The Potential Crisis Facing South African Universities

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> "If the rate of change inside an institution is less than the rate of change outside, the end is in sight"
>
> Jack Welch

1. Introduction

The South African Higher education system, shaped as it was by History, needs to bootstrap itself into the 21st century. An analysis of the various position papers and policy documents make it clear that our education planners are not preparing for the revolution in Higher Education that is being driven by advances in Information Technology and communications. Instead of just considering IT as a facilitator of Higher Education, it is imperative that education policy and planning recognize IT as a driver of Higher Education or we run the risk of being mired in bureaucracy while the information revolution passes us by.

The restructuring of the South African Higher Education system must create a leaner and more efficient system that is geared towards to the imperatives forced upon it by the developments both nationally and internationally. The physical distance that for long isolated our institutions from international competition has now collapsed. Our distance from the developed economies is now measured virtually rather than physically. And this virtual closeness makes it clear that the rate of change within our HE institutions is less than the rate of change in industry and commerce and also lags the changes being introduced

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at HE institutions internationally. Failing to recognize this will place our institutions at a serious disadvantage.

South Africa possesses one of the most advanced information and communications infrastructures in the world. Yet, the plans and strategies for the future of the HE system ignore the very simple fact that in order to react to rapid and discontinuous change imposed upon it by technological developments we need to have agile organizations. The creation of behemoths through mergers and acquisitions runs contrary to the logical solution of creating small specialized institutions that are agile enough to react quickly. In the present system universities require up to a year to introduce programmes of study that would reflect the needs of society. Independent institutions, both international and national, that are represented in our country can react much more quickly and capture the growing market.

2. The Emerging Higher Education Landscape

A university may be defined as an organization that is geared towards the collation, creation and dissemination of information. The manner and efficiency in which this process is managed will impact directly upon the university's success. The central role of information within a university naturally implies that it is significantly affected by the rapid advances in information and communications technology.

One of the most far reaching changes in the 1990s is the exponential increase in the accessibility of information to society at large. The information revolution has reached the stage where it controls the rate of change of our society. The global economy is moving from creating and transporting physical objects to the creation and transportation of knowledge itself. In this information society employment growth directly related to the processing and dissemination of information/ data/ knowledge exceeds the growth in employment within the primary and tertiary sectors of the economy. This has been driven by the convergence of various previously disparate parts of the information economy and this will have a

significant impact on the way a university goes about its business. Universities have to redefine themselves as learning organizations and gear themselves up to provide education and training for the new global information economy.

Information technology touches every part of our society, often in unexpected indirect ways, and influences every facet of the university's business. A university is a knowledge–driven organization, and information and communications technologies are set to play an increasingly important role in teaching, research, communication, publishing and administration. Advances within the ICT sector will lead to improvements within the university environment providing that the institution is geared up to encompass and react to these advances. The quality of information at hand for the university senior executive will determine the quality of its decision making. Executive decision support mechanisms are vital to the proper governance of the university and can easily be achieved by a sound and reliable IT infrastructure.

Increasingly, private service providers and organizations are encroaching into the university's traditional arena and providing training and education in specifically directed learning areas geared towards the needs of the organization. This is because the traditional degree structures are failing to provide graduates suitable for the workplace. The shrinking of the information float means that the useful life of a traditional degree is now measured in months rather than years. Much of what is taught in a traditional degree is rendered quickly useless as the new graduate is required to reskill to keep pace with his/her rapidly changing workplace. Employers spend a significant amount of money and effort in retraining our graduates so that they may be useful within their environment. Unless universities acknowledge this, we are at risk of becoming redundant to the needs of our economy.

New technologies that can assist universities in addressing these needs emerge on a daily basis. University academics and

administrators struggle to understand and integrate the reality of mobile, portable and ubiquitous computing into their environment. It is clear that institutions with inferior IT infrastructure, strategies and resources will be increasingly at a competitive disadvantage.

