Importance of E-Participation by U-Society in the Development of the U-City

Jalaluddin Abdul Malek, Mohd Asruladlyi Ibrahim, Zurinah Tahir

Abstract—This paper is to reveal developments in the areas of urban technology in Malaysia. Developments occur intend to add value intelligent city development to the ubiquitous city (U-city) or smart city. The phenomenon of change is called the development of post intelligent cities. U-City development discourse is seen from the perspective of the philosophy of the virtuous city organized by al-Farabi. The prosperity and perfection of a city is mainly caused by human personality factors, as well as its relationship with material and technological aspects of the city. The question is, to what extent to which human factors are taken into account in the concept of U-City as an added value to the intelligent city concept to realize the prosperity and perfection of the city? Previously, the intelligent city concept was developed based on global change and ICT movement, while the U-city added value to the development of intelligent cities and focused more on the development of information and communications technology (ICT). Value added is defined as the use of fiber optic technology that is wired to the use of wireless technology, such as wireless broadband. In this discourse, the debate on the concept of U-City is to the symbiosis between the U-City and the importance of local human e-participation (U-Society) for prosperity. In the context of virtuous city philosophy, it supports the thought of symbiosis so the concept of U-City can achieve sustainability, prosperity and perfection of the city.

Keywords—Smart city, ubiquitous city, U-Society, e-participation, prosperity.

I. INTRODUCTION

THE development of ICT technologies from wired to wireless technology (or broadband wireless) has changed the urban development concept based on the progress of ICT infrastructure. The development of the intelligent city has now shifted to the knowledge city with the latest terminology, smart city. One of the value-added effects of using wireless technology in a smart city is the Ubiquitous City (U-City). What is important from a change in value added is the emphasis on the urban development discourse from the initially emphasized infrastructure and info structure, to aspects of human capital and social capital. However, under the U-City, the main aspect of emphasis is on how social networks of earlier liberalization can raise human value based on the virtuous city, whether in ethical and aesthetic values. In the context of the virtuous city philosophy, it supports the thought of symbiosis, and thus the concept of U-City can achieve sustainability, prosperity and perfection of a city. The main focus of this discussion is to explore to what extent the application of the U-City leads the community to be sustained

Jalaluddin Abdul Malek is with The National University of Malaysia, Malaysia (e-mail: asrul_yo@yahoo.com.my).

like the perfect society (Kamilah `Uzma) in terms of ethics, morality and wisdom parallel to the progress of ICT.

II. U-CITY AND THE PHILOSOPHY OF VIRTUOUS CITY

The concept of the perfect and ideal society by al-Farabi can be the basis for the development of the U-City [1]. If it is realized, it could overcome the flaws and weaknesses of the development of a U-City. The perfect idea of al-Madina al-Fadila can be applied to realize the sustainability and progress of the city that uses the concept of U-City. Based on the political philosophy of al-Farabi, perfect country attributes (al-Madina al-Fadila) and perfect community is as follows: First, it is a country that has people with a helping nature and selfless characteristics. They participate in the development with a sincere and strong commitment. Second, the country has a good layout and perfect administration system and systematic bureaucracy, efficient and highly efficient use of technologies. Third, it is a country or city that can provide eternal happiness, either in this world or in the hereafter. Eternal happiness is achieved when humans are able to maintain the relationship with the Creator, caring human relationships with other humans, as well as keeping the human relationship with the natural environment. Fourth, have a chief, mayor and good governance and management in terms of humanity. A perfect head of state has the perfection of the physical, knowledge, thinking, spiritual and moral good. In the discussion of the concept of al-Madina al-Fadila, the focus will be on how U-City development should take into account the existence of U-Society as a Kamilah `Uzma. The Kamilah `Uzma Society is a global movement that transcends race, ethnicity, and culture while upholding religion. The Kamilah `Uzma Society is also a close community, where people help one another with mutual understanding and enjoy a peaceful happy life.

According to the Kamilah `Uzma society, in the U-City, people will be wired to networks, in which computers are invisibly installed, and be able to access networks everywhere and at any time [2]. The perfect society in the U-city is able to use ubiquitous networks and will develop from person to person, person to object, object to object, and true ubiquitous computing will be possible [3]. The U-City places an emphasis on technology, equipping it to exploit advances in information technology. The cyber-services that run such technology would form the basis of city development in the time to come.

