wireless connections. These most recent developments in information and communication technologies, provided a new forum for social cognition, communication and discussion. Hence; allowing human elements, or as referred to in this paper as human information systems (HIS), to respond and exchange information in real time regarding what Christian minority groups in Egypt hold most dearly to their hearts - issues of faith and religion. Cyberspace is suggested to have created a "gateway to freedom" through which human information systems (HIS) can communicate, exchange information and debate the topic of Christianity and Islam, where is the truth?

(Rheingold, 1993) argued that the forerunner to the Internet were political institutions of sorts, cultural-based mechanisms by which mental views and cognition processes of information exchange and creation were moulded and influenced.

(Rheingold 1993) suggestions on the important role technology plays in this highly charged political framework, were verified in the findings of our research. However, observations made during the course of this project highlight that in the case of religious discussions between Coptic Egyptian minority groups and their Muslim counterparts, an exception to the rule transpired. While Egyptian participants from both Coptic and Islamic backgrounds use such forums to communicate intellectual views in the hope to undergo cognition processes of information exchange and creation where possible moulds and influences are produced, the most common occurrences which were noted in those emotionally charged discussions appear to achieve the opposite.

The communicative processes taking place in such forums were mostly based on perception defences and stereotype communication barriers. There was very little room for "open minded" exchange of information as the topics discussed were held very close to the hearts of the individuals participating in

such forums. It appeared that participants were mainly there for the purpose of defending and/or attacking rather than seeking valuable information based on integrity and truth. While discussions were held under the banner of discovering the truth, the passionate participants allowed for emotions to cloud their intentions and better judgment when it came to facilitating such sensitive topics for debate. This in turn resulted in more heated arguments, and further nurturing much founded dislikes on both sides as well as an increase in persecution for minority groups in Egypt.

Muslims would often state to Christian participants in such forums that Christians who remain to reside in Egypt would bear the consequences of their actions. This reprisal on behalf of Muslim participants resulted from the feeling that Islam is being subjected to severe and unsubstantiated attack and scrutiny. They would often warn Christians to stop otherwise their friends, families and relatives who reside in Egypt would have to pay for such actions.

Coptic Christians response to such threats was that history proved that despite silence, persecution continued to grow and did not at any stage terminate. Persecution took on various forms as forum participants highlighted. The main issue is physical attacks on Christians in Egypt. Coptics claimed that if anything, the existence of such forums enabled Coptic Egyptians to publicise such occurrences that have been taking place since the invasion of Egypt by Muslims many centuries ago.

Some participants explained that they view such Chat rooms as the technological advances, which finally allowed them to be able to express their own point of view in the privacy of their own space and on a global scale without having to suffer the fear of being targeted by government officials. Participants found security behind their fictional username and were able to seek comfort and understanding from other Egyptian Christian groups who have migrated to the Western world. Immigrant Christian Egyptians formed a solid union with those who remained behind in Egypt through information and communication tools, as they united in voice and spirit to freely voice their knowledge. This in turn was viewed as a threat to the Islamic collectivist mentality of the Middle East, and in particular the Egyptian community.

This global unity was not received well by Egyptian Muslims even in the virtual reality domain. During the usage of communication mediums, many hacking attacks on chat rooms and Christian participants PC's were witnessed. Some participants were subjected to abuse, un-aware projections and humiliation. Oppression continued in some Muslims behaviour towards those Christians who dared to challenge Islam. Muslim activists would hack rooms in the name of "Allah" stating "Allaho akbar!" meaning "God the Great!" This is the Islamic scream for announcing victory of "Allah" over all those who are perceived to oppose him.

It is worthwhile noting that this important phenomenological occurrence in the global cyberworld in turn proposes an essential question; Is cyberspace the longed for "gateway to freedom" or is it just another medium that is used to move an

occurring silent war from the regional to the global and virtual realms?

Speaking with Christian Egyptian minority participants, they seemed to think that it is a worthwhile exercise. The fact that they were heard meant everything. The opportunity they were given to respond to false allegations, to state their stand on matters and to "hold the cross up high", is perceived to be the most empowering experience they ever encountered. Those moments where they were allowed to be a group who held beneficial views that were heard by a global audience, and where they felt part of a larger community that offered them a much needed support and empathy, were priceless.

However, coming from a Western worldview, the practices and events that took place in chat rooms could be perceived as counter productive, destructive and oppressive. Zakaria et al (2003) suggests that Internet information technologies were not segregated from cultural influences, but in fact they are important cultural tools, and makes a call for creating a more culturally sensitive information technology infrastructure, as Internet information technology can be used as the medium for transmitting and influencing human beliefs and mental views. The concept of adaptive technology in both context and culture is defined in (Checkland and Holwell, 1998) as creating "socio-technical" systems within organisations. Below is a discussion of technology grounded in "systems thinking" perspective.

