

## **Rethinking University Education: A Navigation in the Emerging Knowledge Economy in Africa**

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### **Abstract**

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Globalization has placed organizations everywhere in new and different competitive situations where knowledgeable, effective behavior has come to provide the competitive edge. This paper makes important contributions to academicians and practitioners by showing how the academic community needs a rapid shift in understanding of firms as knowledge-based systems by increasing institutional focus on the organization of the knowledge development and application. This can sharpen the knowledge-based students who can be able to face challenges in today's dynamic world. Challenges of education in the knowledge economy are highlighted with a focus on the exponential growth of information. The need to restructure university education to meet the knowledge demand is explained and this can be achieved by incorporating indigenous knowledge, defining the role of university knowledge in globalization, creating networks, working towards knowledge that will lead to change and also preparing students for future knowledge demands

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**Key words:** Knowledge, education, human capital, change, information

### **1.0 Introduction**

A radical shift is beginning to occur in the world. While many people are making predictions about the direction in which life is headed this century will belong to the mind. The world has seen a dramatic shift in economic patterns since the time of the Industrial Revolution.

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This new shift has made a larger impact on economic structures of nations, bridging the gap between developed and developing countries. The single most dynamic factor responsible for this revolution is Knowledge 'which has paved the way for innovations through research. The quality of the African mind, sets us apart from the rest of the world. Africa is capable of becoming the intellectual capital of the world in this century. In order to become one ,Africa should first try to become a society where the prerogative of knowledge is not restricted to a few but is shared by each citizen.

Recent decades have witnessed an unprecedented growth in management and executive development in the corporate world in order to maintain up-to-date knowledge and skills needed in today's highly competitive and dynamic environment (Armstrong & Sadler-Smith, 2008). There is a distinction between being just literate and being knowledgeable. Even a farmer can be a knowledgeable worker despite being illiterate if he understands the soil that he sows in, the nutrients that he is adding and the weather patterns . According to the ancient Greek philosopher Hitopadesa; of all the treasure knowledge is the most precious for it can neither be stolen, given away or consumed .If Africa has to be an economic power then it must understand the economics of knowledge and it is the mandate of universities to champion this.

Tomorrows industries are going to be knowledge industries. Knowledge is the only means of achieving domination over the rest of the world. It is important to understand that industries which employ knowledge workers will have to have global-level competitiveness. Also workers in industries like information technology work on a global time clock. Educational institutions will not be different either. They will be required to deliver relevant knowledge and produce an innovative workforce. In other words they should set the highest possible benchmarks in knowledge and raise their ambitions in tandem with the true creative potential. Universities should therefore understand that new wars will be fought in the knowledge market and not with guns and missiles but new thermonuclear weapons called information and knowledge.

### **1.1 Understanding of knowledge**

Knowledge can be defined as information or ideas put together in useful, meaningful, or interesting ways.

When applied to the economy, knowledge becomes a foundational resource or perhaps more important than traditional factors of production of land, labor, capital, and equipment. Unlike physical assets, knowledge assets expand when they are shared (Brown & Duguid, 2000). In a sense, knowledge is a “meaning” made by the mind (Marakas, 1999, p. 264). Without meaning, knowledge is inert and static. It is only through meaning, information finds life and becomes knowledge. Information and knowledge are distinct based on their internal organization. Information is disorganized, while knowledge is organized (Koniger and Janowitz, 1995). Thus, the distinction between information and knowledge depends on users’ perspectives. Knowledge is context dependent, since “meanings” are interpreted in reference to a particular paradigm (Marakas, 1999,). In contrast, Dawson (2000) defines information as anything which is or can be digitized.

Bhatt (2000) divides knowledge into two groups explicit and tacit both necessary for organizational success. Explicit knowledge is typically visible, definable and objective. In contrast, tacit knowledge lives within individuals and their behaviors. Tacit knowledge is context-rich, often subjective and not easily transferrable,“ Explicit knowledge is organizational knowledge found in documents, files, policies, training, patents, procedures, etc. Tacit knowledge is deeply rooted in individual work routines .Tacit knowledge can become explicit organizational knowledge with deliberate efforts on the part of management to encourage personal and professional growth of knowledge workers, to encourage sharing of knowledge and skills throughout the organization, and by developing a knowledge-sharing culture and environment in the organization (Steyn, 2003).

