Toward Virtual Universities in the Sultanate of Oman: Reality, Challenges and Perspectives

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Abstract
The advances in information and communications technologies (ICT) have made possible the development of virtual universities. On a global scale, virtual universities have been heralded as a way of reducing educational and socio-economic disparities between countries, as students can in theory access high quality education from around the world at relatively low cost. The objective of this paper is to consider the case for a virtual university in the Sultanate of Oman by examining the arguments for and against virtual universities, especially in the developing country context, and to assess the viability and potential benefits of this type of initiative for the Sultanate of Oman, taking into account the country's levels of socio-economic and technological development. The paper is based on secondary analysis of literature published internationally over the past fifteen years or so relating to virtual universities, particularly in the context of developing countries, as well as recent statistics and information pertaining to socio-economic and technological development in the Sultanate of Oman. The paper revealed that existing research evidence indicates that the implementation of a virtual university as a means of upgrading and diversifying the skills and knowledge of a population can effectively contribute to the economic development process. E-learning is already being successfully used in Oman's small but well-developed higher education sector. The paper recommended that the Sultanate of Oman should continue expansion and upgrading of its ICT infrastructure; consideration should be given to establishing a network of Tele-centers to increase population access to the Internet; and to implementing public marketing and awareness-raising campaigns to promote participation in the OVU.

Introduction

Around the world, many virtual universities have been established since the early 1990s, when rapid developments in information and communications technology (ICT) made it possible for higher educational content to be delivered to students via the Internet. This added new possibilities to the concept of distance learning formerly exemplified by the UK's Open University (OU). The OU had been established in the 1970s to deliver home-based learning to students via television broadcasting and correspondence (Cottingham, 2008)

There are various definitions of a virtual university in the literature, but most writers concur that it has similar functions to a traditional university, such as teaching and research, and enables learners to access course material and other resources via the Internet and complete work at their own pace and preferred location (e.g. Goddard & Cornford, 2001; Whittington, 2000). As the literature reveals, another key characteristic of many virtual universities is that they provide students with access to expertise and resources from outside the university environment, for example through collaboration with other institutions within the same country or overseas.

Objective

The objective of this paper is to consider the case for a virtual university in the Sultanate of Oman by examining the arguments for and against virtual universities, especially in the developing country context, and to assess the viability and potential benefits of this type of initiative for the Sultanate of Oman, taking into account the country's levels of socio-economic and technological development. Recommendations and a proposed model for a virtual university are presented for consideration by decision-makers and stakeholders in the government and education sectors in the Sultanate of Oman.

Research Questions

The paper addresses the following specific research questions: 1) What are the potential benefits of virtual universities, especially in developing countries?; 2) What are the weaknesses or drawbacks of virtual universities, especially in developing countries?; 3) What alternative models of virtual universities exist?; 4) Given current levels of socio-economic and technological development, what are the viability and potential benefits of a virtual university for the Sultanate of Oman?; 5) What are the main recommendations and proposed model for the implementation of a virtual university in the Sultanate of Oman?

Methods

The paper is based on secondary analysis of literature published internationally over the past fifteen years or so relating to virtual universities, particularly in the context of developing countries, as well as recent statistics and information pertaining to socio-economic and technological development in the Sultanate of Oman. The key points arising from the literature review are used to develop recommendations and a proposed virtual university model for the Sultanate of Oman.