MANAGEMENT INFORMATION SYSTEMS (MIS) AND CULTURALLY SENSITIVE INFORMATION AND COMMUNICATION TECHNOLOGIES

The paper suggests that global information and communication chat tools are not surrounded by a definitive organisational culture. Rather they belong to various end-users around the globe who are part of diverse social constructs. Thus, there is a need for clear information exchange processes to be set in place. There needs to be a certain grounded mechanism that guarantee effective information exchange and knowledge creation to ensure successful information integrity and transferability.

Therefore, this paper argues that technology infrastructure in the context of cyberspace is the tool or space for information exchange. Hence; it is not the accurate target for the call proposed in Zakaria et al (2003) for the design of culturally sensitive IT tools. The notion of making Internet information technology culturally sensitive in the context of globalisation seems to be parallel to making a knife or a birds' cage more culturally sensitive. Tools in a generic sense are used in various ways depending on the users of such tools and the context in which they are used.

This research suggests that in the context of information and communication technologies, participants utilising the tools contain the information and control the functions by which such information is exchanged through their communication processes. The communication of those participants needs to be more adaptive and culturally sensitive. Also, the processes need to be grounded in functionalities that guarantee the integrity of information.

While the notion of end-users of information and communication technologies and infrastructure, are themselves the information system responsible for information exchange and knowledge creation through their adopted communication processes may seem somewhat odd, it is determined that in the context of globalisation, it appears to be the more suitable option. Subsequently, to help in the understanding the proposed model in this paper, we will use the analogy of the functions and operations of Management Information Systems (MIS).

Checkland and Holwell (1998) suggest that for data to be transformed into meaningful information for users, data needs to be manipulated and processed to cater for users needs and expectations through the MIS's designed functionalities and internal processes. In addition, the MIS needs to be designed in a way that allows for scalability and "upgradeability" as today's organisations are open systems that interact with a larger environment.

Checkland and Holwell (1998) discuss information systems through the mental view that soft systems or human elements interact with "socio-technical" systems to obtain meaningful information. In conducting this research, the context of cybernetics demonstrated that soft systems of internet information technology chat room tools interact with other soft systems of the tools to obtain meaningful information through information and communication technology mediums. The researcher has developed an adaptive and culturally sensitive human information system (HIS) and human information system development life cycle (HISDLC) model to cater for the conditions of this context. The model will enable the process of effective and efficient information exchange within a global environment. In addition, the research found that in the case of debate or discussion being facilitated, participants alternate roles between HIS and end-users depending on who is transmitting the information and who is receiving it. Further explanation is found in the following section of the paper.

ADAPTIVE HUMAN INFORMATION SYSTEMS (HIS) MODEL AND HUMAN INFORMATION SYSTEMS DEVELOPMENT LIFE CYCLE (HISDLC)

In light of the research it is suggested that "globalization", Internet technology and infrastructure resulted in evolving the traditional meaning of (MIS), to the proposed model of adaptive HIS obtained through Human Information Systems Development Life Cycle (HISDLC). The conception of this model is constructed through the analysis of Christian Egyptian minority groups and their interactions during the usage of Internet information technology tools. This interaction was to facilitate information exchange between Muslim and Christian groups in relation to issues pertaining to their faith.

Adaptive human information systems (HIS) are reliant on productive and effective communication processes, facilitated through the use of Internet information technology tools. These processes can be presented as stages through which information is formed and transmitted by interactions and patterns of connections between members through communication "gateways". Through these communicative processes, members

attain, make sense, send (the role of HIS), receive (the role of end-users), influence and use information (Gibson 2001).

This further illustrates the community processes representing distinct stages, which together define the foundational processes needed to allow the exchange of valid and applicable information between end-users and HIS for the purpose of this research. The first stage is one during which data is accumulated within a shared context (such as the cross-cultural or cross-religious communities) or concentrated within a single point of different or unrelated areas (Drach-Zahavy and Somech 2001; Gibson 2001). In the second stage data is exchanged through interactive processes (Drach-Zahavy and Somech 2001; Gibson 2001; Jarvinen and Poikela 2001; Nonaka and Takeuchi 1996). In the third stage, community members work together and individually by imploring sense making mechanisms, analysis and evaluation methods to the attained data (Crossan 1999; Drach-Zahavy and Somech 2001; Gibson 2001; Jarvinen and Poikela 2001; Nonaka and Takeuchi 1996). The final stage is the information assembling stage in which members adapt the data they have absorbed and developed into a new understanding that aims to progress the communities cognitive tasks (Gibson 2001; Jarvinen and Poikela 2001).

