GOVERNANCE AND CHANGE MANAGEMENT IMPERATIVES FOR THE TRANSFORMATION OF NIGERIAN UNIVERSITIES FROM EARLY 21ST CENTURY TO 22ND CENTURY, AND BEYOND, UNIVERSITIES.

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Acronyms

AD	Anno Domini
A Bomb	Atomic Bomb
AI	Artificial Intelligence
AIDs	Acquired Immune Deficiency
AVCU	Association of Vice Chancellors of University
CEO	Chief Executive Officer
CO_2	Carbon Dioxide
FGN	Federal Government of Nigeria
FRSC	Federal Road Safety Corps
FUTA	Federal University of Technology Akure
GDDF	Global Direct Democracy Federation
GDDS	Global Direct Democracy System
H Bomb	Hydrogen Bomb
JAMB	Joint Admissions and Matriculation Board
LDDF	Lunar Direct Democracy Federation
MDDF	Martian Direct Democracy Federation
MOOC	Massive Open Online Courses
MDG	Millennium Development Goals
NUC	National University Commission
OECD	Organisation for Economic Co-operation and Development
PTDF	Petroleum Technology Development Fund
R&D	Research and Development
TAFE	Technical and Further Education
TETFUND	Tertiary Education Trust Fund

UEFA	Union of European Football Association
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organisation
VI	Virtual Intelligence

Protocols

I thank you for inviting me to share some of my thoughts on the Nigerian Universities with you at this 31st meeting of your club which is made up of the best of the bests of the Nigeria intellectuals. I feel highly honoured, knowing very well that you have achieved a feat I must have been struggling with, had I remained a regular University professor till date. In addition to thanking the organizers, I want to thank Professor Faborode, the Executive Secretary of AVCU (Association of Vice Chancellors of Universities) and Professor…., the Vice Chancellor of FUTA and the current Chairman of AVCU. Professor…. first gave me the opportunity to discuss a similar theme at one the Convocation Lectures of FUTA. At today's discuss I will almost repeat myself because the discourse is still topical and it cannot be overemphasized, especially at an occasion like this when we have the CEO's of all the Nigerian Universities. Pardon me if you have heard this story before.

I will approach this topic by explaining where I take the root of my topic. It is from the Theme of this year's conference, the concept note on Governance and Change and what the discourse of the concept intends to achieve. By way of reminder I will like to state them below:

Introduction

To be able to put my topic in perspective I will attempt to define two of the key concepts of the title, i.e. Governance and Change Management.

Governance

What Is Governance?

The concept, "even though, not new, means different things to different people" (Akindele & Olaopa, 1997) (Akindele & Obiyan, 1995) (Akindele, 1992). Thus, its definition has attracted a lot of attention and, in the process generated various analyses from different perspectives thereby creating a plethora of analytical discourses and notion (Akindele & Obiyan, 1995) (Akindele & Olaopa, 1997) (Akindele, 1992).

The World Bank defines governance as "the manner in which power is exercised in the management of a country's economic and social resources for development". According to it governance has three dimensions (World Bank, 1989) (World Bank, 1993). These dimensions are: "the nature of political regimes; the exercise of authority in the management of social and economic resources and, the capacity of government to design and implement policy and to discharge its functions" (Eyinla, 1998). They have been specifically identified and concretely elucidated by (Erero, 1996) (Olowu, et al., 1999) as relating to the "rule-ruler-ruled relationship". These scholars identified the three dimensions of governance in the context of "rule-ruler-ruled relationship" as inclusive of "functionalism, "structuralism" and "normativism". According to them, functionally, governance deals with "rule-making, legitimization, and enforcement" while it structurally comprises of three distinct institutions: the "ruler or the state", the "ruled or the society" and, the "rule of law". In this regard, they viewed governance as the "relationship between state and society institutions". In the same vein, they claimed that "normatively, this relationship highlights the values associated with good governance". These values according to them include: "transparency, organizational effectiveness, accountability, predictability, legitimacy, popular participation and plurality of policy choices". Implicit in the conceptual analysis of governance is the fact that, the latter connotes "the use of political authority and exercise of control over a society and the management of resources"

(Obadan, 1998). Thus, a scholar has claimed that "governance refers to the effective and efficient functions undertaken by a government maintaining a unified state, defending its territorial integrity and running its economy towards securing the well-being of its citizens [Idowu, 1998]. As a matter of fact, governance in relations to the "person entrusted with political power and authority" has been analysed as critical variable involving the following:

- Responsibility and responsiveness in leadership and in public service;
- Accountability in the mobilization as well as in the utilization of resources;
- Discipline, effectiveness and efficiency in handling public (as well as personal) affairs;
- Selflessness and impartial service to the people; and
- Popular participation and empowerment of the people in the conduct and management of their common affairs (Jega, 2000).

For governance as the "duty of government to see to the orderly and stable management of the economy" [Ukpong 1999], to have the foregoing attributes and, be effective, efficient and beneficial for democratic political arrangement, it has to be good. This is more so, since we can, as well, have bad governance.

Bad Governance

The possibility of bad governance could be said to be what the World Bank had in mind in 1989, when it began to dichotomize between good and bad governance by "advocating a political reform approach to government as a way of ensuring positive economic growth" (World Bank, 1989). In fact, the World Bank identified the features of bad governance as follows:

- Failure to make a clear separation between what is public and what is private, hence a tendency to divert public resources for private gain;
- Failure to establish a predictable framework for law and government behaviour in a manner that is conducive to development, or arbitrariness in the application of rules and laws;
- Excessive rules, regulations, licensing requirements, etc., which impede the functioning of markets and encourage rent-seeking;
- Priorities that are inconsistent with development, thus, resulting in a misallocation of resources;

- Excessively narrow base for, or non-transparence, decision-making (World Bank, 1992).

Good Governance

The concept of good governance has been variously defined. It appears alongside such terms as democracy, civil society, participation, human rights and sustainable development. In the last decade it has been closely associated with the public sector reform (UNESCO-CI, 2005). The concept has no single and exhaustive definition, nor is there a delimitation of its scope, that commands acceptance. As a matter of fact, "apart from the universal acceptance of its importance, differences prevail in respect of theoretical formulations, policy prescriptions and conceptualization of the subject itself (Abdellatiff, 2003).

The multidimensionality of its definition and, the "flexibility of its usage" even though, advantageous have created some difficulties at the operational level. Thus, attempts have been made to redefine what it actually means (Johnson, 1997) (Abdellatiff, 2003) .

> *Good governance has eight major characteristics. It is participatory, consensus oriented, accountable, transparent, responsive, effective and efficient, equitable and inclusive and follows the rule of law. It assures that corruption is minimized, the views of minorities are taken into account and that the voices of the most vulnerable in society are heard in decision-making* (UNESCO-CI, 2005) (OECD, 2001).

Good governance implies efficient and effective public administration, good policies and sound management of natural resources. It calls for the ability of a state to anticipate challenges to its well-being, provide core services to people and then augment these services and act as a catalyst of change.

From the discussion of the concept of governance and its dimensions in the immediate preceding section, it is clear that the involvement of academics in governance is a necessary condition in an increasingly globalized knowledge-driven world. However, societies differ in the extent to which they welcome, use and abuse through the contribution of academics to governance. Thus, the issue of operational environment is crucial to the extent to which the value addition is harnessed.

Simplified, governance is participatory and good governance ensures participation of all stakeholders for the benefit of all. The driver of good governance is good leadership. This is where leadership becomes important. This is a topic of another discourse but I will like to leave with you my thoughts on leadership which is the most important ingredient of governance.

In my opinion there are two distinct types of leadership, Counterfeit and Real leadership.

Counterfeit leadership

Counterfeit leadership is preoccupied with authority. It is preoccupied with dominance; putting false set of tasks before people; preoccupied with prominence; preoccupied with crusading. Counterfeit leadership is stuck in the prevailing group paradigm and unwilling to look beyond the comfort zone. Counterfeit leadership impedes learning on critical adaptive challenges.

Real leadership

Real leadership gets people to face reality; orchestrates problem solving process by giving the work back to the people; mobilizes individuals and factions to make adjustments in values, perspectives and approaches; perturbs the system so enough learning takes place to produce an adaptation in the system.

Real leadership is visionary; identifies the problem; calls on all stakeholders to participate for the benefit of all. Nigeria is awash with counterfeit leadership and short of real leadership.

Change Management:

Change

The term 'change' is very difficult to pin down to universally-acknowledged definition mainly because of its pervasiveness. However, in management studies, change presupposes an administrative overhaul of an establishment to suit changing desires or trends. The concept of change is usually associated with progressivism and an upward movement from the status-quo. It is a movement out of a current state (how things are done today), through a transition to a future state (how things will be done differently). Change is a relational difference between states especially between the state before and state after a particular event. Change has two themes which are intervention and transition both of which are used

to drive organisations or establishments towards greater efficiency. Ultimately, the goal of change is to improve an organisation by altering how work is done.

Change Management

For us to effectively understand the concept of change management, we need to analyse it along with the concept of project management. This is because they are two sides of the same coin. Project management is the application of knowledge, skills, tools and techniques to project activities to meet project requirements. Borrowing the ideas of (Creasey & Hiatt, 2012), project management is accomplished through the application and integration of the project management processes of initiating, planning, executing, monitoring and controlling, and closing. Change management is the process, tools and techniques to manage the people-side of change to achieve the required business outcome. Change management incorporates the organizational tools that can be utilized to help individuals make successful personal transitions resulting in the adoption and realization of change. In simpler terms, change management is centred around changing the work orientations of people for greater efficiency and better output.

From the foregoing conceptual considerations, the nexus of governance, change and change management becomes very glaring. Simply put, governance deals with the general administrative management of an organisation, change is to improve the organization in some fashion by the management, project management is to develop a set of specific plans and actions to achieve "the change" given time, cost and scope constraints and to utilize resources effectively (managing the 'technical' side of the change) while the change management is to apply a systematic approach to helping the individuals impacted by 'the change' to be successful by building support, addressing resistance and developing the required knowledge and ability to implement the change (managing the 'people' side of the change).