Communications will be made without communication infrastructure but through direct communications between devices. The U-City should possess the main components such

as convenient city, healthy city, safe city and clean city (Fig. 1) [4]. The philosophy of the U-City is based on liberal users of ICT without the time, space and place borders, such as the everywhere mobile concept. This phenomenon called Omnitopia with its philosophy; ``Anywhere, Anytime, Anyplace, Anybody and Anything''.
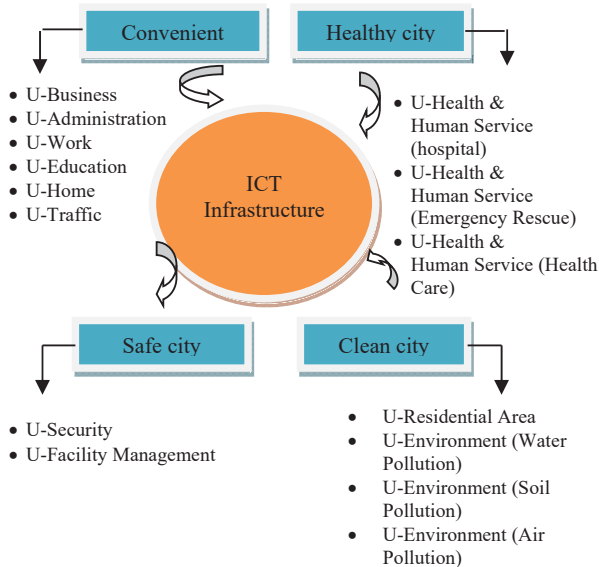

Fig. 1 Main Component of a U-City Concept [4]

The Ubiquitous City plants the seeds for the rise of Omnitopia. The name Omnitopia, derived from the Latin root 'omni' meaning 'all', and the Greek root 'topos' meaning 'place' and refers to a space for people to meet and interact. Such spaces include for example, airports, conference halls and even shopping malls. These are portals through which life experiences are exchanged and the traditional barriers between disparate groups are broken down. For instance, we can flow from place to place, experiencing it all as one vast interior, interacting with other people and natural parts of the world only as a series of objects. The principal of Omnitopia U-City is based on Sustainability, Dislocation, Conflation, Fragmentation, Mobility, Mutability, and Reliability.

Sustainability is the long-term maintenance of responsibility, meanings for sustain, the main ones being to "maintain", "support", or "endure". In regard to the social and economic aspects, the sustainability of U-City refers to equitable, such as in socio economic aspects, reduction of poverty, participation in socio-economy development and more collaboration to create a better quality of life. From an economic and environment aspect, the sustainability of the U-City refers to the viability of all urban society life. It is essential to maintain a social, physical, and human environment that is viable as the U-City develops. Ethical and moral expectations need to be invoked to ensure that the desired environment is achieved and maintained (Fig. 2). Dislocation detaches a site from its surrounding locale. A dislocated place might be compared to a computer terminal

through which one enters. One may indeed continue to recognize the spatial associations of an office or other local enclosure. However, perceptually, one enters an online environment that is separated from a particular place. Conflation merges disparate experiences into a singular whole U-City. As such, conflation crafts a pastiche of functions, referents, settings, and environments, evoking multiple place-narratives in a single location of U-City. This practice is best illustrated by the pastiche experience of many contemporary environments that evoke multiple place-narratives in a single location of a city. Within omnitopia, conflation reflects the experience of passing through multiple environments that seem indistinct; each flows into the other to form a singular experience. Fragmentation splits a singular environment U-City into multiple perceptions. As such, fragmentation reflects an essential counterpart to conflation; both work in tandem along differing levels of cognition. While conflation gathers multiple sites into the same continuum, fragmentation works simultaneously to fracture that omnitopia experience into isolated surface-level images, functions, and interactions. As a result, one can hardly discern a singular narrative or U-City Society within omnitopia.
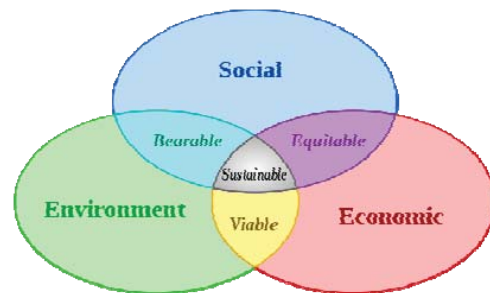

Fig. 2 The future of Sustainability [5]

Mobility constitutes an inevitable component of any U-City site, particularly as the population grows and residential areas expand beyond the pedestrian sphere where one may walk comfortably. Even in a small town, one practices some degree of mobility e.g. when one visits the central park for an afternoon picnic. However, omnitopian mobility differs from traditional urban mobility. Within an omnitopia, U-City mobility becomes essential to transform disparate places into nodes of the same place [5].

