

Becoming a World-Class University

Osama Tayeb · Adnan Zahed · Jozef Ritzen
Editors

Becoming a World-Class University

The Case of King Abdulaziz University



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Editors and Contributors

About the Editors

Prof. Osama Tayeb served as president of King Abdulaziz University (KAU), Jeddah, Saudi Arabia, from 2003 to 2015. He is a professor of pharmacology at KAU. During his presidency at KAU, Prof. Tayeb also served as acting president of various newly established Saudi universities, including Taiba University, Jazan University and the Northern Borders University. As president of KAU, Prof. Tayeb spearheaded and presided over the major transformation that KAU underwent in order to achieve its current internationally recognized world-class university status. During this process, the majority of KAU's academic programmes were awarded accreditation from international accreditation agencies. KAU has consequently achieved its rightful ranking amongst the World's top 400 universities in the international ranking lists of Shanghai, QS, and the Times. Prof. Tayeb was the founder of the KAU International Advisory Board (IAB) and served as the chairman of IAB.

Prof. Adnan Zahed has been the vice-president for Graduate Studies and Scientific Research at King Abdulaziz University (KAU) since 2009. He is a professor of chemical engineering at KAU. As vice-president for Graduate Studies and Scientific Research, Prof. Zahed has maintained a high profile and has played a proactive role in the transformation of KAU into a university that is currently ranked as being of world-class status. Prof. Zahed's tenure has witnessed a huge increase in the numbers of scholarly publications of academic staff of KAU featured in ISI-ranked journals, which increased from 260 in 2009, up to 3600 in 2014. Various incentive programmes, initiated and implemented under Prof. Zahed's supervision and guidance, have resulted in notable increases in citation numbers, which also increased from 1100 in 2009 up to 21,000 in 2014. Prof. Zahed is the secretary general of the KAU IAB.

Prof. Jozef Ritzen a Dutch national, has been an honorary professor at Maastricht University since 2011 (chair at the International Economics of Higher Education, Science and Technology). Prof. Ritzen was president of Maastricht University from February 2003 to January 2011 and special adviser and vice-president of the World Bank from 1998 to 2003. He served as Minister of Education, Culture, and Science of the Netherlands from 1989 to 1999. Prof. Ritzen has academic appointments at Nijmegen University, Erasmus University in the Netherlands, the University of California, Berkeley, and the University of Wisconsin-Madison, in the US. Prof. Ritzen is a member of the KAU IAB.

Contributors

Prof. Dr. Yücel Altunbaşak has served as the 9th president of the Scientific and Technological Council of Turkey (TUBITAK) since 2011. He has a BS in Electrical and Electronics Engineering from Bilkent University (1992) and an MS (1993) and PhD (1996) from University of Rochester. He started his early career in Hewlett-Packard's Palo Alto Laboratories in Silicon Valley and at Stanford University. His research work has focused on the intersection of key scientific advances and industrial application with over 200 papers and 50 patent and grant applications. He obtained his professorship from the Department of Electrical and Computer Engineering, Georgia Institute of Technology. From 2009 to 2011, Prof. Dr. Altunbaşak was president of TOBB University of Economics and Technology in Turkey where he licensed and successfully prototyped an MPEG processing device for a satellite and cable TV company. Prof. Altunbaşak initiated and was the driving force behind an image processing technology called "Pixellence" that has been awarded the Special Jury Award of the Turkish Industry and Business Association. Prof. Dr. Altunbaşak is a member of the KAU IAB.

Prof. Michael Arthur is president and provost of University College London (UCL). Prior to this, he was vice chancellor of the University of Leeds (2004–2013), and formerly dean of the Faculty of Medicine, Health and Life Sciences in Southampton. He is a hepatologist with research interests in liver cell biology. These interests developed initially at the University of California, San Francisco (1986–1988), and further developed whilst he was a Fulbright Distinguished Scholar at Mount Sinai School of Medicine in New York (2002). Prof. Arthur became a Fellow of the Academy of Medical Sciences in 1998. He was a member of the Medical Research Council (2006–2014). He has also been a US/UK Fulbright commissioner and is a former chair of both the Worldwide Universities Network and the Russell Group of Universities. Prof. Arthur is a member of the KAU IAB.

Prof. Guaning Su is president emeritus and professor of electrical and electronic engineering at Nanyang Technological University (NTU), Singapore. As president from 2003 to 2011, he led the transformation of NTU from an engineering and business teaching-focused university into a research intensive, science and technology-focused comprehensive university. Prof. Su is a member of the KAU IAB.

Chancellor Thomas Wilhelmsson Thomas Wilhelmsson, Doctor of Legal Science, has been professor of civil and commercial law at the University of Helsinki, Finland, since 1982. From 1998 to 2008, he was university vice-rector, in charge of international affairs. Prof. Wilhelmsson served as university rector from 2008 to 2013 and has served as university chancellor since 2013. As rector, Prof. Wilhelmsson presided over comprehensive university reforms, which transformed the university from a state institution into an independent public legal entity. He has been awarded the title Doctor Iuris Honoris Causa by the Uppsala, Oslo and Tartu universities. Prof. Wilhelmsson is a member of the KAU IAB.

Prof. Georg Winckler was appointed professor of economics at the University of Vienna in 1978 and has held visiting professorships at universities in the USA, Switzerland and Austria. In 1999, Prof. Winckler was elected as rector of the University of Vienna and served in this position for 12 years from 1999 to 2011. From 2001 to 2005, he was vice-president of the European University Association (EUA), the umbrella organization of nearly one thousand European universities. He was EUA President from 2005 to 2009. From 2004 to 2012, he was a member of the European Research Area Board, a top advisory board for the European Commission on Research Strategies. Prof. Winckler is currently president of ERSTE Stiftung, Vienna, Trustee of the Educational Testing Service (ETS), Princeton, and serves on boards of German and Austrian universities. Prof. Winckler is a member of the KAU IAB.

Introduction

This book is essentially a description of one phase of the fascinating expedition of exploration that has been undertaken by King Abdulaziz University (KAU) as it enthusiastically seeks to achieve the standards of educational and academic excellence that will consequently facilitate the realization of its ambition to become one of the world's leading universities. This book describes the manner in which the university went about seeking, identifying and locating internationally recognized authoritative educational and academic experts. Their expertise and advice were sought for constructive input on the necessary steps to be followed in the process of the pursuit of this ambition, and on the nature and composition of those steps. We describe the background of this process, the manner in which the KAU leadership committed itself to the journey and exploration, and the diverse and valuable advice obtained during the process. We hope and believe that this book will prove to be a useful guidebook for other universities which are also considering embarking upon this long and arduous, but nevertheless, immensely worthwhile journey in pursuit of academic and educational excellence. It is compiled by some members of the International Advisory Board of KAU.¹

The book addresses excellence in research universities. Excellence in universities is often regarded in the context of the university rankings as originated by the Academic Ranking of World Universities (AWRU), also called the Shanghai ranking. Shanghai Jiao Tong University publishes annually a list ordering universities according to the quality of their research, including a list by discipline, starting in 2003. This ranking is one of the three most influential rankings together with the QS World University Rankings and the Times Higher Education World University Rankings. They have shaken the academic community and policy makers alike.² They are also highly disputed as they capture only part of the accomplishments of

¹This introduction greatly benefitted from comments by Prof. Tatiana Kliachko and Prof. Vladimir Mau.

²See, Ellen Hazelkorn, *Rankings and the Reshaping of Higher Education. The Battle for World-Class Excellence*, Palgrave Macmillan, 2015.

universities. Excellence in universities is broader than the measures taken into account in the rankings, as is evidenced in quality criteria embedded in quality insurance systems. The measures of the rankings are not relevant for those universities which do not engage in research but provide education of high quality or universities of “applied science” (in Germany: the Fachhochschule) who engage mostly in research close to development.

Universities are part of a national and international eco-system of science, technology and innovation. Their role is becoming increasingly important in this system in the gradual changes on the labour market towards a greater demand for non-routine workers with high competencies³ and the gradual changes in the economy where knowledge has become more important. These changes also affect notions of excellence in teaching and research in universities, making entrepreneurship and problem-solving abilities more important.

Chapter “[Roadmap to Become a World-Class University](#)” is by the former president of KAU (2003–2015), and co-editor of this text, Prof. Osama Tayeb. This chapter describes the overarching aims of KAU’s ambitious quest, which are to raise the university’s educational and academic status so as to achieve recognition and ranking amongst the elite grouping of internationally accepted world-class universities. The scientific, educational and academic inclinations of KAU’s leadership presuppose the use of examples and models drawn from the international academic and educational arena. International higher educational and academic best practice is seen as beacon shedding light and guiding the university on its lengthy and demanding journey on the road being followed in this quest for excellence. This chapter outlines the thinking behind the strategy employed, and the manner in which KAU sought out the valued advice of international experts to proffer valuable assistance to the university in seeking the achievement of its goals.

Chapter “[International Advisory Boards in the World](#)” is by the second co-editor, the secretary general of the International Advisory Board and vice-president for Graduate Studies and Scientific Research of KAU, Prof. Adnan Zahed. This chapter provides an overview of international advisory boards utilized by scientific institutions and major organizations around the world. It is pointed out how advisory boards complement and reinforce organizational executive boards’ strategies, procedures and operations by offering them authoritative advice and guidance to aid in the successful performance of their tasks and duties.

Chapter “[Excellence as Duty](#)”, is by the third co-editor, Prof. Jozef Ritzen, former president of Maastricht University. This chapter starts with the premise that every university should do its utmost to contribute to society through its education programme and research. The visible profile of an excellent research university therefore becomes not only internal to the concerned university, but broader and external in terms of the degrees of its contribution to society, including, but not limited to, the innovation levels of the country or region of the university’s

³See, Autor, H., F. Levy and R. Murnane, The skill content of recent technological change: an empirical exploration, *The Quarterly Journal of Economics*, November 2003, pp. 1279–1333.

location. The implication of this is that being excellent should be considered within the framework of shared responsibilities wherein the university strives to perform to its utmost capacity in terms of twenty-first-century skills, capabilities and research. The aims of these efforts should be both to develop increased public knowledge and to acquire patents and develop spin-offs. It is pointed out that the process is mutually beneficial for the concerned university and its environs as the region and the country engage in ensuring feedback, investment, venture capital and adequate regulation.

The massification of higher education and its accessibility to the representatives of social groups for which it was previously closed has created a quality challenge for all universities, but especially for research universities. They are essential for strong economic growth. Research universities should improve the quality of education by means of its individualization, engagement of students in research and instillation of an entrepreneurial spirit in them (entrepreneurship training, stimulating start-ups and spin-offs).

Chapter “[Excellence in Education](#)” is by Prof. Guanng Su, former president of Nanyang Technological University of Singapore (NTU). This chapter is devoted to the educational side of research universities that are deemed as displaying academic and educational excellence. His point of view is that the demands from societies for excellence in universities are similar throughout the world. In the course of his NTU presidential term from 2003 to 2011, the author transformed NTU and guided the improvements that led to the university’s status being raised to that of world-class, and to its eventual international recognition as a major global research university. He focuses on undergraduate education and postgraduate professional education up to the master’s level. This chapter concentrates on KAU in the context of Saudi Arabia as an example of a university striving for excellence well realizing that both for KAU as for NTU sufficient funding was a precondition for excellence.

The Singapore story is a “poor boy makes good story”, of a small tropical island, devoid of natural resources other than its maritime location, striving against the odds to succeed and prosper. Saudi Arabia has gone through changes no less remarkable. In a matter of a mere two generations, the lives of Saudi Arabia’s population have undergone a complete transformation. The past nomadic way of life, where everyday life involved struggling against the elements, has been transformed to the current situation, where Saudis are now citizens of one of the most prosperous nations in the world. Religion plays an important role in both nations, but in contrasting ways. As a result of its special position in the Islamic world and the influence that stems from it being one of the world’s major oil producers, able to exert huge influence on the direction of world oil prices, Saudi Arabia has worldwide influence and a stature unmatched in West Asia or the Arab and Islamic world. An important role of leading universities, such as King Abdulaziz University in Saudi Arabia, must inevitably involve the education of such an important nation’s future leaders. In order to do so, and as a crucial element in its

pursuit of academic and educational excellence, King Abdulaziz University must ensure that a broad international world view and perspective is inculcated in all its students.

Chapter “[Excellence in Research](#)”, on the research profile of internationally outstanding universities, is by Prof. Michael Arthur, president of University College London. He identifies and discusses five key recommended actions to be undertaken to enable and facilitate KAU to enhance research performance: building a critical mass of researchers and a concentration of research excellence in a defined and clearly identified number of high-quality fields of research, a clear “youth policy” with respect to training the next generation, attracting external research funding from high-quality research funding agencies, the enhancement of cross-disciplinary research and the development of systems to drive and support innovation. Only 1000 universities out of about 17,000 conduct world-class scientific research. New players (universities) can only enter this narrow circle if they can rely on sufficient financial backing. The author examines the experience of University College London (UCL), as well as some universities in the USA providing high-quality research. The educational system also includes engagement of students in research, preparation of doctoral theses to obtain Ph.D. degree and involvement of postdoctoral researchers in research teams. An important factor in the organization of scientific research, according to the author, is the creation of cross-disciplinary research teams and carrying out cross-disciplinary researches. The author insists on the fact that cross-disciplinary studies are more effective when compared with interdisciplinary and trans-disciplinary ones. Cross-disciplinary research teams consist of researchers from different fields of science and even different countries to solve mega problems of the modern society.

Science funding arrangements are of great importance too as the author identifies with the UK experience. These arrangements have greatly contributed to research quality.

Chapter “[Excellence in Serving Society and Mankind](#)”, on the “third mission” of universities, is by Prof. Thomas Wilhelmsson, chancellor and professor of civil and commercial law, University of Helsinki. He points out that it is often the case that the third mission of social responsibility or the community service of universities is undervalued. He identifies strategies and makes recommendations as to how this situation can be remedied. He provides pertinent examples of how the third mission is currently being successfully incorporated into some universities’ overall educational and academic influence and stresses the beneficial importance of universities’ third mission for the societies in which universities are located, and for mankind in general.

Chapter “[Excellence in Strategic Planning](#)” is by Prof. Georg Winckler, former president of Vienna University. In this chapter, he discusses “excellence” from a different perspective. He examines and investigates how academic and educational excellence can be arrived at by means of tailored, targeted, carefully overseen and implemented strategic planning. He explores and delineates the steps necessary to be followed in the planning process. He states that this should begin with a clear decision concerning the nature and characteristics of the concerned university’s

profile. This involves key fundamental groundwork, such as identification of the areas in which the university aspires to excel and the identification of its core values. It is pointed out that there are considerable potential hazards and pitfalls in this process.

Chapter “[Excellence in Innovation and Knowledge Economy](#)” is by Prof. Dr. Yücel Altunbaşak, president of TÜBİTAK (Scientific and Technological Research Council of Turkey). This chapter deals with innovation and the knowledge economy. In this chapter, he investigates the subject from the perspective of countries wishing to reach what he terms the “production frontier” in order to enable concerned nations to be fully competitive worldwide in high-tech and high-value-added production. He recommends that universities should explore and exploit innovation options and avenues. He provides examples from Turkey and other countries where the components of science and innovation systems are designed and intended to overcome the gap between existing frontiers and “production frontiers”.

Chapter “[Excellence in International Cooperation](#)” is by Prof. Adnan Zahed, as is Chapter “[International Advisory Boards in the World](#)”. This chapter focuses on international cooperation between universities and between their components and constituents. It includes student exchange, joint education programmes and research cooperation. He points out that all the cooperative examples given differ and are subject to their own idiosyncrasies. He stresses that these dimensional inconsistencies necessitate the adoption of a variety of approaches, dependent on the nature of the intended academic, educational and research cooperation and that, in a nutshell, “one size does not fit all”.

Chapter “[Change Towards Excellence](#)”, the concluding chapter, is by Prof. Jozef Ritzen again. In this chapter, he draws on his experience as a minister, responsible for education, science and culture in the Netherlands in the 1990s and on his experience as President of Maastricht University in the first decade of the twenty-first century. He deals with the challenges of change towards excellence for universities which find themselves caught up in the turmoil of globalization and “informatization”. University leaderships have crucial roles to play in ensuring that change towards excellence is achieved by developing strategies which are owned by the concerned universities. He elucidates on how university leaderships are also responsible for the design and provision of means for such strategies’ implementation.

We hope that this book contributes to a better understanding of the way research universities can achieve superiority in education and scientific research by drawing on the rich experience in the world in dealing with the quality question in learning and research in higher education.

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