Talent and Trust: A Case Study Describing the Process of Designing a Global Elite World-Class University in Denmark

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DEDICATION

To my parents, Carol and Clifford; my sisters, Jennifer and Julie; and my uncle Jacques, I dedicate this dissertation. It was with your support, understanding, and faith I accomplished the monumental achievement of earning a PhD.

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ABSTRACT

The purpose of this study was to describe the process of becoming a world-class university in the context of Western Europe. Aarhus University served as the case site, within the context of Denmark. One research question guided this study, "How does a higher education institution in Western Europe undergo the process to actualize its ambition to become a world-class university?" I remained in Denmark for approximately 18 days collecting data for this qualitative case study. Observations were completed in Aarhus and in Copenhagen, and documents and/or photographs were collected from university and government sources, In total 17 participants were interviewed including past and present high-level administrators, an academic administrator who also held a faculty position, and students at Aarhus University, as well as government officials serving in the Ministry of Science, Innovation, and Higher Education.

Findings indicated visionary leadership, external consultants, and a pragmatic reorganization of the university propelled Aarhus University to create academic hubs with an interdisciplinary focus, emphasize a more global focus, express a desire to obtain greater external funding and engage in greater collaboration, and develop a core focus on what Aarhus University referred to as *talent development*. I refer to this notion similarly, as *talent capacity-building* to accent the notion that building a growing base of talent was central to national competitiveness strategies elsewhere in Denmark in addition to Aarhus University. Trust emerged as a cultural value in Denmark and an important consideration for the university and the government. Generous government state support and autonomy enhanced Aarhus University's resources and decision-making capacity, yet a concern for quality assurance, economic competitiveness, and academic relevancy remained.

TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION 1
Statement of the Problem 2
Purpose of the Study 5
Research Question 5
Economic Considerations of Internationalization Strategies 6
Where Global Elite Universities May Emerge 8
Importance of the Study 10
Terminology: Operational Definition of a World-Class University 11
Background Information for Case Context: Nordic Higher Education 11
The Danish Higher Education System 14
Aarhus University: Case Study Site 18
Aarhus University Strategic Plan 2013-2020 21
Organization of the Study 23
CHAPTER 2: REVIEW OF THE LITERATURE 25
Perspectives on the Composition of a World-Class University: Conceptual Base 25
The Emerging Global Model of Research University 32
World-Class University Design: Different Nations, Different Tracks 35
Patterns of World-Class University Design 37
The World-Class University in Asia: The Hub of Empirical Studies 37
The World-Class University in Europe 41
Themes in World-Class University Design in Western Europe 43
Designing A World-Class University in Europe: Opportunities and Challenges 44
World-Class Strategic Plans at European Universities 46
Drivers of University Reform: Rankings and League Tables 52
Ranking Ambiguity 54
A New European Ranking: U-Multirank 55
Theoretical and Conceptual Framework of the Study 59
Institutional Isomorphism 59
Organization of the Study 64
CHAPTER 3: METHOD 66
Case Study Research Design 66
Research Question 68
Descriptive and Holistic Case Study 70
The Aspirational World-Class University as a Bounded Case 72
Site and Population 73
Data Collection Procedures 75
Data Sources 77
Translations 84
Data Storage and Security 85

Data Analysis 86
Representation of Findings 88
Delimitations 89
Limitations 90
Construct Validity 90
Internal Validity 91
External Validity 91
Reliability 91
Pilot Interviews 92
Reflexivity Statement 94
Organization of the Study 96
CHAPTER 4: FINDINGS 97
Organization of the Chapter 97
Findings From the Present Investigation 97
Theme one: Aarhus University's Visionary Leadership 100
Theme two: Independent Consultant's Report 103
Theme three: Administrative Organizational Pragmatism 105
Theme four: Academic Hubs with an Interdisciplinary Focus 108
Theme five: Talent Capacity-Building 110
Theme six: Global Focus 119
Theme seven: External Funding and Collaboration 128
Theme eight: Trust 130
Theme nine: Autonomy and Generous State-Funding 132
Theme ten: Economic Competitiveness, Academic Relevancy, and Quality Assurance 134
Discrepant Findings 138
Brief Summary of Findings 141
Organization of the Study 143
CHAPTER 5: DISCUSSION 145
Organization of the Chapter 145
Summary of the Findings 145
Relation to the Theoretical Framework: Institutional Isomorphism 149
Implications for the Design of a World-Class University 155
A Valiant Venture for Aarhus University, Danish Society, and Higher Education 160
Recommendations for Future Research 164
REFERENCES 167
APPENDICES 184
APPENDIX A: INFORMED CONSENT STATEMENT 185
APPENDIX B: INTERVIEW PROTOCOLS 191
APPENDIX C: OBSERVATION PROTOCOL 196
APPENDIX D: TRANSLATOR'S PLEDGE OF CONFIDENTIALITY 199

APPENDIX E: DOCUMENT SUMMARY FORM 200
APPENDIX F: CONTACT SUMMARY FORM 201
VITA.....202

LIST OF FIGURES

Figure 1. Case study design data collection logic…...….…….....86

Figure 2. Conceptual model for designing a world-class university
in case of Aarhus University, within the context of Denmark……..99

Figure 3. The center hall (Kantine) where fellows meet (top right) and artwork in
Kantine noted in literature and during observation (top left) (Samble, 2014a)……..115

Figure 4. Conference room (top left); lounge (top right) (Samble, 2014a) ……...115

Figure 5. Kitchen (top left); classroom (top right) (Samble, 2014a)…….….116

Figure 6. AIAS auditorium (Samble, 2014a)……..116

Figure 7. Fellows office (top-left); hallway of offices for fellows (top-right)
(Samble, 2014a). …….……...117

Figure 8. The Dale T. Mortensen Building (Samble, 2014b) ……...124

Figure 9. Dale's Café (Samble, 2014b).……..……...124

Figure 10. Menu at Dale's Café with poster in both English and Danish
(Samble, 2014b).…….125

Figure 11. Components of Talent capacity-building.…….……162

CHAPTER 1: INTRODUCTION

"Everyone wants a world-class university. No country feels it can do without one. The problem is that no one knows what a world-class university is, and no one has figured out how to get one," wrote Dr. Philip G. Altbach (2004, para. 1) Director of the Center for International Higher Education at Boston College. As a graduate student in the higher education administration program at Boston College, I first became exposed to the notion of the world-class university as a student in Dr. Altbach's course. In the years following my first learning about this concept, university strategic plans, vision statements, and publications in both the United States and around the globe have continued to celebrate the *world-class* education offered by their institutions. In concise terminology, the world-class university is the notion of an exceptional higher educational institution, which advances educational and economic development in a home country and participates in global intellectual exchange.

Countries across the continents of Asia, Australia, Europe, North and South America, and the Middle East are home to universities which have expressed strong aspirations to elevate their status beyond national borders and earn the prestige of being considered elite across the global spectrum of higher education institutions. This is the case in the leading first-world economies as well as nations without as considerable economic resources. At Aarhus University in Denmark, the world-class phenomenon has gained attention among university leadership. Aarhus' strategic plan outlined several approaches the university will adopt to actualize an ambition to eventually "lead to a ranking among the world's top 50 universities" (Aarhus University, 2013d, p. 12). As explored in this paper's literature review, other European universities in smaller, wealthy

nations on the continent have made similar proclamations in their strategic plans. Beyond the proclamations, what would be insightful for observers of this phenomenon to understand is how a university might undergo a process to actualize its goals to reach the upper echelon of higher education. This is particularly important as the upper echelons are becoming less defined within national borders. To become a world-class university, these universities must gain ground internationally as well as at home.

Statement of the Problem

Policymakers who desire to create higher education institutions of world-class caliber may enhance current universities, construct entirely new institutions, or consolidate existing academic institutions (Salmi, 2009). The literature on world-class universities underscored different approaches occurring elsewhere in the world: South Korea's Pohang University of Science and Technology was constructed as a private university in 1986 (Rhee, 2011), China's Peking University and Tsinghua University (Liu, 2007) and Shanghai Jiao Tong University (Wang, Wang, & Liu, 2011) consolidated specialized institutions into more consolidated universities, and France's Operation Campus and Germany's Excellence Initiative contributed billions in Euros to support developing academic centers from within their current systems (Wildavsky, 2010). These instances of individual private institutions or government-supported public institutions having actualized divergent journeys to reach their goals underscore the differentiation possible in world-class university design. The means through which universities aspire to become world-class vary markedly.

It may still be too early to tell if one route or another is more effective. Furthermore, the national context, institutional strengths and limitations, and public

support of education may create country-specific considerations that enhance or impede development. Lastly, the process of designing a world-class university may be implemented through different execution strategies even within each route offered by Salmi (2009). Noukakis et al. (2011) wrote that one scholar believed the number of world-class universities could not exceed 200. A case study design added a rich perspective to the empirical base of knowledge covering how processes were implemented at one Danish university as it actualized a strategic plan to become a world-class university. No empirical study has focused solely on the topic of a world-class university in Europe complete with an in-depth description crafted from interview, observation, document, and photographic data on the process that university undergoes in pursuit of excellence.

Knowledge-based societies are fundamentally reliant upon higher education institutions to cultivate students' talents and capacity for continued learning that contribute to national and international scholarly and practical advancement. The world-class university contributes to research and enables the transmission of knowledge from the brightest and most established faculty and researchers to the most well qualified students. These students are trained as the next generation of researchers, innovators, and leaders. A world-class university is elite in that it cultivates and enriches the most cutting-edge talent. As economies become ever more reliant upon innovation and intellectual ingenuity, the world-class university serves an increasingly important role in national and institutional success.

The problem is that despite the potential offered by world-class universities, the research on world-class universities has narrowed in scope, demanding broader

contributions in contexts not previously explored. The contextual, national relationships between higher education institutions and ministries of education may mean revisiting governance approaches to steering roles, redefining funding schemes, or other incentivizing (or debilitating) characteristics of each national system that affect higher education provision and, in particular, that institution that wishes to become world-class. Perhaps that institution even enjoys privileges not enjoyed by other institutions with different missions. A descriptive understanding of the artistry of designing a university of this caliber merited further exploration.

The literature was saturated with commentary and perspectives on what a world-class university is conceptually, but empirical research was less common. Most research on this phenomenon was set within Asia. Empirical studies have been completed on universities in contexts outside Europe: in South Korea (Shin, 2009), China (Ho, 2006, Choi, 2010), and Taiwan (Chang, Wu, Ching, & Tang, 2009) among others. Certainly, these researchers have made important inroads; however, a saturation of research in one continent may incorrectly advance the notion that world-class universities are merely a regional phenomenon. A second misconception may exist with a geographic imbalance of empirical research. Findings of generic patterns toward world-class university development in Asia may come to be popularly accepted as the norm in the absence of competing evidence-based claims and alternative models. The reality is that world-class universities are a phenomenon well-beyond China, South Korea, and Taiwan. A study of a Danish universities offered an opportunity for such competing evidence-based claims and alternative models to join this dialogue. This study responded to the absence of

research on the phenomenon as set within Western Europe and considered the complexities embedded in contemporary higher education at one university in Denmark.

Purpose of the Study

The purpose of this study was to describe the process of becoming a world-class university in the context of Western Europe. Aarhus University, the case site in Denmark provided evidence of how approaches taken in the pursuit of building world-class universities led to alternative organizational designs. Findings led to further iterations of how Aarhus, Denmark, and the Nordic region conceptualize the notion of becoming world-class. This is particularly important given the uniqueness of European higher education cooperation as embodied in Bologna Process. As new rankings are introduced and existing league table publishers frequently alter their metrics and/or weights, it may not be in the best interest of institutions to follow normative patterns. An aim of this study was to describe new organizational approaches to the design of a world-class university in the context of Denmark to enrich discussion in an area of interest to both academic and practitioner audiences.

Research Question

International higher education scholar Simon Marginson wrote, " 'World-class university' is an aspirational notion, one which reflects the desire to be globally effective and to be seen as such by the entire world" (Marginson, 2011, p. 10). The key word here is *aspirational*. This word is rooted in the minds and intentions of the government policy makers and university administrative leadership cadre in each national context. Given the ambiguity of the term *world-class university,* the design of such a higher education institution could mean very different conceptualizations of to what image an institution

aspires. Returning to the notion of economic gain as a rationale for higher education, Lane (2012) wrote, "Whether we define an economy by locality, state, or nation, each will likely have a different economic development approach influenced by history and culture as well as industrial and educational strengths" (p. 23). This study is not a program evaluation. In fact, Aarhus' current strategic plan will not come to an end until 2020. Aarhus University is in the process of paving its own unique path to become world-class. A greater understanding of actualizing this process may redefine current conceptions on what is a world-class university.

Therefore, the question that steered this investigation was: How does a higher education institution in Western Europe undergo the process to actualize their ambition to become world-class universities? This question was concerned principally with process.

Economic Considerations of Internationalization Strategies

A world-class university may be the chief engine behind a nation's economic health in an interconnected global knowledge economy, both for its providers and beneficiaries. In fact, the trend toward designing top institutions is not limited to trillion-dollar economies with hundreds of millions of citizens. The phenomenon to better national educational provision exists across regions which are geographically, economically, politically, and socially diverse.

> From Guyana to Indonesia and the Republic of Georgia to Qatar, national governments are linking higher education to their competitiveness strategies. They are investing new resources into their science parks to help spur innovation and research. They are also seeking to capitalize on the success of other nations by importing higher education. (Lane, 2012, p. 10)

As universities collaborate beyond borders and the mobility of talent (students, faculty, staff) becomes more common, economic benefits may parallel this trend. In a recent study of 70 institutions' economic impact reports produced in the last decade and across public and private institutions and systems, researchers found "international students" was a theme at 22 institutions, building a "globally competitive workforce" was a theme at 15 institutions, and "attracting international trade" was a theme at 11 institutions (Lane & Owen, 2012, p. 208). It is clear from this analysis that universities recognize the economic market potential of a globally engaged higher education system. From an economic perspective, international student recruitment has led to lucrative results on two levels. First, a long-term result may be realized after educating a bright, foreign student who later decides to become a productive citizen in the country that hosted their education. A more short-term investment may be realized directly through international students' contribution to their tuition and fee payments and indirectly to assistance in laboratory research, or a variety of other means.

The National Association of Foreign Student Advisors (NAFSA) reported the economic impact of international students and their associated dependents in the United States accounted for close to $21.81 billion in economic gain during 2011-2012 (National Association of Foreign Student Advisors, n.d.). In a state-by-state breakdown, some states enrolled more international students than other states, which resulted in greater economic gains in some cases for those states with higher rates of international students. Massachusetts enrolled 41,258 international students and realized a net gain of $1,489,198,000 from those students and foreign student families (National Association of Foreign Student Advisors, n.d.). The State of Tennessee, by contrast, which enrolled

7,004 international students across state institutions, observed net gains of only $212,993,000 from international students and their families (National Association of Foreign Student Advisors, n.d.). In the cases of Massachusetts and Tennessee, the available data gives the appearance that the greater the number of international students enrolled in state colleges and universities, the greater the opportunity for the state economy to benefit financially. These international students may have also possessed financial means to elect study in the United States with more autonomy than domestic students of more limited means. The Institute of International Education (IIE), noted in the organization's Fast Facts of its 2012 *Open Doors* report that approximately 63.6% of international students in the United States are principally self-funded, either by themselves or by their families in 2011-2012; a 6.1% positive change from the previous year (Institute of International Education, 2012). International students may therefore fulfill a university and/or government's economic goals as well as strategic goals.

Where Global Elite Universities May Emerge

The authors of World Bank's report *Higher Education in Developing Countries: Peril and Promise* accented the importance of "broadening access" to tertiary education among nations where participation was limited to an elite (World Bank, 2000, p. 44). The authors indicated higher education still served as a conduit of and "powerful mechanism for upward mobility" (p. 40). The 2012 IIE *Open Doors* report noted the most popular academic disciplines among international students studying in the United States to be business and management at 21.8%, engineering at 18.5%, and math and computer science at 9.3% (Institute of International Education, 2012). Construction of laboratories and infrastructure to support these academic disciplines and the salaries to

lure top business and engineering faculty could pose a major marketing and financial challenges for nations not already competitively positioned.

In response to this concern, Bloom and Rosovsky (2011) advanced the notion that the opportunity exists for developing nations to become more independent through innovations, but at the same time "merely copying the practices of older and wealthier research universities are not effective because the attraction of world class examples can exert a pressure in the wrong direction…this may call for a balance between teaching and research that differs from some world class models" (pp. 84-85). A developing country's needs may therefore require its governments and institutions to aim for different outcomes, which require different processes to accomplish country-specific goals. As it pertains to these nations ambitions to create a world-class university in a developing context, Altbach (2011a) wrote, "All universities cannot become world-class in the sense of competing for the top positions in the global rankings and league tables. But they can be world-class in serving in the best way possible their particular mission, region, or country" (p. 2). Wealthier states with existing research infrastructures and less dramatic needs for social stability may be sites better positioned for a research university to flourish and establish linkages with nations and universities of advanced capacity.

The developing world must still combat issues contributing to citizen poverty, enfranchise formerly excluded persons into the education system and political life, and engineer basic quality of life projects. This accents the notion of mission and underscores the multiple responsibilities universities may be expected to fulfill. While a world-class university may offer tangible financial rewards, the research emphasis may come as a challenge at too high a cost and negatively impact the delivery in the human

services a university in such a context can offer. Models of how a world-class university comes into being vary as posited in the literature, but share one common characteristic: they are regarded as prestigious higher education institutions. Those nations best positioned to design innovative, leading global research universities will be those located in nations resourced enough and determined enough to serve their local populations as well as national and global communities. Denmark's Aarhus University may become an exemplar case by the close of the most recent strategic plan.

Importance of the Study

A variety of university rankings and multitude of contrasting metrics between those rankings creates difficulty in defining a world-class university. Though, crafting a strategic plan that purports the ambition to enter the world's top tier of university organizations necessitates reliance on some set of metrics to mark progress toward that goal. This study provided insight into how one Danish University's senior management, academic leaders, staff, faculty, students, and government policy makers pursued such a status and the major characteristics a university organization would take on in such a pursuit. Without understanding how other contexts pursue the process of designing world-class universities, the majority of models may be reliant on only those contexts already explored or beholden to rankings and league tables for direction. Should Aarhus reach their goal in 2020, this study may help build the argument for institutions to become more creative than merely mimicking best practices or assessing performance through normative indicators. Instead, Aarhus University could become an exemplar center of international higher education by better serving students, supporting faculty, and cultivating leadership.

Terminology: Operational Definition of a World-Class University

For the purposes of this investigation, world-class universities are single organizational entities which conduct research, provide instruction to undergraduate and graduate students, maintain high quality infrastructure supportive of university activities, engage in international partnerships and enhance global relevance of the campus, support and strengthen commitment to advance the local population of the country in which the university is based, and obtain sufficient financial resources to achieve these aims. Lastly, a world-class university must be *elite*. I define *elite* as the privileged fortune to provide cutting-edge and innovative approaches that advance the institution to become a global leader in higher education.

Background Information for Case Context: Nordic Higher Education

Denmark is among the Nordic, Scandinavian nations of Europe along with Iceland, Sweden, Finland, and Norway. Uniqueness of the regional context is important to take note of as collaborative agreements, partnerships, and a shared history and culture continue to remain emphasized in the higher education sector. Schmidt (2006) explained some of the particularities of this region's higher education systems. Comparatively with other OECD member nations, some Nordic countries spend among the highest proportion of Gross Domestic Product (GDP) on their education and, specifically, higher education sectors and have among the greatest number of researchers per 1,000 of working population; PhD production has increased in Nordic countries; and scholarly exchange is facilitated through programs between Nordic Partners such as NORDPLUS, the Nordic Academy for Advanced Study and in cooperation at the ministerial level in the Nordic Council of Ministers (Schmidt, 2006). While also acknowledging the above three

collaborative associations, Fagerlind and Stromqvist (2004b) claimed Nordic nations share other commonalities including close state control, responsiveness to society, small institutional size, resource centralization, presence of more external members on institutional boards, culture of trust between institutions and government, evaluation methods both institutional and national, and interest in equality among demographics. Nordic nations are seeking to expand access even with currently high participation rates and quality assurance agencies either governmental or independent are present in virtually every Nordic state. Challenges of decreasing public funding amidst the increasing enrolments and need to continue to internationalize university activities persist (Fagerlind & Stromqvist, 2004a). The authors wrote ministries typically control universities in Nordic nations, yet the method of control seems to have shifted from legislative processes to financial and evaluative. Performance budgeting has been introduced along with block funding (Fagerlind & Stromqvist, 2004a), which could signal governmental steering on indicators of quality the universities may have not progressed fast, enough driven by internal processes.

Within this framework of influences, particularly in the Nordic context, many nations are making strides in delivering universal higher education opportunities to their citizens. In terms of tertiary education, Finland has observed 65% participation and Norway has observed 60% participation (Fagerlind & Stromqvist, 2004a). In my interviews with the Ministry of Science, Innovation, and Higher Education, two government officials confirmed Denmark has already reached 60% intake for higher education and indicated the next goal would be for 25% to complete masters level education (Government Ministry, Interview 1). In Iceland, mass higher education may

lead institutions to respond to a new demand. According to Fagerlind and Stromqvist, 2004a), "As more students complete their studies in Iceland, however, they are likely to be looking for elite education at home" (p. 261). State-supported universities, especially those in the Nordic countries that are growing to absorb the increased demand, will need to experiment with the best means of cultivating the most talented students, while simultaneously educating burgeoning student populations.

Considering Salmi's (2009) three paths to designing a world-class university, at least one may be applicable in Nordic contexts. Mergers, for one, are becoming a more common pattern among higher education institutions in Nordic countries. Aarrevaara, Dobson, and Elander (2009) commented on the rationale for this approach in Finland stating, "Perhaps this is appropriate for a nation that currently has 20 universities and 26 polytechnics to service only 5.3 million people" (p. 97). Similarities may be observed in mergers within the Danish higher education system. In both instances, revised governance arrangements included an expanded influence among external stakeholders in university boards. In both instances, university consolidation occurred among several previously separate universities to create but a handful of more comprehensive institutions. In the case of Iceland, it may be too early to tell at this stage in the research whether the University of Iceland's ambitions will be actualized through mergers as well or, instead, through a series of upgrades. The salience of higher education participation expansion observed in Nordic nations is coupled with the significant economic potential that exists for a small nation positioned to actively participate and benefit from global knowledge exchange. Designing a world-class university may be the medium through which a Nordic nation may gain a greater share.

The Danish Higher Education System

The Danish higher education system has been described as extremely "segmented" (Rasmussen, 2004, p. 55). Structurally, higher education is more or less segmented by institutional degree offerings and the extent to which degrees require a professional versus research orientation. The Danish higher education system includes 8 universities, 14 other HE institutions, 11 university colleges and 11 business academies (Nordic Council of Ministers, 2013, p. 25). In terms of finance, universities receive appropriations from the government on an annual basis, students generally receive tuition at no cost, grants are available for research, and performance-based grants are also available in addition to funds through the European Union (Schmidt, 2006). Since Schmidt's (2006) writing, some aspects of the budgeting model have changed. A Deputy Director at Aarhus mentioned universities may be moving towards 3-year budgeting cycles similar to other government departments, which would have the effect of increasing stability (Kristian, January 21, 2014). For the Danish research universities, funding is obtained predominantly through governmental appropriations. The national taximeter system is the basis of university funding appropriations for education. Education funding is performance-based and accounts for 25% of total funding for the university system; performance is based upon passed exams and completion bonuses (Ladefoged Pederson, n.d.). In interviews with Ministry officials responsible for aspects of budgets, the completion bonuses were explained as bonuses awarded within the taximeter schedule, which rewarded universities for bachelor degree completions in under 4 years (Anders & Susanne, January 24, 2014). Within the basic taximeter funding, national/health/technical science passed exams result in more than double the

funding awarded to the institution than humanities and social sciences, with *combination* studies falling in the middle; completion bonuses are also proportionally higher for the science fields (Ladefoged Pederson, n.d.). Basic research grants awarded from the government cover 35% of total research university budgets, competitive research funding from public and private sources accounts for 24%, and 16% comes from other sources (Ladeforged Pederson, n.d.).

In 2003 a University Act was implemented by which external governing board members were granted a greater share of power in university control. Rectors and academic faculty and department leaders become appointed positions and opportunities for institutional entrepreneurship were expanded (Schmidt, 2006). On one hand, universities in the system became "self-governing" (Holm-Nielsen, 2013, p. 76) with additional autonomy, but on the other hand, this signaled a financial shift toward a system with more performance-based grants (Holm-Nielsen, 2012). The University Act established an environment where university administration would be permitted to carry out initiatives with greater independence and ultimate responsibility would fall to individual boards.

Within the previous 15 years, the Danish government's relationship with the universities has shifted beyond the recent grants of additional autonomy. Beginning in 2000, universities completed *development contracts* that defined goals and budget for the university and were accompanied with an expectation that assessment would be ongoing in between contracts (Rasmussen, 2004). The Danish government has also been protective of the university sector, clarifying that a new bachelor's degree offered through second and first cycle institutions is a professional bachelor's degree, as

distinguished from those offered by universities (Rasmussen, 2004). This raises the question of system differentiation. In a system such as Denmark's, where eight universities are reserved a special place apart from the remaining sector, how may world-class aspirations lead to further differentiation among universities? A recent government report may shed light.

The Danish Government's (2006) publication *Progress, Innovation, and Cohesion: Strategy for Denmark in the Global Economy – Summary* touched on the role of higher education in terms of "world-top level universities" (p. 22). Developing a Danish university sector aligned with the best universities in the world will mean connecting funding to quality and performance, increasing PhD academic programs and resources for PhD students, improving instructional quality and training of educators, tying grants to accreditation, flexible of academic programs which respond to the market, and creating "super professorships" (p. 22) among several aims (Danish Government, 2006). The globalization strategy originating under the national leadership of Prime Minister Anders Fogh Rasmussen was noted in interviews to be the tipping point, which ignited the drive to creating conditions that may enable a world-class university or globally competitive institution (Anders & Susanne, January 24, 2014; Kristian, January 21, 2014) to flourish. The Prime Minister's aim for Denmark was that the nation should possess a top 10 university (Malene & Jakob, January 24). A series of university mergers occurred in the mid-2000s, consolidating smaller universities into larger research universities. Benefits of merging included enhanced research capabilities, increased ability to compete for external funding, develop closer ties to industry, and ultimately resulted in the consolidating a system of 25 research universities and institutes to only 8

universities and 3 institutes; the three largest universities would now be the University of Copenhagen, the Technical University of Denmark, and Aarhus University (Ministry of Higher Education and Science, 2013). It is important to note not every university and research institute chose to merge into another university during this process. This voluntary merger process decreased the number of universities with the hope that existing institutions would be stronger positioned to produce top research (Anders & Susanne, January 24, 2014). The mergers fulfilled an objective of the national globalization strategy to concentrate research and investment within selected universities (Mette, January 24, 2014). Again, it was a voluntary choice for the now independent universities to engage in the merger process, aligning with national objectives to create a more globally competitive higher education sector.

Denmark still faces challenges unique to its national societal context. Several challenges unique to Denmark affecting higher education, according to former Aarhus University rector Lauritz B. Holm-Nielsen, include an increasingly older citizenry, limitations on future economic prospects from oil revenue obtained in the North Sea, and the call for universities to become more globally impactful (Holm-Nielsen, 2013). Challenges also include a leveling off of student enrollments and degree production, the transition to the new governance model, and less favorable career prospects for graduates with only 66% of social science graduates and 50% of humanities graduates finding employment following completion of studies (Schmidt, 2006). In consideration of these challenges, an aspirational world-class university in Denmark may be simultaneously concerned with preparing graduates for changing labor market conditions and educating masses of students in addition to cultivating environments to support impactful research.