Mutability enables the perpetual change of a place of U-City. As a practice of omnitopia, mutability reflects a range of potentials; it may be employed to destabilize a critical response by altering the foundation upon which such a critique could be launched. It may also provide the means through which occupants of omnitopia may change the environment for U-Society purposes. Omnitopian mutability is best illustrated by its continual and seemingly automatic adaptation to changing exigencies. There is increasing optimism in developing the U-City to mold city-dwellers and society as a whole towards the ideal of a progressive U-Society. The U-City should have the ability of a system or component to perform its required functions under stated conditions for a

specified period of time. The U-City must be reliable to human practice for all U-Society such as for the young generation, adults, the older generation and for disabled people. The U-City, with its philosophy of "anything, anywhere, anytime, anyplace and anybody". 'Ubiquitous' is defined as the state of being everywhere at the same time. Hence, ubiquitous computing refers to a computing infrastructure being readily accessible in all locations and at all times.

III. DISCUSSION OF U-CITY APPLICATION IN MALAYSIA

According to al-Madina al-Fadila philosophy, the sustainable development, prosperity and perfection of the U-City Implementation award in Malaysia can be achieve by the Vision 2020 agenda. Nine challenges of Vision 2020 saw that Malaysia wants to become a virtuous city or state. *Wawasan 2020* can be achieved if development of the U-City is administered according to set policies in relation to the economy, technology, education, law, transportation and social-cultural considerations. For instance, U-City development should be looking forward and refer to the Malaysian policy and strategy development. Previous policy such as the National Information Technology Agenda (NITA), the Knowledge-based Economy Master Plan, New Economy Model, the New Region Economy Corridors (ECER, NECR etc.), and the Government Transformation Plan for Rural Transformation Program are taken into account in U-City development. Such policies are essential to reduce the digital gap among residents of the U-City. With regard to the economy, U-city development must strive towards an equitable, livable, and viable economy. Sufficiency of workers competent in information technology is important for the success of the U-City, especially with regard to economic and commercial excellence. Progress of the development the U-City and smart village should be balanced. Traditional villages should be upgraded to an Information Network Village or smart village. The relationship between the U-City and smart village can support each other to improve matters beyond the rural economy. The federal government should have a clear strategy to reduce dependence on U-City technologies from abroad. The U-Society in a U-City and smart village should be able to strengthen e-entrepreneurial and innovation skills to develop or produce appropriate technology. In the end, from an economic standpoint, the development of the U-City should be able to sustain and enhance quality of life, generate a high income family and improve people's well-being [6].

From a socio-cultural perspective, the U-City must be able to develop a U-Society as a caring and high morale community (the Kamilah `Uzma society). The U-city must have first-class minded society in parallel with a first-class facility in the U-City development. A vibrant city can be maintained by promulgating sustainable values in the socio-cultural life of the population. Residents of the U-City shoulder the responsibility of protecting the environment and deterring acts of destruction and vandalism so that the community lives as a harmonious and integrated society.

U-City development prioritizes well-being, safety and quality of life. Vulnerable and marginalized communities and society cannot be ignored in the development of U-City. In technology development, revealed the number of U-City development to achieve the National Key Result Area (NKRA). For instance, the program of the smart city and smart village under the Digital Transformation Plan is expected to contribute RM90 billion or just over USD 22 billion [7]. Through the development of the U-City, Malaysia should not just depend on foreign technology, and the development of indigenous technology and local content should be intensified. In the face of rapidly changing technology, the development of the U-City in Malaysia will face the invasion of new technologies from outside and ultimately difficult to produce technology to suit local consumers.