Tilak (2002) classified knowledge as being either popular common sense knowledge acquired thorough experience or erudite education or research-based knowledge. Searching for knowledge and transferring knowledge on the part of human assets in various social network settings. In fact during the industrial era, the foundation of knowledge was based on technical rationality and order. Knowledge was considered representative of a fixed reality, in which “knowing” was considered isomorphic with the objective fact (Dervin, 1994).

## **1.2 Challenges of education in the knowledge economy**

The university has always played a considerable part in cultural, social and economic development.

Beyond the society in which it is embedded, its relevance is currently incomparably greater due to the rapid and profound changes brought about by globalization which is full of opportunities and challenges. These circumstances require innovation in productivity, competitiveness and individual access to the most advanced knowledge (Frias et al, 2012). As the rate of technology advances and with the more usage and application in institutions of higher learning we are seeing a dramatic change in the nature of learning and acquisition of knowledge. Accessibility of information has been made much easier making students lazy and reluctant to read and be well grounded in ideas and concepts. Recent decades have also witnessed increasing challenges for the way in which schools provide evidence of student learning (Rubin & Martell, 2009).

University lecturers take time to give assignments with expectation of glooming intellectual growth of students but the exercise is becoming futile as coping and pasting of down loaded material is the norm. Plagiarism is now reported to be rampant particularly at the master's level as it is becoming difficult to ascertain the originality of research work being presented by candidates. Research has always been cherished at postgraduate level as a means of generating knowledge however if higher learning institutions do not reverse the current trend the quality of postgraduate students will remain suspicious. Thomas and Holdsworth (2012) argue that the current situation is reinforced by an education system that educates for, and reinforces behaviors that contributes to such decline. A change in values and behavior is required if these trends are to reverse. Current approaches to education are more aligned to educational practice than to praxis and are not necessarily the best models to achieve transformative change. They say unfortunately, the principles of this transformation have not yet been integrated into mainstream curricula. This is especially critical in universities, as they operate within a broad societal context and have the potential to contribute to the knowledge economy.

In the 1990s, knowledge management originated as a post-Fordist, information society. During the postindustrial model, the knowledge economy was seen as the leading productive sector. Humanity is currently experiencing a rapid decline in its organizational, environmental and social systems. Sustainable technology and 'intelligent building' are required if we are to decrease the impact of the constructed environment on the natural environment. Today's networked systems mix information processing and retrieval and communication technologies in new ways.

While such systems demand new tools for capturing, organizing, searching, ranking, and visualizing knowledge, our education systems are yet to impress this for better, shared, research (Ronald,2012) This can only be achieved if we develop knowledgeable graduates with an understanding of sustainability principles and capabilities. This will be realized if they are taught by knowledgeable academics with an understanding of dynamics of knowledge (Thomas and Holdsworth, 2012)

Today's world presents many opportunities for tomorrow's generation but also many entirely new types of problems that need to be envisioned and acted upon in new ways. Smarter products, solutions and services require a smarter workforce. Sustainable competitive advantage in a fast-paced, inter-connected, global economy continues to drive the knowledge-intensity of business processes and interactions and will require a steady, knowledgeable workforce(Malone, 2004; Holtshouse 2009). Organizations today are witnessing advances in experiences with, new management and operational practices improvements in information technology and the creation of powerful and practical artificial intelligence techniques (Wiig, 1999). Discoveries are being made on the value of new ways to organize work and interpersonal networking to maximize opportunities and effective utilization of knowledge for people to deliver their best.

Education as designed today makes an effort to prepare future leaders to cope with the knowledge world, but who are ill-suited to thinking their way through the divided or fractured world that actually exists(Waddock,2007) There has been much discussion and debate surrounding the rigor and practical relevance of education in recent times. The debate brings into focus both the nature and impact of formal knowledge realized through management research and the apparent lack of practical skill, self-critical insight and awareness instilled in students of such knowledge(Chia and Holt,2008). This demand for career-ready knowledge workers demands the need for broader educational engagements and commitments to future proof economic outlooks.

It is much more useful to consider educational organizations as adaptive, social system where people cooperate to achieve common purpose. Organizations recreate themselves through the transformation as matter and energy. Just as ecosystems rejuvenate themselves through cycles and seasons, educational organizations grow and revitalize themselves through the knowledge they create, their processes for passing that knowledge on to the others and the exchanges and relationships that they foster among people.(Petrides and Noetine, 2003).

With all these forces pressuring business and the nature of work changing educational institutions must learn to prepare students better. This can only be realized by changing many routine functions, and organize learning in ways that allow delivery of higher quality skills in utilizing knowledge more effectively.