What Lies Ahead in the Upper 21st Century Upwards to 22nd Century and Beyond?

Having placed in perspective the two concepts of Governance and Change Management, the question that readily comes to mind is how competent are we to know what lies ahead in the upper 21st Century upwards to 22nd Century and beyond. Even if we are not competent

to know, we are competent to agitate our minds and ask questions about our anxieties. Some of questions asked by such anxious minds are listed as follows:

What will the world in which we will live, be like, then? The questions and predictions are endless. What things will be the same? What things will be different and how? Will the human race even survive until then or will we destroy ourselves with nuclear weapons of some other man made environmental catastrophe, etc.? Will we still be fighting wars, if so, who and why? Will hunger, poverty, slavery, refugees, greed, selfishness, envy, etc., still exist, etc.? Will world events and competition for resources bring people closer together or push them further apart? What morals or values will we have? Will they be shared by all or most, or will things be more like they are today? Will any present day religion survive? If so, which one(s)? What role will religion play in people lives, if any? Will there still be different races? If so, how will the different races, people, countries and continents relate to each other? Will there be greater integration or less? Will people of the world be more alike or mere different? Will modern day prejudices be greater or less? Will we be any better at caring for and supporting our fellow man? What will be important? What will we look like? Will our bodies have the same general shape and size? Will we have hair or will we all be bald? What will we eat? How and where will it be found or produced? Will we enjoy it or just eat to sustain ourselves? What will they wear? Will fashion continue to be important or will people all dress alike in some sort of standard generic utilitarian outfit? What materials will be used? Where will they come from? Where will people live? How will accommodation differ from its present form? What will be considered fun? Will we still find each other attractive? Will we still date? Will we still marry? Will we procreate in the same way? Will football still exist? What about transportation and manufacturing, etc.? What role will computers, robots, sea exploration, space exploration and travel play in our lives?

These, I am sure are regular type of questions on the minds of academics and people of similar callings who are change agents. More specifically in this community or even in this hall some of us are pondering right now on: What will we learn, and how, when, where and why will we learn it? Will we need more or less educated people? What will they need to know? Why will they need to know it? Will we read and learn for enjoyment or only for survival? What about art and music? Who will determine what is studied, the curriculum? Will all receive the same curriculum, opportunities and same quality of education? Will

classrooms, teachers, textbooks as we know them still exist? Will we have to be conscious when we learn or will information be able to be downloaded into our brains while we are sleeping (or in some other trancelike state), much like we currently download information into a computer? What about universities? If they still exist, will there be more or less and will they be better or worse? Will they still exist as we know them today or will the unused buildings be converted to resorts, shopping centers, housing or neglected and left to crumble back to nature?

Assuming that at least some universities remain relevant and remain an important means of educating the masses, how will today's universities respond to the challenges and lead the change to become 22nd century universities? What are the possibilities and prospects of Nigerian universities in creating and sustaining the world in which we will live in the 22nd century? What initiatives will individual universities take to put them on the leading edge of the 22nd century's academic and business worlds? How will they educate students for critical roles in a world with increasingly porous borders? What impact will their research have on critical challenges facing the world? How will they respond to dramatic demographic shifts in population and complex ways students acquire and process information? How will higher education respond to decreasing levels of public support and increasing demands for its services? Will universities remain relevant in an environment in which information is so freely available and easily transmitted?

One thing that could be going through some minds right would be why bother about 100 years away when we are struggling to overcome today's challenges. The trouble is that even if we refuse to think about tomorrow, tomorrow will come. Time is a moving train that waits for no passengers. You either get on board or you are left behind. So we need to think tomorrow, today, to survive tomorrow and to make sure that we prepare a suitable world for future generations. We have to overcome today to get strong for tomorrow.

My discussion here today is just to raise the questions above, to remind us that our actions today will produce our future(s) tomorrow. Therefore, we should not be too complacent and we should clearly understand that we have to finish very well today, to be comfortable or even survive to see tomorrow. In doing this I will review our today and identify some challenges which we have to overcome. I will attempt to suggest overcomer strategies. In

the second part of the discussion I will present some futurists prediction of the 22nd century so that we can identify probable challenges and start strategizing to overcome them.

Before we proceed any further on this topic, let me do a review of the identifiable challenges confronting the Nigerian Universities to provide the background to our concerns.

Identifiable Challenges Confronting the Federal Universities in Today's Nigeria

While attempting to predict and understand the future it is important to know where we are and where we are coming from. Today's Nigeria University was once described as a shadow of its past. Although this is an arguable assertion, it is real that Nigerian universities have a number of challenges to overcome to achieve its full potential and survive the 21st Century. The identifiable challenges could be categorized as Academic, Administrative, Financial and Ethical; and they would be so discussed. My approach to addressing these current challenges and suggesting overcoming them would be in rhetoric

Academic Challenges

How appropriate is today's curriculum for a 21st century university and how futuristic is their validity? What about the quality of Academic and support staff, are they in currency and in future? Do we have the calling or we are here because it is the last bus stop? Is the learning environment that the of 21st century? Are the aesthetics and the buildings as iconic as they were in the early days of universities? Is the physical and virtual infrastructure appropriate? Are we adding value to the society through our content, research and innovations? Are our students of the quality required? Are we addressing the expectations and aspirations of students? Are we producing value adding functional employable graduates or meal ticket seekers? How much of a local university can we be and how relevant is a local university, even in today's world? How do we become global universities?

Administrative Challenges:

Do we have good Governance? Is the level of control by third parties appropriate? Is our Administrative Policy, the Registry and other support arrangement 21st century appropriate and 22nd century ready? Is the condition of service and remuneration appropriate? Is the Federal Government oversight arrangement appropriate? Is there adequate autonomy to insure that decisions are made according to policy, rather than special interests? Is JAMB,

NUC design and mandates appropriate? Are we adequately fulfilled by administrative role and interventions by other organs of university governance, including legislative, TETFUND, PTDF? Do we need more administrative freedom to determine conditions of service and school fees? Is politicization of education a good omen for present and future? How do we appoint our Principal Officers? Is there adequate autonomy to insure that decisions are made according to policy, rather than special interests? Should the form and functions of Principal Officers not be reformed as 21st/22nd Century officers?

Financial Challenges:

Do we require financial autonomy? Can we survive financial autonomy? How do we cope with financial freedom? What do we do to be self-sufficient? How do determine appropriate school fees? Is the university system business model appropriate? How do we obviate/cope with Low Paying Fee students? What funding model will cope with present and future? How do we fund adequately university development?

Ethical challenges:

Is our conduct ethical? Do our conducts portray the ivory tower status? Are we putting our students first? What about our dressing and carriage? What about our public conduct/arrogance or humility? Are we above the vices of the society- corruption, sexual abuse, cultism, crime? Is our individual ambition and thirst for high office standing in the way of a progressive university system? Are we courageous to speak the truth? Are we going to be the conscience of the nation? How much of role model are we?

These questions and more must be adequately, timeously and correctly addressed if we must survive the present and conquer the future.

Insight into the 22nd Century

Now let us peep into the 22nd century. There many predictions of the way it will unravel. I will present a few to enable a feel of what lies ahead of humanity. I cannot say ahead of us, because I don't know how many of us in this room will see the end of this century. Irrespective of that, we know that, our today has been shaped to some degree by the dreams, aspirations and efforts of those who lived many centuries before us. So as a

responsibility of the Homo-sapiens that we are, we must be thinking and appreciating the 22nd century from now.

As we move through the 21st Century and move towards the 22nd Century, we can expect major changes, especially in 10 key areas of technological change: information technologies, nanoscience and nanotechnologies, resource technologies, engineering technologies, health technologies, social technologies, educational and cognitive technologies, economic technologies, political technologies, and security technologies.

Below is a list of broad areas of concern for the future, but this list should not limit consideration of other topics:

- Commerce (including economics, business, careers, the workplace, finance, trade, monetary policy, management entrepreneurship, investment, commodities, etc.)
- Earth (including resources, environment, energy, food, water, species, habitats, cities, ecosystems, climate, etc.)
- Humanity (including demographics, society, families, education and learning, health and well-being, aging, youth, culture, arts, values, religion, lifestyles, leisure, etc.)
- Futuring (including foresight, futures studies, futurists and their ideas, methodologies, creativity, personal futures, strategic planning, scenarios, etc.)
- Sci/Tech (including science, technology, engineering, R&D, medicine, inventions, exploration, etc.)
- Governance (including world affairs, politics, laws, public policy, communities, globalism, security, war, peace, terrorism, crime, justice, etc.)**;** (Pelletier, 2012)

Many people speculate and make predictions regarding the world in the future, 20, 50, 85, 100, 200, 1000 … years from known. Below are just a few of the predictions of what life might be like: One version goes like this: Population will drop to 1 billion (10^9) or less and those people will still be cleaning up the mess their ancestors (us and our ancestors) brought about by wreaking the planet out of pure greed and selfishness. A resource-based economy will be the norm, with every single object used going back into the system to be used for another purpose. Money will not exist and people will not have jobs as we

currently see it, but they will have duties that involve taking care of the environment (be it Earth or whatever planets we discover and visit). Spirituality will most certainly still exist but it's unlikely to look like organized monotheistic western religions. People will have Nano machines or even tinier things inside them to take care of whatever ailments may happen to them. AIDS, cancer, and other present-day chronic diseases/conditions will be eliminated but that won't mean the end of epidemics and pandemics, for newer, more powerful diseases will exist. Another plague will break out well before 2199 (possibly before the end of this Century), causing war over who gets treated and who doesn't. People will live to well past 100 years old normally, and may never die except in extreme accidents. Brain downloading/uploading will be done at regular intervals automatically and a human being will be able to be restored with ease should they die or have brain damage. By the end of the 22nd Century, the entire world's population will be 'grey' demographically (in that the number of people entering retirement will far exceed the number of children being born - happening now in several countries - entire western world by 2050, all industrialized countries by 2100, world after that). Genetic alteration of human beings is done regularly, however some people are against it (some are against it now, due to human selfishness) and people will be judged ever more harshly because attractiveness and desirability will be chosen, not occur by chance. This could happen in your own lifetime if you were born in the 1980s. Vac trains (or vacuum tube train, Discovery Channel - Extreme Engineering, 2003) and space planes will replace airlines and rail trains, allowing anyone to get from anywhere to anywhere on Earth in under 4 hours' time. Fabbing (downloading/making physical objects with computers) will be how most non-food objects will be acquired. The list goes on and on (Raven, 2012)

Another futurist, Glen Hiemstra has this to say. Assuming, that human civilization survives to the year 2100 it is likely that interest in the future will be greater than ever. Survival implies that we will have solved the next energy question, dealt with climate change, and continued our technological, cultural, and social development, including new steps toward a true space-faring civilization. Thus, in 2100, we will have a greater capacity and likely a greater desire to understand and shape the future. Futuring will thrive, amplified by very high performance data analytics, but still, in the end, requiring people to decide on the future they want. (Hiemstra, 2013)

Dick Pelletier, a renowned futurist was more precise in his predictions. He has this to say: Let's first consider what's left of the 21st century. What can we expect over the next nine (8.5) decades? Of course, no one can accurately predict the future this far in advance, but if we multi-track breakthroughs in major technologies, then we can create a plausible scenario of how the future could unfold

The following timeline reveals achievements and events that could become reality as we trek through the twenty-first century:

2020s

Nanotech, computers, robots make life easier. Medical nanotech improves health care, ending many causes of death. Quantum computers unravel the mysteries of consciousness, lowering crime rates worldwide. Household robots surpass cars as the most indispensable family purchase.

2030s

Improved transportation, longer life spans make the world more enjoyable. Driverless cars have reduced auto deaths to near zero. Except for violence and accidents, most people enjoy an indefinite life span. Children born in the 2030s are predicted to live well into the next millennium.

2040-2060

Human–machine merges bring us closer to conquering death. Humanity's future lies in transitioning into non-biological beings, writes physicist Paul Davies in his book The Eerie Silence (Houghton Mifflin Harcourt, 2010). "Biological life is transitory," he says. "It is only a fleeting phase of evolution."

2050s

Bold pioneers begin replacing their biology with non-biological muscles, bones, organs, and brains. Non-bio bodies automatically self-repair when damaged. In fatal accidents (or acts of violence), consciousness and memories can be transferred into a new body, and victims simply continue life in their new body. Death is now considered no more disruptive than a brief mental lapse. Most patients are not even aware they had died. Built labour-free with Nano factories, non-bio body parts are easily affordable.

2060-2075

Humanity heads for the stars. Successful Moon and Mars forays bring a new era in world peace as countries begin collaborative efforts to develop space. By 2060, terraforming efforts provide pleasant atmospheres on off-world communities with breathable air and Earth like gravity. By 2075, population has reached 10,000 on the Moon and 50,000 on Mars. By 2100, populations grow to 2 million on the Moon and 10 million on Mars.

2075-2100

Faster-than-light travel is developed. Scientists have selected fusion power and zero-point energy as the most probable technologies that could enable spaceships to break the light-speed barrier.

For example, a 2070s hyper-drive vessel or 2080s warp-speed ship might reach Alpha Centauri (four light-years away) in just 30 days, or make the six-month trip to Mars in three hours. Officials at NASA's Glenn Research Center have explored other options to travel faster than light-speeds and believe that, in a distant future, humans may even harness "wormholes", enabling instant access to vast distances in space.

2100s

There will be more than 350 countries and most will have embraced Ultra Democracy; nuclear weapons will have been outlawed and dismantling will be completed; the building and use of space elevators will be commonplace; teleportation and invisibility will be possible; terra-formation of the moon will have taken place (hypothetical process by which a planet's surface would be deliberately changed to make large areas of the environment hospitable to humans, thus making the colonization and sustainable); virtual cities will exist and continue to grow; trans ageism will be the norm; poverty and religion will be reduced; interplanetary sports will be popular; humans will be able to experience digital emotions; there will be superfast Nano-space crafts; there will be a lunar independence movement. (Pelletier, 2012)

2110s-2130s

2110s

There will be mass digital migration into virtual homes; 100,000s of people will purchase virtual homes; towards the end of 2010, Ultra democratic Countries (UDC) will vote to lower the corporate tax for investing in virtual housing; virtual immersion displays of Mars and the

Moon will be available (Google); massive reforestation programs will be ongoing; there will be 50+ countries practicing Direct Democracy; teleportation will be routine; in sports, genetic enhancements will be common; the lunar independence movement will continue to grow; the reduction of nuclear weapons will have reached 80%; global cooperation will have increased; productivity in the West and Asia will have declined and will have increased in Africa and the Middle East, as a consequence of developed world reparations to the now slightly less developed regions, Russia will become the 71st direct Democracy in 2115; by the mid-2010s autonomous labour of blue collar workers will have reached 90%; human employment in services based work will have become the new economic paradigm, globally by this time; by 2014 there will be interplanetary football, over 100,000 people will attend physical and 10s of millions will attend via live visual immersion field; in the 2110s space races will become common, there will be serious talk of terraforming Mars and there will be a "contact breakthrough" to aliens; the rising use of weather modification and the early stages of planetary engineering; and invisibility was commercially viable (clothing, etc.); in 2115, a private space company will launch Nano-bots and along with other companies with the intention to rapidly increase Nano-spacecraft speed beginning a modern space race; in 2116 the Japanese claim that they have the knowledge to build an anti-matter bomb to be used for civil protection; Japan will embrace Ultra Democracy; Existential Weaponry Regulatory Body, bans extreme non-nuclear weapons; people begin to question the power of centralized authorities; Most laws are in the hands of the people via Ultra Democracy; 2018 European Universal Currency established to compete with the Euro.

2120s

An anti-prison movement emerges, that will demand only rehabilitation; there will be an urgent push for anti-criminalistic Nano-drugs to help criminals become less criminal; Ultra Democracy will grow rapidly in South America (Brazil) and Central and South East Asia; 2122 East Atlantic City will be founded and becomes the Earth's first underwater city; there will be the rising popularity of virtual sports which will start small and will become more complex (2121 UEFA held in a virtual city); more direct democracies will emerge; 2124 will see the first attempt of earthquake lubrification (a 5.8 will be reduced to a 5.3); the Extreme Weapons Regulatory Body will pass an act aimed at the abolishing nuclear weapons; most people will be trans ageist; neo Luddism and neo nationalism will be popular; there will be a

globalized socio-political network; rights will be given to the great apes and the cetaceans (whales, dolphins, porpoises, etc.); mega sea walls will be built to protect from storm waves and tsunamis. (Pelletier, 2012)

2130s

Animal exploitation will be non-existent worldwide; religion will be virtually non-existent in the West and most of Asia (80% will be atheists); a modern socio political rationalist wave will be spreading scientific thinking in all shapes and forms because of a more popular scientifically rational culture;

2134

There will be another attempt to establish a globalist currency; space will continue to grow and intensify; by the mid-2130s there will be lunar tourism in the 100s of millions per year; earthquake lubrication will take off on a global scale; 2139 Russia, India and China dismantle final nuclear weapon.

2140s

Nationalism's decline will intensify as a neo-nationalism began to die off; the formulation of a formal Direct Democracy system in place of nations and the rise of a global culture continued; by the early 2140s the majority of the world's population will be Trans ageists. This will be in substantial contrast to the late 21st century, showing how fast the world was changing in the 22nd century; personalized virtual worlds will become very popular; the 2140s will see the consumption of any kind of drug and alcohol die off, since there will be both real world and digital alternatives that were far more effective and healthier, specifically, digital rushes that sent extremely positive signals directly to the brain wirelessly by digital information; on May 2143 Mozambique will become the world's last Direct Democracy, meaning that the last government in the world had fallen on the night of October 14, 2143 in Maputo; by the mid-2140s, absolute poverty will be non-existent and the global economy will be in near total hyper affluent economic parity. This saw the very last of what was the developed world in the early to mid-21st century's reparations to what was the developing world in the early to mid-21st century, come to an end. The "Minority Rights Movement" grew strongly as a protest ideology during the 2140s especially for the neo-environmentalist's, pro-real worldist's, anti-globalist's' and pro-government democracist's who felt that the majority was oppressing them by not giving their say a

chance and also ignoring the potential consequences of total Direct Democracy, transhumanism, planetary engineering, etc.; by the end of the decade, human unemployment by choice, began to become more socially acceptable and increased as Artificial Intelligence (AI) and Robots took more and more of the jobs; the number of Martian space tourist's surpassed 100,000 in the late 2140s; the Globalist Currency spread rapidly around the world during the 2140s and by the late 2140s was used by most people in the world; by the mid-2140s, speciesism was fading away, the cultural values of the world now encompassed almost scientifically-modernist's ethics evaluation of the world; by the end of the 2140s, virtual sports were more popular than real world sports and personalized virtual sporting events were also very popular too.

2150s

The 2150s will see the Lunar Independence Movement grow and develop substantially, especially in the big cities like the Sea of Tranquillity; in May 2151, the first 2-way conversation with an alien civilization will be completed when a reply will be received from the Gartaxan Civilization. This will have been a response to a message sent from Earth on 2056; by the 2150s, half of the would be damage caused by hurricanes/typhoons will be able to be prevented or diverted to cause no damage at all; a globally coordinated effort to reduce wild animal suffering and reform nature in a more friendly environment for its inhabitants will begin in the 2150s, neo-environmentalist's will protest that this "wildlife engineering" is inherently wrong and dangerous; nation State legal disestablishment spread from Norway in 2151 through to 73 nations by the end of the decade; as the Global Direct Democracy Federation will become a global system that will replace "nation states"; space tourism to the world's outer solar system, such as, Ganymede, Europa, Titan, Triton, Pluto, etc. will increase in the 2150s to millions per annum; in November 2158, the Sea of Tranquillity Republic will become the first country to be born as a Direct Democracy; the Minority Rights Movement will convince society to extend the major law pass margin from 60% (which was the norm for the 2130s) to 70% except in cases of emergency in which case any majority would win the vote; the independence movements will grow and develop throughout the solar system in the late 2150s; imagine that a person will be able to live in a virtual city such as Google 4.0, you will have likely grown up in a nation that is now just a region in the Global Direct Democracy Federation (GDDF) and you will use Globalist

Currency; there will be people living in virtual cities, but since 85% of humanity will still live in real world cities, there will also be people living in ocean cities and millions living in colonies throughout the Solar System.

2160s

In the early 2160s, consciousness digitization will have begun to enter the mainstream as individuals will have begun to leave their bodily presence behind, although it will not be very popular overall for global society in the 2160s; in May 2162, will see the independence of the Lunar Republic, which were Direct Democracies, formed by the Lunar Direct Democracy Federation (LDDF) and they will establish a Lunar Currency; Terraformation of Mars will be developing very rapidly in the 2160s and the population of Mars will exceed 1 million; in October 2168, the Olympus Moons Republic will become the first Martian republic and will have been a Direct Democracy from birth; in 2169, Nano-bots will have reached Proxima Centauri, making it the first interstellar mission to another solar system, it will be confirmed in January 2174 when signals of the arrival reach our Solar System; more than 25% of humanity will be unemployed by choice by the end of the 3150s, as Artificial Intelligence (AI) and Robots begin to take over more and more of humanities' work; Hyper-affluence will mean that unemployment benefits will be high enough that the unemployed will still have a really high standard of living; by the late 2160s, personalized virtual sports will be as popular as mainstream virtual sports and real world sports will have died off; by the end of the decade, most nations will have disestablished to become part of the Global Direct Democracy System (GDDS); the 2160s will see the global reform of nature, to minimize wild animals suffering will develop highly and neo-environmentalist's will perform protests and boycotts throughout the decade in the form of the "anti-nature reform movement".

2170s

In the 2170s, humanity will receive a message from Youzafxia Civilization with an invitation to the local "Collective of Civilizations", the collective consists strictly only of Direct Democracies, generally trans-biological civilizations that do not exploit or discriminate unjustly upon members of their own star system (i.e. any sentient beings); fascist's, speciesist's, racist's governing democracies, etc. will not be allowed to join; joining could guarantee long-term survival and military alliances from rouge civilizations, with the knowledge that 70% of the nations in the collective were over 100,000 years old; The choice

immediately will immediately go to a civilization wide debate through 2170; in May 2170, humanity will vote “yes’ by 86.7% vs “no” 13.3% in favour of joining the local collective of civilizations; as part of the agreement, civilization will to change the, law pass margin, from 70% to 75.46% which is according to a universal law last amended by the collective in 316 AD; by the 2170s civilization will be the beginning of truly moving away from an economy based civilization to a more utility based civilization that will be centered on thriving at almost no cost, reducing suffering in non-humans, rejuvenating and reforming nature, expanding colonies into space and individual migration into digital cities; the 2170s will see a rapid increase in the use of the global fully digitally telepathic non-verbal language; the use of the Globalist language increased dramatically and saw a decline in the use of English, which will have been up until this point the single universal language of humanity by the mid-22nd century; by the early 2170s, every part of the Moon will be independent from the Earth; in October 2172, the Martian Direct Democracy Federation (MDDF) will be formed with the birth of the “Martiana” currency; in January 2174, the first close up images and records of Proxima Centauri, will arrive in the Solar System from information to be obtained in November 2169. By the mid-2170s stable weather control, hurricane/typhoon diversion and earthquake reduction will essentially put humanity above the power of nature for the first time in history and Planetary Engineering will be about to embark on a new bold stage; In the late 2170s, there will be 22 Direct Democracy Federations throughout the Solar System, each with its own currency; in the late 2170s, with 37% of humanity living in virtual cities, hardcore Real worldist’s (which was about 2 – 3%.of humanity) will push for “Real World Independence”, demanding that the “Real Worlder’s” should have the right to ownership of the Real World and the laws that govern it, a concept that very little of the rest of humanity will conceive as plausible or fair.

2180s

By the mid-2180s, 40% of humanity will be living in virtual cities with Lunar Colonies, Martin Colonies, Asia and the West will lead the digital migration; the 2180s will see neo-urban decline rapidly develop, industries vanish, manufacturing plants replaced by countryside autonomous production plants and empty buildings, apartments and houses became an ever increasing sight throughout the world’s cities; the 2180s will see a substantial rise in consciousness digitization (post humanism) and by the end of the decade 5% of all humans

will have had their consciousness' digitized and generally abolished their own suffering; by the late 2180s, the abolition of suffering will have moved from a two-century old socio-philosophical movement to a practical movement of social change of a kind never before seen in history; by the middle to the late-2180s, direct space tourism will decline rapidly, as avatar bodies and virtual worlds will be taking up humanities' attention more; many extreme "Real worldist's' will begin to completely boycott virtual existence and many aspects of modern life; Rioting between the autonomous law enforcement of the world and extreme "Real Worlder's, will increase dramatically from the mid to late-2180s; by the 2180s, social membership by intellectual enhancements will be extended to the great apes and cetaceans. This will lead to a debate on the question of how far extension of social membership should go species wise; the 2180s will see a rapid increase in the abolitionist movement to end suffering. The late 20th century & early 21st century works of David Pearce will become very well known around this time.

2190s

The early 2190s will see the Martian economy hit hard from the rapid decline of space tourism. This led to an increased imperative on economic independence from the Earth; the 2190s will see neo-urbanism decline develop into the rise of "ghost cities", such as Seoul, which was prominent for being one of the first cities to fall due to digital migration; in the 2190s, the number of people living in virtual cities will also surpass the 50% mark; in the 2190s people will include all great apes (including humans) and cetaceans, the concept of people will be replaced by "civilized beings"; the 2190s will see Martian home-made production increase drastically to tackle the lack of economic independence from the earth. Their progress was based on the mid-22nd century lunar model of independent development; by the late 2190s more than 95% of civilizations will be unemployed by choice, extreme real worldist's, who also tended to be neo-environmentalist's and anti-globalist's, will be left among the few left working in the real world; in July 2197, The South Indian Ocean Metropois which will have the highest percentage of real worldist's located in it (whether living in virtual cities located by VI hubs or living in the real world), This city will become the first large population to declare a large scale protest against the apparent suppression of minorities, by cutting off the supply of underwater material to local landmasses such as Australia, Declared illegal, the world will be looking at the first military

invasion in decades. Eventually the city will surrender its protest and things will return to normal, The failure of the real worldist's to gain any say in the modern world by the end of the 22nd century will highlight a decline in the centuries old trend of increased minority protection, widespread liberty on issues of planetary control, etc.; the world at the end of the 22nd century will have 57.6% of civilization at the very least will live permanently in virtual cities, some will go as far as digitizing their consciousness' and existing in the digital realm of hyper cyber existence), 96.8% of civilizations were unemployed by choice and the number of beings of civilization will stand at 10.8 billion, 98.7% of which were apes (97.6%) and the remaining 1.3% were cetaceans; civilization will be part of the interstellar stage being a member of the local collective, Although contact with the collective will general be measured in decades but often centuries and sometimes even millennia according to signals from the closer civilizations that will be received during the 22nd century; Technological change as such will not be as dramatic and exponential as in the past, nonetheless, the world will still be changing fast as will be society and the very earth itself, now living in an era where humans had more control over earth than nature Can we expect the future to unfold in this optimistic manner? Positive futurists believe we can. (Mullen, 2013) (Dean, 2014) (Documentary , 2015)

Another futurist Professor Pavarghese predicts thus. According to the UN Population Bureau, life expectancy in 2200 will be around 100 for developed countries and the world population will be about 22.8 billion. In the advanced nations, emphasize will probably be on super-intelligent and disease free kids. Genetic engineering would remove all traits of a host of genetically transmitted afflictions. Will man succeed in conquering the ageing process? Will he be at the brink of conquering death? In another century, perhaps, man will decide when he will die. The gods can take rest and heaven and hell will be less thickly populated.

Organized tours will be frequent to the space and moon and the tourism industry will be more vertical than horizontal. Computer will have a far-reaching influence in our lives. The "computer-modified organism" or robots will probably be used to meet our luxuries and everyday needs

Imaginative people predict the invention of water-fuelled engines, one of the biggest inventions of all times. It means that the price of water will probably rise and it will contribute to the development of high-technology machines and stronger satellite connections. There could be light-propelled spaceships that can investigate a host of things. (PavarGhese, 2011)

We are not short of predictions. We have the following from another futurist: A move towards post-scarcity and resource-based economies, further growth of transhumanism, and major developments in space travel all mark the 22nd century. Practically all of the world's energy comes from either fusion or renewable sources now.

Artificial intelligence – having begun to merge with human intelligence in the previous century – now surpasses it, reaching whole new levels of cognitive and intellectual capability. Though lacking the raw emotions and subtle traits of organic human minds, the sheer depth and power of AI begins to profoundly alter the course of history. Almost every high-level decision by government and business now comes directly from these sentient machines, which oversee vast swathes of virtual employees, robots and heavily automated systems.

Developments in space during this time include numerous permanent, manned settlements on the Moon and Mars; regular manned trips to the gas giants; huge mining operations in the asteroid fields; and the first probes to Alpha Centauri. Space tourism booms during this period and trips to the Moon's surface and elsewhere become relatively commonplace.

The speed and magnitude of progress now occurring, both on Earth and throughout the Solar System, is creating what earlier forecasters would have named a technological singularity. Indeed, many of the scientific discoveries in the 22nd century exceed the comprehension of "unaided" humans lacking the requisite brain upgrades and enhancements. The most notable breakthroughs are those in quantum physics – but wholly new fields also emerge that were completely untapped in the previous century.

There are numerous additional forecasts, including: the widespread adoption of vertical urban agriculture will enable an area the size of Ireland to provide enough food for 10 billion people. The rewilding of vast areas of the planet will result. Forests and rain forests will re-

conquer Europe, China, India, and Brazil. This will absorb 50 gigatons of carbon dioxide a year.

Artificial photosynthesis will absorb CO_2 1,000 times faster than plant life. Engineers will develop economical ways to extract this CO_2 and combine it with hydrogen to make artificial petroleum as the feedstock for thousands of useful products (plastics, medicines, cosmetics, etc.) CO_2 will thus be recycled.

Nanotechnologies will enable the advent of energy-autonomous vehicles and buildings. Cars will be built out of Bucky paper, which will also function as a hyper-efficient photovoltaic skin providing electric energy to run the car. Buildings will be outfitted with mini-depolymerisation units that will convert human waste, garbage, and trash to gas to provide all the electricity, heating, and cooking the building needs (Bisk, 2013).

Another prediction by Supriya says the following, Life a hundred years hence, in the writer's opinion, would not be something to be looked forward to. Man, no doubt, would enjoy a great many comforts and facilities. He would live in mega structures, communicate with others on video phone, and work only 30 hours a week. But such physical comforts by themselves do not make for happiness. Happiness is largely psychological and spiritual, and consists in the pursuit of certain ideals and in the expression of one's personality. The society of the 22nd century would not have any aim higher than that of pleasure. When much of the work, including intellectual work, would be done by computers, one would feel unimportant and have no scope for the expression of one's personality.

Again, what would man do with the abundant leisure at his disposal? Would he devote it merely to seeing three - dimensional pictures and hearing stereophonic music? What would the housewife do with the plenty of spare time released for her by computers and robots? Things like three - dimensional pictures would become boring in the course of time. The meaningful use of leisure would be a serious problem of the 22nd century society. This pleasure - oriented society might prove, with disastrous consequences, the truth of the proverb that an idle mind is a devil's workshop.

Besides, what about individual freedom in such a world? A society so highly scientific and automated is likely to be entirely controlled by a few experts. One shudders to think of a

state of affairs, in which a few experts shape the life not only of the living but of the unborn. (Supriya, 2011)

An anonymous futurist suggests that: if the material world of people in the 21st century looks like a sophisticatedly-organized organism with all its functions and vital processes, then, life in almost a century will be put under a complete metamorphosis and will look like a system of organs which fill the existence (body) of ordinary men.

On the first place, perhaps, I (the author) should mention the development of the nowadays technologies and their progress in all scientific fields. Undoubtedly, specific application in life will take place the "computer-modified organism" or so-called robots. Our luxuries and everyday needs will be easily satisfied by the help of those "live" machines which tend to obey each order of their masters.

An important step will be made in technical-transport machinery with the invention of a water-fuelled engine. That will be one of the biggest inventions among humankind which will probably be accepted with a great dozen of negativism by the different countries. It means, however, that the price of water will probably rise and all these innovations will contribute to development of high-technology machines, stronger satellite connections and light-propelled spaceships which will have a complete physical power to fully investigate some forms of extra-terrestrial life on other planets. Visits and highly paid excursions to those planets, mostly to the Moon, will drastically increase and some well-off people will have the full opportunity to take a look of some places yet untouched by the human hand.

When a huge progress in the high-modern technologies finally takes place, then, it will positively influence on creating effective immune drugs into the field of medicine. The fact that we are on the verge of synthesizing successful anti-cancer drugs makes me think that in 100 years there will certainly have such a progress and successfully synthesized medicaments which will undoubtedly have the right formulas to improve the most destructive illnesses in the world; these innovations will drastically improve the "demographic boom" of these incurable 21-century deceases.

In my (the author's) opinion, with the development of the future high-quality technologies and the ultra-powerful machinery a huge step toward drastic change will be made in verbal and educational culture of folks. Unfortunately, a big number of little-spoken languages and linguistic communities will undergo a significant drop, some of which will become

completely extinct. A lot of refined skills and useful features give opportunity to myriad species to survive in different environments, thus, the need of linguistic variety fully supports this argument. In my opinion, the existence of every single language enriches the social history of communities and a big part of its cultural identity; it strengthens the abundant number of knowledge and interests about life of other nations. English will predominate in terms of every linguistic initiative and each one of us will have the opportunity to speak, write, read, listen or use English as a means of massive communication. Thanks to the future high-modern technologies, not only little spoken languages will become instinct, but also a lot of new will also appear which will become a precondition for the creation of new social communities. Moreover, people then will have the needed mental, physical and technological abilities for an ultra-rapid modernization of the present-day languages which will totally reverse the usual standard of living that people now know.

Finally, here comes the philosophical question "What changes will assume people's minds, way of thinking, values and moral standard during the 22nd-century society. Every one of us is clearly aware of the fact that a lot of countries nowadays have begun slowly to fall into a severe political, economic and social crisis. This crisis finds expression in already mature social and inter-political conflicts in all areas of institutional governments. Our standards and moral values will drastically change and, unfortunately, will turn into a common aim – a tendency for easy enrichment and fast-speed profiteering; and once happened, the spiritual and aesthetic culture of the present-day Homo sapiens will be stricken by the material world – a familiar norm of thinking to people nowadays which gives us nothing, but a lack of common faith to support us during the years. The process of cultural and intellectual decline has developed its steady mechanism with the men's entering in the 21st-century postmodern culture. At present, such a similar habit is perceived as a vice. Indeed, however, do you want to know why people nowadays can find a lot of blind statues and eyeless monuments in all sides of the world? The truth is hidden beyond the sense that when a certain sculpture has two eyes, it can watch whenever she wishes. However, when it has one eye only, that means its look is directed wherever it has been ordered to craving for domination, authority and government. Corruption, personal domination, power as well as oblivion in our traditions and values have threatened human existence. The 22nd century will

be on the verge of full intellectual forgetfulness, but it will be strong enough to surmount the forthcoming evil through its physical and psychological strength.

I think (the author), however, that it's quite possible the lack of moral values and fast-growing 21st technologies to affect people's unaware beliefs or worse – fully to destroy them. Without any beliefs, however, humans will build excellently equipped and precisely armed forces for control over the nature. That's the next thing we should carefully think of – the control over Mother Nature. There may be created ultra-powerful weapons of fast destruction of the Earth; hence, all world nations will have the courage to use their technical and physical opportunity to create and develop nuclear weapons much more powerful than those presently known as the A-bomb (Atomic bomb), the H-bomb (Hydrogen bomb) or the boosted fission weapon, all of them have been responsible for a high-speed destruction and a radioactive contamination… If these likely forthcoming dangers are not prevented on time, huge areas of vegetation may be destroyed. Where once have had thousands of evergreen trees will have only dry-topped ones unable to the producers of life anymore… I (the author) want to add something here: there are two more episodes of creating the whole picture which I (the author) can't fully understand and explain – these are the time of cold and the time of heat. My mind hints me that these extreme periods will not last long or, otherwise, nothing on this planet will be left alive. Cold refers to the eclipse of the solar system and heat, on its hand, to the global warming and severe ozone depletion. However, if all that happens, then, what would be the thing to protect and support humankind? what will they be tending to believe in? who will they lean against and pray? … God? … I (the author) don't think so. A big part of people will have already erased its belief in God which has been keeping it since ancient times. With every passing year belief in God will diminish, hence, leading to discard of national traditions and customs. On the other hand, this anarchy will cause pains and discord in human existence…All these probable times of troubles will undoubtedly lead to separation of nations in different social structures. Yes, but the need of mutual support and belief in their own "Gods" will make people unite and inspire confidence and hope in their hearts to seek for a positive outlook.

The mechanical division between different social classes, the obsession for supreme power and authority will get partially wiped out by the need of a common ideal – a valuable existence. Unfortunately, I (the author) fear that in the 22nd century people won't be

capable of any change. They will go on developing more and more, will go on living with the same values they believe in, will have the real opportunity to morally and physically recover, but they will choose the destiny of their own predetermination, will go on living in the reality of their human existence, full of motivation to develop, master and control our planet…..I hope what I (the author) mentioned above will never come to the surface and will always stay locked in this text (Anonymous, 2010)

University Education from the 21st to the 22nd Century.

There are, undoubtedly, many more predictions. However, let's spend some time on some of the thoughts on moving university education from the 21st to the 22nd century.

Let me start this by borrowing from research conducted by Ernst and Young in Australia on future of the University in the not too far future, say the next 20 years.

Ernst & Young's view is that the higher education sector is undergoing a fundamental transformation in terms of its role in society, mode of operation, and economic structure and value.

To explore these themes and future directions, they conducted an industry-wide study of the main forces impacting the higher education industry globally and locally, and the opportunities, challenges and implications for Australian universities.

They conducted a mix of primary and secondary research, including interviews with more than 40 leaders from public universities, private universities, policy makers and sector representative groups.

The interviewees included representatives from more than 20 universities, including 15 Vice-Chancellors. The topic attracted immense interest around Australia.

Ernst and Young primary hypothesis is that the dominant university model in Australia — a broad-based teaching and research institution, supported by a large asset base and a large, predominantly in-house back office — will prove unviable in all but a few cases over the next 10-15 years.

At a minimum, incumbent universities will need to significantly streamline their operations and asset base, at the same time as incorporating new teaching and learning delivery mechanisms, a diffusion of channels to market, and stakeholder expectations for increased impact.

At its extreme, private universities and possibly some incumbent public universities will create new products and markets that merge parts of the education sector with other sectors, such as media, technology, innovation, and venture capital.

The drivers of change of this brave new world were summarised into five key trends:

Democratisation of Knowledge and Access

The massive increase in the availability of 'knowledge' online and the mass expansion of access to university education in developed and developing markets means a fundamental change in the role of universities as originators and keepers of knowledge.

Contestability of Markets and Funding

Competition for students, in Australia and abroad, is reaching new levels of intensity, at the same time as governments globally face tight budgetary environments. Universities will need to compete for students and government funds as never before.

Digital Technologies

Digital technologies have transformed media, retail, entertainment and many other industries — higher education is next. Campuses will remain, but digital technologies will transform the way education is delivered and accessed, and the way 'value' is created by higher education providers, public and private alike.

Global Mobility

Global mobility will grow for students, academics, and university brands. This will not only intensify competition, but also create opportunities for much deeper global partnerships and broader access to student and academic talent.

Integration with Industry

Universities will need to build significantly deeper relationships with industry in the decade ahead — to differentiate teaching and learning programs, support the funding and application of research, and reinforce the role of universities as drivers of innovation and growth.

Ernst & Young submitted that the university sector is critical to Australia's future. Universities educate our leaders and entrepreneurs of the future, create new ideas and knowledge, and earn much needed export income. Universities provide opportunities for students of all backgrounds to increase standards of living for themselves and future generations. But, to succeed, universities will need to forge new business models that are dynamic, modern and fit for the decades ahead.

They see university business models becoming more diverse, and anticipate three broad lines of evolution.

Streamlined Status Quo

Some established universities will continue to operate as broad-based teaching and research institutions, but will progressively transform the way they deliver their services and administer their organisations — with major implications for the way they engage with students, government, industry stakeholders, TAFEs, secondary schools, and the community.

Niche Dominators

Some established universities and new entrants will fundamentally reshape and refine the range of services and markets they operate in, targeting particular 'customer' segments with tailored education, research and related services with a concurrent shift in the business model, organisation and operations.

Transformers

Private providers and new entrants will carve out new positions in the 'traditional' sector and also create new market spaces that merge parts of the higher education sector with

other sectors, such as media, technology, innovation, venture capital and the like. This will create new markets, new segments and new sources of economic value. Incumbent universities that partner with the right new entrants will create new lines of business that deliver much needed incremental revenue to invest in the core business — internationally competitive teaching and research.

Ernst and Young advised that faced with this dynamic industry landscape, Australian universities should critically assess the viability of their institution's current business model, develop a vision of what a future model might look like, and develop a broad transition plan.

Deliberations on future models need to include which customer segments to focus on, what 'products' or services they need, optimal channels to market, and the ideal role of the university within the education and research value chains. Support functions will need to be streamlined and in some cases fundamentally reconfigured.

Regardless of the path chosen, universities will need to align new directions to their institution's core purpose and values.

Concluding, they submitted that there are, of course, other potential models, including:

Life-long learning models, global alliance models, multi-disciplinary models and hybrid models.

A number of the leaders interviewed spoke of a 'model 1-model 3' hybrid. That is, continue with a leaner version of their current model, while looking with interest at the possibilities presented by selectively playing in a 'Transformer' world. Many of the leaders spoken to, saw teaching-only institutions as inevitable. Interestingly, not one of the leaders of more than 20 universities in Australia — saw their own university becoming a teaching-only institution.

The policy makers spoken to, were also sceptical of this model. While sharing this scepticism, it would be brave step for a university in Australia to completely relinquish research as a stated aim or part of its business. Nevertheless, research will become increasingly concentrated in universities that can demonstrate excellence and impact.

Smaller universities will become increasingly focused on a narrow range of research programs. To make this work, they will need to explicitly tie education programs and industry partnerships to these focused programs — as per the 'Niche Dominator' model — or invest in a distinct student experience for teaching and learning programs not tied to research. It may be that in 10-15 years' time a small number of Australian universities have evolved to become specialised tertiary education teaching institutions, with no research programs at all. However, at this stage, it is more likely that even the smaller universities will find ways to maintain at least 2-3 targeted research programs, potentially in partnership with other institutions.

The outcome of this research is food for thought and a pointer to what Nigerian universities have to contend with in the immediate and the rest of the century.

Perhaps it time to think about: Model and criteria for appointment of Principal Officers? Must a Vice-Chancellor be a Professor or a Business Developer? What about our budgeting and funding model? Can't we now have Zero Budget, Rolling Plan, Subvention, management committee of Staff, Student, Alumni, Parents to manage resources, determine remuneration of staff and student fees? (Ernst & Young, 2012)

In his recent lecture titled "Schools for the 22nd century - Reframing education for global collaboration and innovation", Professor John Fischetti, The University of Newcastle's head of school education, argued that many schools have become testing centers rather than learning centers, and school buildings function only as places where young people watch adults work. Rather, the purpose of schools should be to prepare learners to be successful in the age of global collaboration and innovation. (Fischetti, 2014)

Urgency for Reform.

From the forgoing there are compelling reasons to feel that we are already seeing the very infantile stages of what the future holds for education. In truth, we can no more imagine 22nd century life than depression-era folks could imagine the age of the iPod. But without looking forward, we get stuck in the present. And unfortunately, in education at least, the

present is already past. If innovation lags any more in education, the world will see the 22nd Century before education fully implements the best of 21st century thinking.

This feeling is a reason for concern and need to cause reform of the University system in Nigeria. Notable concerns include:

Internationalization of Studentship

Students of today and tomorrow, do and will compete internationally, not only within a school district, within a state or within a country.)

Privatization of Public Space

Privatization of the educational system is occurring and is led by profit and greed, not common good.

Democratization of Choice

Choice doesn't necessarily make things good. Something quick and easy may not be good.

Competency/Certification

We have created testing centers, not learning centers:

Misuse of Value Added Measures

Value added measures can offer indicators of performance and can be used to project what the growth of students might be based on prior tests, but they are a very imperfect measure of teacher quality.

Popularization of Internet and Social Network

The power and use of the internet can be good or bad. A lot of it can be used for educational purposes. For example, the Social Networking Sites which have the following population of subscribers: Facebook: 1000M, You Tube: 800M, Twitter: 500M, Google: 340M are powerful underutilized resources. The question is: How much have we tapped into these media to take advantage of educational opportunities using these sites? The power of these sites has changed the way things are done in the world, not always for the better. For example, now some of the biggest and most important breaking news stories can be found on Twitter and/or other sites, before they are seen on the more traditional news sources (Twitter helped solve the Boston Marathon bombing). Is education changing to take advantage of this tremendous resource?

Smartphone ownership has really changed everything. By the end of 2013, there were more mobile devices than there were people on Earth. Evidence of the tremendous growth of the

smartphone market can be found in the following statistics. The percentage of telephone owners with smartphones in May 2011 was 35%, in Feb. 2012, 46% and in May 2013, 56%. The educational community has not really decided where we are going with this phenomenon, having a handheld device means having a computer in our hand in the space that used to fill a classroom and we really must take advantage of it because now learning can be anyplace, anytime.

Possibility of Change of Global Language

The top 5 languages on the internet are currently English, Chinese, Spanish, Japanese and Portuguese, but Chinese was expected to overtake English in 2015. This has broad implications. Perhaps more people should be studying Chinese, to take advantage of the associated opportunities. The top 10 languages on the internet are used by 82.2% of internet users. Chrome has 31.1% of the market, Explorer 29.8%, Firefox 21.38% and the others share the balance. The top uses of the internet are: Searching for Information about Health (62.2%), Shopping (58%), Banking (50.1%), Looking for Jobs (45.5%), Making Travel Reservations (43%), Research (37.11%), Meeting People (15.2%)

Increasing Demand for 22nd Century Education

Schooling around the world has been besieged by demands to prepare learners for the needs of the 21st century. Now that it is 2015, Freschetti and his followers believe that we should be preparing students for the 22nd century. And that we reframe schooling around an equity agenda. Freschetti has this to say: "We are preparing the world for the great grandchildren of our children or the grandchildren of children in primary school today. For our great grandchildren to have the fantastic life in the future will require that our kids in primary school today, have one. We need to be getting ready for the next 100 years, not the last 100.

We have progressed from the blackboard in 1914, to the green board, to the whiteboard to the smartboard, today. But with a few wonderful exceptions in technology schools, teaching is very much the same as it was in 1914, students watching their teachers work. Not as much has changed in the last 100 years, as we would like to think. However, we are going to have to change it in the next 100 or we really won't need education because the technology is out there. With the possibilities out there, teachers could actually become obsolete, if teaching does not change.

The same is true for universities. A student does not need to drive to a carpark to listen to a teacher talk, when one can watch a lecture online anywhere in the world or get someone else to do so. Unless it is inspiring, unless we create an atmosphere of really getting involved, unless we are doing it for a purpose which seems for the common good, rather than for getting a mark, we will have missed the mark.

For us to be successful, we have to change the metaphor and change the frame of schooling. This brings us to a major goal, Equity (Fairness) Agenda; building equity around the right mix of pedagogy, content and disposition, resulting in a commitment to equity and excellence for all children".

Clouducation

One vision of higher education in the 22nd century, is through the concept of clouducation. Computers are largely light-based and portable, so they can be used in any situation, in any size. A small projecting device will be added to glasses, wristbands, or embedded in the skin. Students are still monitored by a central agency, but control education themselves. For instance, they can log hours at a veterinary clinic, do virtual human dissection, or create hybrid grapes for a biology credit. Experiences are logged into a cloud-based database, and audited by educators who help students evaluate the quality of their learning. It is assumed that all basic factual data is accessible in multiple ways, so direct instruction is no longer done in any fashion. If a student is learning architecture and needs to understand more about friction coefficients, the student simply finds the relevant information and learns it. Universities have all moved onto the campuses of businesses and corporations, allowing experts to create on-the-career instruction as people work. Virtual reality is used in myriad situations to evaluate a person's health, physical ability, and problem-solving abilities. These environments train people for skill jobs, and allow for the safe and effective manipulation of dangerous substances. Nano-bots work to keep our brains free from plaque and decay, lengthening our years of cognitive aptitude. Social media has evolved into community media, a system by which people have different access points to various communities of people interested in any field. Since this is all 100% collaborative, virtual environments allow people in diverse areas of the world to engage in face-to-face dialogue for any reason. Virtual cafes allow for people to meet others in virtual environments at any time. Children play and learn languages from other students all over the world. Brick-and-mortar buildings

for office spaces no longer exist, but families often have 2-3 office spaces in each home, allowing for virtual communication and data work. Most people compute via voice or by neuro-transmission. (Vonbank, 2012)

Which Universities Will Survive the 22nd Century?

A Professor in a lecture at ……. ruminated on which universities will survive the 22nd Century. He thought aloud and made some suggestions which I will also like to share with you. He went as follows:

…… “One of the most important factors is funding stability. A few schools (The "Harvard type") have large endowments which protect them from much of the turbulence in the market. A larger number of schools have direct state support, which traditionally has been viewed as a buffer, but more recently has become a liability, as the gaps between funding and spending grow increasingly large. The state supported schools, in many cases, are also very efficient. Combined state and tuition funding per student are often lower than private school spending per student, and this difference is often amplified when factoring in quality. The remainder of schools survive almost entirely on tuition payments, which in a sense are also subsidized by the government through loans, which make up a decent percentage of the budget for many students (though arguably the lower rate is mostly from the inability to discharge the debt in bankruptcy - by most accounts this is a profit center for the government). The Harvard types and the state schools also rely on tuition, but benefit from the stability of the diversified income sources (both). This stability is very important, because universities make very long-term commitments, through tenure employment contracts.

So stability is important, but how will this impact universities? The most vulnerable are those schools with high (and increasing) cost structures, with little differentiation. There are reasons that crappy schools can charge as much as Harvard, and that's usually because they're the "best" school many of their attendees can get into. That alone is a complex argument that could be unpacked in a full answer, but the important thing to realize, is that the actual differences between schools is greatly exaggerated. You don't have to go very far

down in the rankings to get to schools that admit 50%+ of their applicants, and many of these schools are outstanding in quality, and many are very affordable. Non-differentiated schools (in terms of quality, or specialized programming) that are charging Harvard prices are going to be most vulnerable. Expensive, private, non-elite colleges will be most vulnerable. Affordable schools (even if undifferentiated) and high quality schools (even if expensive) will be better off. Unfortunately, probably 50%+ of schools are in the mediocre quality but high cost category (obviously to varying degrees). This doesn't mean 50% will go out of business, though over 100 years you may see something approaching that (I {the writer} would predict closer to 25%). However, to the extent that fewer people go to college, and to the extent that the low-cost and high-quality schools increase their capacity, schools in the middle will suffer, and I see all of those happening to some degree.

A wild card in all this is the creation of online schools and content delivery. What I (the writer) am not predicting is that any of the recent entrants in this field will be around in 100 years. It's possible that some will be, but mortality for entrants in any industry is always very high. I (the writer) think those starting as non-profits with a clear mission of providing knowledge will fair best, but there is no clear contender yet with signalling, certification, networking, career services, or maturity-development mechanisms. I (the writer) don't see any of these capturing the research function that is common at many high-quality institutions. To the extent that these start-ups achieve the student-driven requirements, it may start to damage the weaker incumbents described above. However, most of the world does not receive higher education at all right now, so the likely mechanism is more likely to be an improvement of skill at the low end lowering the value of marginal education to the point that it's not worth the marginal cost, more than being a true substitute to the marginal education. It may even act as a complement to marginal education, because they may provide more actual learning, while the marginal education providers focus more on the signalling, career services, and such. (Boysen, 2012)

A Model for 22nd Century University Education

There is a natural tug-of-war between two different goals of a college degree—to be well educated or to be employable. Higher education must inspire the ideals of a liberal

education and also provide practical skills for aspirational, meaningful employment. In some respects, this is the classic “education” vs. “training” debate. A liberal education without the requisite skills for meaningful employment is a lost opportunity for personal growth and professional development. Graduating with specialized skill sets that make students immediately employable, but lacking in higher order skills such as critical thinking, sociocultural awareness and an appreciation of values and ethics locks us into entry-level jobs rather than enabling careers or callings.

Educators need to encourage students to acquire knowledge *and* skills from their undergraduate experience. We have little difficulty emphasizing the knowledge that our respective majors should possess; it is now time to bring the acquisition of skills and competencies into the spotlight as an additional aspirational goal and not a replacement goal.

Knowledge provides the foundational infrastructure for tasks that we perform throughout our lives. Knowledge acquisition need not be the singular focus of a college education, and the mere accumulation of knowledge without the ability to apply that knowledge limits the benefits to the individual and to society’s substantial investment. The acquisition of skills should not be lucky happenstance; in my 22nd century model of higher education, skills-based competencies should be the central focus of higher education. Knowledge provides the fuel that powers the skills-based engine, and without fuel we get nowhere. However, fuel without the proper vehicle would be a waste of an opportunity.

With the help of cross-disciplinary research in the “scholarship of teaching and learning,” we need an enhanced emphasis on pedagogical practices to help students acquire skills. We need to devote expertise and resources to develop multiple measures of skill competency to assess and document both student achievement and institutional performance. Furthermore, institutions need to value these efforts and acknowledge such advances within promotion and tenure dossiers, as well as develop grant programs to help faculty devote research time to developing skills measures. Grant dollars and course releases often signal important aspects of our academic culture, and thus if skills assessment is ever to be

taken seriously by faculty, institutions must value assessment expertise as they value teaching and research.

The status quo continues to be a knowledge-centered approach. But knowledge is fleeting, and data about what college students retain after the course is lacking and points to little to no retention at all. Anecdotally, students will often struggle to remember *what* classes they took in previous semesters, let alone what they learned.

Student-Centered, Skills-Centered Competency Model

The primary goal of higher education should be to assist students to acquire knowledge *and* develop skills. Knowledge acquisition for the sake of knowledge acquisition, absent application, is akin to hoarding. The ability to receive a perfect JAMB score or UTME score may be impressive, but we should be more concerned about what that student learns to *do* with that knowledge. Speaking about the apprentice model used in the middle Ages, "no one fails at bread-making." If you were an apprentice bread-maker, you kept working until you got it right. Graduation should occur when the requisite skills are acquired and can be reliably demonstrated. I suggest that for a 22nd century education, we consider a skills-based competency model rather than the current credit hour model. A student's transcript is now transformed into an assessment of the proficiency levels (those levels being underdeveloped, developing, effective, distinguished) that a student achieves in those areas regarded as valuable by departments, colleges, and universities. Let's put an end to the phrase "C's get degrees."

In our current credit hour model, students accumulate credit hours into buckets, and if their grades are average (or above) and they put enough credits into enough buckets, they graduate. The curricula are often well conceived with high-level goals in mind, but given the current state of assessment and employer feedback, are we meeting our students' needs, or are we truly adrift? Are faculty seeing student achievement at the levels we expect? Are we even meeting our own institutional goals? In many ways, we do what we do because we have always done it that way—but that operational model is not unique to higher education.

What I propose here is a transformative shift from a credit hour model to a competency-based model. Rather than ensure that students accumulate 120 credits to graduate, under a competency model, a student must demonstrate key skills in the institution's requisite areas to graduate. Just as some students in the current credit hour model do not graduate (they did not fill all the buckets), neither would every student in a competency model. Not all students can attain all the key skills designated by the institution as central to graduation; not everyone can be a bread maker. Institutions would need to determine the proficiency levels necessary to graduate. Perhaps a national skills-based proficiency exam might provide colleges and universities baseline data by which to adjust and benchmark an institution's respective assessment efforts. There are institutions now that are exploring skills-centered approaches in the western world but universities at the moment are not following this radical and innovative approach.

In my 22nd century competency-centered model, when a student achieves the standard set by the college or university with regard to the general education or core curriculum, the student would receive a diploma degree. When the student achieves the standards for knowledge attainment *and* skills competency, he or she receives a bachelor's degree. That might take 120 credits worth of academic work, or 72 credits, 144 credits, or 40 credits. The requirement is the ability to measure skills with multiple psychologically appropriate measures—an ability we do not possess currently for all desired skills. In the 22nd century, a student's graduation would represent a true capstone involving the meaningful demonstration of skills that the institution values and assesses with vigor.

Credit for Prior Experiences, Prior Learning and Transfer Students

Under a skills/competency model, students' prior life experiences are particularly relevant. If a student begins college with demonstrable skills, then they are "ahead" (similar to an incoming student having high school Advanced Placement credits). Of course, they need to maintain those skills, and hopefully enhance their skill set. For example, if a marketing executive who gave 100 speeches a year returned to college to become an elementary-school teacher, would we make this returning student take Communication 101? Under a skills/competency model, we do not guess at the answer to that question; if the student achieves the requisite proficiency in an active demonstration of the skill, then they meet the

communication requirement for Communication 101. Conversely, if a transfer student has been "core-certified" by another institution, they must still demonstrate the skills required by their new institution. Polytechnics might focus more on skill development and less on credit generation; the same holds true for four-year colleges and universities. The emphasis shifts from knowledge possession to knowledge application via demonstrable skills and abilities. An assessment-based model would help ensure that citizens would get more value for money spent.

We do implement a skills/competency model currently in some areas of higher education. In many cases, we do not give students multiple choice tests about *how* students would write, but faculty have students actually *write*. Generally speaking, a student's memorized knowledge about writing rules and grammar seems less important than their ability *to* write. Many high school Advanced Placement tests go beyond multiple choice testing, asking students to consider multiple concepts and be able to form linkages among seemingly disparate concepts—in writing. Consider a trip to FRSC a multiple choice test might be in your future, but also a vision test, and more importantly, you demonstrate that you possess the skills to drive *by driving a car*. A trained observer determines if you have the requisite skills to complete the task safely and correctly. We already have trained professionals who are experts at measuring human behavior by developing sound instruments and measures—they are called social scientists.

From a societal perspective, we invest a great deal to ensure that citizens exhibit the requisite skills to drive a car. But what about critical thinking skills, ethical skills, interpersonal awareness skills, technological literacy skills, sociocultural and international awareness skills, quantitative and qualitative reasoning skills, and so on—there is value in ensuring that citizens, and especially college graduates, possess these skills as well. Imagine the benefits to graduates as well as society if there were assurances about what college graduates know *and* are able to do. With a 57 percent college completion rate, society's multi-billion-naira investment in higher education deserves a better return-on-investment.

The Niche University

This is an opportunity for colleges and universities to carve their own niches. Although think tanks, business groups and other agencies have published good guidelines. Each school or department would develop measures of skills and learning outcomes, or coordinate discipline-wide efforts to do so.

There would need to be a minimum number of credits earned from an institution, such that the institution has enough time to deliver its' own unique approach to skills development. In other words, a highly accomplished person could not apply to a college or university, take one course, complete all the skills assessments, and graduate with a degree. The college or university needs time to imprint its academic habits of mind or signature teaching. For example, there might be a minimum of 32 credits needed to earn the degree (similar to a second-degree seeking student). But the selection of those credit hours would be instrumental, and keyed to a current assessment of student skills compared to the competency levels required to graduate. Institutions would put their own imprint or approach or brand on the skills earned by their students.

Measurement Challenges

After disciplines, programs and departments identify and articulate the desired skills for their students, the looming challenge is the meaningful measurement of those skills and abilities. Some may posit that the ephemeral aspects of a college education cannot be measured, or that the act of measurement changes the experience. Can we measure a student's skills and abilities for such nebulous concepts as critical thinking, ethical reasoning, sociocultural awareness, and so on? I tend to agree with the sentiments expressed by William McCall in 1939 his *Measurement* textbook, *w*hen he wrote "Anything that exists, exists in some amount. Anything that exists in some amount can be measured." After disciplines and departments settle on demonstrable learning outcomes, then the goal is to develop multiple methods of assessing the desired skills and abilities.

Think about what this new century would look like—a college degree becomes a credential of measured and quantified skills from the alma mater. Graduates would have demonstrated proficiencies and competencies, and if departments and disciplines do their

homework (which accrediting agencies attempt to ensure), would be poised for success in the workplace of their choice. They would have the tools to succeed in a chosen profession. Electives would be immediately relevant (and not courses "to get out of the way"), because these electives are essential for helping students develop skill-based strengths in areas of weakness. Content alone would no longer drive course selection, but content knowledge and skill development are powerfully intertwined to point students toward success in their academic majors and beyond.

It will take more than four score years to observe the paradigm-shift described here. Institutions work on 5- and 10-year master plans, but this is a four score-plus master plan. A student-centered curriculum is a skills-centered curriculum; a curriculum in which students gain confidence in what they know *and* what they can do. Faculty will need to embrace the challenge, as faculty have so many times in the past.

What if better educated graduates experienced greater personal success and an enhanced quality of life? And what if we had the measurement tools to clearly document the added value of the collegiate experience (and identify efficient classroom pedagogy too)? Whereas some faculty embrace entrepreneurial challenges, others abhor the notion. An innovative approach will be necessary, and a skills-based revolution may well turn current educational practice on its side. For me, if you are not part of the solution, then you are part of the problem. What good is a college education if the practical application of the knowledge acquired is not recognized, exercised, and applied? That outcome might lead to graduates who are underprepared for the workforce experiencing dissatisfaction with their education—a phenomenon some are calling malemployment. Our collective yet savvy investment in human capital must be redoubled if we are to allow our students, departments, disciplines and institutions to achieve their respective destinies. (Landrum, 2013)

Minerva University, USA (Another Alternative Model)

At this juncture let me share with you a project by Minerva University, USA. Amid all the cheering about the advent of Massive Open Online Courses (MOOCs), another high-tech,

path-breaking model in higher education is being developed in San Francisco with the help of a $25 million seed grant. Minerva University, set to admit its first class of undergraduates in 2015, bills itself as “a top-tier university built to accelerate the life trajectories of the world’s brightest and most motivated students.”

That’s rather brazen billing for an upstart, for-profit university — even one with Laurence Summers and Bob Kerrey as its marquee advisors — that has yet to matriculate a single student. In naming his school after the Roman goddess of wisdom, former Snap fish CEO Ben Nelson inverts Hegel’s teaching that the owl of Minerva takes flight only at dusk: the owl of Minerva University purports to know quite a bit in advance of the institution seeing the light of day. But that’s how entrepreneurs talk, and from what I’ve gathered, Nelson’s bold plan is based on some excellent ideas about what a liberal arts education of the next century might become.

Let’s imagine Minerva U. comes to pass along the lines Nelson has laid out. Put yourself in the shoes of one of the first students. You have been admitted solely on the basis of your academic promise, with “no weight...given to lineage, state or country of origin, athletic prowess or ability to donate.” You begin your studies in the U.S. or in your home country, and then spend semesters living in your choice of six or seven cities worldwide where Minerva has outposts. You live and learn in real time with direct human contact in classes capped at 25. Before arriving on campus, you take the equivalent of Econ 101 or Intro to Psychology online: Minerva has no lecture halls, only insanely tricked out seminar rooms linking its campuses with the most advanced technology and video connections money can buy. Your professors are top-rate scholars free of the burden of teaching massive introductory courses, excited to engage with you in higher-level, more specialized study. You pay about half the tuition you’d spend at established elite universities.

This is no MOOC-style virtual reality: no sitting in your living room with your laptop and watching slickly produced lectures by luminaries. The education is direct, intensive, personal and accountable.

But will you miss the mainstay of so much college learning: the live, in-person lecture? If your experience in college was like mine, you got a lot more out of small, discussion based

courses where you were directly accountable for your work in a circle with others than you did out of large lecture courses where nobody but you knew how closely you had read the several hundred pages of assigned reading — or how much of it you had really tackled. Active note-taking and follow-up discussions may enable students to learn more from lectures, but this is decidedly not the collegiate norm. (Many students don't even bother to show up to the lecture hall.) Mountains of educational studies show that small-scale active learning (in science, in the humanities, in dentistry) engages students much more reliably and deeply. We learn, and our lives are enriched, when we *do*: when we facilitate a discussion, engage in a debate, or present a paper, not so much when we sit back and listen.

As Confucius wrote: "*I hear and I forget, I see and I remember, I do and I understand"*

It's not just about the medium, though. The next question is what students will be learning in the seminars. It seems this matter is still unresolved, the blanks to be filled in by four as-yet-unhired "college masters" who will lead Minerva's four divisions (Natural Sciences, Social Sciences, Arts and Humanities and Computational Sciences) and design a yearlong "cornerstone" course that all freshmen will take. This idea draws from the concept of the core curriculum anchoring the undergraduate experience at schools like the University of Chicago, Columbia University and Bard College (where I have taught) and supercharges it, giving every first-year student the same foundation for his or her undergraduate studies. The idea is sure to make a student at Brown or Hampshire queasy, and some will be turned off by such a comprehensive standardized curriculum in the first year, but if the courses are great, the concept could work beautifully and ignite students' scholarly passions.

Every aspect of the academic experience is being reimagined, including a fresh approach to the first-year curriculum. To ensure that all students begin their Minerva experience by learning the foundational skills necessary to succeed in college and professional life after graduation, all students will take the same four cornerstone courses during their first year. Case studies will form a key component of these courses, and will serve to integrate the learned material with concepts in real-world contexts. The foundational skills students develop in their first year will be drawn upon in coursework throughout the following three

years of study. Students will select a concentration during the middle of their sophomore year and culminate their Minerva experience with a senior capstone project.

With students taking the same classes in several different cities and sitting down together for real-time online conversations, the concept has great potential. Imagine a unit in the Social Sciences cornerstone class on wealth inequality around the world. After reading several philosophical perspectives on the question, students could investigate the magnitude, etiology, and politics of the wealth gaps in their own societies and compare Gini coefficients, tax policy and local attitudes toward inequality. Imagine the breadth of knowledge and range of views that could come to life with this type of interaction among three or four real classrooms linked by fibre optics and widescreen monitors. Think of how rich the discussions could be.

This is mostly still in the realm of theory. I wonder how the reality of time zones will enable a 10am seminar in San Francisco to function at 1am in Shanghai or at 3am in Melbourne. I'm also unclear on how Minerva plans to scale up its educational business model while limiting class sizes to two dozen. And there are significant technological challenges associated with making this all run smoothly. But with our increasingly global 21st century making the traditional college quadrangle look a little parochial, the Minerva vision is an intriguing development. (Mazie, 2015)

Think about what this new century would look like—a college degree becomes a credential of measured and quantified skills from the alma mater. Graduates would have demonstrated proficiencies and competencies, and if departments and disciplines do their homework (which accrediting agencies attempt to ensure), would be poised for success in the workplace of their choice. They would have the tools to succeed in a chosen profession. Electives would be immediately relevant (and not courses "to get out of the way"), because these electives are essential for helping students develop skill-based strengths in areas of weakness. Content alone would no longer drive course selection, but content knowledge and skill development are powerfully intertwined to point students toward success in their academic majors and beyond.

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Conclusion

This discussion has considered the state of affairs of the Nigerian university system. It has also presented some of the predictions of state of affairs in the 22nd century. The paper also presented possible education models going forward from now to the 22nd century. Models of universities that will survive the century and win the 22nd century were discussed. The paper reiterated need and reasons for urgent reform. Perhaps one of most important reforms urgently needed apart from quality of staff and students, learning environment and other infrastructure, university business model and thrust, is the funding model that will enable the required autonomy for self-determination in the universities. Self-determination of content, pace and nature of development and competitive remuneration are prerequisites and critical to transforming the Nigerian Universities from locals to global champions, in the present and in the future.

At this juncture I want to recommend that the Federal Government begins the process of granting full autonomy to the University system. The major leg of the autonomy which has been so intractable to resolve is the Funding leg. It may require an inter-ministerial effort comprising the Federal ministry of Education, NUC, TETFUND, PTDF, The National Planning and Budget Office, Ministry of Finance and related stakeholders to design a sustainable funding arrangement under a full autonomy regime.

Please, permit me to end the way I started by being rhetorical. Is it now time to declare Education Emergency? Delay is dangerous.

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