Aarhus University: Case Study Site

Aarhus University initially began as a provincial-serving institution of higher learning in 1928 for the Jutland region of Denmark (Lykke 2001). Much of the early history of the university was rooted in its connections to the local community of the city of Aarhus, Denmark. Initiative behind the foundation of institution came from citizens who accepted collections to fundraise the cost of its first faculty members (Lauritz, January 16, 2014) along with financial backing of the city and, even earlier, from "prominent citizens from the commercial and public sectors" (Lykke, 2001, p. 7). Yet, the ambition to become a comprehensive university was observed among some stakeholders years even before its founding. "In their report of 1925, the 19 members of the commission on Universities recommended unanimously that a future university in Jutland should comprise all the faculties that one would expect to find in a major European University" (p. 60), which came to included faculties of social sciences, theology, arts, science, and medicine over the course of the 20th century, along with individual departments such as law (Lykke 2001).

The growth of Aarhus University into a major research institution and formidable leader in higher education may be traced to a gradual consolidation and mergers in recent decades. A formerly standalone Dental School became a part of Aarhus University in 1992, followed by an Institute of Business and Technology in 2006 and the Aarhus School of Business, Danish Institute of Agricultural Sciences, National Environmental Research Institute, and Danish School of Education in 2007 (Aarhus University, 2013b); the Engineering College of Aarhus became the most recent addition to Aarhus University, becoming part of the university in 2012 (Aarhus University, 2013d). The

mergers occurred to the benefit of Aarhus, Copenhagen, and Technical University amid calls for a more trimmed, efficient higher education system that would be a better steward of fiscal resources as well as a strategy to enhance intellectual competitiveness through combining institutional strengths into a more comprehensive institution (Holm-Nielsen, 2012). Institutional programmatic expansion was accompanied by growth in enrollments and campus presence in Aarhus and throughout Denmark.

In 2003, student enrollment stood at 21,948 whereas the University grew to 34,000 after most of the aforementioned mergers (Aarhus University, 2013b). By 2013, student enrollment rose to 44,527, of whom 23,171 were graduate students and more than 5,000 of whom were international students coming from more than 100 countries to an offering of more than 200 academic programs of which 67 were offered in English (Aarhus University, 2013a). The budget of such an institution is equally enormous. Annual income now tops 831 million Euros and the University commits 33% of its expenses to research, 31% to education, 24% to talent development, and 12% to knowledge exchange (Aarhus University, 2013a). In 2010, Aarhus University's contribution to intellectual exchange included 11,731 publications (Holm-Nielsen, 2012).

Following the mergers that resulted in a larger and research intensive Aarhus University, the institution underwent significant internal academic reorganization. An *academic development process* began to take shape as a means of organizing the now omnibus Aarhus University. The Aarhus University Senior Management Group (2011) released a report articulating the academic development process's four change processes: academic organization, management, interdisciplinary centers, and finance and administration. Beginning with discussions and University Board approval in 2010 and

actualization of the process in 2011, Aarhus University restructured itself academically by consolidating nine faculties to a mere four (arts, science and technology, health, business, and social sciences) each with their own graduate school and from 55 departments into 26 with an emphasis on related curricular departments being within close physical proximity to one another. Interdisciplinary centers emerged alongside a technology transfer office and amid an infusion of 50 million DKK to help fund start ups at Aarhus University, and a new Aarhus Institute of Advanced Studies was created and also funded with 50 million DKK (Aarhus Senior Management Group, 2011). An "Inner Education Market" (p. 16), was generally described to be a feature aimed to promote "cooperation" transcending academic programs to produce graduates better able to find employment (Aarhus Senior Management Group, 2011).

University management observed consolidation from 10 units into a single management cadre (Holm Nielsen, 2012). The new management structure consolidated university management and academic leadership for each of the faculties. Through the academic development process, the Senior Management Group came to be reorganized as a single unit composed of a rector, pro-rector, university director, and four academic deans (Aarhus Senior Management Group, 2011). The reorganization of managerial units into a senior team has meant locating all of the senior offices in the same infrastructure and sharing responsibilities, appointing and rotating academic deans to committees assigned to advance each of the four university missions, and to create a think tank of personnel who may offer advice on how to advance Aarhus University on each of the four missions through strategic planning which meets four times a year in 20-person forums with a forum dedicated to each mission (Holm-Nielsen, 2013, p. 83).

Aarhus University Strategic Plan 2013-2020

Since the academic development process, Aarhus University launched a new strategic plan in 2013. Opening with a simple vision statement, Aarhus University set in motion an ambitious plan to take shape as the next process for the university. The University aims to become "a leading globally-oriented university with a strong engagement in the development of society" (Aarhus University, 2013d, p. 3), but more specifically, the strategic plan observes an opportunity to climb from being recognized as a top 100 university into the top 50 (p. 7) and notes, "This strategy is the result of a process involving staff and students at all levels" (p. 4). Just several links from the university's official website homepage (and within the same section of the Strategy) an updated list of the most recent rankings is visible in its own subsection: for 2013, Leiden ranks Aarhus University 77th, the Academic Ranking of World Universities or Shanghai ranking places the university 81st, QS World University Ranking is 91st and the Times Higher Education World University Ranking is 138th (Aarhus University, 2013e). It is unknown from the website or strategic plan, however, by what standard the top-50 Strategy goal is referring or, conversely, if it is by some other standard than rankings.

Aarhus University's strategic plan, Strategy 2013-2020, shed some light on initiatives and special focus areas to be revealed in the next 7 years. Priorities underlying the strategic plan include producing groundbreaking interdisciplinary research with a global impact, research-oriented academic programs, and internationalizing instructional and research activities (Aarhus University, 2013d). Aarhus University (2013d) envisions it will meet these priorities through four interconnected approaches: research (providing academic freedom, recruiting talent, and updating infrastructure), education (career

competitiveness, increased masters-level interdisciplinary degree offerings, emphasis on entrepreneurship, mobility), talent development (incentivizing recruitment through use of tenure, tapping into alumni networks, cultivating talent as early as at the undergraduate level, creating special tracks within the university for students with exceptional promise), and knowledge exchange (technology transfer, industry linkages, consulting). Of particular interest is the creation of special "talent programmes across all main academic areas" (p. 37), geared to develop the most promising students through additional academic experiences (Aarhus University, 2013d).

Former Aarhus University Rector Lauritz Holm-Nielsen wrote Aarhus University had become a "new model" compared to other European university models stalled in traditional Humboldtian philosophies (Holm-Nielsen, 2013, p. 78), singling out the aforementioned four goals of Aarhus University as the "quadruple helix" (p. 79). The helix represents Aarhus University's four missions and specifically the talent development and knowledge exchange aspects of the mission that are beyond the Humboldtian approaches taken by other institutions consisting of education and research. The very center of where the four missions intersect in the author's diagram is labeled "professors" (p. 78), a slight change of terminology from "top researchers" (Aarhus University, 2013d, p. 22) mentioned in the strategic plan. The terminology in Holm-Nielsen's (2013) model also specifies "post-docs" (p. 78) at the intersection of talent development and research, replacing "research talents" (Aarhus University, 2013d, p. 22).

The new approaches taken by Aarhus University administration focus on managerial reforms and academic priorities to better the quality of the institution according to each of the four missions as described by (Holm-Nelsen, 2013),

- *Education* will be enhanced through a flexible variety of academic program offerings, specifically those earning ECTS recognition.
- *Research* will be enhanced through interdisciplinary centers forged through the participation of multiple academic units as well as *Aarhus University Ideas*, a program that funds younger researchers who may hold particular promise.
- *Talent development* will be enhanced through expanding PhD enrollment, expanding the number of international students, and creating the Aarhus Institute of Advanced Studies, an international research institute with its own infrastructure and staff.
- *Knowledge exchange* will be enhanced through increased provision of societal services

With *Strategy 2013-2020* published, the present investigation commenced in 2014 to better understand the process of designing a world-class university during such an endeavor.

Organization of the Study

Chapter 1 introduced the world-class university phenomenon as a special tier of elite higher education institutions pursued by universities and their governments for the benefits they produce in intellectual, human, and economic capital. The significance of this study is the accent upon the phenomenon as located in the context of Western Europe, specifically in Denmark at Aarhus University. There are many ideas about what

makes an institution a member of this special class of global elite higher education. Unfortunately, the locus of empirical research and a significant number of scholarly observations are not found in Western European contexts. This becomes problematic should European institutional leaders consider strategies applied under very different governance arrangements, very different economic conditions, and with very different needs from their populations and capacities of their current institutions. This case study of is among the first of its kind to describe the characteristics of how one comprehensive university conceptualizes becoming a world-class university and the governmental relations that exist unique to the Danish context.

Chapter 2 will account for the scholarly literature and empirical research on the world-class university. This study's theoretical framework, institutional isomorphism, will be introduced. Although this theoretical frame is often applied to firms and organizations, the theoretical frameworks will be applied to universities as organizations in this investigation. Chapter 3 will outline the study's methodological research design - a qualitative, holistic, descriptive, single-case study. An explanation will be provided on how the case investigation will be executed as well as the coding and analytical approaches taken to analyze the data. Chapter 4 will outline study findings. Chapter 5 will discuss findings in relation to the theoretical framework, literature on world-class universities, and discuss consequences for future research and practical applications in university management.

CHAPTER 2: REVIEW OF THE LITERATURE

Perspectives on the Composition of a World-Class University: Conceptual Base

The term *world-class* applies to multiple types of institutions beyond merely the intensive research university (Salmi & Liu, 2011, p. xiv). Top-tier tertiary educational institutions may exist in highly differentiated classifications within overall higher education systems. Some may include exceptional community colleges, technology-specialized institutions, and smaller colleges liberal arts colleges offering top educational experiences (Salmi, 2009, p. 72). These institutions, however, fail to enter into international rankings due to the rankings' focus on the research tier of universities (Salmi, 2009). While respecting the contributions and uniqueness of other types of world-class institutions, this study is directed towards the comprehensive, research-tier universities. A world-class university should engage in teaching both undergraduate and graduate students and advances knowledge through research. Two-tiered educational programs, teaching, and research are elements in each organizational entity defined as world-class for the purposes of this study.

The world-class university, as a single organizational entity, serves multiple missions. Altbach (2007) distinguished how alternative organizational forms and purposes of universities are separate from world-class universities. "All world-class universities are research universities, without exception. But not research universities are world class, nor should they be" (p. 7). Flagships universities may be premier universities in public educational state systems, while other types of universities within a state may serve educational purposes, but these types of tertiary institutions should not be interchangeable with world-class universities which only a few nations even possess the

capacity to host (Altbach, 2007). Similarly, P. V. Indiresan (2007) prefaced his discussion for potential world-class universities in India by distinguishing between those world-class for teaching and those for research. Marginson (2011) added the word *global* to emphasize that a "World Class Global Research University" (p. 9) is a type of institution special for its global orientation, a "crucial distinction" separating it from other higher education institution's in a nation's system (Marginson, 2011, p. 11).

Salmi (2011) theorized world-class universities produce competitive graduates, pioneer research, and engage in technology transfer fueled by bright faculty and students. Plentiful governmental and non-governmental resources are obtained, and autonomy is granted from constraints typically imposed by governments and regulations. This amalgamation of characteristics fosters the ambiguity of what makes world-class universities different from many of high research activity institutions. The elusiveness of this single organizational entity's distinctive traits merits further refinement. World-class universities are purposefully competitive and intentional in advancing multiple indicators of quality and in cultivating favorable external perceptions. Distinctively, these types of institutions are intellectual powerhouses, generating patents and licenses; publications written by university personnel appear in respected journals; graduates are able to obtain employment; and they enjoy their favorable positions in world rankings and the reputational recognition accompanying their institutions (Salmi, 2011).

Facility considerations also emerged in the literature for an aspiring world-class university. With some exceptions, Mills (2010) suggested amphitheaters be used for instructional purposes as the faculty and students may still interact without reduced educational quality, but carry to advantage of reducing class load expectations and

increase time for research. Mills (2010) cited amphitheater style classrooms could accommodate as many as 90 students without lessening quality. Altbach (2004) discussed the importance of facilities in terms of the library, academic and administrative offices, and online resources in his discussion of what may contribute to a definition of a world-class university. A world-class university therefore necessitates physical planning considerations in addition to academic.

Beyond facilities, Altbach (2004) wrote that universities may need as much as $500 million to become world-class, employ faculty who work at these institutions as a matter of an intrinsic "calling" (para. 8). Further, the faculty of a world-class university is expected to be highly qualified. Khoon et al. (2005) wrote that world-class universities network with top universities, ratchet up, and advertise Nobel laureates and prize-winners associated with their institutions, embed ambitious aspirational inclinations into mission statements, and advance the institution through strategic planning and may be described as "forward looking" (pp. 1-2). For Khoon et al. (2005), scholars are the "life blood of a world-class university" (p. 2). With all these characteristics, Salmi (2011) hypothesized there may be no more than 30 to 50 world-class universities, almost all from North America and Western Europe. Yet, the number of universities included in the league tables frequently cited in claiming world-class position, numbers much higher in institutions and is much broader geographically. The *Times Higher Education Supplement* ranks up to 200 leading universities and Shanghai Jiao Tong University's ranks up to 500 ranked institutions (Salmi, 2011). The literature does not provide an agreed upon number of how many elite institutions may exist. For the purposes of this study, the term *elite* will be considered synonymous with world-class in reference to an

institution in the upper echelon in a particular academic program or overall university. Adding to even greater complexity, Altbach (2011a) offered an alternative definition in his discussion of how the term may apply in developing countries:

> All universities cannot become world class in the sense of competing for the top positions in the global rankings and league tables. But they can be world-class in serving in the best way possible their particular mission, region, or country. In this book, we define world-class as doing the best-possible job in the context of mission or location. (pp. 1-2)

Harvard University's David Bloom and Henry Rosovsky (2011) recognized the importance of localized relevance and noted that nations merely copying what is regarded as *the best* may actually be doing a great disservice to the populations and nations they should be serving. The authors proposed a "balance between teaching and research that differs from some world-class models" (pp. 84-85). This deepens the definition of a world-class university to include a purposefulness to be nationally relevant in a given country. For even if a university cannot stand shoulder to shoulder with Harvard University and Oxford University, these commentaries suggest, a university may still be considered world-class if it can excel in areas that advance itself as an institution as well as the country in which it is located. Yet, the challenge ultimately comes from the ever-present consideration of rankings, which do not distinguish between whether the nation itself is upper-income or developing, or nationally relevant. Evidencing this point, Wildavsky (2010) noted, "While the aspiration to be world-class seems to be at the top of every university's to-do list, this argument goes, world-wide rankings are unavoidably a zero-sum game that implies excellence is found only at the heights of the league tables"

(p. 125). Given the contemporary global push for world-class universities in highly different national contexts with very different university capacities, definitional certainty is still lacking. However, these alternative considerations of what constitutes world-class help in understanding the workable, operational definition crafted for the purposes of this investigation into the design of an elite university in the region of Western Europe.

Jamil Salmi (2009) offered among the most comprehensive characterizations of a world-class university in his book, *The Challenge of Establishing World-Class Universities* published through the World Bank. This contribution to the phenomenon offered observations, recommendations, and critique on contemporary trends among nations developing their own elite systems or institutions of higher education. Salmi (2009) specifically sought to "explore *how* institutions become tops in their league to guide countries and university leaders seeking to achieve world-class status" and asked "Is there a pattern or template that might be followed to allow more rapid advancement to world-class status?" (Salmi, 2009, p. 3). Throughout the report, the author considered the characteristics of institutions numbered among the peak positions across the most respected international rankings as well as the contextual circumstances of nations both succeeding and struggling in their efforts.

A world-class university may develop uniquely, respective of the contextual conditions and culture of both the university and the national government. The use of the term *world-class* to describe an educational experience has become a charged term. The term ascribes a connotation of top-tier quality to a university's reputation for academic excellence, transcendent across national borders and research communities. Salmi (2009), who served as Tertiary Education Coordinator for the Human Development

Network of the World Bank, wrote "world-class universities are recognized by their superior outputs" (p. 5). Determining the outputs of an institution of higher education is no easy task in the U.S. context, let alone the rest of the world. Outputs of a typical university may be interpreted to mean the number of credit hours produced per full-time-equivalent faculty members, profits earned or endowment/advancement campaign goals met, community service hours generated, percent of students persisting until graduation, or number of athletic competitions won.

Salmi (2009) hypothesized the world-class university possesses definable outputs, and noted, "They produce well-qualified graduates who are in high demand on the labor market; they conduct leading-edge research published in top scientific journals; and…they contribute to technical innovations through patents and licenses" (p. 5). A strategic plan outlining the world-class university's vision, ambitious goals, and able leadership is essential (Salmi & Liu, 2011, p. xii). In his model, Salmi pointed out three essential ingredients of a world-class university: (a) concentration of talent, which includes students, faculty, researchers, and staff; (b) abundant resources, which includes grants and tuition, endowment, and public revenue sources; and (c) favorable governance, which includes a strategic vision, supportive regulations, and academic freedom and autonomy. While important characteristics, Salmi is somewhat general in describing what specifically is necessary within each of these categories. For example, Salmi (2011) twice cited the necessity to develop a *critical mass* of bright students and faculty that should be concentrated on the campus (pp. 228-229). But how many constitute a critical mass? This is one question left unanswered in the commentary. Salmi's (2011) observation of a critical mass is not isolated. P. V. Indiresan (2007) remarked on the

need to develop a capacity of talent at such an "elite institution," which would be "large enough to support a number of scholars in each discipline to stimulate and challenge one another" (p. 95). Mills (2010) recommended mentorship between university faculty and stellar, established visiting professors where the visiting professors mentor existing university faculty during their stay at the hosting university. The importance of recruiting top talent seems far from merely counting how many top students and faculty are affiliated with an institution, but rather an accent may also be placed on developing a institutional culture of competition, motivation, and continuing academic challenge to do more. One may wonder how long it takes to develop this type of culture? Is there a way to quickly construct a top university?

Salmi (2013) identified five *accelerating factors* to develop a world-class university, which he developed based off his reading of cases in an earlier publication he co-edited. These included (a) bringing native scholars back home to help build an intellectual base; (b) adopting English as the primary language; (c) focusing on a specialty area that the institution can excel in; (d) benchmarking against other institutions; and (e) developing the curriculum, teaching, and research (Salmi, 2013, pp. 2-3). Salmi (2013) seemed to prefer the creation of a new tertiary educational institution over an upgraded existing institution to better achieve goals, listing the existing culture as a barrier in attempting to change an existing institution (p. 3).

Philip Altbach, Director of the Center for International Higher Education at Boston College's Lynch School of Education, offered insight into these distinguishable characteristics as he illustrated the place of a top research university in the 21st century. According to Altbach (2011b), top-tier of institutions have the following characteristics:

(a) are usually public universities located at the apex in their respective national systems; (b) encounter less competition from other research centers in their countries and are comprehensive institutions including both research and instruction; (c) invest in digital as well as physical infrastructure that includes IT, libraries, and scientific facilities; (d) generate income from technology transfer and tuition; and (e) offer incentives to recruit qualified students and staff (pp. 24-25). P. V. Indiresan (2007) asserted a world-class research university practices both instruction and research, enjoys autonomy on academic policy decision-making, recruits award-winning faculty and talented students globally, and maintains a significant endowment. Still, universities able to achieve the above qualities will continue to face challenges.

According to Altbach (2011b), research universities of the 21st century will need to (a) generate income from their own sources of revenue, (b) operate in stable environments of continued national support for universities (c) balance the demands of calls for accountability while preserving academic autonomy and voice in decision-making processes, (d) compete for talented academics by offering higher salaries, benefits, and better work environments, (e) respond to pressures to privatize public institutions, and (f) facilitate an environment where scientific discourse between that nation and the rest of the global scientific world may occur (Altbach, 2011b, pp. 26-28). Some scholars contemplated whether emphases on some of these activities, namely research and markets, have come to change the character of top universities.

The Emerging Global Model of Research University

Mohrman et al. (2007) discussed the importance of a new, characteristically different type of research university. To the authors, this new research university may be

referred to as the emerging global model (EGM). The EGM model embraces similar qualities of the world-class universities aforementioned: concentration on research, income generation, desire to acquire talented students and faculty, etc. The EGM also stresses a focus on becoming truly internationalized and, preeminently, a research university. Mohrman et al. (2007) illustrated their concept when they wrote, "The EGM can be described as a super research university at one end of a continuum of institutional types reflecting different missions and emphases on research, teaching, application, and service to the area in which the institution is geographically located" (pp. 163-164). Principally, this meant a focus on expanding PhD programmatic offerings across academic disciplines and the production of at least 20 conferred PhDs annually, the Carnegie classification's minimum for doctoral institutions in the U.S. institutional internationalization activities may include attracting talented foreign graduate students to contribute to the university's research endeavors, exchange programs, and internationalization of faculty and students (Mohrman et al., 2007, p. 164). The notion of a balanced mission consisting of teaching, research, and service may not be the primary focus in this iteration of a top university.

The emphases of a greater orientation towards research means an EGM university may focus on incentivizing research over instructional aspects of the faculty (Mohrman et al., 2007). This may, in fact, already be the case in some parts of the world aspiring to develop world-class universities. In China, some academic organizations have scaled back the awarding of tenure to promote competition among the faculty as well as require faculty to publish in a minimum number of articles in international journals (Wildavsky, 2010). While these characteristics may seem similar to other aforementioned iterations

of what makes for a world-class university, there is a more extreme focus more toward research.

The conceptualization of an EGM is even described by authors as similar to research institutes or graduate research centers in nations such as the former Soviet Union and China that separate centers of advanced research from traditional universities as found in Western nations (Mohrman et al., 2007). This is fundamentally opposed to an observation made by Salmi (2009) regarding France's system of research centers being largely separate from other aspects of academe. According to Salmi, one major fault of France's system is that since the research institutes are separated from the university, it is segmented rather than combined with the expertise of those who work in each respective area. This is not without consequence as, according to Salmi, "The strength of world-class universities is that research is usually integrated at all levels" (p. 31). Altbach (2011b) similarly observed the "most successful" research university would not necessarily be separated from the university as "…the dilution of research between universities and research institutes can also weaken the talent pool, removing top researchers from the classroom and the campus…" (p. 25). Notwithstanding the disagreement on organizational structure, Mohrman et al. (2007) identified eight specific characteristics, which add depth to literature on how to successfully identify an EGM research university.

Mohrman et al. (2007) wrote an EGM university (a) articulates a mission, world-wide in scope and directed towards furthering knowledge; (b) focuses on research to the extent scientific methods are integrated across non-scientific subjects as well as scientific subjects; (c) has faculty who engage in international, collaborative arrangements to solve

contemporary issues, (d) fundraises through entrepreneurial endeavors which bring resources into the university beyond public resources, (e) collaborates with government to assist in better economic and societal conditions (f) has students, faculty, and staff are strategically enabling mobility to their institution, (g) invests in additional research centers and technology, (h) collaborates with agencies beyond those associated with the government (p. 147). Concentration on research is a central, thematic characteristic of a top, global university. However, research production and funding (as well as the human capital behind both) are pieces of what the literature has acknowledged make for a world-class university. Western Europe, and specifically the Nordic countries, is a different context than where most of the current literature on world-class universities has focused. Particularities may exist which describe Nordic-specific approaches to create, but also raise barriers to the creation of, world-class universities.

World-Class University Design: Different Nations, Different Tracks

Iterations of how a world-class university may be designed have surfaced in recent years. A foundation in this area has been Salmi's (2009) three paths to transformation, which offer upgrading, merging, or creating as means through which universities and governments may pursue the design of a world-class university. There are benefits and challenges in each circumstance. Salmi explained the pros and cons to each track. *Upgrading* means investment in an already established university to save some expenses otherwise incurred by a new institution, but it may be at a university already unable to advance; *merging* institutions combine assets and strengths of each institution, but can create conflicts in organizational culture; and *creating* institutions intended to be world-class provides opportunity to create a new culture based upon top-

quality, but is a very expensive endeavor (Salmi, 2009). Again, the emphasis in Salmi's presentation seemed to be for a government audience, to whom the directions on paths to create world-class universities are directed.

What is notable and significant is Salmi's (2009) reference in each of the above three cases to what governments could do, granting deference of the steering role to those outside the university. Two years later, Salmi (2011) noted that world-class universities necessitate public contributions to help cover increasing expenses resulting from continually expanding research operations. While government certainly seems to occupy a role in the facilitation of a world-class university, too much of a steering role may underplay a university's agency and willingness to harness its own destiny. According to Mills (2010) argued the need for world-class universities to be autonomous from the control of being part of a system, where decisions are made above the institutional level for a broader spectrum of institutions. Still, other authors noted the importance of the symbiotic relationship between universities and government. In nations where ministries of education wield influence, the role of a university leader may be quite important. University rectors may meet on a standard basis with ministry officials to discuss policy and brainstorm approaches to address issues, advocating for their universities in the process (Rojas & Bernasconi, 2011).

Marginson (2013) contended Salmi's description of world-class university design is absent an emphasis on the cultural and regional context within which the university rests, opposed to a merely structural perspective at the national level.

> That is, different state forms and political cultures shape the distinctive roads to the world-class university…Moreover, it is noticeable that the different roads (and

> systems) of higher education tend to be not so much national, as regional, or sub-regional, reflecting historical overlaps and clustered cultures. (p. 20)

Regional nuances of difference are particularly important. In the last decade, much of the research articles on the world-class universities are based in settings in Asia. Marginson (2011) did include two Dutch universities in his research, but with approximately 20 institutions from around the world and many in Asia, it was difficult to distinguish what made the two universities in the Netherlands truly unique for all the others.

Keeping in mind Marginson's (2013) comments on the impact of historical, cultural, and political influences on world-class university design, the context where in which governments and university leaders approach such as design must also be considered. Even still, differences at the level of the unit of analysis, in this case the university organization, will remain important despite regional differences. Wang, Cheng, and Liu (2013), editors of *Building world-class universities: Different approaches to a shared goal* observed, "In spite of many social, cultural, and economic differences across the globe, three main and common economic strategic foci can be recognized, those being competitive funding schemes, internationalization and governance reform at both governmental and institutional levels" (pp. 2-3).

Patterns of World-Class University Design

The world-class university in Asia: The hub of empirical studies. Empirical research on the world-class university is limited. This is partially due to the contemporary nature of the phenomenon. The current research reflects largely those nations with earlier strides and significant investments into creating not only one, but multiple world-class universities. In Ho's (2006) dissertation of two world-class

universities in China, Tsinghua University and Peking University, the researcher found 11 characteristics of a world-class university in the context of China using a qualitative document analysis technique associated with a grounded theory approach. These characteristics included (a) funding, (b) research innovation in science and technology, (c) distinguished faculty, (d) comprehensive university and updated infrastructure, (e) outstanding curriculum and programs, (f) Chinese context and culture, (g) transparent and competitive system, (h) international perspective, (i) quality students, (j) contribution to social and economic development, and (k) reputation of excellence. The study may be considered limited in scope as the documents she reviewed largely came from Google searches, Google Scholar, or were supported by the Chinese Ministry of Education.

Research on world-class universities has continued to emerge as a topic in more recent qualitative studies. Choi (2010) conducted a case study consisting of interviews, document analysis, and a site visit to China's Yanbian University where she explored the impact of globalization on a Korean minority-serving university, a participating university in China's 211 Project. The 211 Project is one of China's two efforts to build a system of world-class universities. Findings indicated the university expanded the full-professorial ranks and interviewees indicated increased research and significant enrollment increases within the last decade; however, some of the best students are choosing to study in Beijing instead (Choi, 2010). The choice among some students to study in Beijing was presented as an opportunity to attend better institutions. The importance of proximity to more populated and nationally significant hubs of activity has been noted in other contexts. Altbach (2013) speculated one deterrent for India as they look to establish a new university in a rural section of the country was just that, the

isolated location. World-class universities may be better positioned for scholarly engagement if situated near metropolitan areas.