Knowledge economy is one in which knowledge is the key resource. It is one in which the generation and the exploitation of knowledge has come to play the predominant part in the creation of wealth. It is also about the more effective use and exploitation of all types of knowledge by educational institutions in all manner of economic activity.(Department of Trade and Industry[DTI],1998). Capturing and sharing knowledge is necessary for knowledge organizations to develop their capabilities and enhance their competitiveness. Generating knowledge continuously is essential to knowledge organizations, as the value of knowledge is ephemeral in today's dynamic world Dawson (2000). African universities are lagging behind in generation of knowledge. As a matter of fact the amount of research output is almost negligible and yet this is what is supposed to drive industries and economy at large.

The knowledge creation process is a continuous and cumulative learning process in which accumulated prior knowledge increases the ability to gain more knowledge and learn subsequent concepts more easily (Bhatt, 2000). Essential to universities is the capability to create knowledge continuously. The dynamics of knowledge creation process involves four modes of knowledge conversion: socialization, externalization, combination and internalization. Institutions should be places where knowledge is shared and facilitated context in which individuals are able to share and create knowledge in interaction with each other.(Senge, 1990). In enhancing this accrediting bodies should increasingly expect critical evidence from direct, rather than indirect, measures of student learning as a way of ensuring the goals that form the basis of the curriculum are being met (Rubin & Martell,2009).

### **1.3 Exponential growth of information**

During the time of Gutenberg, people tended to live and die 20 miles of where they were born, not because they were afraid to travel, but because they had no reliable maps. People during this era had a very limited understanding of the world around them. The flow of information was controlled by just a few elite members of society and they understood well the concept of knowledge equaling power.

We have gone from that time just 500 years ago, where information was precious and few to today, a time where information is so plentiful that we feel we are drowning in it-information overload. Demands have increased for customized and more sophisticated products and services. Globalization pressures have changed business and correspondingly work world-wide. Nations which earlier supplied manual labor have started to compete with Europe, Japan, and North America by offering competent intellectually-based work. However still many information control permeate our society. Elite members of society still control the flow of information, perpetuating the notion that only doctors can understand medicine, only physicists can understand how the universe works and only teachers know how to prepare us for the world to come.

There are many ways to talk about the rapid growth of information that we have experienced over the past few years. But it is important to pay attention to the changing dimension of information as well as the sheer volume of it. Information is no longer just text-based, but graphical, musical, aural and visual. With high speed fiber internet connections, we find that knowledge workers everywhere can access the latest information on advanced concepts and methodologies, business issues, and technology. The challenge is for higher learning institutions to maintain their viability, by being accustomed to be intellectual leaders and this will need to build and apply intellectual capital much better by increasingly managing knowledge systematically. Knowledge of the universe is rapidly increasing with the continuously growing number of scientists choosing basic research as a career. The question that arises is, will there be nothing left to discover? (Rao, 2012) believes that Knowledge is comparable to the volume inside a balloon, while ignorance, to the vast space outside the balloon. With our knowledge, we send probes into the unknown from the periphery of the surface of the balloon and gather new knowledge. The balloon of knowledge expands, taking us into regions of ignorance across the increased surface of the balloon. The search for new knowledge continues.

Skilled jobs in the knowledge economy, which covers much of today's industrialized world, are not manufacturing jobs, but rather are in knowledge intensive industries and professions, where high levels of education are needed to cope effectively. Some 60% of U.S. workers are now claimed to be knowledge workers. While the numbers are lower in other parts of the world, it is clear that traditional "factors of production" of land, labor, capital, and equipment are no longer the only critical factors (HR Magazine, 2009).

Over the past several decades, according to Powell and Snellman (2004) a number of scholars and commentators have argued that the leading edge of the economy in developed countries has become driven by technologies based on knowledge and information production and dissemination. The key components of a knowledge economy include a greater reliance on intellectual capabilities than on physical inputs or natural resources, combined with efforts to integrate improvements in every stage of the production process.

As a matter of fact, knowledge is considered as an economic good. Perhaps the most important property is that knowledge is the ultimate economic renewable - the stock of knowledge is not depleted by use. Indeed, the value of knowledge to an economy comes from sharing with others. Institutions also obtain value from sharing knowledge internally and in some circumstances by sharing with industry and society (Brinkley, 2006).