The preservation and creation of knowledge is the primary function of a university. The convergence of digital technologies is set to have a far greater impact on knowledge production and preservation than any of the technologies introduced thus far. Central to the preservation of knowledge is the university library. The university needs to see the modern library as more than just a collection of neatly delineated and categorized books and manuscripts. When supplemented by electronic resources the traditional library significantly expands its scope to potentially make available to its users all other electronic resources in the world. The effective management of these resources is arguably as important as the assets the library possesses. Knowledge that is available but not accessible is not useful. Knowledge on demand is set to become a prime driver of the direction in which the university library is moving. Properly managed, libraries are set to become the central to the learning experience as traditional lecture halls dissolve into cyberspace.

3. The Way Forward

Ironically the slowest adopters and adaptors to the ICT revolution are our universities. While ICTs are used in research and communication, teaching is carried out in the traditional way. This is largely due to the fact that we are being driven and guided by CEOs who cannot or are unwilling to recognize the importance of ICTs beyond being just glorified typewriters. In trying to create an African Ivy League they are missing the opportunities presented by new technologies that will enable African universities to leapfrog their international counterparts. Our inability or unwillingness to enter the age of the global (and virtual) university could well see the traditional university forever playing catch up.

The rapidly changing economic, technological and industrial landscape requires that workers embark on a programme of lifelong learning. This trend will place increasing pressure on knowledge organizations to make information available when and where required. This changing student demographic coupled with reduced state funding for higher education will see the advent of the virtual global university. In order to counter this threat the traditional university needs to become more adaptive and agile. The traditional universities need to position themselves to be able to meet the needs of the students rather than requiring that the student be straight-jacketed into their cumbersome and inflexible programmes. The increasingly regulated and less agile South African HE sector hampers such innovation.

Those institutions that fully embrace the potential provided by information and communications technologies will be more likely to survive these changes intact. These survivors will have integrated themselves into a "knowledge and learning" industry that is being driven by the convergence of HE with IT-intensive sectors such as publishing, telecommunications and entertainment. As the access to information resources becomes equally available to both the student and the lecturer the traditional role of the lecturer will change from one of teacher to one of a learning facilitator. In information rich environment both the teacher and the student will learn at the same accelerated pace.

To address these opportunities and threats universities must develop strategies to at least sense the potential changes to aid in the understanding of where the technology may drive it and must include the development of sufficient in-house expertise among faculty and staff to track the technological trends and to access the various courses of action, the opportunity for experimentation and the ability to form alliances with other academic institutions, with business as well as governmental organizations.

The formation of such alliances and the diversification of the offerings of campus based institutions, using the power and reach of

IT, are expressly forbidden within the South African HE landscape. This policy can only further hamstring Universities from addressing the needs of the country in which the educational needs of adult learners will outstrip the needs of traditional learners as they seek to adapt to the rapidly transforming workplace. The availability of high quality information at any time will require a major shift in educational methods for both traditional and adult learners. Universities must move towards interactive and collaborative learning paradigms which are available anywhere and anytime. Rather than restricting our student numbers, both directly and indirectly, universities should be expanding their programmes and reach to a large a group as possible. In the technological age in which we find ourselves and in the information age towards which we are evolving, only those who are sufficiently educated have a chance of success. It is becoming ever more important for our students to be equipped with skills that include an interdisciplinary approach, problem identification, acquiring and managing information, and working virtually.

The convergence of traditional universities with other knowledge intensive organisations such as telecommunications, publishing, entertainment and information service companies is inevitable. Unless universities recognise this they face the risk of becoming increasingly irrelevant. Higher Education must focus on new competencies. Technology fluency, like basic numeracy and literacy must be regarded as a basic skill. We must prepare students for jobs that are yet to be invented. As a case in point consider the job description of webmaster which did not exist 12 years ago.

The majority of universities will face a major challenge in promoting ICT integration to a strategic level. A successful integration will require a top down and a bottom up approach. A coherent IT strategy for the university needs to be formulated in the context of an overall information management strategy. Universities with an ICT strategy will be more advanced in their integration of ICT into their own administration and organization as well as their educational

setting. The fact this is not the case within the South African HE environment is evidenced by the fact that none of our Universities have strategic IT representation at the highest levels of governance.

Every value chain that is involved in the creation of our primary products, graduates and research, has both a physical and an information processing component and as such is critically dependent on IT. The information processing component encompasses the steps required to capture, manipulate, and channel the data necessary to perform the activity. Every value activity creates and uses information of some kind. Information technology not only affects how individual activities are performed, it also greatly enhances the Universities ability to exploit linkages between activities both within and outside the institution.

There is sufficient evidence to suggest that the HE environment is rapidly changing. The licensing of private institutions and the introduction of campuses of private international institutions within our environment makes it imperative that we recognize this and position ourselves so that we have the competitive advantage in the pursuance of our vision and mission. The fact that many of these institutions are not recognized or accredited by the Department of Education does not deny their existence. It is clear that the traditional Universities ignore these institutions at their peril. Employers will not necessarily require potential employees to have SAQA or HEQC accredited degrees. Students with international qualifications, obtained through distance education, and obtained from recognised institutions will not be ignored by the economy. To develop and nurture a competitive advantage it is imperative that our universities anticipate, innovate and lead change. If not we will be forced to accept the changes that others initiate and find ourselves at a competitive disadvantage. IT remains a profound catalyst for the creation of a strategic differentiation because it creates possibilities and options that did not exist before. However, for the university to act on and harness these possibilities requires insight, vision and innovations in business

practice. The challenge of formulating a clear strategy is an organizational one and depends on leadership who will articulate a clear intellectual framework within which this strategy is developed. A high-level and long-term view of the operating environment helps to focus and prioritize near-term innovations thereby helping to build a strategic advantage. In the Harvard Business Review's "Breakthrough Ideas for 2004", the crosscurrent running through each of the 20 ideas is that "managers with open minds and access to new thinking can make a difference to the competitiveness of their organizations and the well–being of the world."

In formulating these strategies within the university environment it must be borne in mind that the economic and strategic impact of ICTs arise out of incremental innovations whose cumulative effect is discontinuous change. The university's ability to deal successfully with these discontinuities will determine its long term future.

While the use of IT within the university is spreading rapidly, most users of IT are not willing or able to spend their time learning about current and emerging IT applications and operations and academics are beginning to expand their use of IT beyond the traditional to create new ways to teach as well as new things to teach.

The university's IT strategy should not only define a framework for regulation and resource allocation, but should challenge all parts of the university to take advantage of the opportunities opened up by new technologies. This strategy must be designed to provide a competitive environment and add value to the traditional methods of teaching, learning, research and administration that will attract students and high quality academics. These strategies must encompass emerging trends that include bioinformatics, telemedicine, and library digitization amongst others.

The importance of higher education in producing highly educated people to be employed within the information economy means that ICT must assume a position as a core competency within our institutions.

Recognizing that IT is a core competency and to harness the opportunities, address the issues and develop IT strategies the university needs to appoint a functional head of information management at the most senior level. An investigation of the trends internationally will show that leading Universities have taken this view and made such appointments.

4. Conclusion

There is no doubt that information systems and information technology are the glue that holds together an information organization. For information organization to transform into a learning organization it is imperative that the institutional management fully understand the complex interrelationship between the technology that supports the institution and the business of the institution.

The South African higher education environment is in danger of floundering due to the lack of visionary leadership at both the local and national level. The political imperative to redesign the HE environment through large scale social engineering has not taken into account the key issues that are redefining the direction that universities are being forced into internationally. The mergers and acquisitions within the HE environment are set to perpetuate the pre-independence landscape. The large and unwieldy institutions being created are not flexible enough to adapt rapidly to a discontinuously changing environment.

Finally, IT direction and planning are not framed by the capabilities that technology can offer but by the business needs that they must serve. Technology must be seen as a means to achieve the strategic goals defined by the institution in realizing is mission and vision and not as an end of itself.

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