The proposed model for adaptive human information systems (HIS) and human information systems life cycle (HISDLC) is developed in light of "globalization" and the usage of Internet information technology chat tools by Egyptian groups as means for carrying out religious information exchange. It is constructed on the above phases. Parallels between the proposed model of adaptive human information systems (HIS), human information systems development life cycle (HISDLC) and management information systems (MIS) are drawn upon in Table 1; HIS and HISDLC Model, to further explain the model.

Management Information Systems (MIS)- Transmitter	Human Information Systems (HIS) - Transmitter
Data Storage Servers - Databases	Human Mind
Creation of Tables on databases	Research and exhaustive analysis of applicable referenced resources from all perspectives - subject to discussion and information exchange
Linking of data by constructed database Primary Key and Secondary Key to avoid data redundancy	Investigate common grounds in both religions on which conversations can be constructed to avoid conversation redundancy - use as foundations to constructive debates of disparities between Christianity and Islam
Establish desired outcomes and reports by investigating end-users needs	Establish desired outcomes by understanding social constructs and history involved to better understand cultural 'norms' and expectations
Design systems to integrate with established organisations business processes and end-users	Understand and manage diversity of end-users residing on the same platform or chat room
Design systems that are scaleable and upgradeable; hence cater for future business processes and context changes	Employ open-mindedness ideology to adapt to real time dynamic and changing interaction processes with end-users of the platform
Manipulate data through set processes to achieve meaningful information for end users	Establish efficient and effective communication skills to guarantee the transmission of the meaning of the message sent to end-users of the platform
Maintain data integrity	Reference information. Take ownership of perceptions to avoid conflict
Display reports and meaningful information through GUI to end-users	Transmit established meaningful knowledge based on common grounds through information and communication technology chat room tools and effective processes set in place to end-users

Table 1; HIS and HISDLC Model

DISCUSSION

Human Information Systems (HIS) and Human Information Systems Development Life Cycle (HISDLC)

As stated above, in order for HIS presented in this paper to be adaptive to their context, they first need to be effective in themselves. Hence; there needs to be productive processes set in place for participants. The suggested phases presented in Table 1 need to overcome the following barriers to produce effective information sharing and exchange, and in turn influencing the level of HIS adaptability to the global and diverse context:

1. Social Construct influences on acquired information;
2. Human Interaction and Transmission; and
3. Inefficient Internet information technology infrastructure, lack of security and reliability causing discontinued and interrupted exchange of information while risking privacy and confidentiality.

Following is a discussion of the first two elements as specified above, the third element is considered to be self explanatory, hence; will not be discussed as part of this paper.

Social Construct Influences on Acquired Information

Understanding communication and information exchange processes related to HIS and HISDLC can be enhanced by reference to social learning theories such as social construction theory and situated cognition. Such theories emphasise the relationship between context and assembling of information, and suggest that meaning and comprehension is inseparable from its relationship to the environment (Brown et al. 1989). Accordingly, information is interwoven to the context of its generation and use. Social Constructionism understands that learning is always contextualised, that is, what is learnt and how it is learnt always reflects the social context of the learner.

HIS observed as part of this research demonstrated that context influences play an important role in acting as a catalyst for "cross contamination" of data and is one of the main causes behind data integrity issues. In line with the above discussion of the Egyptian cultural context, it is noted that due to the nature of the Egyptian society, Egyptian Muslims were subjected to biased and negative views regarding Christianity which they were discouraged from questioning and exploring. Islamic founded context influences generated preconceived ideas and perceptions, which were stored in the minds of the Muslim participants. It is believed that this stored data was purely based on Islamic religious leaders anecdotal representation of Christianity to the Egyptian population. Egyptian Muslims located in Egypt, were confronted with data reliability issues through Internet information technology enabled communication and information exchange exercises with Coptic Christian HIS in real time.

Coptic Egyptians were influenced by a long history of fighting oppression and false allegations as well as resentment towards those who stole their land, homes and possessions, which they believe were always rightfully theirs.

To allow for the adaptability process to resume, Checkland and Holwell (1998) suggest the need for “conceptual cleansing” process to take place. The research findings re-enforce the need for “conceptual cleansing” processes to take place in HIS, hence; creating adaptive and culturally sensitive HIS in the context of globalisation and cybernetics.