#### **1.4 Theoretical Framework**

Education has recently been re-theorized under Human Capital Theory as primarily an economic device. Human Capital Theory is the most influential economic theory of Western education, setting the framework of government policies since the early 1960's (Fitzsimons, 1999). The concept of human capital recognizes that not all labor is equal and that the quality of employees can be improved by investing in them. The education, experience and abilities of an employee have an economic value for employers and for the economy as a whole. Human capital is like any other type of capital; it could be invested in through education, training and enhanced benefits that will lead to an improvement in the quality capacities.

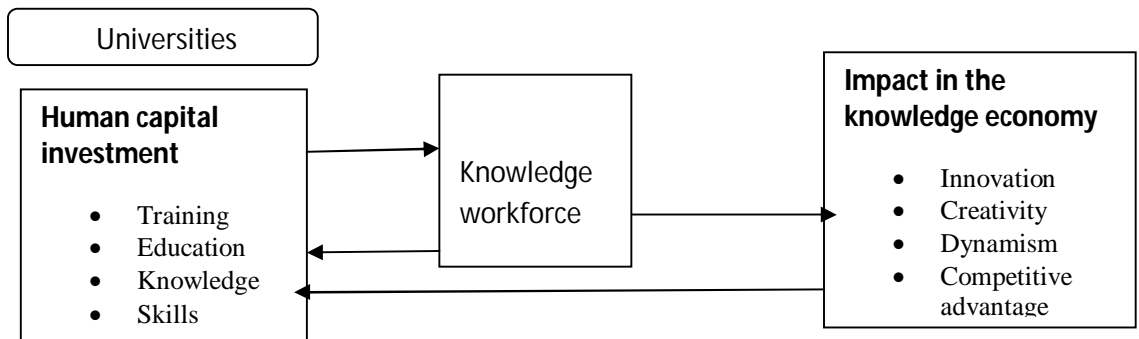
Knowledge is getting greater importance in the national competitiveness. Slaughter and Rhoades (2004) argue that academic capitalism theory opens up the ways for university academicians to involve in the commercialization of knowledge activities. According to Etzkowitz et al., (2000) universities, in the knowledge economy need to be transformed from knowledge producers to knowledge capitalizers. This will accelerate innovative activities in the universities. This innovation commercialization leads to developing the idea of research and entrepreneurial universities. Knowledge Innovation has always been considered as the most important factor for long term and sustainable economic growth and development (Fagerberg, Mowerey and Nelson 2006).



Knowledge based innovation and technology are the heart and soul of the knowledge economy. Focus should be transferred to strengthen the process of development of knowledgeable entrepreneurs who can identify opportunities and who can convert these opportunities into wealth (Kefela, 2010). There should be intercluster linkages between university, industry and government, which are essential to support an advanced knowledge infrastructure. In the modern world, the universities should be identified as academic entrepreneur houses which are strategically placing and positioning themselves as engines of sustainable economic growth and technological development by producing a knowledgeable human resource (Mohar, Saeed and Leillanie, 2009).

### 1.5 Conceptual model

This study adopts a model that shows the relationship between the role of universities and the impact of knowledge workforce.



**Fig. 1 Role of universities in the knowledge economy**

Universities invest in human capital through training, education, knowledge and skills to produce an effective knowledge workforce. This workforce will continuously be improving by utilizing the knowledge acquired to bring about creativity, innovation, dynamism and competitive advantage in the ever changing environment. In turn universities can also learn from the knowledge economy that is ever changing by repositioning themselves with an aim of remaining relevant.

### 1.6 Restrategizing university education in meeting knowledge demands

Seers (2007) says Universities as we have known them are bundled with knowledge in multiple senses.

Most generally, they have bundled knowledge in research and knowledge dissemination through teaching and service. Knowledge dissemination represents further bundling with respect to the combination of general, liberal education and the applied knowledge transmitted in the development of skills and work competencies. Levine (2000) argues that contemporary trends are leading to the unbundling of research from teaching in higher educational institutions. Viewing knowledge as a development factor can be beneficial to universities and the communities they serve via the establishing of a regional competitive advantage (Moss, Kubacki, Hersh, & Gunn, 2007). Preparing students to succeed in a knowledge-based economy requires an integrated educational environment that encourages creativity and a commitment to lifelong learning. This challenge requires universities to be in a constant state of evolution, investigating, analyzing, predicting, and responding to opportunities and threats resulting from knowledge creation (Stukalina, 2008). Universities should re-orient themselves, embrace technology and open their doors to competitive research and faculty building Sridhar cited by (Mishra, 2012).