Using data envelopment analysis, Chang, Wu, Chin, and Tang (2009) explained the impact of funding on outputs among the 12 out of 164 Taiwanese tertiary institutions part of Taiwan's formal plan to develop first-class universities and top-level research centers. Outputs included growth of international students, publications in top-tier academic journals, growth in international collaboration, and growth in visiting scholars and collaboration expenditures in science and education. The researchers found several of the universities receiving the least amount of resources were more efficient than those universities that received more funding. The researchers concluded universities with less funding were better stewards of their resources and more attentive to their use; only found 5 of the 12 universities were found to be "relatively efficient." This suggested the possibility of beneficial future research to examine the internal process of how to create a world-class institution relative to resource allocation and management processes. The varied successes in the aforementioned 12 universities suggested different approaches might be pursued even in the same national system. If the determining factor of success is not the extent of funds invested, but rather how those funds are used, the institutional policies directing those funds warrants further investigation. Chang et al. elaborated on some steps taken, but with 12 universities in the study, a more in-depth qualitative case study of two aspiring world-class universities may be more appropriate for a study of internal processes.

Shin (2009), similarly looked at outputs as indicators of progress in the development of world-class universities in the context of Korea. The researcher sought

to evaluate the effect of South Korea's Brain Korea 21 Project funding on the production of top academic journal publications. Shin found funding had a positive effect on research productivity, but in most cases publication production was only at roughly the same rate as the United States and Japan and still fell short of China's rate and below world-class universities generally in the sheer volume (Shin, 2009). This study accented the difficulty in competition along a continuum of indicators where other nations have already held a strong lead. This may suggest aspiring world-class universities may experiment with different, more innovative approaches in the future if they cannot succeed by current measures. Still, these studies are among much of the empirical research on world-class universities and internal processes remain unclear.

The above empirical research illustrates an abundance of studies on institutions throughout the continent of Asia. While making rapid strides towards developing what it interprets to be world-class universities, Asian universities reflect experiences unique to their contextual circumstances. Europe faces very different complexities in coordinating higher education. One complexity unique to the region is the Bologna Process, an established European Area of Higher Education, where credit-transfers are becoming more clearly delineated to improve cross-border study, degree structures are becoming more uniformed, diplomas transparent, and learning outcomes discussed, and mobility encouraged for not only students but also faculty and staff (Gaston, 2010). European economies also operate under different circumstances. Most OECD nations are European (Organization for Economic Cooperation & Development, n.d.). Coincidentally, most of the institutions that rank in the upper tiers of the most popular world league tables are among those OECD members. Yet, these highly ranked institutions may only account for

a fraction of the continent. Other nations within the OECD may be in the best positions to develop world-class universities and compete with the current leaders. Western European universities are generally located in nations with strong economies, established universities, and are connected in cross-border arrangements.

The world-class university in Europe. Some empirical and conceptual writings more recently surfaced on European nations having pursued world-class status. Marginson (2011) described a study of 12 top national public universities across Asia, the United States, Canada, Australia, New Zealand, and two universities in the Netherlands—Leiden and Twente—where 12 to 20 interviews were conducted at each institution with the focus being on interviews with university leaders. In those two Dutch institutions, Marginson found that foreign study experiences were encouraged for a semester, but conversely visa setbacks were present. Leiden, though, made strides to enter into networks with other European institutions (Marginson, 2011). While the case studies shed some perspective from top officers, the reporting of the cases leaves absent many of those others interviewed outside top university officers.

Both the *Ecole Polytechnique Federale de Laussane* (EPFL) in Switzerland (Noukakis, Ricci, & Detterli, 2011) and top institutions in Romania (Agachi, Moraru, Cucuruzan, & Curaj, 2011) sought entry into the Bologna Process. Both recruited younger academic researchers to further research goals and both developed ways to obtain funding either through grants as in the Switzerland case or a type of formula or performance type funding as in the Romanian case. Both, however, developed in very different contexts and attempted different approaches to enhance their institution or system. In Romania, universities were coming out of communism, which meant

differentiating institutions between those with a research focus and those meant for teaching or vocational instruction and infusing global language into mission statements (Hazelkorn, 2005, as cited in Agachi et al., 2011), deal with massification, and develop a plan such as the Romanian National Research Strategy between 2007-2013 (Agachi, Moraru, Cucuruzan, & Curaj, 2011). Switzerland's EPFL created new schools and colleges such as the School of Life Sciences and colleges including Social Sciences, Humanities, and Management of Technology; restructured curriculum to allow more coordination between schools; established a doctoral school with doctoral level programs; and established tenure-track positions and attractive compensation packages (Noukakis, Ricci, & Detterli, 2011).

Slovenia shares criteria among those nations most appropriate for future investigations. Slovenia is a smaller European nation with emerging national universities. Altbach (2012) observed that Slovenia's 2011 National Higher Education program may face some challenges inherent in the system as Slovenia moves to improve their higher education system. Challenges in the system included institutional leadership selected from academic and student constituents, free tuition for many undergraduate students, and the need to better internationalize the University of Ljubljana through courses of study in English, exchanges, and choosing in which fields to be world-class (Altbach, 2012). This commentary and, especially this last point, have particular relevance for other similar nations. Notably the notion that world-class can apply to institutions with exceptional programs. Altbach observed that, "Few universities can afford to be world class in all specialties. For a small country, careful selections will be required as to that fields and disciplines can truly be world-class and which should be

'merely excellent' " (p. 16). There may also be more rapid ways for achieving world-class status.

Themes in World-Class University Design in Western Europe

Cross-continental, global partnerships or network arrangements are emerging as a trend among aspirational elite higher educational institutions. Haworth (2013) alluded that European higher education may experience a future financial climate where budget commitments to European Union programs may be questioned. Haworth noted universities are engaging in cross-continental partnerships such as universities in Britain and Australia as well as a 3-way partnership between universities in Switzerland, Belgium, and Canada, where some of these institutions are entering into resource-sharing arrangements.

Ecole Polytechnique Federale de Lausanne (EPFL) engaged in academic restructuring to establish new academic centers as an approach to design a world-class university. Formerly divided among five academic schools, EPFL established several cross-disciplinary research centers to encourage faculty collaboration in addition to establishing a School of Life Sciences, College of Management, College of Social Science, College of Humanities, rearranging departments, and expanding doctoral opportunities (Noukakis, Ricci, & Detterli 2011). At EPFL, international recruitment of faculty meant the creation of tenure-track positions for assistant professors, attractive benefits and working conditions, and mentorship for those faculty brought onboard (Noukakis et al., 2011). A focus on talent cultivation also appears at work at Aarhus University in Denmark as one of the four components of the "quadruple helix" (p. 79) as described by then-Rector Lauritz-Holm-Nielsen (2013) as he articulated the missions of

Aarhus University under its new model. Although, more research is needed on how Aarhus actualizes this aim for students, faculty, and staff.

Technology transfer, as with aspirational world-class universities in Asia, is present in Europe through investment in entrepreneurial and profit-earning projects. EPFL provides internal grants to researchers through a program named Innogrants as well as actively collaborate with businesses through liaisons charged with connecting the interests of both the university and industry in a program named Alliance (Noukakis et al., 2011). EPFL in Switzerland created an average of a dozen organizations annually, over the past decade (Noukakis et al., 2011). This suggests that exploring the trends of patent production, technology transfer, and entrepreneurial spin-offs and activities as they occur among institutions working toward world-class status may be beneficial.

Designing A World-Class University in Europe: Opportunities and Challenges

Despite the ongoing continental Bologna Process leading to a more integrated, mobile, and globally enriched European intellectual environment, several countries are enhancing universities at the national level. Both Germany and France launched initiatives to develop world-class universities on the European continent. At the start of the 21st century, Germany unveiled its $19 billion euro Excellence Initiative in which national universities competed to win the funding to support future research and graduate programs whereas France committed to a $5 billion euro contest known as Operation Campus that awarded funding to the most competitive institutions (Wildavsky, 2010). Yet, national yearnings for exceptional higher institutions are emerging beyond the borders of Europe's largest and most economically powerful countries. European nations smaller than France and Germany, both by measure of citizens and annual GDP, are

articulating strategic plans and vision statements echoing the desire to also design top-tier, internationally recognized universities.

Wildavsky (2010) observed EU nations have already set goals to expand the numbers of PhD students and graduate academic programs offered in the English language have proliferated across Europe. Indeed, national policies and amiable national governments may work with universities to better educational quality. Dysfunctional elements however have been known to crop up in other parts of the world. Several of these potentially aspiration-hindering factors may include universities which recruit their own graduates into their faculty lines and universities with high admissions rates leading to less selective enrollment management practices as is common in Latin America (Salmi, 2011, p. 229). In the case of Western Europe, this investigation may uncover national conditions which both facilitate and inhibit the development of a world-class university. van der Wende (2013) noted several dysfunctions of undergraduate-level education stemming partially from massified systems. These dysfunctions include poor retention and graduation figures, longer degree completion time, withering stimulus in the faculty for instruction, and packed lecture facilities.

European countries seeking to establish world-class universities will encounter challenges similar to and unique from nations in other continents directed toward the same ends. European institutions will confront the challenge of implementing change within institutions accustomed to traditional approaches, expanding academic offerings delivered in the English language, discovering new revenue sources, entering into partnerships and alliances with other academic institutions and industries, and strengthening their ties with local communities (Noukakis et al., 2011). For Denmark in

particular, aspirational top-tier universities may face challenges within their national context as well as local culture. According to Colatrella (2007), "Attracting Danish and foreign students in universities is critical for a small country interested in maintaining international business ties and expanding international education opportunities" (Colatrella, 2007, p. 122). van der Wende (2013) commented on the dysfunctional elements of undergraduate education generally are present in Denmark. Students in Denmark face the challenge of graduating on time, Danish welfare programs are generous but very costly, and classes are generally not taught in English and may therefore pose challenges in attracting international students (Colatrella, 2007). Iceland specifically may face a more geographic challenge of connecting provision of higher education to less populated areas outside the capital region of Reykjavik and town of Aukeryri where many of the nation's public and private universities are located and population concentrated (Educational Testing Institute of Iceland, 2005). Despite national and institutional challenges, many universities are moving ahead in developing and promulgating strategic plans and vision statements on how their universities will become world-class, unseat better ranked schools, or keep the status quo.

World-Class Strategic Plans at European Universities

Empirical studies on the world-class phenomenon at smaller European nations are near non-existent. The absence of studies is in spite of the current strategic pans that have been underway for the last decade. These strategic plans cite efforts to bring universities in their countries into a top-tier of institutions with a global perspective in mind. The University of Iceland is actively developing research capacity and educational quality as well as focusing on improving human resources in an effort to join the globe's

top 100 universities (University of Iceland, 2010, p. 5). A statement written by the university's current Rector, Kristin Ingolfsdottir, read,

> On the centennial anniversary of the University, its employees and students look toward the future, determined to strengthen the Icelandic community…In 2006, the University of Iceland set itself the ambitious long-term goal of becoming one of the leading universities in the world. (University of Iceland, 2010, p. 3)

One may observe the far and forward vision embedded in this statement. The impetus for such change is cited to be not from an explicit economic or political position, but it is conveyed much more as a communal, university-wide desire to become a better place by heading down such a pathway.

The University of Zagreb, in Croatia, is pursuing six "immediate objectives" with the hope of achieving an overall goal to increase the university's contributions to global research and enhance its reputation as a research institution (University of Zagreb, 2008, p. 16). The University of Tartu in Estonia, underscored the university's salient role as fueling national intellectual advancement as well as "…creating the preconditions for development of world-class research fields through international cooperation and, as Estonia's national university, assuming its share of responsibility for the preservation of the Estonian people and nation" in the mission statement of the university's most recent strategic plan (University of Tartu, 2008, p. 5). The University of Latvia indicated in its 2010-2020 strategic plan, the University is working to become a "world-class research center" in its quest for "excellence" (p. 7) and, eventually, become a top Baltic research university (Kalnina n.d., p. 11). Other European nations have articulated specific qualities in the pursuit of bringing world-class recognition to their universities.

Aarhus University in Denmark positioned itself to become an increasingly competitive research university in the world rankings. In the university's 2013-2020 strategic plan, Aarhus University declared its intention to advance from the top 100 ranked world research universities into the top 50 through significant research, preparing the most talented students through research-based programs, and internationalize teaching in addition to research (Aarhus University, 2013d). Additionally, Aarhus University's publication, *Profile*, noted a focus on developing a world-class campus. Specifically, the publication noted, "If a university wants to be among the world's best places to study—and that is exactly what Aarhus University does want—then it's not just the teaching and research that need to be world-class. The study environment must be just as good" (Aarhus University, n.d.c, p. 29). *Profile* cited the training of 104 student counselors to promote stress reduction among fellow students, the creation of study group and mentor programs, and establishing a "study café for mathematicians" (Aarhus University, n.d.c, p. 29).

Trinity College Dublin, outlined its 2009-2014 strategy to become a leading global university through increasing accountability, establishing an Academic Medical Centre, and promote the city of Dublin, Ireland (Trinity College Dublin, 2009). Trinity cited objectives which included the recruitment of "world-class principal investigators" (p. 17), furthering "world-class supporting infrastructure" for research (p. 21), and enhancing the "Library's world-class research collections" (Trinity College Dublin, 2009, p. 37).

In Finland, ambitions to establish a system where world-class universities may emerge have led to a significant paradigm shift in the role of universities in Finish

society. In yet another Nordic context, Finland's experience has been similar to Iceland and Denmark. Prior to new legislation on university reform, Aarrevaara, Dobson, and Elander (2009) wrote about a new University Act, expected to pass in 2009 which would fundamentally shift many traditional characteristics of Finnish universities. The authors remarked the University Act of 2009 would allow universities an opportunity to become independent to encourage financial gain from sources outside government, share ownership of university infrastructures where the government formerly maintained sole control of university buildings, revamp governance processes to allow rector appointments by board replacing a pre-existing election process, and include a more active role for external board members (Aarrevaara et al., 2009).

Given the new climate ripe for financial, governmental, and organizational change, the opportunity to create a world-class university has emerged in Finland as well. Aarrevaara et al. (2009) wrote, "The merger that has excited the most interest has the unashamed aim of creating a 'world-class' university…some might see elements of the 'Harvard Here' syndrome, by which an expansion of funding is seen as a means to create a local equivalent of Harvard" (pp. 98-99). This Finish university in particular, Aalto University, originated from the merger of the Helsinki School of Economics, Helsinki University of Technology, and University of Art and Design several years prior to the new University Act being proposed (Aarrevarra et al., 2009).

> In Finland, world-class university envisages and idealized image of an American research university. Harvard and MIT are the most often mentioned higher education mirages in the policy desert…In this kind of comparative setting, the conclusion is always the same: we should do something to our universities to

> make them world-class. This is the mechanism through which the pressures of globalization are translated into national higher education policies in a Nordic-nation state. (Valimaa, 2012, p. 116)

From the Finnish experience, universities have undergone legislative and organizational change to pursue world-class ambitions. The University Act in Finland appears to have created conditions for a more autonomous university to flourish. However, this is not without critique of possible dysfunction. In Finland, the University Act, which eventually passed, signaled for higher education scholar Jussi Valimaa, a greater struggle between a university culture based upon Humboldtian notions and a strong national cultural role, to a university adopting a more business-minded approach (Valimaa, 2012). In a surface analysis of the most common phrases in the University Act of 2009, words appeared more than 100 times in the document in reference to *administration, management, research, ministry of education, teaching,* and *leadership* (Valimaa, 2012, pp. 110-111). The inclusion of the Danish Ministry of Science, Innovation, and Higher Education is quite important for this investigation as the ministry continues to play an important role in university academic and financial operations. It is also an important point to note references to the ministry as it may help observers note who is in a steering role of the leadership course directed to the establishment of an environment appropriate to establish a world-class university. Valimaa (2012) remarked Norway and Sweden tried unsuccessfully at major restructuring approaches but Denmark's succeeded. According to Valimaa, "In Denmark, however, the radical structural changes that have been implemented aim at establishing world-class universities" (p. 115).

The Netherlands recently welcomed the introduction of a new, elite undergraduate college on the Dutch higher education scene. Created in 2009 as a collaborative endeavor between two top Dutch universities, Amsterdam University College (AUC) is a liberal arts college emphasizing global competency development, exposure to research, concentration on greater scientific and social inquisitives and offers a 3-year undergraduate program in English to a student body half composed of international students (van de Wende, 2013). AUC proposes a special approach beyond those outlined above, an approach common in liberal arts tradition. van der Wende (2013) wrote, "That is, the realization that some of the 'big challenges' that we face both in science and society are just not solvable by single-discipline approaches and that interdisciplinary work is needed to provide the big breakthroughs" (p. 94).

The emphasis on *interdisciplinary* curriculum approaches is a theme among ambitious Nordic universities. This especially seemed to be the case in the organizational restructuring of EPFL in Switzerland (Noukakis, Ricci, & Detterli, 2011), the intention to grow interdisciplinary centers at Aarhus in Denmark (Holm-Nielsen, 2013), and the desire to increase interdisciplinary and globally collaborative research at the University of Iceland (University of Iceland, 2010). All of the above strategic plans are geared towards improvement. What makes world-class plans different than others is the emphasis on being considered the best caliber on the tertiary scene. For some institutions, normative influences such as rankings serve as surrogates of confirmation that institutional efforts have achieved a goal – fueled all the more by incremental gains in the following year's publication and lead to benchmarking approaches which may look across more than within.

Drivers of University Reform: Rankings and League Tables

Global rankings and league tables are fueling much of the momentum behind university and governmental efforts to design a world-class university in many countries. Rankings are not a particularly new phenomenon in the U.S. context. *U.S. News and World Report*'s rankings released each spring designate best institutions and academic programs, often leading a well-placed college or university to litter its homepage with headlines celebrating strides. *The Princeton Review* has for years offered its own rankings categories based on political atmospheres on campus, extent of student diversity, and best food. International rankings, however, are a more recent development.

International rankings publically recognize institutions for which their publishers' indicators or chosen metrics suggest make one institution more competitive than others. Some of the better-known rankings publications include *The Times Higher Education Supplement (THES),* Shanghai Jiao Tong University *(SJTU),* and *Webometrics* produced by the Cybermetrics Lab in Spain (Salmi, 2009). Internal reports compiled by ministries of education, independent quality assurance agencies, or the institutions themselves may be less accessible and/or less manageable for comparison purposes than a concise list, offering a comprehensive comparison of universities across the globe. Audiences to these rankings though are not only secondary students eager to attend the *best* college or university. Nor are audiences solely their parents, watchful of graduation or career-placement rates and rising tuition costs. Audiences may include university administrators who would prefer to elevate their campus's prestige. Government officials who recognize the financial benefits of national laboratories and research incubators may wish to recruit the most capable student. With the onset of the Bologna Process in Europe, a

more consistent and fairly applicable metric may emerge, but for now, the existing global rankings offer a standard for administrators to set performance and achievements against.

Shanghai Jiao Tong University's *Academic Ranking of World Universities*, first published in the summer of 2003, initially served to motivate administrators at the Chinese university to analyze characteristics common among the greatest universities in the world so that Shanghai Jiao Tong could some day earn acclaim shared by those academic organizations at the peak of the hierarchy, world-class status (Wildavsky, 2010). The publication of the university's internal benchmarking indicators only encouraged others to enter into the fray.

> Even well-known institutions had set ambitious targets to reach the much-coveted 'world class' status quickly: Peking University set its sights on 2016, for instance, whiles its crosstown rival Tsinghua University aimed for 2020. But without benchmarking against universities at home and abroad, determining just what was meant by 'world class' would have been difficult. (Wildavsky, 2010, pp. 112)

The Shanghai Jiao Tong University rankings underscore two important points: first, universities are engaging in strategic planning through benchmarking against existing elite universities and, second, universities are defining a set of indicators to serve as a successful path to join those elite universities. The measurements utilized by many of these rankings vary, leading to the ambiguity of defining one particular set of indicators of a top-tier or *world-class* university. More specifically, the Shanghai ranking does not consider student retention/graduation rates, class sizes, or reputational evaluations in their analysis and heavily lends favor to publications in more scientific journals like *Nature*

whereas the *Times* rankings consider reputational evaluations to account for 40% of the total along with student faculty ratios, foreign student and faculty presence, and accounts for publications in a way that grants greater recognition of articles submitted in the social sciences than the *Shanghai* rankings (Wildavsky, 2010). This eclectic spread of indicators signals an important, but cornerstone observation about the process of designing a world-class university.

First, there are different perceptions of what makes the best-ranked university. Should the emphasis be on reputation (peer review), knowledge production (as recognized in competitive journal publications, citations by other scholars, and awarding of prizes), or how reflective a university's faculty and students are of a diverse and global society (a more internationalized faculty and student demographic)? Depending upon which values are most salient to the benchmark publication, different strategies toward obtaining world-class status may take institutions down very different approaches. Some approaches could even lead to disaster. "…the blind pursuit of global standings could be dangerous and harmful, especially for universities in less-developed countries" (Liu & Cheng, 2011, p. 154). Conversely, rankings that accent peer-review may open the door to new, innovative indicators should a university be able to cultivate a strong reputation upon those very indicators which are making the university stronger in its own unique way as recognized by the predetermined indicators of other ranking tables. Ambiguity then abounds as to what makes the best-ranked university.

Ranking Ambiguity

The absence of consensus on objective indicators and ambiguity of non-objective factors reinforces the current problem of understanding how universities may become

world-class. The existence of multiple measures and lack of consensus on what holistically may define a world-class university adds complexity and depth to an analysis of how an aspirational world-class university or aspiring government or ministry should go about achieving that vision. The benefits of attracting the most talented students, faculty, and personnel, and cultivating an environment where they may contribute to national economic, political, and social growth are desirable both for recipient universities and national governments. It is worth understanding to what extent the process of constructing a world class university would allow for creative design in its chosen approaches. Must the design be based on the rankings' normative metrics or may the university choose an innovative design appropriate for the national context? The lack of consensus and ambiguity may then lend to allowing aspirational world-class universities to enter into the fray and experiment with different approaches. The core inquiry is how aspirational world-class universities determine the best approaches based upon their national contextual conditions and their higher education systems. The ramifications for not properly understanding this problem may lead the universities to head down a path of investment with little return for what the institution is expecting. Mohrman et al. (2007) warned, though, the decision to invest in a top research university may conflict with other national interests especially in nations still responding to access demands.

A New European Ranking: U-Multirank

In 2014, a new ranking system will emerge in Europe vastly different from existing international league tables. U-Multirank is a newly formulated rankings system, which focuses on both comprehensive and disciplinary competitiveness of universities –

comprehensive in that research is but one factor alongside instructional quality and global orientation, disciplinary as major fields will be ranked with additional fields of study added each year (Paun, 2013). Two features of the European Union supported U-Multirank approach will be the lessening influence of weights as determined by the existing international rankings systems and the introduction of users choosing the criteria for comparisons across institutions based upon the factors important to those users (U-Multirank, n.d.a.). The process of designing world-class universities based off traditional international rankings is addressed directly on U-Multirank's Web page, as well as what makes this ranking different.

> Existing rankings have created an arms race to become a 'world-class university,' which means world-class in research performance. This is a threat to the diversity of higher education systems and it devalues other institutional profiles. U-Multirank will show excellent performance in five dimensions, not just research. (U-Multirank, n.d.a, para. 5)

U-Multirank, instead, considers teaching and learning, research, knowledge transfer, international orientation and regional engagement (U-Multirank, n.d.a, para. 1). The necessity to include teaching and instruction in the rankings system has been observed by European Union officials in their expression of doubt on the effectiveness of the existing league table metrics' ability to truly better educational quality (Haworth, 2013). Where the ambiguity of defining a world-class university remains a challenging reality, some have commented this ambiguity may be nearing its limits. Haworth (2013) wrote, "But the need to work towards agreement about what makes a world-class university was becoming acute, given the increasing technical, political, social and purely educational

pressures to boost international cooperation between universities" (para. 7). U-Multirank metrics consider institutional and field rankings separately.

Metrics for the category *teaching & learning* are "graduation rate" (bachelors and masters), "percent of students graduating within normative period" (bachelors and masters), and "rate of graduate employment" are the only line-item qualities that apply to the institution ranking, whereas an additional 12 criterion apply to the discipline specifically (U-Multirank, n.d.b). Among other metrics, the category *research* considers "number of post-doc positions" and "art related output." the category *knowledge transfer* is almost entirely measured by patent production, enterprises, and revenue generation from outside the public sector. *International orientation* measures include the number of programs offered in foreign languages at the bachelors and masters level, percent of international students earning a PhD, and extent of international grants and/or publications among others. *Regional engagement* affects the institutional ranking on four line-item qualities that relate to student internships/employment in regional careers and regional publications and revenue (U-Multirank, n.d.b). Grants, publications, and graduation rates are hardly new metrics in rankings, but several of these metrics may be game-changers, especially those related to the category *Regional Engagement*. This may mean institutions will not be considered world-class (if world-class is determined by a top ranking) should universities impressive in every other way neglect their local and regional constituents.

Metrics of U-Multirank's design may clear a pathway for institutions to excel in particular disciplinary fields as well as an overall university. This may be U-Multirank's most significant contribution: an opportunity for institutions to reverse an otherwise

endless process of benchmarking institutional strategic plans against overly simplistic attempts to rank complex organizations. Universities may, instead, concentrate on what disciplines they are most capable of offering well, possibly leading to increased academic differentiation among universities. The emphasis on regional relationships is reflective of higher education's connectedness to its localized context, especially in societal and economic terms (Van Vught & Ziegele, 2011). The Final Report on the U-Multirank project commented directly on the regional development indicator. Regional activity has become a more key component of how universities serve their missions (Vught & Ziegele, 2011). The effectiveness of a university as a hub of regional advancement may very well be a prerequisite for a world-class university if U-Multirank is to some day take shape. The first iteration of U-Multirank rankings will be released in 2014, including upwards of 500 institutional participants and selected disciplines at those institutions (U-Multirank, n.d.c). As universities aspire to become world-class and new metrics are introduced, it will become increasingly important to understand the complexities of approach in instilling a process to design elite higher education institutions in Europe.

Universities wishing to become world-class may produce a blueprint or strategic plan that detail the steps needed to reach their goals. Perhaps some of these steps are ideas borrowed from other universities that were successful in another context. Perhaps the rankings' metrics are used as the blueprint themselves. Perhaps the national government dictates exactly what course of action to take. Perhaps the process of becoming world-class is formulated in some other fashion. The application of a theoretical framework will lend insight into what direction a university looks to when conceptualizing how it will actualize the process to become world-class.

Theoretical and Conceptual Framework of the Study

An understanding of theoretical approaches underlying this investigation is crucial to creating meaning from the collected data. Merriam (1998) wrote, "the things we observe in the field, the questions we ask of our participants, and the documents we attend to are determined by the theoretical framework of the study" (p. 48). The current study investigates the process of designing a world-class university through interview, observation, and document data sources. Decisions made by key university stakeholders at Aarhus University may lend insight into the process of decision-making strategies employed in the hope of creating an elite, leading global university. The current investigation applies institutional isomorphism as the theoretical frame.

Institutional Isomorphism

Institutional isomorphism, as advanced as an organizational theory by DiMaggio and Powell (1983) suggested organizations are prone to become more prototypical of other organizations in the same sector. The authors asserted organizations become more alike when one of three types of isomorphic processes transpires. First, *coercive* isomorphism causes organizational change when political pressures force an organization to undergo changes, possibly causing the organization to respond to the pressures from a point of dependency; second, *mimetic* isomorphism causes organizations to copy and model change based on other organizations, possibly those successful and more centrally regarded because of otherwise ambiguity and uncertainty; third, *normative* isomorphism is laden in professional organizations or within commonly recurring processes that lead to homogenization (DiMaggio & Powell, 1983). DiMaggio and Powell offered six scenarios where organizations may become pathologically isomorphic, two for each of

the above three processes of isomorphism. According to the authors, coerciveness may drive isomorphism when an organization becomes dependent upon other organizations or resources; mimicry may drive an organization's isomorphic change when goals and internal technologies' connectedness to goals are vague; and normative pressures may drive organizational isomorphic change when an organization requires more significant academic qualifications or when employees are actively engaged in professional associations (pp. 154-155).

DiMaggio and Powell (1983) added isomorphism should not by synonymous with efficiency; isomorphism, instead, becomes a rationalized legitimacy in its own right instead of efficiency. Any one of these processes may be at work in an organization appearing to become more similar to others. Higher education institutions may desire world-class status because such expectations are imposed on them by the government, imposed by professional associations or, by extension, possibly popular rankings or league tables, and/or self-imposed as a means of mimicking what those already at world-class status have done to achieve their positions.

This theoretical framework has been previously applied to other studies in higher education settings. One lens through which one may gain a glimpse of the logic behind the recent attempts to develop new world-class universities is the tendency to copy the best. Mimicking what is accomplished at the best universities is, to some aspiring top-tier universities, the best approach to take. After all, if certain approaches and tactics worked for one university, it may be a pathway for others to compete at the top of the pyramid. According to Mohrman et al. (2007), "To be a legitimate organization of a particular kind means to look and act like the other organizations in that sector;

isomorphism in form and process brings public recognition that an organized entity is what it claims to be" (p. 160). One case examined legitimacy in the context of a college of business at a mid-Atlantic university that became entranced with the idea of earning prestige through accreditation, occurring at the same time the university received a large gift and upgraded themselves from a state college and even changed its name in the process (Rusch & Wilbur, 2007). Isomorphic organizational change came about from the desire to generate legitimacy through the most elite accreditation process, and change became steered differently from its original mission of teaching to include both instruction and research (Rusch & Wilbur, 2007). As Scott (2012) found in his study of two business schools, Rusch and Wilbur (2007) found isomorphic processes were present. Scott noted the influence of rankings in his abstract and study, although they appeared more related to coercive isomorphism in his study.

In their analysis of institutional isomorphism in academic degree program duplication among universities in the United States and the Netherlands, Morphew and Huisman (2002) sought to understand mimetic and normative influences of established leading universities upon non-flagship universities in the United States, or newer universities in the case of the Netherlands. The researchers found a significant difference in the context of the United States, where non-flagships added duplicate programs, overall and at the graduate level, at a higher rate than flagships; yet, researchers did not find a difference in the case Netherlands between established universities and newer universities. Morphew and Huisman found Netherland universities of all types were more likely to duplicate programs at similar institutions than those dissimilar. This final finding suggests universities in at least one Western European nation may experience

isomorphism differently than universities in the U.S. context. Rather than pursue one ideal image of a top comprehensive university at the state-level in the United States, the researchers found universities in the Netherlands duplicated programs more similarly to universities more like their institutional type. Although, Morphew and Huisman's found one of their criteria invalid in distinguishing between Dutch institutions in the same manner as flagships in the United States, the findings did not indicate significant differences between the old and new universities in the Netherlands as had been the case between flagships and non-flagships in the United States (Morphew & Huisman, 2002).

This finding is worth investigating further as it may mean a difference between how isomorphism impacts European prestige-seeking processes and popular understandings of the phenomenon as observed in other areas of the world. Wildavsky (2010) wrote, "Still, the widely shared understanding is that world-class institutions will be closely modeled on the Western research university and in particular on the hugely successful American research university…imitation, after all, is the sincerest form of flattery" (p. 70). Rather than universities unprepared for the challenge of developing elite universities aimlessly embarking on their path to greatness, the findings of Morphew and Huisman (2002) may signal those developing such plans are similarly top-tiered institutions pursuing such strategies.

Conversely, Morphew and Huisman (2002) touched upon the notion institutional divisions may be less severe in the Netherlands than in the United States. Zha (2009) wrote national institutions come to resemble one another as they engage in competition for increasingly limited resources for which standardized criteria is established for awarding funding. This may therefore connect back to DiMaggio and Powell's (1983)

hypothesis that an organization may follow an isomorphic process from its dependence upon resource suppliers. Zha's literature review drew connections between how governments in North America, Europe, and Asia incentivize or provide resources to research intensive institutions, consolidating resources in a fraction of institutions in a given country. Zha illustrated the differential impact of isomorphism at higher educational institutions of varying types, which pose accordingly different implications on the local, national, and international scenes.

In Dobbin's (2011) study of higher education systems adoption of isomorphic processes in the Czech Republic and Romania, the researcher applied institutional isomorphism to higher education settings in Central and Eastern Europe amid the onset of the Bologna reforms. Dobbins observed through interviews and document analysis that the Czech Republic and Romania shared a historical dominance of communism, but upon emergence from communism, approached higher education reforms differently in each country. Romania embraced market-oriented approaches to higher education development, incentivized progress toward ministry goals, relied upon university management in goal-setting, and embraced isomorphism among national institutions; adoption of international approaches also occurred, to an extent driven by adoption of Bologna reforms (Dobbins, 2011). The Czech Republic, conversely, did not experience isomorphism due to its desire to reinforce the institutional, academic control of the universities, which preceded communism's state approach (Dobbins, 2011). Thus, there are instances of both adoption of and resistance to isomorphism in European higher education. Where Aarhus University directs its resources and attention and how the university defines and communicates its uniqueness and value may be revelatory.

Revelatory in that the university may not follow any of the isomorphic trajectories; Revelatory in that its approach may be classified as *something else*. That *something else* could be a new vision, a new approach, or new internal technology, which comes to serve as an exemplar and cause other institutions to become isomorphic. We may not know where the "next thing" Mills (2010) wrote about, will crop up, but he observed, "Each world class university gets to that status in its own way and with its own personality. Hence the need for autonomy that permits a university to find its own way to world class status" (p. 23). Perhaps, Aarhus University may be on the cusp of articulating a new approach to elite higher education, which redefines what may constitute world-class.

If Marginson (2013) was correct about the formation and characteristics of world-class universities as affected by regional nuances of difference in culture, this investigation may lead to findings that speak more specifically about the drive to create world-class universities as it exists in Western Europe. Aarhus as a university organization also operates within its respective national and cultural context. It is the hope of this case study to bring a better understanding of one university in Denmark, but also by extension, add to the understanding of this phenomenon as it surfaces in Western Europe. This study was guided in its analysis by the application of the theoretical framework, institutional isomorphism; a framework often applied to organizations.

Organization of the Study

Chapter 1 introduced the world-class university phenomenon as a special tier of elite higher education institutions pursued by universities and the governments for the benefits they produce in intellectual, human, and economic capital. Chapter 2 accounted for the scholarly literature and empirical research on the world-class university and

introduced this study's theoretical framework, institutional isomorphism. Chapter 3 will outline the study's methodological research design, a qualitative, holistic, descriptive, single-case study. An explanation will be provided on how the case investigation was conducted as well as the approaches taken to collect and analyze the data.

CHAPTER 3: METHOD

Case Study Research Design

The descriptive nature of this case study and the narrative choice in reporting communicated a candid and in-depth, personal feel for the environment where the research is taking place, where audiences may not have the immediate opportunity to visit. The opportunity to make a site visit to Denmark in January 2014 made this approach possible. This concentration on description is where constructivist/interpretivist epistemology and case study logic overlap. Constructivists who use case study methodology may prefer to utilize considerable "thick description" to describe their cases and write-up cases as narratives to communicate description (Stake, 1995, p. 102). I was attentive to how the stakeholders at Aarhus University conceptualized their pursuit of a world-class university through data collected in the field. I focused on understanding how faculty, administrators, students, and governmental representatives made sense of the process to become a world-class institution. Hatch (2002) wrote that for subscribers to the constructivist paradigm, this epistemological frame means entering a "process of coconstruction" (p. 15) and engaging in the context where that "co-construction" is occurring (p. 93). An insightful observation of what methodologies might best fit a constructivist is offered by Hatch:

> Knowledge produced within the constructivist paradigm is often presented in the form of case studies or rich narratives that describe the interpretations constructed as part of the research process. Accounts include enough contextual detail and sufficient representation of the voices of the participants… (pp. 15-16)

The present investigation adopted a case study design as a methodological form, presented in a narrative. By narrative, I am referring to the interweaving of participant quotations, document excepts, and photographs with an explanation of the themes. As only one research question guided this study, narrative form was a more appropriate choice than sorting findings by research question.

Research Question

The nature of this investigation merges with many of the criterion of case study research design as advanced by Yin (2009). Specifically, Yin itemized three criteria for a research design to be an appropriate application of the case study investigation, differentiating case studies from other research methodologies. Principally, (a) questions are phrased as "how" or "why" as these types of questions focus on the "operational links" of an event; (b) events under study are not directed by the researcher as in an experiment; and (c) the study is focused on an actual "contemporary" event (Yin, 2009, pp. 8-12). The research question for this study was this: How does a higher education institution in Western Europe undergo the process to actualize its ambition to become a world-class university? The phenomenon of the world-class university is contemporary as a research topic itself, emerging only within the last few decades.

Yin (2009) asserted case studies are best applied in situations when the "boundaries between phenomenon and context are not clearly evident" leading to the need to understand the plethora of circumstances which necessitate triangulating "multiple sources of evidence" and consider the "prior development of theoretical propositions to guide data collection and analysis" (p. 18). This is especially appropriate

given historical and cultural elements unique to Denmark, which plays a significant role in how aspirational universities are enhanced or impeded in the process in that context.

Epistemology

A fundamental consideration is how my values, biases, and motivations underlie each stage of the investigative process. Complexity of interpretation amid epistemological, ontological, and axiological beliefs intertwined with case study methodology, which relies on multiple sources of data, is something I should acknowledge. Stake (1995) described the case study design and its relationship to interpretive knowledge construction stating, "ultimately, the interpretations of the researcher are likely to be emphasized more than the interpretations of those people studied, but the qualitative researcher tries to preserve the *multiple realities*…" (p. 12) and later added, "subjectivity is not seen as a failing needing to be eliminated but as an essential element of understanding" (p. 45). For this reason, my reflexivity statement preceded a discussion of the methods and procedures.

My epistemological beliefs are *social-constructionist.* Guido, Chavez, and Lincoln (2010) described how constructivism is understood as a paradigm by student affairs professionals, stating of constructivism, "Its central purpose is to make sense of human experience and to understand and derive shared meaning within a particular context…Knowledge within this paradigm is emergent, contextual, personal, socially constructed, and interactive" (p. 15). Yet, within educational fields, ambiguity remains around the nuances of difference between interpretations of constructivism and constructionism, and whether knowledge is found in the individual, use of language, or in practice (Miettinen, 2002).

In attempting to articulate the arguments advanced by a radical constructivist and a social constructionist, Shotter (1995) wrote social constructionists understand knowledge to "reflect in their various negotiated structures – outcomes that people have fastened on themselves in history as important" (Shotter, 1995, p. 44). Gergen (1995) underscored these "negotiated agreements" are made through the use of language, generally used to refer to the "transmission of knowledge" that may occur in lectures or in documents, and that language has meaning as it is defined in the process of interaction with others (Gergen, 1995, pp. 23-24). These beliefs are reflected in the co-constructive nature of qualitative research design. The process of becoming a world-class university is beyond the scope of any singular program; it is the study of an organization. Given the dynamic and complex interactions among higher education institutions (e.g., administration, academic staff, students, government officials), my epistemological framework was appropriate for this investigation of how a university as a collective organization pursues world-class status.

Communication occurs at multiple levels and between multiple constituents within universities. Understanding how the community within an aspirational world-class university conceptualizes its ideal state may shed meaning on why certain steps are taken to actualize the vision of a world-class university in Denmark. The methods used in this study included interviews, document analysis, and observations of campus infrastructures and parallel university/government cooperative endeavors to attract talent elsewhere in Denmark. I sought to understand how the academic community – academic administration, staff, students, and associated government officials—came to an understanding, or "negotiated agreements" (Gergen, 1995, p. 24) of what a world-class

university actually meant in the context of one higher education institution in Denmark. The multiple sources of data are multiple opportunities to observe how individuals share in and refer to Aarhus University's endeavor to become a top global university. Acknowledged, I have previously not visited Denmark; therefore, the use of multiple sources of data provided the opportunity for triangulation to ensure I appropriately identified consistent, salient themes.

Descriptive and Holistic Case Study

This study utilizes a qualitative, descriptive, holistic, single-case study design. Governmental and institutional strategic planning and communication, agenda setting, policy formulation, program implementation, and the motivations driving such policies relate directly to the process of designing world-class universities. Case studies are also *bounded* (Merriam, 1998; Merriam, 2009; Stake, 1995; Yin, 2009), which means there are definable boundaries as to the constructs under study; in this case the constructs was a university organization. The world-class university phenomenon was bounded at Aarhus University, which will constitute the case set within the larger context of Denmark. Constructs may include people, organizations, associations, etc., which create "concrete boundaries" and help craft a "real-life phenomenon, not an abstraction" (Yin, 2009, p. 32). Aarhus University was the construct of interest, as an organization.

Descriptive. This study may be described as *descriptive*. Merriam argued descriptive case studies are important in educational contexts where literature is meager and where "innovative programs and practices are often the focus of descriptive case studies in education" (p. 38). The dearth of information on higher education in Denmark and, to a greater extent, the dearth of information on the recent ambitious strategy of

Aarhus University to develop a leading global university, suits both criteria. Arhus University possesses the potential to be an exemplar case. A rich, descriptive narrative of how Aarhus pursues this particular strategy, illustrated the programs, priorities, and execution of a strategy, which is too often glossed over generally in the literature, even in empirical studies.

Holistic. The choice for a *holistic, single-case* design was made to enhance the depth of understanding how elite higher education is pursued in Western Europe. According to Yin (2009), a *holistic design* differs from an *embedded design* in that the holistic design concentrates on a single construct of the phenomenon whereas the embedded design concentrates on a greater number of constructs within the same case. A holistic design was chosen as this investigation focused on one major construct, an organization, or, more specifically, an aspirational world-class university.

In an effort to comprehensively understand this phenomenon, multiple constituencies were interviewed, multiple observations were conducted, and multiple documents were analyzed relating to the various facets contributing to the process of designing a leading global, elite university. The choice of a single construct, an organization, provided a more accurate reflection of the process to create a world-class university, an amalgamation of a myriad number of characteristics, than to examine one component programmatic or individual construct alone. For this reason, a descriptive, holistic design was chosen. A leading global academic organization does not succeed on its students, faculty, research, or staff alone, but rather on the amalgamation of these factors as the collective institution aims to better its programs and organization overall. Universities, as complex organizations, make it more difficult to predict exactly what

constructs are more salient in world-class university development than others. Yin (2009) discussed why a holistic design might be a better choice in some situations than other designs, which study multiple constructs rather than one construct:

> In contrast, if the case study examined only the global nature of an organization or of a program, a holistic design would have been used. The holistic design is advantageous when no logical subunits can be identified or when the relevant theory underlying the case study is itself of a holistic nature. (Yin, 2009, p. 50)

The conception of a world-class university is greater than merely an exceptionally talented cohort of newly admitted students or merely the qualifications of faculty members. As discussed in Chapter 2, a multitude of rankings are driven by a multitude of metrics. Even if a university seeks world-class more narrowly in one academic program, a holistic case study is still important as it accents the need to examine how the institution enables the program to be successful (or not successful). Especially as this was a study of an aspirational world-class university, the indicators of quality may be still emerging. A holistic approach was most suitable for this single-case study design.

The Aspirational World-Class University as a Bounded Case

Cases are *bounded-systems*, chosen as "an instance of some process, issue or concern" (Merriam, 2009, p. 41). A university aspiring to become world-class will therefore be a case bounded by the spatial boundaries of the university as well as the time during which the university pursues bettering its status. The university case site, as an organizational construct, bound the case in terms of spatial boundaries. By extension, European universities often maintain close ties to ministries of education. In Denmark, the Ministry of Science, Innovation, and Higher Education (now Ministry of Higher

Education and Science) is the governmental entity charged with responsibility for higher education. The Ministry was bounded within the context of this case study as well for its influence in furthering Aarhus' strategy to become a top-tier university. Aarhus's Strategy 2013-2020 (Aarhus University, 2013d) will still be in effect following the conclusion of this study. Studying Aarhus while this strategic policy is in effect will reflect the real-time feelings, ambitions, and rationales underlying implementation.

Site and Population

Yin (2009) illustrates five circumstances preferable to the application of s single-case design. These justifications include a critical cases based heavily upon theory, extreme or unique cases appropriate in rare instances of a phenomenon, representative or typical cases, revelatory cases, and longitudinal cases (pp. 47-50). One case was chosen to enhance the richness of understanding the phenomenon in Western Europe. The decision to choose a case in Western Europe may be considered both a revelatory and unique case. A single-case study on an aspirational world-class university in Western Europe is revelatory because the rigor of the methods used in such an emergent strategy allowed for data analysis rendering findings based on more sources of data collected in the field than most empirical studies on the world-class university. This single-case study is unique in that virtually no empirical research exists on an aspirational world-class university in Europe without being compounded in studies with other sites and/or other national contexts. The uniqueness of a Danish university lends itself to not only an intense, in-depth study of such a university in Denmark, but marked a unique opportunity for the region. Merriam (1998) addressed two choices case study investigators decide:

(a) the choice of which case to choose and (b) the choice of which sources of data will be the most appropriate (p. 66). This discussion will first address case choice.

Aarhus University was chosen based upon the convergence of several criteria. Both Merriam (1998, pp. 61-62) and Miles and Huberman (1994, p. 34) discussed how criteria might be applied as a sampling strategy. Aarhus University was selected on the basis of criteria essential for the purposes of answering this research question; that is Aarhus is a comprehensive research university, offers both undergraduate and graduate programs of study, and expresses an ambition to create an elite, leading research university, global in scope embedded within its mission statement, vision, and/or strategic plans. It is also physically set within Western Europe, which fulfills the purpose of this investigation. An overwhelming amount of the existing research and conceptual musings on world-class universities has focused on nations home to resident populations in the tens of millions with economies benefiting from multi-million-dollar government expenditures on research endeavors for educational institutions. As European higher education journeys further into the Bologna Process, a study of universities in such a context will be uniquely complex and uniquely different from most of the nations and continents already examined in the literature. The relative absence of similar contexts in the existing literature makes Denmark an intellectually stimulating case. Furthermore, the strategic approach being undertaken at Aarhus could be an exemplar case of the world-class university phenomenon. Research on this institution may better help scholars and practitioners understand greater nuances in designing world-class universities.

While this case site and a handful of professionals, educators, students, and government officials may be identified prior to the current investigation, qualitative

research is an inductive process (Merriam, 2009). Therefore, *snowball* sampling was utilized as an effective strategy to identify key actors and those with expertise to best contribute information on the university's development toward world-class status as identified by University and/or government personnel. Merriam (2009) explains *snowball* sampling as a technique whereby interview participants may offer to refer the researcher to other possible interview participants. Not being an employee of Aarhus University or a Danish citizen, I relied on more than one key informant to identify participants within the university community and/or government who were able to offer insight into this topic.

Aarhus University was chosen over alternative case sites for several reasons. First, information included on the university's website, the ambition of the stated objectives in the university's strategic plan (Aarhus University 2013d), the accomplishments highlighted in the university's magazine *Profile* (Aarhus University 2013c), and a recent journal article written by the former rector (Holm-Nielsen 2013) all signaled Aarhus was seriously pursuing a vision to become what amounted to a world-class university. Second, another institution, the University of Iceland, was a close second. However due to my dissertation committee's recommendation to select only one site and the timing of when I obtained confirmation, Aarhus was selected. However, the University of Iceland would still make a unique case study for future research.

Data Collection Procedures

The methods for this study merited special consideration in light of the international dimension of where virtually all data will be collected. DeWalt and DeWalt (2011) suggested investigators doing research in foreign countries should seek

permission from an appropriate institutional review from the country of interest in addition to the researcher's own institutional review process. First, I consulted U.S. Department of Health and Human Services (DHHS) International Compilation of Human Research Standards. A great number of resources for Denmark however, concerned research appropriate in scientific investigations. However, one link in the aforementioned DHHS publication referred to the Danish Data Protection Agency. An updated and translated version of the Act on Processing of Personal Data is accessible through the Danish Data Protection's website (Danish Data Protection Agency, 2012). Several participant protections are evident for personal data collection. Title Three, Chapter 8 and Chapter 9 stipulate participants be provided information about the investigator, the purpose for how the data will be used, inclusion of other pertinent information, intended recipients, the right for participants to object, and the right of participants to withdraw with their personal data and/or access data (Danish Data Protection Agency, 2012). While I found this information helpful, I continued to search search for an institution or government office, which could grant permission to conduct the study in Denmark.

I reviewed Aarhus University's institutional web page and contacted a senior university office with a letter explaining the purpose of my study and interest in studying at Aarhus as a case site. I also sent physical copies of this letter to the same office at Aarhus University, as I was unsure about the reliability of the emails going abroad between Internet servers. Aarhus University contacted me and confirmed permission to conduct my study during the summer of 2013. The confirmation provided contact information for a person who could provide assistance with organizing my research visit.

After I received approval from my dissertation committee in October 2013, I contacted the person mentioned in the original letter, who in turn, provided me an additional person at the University who could provide logistical assistance with the site visit.

The language considerations of the informed consent statements for interviews were developed based off expectations of the University of Tennessee's Institutional Research Board (IRB) and the CITI Program's Basic Course for Social and Behavioral Research as well as the Social and Behavioral Responsible Conduct of Research Course. Informed consent statements were translated into Danish and both English and Danish versions of the statements were provided to informants for interview, observation, and document analysis permissions. U.S. institutional review boards address many of the same concerns raised in Denmark's Act on Processing Personal Data.

Data Sources

Yin (2009) suggested cases should focus on "concrete" units and differentiate what will be studied versus what fall outside of the case boundaries (pp. 32-33). A higher educational organization such as Aarhus University is complex. Administration, academic staff, and students are all stakeholders associated with a university's potential for excellence. Aarhus University maintains a relationship with the Danish Ministry of Science, Innovation, and Higher Education. This adds greater complexity to the functioning of the organization as it is influenced by constituent stakeholders internally and externally.

For the purposes of this investigation, interviews, observations, and document analysis formed the basis for sources of data. In case study design, multiple methods may be used for the purposes of answering the question; case study design is more

concerned with answering the study's question(s) than applying a particular method (Merriam, 1998). Similarly, Yin (2009) also stipulated that three methods of collecting data are used in this research design methodology:

> The case study relies on many the same technique as a history, but it adds two sources of evidence not in the historian's repertoire: direct observation of the events being studied and interviews of the persons in the events…the case study's unique strength is its ability to deal with a full variety of evidence – documents, interviews, artifacts, and observations. (p. 11)

For these reasons findings retrieved from each of the three sources of data (interviews, observations, and document analysis) will be described and analyzed in the course of this investigation as categories emerge.

Interviews. Weiss (1994) suggested that in studies of organizations, interview participants should be selected for the variety of perspectives they may contribute from the various positions they hold which create a relationship with the organization (p. 19).

A semi-structured interview was selected in favor of a standardized or open-ended approach for several reasons. First, standardized interviews may limit the ability to uncover the uniqueness of what it means to be a world-class university in the context of Western Europe, a previously understudied topic. While factors may exist that conceptualize world-class universities in various parts of the world, the lack of research on this context entirely reflects an equally absent *a priori* list of indicators of the essence of a world-class university in Denmark. Open-ended interviews would not be appropriate for the opposite reason. Some iterations of what makes a university world-class have emerged in recent empirical research. Ho (2006) found 11 elements of a world-class

university in the context of China in her study of two research universities aspiring for such a status. Various conceptual readings (Altbach, 2004; Khoon et al 2005; Mills, 2010; Mohrman et al., 2007; Salmi, 2009; Salmi & Liu, 2011) have also brought a multitude of factors into the discussion of what makes for a university to be considered a world-class university. However, many of these may not completely reflect what is occurring in Western European universities. A semi-structured interview protocol would help frame the discussion and provide the openness needed for iterations of how Denmark conceptualizes the world-class university (Appendix B).

Topical questions were selected as the primary types of questions to be asked of participants. According to Stake (1995), "topical questions call for information needed for description of the case….A topical outline will be used by some researchers as the primary conceptual structure and by others as subordinate to the issue structure" (p. 25); whereas issues questions focus "attention to the major perplexities to be resolved" (p. 26). This case study is descriptive and thus requires questions that will first lead to important understandings of how the phenomenon is understood within the context of Denmark. Subsequent investigations would then be fruitful in exploring the complexities of issues uncovered and if those issues are salient among other similar or multiple Western European sites. The findings from such types of questions would lend meaning to how stakeholders at the institution regard the existing approaches and how they feel their approaches may be different and more appropriate to build a world-class university (See Appendix B).

University administrators, academic administrators/faculty members, students, and government officials who influence higher education policy development were

identified as potential interviewees. According to Johnstone (2011), administrative leadership maintain the authority of office to create incentives, appoint or influence appointment, redistribute resources, grant autonomy to seek supplemental funding, and engage in contractual arrangements; government ministers may influence budgets for the organization, appoint individuals; faculty may resist changes and influence appointment of academic or institutional administration; and the academic administration has the power to appoint and promote faculty and influence the curriculum (Johnstone, 2011a). Students particularly are important constituents in the establishment of the world-class university as they are both an input and an output.

This investigation included 17 interviews of university constituents and stakeholders that included current and former high-level campus administrators, a member of the academic administration who also previously served as a member of the faculty, undergraduate and masters students, and government officials at the Ministry of Science, Innovation, and Higher Education (See Table 1).

Table 1. Total number and classification of interview participants

Participant Classification	Total Participants
Ministry of Science, Innovation, and Higher Education Officials	6
Aarhus University Administration – Past & Present	4
Aarhus University Academic Administration/Faculty	1
Aarhus University Students	6

Each interview was audio recorded for the duration of the interview, except one where the conversation began before starting the tape and I decided to follow the flow of the conversation rather than interrupting the richness of the dialogue. The interviews occurred on campus, mostly in participant offices, and/or in a coffee house, conference room, student council office, Danish Ministry office in Copenhagen, or other locations identified as appropriate. The use of the English language is common in Denmark. The interviews were transcribed using InqScribe software. I transcribed all of the interviews personally. Pseudonyms were used to protect the identities of participants who wished not to share their identities. The site, offices, academic programs, campus infrastructures, et cetera were mentioned by name in most cases so as to accent the descriptive, narrative reporting form of this case study and better articulate the process of designing a world-class university for audiences. Interviews lasted approximately 1 hour for each session as interviews going over 2 hours place fatigue on the researcher (Weiss, 1994). Some interviews lasted shorter others lasted longer. Interviews ranged from approximately 30 minutes to approximately 90 minutes. Following interviews, *contact summary forms* based upon those described by Miles & Huberman (1994), but modified for the purposes of this study, were completed (Appendix F).

Observations. On-site observations in Denmark served as a second data source. While the literature and current research on world-class universities is rife with document analysis and interviews, direct or participant-observations are less common. There is a dearth of studies that provide the reader with a sense of what it means to work, study, and/or teach at an institution with this ambition. Observation serves an important purpose for the study of what it means to be a part of the process of designing a world-

class university and how that conception may be taking shape in the physical environment. According to Merriam (1998):

> It offers a firsthand account of the situation under study and, when combined with interviewing and document analysis, allows for a holistic interpretation of the phenomenon being investigated….Fieldwork, as participant observation is often called, involves going to the site, program, institution, setting—the field—to observe the phenomenon under study. (p. 111)

Observations of physical infrastructures such as the Aarhus Institute of Advanced Studies at Aarhus, Department of Education at Aarhus, and the International House Copenhagen were conducted in the course of this investigation. The current investigation best follows Spradley's (1980) conception of social situations by *cluster,* where in a "single location" there are multiple social situations, and some beyond those relevant to the people in a situation, where the observations will be conducted. In this investigation, this cluster of activity was the case university site, yet the context of Denmark meant some social situations beyond the case university site were influential to better understand to drive to become a world-class university as a shared university and national objective. Observations helped craft an illustration of what it feels like to experience this bounded context and were a combination of direct and participant observations. Observations were conducted as a direct-observer in instances such as campus tours of Aarhus Institute of Advanced Studies and as a participant-observer in instances such as visiting the Department of Education of Aarhus, and attending the International House Copenhagen somewhere in the middle leaning more towards observer end of the spectrum.