Human Interaction and Transmission

Interaction is based on the use of language and other symbols to develop a rich and shared understanding of the available, relevant information. It is based on a process of communication focusing on investigation, reflection and efforts to understand. As such, the interaction process relies on end-users of the platforms to actively and openly listen and receive the information provided by HIS. Such an approach to communication and information exchange is covered by the notion of open-minded norms, which are reported to be the relating behaviour to the way in which humans approach the views and information of others in their community. Incorporating the belief that others should be free to express their views and the motivation to investigate and recognise the value of others’ information and context (Tjosvold and Poon 1998).

In context of adaptive HIS, the receiver (end-user) of the information would need to keep an open mind to information shared and evaluate the relevancy, value and truth of information, hence; permitting the process of reconciliation to resume, and minimising conflict on cyberspace platforms.

Transmission (HIS) incorporates both the externalisation and interpretation of information. The interpretation of information received from end-users is based on the application of acquired information (Polyani 1966; Tsoukas 1996). However, according to social constructionist theories, community members from varying backgrounds develop different information based on their social-circles and interactions (Bhatt 2000). Accurate interpretation thus, in part, relies on the degree to which information of the receiver (end-user) agrees with that of the sender (HIS). Therefore, in this context of religious discussions or debates, it is essential to found the arguments on common grounds shared between HIS utilising information and communication technologies to avoid communication redundancy and emotionally charged arguments.

HIS in the context of globalisation are proposed to be dynamic because of the real time nature that is associated with information exchange taking place over the internet. They are dynamic systems that need to master the art of immediate scalability and upgradeable. In contrast the MIS, are designed to be scaleable or upgradeable to adapt to change that takes place within organisations as they evolve their business processes and operations. Such occurrence does not arise in real time, instead it advances over number of years as organisations

allow for solidification interludes of business structure and processes.

In the case of HIS, there needs to be an ability to work on the commonalities identified between the varying perspectives; establishing linkage between HIS and end-users of the platform. Participants would need to take ownership of their interpretation and perception during the communication process and information exchange on chat room forums.

Participants on the platform both Coptic and Muslim Egyptians alternate between human information systems (HIS) role and end-user role depending on who is transmitting (HIS) information and who is receiving information (end-user). In a debate or discussion context, participants may find themselves acting as both HIS and end-users of Internet information technology chat room tools.

In the case of HIS and end-users reported in this paper, the differences between the information transmitted and received was vast. This hindered any possibility of reaching common grounds in majority of cases where both the transmitter (HIS) and receiver (end-users) are able to effectively exchange and share beneficial information as well as adapt and integrate through cyberspace. It is worthy to note that in the case of HIS, the effectiveness of information exchange processes is highly dependent on the individuals themselves, as opposed to MIS where the effectiveness and adaptability of information systems is more than often reliant on the design phase of SDLC.

Some HIS were observed to be very effective in choosing their methods and tactics to ensure beneficial information exchange between all participants despite their background and social circles. This goes back to HIS ability to adopt “open-minded” ideology in their interaction processes as previously discussed, however to ensure the placement of adaptive HIS in a globalised context, it would require the dedication of both the transmitter and receiver of information to the scalability and upgradeability design, also known as open-minded ideology.

The functionality implemented by effective HIS and observed through the course of this investigation was to base the discussion topic on the common areas found in both religions, as well as the differences. At emphasising the commonalities, the receiver of the information was then able to slowly engage and adapt, as well as cautiously drop their perception defence barriers as the conversation evolved. Despite the fact that there were no major conversions taking place, it was noted that when such “diplomatic” tactics were incorporated in facilitating the debate, the process of information exchange was much more effective, much less hostile, and diverse end-users were more willing to interact with the HIS.

CONCLUSIONS

Social Construct and Internet information technology in light of globalisation are key contributing factors to the conception of HIS and HISDLC model. Information systems based on humans, created both positive and negative implications on the effectiveness of information exchange processes via cyberspace. The human factor being the most complex element is proving to

act as the greatest barrier in the way of resolving issues of “cross contamination” of data and data integrity as well as the creation of adaptive and culturally sensitive HIS’s on cyberspace. Human element proposed threat of security, invasion of privacy, un-aware projections, stereotyping and unproductive communication processes between participating HIS. HIS proved to be dynamic, thus as the human element is responsible for the effectiveness of information exchange, the level of adaptability is mainly tied up to the individuals engaged in the information exchange process, in contrast to the mental view commonly used in the traditional concept of MIS. Human information systems development life cycle was conceived to illustrate the phases needed to guarantee the creation of effective and adaptive human information systems over cyberspace.

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