The future of humanity requires knowledge to be created and mobilized at an unprecedented scale, and higher education institutions are expected to create and contribute to this knowledge, Tandon cited by Sharma (2012). In an interconnected world, universities not only need to reach out to communities to resolve intractable problems with knowledge that already exists but also to learn from communities. Tandon suggests that, universities need to rethink their role in the context of many countries especially developed and emerging nations with an aim of strengthening their knowledge economies based on higher education, research and innovation, and with the change of knowledge as something of intrinsic value to its use as a 'private good' for personal gain and profits.

Universities and other institutions must therefore find ways of working together with communities, industry, civil society, media and others. It is worthwhile to make sense to rediscover and reorganize knowledge that already exists and even generate more (Sharma, 2012). Therefore Bloom's Taxonomy could be a valuable tool in meeting the challenges of an ever-changing environment and preparing students to assume roles as important human assets in a knowledge-based economy (Anderson et al., 2001). This will be in addition to norms for hiring faculty being liberalised so that fresh talent can be brought in. The conventional teaching and grading systems need to be re-looked at and teachers need to be given more autonomy.

A futurist by the name Thomas Fray say that the distance between the functionally literate and the super literate is growing. Some people who have become expert on a specific topic have pushed the envelop of understanding far beyond the comprehension of the rest of the world.

In an economic downturn, the collection of organizational knowledge and its application are likely to determine the next generation of industry superstars. The most sophisticated American war planes today are not piloted by humanbeings but are smart jets only controlled by computer and satellite able to avade the enemy radars and deliver missiles and bombs to specific targets. Education and learning are cornerstones of this century institutions need to grow students intellectually and prepare to contribute to society and to organizations. In a global marketplace, successful companies focus on the education of their current workforce as well as the next generation. University's competitive advantage depend more than anything on knowledge what it knows –how it uses it and how fast it can disseminate and popularize it. Schools, colleges and universities will have to adapt their curriculum in an effort to provide bussiness and industries with employees that meet their requirements. Higher learning institutions will compete with each other for students and inorder to succeed they will have to keep up with the knowledge trends for the workfoce. It is therefore imparative to look at the bussiness and market trends to gage the future.

Rooney and Hearn (2000) are of the view that education must ensure that we meet the next waves of innovation. This can only be achieved by placing a high value on curiosity, freedom and difference. This necessitates enshrining the freedom to fail (Inayatullah and Gidley,2000). Even though some researchers argue that knowledge creation is basically an individual thought process, some others have recently shown that creativity can be learnt and taught (Marakas, 1999).In either case, knowledge creation in the institution is led through individuals, i.e. an organization creates knowledge through its individuals, who learn and generate new “realities” by breaking down rigid thinking and assumption. The synthesizing capacities of academicians are considered quite critical in knowledge creation. If they find it difficult to synthesize knowledge, they are likely to create redundancies and inconsistencies in knowledge, and may suffer from information-load.

To overcome obstacles to a quality education, a society must place the transmission and production of knowledge at the core of the educational endeavor, genuinely and authentically, without making concessions to lesser aims and rationales. This commitment would give present and future students the skills and abilities they need to master their own future and contribute to the destiny of the nation (Mounier and Tangchung, 2010). The ability to produce and use knowledge has become a major factor in development. In fact, this ability is critical to a nation's comparative advantage. Surging demand for secondary education in many parts of the world offers developing countries an invaluable opportunity to prepare a well-trained workforce that can generate growth in a knowledge-driven economy (World Bank 2008)

### **1.6.1 Incorporation of Indigenous Knowledge**

Mohamedbhai (2013) suggests that Africa should embed indigenous knowledge systems in its development strategies, while also using the technological experiences of the western countries. "Africa has a rich body of indigenous knowledge, used for hundreds of years to solve developmental and environmental problems," he said. There is an urgent need to protect and document indigenous knowledge by creating a database and dedicated centers at the institutional and national levels. However the weak academic cores of many African universities limited their capacity to generate local or global knowledge for teaching, research and training the next generation of academics. Indigenous knowledge should be incorporated through joint curriculum development, mixed faculty, joint supervision of graduate research, and links with industry.

As organizations interact with their surroundings, they absorb information, convert it into knowledge and carry out actions based on the combination of this knowledge and their experiences, values and standards. Without knowledge, an institution cannot automatically maintain order. It would be incapable of remaining functional. Frias et al (2012) say that what is most desirable is to create a society of knowledge seeking science. Knowledge is currently the most efficient human resource for innovatively solving problems and increasing harmony. For this reason, the thousands of universities that exist in the world represent a hope for the future, as long as they are at the service of the common good starting with the constant search for excellence.