I retained artifacts encountered and/or obtained in the course of observations and utilized an observation protocol (Appendix C). Photographs were taken of infrastructures, exterior and interior, which further Aarhus's efforts to design a top-50 university, specifically of the exterior/interior of the Institute of Advanced Studies and The Mortensen Building/Dale's Cafe. The determination of which sites to photograph was those which (a) appeared salient to the top-50 drive in either interviews or documents and (b) those sites for which I received permission to take photographs. Consent was received by my tour guide at the Institute and for photographs.

Documents and other archival data. Document analysis was third method of case study methodology utilized in this study. Artifacts, existing photographs, and "already present" materials are considered documents (Merriam, 1998, p. 118). These multiple sources of evidence are helpful for triangulation because of the ability to observe "converging lines of inquiry" and "corroboration" of data obtained through these various sources (Yin, 2009, pp. 115-116). Miles & Huberman, (1994, pp. 54-55) further recommend *document summary forms* be used as documents are collected.

Analysis of documents in combination with data obtained through interviews and observations added depth to the study and also helped triangulate other data obtained. Documents collected included statements on advancing the institution toward world-class status, both university and ministry of education generated; researcher-created photographs of the site and facilities taken at both universities; artifacts, meeting minutes and agendas, university map, course catalogs, presentation slides, university magazine, and other documents and material data obtained throughout the investigation. Documents available in English were more conveniently worked into this study as English is my

primary working language. However, one document from the Institute of Advanced Studies was translated from Danish into English. A document summary form modified for the purposes of this study, was prepared for most collected documents (Appendix E). The document summary forms were used to enhance the organization of field materials prior to data analysis and triangulation, and this enabled a more organized audit trail.

Data source summary. Data was collected from interviews, observations, and document sources. Observations added the greatest diversity and need for knowledge on the world-class university phenomenon and interviews helped contextualize and allow the researcher to triangulate what was being observed in a dialogue of an interview or in documents shared between individuals. University and government documents provided a trail of decisions and aspirations, which weaved together a narrative of what could be read with what was seen in the observations and heard in the interviews. For the one document only available in Danish, I acquired the services of translators through the University of Massachusetts at Amherst Translation Center.

Translations

One document analyzed for this study was only available in Danish. Informed consent statements were translated before commencement of the site visit and provided to participants with an English version either in person or via email (Appendix A) ; I have retained all signed copies. The University of Massachusetts at Amherst Translation Center provided translations for this research project. I contacted the Center regarding Danish translations in Fall 2013. Nordic and Western European language translations are listed on the Translation Center's Web page. Given the cost of translation and notarization, this service was used sparingly for documents deemed essential in the

course of the study. A separate confidentiality statement was requested of and received from the translation center (Appendix D) as well as an accuracy statement.

Data Storage and Security

Tape recordings were stored on a voice recorder until transferred to a laptop for transcription. The digital recordings on the tape recorder will be retained for 3 years following data collection. Digital recordings and written transcriptions will be stored on the researcher's laptop computer, which will have an electronic locking mechanism as well as the digital recording device, which will be stored in a secure location until the 3 years have expired. The researcher will retain transcriptions indefinitely, observation records, photographs, and artifacts indefinitely. The researcher may present and report data findings at his discretion in his dissertation, to his doctoral committee, participants and participating universities, academic communities, professional associations, publication bodies, government and/or multi-government agencies, and/or research sponsors and participants. Data collection processes are further detailed in Figure 1.

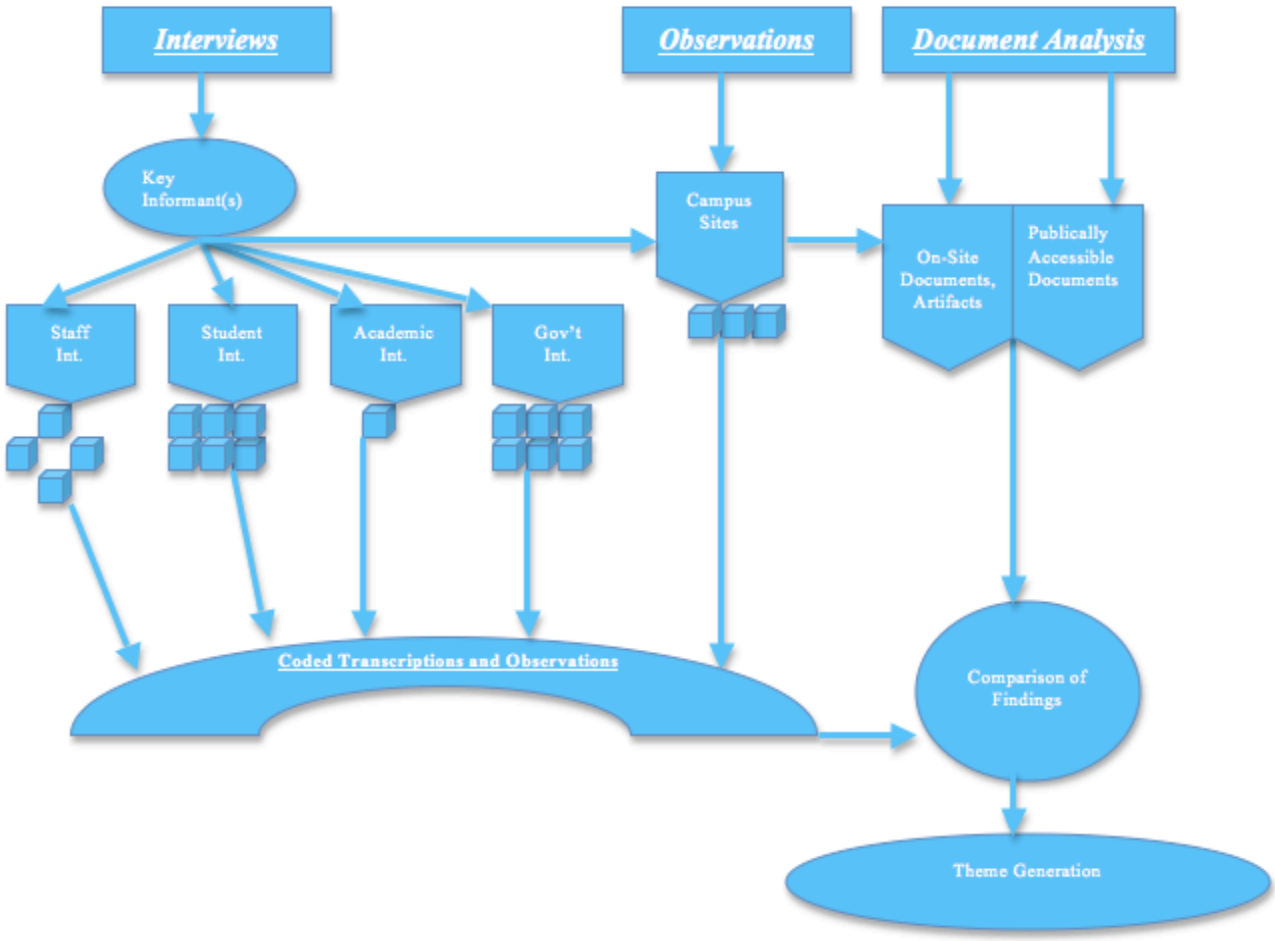

Figure 1. Case study design data collection logic.

Data Analysis

Yin (2009) wrote case studies can be analyzed through the researcher's selection of a "general analytical strategy" (p. 126) and suggested *case description* as one strategy among others choices he presented. The case description strategy has been used to describe complex situations in case studies and recognize "the appropriate causal links to be analyzed" (pp. 131-132). Provided the present investigation is a descriptive case study on a complex organization, case description is the most appropriate approach to data

analysis. Additionally, I recognized the need to select a coding scheme to examine interview transcriptions and observation accounts so that I could identify the most salient themes from the data. Saldana (2009) presented two types of coding, *first-cycle* and *second-cycle* codes. Using Saldana's (2009) approaches to coding, I selected two coding approaches from the *first-cycle, elemental* code group (*descriptive coding* and *process coding*) and one coding approach from the *second-cycle*, *focused coding.* Descriptive coding assigns codes in the form of words in noun form and is useful when multiple sources of data will be analyzed (p. 70). *Process coding* refers to labeling action being taken using words ending in *ing* to code "observable activity" (p. 77). The first coding choice aligns coding with the choice of this investigation's overall design (descriptive case study) whereas the second coding choice is appropriate given the aim of this study (understand a process). Saldana (2009) also suggested second cycle coding to gain greater analysis in understanding how codes drafted during the first round are related and may be made more concise (pp. 149-150). *Focused coding* was chosen as the subsequent round of coding as it leads to categorization of data allowing for an orderly means of organizing and, secondly, focused coding is a more "streamlined adaptation of classic grounded theory's axial coding" (p. 155).

I began data analysis by listening to interview recordings. Recordings were uploaded to the transcriptions software program Inqscribe installed on my laptop via the recording instrument, my I-Pod touch. I then transcribed interviews one by one. I then completed write-ups of the observations. Interview transcripts and observations were organized into folders on my desktop and the recordings were retained should I have needed to revisit them. Interview transcripts and observations were then uploaded into the

data analysis software program ATLAS.ti. I began analyzing transcriptions using the coding scheme and making other notations of statements that stood out to me until the software and most significantly, hardware, crashed, I transitioned to using Microsoft Word for coding and organizational purposes for the remaining interviews and the observations. I revisited the previously coded transcriptions through the backup copies I preserved in folders on the desktop of my personal laptop. The data saved to the loaner laptop that had been running ATLAS.ti before it crashed had been saved and returned to me in a file by my University college's IT personnel, but Word became the principle software program I used to analyze interview transcriptions and observations. Documents were examined separately and following the other sources of data. Themes emerged from the findings based upon which concepts appeared to be the most salient.

Representation of Findings

Merriam (1998) claimed case studies are descriptive, bounded, and aim to provide a comprehensive understanding of the study's case. In a similar spirit, Weiss (1994) described a process of organizing data into a narrative and interspersing analysis. *Narrative* form was chosen for its appropriateness with the descriptive nature of this case study (Yin 2009). The narrative form was the appropriate choice as it has been used in single cases to integrate other elements beyond merely text. With the inclusion of researcher-generated photographs taken on-site as well as the potential for participant-provided artifacts to be included, the narrative form is appropriate given the methods of data collection. Merriam (2009) accented the importance of description in case studies with the choice of narrative write-up as one way to communicate the context to an audience:

> Perhaps the major point about case studies to keep in mind is that they are richly descriptive in order to afford the reader the vicarious experience of having been there…in order for a reader to vicariously experience a phenomenon, the writer must transport the reader to the setting. This is done through writing a vividly descriptive narrative of the setting and the situation. (pp. 258-259)

Findings were reported as they are developed from individual sources of data, categorized by theme. The narrative form of the presentation complemented this study's inclusion of photographs as well as observations, interviews, and document analysis in Chapter 4 where participant text or images and the author's text or figure were interlaced with a very descriptive and detailed account of my findings.

Delimitations

Danish remains an important and common medium of written records and spoken communication. This has been undergoing a process of change as noted in the findings. However, documents deemed critical to the study will be translated by a translation center as previously noted. Yin (2012) stated that a case should not be selected for its convenience but rather focused on the rationale for the study and if the researcher has a "desire to have exemplary instances of the phenomenon being studied" (p. 33). The strength of the case study design is its reliance on multiple sources of data. The use of interviews with individuals working at the university and government were conducted with participants capable of speaking English and the ability to conduct observations at an institution becoming more globally-oriented and offering ever-increasing degree programs in English and hosting foreign students. For these reasons, multiple sources of

data able to mitigate areas herein delimited and therefore establish case study design as an appropriate methodological choice in pursuing the current investigation.

Limitations

The absence of the faculty perspective was a limitation of this study. While one interviewee served as an academic administrator and previously as a member of the faculty, the perspective of those whose full-time occupation is solely within the professoriate was absent. Several invitations were extended to garner faculty participation, however messages were not returned or indicated inability to participate.

Construct Validity

Construct validity is the assurance "correct operational measures for the concepts being studied" are undertaken (Yin, 2009, p. 40). The construct of interest is the university organization. Physical planning, research grants, and new programs are developed at universities on a routine basis at demand-absorbing open-enrollment institutions as well as highly selective research universities. The validity concern associated with the organization construct is that the elements of design under study align directly with what contributes to becoming world-class, opposed to projects and programs, which would otherwise still be pursued regardless of the status ambition.

This investigation relied upon several techniques to enhance the construct validity and strengthen the trust appropriate constructs are being measured from which interpretations will be posited following data analysis. Yin (2009) suggested using several sources of data as one of several means to enhance construct validity (pp. 41-42). In this investigation, multiple data sources will be relied upon and will include semi-structured interviews, direct and participant-observations, and documents or artifacts.

Internal Validity

Internal validity was not considered in this investigation, as the research design is a descriptive case study. Yin (2009) wrote that the rationale for internal validity "is inapplicable to descriptive or exploratory studies (whether the studies are case studies, surveys, or experiments), which are not concerned with this kind of causal situation" (p. 43). This investigation did not evaluate whether the institution has become world-class or took the correct or incorrect approach. Instead, this study examined how Aarhus University conceptualizes world-class and actualizes a process to achieve that status.

External Validity

External validity was enhanced through the use of rich, thick description (Merriam, 2009) and the application of theory to the case under investigation (Yin, 2009). As suggested by Merriam (2009) data will be presented using statements made by participants as well as researcher journals and other data that assist the reader in gaining understanding. While qualitative research is not truly generalizable in the sense of quantitative research, findings allow future investigators to compare observations in Denmark with those in other contexts. Yin (2009) refers to this type of generalizability as an "analytic generalization" (p. 43).

Reliability

Consistency, or reliability is the notion a study's findings are consistent with the data (Merriam, 2009). Reliability was enhanced through what Merriam (2009) called an audit trail, or what Yin (2009) referred to as a chain of evidence. An audit trail, as I refer to it, included the journaling of decisions made and feelings felt in the field, outlined the general tasks completed each day, and provided transparency in that my general

activities, successes, challenges, and thoughts were recorded. I maintained my activities in one column of the document and noted my reflections in a second column. I originally planned to use what Yin (2009) referred to as a case study database. However, several program crashes and a hard drive crash were persistent and significant enough to cause me to not use the database. The audit trail/chain of evidence was therefore means of reliability. Additionally, I catalogued most documents, interviews, and observations through the use of what I previously noted Miles and Huberman (1994) referred to as *contact summary forms* and *document summary forms* to assist in the organization of documents, indicate importance, and recommend next steps for the research. The ability to account for my activities and reflect upon them provided me insight on the next steps I would need to take to ensure I was obtaining all the information/data I would need to complete my study and make accurate conclusions regarding my findings.

Pilot Interviews

Three pilot interviews were conducted to reinforce the reliability of interview protocols. Of internal validity, Merriam (1998) asked, "Do the findings capture what is really there?" (p. 201). The use of pilot interviews enhanced the quality of the questions that would eventually be included in the revised interview protocols for the study of a world-class university. A public research university aspiring for inclusion among the top 25 universities world-wide was chosen as the site for pilot interviews and included administrators and graduate students as participants in testing the effectiveness of interview protocol questions in eliciting responses and targeting areas appropriate for the investigation's purpose. An aspirational top 25 institution was chosen as the site for pilot interviews for two compelling reasons. First, the institution was ambitious to better its

current status and integrated such ambitions into a strategic plan or vision. The expectations and difficulty climbing into the rankings among the top quarter of U.S. research universities may mirror some of those at institutions aiming to climb to the top 100 in the world. Second, the transformation is still in progress. This is important, as the design of this study was descriptive, not explanatory. Participant responses may therefore better co-construct meaning with the researcher on what it is like to be in the process of establishing a top-tier institution than one having failed to meet their goal or already achieved such a status.

Using semi-structured interview protocols, I interviewed three participants in the spring semester of 2013. All three participants were full-time university administrators, all of whom were enrolled as graduate students or had taken graduate-level coursework at the university site. Although participants occupied both roles as staff and student, interview protocols for the most part focused on one of these areas. One participant taught coursework as well, but during the course of the interview I determined this would not be an appropriate case to illustrate how a tenure-track faculty member may experience a world-class university. Interviews were conducted in the participant's offices, digitally recorded, transcribed using InqScribe, and analyzed using Atlas.ti. Following analysis several changes were made to both administrator and graduate student protocols. Administrator protocol follow-up questions were revised to add a question on the process of becoming a top 25 university, a question on challenges incurred through such a process, and reworded questions to focus more specifically on the university as the construct of interest. Graduate student protocol questions were similarly revised to concentrate more on the existence university support, rather than individual experiences.

Both protocols underwent a second, thorough revision to be more narrowly tailored to the realities facing higher education in Denmark. Protocols were later formed for administrators, faculty, students, and government officials.

Reflexivity Statement

I approached this single-case study of Aarhus University influenced by how the world-class university phenomenon was pursued within other higher education cases set in differing contexts around the globe. I questioned the adequacy of the existing empirical and conceptual literature, which collectively focused on particular geographic regions at the expense of others. I questioned the absence of research on this phenomenon in the European Higher Education Area (EHEA) following the commencement of the Bologna Process. This is ever more important amid the paradox of a continent moving towards uniformity of higher educational degree conventions while member nations and institutional leaders retain autonomy of design in their own top universities. In part, I chose the nation of Denmark to contribute to an otherwise deficit of empirical field research on world-class university development in Europe, specifically Western Europe.

As noted in chapter two, other empirical studies examined nations such as China. I became frustrated with the concentration on China, however. Despite China's incredible investment in certain higher education institutions, a Chinese university, in my opinion, would be a poor pillar for a study to highlight as world-class. The concentration on rankings indicators and publication counts seems to take precedent over the teaching mission which I believe should still be present in comprehensive research universities. As a product of both a liberal arts undergraduate education with a strong civic mission and

both religious and land-grant research intensive graduate education, I have come to understand true research scholarship can not be devoid of a basis in a well-rounded education with elements of service to society. Yet, universities in China seemed to be concentrating on simplified indicators or increasing publication counts at the expense of the intrinsic value of a higher education for students who attend their institutions and the staff and faculty who work within their walls, which may be more difficult to measure but invaluable in experience for students and the society for which those students will later serve. Regardless of how much China decides to invest in their higher education sector, I do not believe talent can be merely bought. The talent necessary for a world-class university, including student talent, would more likely be attracted to truly comprehensive research universities known for quality education and a supportive campus climate as well as research.

The traditions of the great universities of Germany, France, Italy, England, and Scotland historically influenced how higher education in the United States would come to be, developing further innovative configurations as the centuries wore on. Western Europe and the United States continue to host some of the greatest universities in the world. I identify as an American whose ethnicity stems from Western Europe, so I naturally identify with these traditions to which I have grown up and been exposed to in my collegiate studies. Within the scope of Western Europe, the Nordic countries accent education as an important element of their society, especially Denmark. Given the historical traditions between Western European and American Universities, the freedoms provided to citizens and academics alike, and the reputation of excellence for the region

generally, my choice to study Aarhus University in Denmark was as much of a personal fit as an appropriate case choice.

Organization of the Study

Chapter one briefly presented the concept of a world-class university and provided a definition appropriate for this investigation, posed the research question, stated the purpose of the study, and provided background information on the Danish higher education system and case site. Chapter two provided a more thorough examination of the empirical and conceptual literature on the notion of a world-class university. Chapter three outlined the research design of this study and the methodological considerations taken in terms of data collection, analysis, and presentation.

Chapter four will outline findings. Chapter five will provide a discussion of the implications and recommendations for future research.

CHAPTER 4: FINDINGS

Organization of the Chapter

The purpose of this study was to describe the process of becoming a world-class university in the context of Western Europe, specifically Denmark. This study was guided by the research question: How does a higher education institution in Western Europe undergo the process to actualize its ambition to become a world-class university? In keeping with a qualitative case study methodology, the data sources included (a) interviews with university administrators, academics, and students at Aarhus University as well as governmental officials at the Ministry of Science, Innovation, and Higher Education (now named Ministry of Higher Education and Science); (b) observations conducted in Aarhus and Copenhagen, Denmark; and (c) document analysis.

First, a graphic illustrating the ingredients for a recipe to design a world-class university in Denmark will be presented. Second, the salient themes of this recipe will be presented with quotations from interviewed participants, photographs obtained during observations, and excerpts that appeared in collected or considered documents. Third, a note on the organization of the study will precede discussion in the final chapter.

Findings From the Present Investigation

The process of designing a world-class university in Denmark, specifically at Aarhus University, necessitated internal ideological and structural change within the university as well as certain environmental preconditions stemming from the university's relations with its government and Ministry. A university aiming to become world-class in such a context would, internally, necessitate seven characteristics at the university level,

three characteristics at the ministerial level, and one cultural characteristic binding the university and governmental aims (Figure 2).

University Level Characteristics

1) Visionary Leadership

2) Independent Consultant's Report

3) Administrative Organizational Pragmatism

4) Academic Hubs with an Interdisciplinary Focus

5) Talent Capacity-Building

6) Global Focus

7) External Funding and Collaboration.

Cultural Characteristic

8) Trust

Ministry Objectives

9) Autonomy and Generous State Funding

10) Quality Assurance, Economic Competitiveness, and Academic Relevancy

First, I will describe the most salient findings at Aarhus University and then discuss those most salient at the Ministry of Science, Innovation, and Higher Education, interconnecting their approaches to describe how a more competitive, elite, and global research university is designed in tandem between governmental and institutional aims.

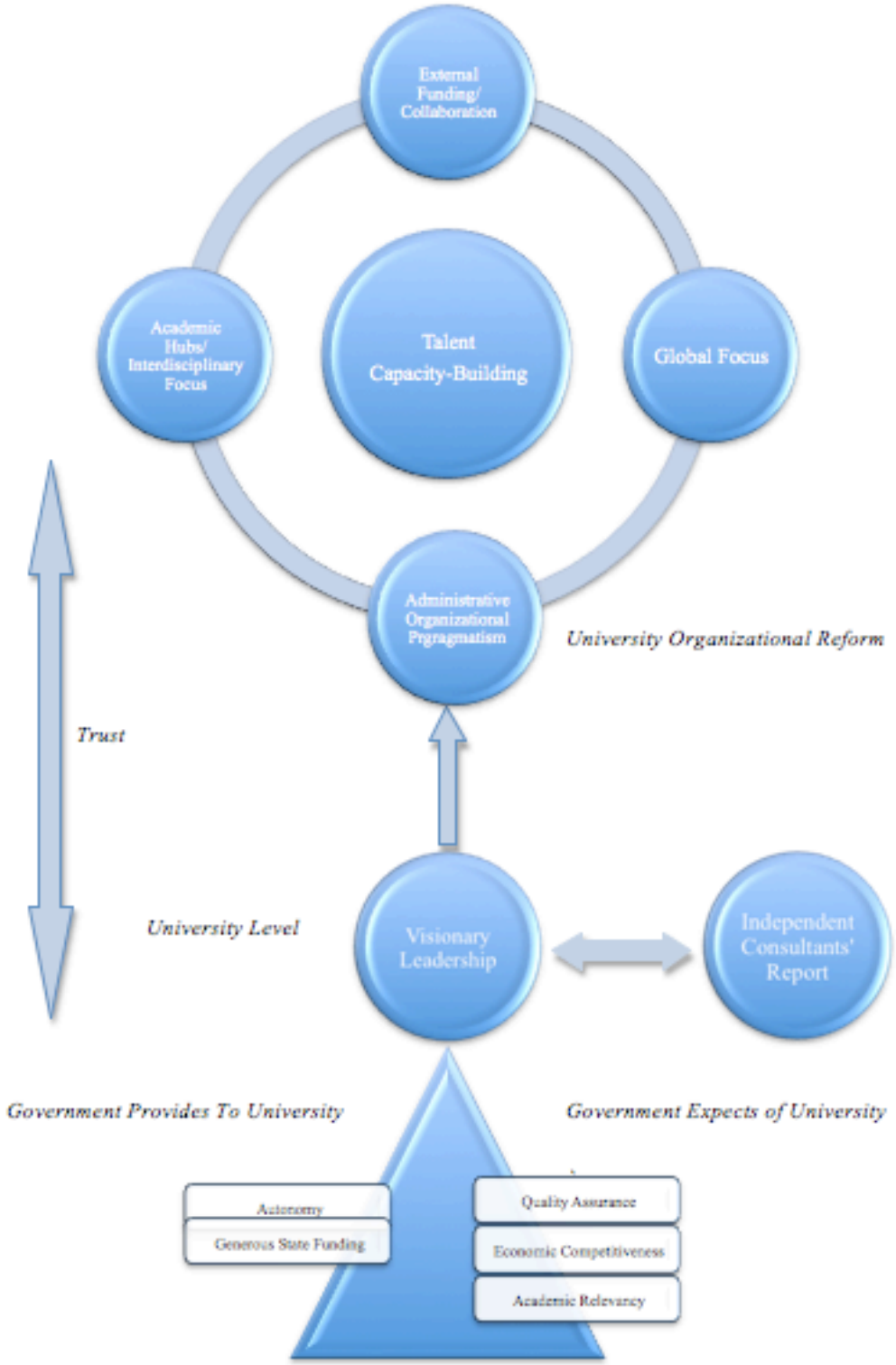

Figure 2. Conceptual model for designing a world-class university in case of Aarhus University, within the context of Denmark.

Theme one: Aarhus University's Visionary Leadership

Steering Aarhus University towards pursuing world-class status required visionary leadership. This theme was consistent and expressed with clarity across every interview with administrators, the academic administrator, and in some cases, students. Specifically, former Rector Lauritz Holm-Nielsen was credited with encouraging Aarhus University to embrace the notion of becoming a leading global university. Hans (pseudonym), a high-level administrator, commented,

> I think that one of the main architects behind the Top 50 is Lauritz is the former Rector. He's been working for a long time international scene with a lot of universities around the world and he has always had big ambitions for Aarhus University and I think he it has been his one of his main aims to take Aarhus University from a small Danish local university to a an international university and to make it to a world-class university, so far so good (Hans, January 28, 2014).

As Jan (January 27, 2014) described his impressions of the academics' reaction to the plan towards a goal of becoming world-class, he also remarked that the senior management team within the university became more "prominent" and "visible." Kristian, a high-level administrator, observed a lot of internal improvements emerged under the rector yet those who critiqued the plan were likely to have perceived the move as a difference of ideas on the centralization of the university (January 21, 2014). Students, too, often remarked about the former rector. When Anne (January 15, 2014) spoke about student initiatives being financially supported, she referred to the funding as

having come from the rector. Sune (January 14, 2014) attributed organizational change that restructured Aarhus University to the former rector.

As indicated earlier, the *quadruple-helix* was an idea originated at Aarhus University with the added dimension of *talent development*. The helix model appears in the strategic plan *Strategy 2013-2020*, but the mention of focusing on talent is also found within the 2008-2012 strategic plan and observed in internal documents presented to me during my trip. I was informed during my visit that the University actually had not had a firm, formal strategy prior to the 2008-2012 strategy. During my visit, I had the opportunity to speak directly with the former rector, Lauritz Holm-Nielsen.

The former rector communicated that the notion of the quadruple helix was actually his idea along with some later projects spearheaded in the direction of the talent development dimension such as the Dale Mortensen building, which serves international students and the Institute of Advanced Studies, which is a hub for PhD, postdoctoral, or other academic and research fellows to Aarhus University. Lauritz continued to speak about what he referred to as the fourth bubble, which is talent development,

> The quadruple helix is not just Etzkowitz's triple helix; with a fourth bubble its more like the classical research university, Humboldt, with a certain mission added and then the fourth bubble I thought we need that for first of all because its such a large university, you have 40,000 students. How do you make it an elite university at the same time as its a mass university. (Lauritz, January 16, 2014)

The concepts Lauritz mentioned as being among his ideas connected to talent development and internationalization were among those ideas most clearly identified in interviews and in documents as linking a connection to the strategic plan and the

ambition to become a world-class institution. Lauritz indicated Aarhus University could advance to become a top 50 university, but likely not for another 10 years and would necessitate the recruitment of the greatest talent from all over the world, specifically citing PhD students, postdoctoral students, and visiting professors. It was consistent throughout my interview with Lauritz that attracting the most talented minds to Aarhus University from wherever they may be in the world was an essential element of becoming a top university and that his vision had been a driver in this endeavor.

The most recent edition of *Profile*, Aarhus University's magazine, in an article aptly titled "Vision and Public Spirit," cited the new rector and past rector as leaders who share in their desire for Aarhus University to both serve Denmark and become a more prominent player on the world-scene (AU Communication, n.d., p. 90). Under the heading, "From provincial to world-class," the author(s) wrote, "To make Danish universities understand their role in society was the task Holm-Nielsen took upon himself when he became rector of Aarhus University in 2005" (p. 90). In the article, Lauritz noted the Aarhus Institute of Advanced Studies as an example of increasing global reach in acquiring committed researchers (AU Communication, n.d.). It is consistent in this article and in interviews (Kristian, January 21, 2014) the Danish government advanced a globalization strategy, which the University declared its intention to embrace and pursue. It is further evident that former Aarhus University rector, Lauritz Holm-Nielsen, who was present during the globalization strategy, mergers, and restructuring, formulated the vision for and took the initiative in leading Aarhus University to pursue world-class status.

Theme two: Independent Consultant's Report

A catalyst for the changes that occurred at Aarhus University was a document produced by two independent, external consultants which I heretofore and will continue to refer to as the Consultant's Report. Aarhus University's *Academic Development Process* (Aarhus Senior Management Group, 2011a) explained the next stages to bolster the University as a single organization, following the mergers. This document referenced the approaches taken that led up to this report between March and June of 2010,

> The rector initiated the academic development process with his vision statement of 8 March 2010. A series of oral and written consultations of students and staff were carried out, nine interfaculty working groups were established, four academic strategy seminars were held, and two external experts were consulted. (pp. 8-9)

The Academic Development Process report continues on without specific mention of the independent consultants or what recommendations specifically came from their report that was integrated into Aarhus' execution of its strategic goals. When I arrived in Denmark, a key informant had mentioned the report might be something I would be interested in reviewing for this study. Anne, a student whom I interviewed, also mentioned the external consultants. Anne discussed serving on the student council at the time she became aware of the university's intention to restructure and noted a memo from the rector as well as "a report written by two independent counselors," which she read and indicated the report made suggestions for what Aarhus should be implementing next based on "a trend going around Europe" (January 15, 2014). Anne added she perceived the changes that followed to be administration-led.

The Consultant's Report was compiled by two external consultants with career experience in strategic planning and higher education; one with extensive international policy experience and a faculty member at the Institute of Education at the University of London, the second had extensive experience at the World Bank with research ties to the Massachusetts Institute of Technology (MIT) (Revsgaard, 2012). In addition to their brief biographies, the university's website added the consultants contributed recommendations for next steps after interviews with academic administers and administrative management (Revsgaard, 2012). The report (Hatakenaka & Thompson, 2010), is an 81-page document outlining recommendations spanning from organizational structuring of the academic faculties, organizational restructuring of responsibilities for academic administrators such that "it will be even clearer that the deans have a 'corporate' responsibility in the university" (p. 67), the formation and composition of particular policy committees, financial procedures, as well as recommendations for core areas of Aarhus University's strategy including education, research, knowledge exchange, and talent development.

Anne (January 15, 2014) mentioned the report discussed trends in Europe. My review of this document certainly discussed the place of Aarhus University in the European as well as Danish context. However, many references to specific universities approaches are to American universities, specifically the Massachusetts Institute of Technology (MIT) and Stanford University in areas of research and/or collaboration with industry (Hatakenaka & Thompson, 2010). Among the opening statements, the report stated, "AU will be a global, modern university, excellent in all it does; it will set a new reference point for European universities. It will have a clear and well-known 'brand

image,' different from that of Copenhagen University…" (p. 3). Some of the ideas in the report are reflected now in the organizational structure, management responsibilities, and in concepts that have been implemented to name a few clear examples. Yet, the report (Hatakenaka & Thompson 2010) suggested that more autonomy is needed at the university level for Aarhus to truly be able to achieve its aims and suggested in its closing remarks that Aarhus University consider advocating for "changes in the legal position" among the Danish universities (p. 81). The national ambition for Denmark to have a top university is at an intersection with the rector and consultants' vision that Aarhus University may obtain a leading position.

Theme three: Administrative Organizational Pragmatism

Depth and Coherence, a brochure produced by Aarhus University opens with the statement, "We are building a university that combines in-depth professional competence with interdisciplinary collaboration in close and flexible interaction with the world around us" (p. 3) and continues in the brochure to add, "The aim is to create a university that combines in-depth professional competence with interdisciplinary collaboration" (Aarhus university, n.d.g, p. 4). Administrators, academic administrators, faculty members, students, and government officials, noted the process of administrative and academic reconfiguration both as a recent strategy following the mergers and for the enormity of organizational and cultural change the reconfiguration has delivered.

First, reasons existed which necessitated greater professional coordination. Thorn's (2014) presentation illustrated challenges that included an inconsistent network of services and communication between the central administration, academic administration, and institute administrations, which included "6 different accounting

systems, 6 different finance models, 8 different mail systems" among others, not the least of which included "administrative structures characterized by organizational budding." Jan (January 27, 2014), a high-level academic administrator, spoke of barriers between discipline collaboration including budgets, technical reasons, and personnel. Kristian (January 21, 2014) emphasized the different accounting systems, IT systems, different levels handling concerns, and large size of the institutional personnel as aspects of the organization that would be streamlined as it "was not very efficient." Streamlining professional support systems and reducing constraints to collaboration required expansive overhaul.

Streamlining systems meant significant reorganization both for academic faculties and professional administration. First, professional administration was unified into one Administrative Center in each of the four faculties, as tiers of experts versed in a particular specialization area operate within each center, including Studies, Finance and Planning, HR, Communication, IT, Research and Talent. Each tier provides services to their academic faculty and partnered institutes. Additionally, "back-office" support is provided in tiers for specialization areas that run across all four faculties (Thorn, 2014). The Senior Management Group hierarchically over this new professional structure as well as academic structure was consolidated into one group that included the rector, pro-rector, university director, and four academic deans each with leadership of "one of the university's core activities: research, talent development, knowledge exchange, and education" (Aarhus University, n.d.g., p. 9). Jan (January 27, 2014) referred to these as "bands" in which vice-deans and faculty were also included and spanned across each of the faculties. Pointing out his area of responsibility, AU Research and Talent, Kristian

(January 21, 2014) noted he had 130 personnel in his area, which included administrative support functions relating to PhD students and funding considerations relating to EU funds, and that personnel are very specialized and considered experts in their individual area. He noted that his unit, Research and Talent, was one of eight professional administrative areas. The others included Knowledge Exchange, Communication, IT, Finance and Planning, HR, Studies, and Strategy, all under the authority of the University Director (Thorn, 2014). Jens (personal communication, January 21, 2014) drew a diagram of how the university formerly functioned administratively and how it changed. While Jens indicated it caused confusion among academics and researchers as to who to go to for services, Kristian indicated departments are able to collaborate better now than in the first year. Another change occurred in the Strategy Office. Hans (January 28, 2014) noted the AU Strategy office grew following the mergers.

One student, Sune (January 14, 2014), observed monetary resources become consolidated at the top and stated, "The funding has gone upwards in the system towards the management." While the extent of resources in upper administration before and after the administrative restructuring is unclear, Senior Management possessed significant financial resources to offer for new interdisciplinary initiatives. Jan (January 27, 2014) explained that portions of budgets were absorbed into competitive strategic funds set aside for researchers to apply to finance new research centers on par with other top institutions and could be awarded 10 million Kroner, "the money that the Strategic Funds used it was to really promote strong research centers on a high international level, which were also interdisciplinary in nature" (Jan, January 27, 2014). He added that Science

often did well in application success rates because they were used to applying for funding and in that regard were better prepared than other faculties.

Looking ahead, Jan (January 27, 2014) said the strategy unfolds in years and that for 2014, 2015 there were a set of "top 20" projects. When I asked for examples of some projects, Jan indicated "introducing the new learning management system," "a strategy for internationalization of education," and working with "doctoral training courses." He added that the vice-deans are project owners and they work closely with the project leaders.

Theme four: Academic Hubs with an Interdisciplinary Focus

Administrative reform required considerable organizational reformulation. Academic reorganization was equally as massive an endeavor. Lauritz recalled that many internal barriers existed between the faculty prior to the reforms and described it as territorial as opposed to focusing on other competition in Europe. The solution underlying many of the documents and trending in many interviews was a focus on interdisciplinarity. A second, more structural reorganization as noted in the literature was merging together academic faculties. Jan (January 27, 2014) stated that prior to 2011 academics were not in an "organized research environment," whereas afterwards, faculty were organized more into research groups where they may collaborate with other academics from other disciplines. The Consultant's Report of 2010 suggested merging faculties together so that the faculties would "regroup into a smaller number of larger units" (p. 45), specifically only four to five, and with new names for the newly reorganized faculties (Hatakenaka & Thompson, 2010). Government officials I met with at the ministry spoke about how intensely Aarhus University had pursued its

interdisciplinary approach (Pernille & Mette, January 24, 2014). Meeting minutes from the AU Research Forum indicate some believe interdisciplinarity is more than different disciplines working together, "Interdisciplinary research is a means to an end, but not a goal in itself" and that "interdisciplinary initiatives should be targeted towards 'societal challenges' in order to improve potential applications for Horizon 2020" (AU Forum for Research, 2013, p. 3).

The physical planning aspect of the academic reorganization also posed challenges as the placement of related academic disciplines nearby to one another required many departments to move elsewhere on campus. As noted in *Depth and Coherence*, "We are making efforts to consolidate all the departments physically. As far as possible, academically related departments will be geographically located close to each other in strong academic environments…" (p. 9). Hans (January 28, 2014) added the purpose was to cluster each of the academic areas together to make it possible to identify each of the four areas on a map. In fact, the official campus map notes physical changes in sync with the process of organizational change in its opening page:

> Aarhus University is currently undergoing a historical transformation. The academic organization, the management and the administration are being changed to create a coherent university geared to the future and matching the best in the world. As a result, the geographical locations of various units will change in future, starting in summer 2011. (Aarhus University, 2011b, p. 3)

Hans added that research institutes were also intended to be moved near their academic clusters.

Theme five: Talent Capacity-Building

Internal Meritocracy. Aarhus University's special attention towards talent development is, as previously mentioned, geared towards graduate or postgraduate recruitment globally. Even within the university, though, more selective talent tracks are being developed for students identified with intellectual promise already attending Aarhus University as undergraduate and master-level students. First, special elite tracks are being developed and provided to select undergraduate students. Kristian, who is a high-level administrator responsible for areas of research and talent management spoke about these emerging tracks:

> When we talk generally of talent development we talk about PhD education but now we're introducing it also in undergraduate and masters degree education so the point is that we would like for the special gifted students that can do more to give them some extra activity and recognize them for that extra activity and then being able to take extra credit or more difficult courses. And we've started to pilot a number of those things particularly at the faculty of science and technology. They started this year doing a lot of things…I think the talent development component is going to be our answer to the massification of higher education. (Kristian, January 21, 2014)

The Consultant's Report offered guidance on considering the promise of students outside the most advanced programs and recommended support for these students as well, stating, "Although not of such direct concern for talent development, bachelors' and masters' graduates are 'talents' in their own right, and for most of them, such qualifications mark their end goal" (Hatakenaka & Thompson, 2010, p. 17). Specifically,

the authors of the consultant report remarked advising services to these students would be best served by the Education Committee (p. 18).

Indeed, the AU Forum for Education Minutes noted an intersection of talent development and undergraduate education. A special track or "honours program" (p. 6) for elite bachelor's students was in the process of being piloted where students in the Science and Technology faculty are recruited after their first year of study and formed into research groups based upon their interests where "the aim of the project is to give particularly competent and motivated students a research/innovation and entrepreneurship profile, and to strengthen their interactions with the business community" (AU Forum for Education, 2013, p. 5). Two tracks were discussed, one in Physics and Astronomy and another within the Interdisciplinary Nanoscience Centre where "the student must be highly intellectual, ambitious, hard-working, curious and cooperative and must also like academic challenges, 4 to 5 students are expected to be selected per track" (AU Forum for Education, 2013, p. 6). The minutes indicated the intention to eventually expansion of the talent tracks across the four academic faculties was in the planning process and that these elite tracks serve to supplement the academic program of the elite tracks students by providing them with an additional research and business-oriented experience that benefits the students in the track and Aarhus University overall (AU Forum for Education, 2013). At the same meeting where the talent tracks for bachelors students was discussed, a representative from a Denmark-based industry came to speak with the AU Forum for Education about the talent program in effect in her company, where they identify the top 5% of employees and invest in additional opportunities for their development "and the talents often become role models to their colleagues" (AU Forum for Education, 2013, p.

2). The AU Forum for Education Minutes (2013) indicated that in both cases, for the company and for the supplemental undergraduate talent tracks, the people who are talented are still immersed in their respective areas with other employees/students thus benefitting their more typical coworkers or students. In both cases the experiences appeared to be supplemental.

Lauritz Holm-Nielsen, the former rector, spoke along similar lines about creating pathways for undergraduates to engage in research experiences at an earlier juncture. The former rector discussed a track he referred to as "Bologna Danese" to signify an amending of the Bologna Process in this context where a PhD may be pursued immediately following the bachelor's degree and discussed identifying talent early and begin providing opportunities to join "research groups" and "elite classes" (Lauritz, January 16, 2014). PhD programs emerged, across many administrator and student interviews as a central function of becoming a leading global institution and were reinforced as important within governmental budget and evaluation documents.

Cultivation of Young PhD Students. Of PhD programs in Denmark, the Danish University and Property Agency wrote, "There is a rising demand for PhD graduates, as a result of the increased allocation of research funding to the universities" and in arrangements between the ministry and the universities, "the intake of PhD students was to be doubled" (Danish University and Property Agency, 2009b, p. 23). Aarhus University has made a commitment to enhance its base of PhD students. Currently, 2,045 PhD students are enrolled at Aarhus University and a "3 + 5 Bologna Danese" model allows for PhD studies to commence following 3 years as a bachelor's student and a period as an Honours Master student while pursuing the PhD degree (Thorn, 2014).

While this model does not shorten the length of tertiary research study for the PhD when compared to other models in Thorn's (2014) presentation, it does place students in advanced degree programs 1 to 2 years sooner than the other models presented. At Aarhus University, PhD students were not only considered graduate students, but younger researchers. One brochure geared towards PhD students stated the following:

> At most universities, PhD students are considered the oldest students - at Aarhus University, PhD students are the youngest members of staff. Young researchers thus enjoy highly attractive conditions. They participate in department meetings, earn a salary and a pension, and enjoy parental leave benefits. (Aarhus University, n.d.a, para. 4)

The focus on *young* talent at Aarhus was abundant in documents and interviews with administration. References in what appeared to be a recruitment brochure included statements such as, "As a talented young researcher, you can become part of our internationally renowned university….To attract and retain the most talented young researchers….We are committed to providing young researchers with global competencies" and discusses Aarhus as "the youngest city in Denmark" (Aarhus University, n.d.a). Former rector, Lauritz Holm-Nielsen observed, "it's a huge investment 2000 PhD and 1000 post doc. We get a very young collection of brains" and noted citation rates are higher as compared to other European countries as "brain power is young and daring" (Lauritz, January 16, 2014). Hans (pseudonym), a current high-level administrator, commented, "the aim is to attract young outstanding researchers; that's part of being world-class university" (Hans, January 28, 2014). One of the most

significant facilities directed towards attracting talent is the Aarhus Institute for Advanced Studies (AIAS).

Aarhus Institute of Advanced Studies (AIAS). Among interviews with administrators concerning which buildings were most closely related to the world-class ambition, the Aarhus Institute of Advanced Studies consistently came up. A brochure communicates that AIAS offers fellowships to international scholars who will come to Aarhus to engage in research collaboration with other scholars for a period anywhere from 6 months to 3 years (Aarhus University, n.d.b.). Thorn (2014) noted in his presentation slides that AIAS received a seed grant of 1.5 million Euros each year for 5 years and is meant for "exceptionally talented younger researchers from all over the world." Other offerings mentioned in the brochure include planned social get-togethers for fellows, researchers, and the families of fellows and assistance for families to find accommodations and schools (Aarhus University, n.d.b.). The brochure lists aspects of the facility offered to fellows including an auditorium, meeting rooms, and "The center hall of the building displays a piece of signature art by the American video artist Tony Oursler. The artwork called "Ello" welcomes all visitors to the building with image and sound" (Aarhus University, n.d.b., para. 4). During my visit, I was able to complete an observation of AIAS.

My tour-guide, Cecile (pseudonym), escorted me throughout the AIAS facility, where I observed the main hall (Figure 3), conference room space (Figure 4), lounge (Figure 4), kitchen (Figure 5), classroom (Figure 5), auditorium (Figure 6), offices (Figure 7), and reception areas.

Figure 3. The center hall (Kantine) where fellows meet (top right) and artwork in Kantine noted in literature and during observation (top left) (Samble, 2014a).

Figure 4. Conference room (top left); lounge (top right) (Samble, 2014a).

Figure 5. Kitchen (top left); classroom (top right) (Samble, 2014a).

Figure 6. AIAS auditorium (Samble, 2014a).

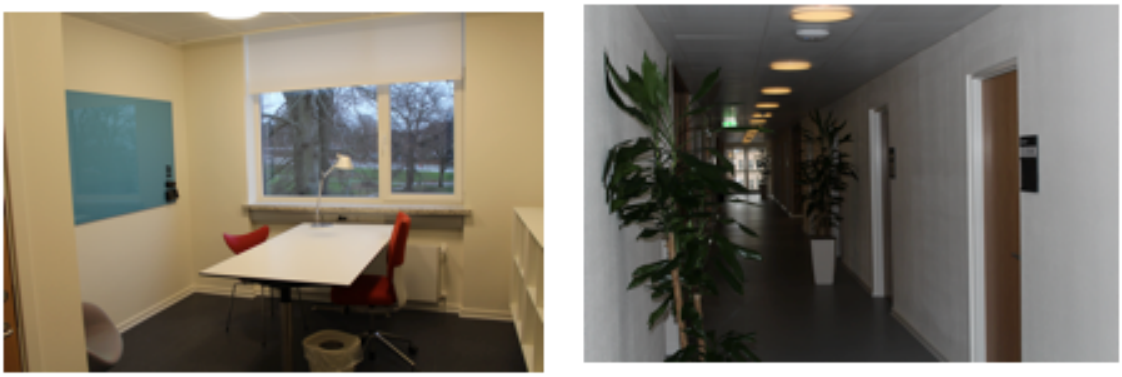

Figure 7. Fellows office (top-left); hallway of offices for fellows (top-right) (Samble, 2014a). Offices provide space for individual researchers within a corridor of colleagues in rooms adjacent to or across the hall from one another.

As we began our tour Cecile noted that the center had just received Marie Curie Fellowships. I obtained a handout that indicated that the University will offer 25 AIAS-COFUND fellowships associated with the European Commission and granted to recipients who are "junior and senior researchers" at AIAS (Aarhus University, n.d.c.). During the observation (January 21, 2014) I first visited the fellows' office spaces. A long corridor was lined with offices on both sides, interspersed with floor to ceiling windows at the end, plants spaced every few doors, and a kitchenette in the center. Inside, offices were open, bright from the lighting and open windows and each with a desk, chairs, whiteboard, and bookshelf. We could not yet enter the conference room as I was informed the "board" was meeting inside. I asked about the board and learned that it is composed of academics and has become increasingly composed of external members. I also visited the Kantine, where I observed a greenish face as part of a piece of artwork to my left and a long table lined with chairs straight ahead. The Kantine, Cecile informed me, was where fellows meet to eat each Monday with faculty and staff. A kitchen is

connected directly to the Kantine, where a Danish flag was present. Cecile informed me the fellows will celebrate birthdays by placing the flag outside of the door of who is having the birthday and they are expected to bring cake for everyone. A lounge with couches connects to the kitchen and central hall areas. The conference room, which I was able to enter after the board had departed, contained a television with Skype capabilities for conferencing, similar to another room I had seen upstairs although set up more like a classroom than the conference room where the board met. Cecile informed me on Mondays, they also have Fellows Seminars where fellows are introduced to share their work.

A listing of AIAS Fellows Seminars for Spring 2014 included eight topics such as "Designing molecules – 3d Science animation as data visualization" and "Measuring the Invisible – Probing the dark Universe with new observational techniques" among other sessions led by fellows, which was noted to take place in the auditorium (Aarhus University, n.d.c.). Cecile walked me to an auditorium where she informed me the space was used exclusively by the Institute and not by the undergraduate students. Fellows could present their work here or hold workshops. The auditorium had stadium-style seating, a projector, and a podium area.

Near the end of the observation, I noticed a flyer in Danish in the reception office. I could make out it read "DUA PEP-TALKS." I later had the document translated. Upon receiving the English version, I learned the subheading read, "Come and meet some of Denmark's most talented young researchers" (Aarhus University, n.d.d.). Further details noted several lectures covering "Digital Elections in Denmark: Why Not" and "The

Attentive Brain," among others and invited "high school students as well as university students in their first year" (Aarhus University, n.d.d).

Theme six: Global Focus

Creating Global Networks of Scholars. Kristian spoke about Aarhus University's differentiation from other world-class institutions and how its strategies lead it to grow its global network of scholars.

> Becoming world-class is also developing a profile…interdisciplinary, we would like to make that a core difference, but also becoming one of the most attractive places in Europe for young research talents to come and develop not necessarily stay here onward. I mean We can't absorb everybody that goes through a post doc or PhD education here but they become part of the active research network - they have a good experience, they learn something, they go back in their own research environments and they become an active part of our research network. (Kristian, January 21, 2014)

Data indicates a more internationalized campus in terms of students and staff representation, academic program offerings, and international research activity. Aarhus University touts an enrollment of 5,022 international students, offers 67 degree programs in English, maintains 1,154 exchange agreements, and notes high rankings on citation rates (Aarhus University, 2013a). Other literature obtained on site boasted 1,000 courses were taught in English and 70 nationalities represented among the staff (Aarhus University, 2011a). More recent data indicates the trend toward more a more globally representative campus has continued. The *International Study Guide 2014* mentions 1,019 courses are now taught in English, 78 nationalities are represented on staff and 103

nationalities are represented among the students (AU Communication & International Centre Aarhus University, n.d.). Aarhus University's development contract with the ministry illustrated Aarhus University chose goals that would enhance its global focus. Specifically, Section G. of the Development Contract, Global Solutions, stated Aarhus University will continue to expand interdisciplinary centers as "dissolution of scientific and scholarly barriers are absolutely key to solving these global challenges" (para 44) and "also involves the ability of these centres to attract external funding to a significant extent in open competition" (Aarhus University, 2012, para 45).

Denmark is also reaching out to attract global talent in other ways and on the eastern side of the country. While in Copenhagen, I had the opportunity to observe the opening of the International House. International House Copenhagen will serve as a link that connects talented employees and students to Denmark and assists them become settled in Copenhagen. At the opening, I received a brochure which included a listing of services such as, "help with paperwork when hiring (issuance of a CPR number, tax card, residence and work permit)," "help with job search for accompanying spouses and students," and providing "temporary accommodation at the Researcher Hotel (International House) for researchers and guest lecturers at the University of Copenhagen/Rigshospitalet" (International House, n.d., p. 3). An additional brochure (University of Copenhagen, 2013) noted that the International House was a cooperative endeavor between the city of Copenhagen, the University of Copenhagen, and Rigshospitalet and mentioned the provision of social activities and assistance to visitors and their families. The importance of attracting talented students was present here, too,

in Copenhagen as invited guest speakers discussed the purposes International House would serve for Denmark.

A former government minister Christian Friis Bach stated, "international students bring new ideas and innovations to the country. We need to make it easier for them to find a job after their studies" (as cited in Young, 2014, para. 2). American Chamber of Commerce Executive Director, Stephen Brugger, added, "Denmark needs investment, Denmark needs international companies and Denmark needs foreign talent. And when we succeed in attracting foreign talent, we need to increase the chance they might stay a while longer" (as cited in AmCham, 2014, para. 5). The University of Copenhagen, in cooperation with the City and Hospital has then established a hub for talent where they may sleep, socialize, and gain access to services intended to help newly arrived talents settle in the city with the hope of retaining talent in Denmark. Aarhus University has taken a similar approach.

Dale T. Mortensen Building. The Consultant's Report proposed an idea for creating a hub at Aarhus University for talent recruited to the university. A concept very similar to the more recent development in Copenhagen. Specifically, the Consultants' Report stated the following:

> One suggestion is for the group to create some form of club, the purpose of which would be to provide a forum in which PhDs, post-docs and other interested academics might gather together….One possible catalyst might be to arrange for a space, or even a building, in which some of the group would have a form of residence or rooms, with a dining room or cafeteria or some such facility which

> was open not only to the residents but also to others of the target Talent Development group. (Hatakenaka & Thompson, 2010, pp. 16-17)

The Consultant's Report described a desire "to make PhDs and post-docs feel more part of the university community" (p. 16) and "to bring any form of cohesion would require more 'glue' than holding occasional 'events' " (p. 17). Less than a year after the Consultant's Report, in February 2011, the Dale T. Mortensen building (Figure 8) opened at Aarhus University offering services including a PhD House, IC Dormitory, International Centre, a Strategy and Partnership Unit, Student Mobility Unit, Staff Mobility Unit, IC Housing, and Dale's Café (Aarhus Univeristy, n.d.e.). In my interview with the former rector, he informed me that this building was formerly the School of Journalism, but after they moved, the facility was established to serve as "one stop shop for all aspects of internationalization" (Lauritz, January 16, 2014). Referred to as the PhD House, a brochure (Aarhus University, n.d.e) the facility hosts the IC Dormitory composed of a community kitchen and 28 single rooms, 2 double rooms, and apartments for international students at the PhD level where they can stay from 1 month to 1 year; office and meeting space, a PhD association which organizes events, and spaces where courses may be offered; a Staff Mobility Unit that assists both PhD students and researchers' families adjustment in terms of providing information on insurance, schools, childcare, and work opportunities for spouses; and Dale's Café (Figure 9) which serves as

> A meeting place for international students and the university's increasing number of PhD students. The café offers quality coffee, sandwiches, and a wide selection of beers. It has an informal lounge area where students and young researchers can relax while enjoying snacks and beverages. (Aarhus University, n.d.e., p. 11)

PhD House also has an activity group, which is composed of PhD and postdoctoral students and "matches the official university strategy of knowledge transfer, focused talent development and internationalization" (Aarhus University, n.d.f., p. 2). The Activity Group has a monthly newsletter, communicates events through Facebook, and organizes social and academic events which included "music and game nights in Dale's Café, academic lectures and talks, workshops and beer tasting to the screening of The PhD Movie, which attracted over 380 PhD students" (Aarhus University, n.d.f, p. 2). The menu in Dale's Café is in both Danish and English (Figure 10). Other services offered within the Dale T. Mortensen Building's International Centre include a Housing Unit to assist international exchange and full-degree students, a Student Mobility Unit which maintains exchange agreements, counsels students, and organizes logistics of the Aarhus University' Summer University; a Strategy and Partnership Unit which works with other "international elite universities…analyzing the global education market…advising on regulations for the internationalization of education" (Aarhus University, n.d.e., p. 7), among other related tasks. The International Centre also oversees the Staff Mobility Unit previously mentioned (Aarhus University, n.d.e).

Figure 8. The Dale T. Mortensen Building (Samble, 2014b).

Figure 9. Dale's Café (Samble, 2014b).

Figure 10. Menu at Dale's Café with poster in both English and Danish (Samble, 2014b).

Pragmatic use of language: Adopting English and Danish. In interviews with students, administrators, and administrators who also previously served as members of the academic faculty, it was consistent that there was a transition towards English becoming the working language on Aarhus University's campus. This was observed in the amount of print materials, Web page accessible documents, and other more recent publications among university personnel. Still, many if not most documents and most interpersonal communications between students and staff I observed are in Danish. I found the use of language to be pragmatic and chosen based upon what was more practical given the circumstances.

In my interview with the former rector he reflected on the senior management team's consideration of a language policy and that they decided the following:

> We had an unwritten agreement that as a matter of principal undergraduate study programmes are in Danish and graduate study programmes are in English. Its like a unwritten principal this doesn't mean that we don't have study programmes that are in English completely or Danish completely but it depends on the field of study and the necessity. (Lauritz, January 16, 2014)

Lauritz (January 16, 2014) continued to explain that there were situations where English would not function well in place of Danish such as in the administration where relations with the local government and labor contracts. Kristian (January 21, 2014) spoke about how communication was completely in Danish with limited English used but they have moved to practicing "dual communication" with English and Danish and for the past 1 to 2 years have provided support for administration to become more proficient in English and documents are now produced in the language. He commented that the sciences had moved in this direction earlier, but administration was now catching up. In response to a question about successful strategies to recruit talent, Kristian spoke about Denmark as a good destination because, among other things, of the ability of most people to speak English "at a very high level." Students expressed positive attitudes towards the use of English, but also some concerns.

Andrea (January 20, 2014) commented that English would prepare students to be more international and it would be appropriate for the university's strategy and also in disciplines like Anthropology where English is common. Andrea observed that while here instructors communicated in Danish, the texts are in English which, at first, made it "confusing" when English was translated into Danish, as she was not sure if the meanings were the same. Anne (January 15, 2014) concurred that English became more common

and really started to change in 2010. She mentioned it is a benefit for international students and that office languages have changed where secretaries will communicate in Danish with Danish students, but if a someone approaches and speaks English, they will be expected to transition to English. Anne indicated difficulty when she traveled to Humboldt University in Germany where she experienced a more rigid office language that for the most part only supported German. Lastly, Anne expressed concern that the use of languages should be used more closely tied to the academic subject, providing an example where in her classes an overwhelming number of students speak Danish, but discussion may be in English, and the texts may be in German; Anne felt use of German would be more academically strong in philosophy where texts are in German (Ann, January 15, 2014). Nonetheless other systematic shifts toward English have occurred. Kirstine, a masters student, observed the faculties changed their names from Danish into their present English forms of "Arts and Health and Sci-Tech and Business and Social Sciences instead of our Danish names" and spoke about it as an "international theme" (Kirstine, January 27, 2014).

The practical justifications for changing names have occurred in other ways. In his area of work, Jan travels to China. Following my interview with Jan (January 27, 2014), he provided me his business card and pointed out that Chinese characters for his name were placed next to his listed name. Jan also mentioned that among other attractive reasons for international students to pursue a degree at Aarhus University on par with Britain is that Aarhus University also offers courses in English. The use of language appears to be used pragmatically at Aarhus University and operates to serve functions depending on the circumstances.

Theme seven: External Funding and Collaboration

The Aarhus University Development Contract indicated external funding as one component of its strategy for 2012-2014 under the category of *research quality*, section E (Aarhus University 2012). Specifically, the contract depicts "external funding from non-Danish sources" to have been 200 million Danish Kroner in 2011, with a projection to reach 260 million Danish Kroner by 2014; the summary below this section establishes a connection between external funding and a global focus. According to the development contract foreign external funding,

> Measures the international competitiveness of Aarhus University's research as well as Aarhus University's ability to internationalize its research and make the most of the funding opportunities in the EU system, including the ERC and other foreign sources. (Aarhus University, 2012, para. 39)

The former rector mentioned obtaining funding from American sources is much easier than in the EU, specifically mentioning NASA and a project regarding research on Mars (Lauritz, January 16, 2014). Jan (January 27, 2014) and Kristian (January 21, 2014) added that there are additional European funds available through Horizon 2020, which Jan indicated was $70 billion and Kristian mentioned European Research Council and Marie Curie Grants to promote "mobility of young researchers around Europe." The grant AIAS received for the Marie Curie scholarships from the European Commission was 46 million Danish Kroner (Hammerich Nielsen, 2014).

The pressure to obtain external funding is reinforced nationally at the ministry level and locally within university management. Nationally, 20% of basic research funding appropriated by the ministry is based on the university's ability to secure external

research funding (Ladefoged Pedersen, n.d.). Internally, pressure is exerted on researchers to obtain external funding. In regards to the Horizon 2020 funding, Jan (January 27, 2014) recalled that management encouraged researchers to "get that money, go for it," and noted the science community on campus was better prepared and/or more used to applying for competitive grants than other disciplines. Again, the internationalization initiatives were linked to obtaining external funds. Jan (January 27, 2014) mentioned bridging partnerships between Aarhus University and China and, in addition to other exchange efforts, China would be able to obtain Horizon 2020 funding through a partnership with a European university, especially with universities in smaller European countries.

Overall, external funding increased between 2012 to 2013 from 221 Million EUR to 257 Million EUR, accounting for a greater increase than other areas including education and basic research; research collaboration with industry has also steadily increased in recent years from 331 in 2010 to 336 in 2011 to 360 in 2012 (AU Communication, n.d). Despite the increases in collaboration, Jens, a high-level administrator, informed me that industry partnerships had not developed as quickly as originally anticipated (Jens, personal communication, January 21, 2014). Jens (personal communication, January 21, 2014) commented that he perceived it to be the effect of the organizational structure upon the academic community; specifically, that so many administrative functions were rearranged that affected academics, in addition to the academic structure being reconfigured, that academics were confused who to go to for support or services. Overall, however, it appears a global focus, external funding/collaboration, and building a base of the best researchers are separate, but

interconnected interests at Aarhus University. The context within which Aarhus University is able to pursue its strategic plan is equally important to understanding how Aarhus University may be positioned to reach its goals: context including external funding as well as governmental relations.

Theme eight: Trust

Trust existed as an ideal theme. Several years before the organizational restructuring, but following the university mergers, trust was a notion still developing between the ministry and the university system. The *University Evaluation Report* proposed a two-pronged solution to enhance autonomy afforded to Danish universities:

> In the Panel's opinion, the way forward is to develop a high-trust strategy that stimulates the universities to deliver on mutually agreed missions by allowing them to operate in practice under higher levels of autonomy than is currently the case. The approach is to find less intrusive accountability mechanisms. (Danish University and Property Agency, 2009a, p. 34)

The *University Evaluation Report* recommended the ministry focus attention on strategic planning with the universities, but not necessarily how the universities choose to implement plans to meet shared objectives. The second prong of the recommendation suggested development contracts be narrowly tailored to each university's specific profile and objectives should act as a means of achieving national goals (Danish University and Property Agency, 2009a). Trust exists in the fulfillment of goals embedded within the development contracts if, save another reason, ministerial funding is not tied to meeting stipulated contract goals. Trust is differentiated from autonomy in that oversight and direction is eased from top-down fashion, in favor of granting deference to the

professional competence and expertise of the academic community to determine how best to achieve university and governmental goals.

Trust emerged in interviews with government officials at the ministry, "we trust you to be able to make the right decisions on which quality assurance system fits your institution" (Jakob, January 24, 2014). Yet, at the same time Jakob and Malene (pseudonym) spoke about retaining some "control." The same two notions arose in interviews with other government officials. Referring to the Minister's position, "its both trust but its also accountability…he would say yes I have trust but I don't have blind trust" (Pernille, January 24, 2014).

Trust emerged among administrators in two regards. First, former Rector Lauritz discussed trust as a foundation between Aarhus University researchers and partners in the United States juxtaposed to the EU, which was described as bureaucratic, "long-term relationships that build on capacity and trust" (January 16, 2014). While the former rector described relationships with those external to the university as trusting, another senior administrator, Jens, felt additional trust is still needed among internal academic audiences. Jens spoke about how Danish society was based upon principles that included equality, democracy, and trust. He felt the hastiness and magnitude of the organizational reforms and restructuring of Aarhus University with little input from academics opposed the actual trust within the community despite what was communicated within the strategic plan (Jens, personal communication, January 21, 2014). Trust does appear in *Strategy 2013-2020* as a foundation for effectiveness in research quality, "Granting the individual researcher freedom and trust, in combination with respect for the long-term perspective, is the path to excellence in research" (Aarhus University 2013d, p. 30).

Many of the students and administrators who were asked about the prospect of Aarhus University becoming a world-class or leading global university felt confidant Aarhus University had the potential to achieve its goal.

Theme nine: Autonomy and Generous State-Funding

The current state of autonomy, as aforementioned, emerged as a rationale for a need for the system to adopt a "high-trust strategy" (Danish University and Property Agency, 2009a, p. 34). A second report provided by Ministry officials during my visit detailed the extent of autonomy in the Danish higher education system. In Denmark, universities retain the autonomy over budgetary decision-making, employment of staff, and appointment of governing boards without necessitating government approval; areas more shared included building ownership, decision-making regarding academic programs, and deciding the size of student enrollments (Danish University and Property Agency, 2009b). In an interview with Ministry officials who were knowledgeable aspects of system finance, it seemed universities enjoy substantial discretion with state appropriations. Susanne (January 24, 2014) explained that unlike in other Nordic contexts, Denmark invested additional funding into the higher education sector prior to and following the 2008 global financial crisis. Funds are received as a block grant based upon criteria aforementioned in the beginning of this chapter. Anders and Susanne (January 24, 2014) shared that some universities decide to internally distribute state funding similarly to how it is obtained. Regarding basic research funds, "when the central university management receives say 100 million Kroners then some of the universities will to some degree divide that money between their faculties according to the same criteria as they receive the money" (Anders, January 24, 2014). The same was

indicated for education funding where universities "can choose to allocate the money the same way" so academic areas leading to successful performance in garnering state funding under the taximeter system may be allocated by the university based on "what they have earned from the system." It "is their own choice," added Susanne (January 24, 2014).

Autonomy was a key consideration for Aarhus University following a Consultant's Report *Aarhus University: Reform Review*. In the report, authors Hatakenaka and Thompson (2010) concluded, "AU does not yet have the levels of autonomy that other world class universities enjoy" (p. 80) and referred to academic program formulation's position within the legal framework, outside the authority of the university to be outdated, "Such matters are the internal responsibilities in world class universities….We hope that this report will help AU to make the case for changes in the legal position in Denmark to enable its universities to become up to date in international terms" (pp. 80-81). Some Aarhus University administrators also commented on governmental requests becoming additional areas of responsibility for the institution. One concern was the government's aim to increase speed of student graduation rates and the threat of funding being withdrawn if students do not complete degrees more quickly (Jan, January 27, 2014). Students also expressed concern regarding this coming legislation referred to as Fremdriftsreformen: one student called it "destructive" (Kirstine, January 27, 2014). A second concern was a revamping of the national accreditation process. Accreditation is in transition from a program-level to become institution-level, which was described as a means for universities to on one hand, ensure appropriate internal quality assurance policies were working and, on the other, make the institution

accountable for the quality of its programs (Jakob & Malene, January 24, 2014). The process of earning institutional accreditation has required Aarhus University staff to expend efforts on revisiting assessment and quality criteria in order to gain institutional accreditation (Jan, January 27, 2014).

The Ministry however saw institutional accreditation as a means for universities to gain more autonomy over academic program development. Multiple Ministry officials referred to the concept of freedom being increasingly provided to universities in this regard. Mette noted the 2003 University Act allowed Aarhus University's governing board to gain additional freedom and Pernille indicated the accreditation procedure currently underway will provide institutions control over their academic offerings should the institution gain accreditation (January 24, 2014). Jan (January 27, 2014), however, contended that "prequalifications" were still reserved when applying for a new program "whether there's a labor market for those candidates that'll be a product of the program." This connects to themes of academic relevancy and economic competition observed in interviews with administration, government officials, and present in the consultant's report for Aarhus University and emphases within the ministry's budget.

Theme ten: Economic Competitiveness, Academic Relevancy, and Quality Assurance

Ministry officials discussed prequalification as a means of determining *relevance*. The political rationales underlying the mergers years earlier were geared toward enhancing economic competitiveness in a global context for which the university sector was perceived as occupying a particularly important position which Aarhus University accepted as an "invitation" to further a goals the university already possessed and shared

(Kristian, January 21). Further, Danish Law required the consideration of relevance for new academic programs and that Aarhus University was meeting these expectations through "employer panels" associated with the academic faculties (p. 10), but besides select professional fields, "future labour markets will tend to look for graduates with transferable skills…there will be a more general labour market need for programmes that are multi-disciplinary" (Hatakenaka & Thompson, 2010, p. 11). Relevance was similarly framed among those interviewed—applicability in a changing and somewhat unpredictable labor market with the ideal effect of raising competitiveness of the university sector and its graduates.

Ministry interviews confirmed prequalification criteria would be based upon relevance and the recommendations a newly formed Quality Committee may soon have regarding the specific metrics. Lecture hours, facilitation hours, and completion rates may be among the indicators of quality, but employment and salary may be additional indicators considered in academic programs (Pernille, January 24, 2014) and relevance is an indicator of quality (Mette, January 24, 2014). Jakob (January 24, 2014) spoke of medical fields as particular arenas Denmark could compete powerfully, but cautioned about producing too closely to the market in the case of engineers specifically when economic downturns may affect construction and thereby engineers. Pernille and Mette (January 24, 2014) expressed the same concern about engineering and recalled a period in the 1980s when many pursued engineering but could not obtain jobs. Aarhus University's *Strategy 2013-2020* linked relevance and quality under the Education tier of the Strategy.

> The university must combine the strengths of its research environments with a focus on the labour market's demand for both depth and breadth, thereby ensuring that its degree programmes are relevant for society and developed in collaboration with alumni and employers (Aarhus University 2013d, p. 39).

Even among doctoral degree programs, relevancy of the education for graduates emerged as an area of interest. Former Rector Lauritz recalled a study conducted which found the average "half-life" of a Danish PhD was 5 years before the degree holder would enter another industry and contribute to the greater knowledge society (Lauritz, January 16, 2014). Lauritz went on to discuss the investment made into cultivating the PhD and postdoctoral talent at Aarhus University and noted the age of the academic staff is perhaps a decade or more younger than that of other European nations such as Germany and France. Lauritz also discuss some of the strengths and concerns for PhD s regarding their ability to enter labor markets such as health and science.

Relevancy may pose implications for the academics as well in this environment. Trends towards a more impactful publication environment were noted in interviews with an administrator who served as an academic as well as with government officials. Through the national funding system, the government rewards publishing in top-tier journals by basing 25% of the basic public research grant budget on bibliometrics; additionally 20% of the basic public research grants are appropriated based on how much is externally financed and 10% on PhD completions (Ladefoged Pedersen, n.d.). For universities to receive the most funding in this research area, they need to obtain external grants, publish in the best journals, and produce more PhDs. The bibliometric framework, introduced two tiers of journals, developed by academics, awards points

determined by the publication and the tier in which it is considered (Anders, January 24, 2014). Anders expanded that "there is the tier one which would give you say 10 points for publication in one of them or say an article in *Nature* would give you 10 pints and an article from this lesser known, lower rated journal would only give you 5 points" (Anders, January 24, 2014).

At Aarhus University, Jan (January 27, 2014) discussed the process of selecting the top tier journals. Discussion initially involved representatives from each discipline. In the case of European Studies where there may have been thousands of journals, the number of the selected journals for an upper tier was narrowed to approximately 350 and then, finally a top 20%. To determine the top 20% of journals in the field, academics would phone colleagues as well as engage in additional discussions with their groups, which were established by the ministry with representatives from the university. The process took one to 2 years (Jan, January 27, 2014).

Yet, Jan asserted the momentum for bibliometric change occurred from a different place than the budget reconfiguration, at least early in the process. Jan described the momentum as a means to engage in "academic discourse" and stated, "If you open up and become more international, you also get merged in this kind of discourse, so oh you have to publish there to become this." Students also acknowledged the role of the academic staff to engage in publications both to move up in rankings (Sune, January 14, 2014) and as part of the *Strategy* (Kåre, January 15, 2014). Although, students expressed concern that the concentration of publications may risk the researchers spending less time on educational elements of their study (Kåre, January 15, 2014) or that the publication productivity expectations would be difficult to maintain (Sune, January 14, 2014).

Relevance was a theme for graduate employment as well as academic engagement from vantage points within the ministry and Aarhus University. Still, quality assurance to maintain the best educational environments was a consistent interest of the ministry staff quality of appropriate educational facilities, access to education, and considering the range of options and scope of financial needed for continued support of higher education (Jakob & Malene, January 24, 2014) as well as setting intake goals (Anders and Susanne, January 24, 2014) and desiring monies appropriated to the research universities are used to enhance education as well as institutional ambition (Pernille, January 24, 2014).

Discrepant Findings

The rapid organizational and ideological paradigm shift from a national university to a world-class university and recent mergers created internal challenges as indicated in interviews with students, administrators, academic administrators, and government officials in addition to university meeting minutes.

Consolidation of IT systems. The university mergers that led to Aarhus University's organizational expansion and boom in student numbers meant consolidation of multiple systems. In terms of technology, students experienced technical glitches. Kasper (January 20, 2014) discussed difficulty viewing grades and signing up for classes amid the physical relocations. The organizational restructuring meant merging many processes and practices including multiple, unique IT infrastructures (Kristian, January 21, 2014). Kristian (January 21, 2014), however, noted that things have improved in the last couple years.

Student concern over academic hub reorganization. Students expressed mixed reactions to the physical relocation of academic units. Kasper (January 20, 2014), a

student, reflected on the moves as sensible, citing the department of business and department of economics being relocated closer to one another and that courses in languages and communication were now conducted in the same area of campus. However, Kasper, Anne, and Kirstine, all expressed frustration with the movement of academic disciplines as well. Kasper (January 20, 2014) moved from one of the old buildings in central campus to the business school; Anne (January 15, 2014) observed one academic discipline move out of a building where it had been established; and Kirstine (January 27, 2014) discussed the quality of the library she lost when her discipline had relocated. The physical movement of academic disciplines, therefore, changed the way some students identified with their academic community. Kåre (January 15, 2014) commented that his discipline in the sciences had not been moved because the machines were difficult to move. Despite the moves that had occurred up to this point, Hans (January 28, 2014) noted that things are becoming more settled for Arts, Business and Social Science, and that Health had not moved, being located near the hospital, but that Science and Technology will likely experience movement in the future.

Hesitation among faculty to participate in study. Despite emailing prospective faculty and academic administrator participants invitations to participate in my study, most either did not respond to invitations to participate in the study or indicated anonymity could not be guaranteed given their position. Most of my study was also conducted at a time when students were completing final exams for the previous semester as at Aarhus University the spring semester does not actually begin until late January/early February. Whether faculty did not participate due to availability, concerns over being identified, or simply did not respond, their voice was largely absent. Jan

(January 27, 2014) observed that news of the strategic plan to become a world-class university was first greeted by many as a point of humor and skepticism, but suggested that this attitude began to change with a greater presence of top management and engaging in greater international dialogue which meant that rankings became a factor when communicating with other nations such as China.

Financially sustaining world-class university administration. Aarhus University is currently facing financial challenges and exploring expenditure reductions. This emerged in several interviews with students (Sune, January 14, 2014; Kirstine, January 27, 2014; Anne, January 15, 2014; Andrea, January 20, 2014). An official at the ministry, too, felt Aarhus University's current financial issues may have been too ambitious in external funding expectations as the size and costs of administration and personnel continued to rise without the revenue needed to support it (Pernille, January 24, 2014). The new rector, Brian Bech Nielsen, who recently assumed office, declared that the deficit for 2014 could reach as high as 150 million DKK if nothing Is done to cut back given no further increase in state funding and greater competition (Aarhus University, 2014). Nielsen just announced Aarhus University is planning cutbacks mostly effecting the administration in order to limit the effects on core functions, although academic areas will be impacted as well (Vestergaard 2014). The expenditure reductions, however, amount to more than one hundred staff departures (Vestergaard, 2014).

Student concerns over the piloted elite undergraduate tracks. The AU Forum for Education Minutes (2013) indicated student members were opposed to the honours program on the basis of two criteria: first, that it benefits only a small number of students

and, second, that they were uncertain if talent could be identified as early as the project purports; students also indicated in the minutes that this undergraduate talent program was a reason for their objection to Aarhus University's strategy. Additionally, it was noted in the minutes there was a concern if the talent track could be offered in other faculties due to "resources and a certain student-researcher ratio" (AU Forum for Education, 2013, p. 6).

Brief Summary of Findings

Aarhus University strives to become a world-class university. In this case study, the process of becoming world-class has meant as much about the contextual, environmental conditions within the nation home to the aspirational university as the internal institutional processes. The findings illustrate that in the case of Aarhus University, visionary leadership and an independent Consultant's Report served as conveyors of ideas by which a massive structural change occurred characterized by administrative organizational pragmatism. Aarhus University sharpened its global focus, established academic hubs for disciplines while emphasizing an interdisciplinary focus, and sought greater opportunities to obtain external funding and/or collaboration. Central to Aarhus University's process of becoming world-class is talent capacity-building, a term I use that includes the university's notion talent development, but more centrally-located and broadly-shared. Talent capacity-building refers not only to the talent and physical support of the talent, but it also accents the national desire to attract talent to Denmark to boost economic competitiveness. At Aarhus University, talent can be attracted, trained, and perhaps later be employed and contribute to Denmark. Aarhus University may serve as an engine for such opportunity. Furthermore, the desire to

attract top researchers and the most intellectually apt students is as much a goal of the national government as it is a goal of the university. Fueling the university's capacity to enact the changes and retain financial reassurance comes largely from the government, in additional to university-obtained external funding. Generous state funding and autonomy are provided by the government, which expects quality assurance, economic competitiveness, and academic relevancy. Lastly, trust appeared to be a cultural value, which could better bridge interests within the university and with government, but there exists additional space for trust to develop to its potential.

Discrepant findings also emerged which included consolidation of 1) IT systems, 2) student concern over academic hub reorganization, 3) hesitation among faculty to participate in study, 4) financially sustaining world-class university administration, and 5) student concern over the piloted elite undergraduate tracks. The emergence of these findings are likely to pose challenges provided how quickly and how deeply impactful change occurred.

With so many campuses formerly relying on their own procedures and IT systems, challenges should be expected consolidating campuses. However, according to Jens (personal communication, January 21, 2014) the IT problems were foreseeable and proactive action was not taken as needed to prevent many of the later frustrations expressed within the university community. The cost to support an expansive administration also came at a time when external funding did not increase as much as needed and state funding stabilized. This signals the need to critically examine the costs associated with designing a world-class university and to consider the cost and human resources. The faculty's general lack of interest in participating in the study may have

been related to a number of reasons including concern about being identified as speaking out about the current strategy.

Students would have preferred not to be physically relocated from the buildings in which they formerly studied. The reorganization of the academic disciplines into clusters seemed to be reasonable given the administration's aims to promote faculty cooperation, but it posed an interim challenge to how the students identified with what was perceived as their section of campus. From my perspective, these student perceptions will likely subside once the last cohort entering Aarhus University before the reorganization graduates. Lastly, the notion of tracking students into elite tracks was opposed by some students who felt concerned about providing greater opportunities for a very small cohort and very early on in their undergraduate studies; though the university representative did indicate there was not a hard line for entry and that students could leave the track if desired (AU Forum for Education, 2013).

Organization of the Study

Chapter 1 introduced the world-class university phenomenon as a special tier of elite higher education institutions pursued by universities and the governments for the benefits they produce in intellectual, human, and economic capital. Chapter 2 accounted for the scholarly literature and empirical research on the world-class university. This study's theoretical framework, institutional isomorphism, was introduced in Chapter 2 as well. Chapter 3 outlined the study's methodological research design, a qualitative, holistic, descriptive, single-case study. An explanation was provided on how the case investigations were executed as well as the coding and analytical approaches taken to analyze the data. Chapter 4 opened with contextual background information on Nordic

higher education, the Danish higher education system, Aarhus University, demographic data of the present investigation, and subsequently outlined findings observed as themes occurring at the Danish university.

Chapter 5 will discuss the significance of Aarhus University in relation to the theoretical framework (institutional isomorphism), literature on world-class universities, and consequences for future research and practical applications in university management.

CHAPTER 5: DISCUSSION

Organization of the Chapter

The purpose of this study was to describe the process of becoming a world-class university in the context of Western Europe, specifically Denmark. The following research question guided this investigation: How does a higher education institution in Western Europe undergo the process to actualize its ambition to become a world-class university? The methodological approach utilized for this study was a qualitative case study design. Methods included interviews with administrators, an academic administrator who had previously served on the faculty, and students at Aarhus University as well as government officials at the Ministry of Science, Innovation, and Higher Education (now the Ministry of Higher Education and Science). Observations were conducted and documents were obtained from participants, offices, and online.

First, this chapter will present a brief summary of the findings detailed in Chapter 4. Second, the findings of this study will be considered in relation to the theoretical framework, institutional isomorphism. Third, implications for the design of a world-class university will be offered in relation to the literature. Fourth, a summary of findings will be made regarding Aarhus University's ongoing strategy to join the world's top 50. Last, implications for future research will be offered for the research community to continue to explore non-normative alternatives on designing world-class universities.

Summary of the Findings

Through this investigation into understanding the process of designing a world-class university in Denmark, the following findings emerged from interview, observation, and document and artifact data:

- *Autonomy* and *generous state-funding* were two contextual conditions unique to the Danish higher education system overall. Increasingly output-oriented public funding could be complimented with external awards from within and outside Europe, providing universities apt at obtaining both with significant financial resources. This public financial support coupled with increasing levels of institutional autonomy following earlier system-wide governance reforms created an environment fertile for the cultivation of a world-class university.
- *Quality assurance*, e*conomic competitiveness*, and *academic relevancy* are governmental/ministerial expectations of the research universities. The mergers were a means of creating more competitive universities that would boost national economic competitiveness, academic fields were expected to be relevant to both the labor market and research/academic community, and appropriate quality assurance mechanisms should be operating within the universities.
- The *visionary leadership* offered by Rector Lauritz Holm-Nielsen rallied Aarhus University to transition from a relatively regional/national university toward an intentional, strategic effort to become a leading, global research university. Leadership toward the new strategic vision came at a time shortly after several other universities/research institutes were merged into Aarhus University.
- An *independent consultants' report* offered guidance on structural, conceptual, procedural, fiscal, and managerial reforms for Aarhus University following the mergers and prior to the implementation of Aarhus University's *Academic Development Process*. The report discussed the university's potential to become one of Europe's best universities (Hatakenaka & Thompson, 2010).

- *Administrative organizational pragmatism* described how Aarhus University reorganized administrative and academic functions to enhance efficiency. Following the mergers, Aarhus University came to serve thousands more students, faculty, and staff alongside several campuses having been merged into Aarhus University. Management of the new consolidated Aarhus University required a significant emphasis on the structural overhaul among each of the faculties and tiers of professional and academic administrators responsible cross-cutting the faculties in support of the university's strategic plan. Efficiency was valued, although the organizational overhaul occurred very quickly and it was observed by some administrators that not all academics easily adjusted to the structure.
- A *global focus* became more apparent to interviewed students who attended and staff who worked at Aarhus University within the past few years. Aarhus University began as a regional university as recently founded as the 20th century, but Aarhus endeavored in recent years to expand its international profile. The university expanded international networks with other universities outside Denmark, welcomed foreign student and researcher talent to campus by establishing physical centers and living/learning space, and adopted English as a second working language in administrative areas and as an instructional language in many graduate academic areas as well as many publications/communications. A good relationship with the local city, though, remained important among administrators at Aarhus University even with a growing global focus.
- *Academic hubs with an interdisciplinary focus* required significant restructuring of academic faculties and were among the consultants' report recommendations.

The focus on interdisciplinary collaboration served to connect researchers across different academic areas where either habit or technical issues existed as barriers. Physical planning reinforced the new academic organizational structure and shifted around academic departments so similar disciplines would be located in hubs on campus. Students, generally, were not receptive to academic relocations.

- *External funding* and *collaboration* with industry and other universities became increasingly areas of interest for Aarhus University. The ministry's basic research funding model reinforced external funding and top-tier journal publications. Collaboration with other universities or international government agencies also posed opportunities for obtaining external funding.
- *Talent capacity-building* refers to what I found be the core of Aarhus University's strategy to become a world-class university, specifically among a younger generation of researchers and students. Talent development is Aarhus University's term for the process of cultivating an environment, which attracts, serves, and develops young PhD and postdoctoral students and visiting researchers. Physical structures are designed to support a collegiality, community, and fellowship. At the undergraduate level, an internal meritocracy is in the process of being experimented with to enhance the abilities of the most promising undergraduate students by offering supplemental academic experiences that accent additional exposure to research and business opportunities. The focus on talent as young became very apparent during interviews and within documents. I added capacity-building as the aims of attracting talent intersect with national interests in boosting Danish economic competitiveness. The *talent capacity-*

building at Aarhus University may serve as an engine for national growth as well as enhance the research university.

- *Trust* was a unique component of this case study. Prior to this study, trust was revealed to be a value between universities and the national government in the Nordic countries generally in the literature (Fagerlind & Stromqvist, 2004b). This study accents trust as an important cultural element, particularly in Denmark. At Aarhus University and the Ministry of Science, Innovation, and Higher Education appeared to also have a strong sense of trust, such as in areas of university discretion in budget management and strategic planning. Yet, trust may at times need to accompanied by accountability/quality assurances/accreditation prequalification, or, be considered internally such as when the university was quickly reorganized. Trust was found to be a value, but a value that could still be developed.

Relation to the Theoretical Framework: Institutional Isomorphism

When DiMaggio and Powell (1983) introduced institutional isomorphism, three general explanations were offered as to why organizations may undergo change processes that lead an organization to become similar to other organizations of the same type. The authors explained the types of change processes. *Coercive isomorphism* concerns cases where organizations become dependent upon other organizations in a given context and stated, "such pressures may be felt as force, as persuasion, or as invitations to join in collusion. In some circumstances, organizational change is direct response to government mandate" (p. 150). *Mimetic isomorphism* concerns organizations facing uncertain conditions, whose reaction to those uncertain conditions is to engage in

"modeling" (p. 151) or copying the practices of other, successful organizations of the same type and where the mimicking organization may obtain its ideas by consultants among other sources. *Normative pressures* concerns professionalization and socialization of employees but also notes as information is exchanged between individuals in similar organizations, the result can lead to a "commonly recognized hierarchy of status" (p. 153). The authors conclude all of the isomorphic processes may lead to similarity across organizations of the same type, but may not actually enhance efficiency, and benefits from isomorphism can include greater legitimacy among and transactions between organizations (DiMaggio & Powell, 1983).

Findings from this study indicate the strategic plan as actualized by Aarhus University is not a result of isomorphic processes. First, *coercive isomorphism* initially may appear present due to the generous government support interlaced with an increasingly output-related budget model and a national strategy to enhance globalization, which preceded the university's strategic plan. However, data from interviews, documents, and literature, suggest the process to merge and consolidate universities was a voluntary one. It required university agency to change. Kristian (January 21, 2014) spoke about how "It was not a mandate, it was more an invitation," explaining how the university shared the aims of the government to bolster Danish universities, specifically being accepted at Aarhus University. My impression is that the favorable government attitudes toward the university sector and continuing support created an environment where universities elected among themselves whether they would like to become more globally competitive. While bibliometric indicators are now a component, albeit limited, of the nationally provided research budget, Jan (January 27,

2014) explained how academics were involved in the process, consulted to determine which journals were in the top-tier in their respective disciplines. Aarhus University seemed as dedicated to the pursuit of global excellence in research as a national government priority.

Second, *mimetic isomorphism* did not appear to be a driving force in this case. There was a consultant's report (Hatakenaka & Thompson, 2010) that suggested specific actions Aarhus University should take to become a better university, some of which the university then pursued and accomplished within 1 to 2 years. Mentions of other top universities in the United States, the United Kingdom, and Sweden, did arise as either contributing ideas for strategy or innovative infrastructures (Lauritz, January 16, 2014) or examining several universities in these countries for ideas (Jens, personal communication, January 21, 2014). No one university was looked to as a model to be copied over. In fact, the former rector mentioned that Aarhus University did not look to others for how their strategy could be accomplished; in fact, he added that when he compares Aarhus University to another well-known university in the U.K., Aarhus University possesses a "more efficient strategy" (Lauritz, January 16, 2014). The notion of efficiency separates Aarhus University from the theoretical framework. Aarhus University is willing to be different than the competition, but also consider what other top universities are doing; the Aarhus University approach appears more pragmatic than mimetic. If an idea is a good idea, whether it comes from a consultant's report or looking to other universities, the ideas are not all coming from one place. As noted in the organizational reform, the process by which Aarhus University is seeking to become world-class appears pragmatic. Aarhus University chose to integrate certain reforms not

simply because it sought to mimic other elite university as a means to become one itself, but rather, Aarhus University chose to pursue what it felt would be in its best interest.

Third, *normative isomorphism* does not appear to be an influence for becoming a world-class university in the case of Aarhus University. As regards *normative isomorphism*, I considered normative influences to be externally-derived such as from a rankings or league tables. While professionalization has occurred, the new administrative framework following the organizational reconfiguration has come to support and reinforce Aarhus University's strategic objectives. Rankings typically express a set of standardized, externally derived set of qualities a top institution should have. Scott (2012) acknowledged rankings may exert isomorphic pressures on business schools. Although, Scott considered a possible relationship between rankings and isomorphism, he framed the relationship as a coercive or mimetic one (p. 40). Rusch and Wilbur (2007) discussed how normative influences might work within an accreditation framework. In this discussion, I considered rankings and isomorphism from a normative, but for the purposes of analysis I also considered normative pressures which influence organizational behaviors to be externally-derived. If DiMaggio and Powell's (1983) term *commonly recognized hierarchy of status* (p. 153) and emphasis on socialization could be extended to other normative influences that include rankings, rankings and therefore normative isomorphism, would not be pillars of indicators Aarhus University looks to as a sort of blueprint to design their next steps. At the national level, the Danish University and Property Agency's (2009) *Evaluation Report* noted,

> What is, for example, meant by world-class? Does it mean that one Danish university should be among the 10 best in the world, among the 20 best? Or

> should all Danish universities become world leaders in at least one disciplinary area? What are the indicators to be used? The use of global rankings is, for example, connected with severe problems, as they are heavily criticised for methodological inconsistencies. In addition, the starting point for the evaluation is not a university sector in crisis. The research performance of Danish universities was in 2007 in many respects good to excellent, and there are no indications that it is deteriorating….Also, the growth and productivity of the Danish universities is satisfying, and concerning the research impact Denmark is among the best performing countries in the world, with Switzerland being the only country performing better than Denmark. (Danish University and Property Agency, 2009, p. 46)

The above statement indicates Danish universities already perform ahead of most other countries in terms of research productivity. In an interview with a government official, Pernille (January 24, 2014) compared university rankings to a "jewel" and added the focus should remain on other indicators.

At Aarhus University, the phrase *Top 100 University* appears in many of the documents analyzed. Thorn's (2014) presentation slides indicate significant progress in two major international rankings, *Shanghai* and *Times Higher Education* over recent years. However, it appears rankings are used as a means to communicate Aarhus is a top university. The internal strategy, however, does not appear related to the rankings.

Interviews with administrators revealed that the strategic plan was not being formulated according to normative metrics conveyed in how the rankings reward universities with better positions. Hans (January 28, 2014) felt it was more about pursuit

of being a leading global university than with a particular rank. In fact, when rankings were brought up in one interview (Jan, January 27, 2014), the focus was on how China perceived Aarhus University as it was acknowledged they are were observant of where universities are ranked. It was from this conversation with Jan (January 27, 2014) that rankings appeared important for Aarhus University in so far as it assisted them engage with more legitimacy from the perspective of those who paid attention to rankings. This was reminiscent of Marginson's (2013) discussion of national contexts and their importance in considering different routes to pursuing world-class universities.

Perhaps regional differences are manifesting themselves within higher education systems differently in Denmark? Denmark is a first-world economy, which provides significant state support to its research universities, and Aarhus University, in this context, produces quality research and is growing both its talent and expanding its global focus. Why would it or any other top university want to cater to the rankings? I asked about the influence of a new European university ranking system, U-Multirank. I expected this new ranking system to be important if *normative isomorphism* was to be a factor in the design of becoming world-class. Jan (January 27, 2014) indicated he had attended a conference where it was presented, but there was not too much dialogue on the rankings and that the rankings can be better developed. DiMaggio and Powell (1983) wrote that mimetic and coercive forms of isomorphism "involve managerial behaviors at the level of taken-for-granted assumptions rather than consciously strategic choices" (p. 149). My impression of the use of rankings has been for strategic choices when applicable. Both the extent to which their positive performance in rankings appears in publications and the knowledge that other countries with whom Aarhus is exploring

relationships pay attention to the rankings appear to be a strategic concern – for marketing accomplishments and engaging with other universities. Rankings were appreciated by Aarhus in these ways, but again, the rankings themselves did not appear to exert a normative influence upon Aarhus to follow any particular blueprint of indicators.

Implications for the Design of a World-Class University

Salmi (2009) wrote about three characteristics of a world-class university: concentration of talent, favorable governance, and abundant resources. Aarhus University possesses all three characteristics. Talent is a central, core component of the university's strategic plan, receiving 24% of the university expenses (Aarhus University, 2013a). Although the university continues to reduce barriers to efficiency and effectiveness internally, some external barriers remain. In conversations with non-EU students who attend Aarhus University (researcher observations, January 22, 2014), I learned how difficult and stressful it was for some bright and motivated students to overcome the bureaucracy of the Erasmus program and the amount of time it takes to complete paperwork. Confusion the cumbersomeness of the process in terms of planning which courses to take if studying abroad arose in my interview with a Danish student (Andrea, January 20, 2014), even though she indicated she had a strong desire to study at Oxford. Aarhus University may be able to invest more in assisting the most talented EU and non-EU students pursue entry into Aarhus University. Assistance could be offered to a greater extent with understanding visa requirements and clarifying dates and coursework planning expectations or, more efforts to explain the application process. A benefit for Aarhus University by investing more resources in this area may be for the University to gain an even greater share of the world talent. Also, by providing better

preparing Danish bachelors students interested in traveling abroad, they can further expand Aarhus University' integration with the global community. At the national level, Ministry officials indicated a desire for parity among exchanges and suggested more students were coming into Denmark for study experiences than were Danish students traveling outside of Denmark (Anders & Susanne, January 24, 2014). Assisting more Danish students study abroad would meet national and university goals.

With regard to abundant resources, Salmi (2009) indicated state support, endowment, contracts, and tuition-derived resources (p. 23) as means of increasing resources. In the context of Denmark, there are limitations on raising tuition as it cannot be raised from EU students. However, Aarhus University does receive significant state-support for education and research. Endowments are not as robust in Denmark as they are in the United States, but collaboration with industry and efforts to obtain European-based and United States-based grants has been active. Though, finances are challenged with the recent deficit, an event that caused concern among some of the students whom I interviewed. Weimer (2013) recently wrote in her dissertation about a new finance approach undertaken at a university in Finland, Aalto University, which is also seeking to become world-class by 2020. She concluded Aalto would be inclined to charge tuition fees (in limited cases) as it pursues world-class status (Weimer, 2013). This suggests the world-class university may be expanding boundaries on inventing new means of raising the amount of resources to support its operations. As Aarhus University addresses and rebounds from the current budget concerns, it will be interesting to explore how it raises new revenues in the future.

Autonomy and recruiting the best and brightest are two among several challenges Altbach (2011b) predicted research universities confront with now or will confront that stood out to me in particular when I reflected upon my research at Aarhus University. I concur with Altbach's assessment that research universities necessitate the autonomy to pursue a strategy to become better institution and receive state-support while also being expected to be accountable. Second, Altbach wrote about attracting the best students and staff to the university as a challenge that is becoming an "increasingly competitive global marketplace" (p. 27). Aarhus University may be taking a new, innovative approach around the competition. By serving such a large institution, nearly 44,000 students, Aarhus University has a lot of human capital among whom the world's top talent may already be present and can be developed—at all levels. As Aarhus University continues to explore elite talent tracks for undergraduates and recruit them into research PhD programs at earlier ages, the emphasis on *young* talent can be nurtured to bloom into the next generation of top researchers and, if Aarhus University can keep the best on campus or in their network, the university as an organization benefits, even if the researchers later travel outside of Denmark. Additionally, Aarhus University' expansive size of its PhD and postdoctoral students and the AIAS facility will all enhance the university's reputation for serious research: mechanisms for creating fellowship among scholars such as the Mortensen Building and Dale's Café, will create a welcoming, supportive, and affirmative culture for PhD and postdoctoral students. Denmark's national government, however, would likely prefer to retain these researchers domestically and thereby contribute to the health of the economy. During my observation at the International House Copenhagen (January 23, 2013), support for attracting and retaining international

students and talent appeared to be a central argument behind its founding to better assist foreigners to get situated upon arriving in Denmark. For this reason, I considered the talent development component of Aarhus University's strategy a significant component of talent capacity-building as the notion is also underscores the mentality in Denmark geared towards enhancing the nation as a global knowledge economy. Sustaining talent capacity-building in Aarhus University's case exists at the university level, but may serve as an engine for achieving both university and government interests.

Choi (2010) found infrastructure upgrades at Yanbian University in China included "an administration building, a gymnasium, and a science building…expanded the university library both in terms of volumes of books and the physical building" and "completed the construction of a new undergraduate dorm" (p. 175). At Aarhus University, the university did not own the residence halls, libraries were more reshuffled and shared between disciplines than newly built, the central administration was housed in some of the older traditional "yellow brick" buildings, and I did not observe any athletic facility for the students. Instead, Aarhus University repurposed and renovated the interiors of the most classic buildings to make space for the international service center that became the Dale Mortensen building and AIAS and academic disciplines were reshuffled into hubs around the campus. The pattern of infrastructure development was different between these two cases, in two different contexts.

A second difference between Choi's (2010) study and the present study concerned location. Choi (2010) wrote that many top academic males students who identified as ethic Koreans, a population which Yanbian served, would enroll in better academic institutions closer to Beijing and that location itself a disadvantage in top faculty

recruitment. In the case of Aarhus University, the students I interviewed were very intentional about choosing Aarhus for both its location to where they grew up and offering academic programs of interest. The University of Copenhagen arose as another institution some of the students considered attending, but ultimately chose Aarhus. While reputation for the academic program emerged in some of these interviews, no student mentioned rankings or cited the 'Top 100' status as the reason for attending Aarhus. My impression was that Aarhus University enjoys the grace of a good reputation in Denmark, it offers enough programs to recruit a diverse array of students thus widening the span of talent at all levels, and preserves a healthy relationship within Aarhus and Jutland in which it was founded and continues to serve. Copenhagen likely benefits from attracting Danish students in the same manner, but both are now competing internationally for the best talent abroad. In interviews, I learned of university-industry partnerships both at Aarhus University and the University of Copenhagen. In a nation as small as Denmark, the location may not be as great a factor for a university's success as in China.

Ho (2006) observed a cultural element among the 11 elements attributed to a world-class university in China, "Chinese context and culture." In Denmark, *trust*, according to Jens (personal communication, January 21, 2014) is a practice in Denmark similar to the value place on societal egalitarian values. *Trust* also arose in government interviews and appeared as a recommended approach between the government and the universities (Danish University and Property Agency, 2009a). Trust will be an important component for the Danish university and government to maintain as well as internally within the university so that more academic, staff, and constituents feel heard and understood in future strategic moves which will affect their experience on campus.

Cultural elements embedded within the context in which the world-class university case exists, appears to play a role in how that university conceptualizes itself and in relation to society.

Salmi (2009) wrote about mergers, warning that redundancy and conflicts among different cultures now expected to work together could pose challenges. Yet, he also wrote about the opportunities that emerge from consolidated resources, specifically mentioning Denmark, "The Danish case, however, has greater chances of success because the push for mergers is taking place within the context of an overall governance reform aimed at transforming all universities in the country into more flexible and dynamic institutions…" (p. 44). Aarhus University's internal professional administrative staff restructuring with service-delivery in academic units and consolidating systems shared across faculties is one of three major instances in Denmark. This Danish university is positioning itself to further capitalize upon its newly acquired, additional research universities and institutes through systematically binding together the university as an organization.

A Valiant Venture for Aarhus University, Danish Society, and Higher Education

In the Danish higher education context, research universities receive significant state support and autonomy. Aarhus University shared ambitions with the government for Denmark to have a leading global research university. Through visionary leadership accented by consultants recommendations and innovative practices elsewhere, Aarhus University pragmatically reorganized its administration most efficiently to pursue its new ambition. Among the approaches Aarhus University has actualized and/or strengthened to meet this goal, the most salient quality of the university as it undergoes the process of

becoming world-class was *talent capacity-building*. By this term, I am referring to an accent on the recruitment, development, services provided to and research conducted among PhD and postdoctoral students as well as visiting researchers in addition to the development of an internal meritocracy to support its most talented undergraduate students in future research opportunities. In Denmark, Aarhus University's effort preceded a similar endeavor in Copenhagen, where a new International House opened just this year to support the transition of internationally talented persons into Denmark. Both the International House Copenhagen and the Dale T. Mortensen building at Aarhus University underscore and support the goal of the Danish government's globalization strategy. Both facilities offer housing, logistical services, and social activities for the global talent flowing into Denmark and their family. Denmark understands and has chosen to commit resources to enhance the knowledge sector, which will likely lead to social and economic gains in return for both the university and Danish nation. The core driver of the world-class university in the case of Aarhus University appeared to be talent capacity-building, composed of a variety of components, six at the university-level and one at the government level (Figure 11).

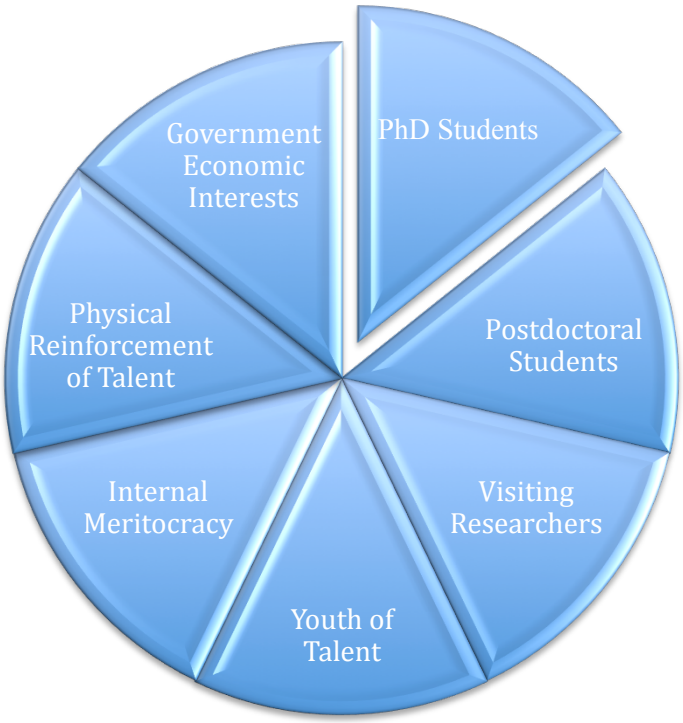

Figure 11. Components of Talent capacity-building.

Both the national government and Aarhus University would benefit from Aarhus University becoming world-class. This alignment of interests to deliver a quality education, provide steady state financial support as an investment in the research universities towards the goal of increasing national economic prosperity, and pragmatic administrative and academic practices within the university itself is a powerful conceptual approach for designing a world-class university. Aarhus University reshaped its campus and physically reinforced its vision. Aarhus University leadership has remained steadfast and committed to the strategic plan in a way that I perceived as confident, resolute, forward-looking, and determined to eventually achieve greatness.

Aarhus University declares it would like to assume leadership in global higher education. The Dale T. Mortensen building is a facility equipped to serve as a beacon for

the most intellectually promising students and researchers and the Aarhus Institute of Advanced Studies (AIAS) is a facility equipped to facilitate dialogue and collaboration among those researchers, international and Danish. The alignment of physical planning and academic faculties may create a greater sense of collegiality among the faculty, next cohort of students, and administrative apparatus fueling the strategic planning process. The increasing collection of human research capital at the graduate and postgraduate levels and streamlined efficiency of the organizational system in which they study may lead to new model and pillar should Aarhus succeed to reach 'Top 50', if not in the rankings, then in reputation.

Some of the criticisms of the honours program, as previously mentioned in forum meeting minutes (AU Forum for Education, 2013), related to the notion of providing attention to a small number of students and raised the question if after the first year of a bachelor's degree is to early to identify the most talented undergraduates for the special talent opportunities. In the United States, many colleges and universities have honors programs where students are identified prior to matriculation and enroll in honors sections of classes for certain courses for the duration of their studies. I would argue the approach to the honours program at Aarhus University underscores egalitarian values and may better identify the most intellectual apt students than approaches more common in the United States. Where many American colleges and universities identify their honors program based upon secondary school performance and/or standardized tests taken prior to matriculation, Aarhus University identifies students only after they have had a chance to complete a year of research university-level education. By only selecting a small number of honours students, the Aarhus University approach also permits an intimate

experience for its best students to be exposed to early research opportunities in their respective academic areas. The minutes (AU Forum for Education, 2013) cited exposure to business as well as research. This underscores the Danish Ministry of Science, Innovation, and Higher Education's interest in academic relevancy and alignment of interests, intellectual as well as economic.

Aarhus University's reorganization and strategic initiatives were pursued quickly. On one hand, many reasons existed to necessitate change and to enhance efficiency inside an organization that absorbed other organizations following the national mergers. On the other hand, the expediency with which it was pursued may not have gained complete buy-in from the academic community. Yet, substantial progress has been made in extending global networks and establishing elite research hubs on campus. The Ministry of Science, Innovation, and Higher Education's foci on quality and national government continued, albeit more stable financial support, only enhance the capacity of the research universities to pursue excellence. As Aarhus University actualizes its second strategic plan, *Strategy 2013-2020*, a new rector carries the torch. Talent will continue to keep the torch lit and trust will be a handle by which leadership may continue to guide Aarhus University toward excellence.

Recommendations for Future Research

Future research on world-class universities would benefit from one of several approaches, derived from this study's findings and discussion. First, Aarhus University was a unique case due in part to its relationship with the Danish government. While the empirical research is still developing efforts to design world-class universities in Western European contexts overall, a comparative case study looking at other Northern European

universities may help develop a theory regarding the approach to designing world-class universities and its viability in smaller, social-welfare states. The Nordic countries are typically smaller in population, engage in regional partnerships, and provide significant state subsidies for education where others in Western Europe charge tuition to their own citizens. A more focused look at aspirational world-class universities in other Nordic nations may be more appropriate than elsewhere in Western Europe.

Second, the research literature would benefit from future multiple-case studies across contexts concerning how organizational structure is reconfigured to pursue world-class university ambitions, applying organizational theory. The organizational structure of a world-class university may require reconfigurations considerable enough that they illustrate an academic and administrative model differentiated from other universities, even in the same national university system.

Third, governance arrangements preceded the mergers and, while not necessarily connected with the strategy to become world-class, the arrangement empowered university leadership decision-making capacity when the time arrived to adopt a new strategy in the case of Aarhus University. The governing board of Aarhus University retains and exercises significant corporate responsibilities. The board emerged as a presence but board members were not among the constituent groups included as interviewees in this study. A future study concerning world-class university governance, concentrating on university boards of trustees may be an additional avenue of research.

Fourth, among the findings which most drastically stood out to me, but not covered in-depth, was the evolving notion of a talent track for bachelor degree students. In the United States, many colleges and universities identify students for honors

programs upon admission but prior to enrollment. This privileges a class of students prior to their proving their academic merit, abilities, and talent at a college/university level. Further, in American universities, there may be many students in an honors program. At Aarhus University, the most intellectually apt students are selected after only after completing some university coursework. The academic tracks offer additional research training opportunities to an academically elite cadre of students. The program at Aarhus is only in its early phases, but the notion is one that may be in progress at other world-class universities. Further research on the profile of the most talented students in such a large university as well as the types of opportunities offered by the track and contributions/achievements of the tracks' alumni may be the boundaries of an emerging niche research area on an elite, innovative, and research heavy undergraduate education beyond Aarhus University.

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APPENDICES

APPENDIX A: INFORMED CONSENT STATEMENT

The World-Class University in Western Europe: A Case Study Describing the Process of Designing an Elite Higher Education Institution in Denmark

INTRODUCTION

You are invited to participate in this interview, observation, and/or document collection. You were selected to participate in this study since you are currently administrative staff, faculty, or student at an aspirational leading, global research university in Western Europe or a government official with a role in educational policy knowledgeable about such an institution. The purpose of the study will focus on the design of world-class universities in Western Europe and how higher educational institutions undergo a process of advancing toward elite status. The investigator, Brian W. Samble is a PhD Candidate in the Higher Education Administration program at the University of Tennessee Knoxville and is completing this research in partial fulfillment of the PhD.

SCOPE OF PARTICIPANT INVOLVEMENT

☐ Interview

Interviews are expected to last the duration of approximately 1 hour. Audio recording will be used for the purposes of transcription. Transcriptions will then be coded and analyzed. Themes, interpretations, findings, and assertions will then be iterated from the initial data collected by the researcher.

☐ Observation

Observations are expected to last the duration of approximately 1 to 2 hours. Field notes will be taken as observations are conducted. Observations may include facilities, meetings, classes, campus tours, activities, events, etc. Photographs may be taken while completing observations. Field notes will be coded and analyzed. Themes, interpretations, findings, and assertions will then be iterated from the initial data collected by the researcher.

☐ Document Collection

Documents will be collected by the researcher which may include meeting agendas/minutes, artifacts, photographs, mission statements, brochures, etc. Documents will be coded and analyzed. Themes, interpretations, findings, and assertions will then be iterated from the initial data collected by the researcher.

BENEFITS

Benefits for participation include advancing knowledge on the world-class university phenomenon and, specifically, the advancing knowledge on your home institution as it progresses to become a leading, global elite university. The university will also gain

international attention through publication and presentation of data and findings from this study. Your participation will contribute to that dialogue.

RISKS

Risks include the loss of data, identity exposure, and/or the triggering of emotional reactions. Precautions will be taken to avoid identity exposure by using a pseudonym if you choose to remain anonymous. Precautions will be taken to prevent loss of data as devices will be electronic locked by password and paper/physical copies will be secured in a locked location as well. The second risk consideration is that the questions may pose no greater than minimal risk should mental stress be provoked from questions.

CONFIDENTIALITY

Your university, office, and other identifying characteristics about the organization will be identified. Your office/title will only be used if it does not directly identify you should you wish to remain under a pseudonym and not be identified. Personal information (i.e. name) will only be used if indicated as "Actual Name" at the signature line. If "Pseudonym" is indicated, the researcher will generate one for you. The data will contribute to a study on world-class universities in Western Europe. The study may be published, presented, and or shared with audiences at the University of Tennessee, site university, and/or the greater academic community and associations. You will have access to your personal data upon written request to the investigator and the University will be provided with a final version of the study.

COMPENSATION

Compensation will not be provided in this study. If the interviews happen to be located at coffee-type shops/cafes, I would be prepared to offer to cover food/beverage costs for you.

PARTICIPATION

Your participation is voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study without penalty and without loss of benefits to which you are otherwise entitled. If you withdraw from the study before data collection is completed your data will be returned to you or destroyed. Notification of participation withdrawal must be communicated in writing to either the researcher or his program chair prior to January 1, 2014. After this date, data will be used in fulfillment of the purpose of the study. Only participants at or above 18 years of age will be interviewed.

CONTACT INFORMATION

If you have questions at any time about the study or the procedures, (or you experience adverse effects as a result of participating in this study,) you may contact the researcher, Brian W. Samble, via email at: bsamble@utk.edu. If you have questions about your rights as a participant, contact the Office of Research Compliance Officer at (865) 974-3466.

CONSENT

I have read the above information. I have received a copy of this form. I agree to participate in this study.

Participant's Printed Name_____ Date_____
Participant's Signature_____ Date_____

Indicate Preference For Use in Study: ☐ Actual Name ