Strategic Approach for Developing World-Class Universities in Egypt

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Abstract
In the past decade, the term "world-class university" "WCU" - also called "globally competitive universities", "world-class", "elite", or "flagship" universities- has become a catch phrase, not simply for improving the quality of learning and research in higher education but also, more important, for developing the capacity to compete in the global higher education marketplace through the acquisition and creation of advanced knowledge. The main objectives of   paper is to propose a strategic approach for developing world-class universities in Egypt, to achieve this objective the paper starts by attempting to construct an operational definition of a world class university. It then outlines the features of world class University, the requirements of the transformation into a world-class universities, the challenges involved in achieving world class universities, and the key problems and challenges of the Egyptian higher education system. Finally. The selected statistical population of the research are Higher Education experts [N=57], and a mix methods of conducting a questionnaire and interviews are used. The research questions are: 1- What does it mean to be a world-class university? 2-What are the essential features and characteristics of world-class university?3-How does the ecosystem influence the performance of universities?4-What are the present performance, problems and challenges of the Egyptian higher education system ? 5-What are the higher education reform initiatives in Egypt? 6-What are the requirements that could upgrade public Egyptian universities to world class universities? 7- What are the existing challenges of developing world-class universities?8-What Strategic approach is developed for Egypt to develop its world-class universities ? One-Sample Kolmogorov-Smirnov Test is used to analyze the data. Results: The result obtained in the study is to use the collaborative approach rather than to upgrade the present universities or create or merge.
Key words: World-class universities, global university rankings, higher education, Egypt.

1.Introduction

The goal of establishment and changing the university to world Class University is compete in the universal knowledge economy and also training productive human resources and promote national development. Furthermore worldwide competitiveness has given rise to the idea of world-class university. Considered one of the four recent movements in higher education, "the new concern on 'excellence' in the context of competing universities" (Bellon, 2005, p. 56) has prompted the interest of economic observers as well as higher education observers. The recent survey of higher education trends by The Economist argues that "the emergence of a super-league of global universities," also called world-class university, is the most significant development in higher education .As the global dynamics of higher education have expanded and grown in complexity, stakeholders in the sector are re-evaluating their priorities and expectations (World Bank, 2009b: ix). The dynamics have also led to the emergence of phenomenon that scholars are calling the World-class university (also called Flagship University, World-Class Higher Education Institution) institutions that transcend culture and education. They are "points of pride and comparison among nations that view their own status in relation to other nations" (World Bank, 2009b: x).

Since the emergence of global university rankings in 2003, the interrelated connection between World-Class Universities and university rankings has been a heated topic around world. Very few studies and researches investigate the subject of World Class Universities and as far as the researcher searched, has not find similar research about the establishment of World class universities in Egypt.

According to Lin 2009 necessarily any country should have a world class university in order to play its role in the world. (Lin 2009, p.x) states that

> "No longer are countries comfortable with developing their higher education systems
> to serve their local or national communities. Instead, global comparison indicators
> have gained significance in local development of universities".

Having a World Class University is everyone wishes and requires national, collective, and programmed efforts (Altbach, P.G., 2007). The same author adds ''The problem is that no one knows what a world-class university is…'' It may be true that there is no agreement on a definitive concept of ''world Class University'', but the research university model is in everyone's mind when the idea of ''world class universities'' is mentioned. Based on this thinking Egypt should focus on how to transform a few selected universities into World Class Universities. One definition of WCUs follows from Williams and Van Dyke (2007):

"In the past decade, the term 'world-class university' has become a catch phrase for not simply improving the quality of learning and research in higher education but more importantly for developing the capacity to compete in the global higher education marketplace through the acquisition and creation of advanced knowledge. With students looking to attend the best possible institution they can afford, often regardless of national borders, and governments keen on maximizing the returns on their investments on universities, global standing is becoming an increasingly important concern for institutions around the world". Governments have responded to this global reputational competition with additional funding to promote their national elite universities, as illustrated by the various "Excellence Initiatives" in countries as varied as China, Denmark, Germany, Nigeria, Russia, South Korea, Spain, or Taiwan. In some cases, the government has also encouraged its top universities to merge so as to achieve economies of scale, and reach a better position to compete globally. A few countries have even decided to establish new universities from scratch, with the explicit purpose of creating world-class institutions.

Another definition of a WCU follows from Levin, et. al. (2006):

"In general, there is wide agreement that great universities have three major roles: (1) Excellence in education of their students; (2) research, development and dissemination of knowledge; and (3) activities contributing to the cultural, scientific, and civic life of society. Excellence in education means the resources and organization of undergraduate, graduate, and professional instruction and educational opportunities for students. Clearly, this goal requires outstanding faculty, high quality teaching and other instructional activities, and availability of good libraries, laboratories, and other pertinent facilities as well as highly prepared and motivated students who serve to educate through their peer influence. Research, development, and dissemination of knowledge refer to the embryonic identification, growth, and extension of concepts and ideas as well as their transformation into applications, goods, and services that enhance understanding and welfare. Activities contributing to the cultural, scientific, and civic life of society are many and varied, but include conferences, publications, artistic events and forums as well as provision of services (e.g. medical clinics and hospitals or museums) that engage and contribute to the larger community including the regional, national, and international communities."

2. Statement of the problem

World-Class Universities – what they are, how to construct one, how to maintain them (if a country has any), and in what ways they genuinely contribute to national development efforts   (Altbach, 2004; Clark, 1998). The literature does not offer precise answers to the aforementioned questions but suggests some features or qualities that have been observed about WCU (Clark, 2004a; Salmi, 2009). Altbach (2004) asserts that despite its elusive description ("what is it?") or ways of building world-class universities ("how does a country get it?"), there is a compunction for every nation to have, at least, one WCU.

In the light of what has been mentioned ,this study seeks to propose a strategic approach for developing world-class universities in Egypt, to achieve this objective the study will answer the following questions:-

The main research question in this study is how to develop World-Class Universities in Egypt. This question is broken down as follows:

1. What does it mean to be a world-class university?
2. What are the essential features and characteristics of world-class university?
3. How does the ecosystem influence the performance of universities?
4. What are the present problems and challenges of the Egyptian higher education system?
5. What are the higher education reform initiatives in Egypt?
6. What are the requirements that could upgrade public Egyptian universities to world class universities?
7. What are the key existing challenges of developing world-class universities?
8. What Strategic approach is developed for Egypt to develop its world-class universities?

3. Scope and Objectives of the Study

The main objectives of this study is to :

1. Define the concept of the world class university.
2. Provides a characterization of the world class university.
3. Identify the key factors affecting the performance of universities.
4. Discusses the present problems and challenges of the Egyptian higher education system and how are these problems and challenges have been faced.
5. Identify the requirements and challenges of transferring public Egyptian universities to world class universities.
6.   Propose possible strategic approach for Egypt to develop its world-class universities .

4. Significance of the study

1. The results of this study will make known what should be done to for developing world-class universities in Egypt, since having a world class university is every nation wishes.

2. The practitioners may benefit from this study by virtue of understanding some of the attendant issues in developing world-class universities in a developing nation setting – its origins, what it entails, what benefits are anticipated and at what cost.

3. The findings of this study can serve as a map and guide for designing and plan of university system according to international standards .

5- Research methodology

5-1 Tools and methods of data collection

Researcher based on the previous studies used mix method of qualitative method by means of semi-organized interview and also quantitative method through questionnaire. In order to achieve the research objectives, a questionnaire consisted of closed and open questions were used. This questionnaire includes three main parts. First part assess necessity and proportionality of public Egyptian universities with the world class university, then in the second part , assess the existed challenges and problems in two steps and in the third part assess presented approaches. Answers of the questions ranked by Likert rating scale.

5-2 Validity and reliability of the questionnaire

One of the applied tools in the research is questionnaire. It should be noted that the obvious content validity of the questionnaire were provided through studying the researches and literature of world-class university and world class areas. After preparing the questionnaire it was delivered to a number of faculty experts of higher education and their corrective comments took into consideration. Reliability shows the correctness and accuracy rate of collected data for the stability and repeatability. The test reliability according to Cronbach's Alpha test was 87%.

5-3 Statistical sample and sampling method

Researcher partake of the experts' views in the field of higher education, educational administration, strategic management, information technology professionals [statistical population N = 57] randomly in the best university of Egypt (Cairo University, American University in Cairo, Mansoura University, Alexandria University, Benha University, Zagazig University, Assiut University, Minia University, University of Tanta).

5-4 Method of performing research and data analysis

The researcher after proposing the suggested transfer approaches based on literature review; a questionnaire and semi-organized interview was prepared and distributed among 57 experts. Totally, all of whom were interested and agreed to universities' transformation. However, consider this act as very difficult and mostly believed in universities' promotion. In the present study, the quantitative methods are used to present the data analyze results. In order to analyze the questionnaire data; SPSS software by one-dimensional Kolmogorov–Smirnov test [K - S] is used.

6-Theoretical Background and Contexts

Rightly or wrongly, all universities are now defined not simply within the context of national borders, but on a global level. In this regard, understanding what it means to be world class appears particularly central to the future visions and strategies of higher education establishments across the globe. Case study research (e.g. Marginson, 2011a) and the relevant literature (Hazelkorn, 2008 & 2011) confirm that the drive towards world-class university status is widespread, with only a few emerging nations being untouched by this movement.

World-class universities, commonly recognized as global most prestigious research universities, are essential in developing a nation's competitiveness in the global knowledge economy. In the past decade, the development of world-class universities is high on the policy agenda of various stakeholders across the globe. Various reforms and development strategies at both national and institutional levels have been outlined and observed. This policy concern has also been reinforced and intensified with the proliferation of international league tables (Salmi, 2009; King, 2011).

However, universities are situated in various higher education systems and are bounded by various cultural, social and historical origins and conditions. How do different countries and regions develop world-class universities? Are they facing the same issues and challenges? Can successful experiences and strategies in one country be copied in other national contexts? The Fourth International Conference on World-Class Universities, held in November 2011 in Shanghai, attempted to further explore and review these questions and issues. In this section the concept of world class university and its essential features and characteristics are defined.

6-1 The concept of world-class universities

The concept of world-class universities, a term adopted largely interchangeably with global research universities or flagship universities has been firmly embedded in governmental and institutional policies to promote national competitiveness in the increasingly globalized world. However, the paradox is that the concept has been widely employed without an explicit, clear definition. Philip Altbach (2004) notes the paradox of the quest for a ―world class‖ university thus: ―everyone wants one, no one knows what it is, and no one knows how to get one.

In the past decade, the term "world-class university" has been used to describe research universities on the pinnacle of the higher education hierarchy (Salmi, 2011, p. 323). What then is a global research university? Its qualities have been identified by (Altbach and Salmi 2011; Salmi, 2009), it must be globally networked, globally recognized and effective in local, national and global action. Moreover, it must house a global research capability and outputs in several fields, and maintain staff capable of interpreting and applying findings in most fields of knowledge. Furthermore, it needs to have a viable local doctoral program in some fields. Nowadays, owing to widening of aspirations, the research university functions of knowledge creation, dissemination, storage and transmission, and also research training, are now spreading from a limited group of nations to the majority of nations. Above all it has research capacity sufficient to generate globally significant output in the sciences and social sciences .

Altbach argued that "everyone wants one, no one knows what it is, and no one knows how to get one". It is commonly agreed that world-class universities are academic institutions committed to creating and disseminating knowledge in a range of disciplines and fields, delivering of elite education at all levels, serving national needs and furthering the international public good (Altbach, 2009; Liu, 2009). Salmi (2009, pp.3-4) states that

> "In the past decade, the term "world-class university" has become a catch phrase, not simply for improving the quality of learning and research in higher education but also, more important, for developing the capacity to compete in the global higher education market place through the acquisition, adaptation, and creation of advanced knowledge."

Among scholars, institutional administrators, and policy-makers, one of the common approaches to defining "world-class" is through the creation and ongoing development of league tables, such as the Academic Ranking of World Universities (ARWU) by Shanghai Jiao Tong University, the Times Higher Education World University Ranking and the QS World University Rankings. Despite different methodologies being used in evaluating universities in the international rankings, it is not difficult to observe that these indicators focus heavily on quality of education, internationalization, research output, prestige and impact (Salmi, 2009).

Ramakrishna, 2012considers world Class University with seven basic elements: 1: having international curriculum. 2: increase the student exchange. 3: increase the international students' registration. 4: emphasize on the improvement of faculty and professors' communication. 5: use information technology. 6: support the cooperation with foreign institutions to strengthen. 7: progress in the international development process.

For any university to become a WCU there are three criteria to be fulfilled, which are:

1. The University academics and students should publish their research in refereed journals and those articles should be cited by other researchers;
2. The University should have an international academic and student community;
3. The University should produce globally employable graduates.

Thereby, to me, a world-class university is a term of great complexity and it puts forward the notion of "academic excellence" or "appraising university quality", and has three main roles and in fact excellence in the same University functions is considered: 1: excellence in the education and research 2: Developing and broadcasting of knowledge 3: Pursuit cultural and scientific activities and social and civil life.

6-2 The essential features and characteristics of world class University

The literature has approached defining the essential features of world class University in a variety of ways (The Russell Group of Universities (2012)):

1. **relative performance against a set of measures (for example, ranking within league tables)**
2. **demonstration of specific critical success factors.**
3. **delivery of a range of specific outputs and wider benefits.**

These approaches are interlinked. For example, a world class university may demonstrate critical success factors, which enable it to deliver a wide range of outputs and benefits.

Relative performance measures

1. The ability to compare different universities, within and across countries, is important to a wide range of stakeholders including students, business, policymakers and academics. However, for world-class

universities success relates to the expansion of knowledge and

the shaping of minds. These things are necessarily very difficult to quantify or measure, and therefore the performance and reputation of any world-class university cannot ultimately be judged numerically, or measured in simple terms.

2. Rankings within league tables are often used as a tool for making comparisons, and are produced by a range of different organizations, including the media and academic research organizations. International league tables include the Times Higher Education World University Rankings, Academic Ranking of World Universities (the Shanghai Index) and QS World University Rankings. These tables compare institutions based on a range of different factors and provide a snapshot of the comparative performance of universities, countries and regions.

Specific critical success factors

An alternative approach to defining a world-class university is to examine the critical success factors which a world-class university demonstrates. A World Bank (Salmi, 2009) report suggests that there are three, inter-related critical success factors which distinguish a world-class university:

1. a high concentration of talent, both faculty and students.
2. sufficient resources to provide an extensive, comprehensive learning environment and a rich environment for advanced research.
3. favorable governance to encourage autonomy, strategic vision, innovation, efficient resource management and flexibility.

Range of specific outputs and wider benefits Research

– generating economic and social impacts through a large volume of excellent, leading research.

– tackling global challenges through promoting and facilitating multidisciplinary research.

– providing international leadership, advising governments, business, media and accessing the latest breakthroughs in research.

Knowledge exchange

– forming high-tech innovation clusters of knowledge intensive activity.

– attracting investment from business and international sources.

– exploiting the findings of research and technological breakthroughs.

Learning and teaching

– producing highly skilled, employable graduates and postgraduates through the delivery of high-quality research-led teaching and supervision .

Li, Whalley, Zhang, & Zhao , 2008 consider four features as main factors in achieving World Class University:

A: Commitment to excellence in all university areas [theoretically is easy, but practically it is very difficult] .

B: Participation in the latest and most advanced researches and regarding education, powerful and meaningful communication between education and research.

C: Researchers' freedom

D: They have permeable borders. This kind of university view is beyond the borders. Cooperate with the industry through open interdisciplinary of education and research.

Sharma, 2011 in a study titled; How to build a world class university? In this research, World Class Universities have three main characteristics. The first characteristic is the focus on talent. In fact, poorness or richness, smallness or largeness of the countries is not important. The second characteristic is the high cost of this type of university. In fact, the establishment of a World Class University cost millions of dollars. Saudi Arabia in 2007 was spent ten billions of dollars to establish Research University of graduate studies. Pakistan for establishing new universities of engineering, science and technology allocated a budget of 750 million dollars for each one and establishing Qatar university of Cornell Medical School cost 750 million dollars. The third characteristic is key and important elements such as competitive environment, unlimited scientific research, scientific freedom, creative thinking, innovation and creativity, academic independence and high flexibility, and removing the cumbersome rules.

Kerr, 2001 about academic freedom said: there are four kinds of freedom and this freedom is essential for world Class University. 1: Freedom in creativity and innovation 2: Freedom in order to get rid of bureaucracy and unnecessary limitation 3: Freedom from arbitrary decisions of financing 4: Freedom with partners.

Alden and Lin (2004) summarized the essential features and characteristics of world-class universities as follows:

1. has an international reputation for its research;
2. has an international reputation for its teaching;
3. has a number of research stars and world leaders in their fields;
4. is recognized not only by other world-class universities, e.g., United States of America Ivy League, but also outside the world of higher education;

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5. has a number of world-class departments (e.g., not necessarily all);
6. identifies and builds on its research strengths and has a distinctive reputation and focus, e.g., its "lead" subjects;
7. generates innovative ideas and produces basic and applied research in abundance;
8. produces path breaking research output recognized by peers and prizes, e.g., Nobel Prize Winners;
9. attracts the most able students and produces the best graduates;
10. can attract and retain the best staff;
11. can recruit staff and students from an international market;
12. attracts a high proportion of postgraduate students, both taught and research; attracts a high proportion of students from overseas;
13. operates within a global market and is international in many activities, e.g., research links, student and staff exchanges, throughput of visitors of international standing;
14. has a very sound financial base;
15. receives large endowment capital and income;
16. has diversified sources of income, e.g., government, private companies sector, research income, overseas student fees;
17. provides a high quality and supportive research and educational
18. environment for both its staff and students, e.g., high quality buildings and facilities/high quality campus;
19. has a first-class management team with strategic vision and implementation plans;
20. produces graduates who end up in positions of influence and/or power, e.g., movers-and-shakers, e.g., Prime Ministers and Presidents;
21. often has a long history of superior achievement, e.g., Oxford and Cambridge in the United Kingdom and Harvard in the United States of America;
22. makes a big contribution to society and our times;
23. continually benchmarks with top universities and departments worldwide;
24. has the confidence to set its own agenda.

6-3 Alignment of fundamental characteristics of world-class university

The superior essential features and characteristics of world class University —highly sought graduates, leading-edge research, and dynamic technology transfer—can essentially be attributed to three complementary sets of factors (Salmi, 2009): (a) a high concentration of talent (academics and students), (b) abundant resources to offer a rich learning environment and support advanced research, and (c) favorable governance features that encourage strategic vision, innovation, and flexibility, enabling institutions to make decisions and manage resources without being encumbered by bureaucracy (Figure1). While the configuration of results—research, learning and technology transfer— depends on the nature and specific mission of each higher education institution (research intensive, teaching, applied science, etc.), the alignment of the three sets of factors is a requirement for any kind of institution.
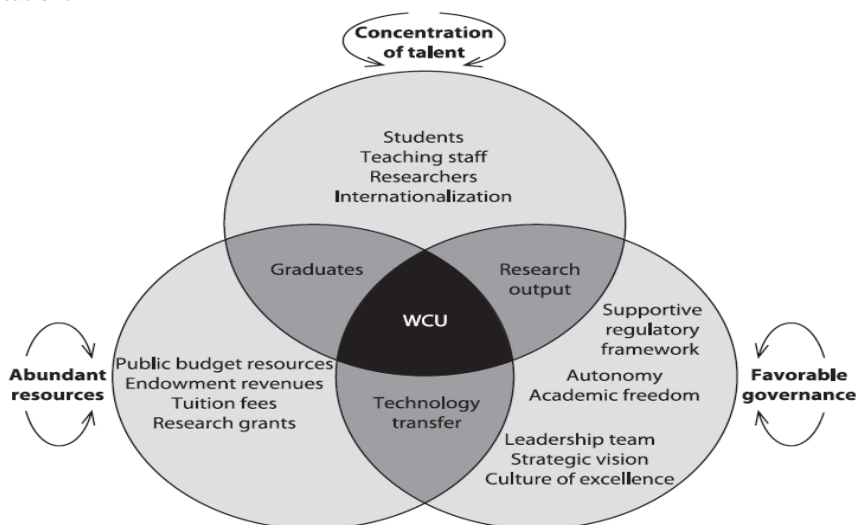

Figure 1. Characteristics of a World-class university (WCU): Alignment of Key Factors.
Source: Salmi, 2013, p. 132.

Salmi, 2014, indicated that the first and perhaps foremost determinant of academic excellence is the presence of a critical mass of top students and outstanding faculty. The most recognized universities globally are able to select the best students and attract the most qualified professors and researchers, not only from the country where they are located but also internationally.

Abundance of resources is the second element that characterizes well-performing universities, especially in the case of research-intensive universities that require sophisticated laboratories and equipment. These universities have four main sources of financing: government budget funding for operational expenditures and research, contract research from public organizations and private firms, the financial returns generated by endowments and gifts, and tuition fees.

The third dimension concerns the degree of those universities enjoy. World-class universities operate in an environment that fosters competitiveness, unrestrained scientific inquiry, critical thinking, innovation, and creativity. Institutions that have substantial autonomy are also more flexible because they are not bound by cumbersome bureaucracies and externally imposed standards, notwithstanding the legitimate accountability approach s that do bind them. As a result, they can manage their resources with agility and quickly respond to the demands of a rapidly changing global labor market. These autonomy elements are necessary, though not sufficient, to establish and maintain world-class universities. Other crucial governance features are needed, such as inspiring and persistent leaders; a strong strategic vision of where the institution is going; a philosophy of success and excellence; and a culture of constant reflection, organizational learning, and change.

Jamil's paradigm could be referred to as the World Bank paradigm because he anchors educational matters at the institution. There is no doubt that his analysis is ideal for establishing a world class university worldwide. He, however, missed the realities in most developing economies. Favorable Governance, for instance, is elusive in most failed States and remained suspect in stabled and emerging developing nations like Egypt. There is absence of abundance resources because promises are common at fanfares that celebrates opening of new universities. The culture of endowment is mostly absent, and where it exists, corrupt officials use the opportunity to become billionaires. There is a continuous dichotomy between faculty, staff, and students.

It should be noted that the World Bank report on the subject and its definition of world paradigm for classification of an institution is subjective and not entirely adaptable in many parts of the world. To the World Bank,

> All world-class universities are research universities, and they always play a critical
> role within the tertiary education system in training the professionals, scientists and
> researchers needed for the economic development and generating new knowledge
> in support of the national innovation system (World Bank, 2002).

6-4 Theory of change within higher education institutions

Salmi, 2014, indicated that the above framework can be complemented by a theory of change as represented in Figure 2, the theory of change involves two dimensions. First, it identifies institutional-level factors that affect the performance and sustainability of higher education institutions by directly influencing their mode of operation. Second, it models the inputs and intermediary results that, according to the literature and international experience, lead to better graduates and research.
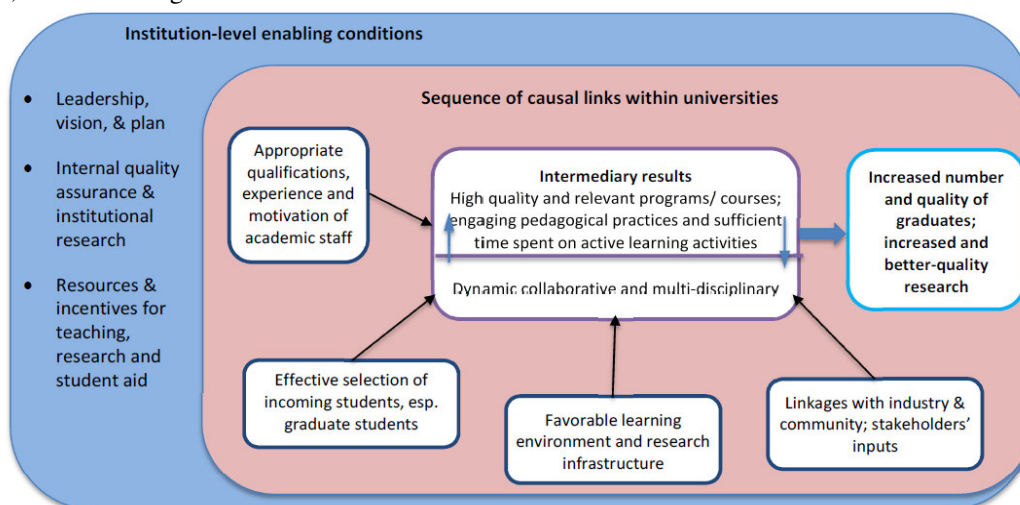

Figure 2 - Theory of change for producing well-qualified graduates and high quality research
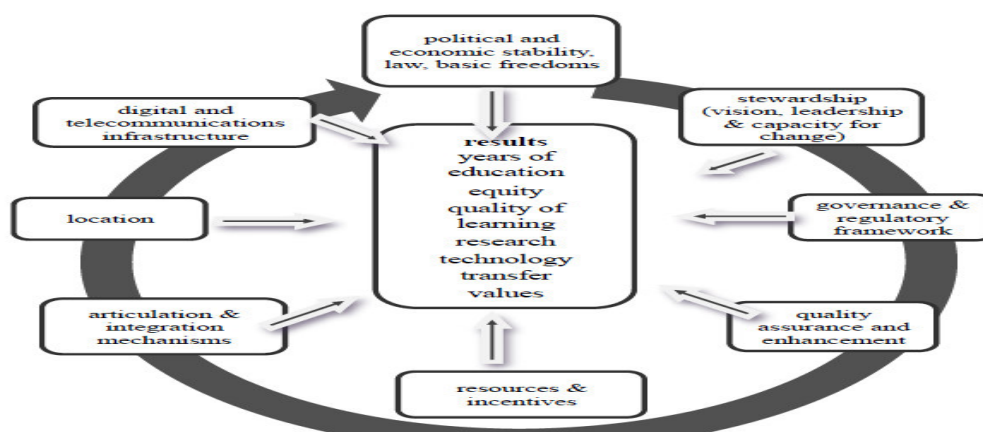**Source:** Salmi, 2014 .

The most important dimensions in the causal chain explaining the performance of any higher education institutions include the following aspects (Salmi,J.,2014):

- academic preparation and motivation of incoming students;
- qualifications, experience and motivation of academic staff influenced, in turn, by Institutional recruitment policies, faculty development programs and incentives systems;
- existence of close linkages with employers and the community to improve the relevance of students' learning experiences and ensure that university research is oriented to the resolution of priority economic and social problems;
- learning environment and research infrastructure;

6-5 Higher education ecosystem and world class university

The best universities in the world, or in a country, do not operate in a vacuum. A full assessment cannot be made without taking into consideration some significant external factors of what could be called the higher education *ecosystem*. As illustrated in Figure 3, the main dimensions of the ecosystem include the following elements (Salmi, 2011) :

• **Macro environment**: The political and economic situation of the country, along with the rule of law and respect for fundamental freedoms among those who exert influence, in particular, on the governance of higher education institutions (selection of university leaders), their level of funding, academic freedom and safety for individuals;

• **Leadership at the national level**: Vision and strategic plan to shape and guide the future of higher education and the technical and political capacity to implement the necessary reforms;

• **Governance and regulatory framework**: Governance structures and processes at the national and institutional levels that determine the degree of autonomy, as well as accountability approach s;

• **Quality assurance system**: The institutional framework and the tools for assessing and encouraging the quality of research, teaching and learning;

• **Resources and financial incentives**: The resources available to fund higher education and the approach s used to allocate these resources;

• **Location**: The quality of the setting and infrastructure, which allows the university to attract top scholars and talented students, and finally;

• **Digital and telecommunications infrastructure**: The availability of a broadband connection.

Factors determining university performance

Figure 3. Understanding how the ecosystem influences the performance of top universities.
Source: Salmi, 2011b, p.336.

Salmi, 2011b reached a significant new finding from the case studies is the weight of the higher education ecosystem in influencing the performance of universities seeking to achieve world-class status. The various features of the ecosystem—from the macroeconomic and political situation to key dimensions of governance to resource mobilization and allocation to location and the digital infrastructure—have a strong effect on the ability of universities to make progress on the road to world-class universities.

6-6 Egyptian universities in the world rankings
ARWU 2009: No Egyptian U among top 500
ARWU 2013: Cairo University (401-500)
ARWU 2014: Cairo University (358-500)

Table 1 : Top 10 WCUs in Egypt

World Ranking	University
358	Cairo University
904	American University in Cairo
911	Mansoura University
1223	Alexandria University
1493	Benha University
1729	Zagazig University
2195	Assiut University
2575	Minia University
2996	University of Tanta
3050	Suez Canal University

(**Source**: ARWU, 2014)

Table 2 : Top 10 WCUs in the Arab Region

1	King Saud University	Saudi Arabia
2	King Abdulaziz University	Saudi Arabia
3	King Abdullah University of Science & Technology	Saudi Arabia
4	Cairo University	Egypt
5	American University of Beirut	Lebanon
6	Mansoura University	Egypt
7	Ain Shams University	Egypt
8	King Fahd University of Petroleum & Minerals	Saudi Arabia
9	Alexandria University	Egypt
10	United Arab Emirates University	United Arab Emirates

(**Source**: U.S. News International, 2014)

Table 3 : Top 10 WCUs in the World

World Ranking	University
1	Harvard University
2	Stanford University
3	Massachusetts Institute of Technology (MIT)
4	University of California-Berkeley
5	University of Cambridge
6	Princeton University
7	California Institute of Technology
8	Columbia University
9	University of Chicago
10	University of Oxford

(**Source**: ARWU, 2014)

The next section of the study aims to provide an overview of the present performance, Problems and challenges of the Egyptian higher education system, and identify existing issues and challenges. Second, on the basis of this diagnosis, it explores the main reforms and policy options that could be considered in order to address the problem at hand that is ; developing World-Class Universities in Egypt.

6-7 Overview of the present Problems and challenges of the Egyptian higher education system
The higher education system in Egypt is made up of 23 public universities (established and run by the government), 22 private universities, and 131 private higher institutes, (established and run by private consortiums sometimes in collaboration with foreign higher education colleges or universities, e.g., the British or German or Russian universities), and 150 private higher education institutes (established and run by non-governmental organizations). Students also have the choice to obtain degrees from the Workers University Al-Azhar University (in which enrollment is limited to graduates of the Al-Azhar school system) and the Egyptian E-Learning University. Alternatively, students can join the open learning programs offered by a number of public universities (e.g., Cairo university has many open learning programs in the liberal arts) (Barsoum 2014).

As of 2011/2012, 1.6 million students were enrolled in public universities and around 87,000 in private universities. In terms of institutes, in 2011/2012, there were around 33,000 students enrolled in private institutes and around 305,000 in higher institutes supervised by the Ministry of Higher Education (CAPMAS 2013). Gross enrollment rates in higher education are expected to expand from 28% to 35% by 2021 due to increasing demand for higher education (OECD & World Bank 2010).

Due to their limited institutional capacity and the design of their governance structures, higher education institutions in Egypt is not well positioned to deliver high quality instruction. The latest Global Competitiveness ranking (2013-2014) compiled by the World Economic Forum (WEF) ranks Egypt 118th out of 148 countries in terms of the overall competitiveness of its institutions and higher education policies (Schwab 2013). Egypt's ranking actually fell since 2012-2013. As well as having an overall institutional environment that is inadequately competitive, Egypt also performs poorly in terms of its higher education and training competitiveness, where it also ranks 118th (Schwab 2013).

However, Higher education is also failing to provide the majority of students with improved job prospects .The higher education system suffers generally and basically from lack of independence, and is highly centralized across various state authorities and several layers of control (OECD & World Bank 2010). Like many countries in the Arab region, Egyptian higher education institutions operate under a very centralized control system and rigid bureaucracies. The lack of autonomy is thus connected with lack of academic freedom, lack of participation in decision-making and the absence of accountability and transparency. Lack of autonomy is also due to "the control of the Higher Council for Universities over academic policies", "lack of transparency" and "poor public relations"

Higher education institutions are administered as extensions of state authority (Wilkens, 2011). For instance, university presidents were primarily selected for their loyalty to the governing party, although this has changed since the January 25th 2011 revolution (Lindsey 2012) The state-dominated approach has led to numerous dysfunctions in the higher education system including stifled institutional autonomy, limited flexibility, rigidity of education and training programs, and more importantly, weak responsiveness to student demands, the needs of the labor market and national development goals (OECD & World Bank 2010). This lack of autonomy and self-management continues to produce a mismatch in the demand and supply of skills in the Egyptian labor market, which is problematic for both graduates and employers (OECD & World Bank 2010).

Despite the fact the public spending on higher education is reasonably high in Egypt, due to the higher education expansion policies, public institutions are severely underfinanced in terms of faculty, infrastructure, equipment and learning materials (OECD & World Bank 2010). Budget allocation approach s are not performance-based, nor do they reflect the actual needs of the higher education institutions or provide the incentives required to align their educational processes and programs with community needs and employers' expectations (OECD & World Bank 2010; Fahim & Sami 2010). This public funding approach provides no financial incentive for public institutions to use the already limited resources more efficiently and cost effectively (OECD & World Bank 2010). Furthermore, As in most of the Arab world, levels of investment in research and development (R&D) are very low, at less than 1 per cent of GDP, and there are few linkages between higher education and business.

In addition, the Egyptian higher education system continues to be hindered by an outdated framework of public administration as well as an overly fragmented and detailed legal Structure that allows for excessive state intervention. State agencies control the curriculum design, approval of new degrees, and admission of students. Like public higher education institutions, private programs are similarly burdened by many of the restrictive laws and regulations, which undermine the potential of the private sector in higher education (OECD & World Bank, 2010). Students' admission to public and private higher education institutions is solely based on secondary school examinations and centrally administered by the Central Placement Office. This admission process gives no institutional autonomy or flexibility for higher education institutions to incorporate their missions and capacities into their admissions (OECD & World Bank, 2010).

Computer labs, scientific equipment, and library books are benefits that not all universities enjoy (Salmi 1992; Shann 1992). Even when resources are available they are spread so thin that they have little impact. Most Egyptian universities and higher institutions are underequipped; they do not have the necessary scientific equipment or materials for experiments (Shann 1992). Libraries in Egyptian universities are also in very poor condition. According to Mary Shann (1992), in the early 1990s, some universities had books that were 15 and 20 years old. The libraries in most public universities do not have the necessary funds to update their collections or provide online resources for their students.

Another challenge is the students' limited familiarity with topics outside of their disciplines. College students in Egypt select their specialization in their first year. Their choice is based on the students' scores on the General Secondary Education Certificate (Thanaweya a'Amma). Thus they get limited exposure to anything but their field of study. Another factor that limits the scope further is that the course professor is considered as the sole source of knowledge.

Assessment is another factor behind the limited scope of students' knowledge. Universities in Egypt follow the two-semester system, each semester lasting for 17 weeks, 15 of them spent in studies and 2 for semester examinations followed by a 2week semester break. In order to graduate, students should receive a passing grade in all subjects. Students' assessment is graded on a four-rank scale: acceptable – good – very good – excellent, determined by their total GPA over the four years of study. In general, Egyptian universities suffer from old assessment methods which focus on the final evaluation limited to measuring knowledge acquisition. They lack standardized techniques and modern methods in evaluation (El Amine,2014). In most western universities course assessment is varied and would incorporate multiple instruments such as quizzes, assignments, midterms, and presentations. In Egyptian public universities, on the other hand, assessment usually takes the form of an end of semester exam that represents 100 percent of the final grade depending on faculty policies, except for faculties of medicine which have practical, oral, and written exams.

Academic freedom in Egypt is a major concern in the current higher education system. This debate of academic freedom affects both the students and the faculty in public and private universities alike (Reading Between the 'Red Lines' 2005). Enforced by different entities, students, faculty members and institutions suffer from the lack of academic freedom. In most Egyptian educational institutions academic freedom is almost nonexistent. The government of Egypt has established a complete system to ensure full control on the academic environment, starting with the presence of university police, to exhaustive rules and regulations, to political appointment of university presidents and deans (Reading between the 'Red Lines' 2005). This control extends to student activities, represented in repression of student unions, student clubs, and student publications. The government, through the university president and faculty deans, reviews and controls all course objectives, materials and outcomes (Reading Between the 'Red Lines' 2005).

The absence of a public accountability system, the prevalence of a top-down authority approach which lays the grounds for the university's subordination to higher authorities, and the lack of partnerships with local communities or the inefficiency in existing ones are another major concerns.

In general, public universities are self-sufficient in terms of the number of faculty members they have in different fields of specializations. However, information on quality of this faculty is absent. Student/teacher ratio is acceptable (20 to 30 students per faculty member). Some general trends are noticed: lack of teachers in some specializations (due to shortage in numbers, or to some favoring work in the private sector, or to low wages, or to lending and transferring to developed or rich countries, especially as in the Gulf (El Amine,2014) .

6-8 Higher education Reform in Egypt
In recent years, the Government of Egypt has driven major reforms for modernizing the country. While the success of this effort depends heavily on the quality of education and skills of the population . Accessibility and lifelong learning Egypt is going through the second phase of its Higher Education Reform plan. The first phase started in 2003 and ended in 2008. The second phase started in January 2009 and will last for 4 years. The academic society is inspired by the January 25th, 2011 revolution; they are hoping for a radical reform. Some positive steps have taken place such as free elections of student unions, and electing, for the first time, the universities' presidents. How and whether or not change will continue is still a question that only time can provide an answer for.

The government set out a long term program that continues until 2017 which is aimed at raising the level of efficiency by granting universities more autonomy in the modernization of their curricula and the allocation of their internal resources. Egyptian Ministry of Higher Education has indicated that the plans which began to be implemented before the revolution are continuing as planned without significant changes in the post-revolutionary period. Since the revolution the ministry has, however, been undergoing continuous changes to its structure and personnel, and this has caused some stagnation in the policy design and its implementation (Rezk ; Katarína, 2012). The main objectives of higher education reform in Egypt can be summarized as follows:

1. To increase the opportunities for higher education in Egypt.
2. To assure a quality educated graduate and strong research-based highly ranked academic institutions.
3. To motivate stakeholders to continuously improve, modernize, and finance the higher education institutions and programs.
4. To enhance creativity and innovation skills of young generation to lead and advance production and service sectors in the economic development plans.
5. To prepare HEI's and programs be attractive for expatriates from neighboring countries to come to study in Egypt.
6. To foster the use of technology, and facilitate lifelong learning.
7. To develop – to the highest possible level – technical education and vocational training.

6-8-1 lifelong learning
The way to ensure practicality and implementation of lifelong learning concept is to provide enough

opportunities through formal and non-formal education and training programs with appropriate requirements for enrollment. The success of such programs depends mostly on the government formal effort to ensure the following :(Helal, 2014)

- Providing educational and training programs in diversified fields and disciplines.
- Reducing constraints of age or program duration.
- Subsidizing these programs such that cost may not be an inhibiting factor for enrolment.
- Recognition of the degrees and certificates resulting from such programs.
- Providing multiple access to individuals with good reasons for re-entry.

6-8-2 Equity

Egypt has always been keen to maintain equity between citizens in higher education**.** Urban and rural area equity is considered in the strategic master plan of higher education in Egypt. Gender equity is assured by the central admission system to all public and private universities in which only the GPA in high school exam (Thanawya Amma) is the decisive factor. In fact there are additional faculties that accept only girls (Faculty of girls in Ain Shams University, and to most recently all faculties of nursing). The result is that many colleges (e.g Medicine, Pharmacy, Science and of course Art and literature) have more female students than male students.

6-8-3 Monitoring and Control System

According to the Law No. 52 issued in 1970, the Ministry of Higher Education has the right to control and supervise all the affairs of institutions, such as educational matters, financial procedures, organizational functions and the like. However, the Ministry did not exercise this right until 2013. This monitoring system was set up and operated by the Ministerial Decree No. 446 dated February 19, 2013. It involves carrying out systematic visits to the institutes by reviewers appointed by the Ministry.

6-8-4Applying Quality Assurance Measures and Seeking Accreditation in Higher education Institutes

The Egyptian government has realized the need for maintaining quality in higher education programs to assure appropriate and competitive qualification for the graduates. To guarantee that , Projects Management Unit (PMU) was established in 2002 after the National Conference for Education Development with the aim of reforming higher education in Egypt and addressing the 21st century challenges as announced in the Bologna process principles (1999) and in Prague (2001). It is a special unit operating within the Ministry of Higher Education in Egypt reporting directly to the Minister of Higher Education. One of the key projects that PMU has worked on was "Continuous Improvement and Qualifying for Accreditation CIQAP." The aim of this project was to provide technical support, monitor and evaluate the implementation of operational plans, which would lead to accreditation. PMU has, until November 2013, only worked with "Government Universities." However, since 2013 all higher education institutions were given the chance to seek support from PMU (Ministerial Decree 4445, dated November 23, 2013). A new project was launched: Competitive Excellence Project of Higher Education Institutions (CEPHEI).This project aims to increase the competitiveness of the Egyptian institutions of higher education in the international and regional job markets by (Elsayad,2014):

- Promoting excellence and innovative practices in the fields of education, scientific research and society services.
- Facilitating sustainable development of the financial resources of higher education institutions.
- Creating and activating the channels of communication with civil society organizations, and national, and international higher education providers.

A series of meetings to cultivate awareness took place in December 2013 to introduce the technical support scheme. Representatives from all institutes attended those PMU meetings. Most institutes have now established a "Quality Assurance Unit" and are beginning to apply the accreditation requirements.

Strategic planning for higher education institutions is another reform initiatives introduced in an attempt to address the issue of quality in education. These strategic plans were drawn to identify specialties needed and geographic locations for new campuses. Student admissions for 2013-2014 were based on the number of faculty members and the surface area of educational facilities within each institute (Decree by Council of Higher Education Institutes at 29-1-2013 meeting). The Council of Higher Education agreed upon a plan to increase the faculty/student ratio for each educational specialty as shown in Table 3.

Table 3: Approved Plan for Faculty/Student Ratio for Educational Specialties and Future Academic Years.

Educational Specialty	2013-2014	2014-2015	2015-2016
Applied arts, engineering, agriculture and nursing	1: 75	1: 60	1: 50
Mass communication, liberal arts	1: 100	1: 80	1: 60
Social work, hotel and tourism and business	1: 150	1: 120	1: 100

There were other decrees issued during the year 2013 that aimed to improve the quality of education in higher education institutions as follows (Elsayad,2014):

- Ministerial Decree No. 446 dated 19-2-2013 declared the need to establish a strict system for

monitoring and control of the education process in all higher education institutes.
- Ministerial Decree No. 1945, dated 31-7-2013, made it obligatory for institutes to qualify for institutional and program accreditation. This was followed by Ministerial Decree 4445 dated 23-11-2013 which instructed institutes to seek technical support from the Projects Management Unit in the Ministry of Higher Education, in order to qualify for accreditation.

The National Authority for Quality Assurance and the Accreditation of Education was established in 2006 to assess both the instructional process and the institutional capacity of schools for accreditation.

6-8-5 Financing

The Egyptian government recognizes the shortcomings of the current system, and has taken steps to garner additional funding for public universities. For instance, to address the issues of efficiency, the government has tentatively attempted to apply cost sharing to special programs in public universities, it has also attempted to link academic staff remuneration with the level of performance. In addition, the government has encouraged the private provision of higher education in order to meet the challenges of increased future demand for higher education (Fahim, 2009).

6-8-6 Competitiveness

Until recently Egypt has always been the center for education in the Arab world and some African countries. It is now expanding its education programs across the borders to reach gulf countries. Egyptian HE institutions are opening education facilities in some Arab gulf states. HE reform plans in Egypt are considering the competition of other HE institutions in the region in terms of quality, cost, and flexibility.

6-8-7 Internationalization

Internationalization is an important criterion for higher education reform in Egypt is to open up for international interaction and recognition. This criterion requires cooperation with other international HE institutions through exchange programs, joint degree or double degree programs which will help in mutual recognition (Helal,2014)
.

6-8-8 E-learning

E-learning has been widely used as a tool in the learning process in most of the Egyptian universities. In spite of its importance, still many of the academic staff in these universities tends to avoid using it or using it only to upload materials and neglect the interactive activities offered by such systems(El-Seoud, 2013). The Egyptian government reform initiatives to address the issue of E-learning has established the National e-Learning Center (NELC) to serve as a technical unit within the Supreme Council of Universities to promote and support the development of e-learning in Egypt by improving the development of the learning content to the highest maturity level, to achieve strong presence both locally and regionally. Another initiative to support E-learning in Egyptian universities is The Information and Communication Technology Project (ICTP) that includes five sub- components at a wide level, as well as activities at the university level to address quality and efficiency related issues. these subcomponents include: Network Infrastructure, Management Information System, (MIS), e-learning, Digital Libraries, and ICT training(ICTP,2008).

7- The Requirements of transferring public Egyptian universities to world class universities
7-1 Two Different Perspectives & Two Dimensions
1. Universities operate in both national and global contexts. The world-class idea falls into the global sphere. It assumes that the university is competing with the best academic institutions in the world and is aspiring to the pinnacle of excellence and recognition. National and even regional realities may differ. They relate to the need of the immediate society and economy and imply responsiveness to local communities. In these contexts, the nature of academic performance and roles may differ from what is expected at institutions competing in the global realm. To label one sphere world class while relegating the others to the nether regions of the academic hierarchy is perhaps inevitable, but nonetheless unfortunate.
2. Two complementary perspectives need to be considered in examining how to establish new world-class universities. The first dimension, of an **external nature**, concerns the role of government at the national, state, and provincial levels and the resources that can be made available to enhance the stature of institutions. The second dimension is **internal**. It has to do with the individual institutions themselves and the necessary evolution and steps that they need to take to transform themselves into world-class institutions.

7-2 Government Role

Recent international experience shows that three basic strategies can be followed to establish world-class universities:

– Governments could consider upgrading a small number of existing universities that have the potential for excelling (**picking winners**).

– Governments could encourage a number of existing institutions to merge and transform into a new university that would achieve the type of synergies corresponding to a world-class institution (**hybrid formula**).
– Governments could create new world-class universities from scratch (**clean-slate approach**). (Liu, Wang and Cheng, 2011)
-Government could bring the various universities under one umbrella to put join effort in the area of their own expertise to transform into WCU.

8- Strategic transfer approaches
Regarding the provision of higher education infrastructure in order to upgrade the universities to World Class Universities, three main approach s according to comparative and universal studies offered as follows and among this four Transfer approaches .

Countries deciding to establish world-class universities by upgrading or merging existing ones must also chose an appropriate methodology to select among existing universities. According to Jamil Salmi, there are four general models for building a WCU:-

1.   Upgrading existing institutions approach
One of the main benefits of this approach is that the costs can be significantly less than those of building new institutions from scratch. This is the approach followed by China since the early 1980s, with a sequence of carefully targeted reforms and investment programs. However upgrading existing institutions is the less-expensive option, but difficult to reform and transform .In this approach, all the indexes, standards, norms and rules, collected based on comparative studies and has been passed through all philosophical, social, cultural, political filtering. So to upgrading the current systems of Egyptian traditional universities by action plan, for example in a five-year period, in this case it will be provided a gradual upgrading in universities. In this process, all instructions, guidance, executive regulations and their related rules are prepared, designed and implemented. Usually the process of promotion and upgrading takes two or three decades depended on multitude focus on the talents and financial resources able to consider and govern and dominate the independence and academic freedom from the very beginning (Sharma, Y., 2011).

2.   Merging existing institutions approach
Another possible approach to building up a world-class university consists of promoting mergers among existing institutions. France and Denmark are two countries that have diligently embarked on this path in recent years. Merging existing institutions can provide opportunities to change organizational culture, but are difficult to manage. Combination and merging of existed universities in a new integrated system is done by Joint Ventures and integration. In France, individual universities and *grandes écoles* are exploring the feasibility of merging on a regional basis. In Denmark, the government has set up an Innovation Fund that would reward, among other things, the combination of similar institutions. In China, too, a number of mergers have taken place to consolidate existing institutions. For example, Beijing Medical University merged with Beijing University in 2000; similarly, in Shanghai, Fudan University merged with a medical university, and Zhejiang University was created out of the merger of five universities.

The great advantage of mergers is that they can result in stronger institutions able to capitalize on the new synergies that their combined human and financial resources may generate.

3. Creation new institutions approach
Creating new institutions from scratch provide the most opportunities to create a culture of excellence and select the best staff, but are also the most expensive policy option .According to Sharma, Y. , 2011 generally establishment done faster and more efficient than upgrading. In fact, indexes, standards, software, and programs are specified in a period transparently and within the manner. In this approach , two major action must done: 1: design university according to world class in order to explain the elements, objectives, comprehensive plan and road map with the international standards. 2: the execution and development stage and at this stage, in a maximum of two to five years, executive fields will provided and University implemented its programs according to international standards.

4. Collaborative approach
Collaborative approach is not only cost saving but also to provide opportunities to all the existing universities in excelling in their respective fields. Because of this, a combination option of upgrading and merging existing institutions may also be pursued. The problem in merging is that one existing university has to lose its identity and managing change in this scenario would be challenging. Collaborative approach can be implemented at national and at international levels simultaneously. This strategy has been partially implemented by MUST. For example, MUST is finalizing its collaboration with International University of Japan (IUJ) and IEC in India. For multi dimensional and faster development at lower money involvement, this approach is suitable for the country.

In sum, there is no universal model for building up WCUs, just as there is no one ideal model for a WCU. Each country must choose a strategy that is most suitable for itself.

The pros & cons of each approach as discussed by Jamil (2006) are mentioned on Table 1.

Table 1 –Costs and Benefits of Strategic Approaches for Establishing World-Class Universities

Approach / Conditions	Upgrading Existing Institutions	Merging Existing Institutions	Creation New Institutions	Collaborative approach
Ability to Attract Talent	Difficult to renew staff and change the brand to attract top students	Opportunity to change the leadership and to attract new staff. Existing staff may resist	Opportunity to select the best (staff and students). Difficulties in recruiting top students to "unknown" institution. Need to build up research and teaching traditions.	Opportunity to select students in varied area of study
Costs	Less expensive	Neutral	More expensive	Less Expensive
Governance	Difficult to change mode of operation within same regulatory framework	More likely to work with different legal status than existing institutions	Opportunity to create appropriate framework	Difficult to bring various independent institutions under one umbrella, conflict of interest
Institutional Culture	Difficult to transform from within	May be difficult to create a new identity out of distinct institutional cultures	Opportunity to create culture of excellence	Difficult to change existing culture
Change Management	Major consultation and communication campaign with all stakeholders	"Normative" approach to educate all stakeholders about expected norms and institutional culture	"Environmental adaptive" approach to communicate and socially market the new institution	Difficult to apply Lewin's change model

Source: Liu ,Nian Cai, Wang , Qi and Cheng ,Ying , 2011, xii.

It should be noted that these generic approaches are not mutually incompatible and that countries may pursue a combination of strategies based on these models.

8-2 key questions need to be answered
The establishment of a world-class university requires strong leadership, a bold vision of the institution's mission and goals, and a clearly articulated strategic plan to translate the vision into concrete targets and programs. Universities that aspire to better results engage in an objective assessment of their strengths and areas for improvement, set new stretch goals, and design and implement a renewal plan that can lead to improved performance. The following key questions need to be answered by governments and institutions to guide the quest toward establishing world-class universities Salmi And Nian Cai , 2011) :-

At the National Level
1. Why does the country need a world-class university?
2. What is the economic rationale and the expected added value compared with the contribution of existing institutions?
3. How many world-class universities are desirable and affordable as a public sector investment?
4. What strategy would work best in the country context: upgrading existing institutions, merging existing institutions, or creating new institutions?
5. What should be the selection process among existing institutions if the first or second approach is chosen?
6. What will be the relationship and articulation between the new institution(s) and existing higher education institutions?
7. How will the transformation be financed?
8. What share should fall under the public budget? What share should be borne by the private sector?
9. What incentives should be offered (for example, land grants and tax exemptions)?

10. What will the government's role be in this process?

At the institutional level

11. What is the vision for this university? What niche will it occupy?
12. What level of autonomy and forms of accountability will be appropriate?
13. What are the governance arrangements that must be put in place to facilitate this transformation and support suitable management practices?
14. How can the institution build the best leadership team?
15. What are the vision and mission statements, and what are the specific goals that the university is seeking to achieve?
16. In what niche(s) will it pursue excellence in teaching and research?
17. What is the target student population?
18. What are the internationalization goals that the university needs to achieve (with regard to faculty, students, programs, and so forth)?
19. What is the likely cost of the proposed qualitative leap, and how is it going to be funded?
20. How will success be measured?
21. What monitoring systems, outcome indicators, and accountability approach s will be used?

9-The challenges of establishing world-class universities

There is no universal recipe or magic formula for making a world-class university. Furthermore, the transformation of the university system cannot take place in isolation. A long-term vision for creating world-class universities - and its implementation - should be closely articulated with: (a) the country's overall economic and social development strategy, (b) ongoing changes and planned reforms at the lower levels of the education system, and (c) plans for the development of other types of higher education institutions to build an integrated system of teaching, research, and technology-oriented institutions. Furthermore, (Salmi, , 2010) emphasized that achieving the ambitious result of launching a high quality, new university is easier said than done, however, as building a world-class university requires more than knee-jerk reactions to the rankings or massive infusion of government money. It is a complex and lengthy process that has only recently begun to receive careful attention. The following examples outline the most common pitfalls encountered in some of the current projects that aim at establishing a new flagship institution.

1.Build a magnificent campus; expect magic to happen

The physical infrastructure is obviously the most visible part of a new university. A lot of care is usually given to the design and construction of impressive, state-of-the-art facilities, and rightly so. Good academic infrastructure is certainly an important part of the education experience of students, and researchers need adequate laboratories to carry out leading-edge scientific inquiries. But, without an appropriate governance set-up, a strong leadership team, a well-thought curriculum, and highly qualified academics, the beautiful campus will remain little more than an empty shell that embodies a waste of valuable resources.

2.Design the curriculum after constructing the facilities

It is often assumed that teaching and learning can easily adapt to the physical environment of the institution. This may be true for traditional lecture-based teaching, but innovative pedagogical practices often require equally innovative facilities. For example, interactive approaches, problem-based learning or pedagogical methods relying heavily on teamwork and peer learning are constrained by the physical limitations of conventional lecture halls or even classrooms.

3. Import content from somewhere else. Why reinvent the wheel? The teams in charge of establishing new universities tend to look almost exclusively at the top-ranked institutions in industrial countries to buy or copy elements of their curriculum instead of going through the more labor-intensive process of custom designing their own programs. While this may seem expedient and practical, it is not the most effective way of building the academic culture of a new university that aims to reach high standards.

4.Design with an OECD ecosystem in mind, implement elsewhere

Replicating the three key features that make flagship universities in industrial countries successful—concentration of talent, abundant resources and favorable governance—is a fundamental requirement, but it does not encompass the full complement of operational conditions that underpin the authorizing environment of a successful world-class institution. It is difficult if not impossible to create and maintain thriving universities when the higher education ecosystem within which they operate is not fully supportive. Some potentially important dimensions of a favorable ecosystem include leadership at the national level (existence of a vision about the future of higher education, capacity to implement reforms), the regulatory framework (legal provisions, governance structure and management processes at the national and institutional levels), the quality assurance framework, the approach s and pathways integrating the

various types of higher education institutions, the financial resources and incentives, along with the digital and telecommunications infrastructure. To operate adequately, all of these require an overarching set of conditions which have to do with political and economic stability, the rule of law, the existence of basic freedoms, and a favorable location from the viewpoint of the spatial environment in which the new higher education institution is meant to operate (local economic, social and cultural life). The absence of even only one of these elements or the lack of alignment among these various dimensions is likely to compromise the ability of new universities to progress and endure.

5. Delay putting in place the board and appointing the leadership team

The resolution to establish a new university is often a political decision reflecting a visionary ambition at the highest levels that a ministry or a technical project team is then charged with putting into action. This typically leads to a centrally managed design and implementation process. Given that the establishment of a new university requires passion and drive to create a new organizational culture, it cannot be built by a disinterested committee. A project of such magnitude must be fully owned and carried out by a dynamic leadership team, working under the authority of an independent board with the capacity to offer guidance and empowerment. The first order of business of the new board has to be the identification, selection and installation of institutional leadership. Putting in place an appropriate governance framework from the outset is a key factor of success.

6. Stack the board with political appointees

Founders need to choose a governing board that brings together a range of essential expertise that can evolve over time. The governing board should start out small and grow very gradually to accommodate more expertise as needed. The common oversight is that people are appointed to boards on the assumption that they "represent" their institution or represent a constituency, when really they should represent an area of expertise needed in the management of the new and growing institution (legal expert, financial expert, infrastructure expert, academic experts, retired institutional leaders, etc.).

7. Plan for up-front capital costs, but pay little attention to long-term financial sustainability.

The promoters of a new university usually announce with enthusiasm the huge endowment dedicated to the establishment of the new institution, but the initial capital investment is only one part of the total project. It is essential to provide adequately for the first few years of operation and to establish a thoughtful business model that allows the new institution to grow and endure in a financially sustainable manner.

8.Be too ambitious in enrollment targets

The leaders of new institutions sometimes think that they can rapidly enroll large numbers of students, often in the tens of thousands. This is rarely achieved without sacrificing quality. It is usually a better idea to begin with a small number of programs and student body if quality is a priority.

9. Think that everything can be accomplished in eighteen months

A variant of overambitious planning is assuming that a new institution can be launched in a matter of months and that high quality teaching and research can be accomplished within a few years of establishing a new university. In reality, rushing through the initial phase of design and implementation can often only lead to hasty decisions that can have an adverse effect on the quality and cost of the project.

10. Rely exclusively on foreign academics without building up local capacity

Hiring foreign academics is common practice to accelerate the launch of a new university in a country with limited capacity. Indeed, it makes good sense to bring experienced instructors and researchers to help put new programs in place; it can also be a very effective capacity-building strategy when an important part of the mission of the foreign academics is to train younger, less experienced academics from the host country.

10-Research results

The findings of question 2: 20 elements form World Class University and considering characteristics of existing universities in Egypt, there is distance and gap between the depth of universal and current components of Egyptian universities. This components and dimensions are as follows:

1: a high concentration of talent (academics and students)2: the high cost of university 3: universal learning resources 4: competitive admission of student 5: scientific referencing and citation 6: multilingualism 7: international students 8: high rating and ranking 9: strategic vision, 10: abundant resources to offer a rich learning environment and support advanced research 11: innovation and creativity 12: high level of research activities 13: education quality 14: affordance and considerable income15: administrative structure and supportive rules 16: international, responsive, and innovative curriculum17: information technology 18: cooperation with foreign institutions, industry and the community 19: academic and managerial autonomy, 20: tolerance of cultural diversity.

The findings of question 4: according to the obtained results and because Z amount of Kolmogorov–Smirnov is between 1.96 to -1.96,the community distribution is normal and because the average of 3.2 is

obtained, therefore, by polling we conclude higher education experts believe that the universities in the country is a difference with international standards. Considering the existed findings about the obstacles, indicative some realities. The key important problems and challenges are1: language, research, infrastructure ,the absence of a national program for the development of top institutions, as well as the lack of critical mass in terms of international scholars, the slow progress on the issue of internationalization, the governance model in public universities and a lack of accountability, and the lack of public investment in scientific research capacities, and how to turn barriers into opportunities. Language: the language requires gradual work and its problem institutionalize by education. To solve this problem, also requires extended act in elementary and secondary schools.

Research: the facts show research among the distinguishing characteristic of the world class university. However, in order to institutionalizing the research in the Egyptian universities, it needs to commercialize in the real world of industry. In the process, universities should take their programs toward basic and applied research.

The infrastructure: a look into the infrastructures, public universities and private universities shows revision and reinvest and use technology in a broad level and its culture and literature should pave the way for university way in this field. So in order to disarm this phenomenon requires careful planning and not a daily program.

Development of top universities requires that all the major stakeholders like government and private founders should continuously provide funds or create competitive funds for teaching excellence, research, and service. Moreover, universities should identify the pathway to accomplishing its goals and aspiration by creating a niche for itself.

Internationalization: universities should devise strategies of various levels of ambition, complexity, scale, and duration. Implementing these strategies requires commitment by top institutional leaders, buy-in by faculty and students and other stakeholders, establishment of clear monitoring processes, and allocation of adequate resources. Internationalization strategies are only as good as they deliver a transformative education for students and promote faculty scholarly engagement.

Governance Model: Universities autonomy should be granted by transforming universities from government institutions to independent legal entities. Universities have their own governing board, to which the university reports, with the authority to make major administrative and academic decisions. As well as universities should establish boards of trustees with representatives from the government (e.g. the Minister of Higher Education, local governor), industry, alumni, prominent figures in education, and the academic community. The Board is the supreme body in an autonomous university with the authority to select and appoint the rector, and approve the strategic plan, annual programs, and the budget plan. Major investment and changes in budget allocation have to be approved by the Board. They are also responsible for appointing the internal audit unit and the external auditor to conduct external audits. The rector of the university is supported by vice-rectors.

Investment in scientific research: Lack of fund or its inadequacy should not stall scholarly production of cutting-edge researches that could lead to inventions and publications across disciplines. Therefore, a scholarly research should aim at filling the vacuum by previous publications, breaking a new ground, or a critique of existing knowledge based on new evidence.

In this process, also special attention must be aimed to other barriers and draw and predict transfer approach s from the unfavorable situation to favorable situation and support the disarm . Polling frequency indicates: generally 31 individual in response to questions had agree, 17 individual agreed completely and 9 individual have no comment. No experts disagree or strongly disagree.

The findings of question 8: after presenting transfer Approaches [Upgrading existing institutions approach, Merging existing institutions approach ,Creation new institutions approach, Collaborative approach] and according the empirical results of the polling N = 57 and also cultures characteristics, 81% of experts were consentent on the first approach, 67% agree on the second approach, 71%due to the extremely high cost agree on the establishment and creation of universities , 91% of experts were consentent on the fourth approach.

11-Discussion and conclusion

The ambition of world-class universities is not a superficial or elitist whim. It is a completely valid aspiration. However a qualitative leap is required for Egyptian universities to enter the exclusive group of world-class universities to contribute more strongly to economic development in Egypt as pillars of innovation.

Some of the existing challenges of developing world-class universities in Egypt are language, research, infrastructure ,the absence of a national program for the development of top institutions, as well as the lack of critical mass in terms of international scholars, the slow progress on the issue of internationalization, the governance model in public universities and a lack of accountability, and the lack of public investment in scientific research capacities.

It is concluded that the following areas need to be discussed further for decision making towards developing world-class universities in Egypt. The road to academic excellence is full of avoidable pitfalls, as

illustrated by the preceding discussion of most commonly observed errors. More importantly, the decision to develop a world-class university must always be examined within the proper context to ensure full alignment with the national higher education strategy. With thoughtful and realistic planning, however, reaching for excellence in higher education, at all levels, can only be seen as a good and important thing. On one hand, government needs, therefore, to construct a supportive environment and create the financing and regulatory conditions that enable and encourage its universities to compete at an international level on a host of indicators on which the quality and relevance of university education are commonly assessed including reputation and awards, foreign students and faculty, and research grants. On the other hand, universities aspiring to become world-class institutions must develop their own strategic plan and define priorities to develop areas of excellence, which should be characterized by research results and cutting-edge teaching. Moreover, alliances between Egyptian universities, with universities in other developed countries, and effectively use internationalization strategies, can serve to accelerate the process of developing areas of excellence.

Enhancing the quality of the learning experience through a multicultural dimension is another important issue for Egypt to develop its world-class universities. Therefore the ability to offer programs in a foreign language, especially English, can be a powerful attraction factor. Among the top 100 universities in the Shanghai ranking, 11 are from countries where the official language is not English, but where many graduate programs are offered in English (Denmark, Finland, Israel, Netherlands, Norway, Sweden and Switzerland). A another key aspect is allocating resources within the university, in order to encourage a quantitative and qualitative improvement in priority research areas through dedicated investment funds. This requires in turn a clear internal research development and monitoring strategy to identify the disciplinary and multi-disciplinary areas.

Collaborative approach is expected to be the best approach as it is not only cost saving but also to provide opportunities to all the existing universities in excelling in their respective fields. This means recognizing and supporting the legitimate and complementary missions of Egyptian universities, as long as there are flexible paths and bridges to facilitate student progression between the various types and categories of institutions and programs. Vision defining and taking on a set of reforms and measures, and committing to the financial investment that must accompany these steps over the long term. Once all these conditions are met, Egypt can make the dream of having world-class universities a reality. in a country like Egypt, where the very significant higher education reform of the last decade was adopted by the government, the world-class university development initiative must be a project that gains the consensus of the country as a whole.

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