Over the last two decades knowledge infrastructure and capacity building have received a great deal of interest internationally, amongst research and policy

institutions, as a basis or pre-condition for fostering innovation dynamics (Moulaert and Hamdouch, 2006). Higher education institutions are becoming major components of the knowledge infrastructure as providers of skills, information and internal and international networking potential (Wood 2002). At the same time capacity building for the planning and implementation of innovation policies requires an effective association with knowledge infrastructure to generate and disseminate knowledge as well as to strengthen institutions and develop human capital. Universities should therefore keep in mind that one of the purposes of education is ultimately to advance knowledge, and where this is not always possible, at least familiarize the educated with the advances in knowledge, (Thapar, 2005)

### **1.6.2 Education, Knowledge, and Globalization**

It is now obvious that the real impact of education upon economic development depends on the quality of schooling and the robustness of the knowledge it contributes to foster. In fact, today knowledge has become the most relevant factor of production because it enhances productivity, global income and economic development on the whole (Chagas, 2012). As observed by Brown, Lauder, and Ashton(2008), Governments all over the world want their countries to have high-value, high-skill economies, and they realize that the first step towards this aim is to have a well-educated workforce. Already Asian rivals are competing not just in low-skilled manufacturing, but in high-tech products and services. Once, countries worried about a global arms race. The challenge this century is a global skills race and that is why there is need to push ahead faster with reform in education. Globalization dictates that the nations that succeed will be those that bring out the best in people and their potential.

The management of knowledge has increasingly become a topic of interest in both business–industry and education circles. The processes through which organizations develop, organize, and share knowledge can lead to a source of sustainable competitive advantage (Hatch & Dyer, 2004). The generation and availability of new and existing knowledge presents a tremendous challenge and opportunity to organizations attempting to compete in a global arena. Educational institutions are challenged to keep pace with changes in the global business environment as well as the increased demands of stakeholders for accountability.

Study results by Perotti, Wall and McLaughlin (2010) show that today's knowledge workers face an overwhelming amount of information. Information is everywhere, comes in a variety of formats and media, is intertwined in work and home life and provides unique challenges to the mobile workforce. Information is the static, raw material that when applied and acted upon is transformed into knowledge. Self-organization is required to build connections between different parts of the education sector, and between education and industry (Inayatullah and Gidley, 2000). Rapid curriculum reinvention at all levels of education is required.

In addition to lifelong-learning, education will renew an older focus on enduring knowledge and generic critical-analytical skills in the arts, humanities and social sciences. Doing so will improve cultural life, intellectual life, economic life and social life with wisdom (Rooney and Hearn, 2000). Education should contribute to the ongoing evolution of human society. There is need for a new way of thinking in order to handle the challenges of today and flourish in the world of tomorrow. Lombardo (2007) call it "New Enlightenment" – one that is global in scope and reflective of the best knowledge we have about human nature and the world around us. A New Enlightenment will transform human nature by changing how people think, feel and how they behave Lombardo (2007).

In the knowledge economy the role of the university has been altered from knowledge producers to knowledge capitalizers for improved economic performance. According to World Bank for a successful knowledge economic system, investment should be focused on the areas of education, innovation development, info-structure and favorable economic environment. Findings of the study by Iqbal et al (2011) confirm that there exist a strong relationship between the university and its identified attributes which collectively influence the performance of university in the knowledge economy.

### **1.6.3 Creating and sharing knowledge through networks**

The need for close relationships and for building knowledge networks of higher education and work environments in a knowledge economy is based on the assumption that the transition between formal education and the world of work has to be facilitated as a priori role of the university (Hagen, 2002).

Recognizing the realities that individuals live in an information society, work in knowledge-based workplaces, and value knowledge workers, academic communities should be viewed as knowledge based organizations involved in the process of developing knowledge workers (Santo, 2005). Institutions of higher education became critically important places of knowledge production, knowledge perpetuation, and knowledge dissemination. In addition universities have the unique potential to encourage synthesis and integrate different types of knowledge and to enhance the application of knowledge to social change (Stephens, et al, 2008).

The increasing importance of knowledge in our society and economy also demands for a shift in higher education in order to prepare students adequately to function within this type of society (Kessels and Kwakaman, 2006). Santo (2005) agreed with Candy (2000), insisting that we are in an era of the knowledge organization in which generating, sharing, and storing knowledge are imperatives for organizational cultures. However Santo regrets that educational institutions are among the last to implement this knowledge management cultures. It is claimed that knowledge management and creation have become increasingly important activities in today's organizations and that those who can successfully extract and codify tacit knowledge enjoy a competitive advantage (Lam, 2002)

Education for Knowledge is required to create a strong human capital base. This can be realized through education systems that impart higher-level skills to a greater share of the workforce. A national innovation system is a well-articulated network of firms, research centers, universities, and think tanks that work together to take advantage of global knowledge—assimilating and adapting it to local needs, thus creating new technology (World Bank, 2008). The creation and sharing of knowledge among organizational members has become of interest to organizational researchers. Since explicit knowledge is shared throughout the organization, tacit forms of knowledge remain embedded in the individual but can be shared among individuals and groups in the right circumstances, for example, through networking. Linking networks and knowledge creation in this way will reveal differences amongst different groups of workers.(Durbin, 2011)

Sridhar and Ramaprasad (2011) suggest that Free flow of knowledge is sine-qua-non for effective development. However, the flow has to be managed through exchange, transfer and dissemination mechanisms.

For example, a university faculty member may exchange papers with a faculty member in another university; a researcher may transfer a technology she has developed to a company for manufacturing. Collaboration will enable program composition evolution. Partnership will redefine work and continue to demonstrate higher education's value in generating knowledge. Education is premised on the development hypothesis that education is both foundational and human development and critically linked to broad based economic growth. There is need to pioneer new knowledge through systematic program analysis, participation methods and cutting edge research in promoting holistic approach to education achievement.

#### **1.6.4 Generating Knowledge for Change**

The invention of agriculture provided the humanity with a new way to convert the earth's resources into wealth and the Industrial Revolution gave way to factory-based system for wealth creation. In turn, this led to mass production, the drive for larger and larger markets, and the need for bigger, ever more bureaucratic organizations. Today's knowledge revolution, has launched an economic, technical and social change, which is forcing organizations to operate in radically new, continually shifting ways argues Gibson(1998) . A good example propagated by Gipson is the current disparity that has to do with knowledge which is the primary factor of production in the new system for wealth creation. Back in the 1960s and early 1970s, there was a general sense of certainty about where we were going and how to get there. Successful corporations, powerful post-war economies and long-established institutions were driving to the future like large luxury sedans on a wide open freeway. They imagined they saw a long, straight road stretching out before them into the distant horizon, one that could be traveled in much the same way as the road they had left behind. The future, it seemed, belonged to them. Gibson (1998)

We are living through a period of profound change and transformation of the shape of society and its underlying economic base. The nature of production, trade, employment and work in the coming decades will be very different from what it is today (Forfas, 1996). The pace and extent of change in today's global economy provides researchers with the opportunity and obligation to contribute knowledge that can help organizations shape a more effective future. Today's organizations are seeking knowledge about how to operate in the ever-shifting and uncertain economic environment that has developed.



This therefore should be a major challenge to higher learning institutions to make fundamental changes in how they operate and prepare students. Together, economic, technological, and social events have changed the knowledge needed to manage organizations effectively. Complexity has increased as the economy has become global, and information technology has changed the way people and organizations relate to each other and operate. These forces provide an unprecedented opportunity for academic researchers to contribute useful knowledge (Mohrman & Lawler, 2011b).

Knowledge has to be translated into action for a society's development; it has to be applied to solve the problems and corrected when it does not. Availability and accessibility of knowledge are necessary but not sufficient for application. The knowledge has to become embedded in the society's practices and processes. For example, all the knowledge about water conservation would be of little value unless it is incorporated into the daily habits of the people in the society by changing how they cook, wash clothes, bathe. Application also provides feedback about the efficacy of the knowledge. A successful application reinforces its efficacy; an unsuccessful application signals the need for further research (Sridhar and Ramaprasad, 2011)

In a rapidly changing world, knowledge that is most useful to organizations is knowledge that helps them change and adapt to perform effectively. As the global economy has evolved, and as new technologies have enabled new ways of organizing, institutions will have to assume new forms and craft new learning models and processes. This can be realized through partnerships and alliances that are formed using open innovation, and new knowledge network forms of institutions (Chesbrough, 2006). The knowledge academics generate will be most useful to organizations if it is constantly changing (Rynes, 2011). Researchers can't think of themselves as stating lasting truths or generating knowledge that is useful for decades. Academicians will need to study and experiment with new approaches of achieving unique and superior outcomes (Yip, Devinney, & Johnson, 2009).

## **1.7 Preparing for tomorrow**

As we prepare to drive off the road and on to the unfamiliar terrain that lies ahead, it is becoming clear that we are going to require a new kind of vehicle, different driving skills and a whole new kind of knowledge.

Learning institutions will need to challenge organizational assumptions about the world that requires a different type of knowledge (Senge, 1990). There is a critical need for programs that comprehensively integrate the skills and knowledge that will develop productive citizens for the 21st Century. Senge says that there is need for a Comprehensive School Improvement initiative that provides a process for students, educators, and community members to clarify thinking, to identify what we want graduates to know and be able to do, and to set goals for education. Senge observes: 'we have to stop trying to figure out what to do by looking at what we have done.' He says that schools have been designed on the implicit assumption that all the problems in the world have already been solved and the teacher knows the answers. So the job of the teacher is to tell the students the problem and then the answer. This is lack of evolution within education. Traditional education is, therefore, in danger of being deskilling, rather than the reverse. This will require us to change our whole educational system and how teaching and learning takes place.

Education has been characterized by repressive rote learning. Students are not encouraged to think differently. They are not challenged to form their own opinions, to think creatively to solve problems. They don't look for solutions outside of the text books. The education system must encourage people at an early stage to believe in the power of creativity and equip them to compete among their global peers. Both teachers and learners need to put their structured mindsets aside and revel in contradiction. If institutions have to be a cradle of creative thinking then we don't always have to expect harmony and avoid conflict in creating and using knowledge. Knowledge society, knowledge-based society, knowledge economy and knowledge-based economy are terms frequently used to describe the emergence of knowledge as the dominant resource for development in place of capital and labor (Britz, Lor, Coetzee et al. 2006; Casey 2006). The unique properties of knowledge – for example, the relative ease with which it can be transmitted, translated, duplicated and distributed especially with the modern information technology – has made it an attractive resource for transforming a society.

According to Wiig (2004), "Institutional effectiveness is determined by many factors, the most important being the quality and availability of pertinent knowledge at points of actions used to handle situations—that is, to make sense of information, innovate, decide what to do, act, and evaluate the implications of approaches and actions" (McElroy, 2006). Effective actions flow from high-quality knowledge produced by robust knowledge-processing systems.

The strategy for improving the quality of knowledge needed for achieving greater effectiveness is to increase institutional capacity for knowledge processing. The generation of knowledge, implies learning new things at the level of individuals and groups. Newly generated knowledge should eventually result in applications, thus becoming incorporated into interactions. (Faber, Jorna, and van Engelen 2005). Knowledge management within institutions should therefore allow for the creation of knowledge, enable the critical evaluation of knowledge in relation to sustainability, and ensure the effective and efficient integration of knowledge.

Higher learning institutions should now think of moving from the paradigm of education to the paradigm of knowledge, providing wider perspective for education by bringing about more holistic and integrated approach and reforms in and outside education, promote out-of-box thinking and perspective among all concerned, build excellence in the educational system to meet the knowledge challenges of the twenty-first century and increase institutional competitive advantage in fields of knowledge, and also endeavor to improve the leadership and management of education and knowledge within institutions.

## **1.8 Conclusion**

The industrial economy was focused on manpower to drive efficiency and economic wellbeing of nations. Dramatic changes are transforming business and nature of work and society. The knowledge economy of the future will be focused on the productivity of the mind to turn experiences into knowledge and ideas to come up with innovative products, solutions and services for sustainable competitive advantage. This evolution toward a knowledge economy constitutes a significant paradigm shift in many respects. Future human capital will need tools to help them integrate and access information across all spheres of the economy. Graduates will need to become smarter and more tailored to specific users to help them filter and integrate information bits into usable knowledge.

We are living in an era where change seems to be continuously random with inaccurate predictions making it necessary to break away from the usual pattern of acquiring and using knowledge. In this regard universities have a bridge to cross. This bridge is the application of knowledge to solve both the existing and foreseeable future problems.

This bridge is critically dependent on knowledge and its practical application. As Charles Handy says, 'You can't look at the future as a continuation of the past because the future is going to be different. And we really have to unlearn the way we dealt with the past in order to deal with the future.' Universities will need to harness intellectual and innovative talent of both faculty and students to deliver academic based solutions that will address would complex problems. This can be achieved by tapping rich networks of knowledge through strategic engagement between institutions and organizations. There is need to reignite the resilience of universities by creating and utilizing knowledge in addressing the ever changing challenges. Educational institutions need to rethink the approaches they use in developing a human capital for this astounding development and even redefine education.

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