Findings from the Literature Review

The Growth of Virtual Universities

Though advances in information and communications technologies (ICT) have made possible the development of virtual universities, there have been a number of inter-related drivers of growth in the sector. To paraphrase Farrell (1999), the main drivers can be defined as: a)

advances in information and communication technologies and reductions in their cost, which have made these increasingly well suited to the design and delivery of online learning; b) the demand among people of all ages and in all geographic localities for new types of knowledge and skills to meet the needs of the global economy; c) the related need for flexible access to learning for people with employment or family commitments which prevent full-time participation in study at a particular location, and d) the increasing entry of private businesses into the higher education sector and the need for all market participants to innovate in order to remain competitive. All these factors have resulted in what Baker and Gloster (1994) referred to as a "paradigm shift" in higher education instruction, "from a mode of faculty-student interaction occurring in fixed locations at specific times to one in which students can access the same instructional resources in a variety of forms, regardless of location, at their convenience"; in other words, higher education is becoming learner-centered rather than teacher-centered (Ivanova & Ivanova, 2009). A concurrent development is that virtual universities are tending to focus less on traditional academic education and more on the development of the critical thinking and problem-solving types of skills increasingly needed for jobs in the 21st century economy. In this environment, real-time learning models using social interaction in forums, conference calls, instant messaging and other online are becoming as important as passive learning models based on listening to lectures and reading books.

The Benefits of Virtual Universities for Developing Countries

For developing countries, virtual universities have been hailed as a means of bringing affordable and accessible higher education to groups previously excluded from such opportunities, such as low income and rural populations, thereby offering the potential to reduce socio-economic inequality (Al-Shehri, n.d.). On a global scale, they have been heralded as a way of reducing educational and socio-economic disparities between countries, as students can in theory access high quality education from around the world at relatively low cost. Moreover, the establishment of virtual universities along with the technological infrastructure necessary to support them offers prospects for addressing the "digital divide" between rich and poor nations and plugging the "brain drain" (D'Antoni, 2006), a phenomenon in which potential skills and expertise are lost from developing countries when their nationals fail to return home after securing an overseas education. These are among the main reasons why virtual universities have been adopted in a number of developing countries and regions, and have in some cases been established using foreign aid from international NGOs such as the World Bank and United Nations.

For the governments of developing countries, a virtual university can offer an unprecedented opportunity to upgrade the education and skill levels of the population at relatively low cost, enabling them to diversity and strengthen their economies and participate effectively in the global economy. For some, the ultimate objective is a fully networked society in which there is equal access to knowledge and information, with individuals having control over their own educational environment (Helmi, 2002). Virtual universities offer important cost-economies in the provision of higher education in resource-constrained developing countries, since academic specialists – including local staff and overseas associates - can be widely accessible to a large number of students along with other shared resources and services, and a much higher number of students can be enrolled than would be possible within the physical university (Wilson, 1998).

Potential Weaknesses or Drawbacks of Virtual Universities

Despite the potential benefits of virtual universities for developing countries, in practice they are not necessarily a simple solution to socio-economic development problems. Some have argued that, instead of reducing inequalities within the populations of developing countries, virtual universities can reinforce these because it is only the wealthier, urban communities that tend to have good access to the ICT and the Internet (Amutabi & Oketch, 2003; Gladieux and Swail, 1999). More generally, many developing countries have limited or unreliable Internet coverage, a major problem for virtual universities which rely on the delivery of learning via this medium. Furthermore, there are challenges relating to the implementation and sustainability of virtual universities worldwide but are particularly pertinent in the developing country context, especially if foreign aid or initial government funding has been secured for the start-up. The establishment and maintenance of a virtual university is generally a complex logistical exercise involving a wide range of academic and administrative stakeholders, not to mention extensive technical expertise and substantial financial support, and many virtual universities have reportedly failed because it has been too difficult to secure or sustain this level of collaboration (Pollock and Cornford, 2000). Few virtual universities have yet become self-sustaining financially and there is also the major challenge, therefore, to generate ongoing finance for their maintenance and expansion (Amutabi and Oketch, 2003).

More fundamentally, some writers have questioned the legitimacy of virtual universities as an alternative to traditional institutions of higher education. Brey (2003) argues that it is very difficult for virtual universities to effectively fulfill the important non-academic functions of higher education, defined as: a) cultural transmission

of values; b) social integration; 3) promoting personal and social change; d) establishing social networks; e) offering extracurricular activities and social services. He also argues that it can be difficult for virtual universities to preserve the principle of free speech which is fundamental to high quality academic learning and research, since delivery via ICT introduces the possibility of blocking or deleting information or messages that are seen to be objectionable. Similarly, free access to websites, forums and other resources can be easily blocked by the use of filters, sometimes to meet national censorship requirements (Brey, 2003). On a different point, the expansion of virtual universities has opened up the higher education content and delivery to private sector organizations, giving rise to concerns about adverse impacts on the academic quality of materials and the effectiveness of delivery methods and learning techniques (Brey, 2003; Wilson, 1998). From a practical perspective, it has been pointed out that a number of academic disciplines, including the visual arts and various sciences, cannot be effectively learned in a virtual environment, since these require the physical presence of artifacts or hands-on use of laboratory equipment (Brey, 2003).

Valid though many of these arguments may be, they do not necessarily outweigh the potential benefits of virtual universities. In determining the case for a virtual university there will be a need to consider the national or regional context and factors such as the existing ICT infrastructure, state of economic development, levels of demand for higher education and available funding. Issues of free speech, censorship of information etc. are not unique to virtual universities and any risks to academic freedom, access to information, effective social interaction etc. can be addressed in the design of the virtual university model, as can the question of how to accommodate subjects requiring an on-site component. In any case, it can be argued that the purpose of a virtual university is not to replicate all the functions of traditional universities but to complement them, by improving ease of access to education.

Alternative Models

Virtual universities have appeared in a variety of forms; some are completely new institutions which only provide distance education; others are extensions of existing institutions in which some degree programs or courses can be taken by students available online; yet others comprise networks of online services and shared resources that are generated through collaborations between multiple institutions. Finally, virtual "universities" have been established by corporation or other independent organizations mainly for the purpose of financial profit, as in the case of the University of Phoenix which offers courses with flexible combinations of online and on-campus learning (Yengin et al., 2010). Three key dimensions which can be used to define alternative models of a virtual university: a) the degree of centralization or decentralization of authority (Njeguš, 2004); 2) the extent to which learning takes place exclusively online or has an on-site component and 3) the relative emphasis of the university on profit-making (Epper & Garn, 2004). In general, models of virtual university have been defined in the literature in terms of these dimensions or variations on them. It is notable, however, that the profit dimension is increasingly becoming blurred in the current economic climate in which many universities are expected to generate their own revenue streams and become self-sustaining. Despite concerns about the quality of teaching and academic material in a commercialized education sector, some writers (e.g. Stallings, 1997) contend that virtual university must operate for profit if they are to survive and remain competitive.

Many leading examples of virtual universities have been established at national level by governments, in collaboration with the traditional university sector or private companies, to help meet economic and social development initiatives. This may involve partnership with a single university or with multiple institutions, the latter case representing a highly decentralized model. Khan recommends the government-led virtual university model for developing countries, since this model enables the country's resources to be put to best use in the development of education and training programs suited to the country's needs, and can help ensure that the necessary infrastructure is provided to support the initiative. He also highlights the benefits of regional collaboration between virtual universities in the developing world, as a means of sharing limited expertise and academic resources between countries sharing similar languages, cultures and socio-economic objectives (Khan, 2001).

One of the leading examples of a national level university from the developed world is the Finnish Virtual University. An integral component of government policies on building an information society in Finland, this involves heavy investment by the Finnish government and the collaboration of all Finnish universities, which are represented on a consortium charged with the technical and organizational development and financial management of the university (Kess, n.d.). Within the Arab Gulf region, the Syrian Virtual University was established in 2002 with support of the Ministry of Education, with the objective of becoming a focus of education for Arab students within Syria and worldwide, to promote lifelong learning and the development of new skills and knowledge. At present, the university mainly delivers courses through partnership with a number of universities in the UK, US. Canada and, Australia but is working on the development

of its own curricula. A key feature of this virtual university initiative has been the establishment of telecenters throughout Syria to enable students without Internet access at home to participation in higher education.

The Case for a Virtual University in the Sultanate of Oman

Like other countries of the Arab Gulf region, the rapid economic development that the Sultanate of Oman has experienced in recent decades has been built almost entirely on its oil reserves, but these are projected to run out in the near future and there is an urgent need for diversification of the economy (Business Monitor International, 2010). The existing research evidence from around the world indicates that the implementation of a virtual university as a means of upgrading and diversifying the skills and knowledge of a population can effectively contribute to this process. However, a number of pre-conditions of success can be identified from the literature which include adequate funding; clear objectives; a good ICT infrastructure which is widely accessible; an existing robust higher education sector, and a means of securing the commitment and effective collaboration of a range of academic, administrative and technical stakeholders, as well as the participation of students.

The Sultanate of Oman already has a number of these pre-conditions in place. In order to help diversify the economy and make best use of emerging ICT, the Government has developed the eOman Strategy for the transformation of Oman into a knowledge-based society, and established the Information Technology Authority with responsibility for its implementation. However, it is proving difficult to achieve high levels of connectivity to the Internet in such a vast country with a much dispersed population (ESCWA, 2009). In an effort to facilitate this process, the telecommunications market has been liberalized, but no private sector providers are yet participating. Nonetheless, there are already relatively high rates of Internet penetration, estimated at 64% of the population in late 2010, or 1.72 fixed and mobile internet users in early 2011. E-learning is already being successfully used in Oman's small but well-developed higher education sector. The single national higher education institution, Sultan Qaboos University, has implemented a successful e-learning platform for its own students via the WebCT and Moodle and many online courses are already available; empirical research has revealed that despite initial reservations, students have been very receptive to e-learning but prefer to use it in combination with face-to-face learning (Naqvi, 2008).

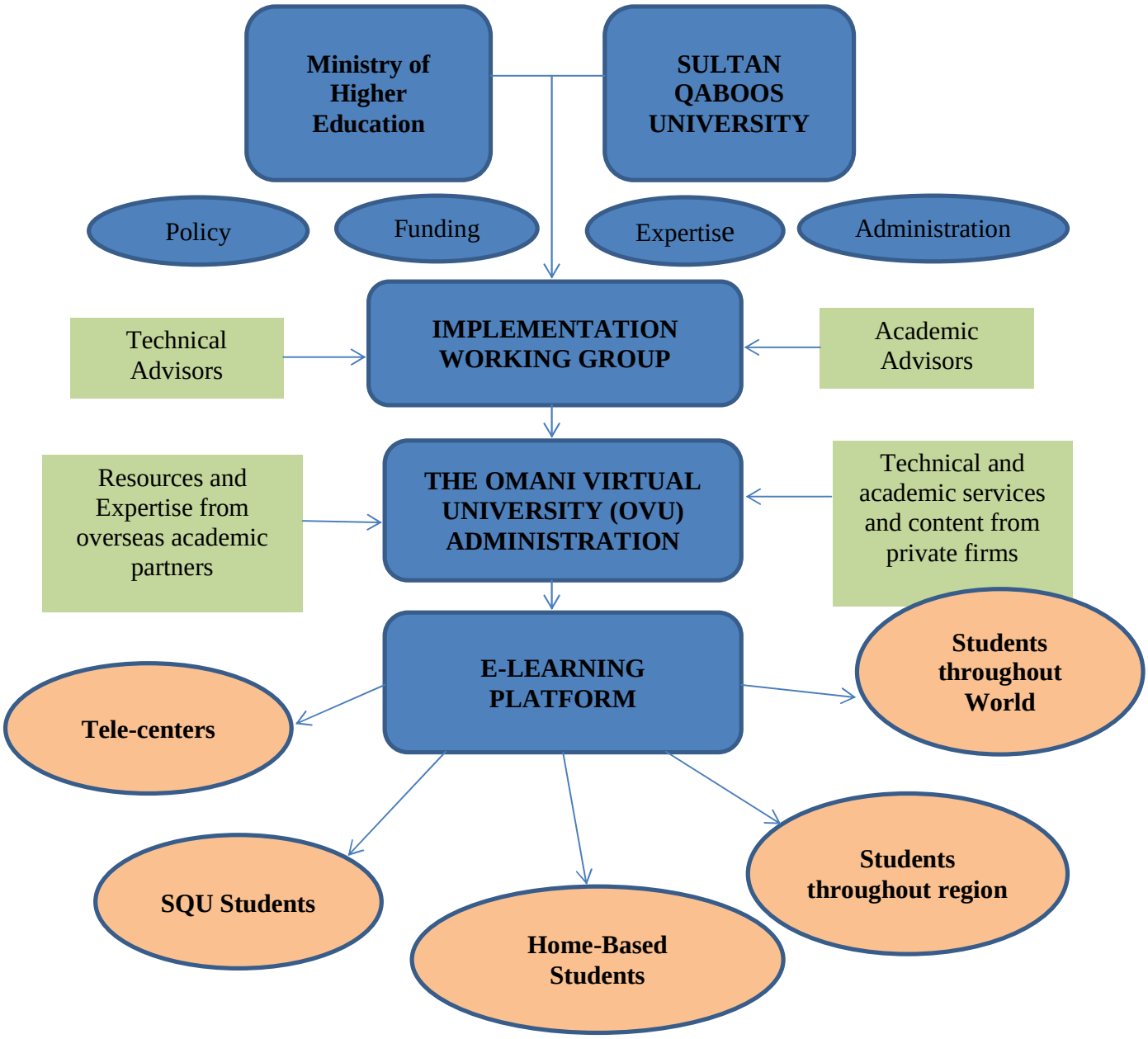
Recommendations and Proposed Model

Taking into account the current state of economic, technological and educational development in the Sultanate of Oman, and based on best practice principles drawn from the literature, the following recommendations are made for the development of a virtual university in Oman: 1) The Government should lead on the establishment of the Omani Virtual University (OVU), which should be provided with core funding under the eOman Strategy and be designed primarily to address national human resource and economic development needs; 2) whilst initially non-profit making and focused on national development needs, the University should seek longer-term opportunities to generate profits and become self-sustaining by developing and marketing programs to students throughout the Arab world and beyond; private investment opportunities should also be explored; 3) the OVU should be developed and implemented through a partnership of Government and Sultan Qaboos University, and should build on the e-Learning platform and infrastructure already available using WebCT and Moodle; 4) to ensure a quick start-up, diverse subject range and high academic quality, initial program content and academic services should be sourced from leading universities and academic content providers world-wide to complement those already available within Oman; 5) there should be an emphasis on cultivating linkages and exploring the possibility of shared resources and expertise with Universities throughout the Arab Gulf region, with a view to the development of a fully networked regional Virtual University over time; 6) The Sultanate of Oman should continue expansion and upgrading of its ICT infrastructure; consideration should be given to establishing a network of tele-centers to increase population access to the Internet; 7) the Government should consider implementing public marketing and awareness-raising campaigns to promote participation in the OVU.

The proposed model is represented graphically in Figure 1.

Figure 1: The Proposed Omani Virtual University (OVU):

The proposed model is represented graphically in Figure 1.



References

Al-Shehri, M. A. (n.d.) A Virtual University: A Proposed Model. Retrieved from http://faculty.ksu.edu.sa/mansour/Publications/virtual%20university%20_columnuns.pdf

Amutabi, M.N. & Oketch, M.O. (2003). . Experimenting in distance education: the African Virtual University (AVU) and the paradox of World Bank in Kenya. *International Journal of Educational Development 23*, 57–73.

Baker, W.J. & Gloster, A.S. (1994). Moving towards the virtual university: a vision of technology in higher education. *Cause/Effect, 17* (2).

Brey, P. (2003). *Ethical Issues for the Virtual University*. University of Twente, The Netherlands.

Business Monitor International (2010) Oman infrastructure report: Q3 2010.

Cottingham, M. (2008). The Evolution of Virtual Universities. In IGL Global. *Virtual Communities*. Retrieved from http://www.igi-global.com/chapter/encyclopedia-networked-virtual-organizations/17659

D'Antoni, S. (Ed.) (2006). T*he Virtual University: Models & Messages: Lessons from Case Studies*. UNESCO Publishing. Retrieved from http://unesdoc.unesco.org/images/0014/001465/146558e.pdf

Epper, R.M. & Garn, M. (2004). The Virtual University in America: Lessons from research and experience. *Educause Center for Applied Research Research Bulletin* 24(2).

Farrell, G.M. (1999) Introduction. In Farrell, G.M. (Ed.) *The Development of Virtual Education: a Global Perspective*. Vancouver, Canada: The Commonwealth of Learning.

Gladieux, L. E., & Swail, W. S. (1999). *The Virtual University and Educational Opportunity - Issues of Equity and Access for the Next Generation.* Washington, D.C.: The College Board.

Goddard, J. & Cornford, J. (2001). Space, Place and the Virtual University: The Virtual University is the University Made Concrete. In H.J. Van der Molen (Ed.) *Virtual University? Educational Environments of the Future*. Portland Press.

Helmi, A. (2002). An analysis on the impetus of online education: Curtin University of Technology, Western Australia. *Internet and Higher Education, 4*, 246.

Ivanova, G. & Ivanova, A. (2009) Virtual University 2.0. Paper presented to the International Conference on e-Learning and the Knowledge Society - e-Learning'09. Retrieved from http://www.iit.bas.bg/esf/docs/publications/VirtualUniversity%202.0.pdf

Kess, P. (n.d.). The Finnish Virtual University. Retrieved from www.eadtu.nl/e-bologna/files/EADTU_Kess_Approaches.doc

Khan, B. H. (2001). Virtual U: A hub for excellence in education, training and learning resources. In B. H. Khan (Ed.), Web-based training. (pp. 491-506). Englewood Cliffs, NJ: Educational Technology Publications.

Naqvi, S.J. (2008). WebCT and Learning (An Oman Experience). *IAENG International Journal of Computer Science 35(4)*.

Njeguš, A. (2004). Researching the concept and development of virtual university architecture. *Megatrend Review 1*(4), 219-239.

Pollock, N. & Cornford, J. (2000). The theory and practice of the Virtual University. Report on UK universities use of new technologies. *Ariadne, 24*, June 2000, retrieved from http://www.ariadne.ac.uk/issue24/

Whittington, D. (2000). Evaluating three years' use of a virtual university. *Journal of Quality Assurance in Education, 8*(1), 48-52.

Stallings, D. (1997). The Virtual University is inevitable: But will the model be non-profit or profit? a speculative commentary on the emerging education environment. *Journal of Academic Librarianship, 23*(4), 271-279.

Telecommunications Regulatory Authority (2011). *Telecom Market Indicators Report: Q1, 2001.*

The Syrian Virtual University. Retrieved from http://www.svuonline.org/images/upload/File/Prospectus.pdf

United Nations Economic and Social Commission for Western Asia (ESCWA). National Profile of the Information Society in Oman (2009). New York: United Nations. Retrieved from http://isper.escwa.un.org/LinkClick.aspx?fileticket=29lkZisbylU%3D&tabid=221&language=en-US

Wilson, A. (1998). The virtual university? An institutional perspective. In Pauling, B. (Ed.) *The Changing Technologies of Learning – Reshaping the Boundaries of the University*. HEC (unpublished). Retreived from http://www.heacademy.ac.uk/assets/documents/resources/heca/heca_vu01.pdf

Yengin, I., Karahoca, D., Karahoca, A. & Uzunboylu, H. (2010). Re-thinking virtual universities. *Procedia - Social and Behavioral Sciences, 2*(2), 5769-5774.