From an education aspect, U-City development must be the outcome of knowledge-based society for the long-term. Developing a knowledge society can be involved lifelong learning, non-formal education and informal education. The strategy of bridging the digital divide should be continued, and in the long term, ICT for sustainable development should be continued for the development of socio-economy achievement. In this regard, a program built on a foundation of information technology should be supported to elevate economic development of the urban society. In the aspect of the law and morale, U-City development must take into account Malaysian Act's such as The Annual Digital Signature Act 1997 (Act 562), Computer Crimes Act 1997 (Act 563), Telemedicine Act 1997 (Act 564), Electronic Commerce Act 2006 (Act 658), Electronic Government Activities Act 2007 (Act 680), etc. Ultimately, the U-City should seek to build the perfect society (the Kamilah 'Uzma society) where wisdom, ethics, and morality are upheld in the advancement of ICT. The philosophy of the Omnitopia U-City that is; "Anywhere, Anytime, Anyplace, Anybody and Anything" must be guided by appropriate acts for the sustainable development of U-City and U-Society.

IV. U-CITY AND E-PARTICIPATION IN MALAYSIA

Participation can be defined as the act of taking part in a group activity to achieve a common objective. This rather limited definition would only involve performing an act together with other persons. In its broader sense, participation encompasses a situation where co-operating parties come together with a common objective to make joint decisions that affect themselves. In social and political science theory, participation often refers to an involvement of the public in arriving at political, economic, and management decisions. Hence, the process of participation is essential to the various control mechanisms governing group activities. When the service process becomes complex, its implementation would no longer be a political decision alone, but would be a decision by society and the public at large, and one that is seen as pragmatic. Essentially, this determines how a government policy is implemented.

E-participation is a term that is commonly referred to as ICT participation through processes involved in the government's administrative system. These processes include matters concerned with management, administration, service delivery, decision making, and the formulation of government policy. For these reasons, e-participation is a matter taken seriously by the government. With regard to national development, e-government places importance on the benefits e-participation can bring to the people, including new services that they did not previously enjoy. The need to differentiate between the role of the citizen and the customer has taken on greater urgency. A deeper definition of e-participation sees it as the "use of information and communication technology to widen and deepen political participation by the people to communicate with one another and with their elected representatives [8]. This definition encompasses the involvement of all major groupings in the democratic decision-making process, rather than it being a top-down government initiative. As such, e-participation operating as a component of e-government may be regarded as a manifestation of e-democracy where the adoption of ICT is encouraged by the government to involve elected officials, the media, political parties, public interest bodies, international governmental organizations, citizen and voter groups, and other relevant parties, and where such national or regional political processes receive input through e-participation [9]. The problems encountered in e-participation arise from the large number of districts where the adoption of the system is not always uniform, and also from the diversity of interested parties and the extent of their involvement in policy decisions [10].

A number of tools and models have emerged as part of Web 2.0 that can be used to inspire the design of architecture for e-participation. In particular, "the emergence of online communities oriented toward the creation of useful products suggests that it may be possible to design socially mediating technology that support public-government collaborations" [11].

A. Participation Tools

Prior to the implementation of e-participation, there should be an initial study of the scheme that includes feedback *via* various channels of communication such as e-mail, questionnaires and web-forums where citizens can air their views. Organizing more public forums can also be a means to encourage interest in e-participation. Facilities and infrastructure available for e-participation need to be reviewed to assess the state of readiness. The background and other relevant information on the processes involved should be imparted to citizens and the business community in order that they understand the policies and regulatory issues that would be instituted.

Access to the Internet is a basic requirement in order to participate in the myriad of activities supported by Information and Communication Technology (ICT) that is widely used in the digital community. The pervasiveness of ICT is a measure or indicator of how digital savvy a community is. Warschauer [12] lists four factors that positions a community to participate in ICT-mediated development, namely 1) physical resources, essentially adequate access to computers and the Internet; 2) ICT competency to enable the search for Internet content and to understand it; 3) manpower with competency in ICT and ICT-mediated learning that includes a working knowledge and understanding of cyber rules and ethics; and, 4) social resources that encompass the local community, institutions, and social structures with linkages to IT.

This paper is aimed at exploring the extent to which ICT acts as a facilitator in community development, especially in the economy, through increased employment opportunities and global competitiveness in the present era. Such a situation would be in accordance with the al-Madina al-Fadila philosophy that posits sustainable development, prosperity, and perfection of the U-City.

B. Mechanisms

In Malaysia, ICT acts indirectly as an instrument to improve the economy of rural residents and the underprivileged through the reduction of overall poverty in the country by assisting in the following ways:

1. Providing Information on Commercial Opportunities

Through ICT, information on prices, markets, trade and so forth can be obtained easily via the Internet. Such information is also useful in the search for new markets while facilitating orders, delivery, and payment.

2. Creating New Job Opportunities and Facilitating Job Search

Besides helping job-seekers to search online for employment, ICT also creates opportunities for new genres of work, for example, in web advertising.

3. Acquiring Knowledge and Skills

Long distance learning via the Internet can be undertaken if ICT facilities are available. Various skills can be acquired using modern methods that are available online.

4. Providing Easier Access to Healthcare

New innovations bring healthcare services to all, including the poor, through the use of ICT. Telemedicine is an example.

5. Improving Public Administrative Services

The use of ICT can make public services more efficient. Conversely, the public can communicate directly with government departments on administrative matters, such as making queries or complaints.

V. FINDINGS AND DISCUSSION

In a study carried out in the Cyberjaya community, findings indicated that ICT diffusion did not advance beyond a moderate stage. Internet access was mainly for recreational purposes and generally trivial pursuits such as keeping up-to-date with sports news. A total of 227 out of 600 respondents (40.4%) followed their favourite sports in this way daily (Fig.

3). Besides that, Internet surfing for news was another favourite pastime among 217 respondents (38.6%) who did so every time they accessed the Internet. This was followed by searching for educational materials (198 respondents) and employment opportunities (190 respondents), see Table I.

The respondents in this study did not appear to be interested in looking for information on agricultural activities, with only 130 (23.1%) out of 562 doing so. Both domestic and world politics similarly stirred little interest, with only 166 respondents visiting such websites during their Internet sessions. The same could be said of sites pertaining to trade and business (175 respondents) or health (179 respondents). It appeared that Internet interest within the Cyberjaya community was confined to recreational aspects, rather than those related to information and knowledge. Nevertheless, it should be appreciated that the reluctance of the respondents to integrate ICT into their daily lives was not due to personal factors alone. External factors such as poor ICT facilities and the lack of ICT training, besides the low ownership of computers and smart phones with Internet capability, did not help to improve Internet usage for more useful purposes.

TABLE I
RESPONDENTS TO INTEGRATE ICT INTO THEIR DAILY LIVES

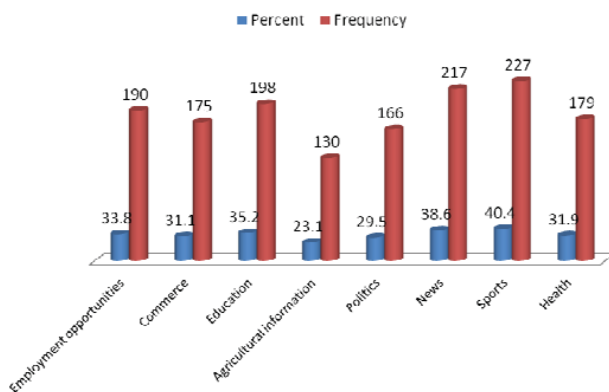| Internet Usage	Percent (%)	Frequency
Employment opportunities	33.8	190
Commerce	31.1	175
Education	35.2	198
Agricultural information	23.1	130
Politics	29.5	166
News	38.6	217
Sports	40.4	227
Health	31.9	179

Fig. 3 Internet Usage

Fig. 4 and Table II show the respondents' views regarding the importance of the community's participation in ICT in the building of a U-city populated by an informed society. A total of 114 respondents strongly agreed with the proposition that community participation in ICT was important to be successful in building a U-city, as compared with 26 respondents who strongly disagreed. At the same time, 354 other respondents agreed with the proposition, while the remaining disagreed. In any case, there was unanimous agreement that such activities required support, especially in funding from all parties, including NGOs and the private sector.

TABLE II
IMPORTANCE OF COMMUNITY PARTICIPATION

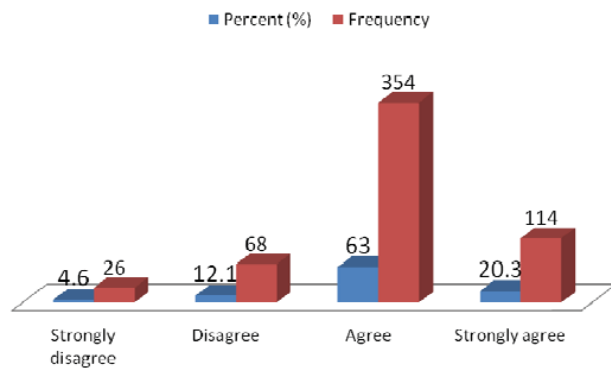| Importance of community participation	Percent (%)	Frequency
Strongly disagree	4.6	26
Disagree	12.1	68
Agree	63	354
Strongly agree	20.3	114

Fig. 4 Importance of community participation

VI. CONCLUSION

In conclusion, the development of U-City has a big challenge to be a virtuous city (al-Madina al-Fadila). ICT such as broadband wireless technology used must be harnessed efficiently and effectively by U-Society in order to reap its maximum benefits. U-City development must consider aspects of human development. Aspects related to policy and administration, economy, socio-cultural, technology, education, and also law and moral should also be considered.

REFERENCES

[1] Al-Farabi, A.N. 1998. *On the perfect state (Mabadi' ara' ahl-madinat al-fadilah)*. California, USA: Great Books of the Islamic World, Inc.
[2] Weiser, M. and Brown, J. S. Riding on a Sea of Calm, *World Link*, Jan./Feb. 1998, pp. 48–50.
[3] Murakami, T. 2005. Japan's national IT strategy and the ubiquitous network. Nomura Research Institute. Papers No. 97.
[4] Ubiquitous City, Buzz That Is Here to Stay, 2006
[5] Adams, W.M. 2006. The Future of Sustainability: Re-thinking Environment and Development in the Twenty-first Century.Report of the IUCN Renowned Thinkers Meeting, 29–31 January 2006. Retrieved on: 2009-02-16.
[6] National Economic Advisory Council (NEAC). 2010. *New economic model for Malaysia Part 1*. Putrajaya: NEAC.
[7] Global Science and Innovation Advisory Council (GSIAC). 2010. Annual Meeting Report, 2010
[8] Macintosh, A. 2004. *Characterizing E-Participation in Policy-Making*. In the Proceedings of the Thirty-Seventh Annual Hawaii International

Conference on System Sciences (HICSS-37), January 5 – 8, 2004, Big Island, Hawaii., CiteSeerX: 10.1.1.98.6150

[9] Clift, Steven. 2003. *Exploiting the Knowledge Economy: Issues, Applications, Case Studies*. retrieved 2009-03-17

[10] Fraser, C. et al. 2006. DEMO_net: Demo_net Deliverable 5.1: Report on current ICTs to enable participation

[11] Kriplean, T.; Beschastnikh, I.; Borning, A.; McDonald, D. W.; Zachry, M. 2009. *Designing Mediating Spaces Between Citizens and Government.* Socially Mediating Technologies Workshop at the ACM 2009 SIGCHI Conference on Human Factors in Computing Systems (CHI'09)

[12] Warchauer, M. 2003. *Dissecting the "Digital Divide": A Case Study in Eqypt*. The Information Society. Volume 19, pp 297-304.

Jalaluddin Abdul Malek is a senior lecturer at the Faculty of Social Sciences and Humanities, National University of Malaysia since 1998. He received a PhD in Urban Planning (Intelligent city planning) from the University of Malaya (2006) with a field of expertise deals with the design of e-Development and the village; Sub-Sector; Smart Urban Planning and Development, Development of E-Communities, Smart Planning and Rural Development, and Analysis of the Impact of E-Development.

Asruladlyi Mohd Ibrahim is a PhD candidate at the National University of Malaysia in areas related to Rural Planning, Smart Village, the E-Community and the Development of ICT. Having experience as an assistant researcher in the field of e-communities and the Smart Village since 2010.

Zurinah Tahir is a postdoctoral researcher at the Faculty of Social Sciences and Humanities, National University of Malaysia. She has the expertise and professionally conducting research in the field of Planning & Development, GIS Strategic Planning, Science development, and Land Development.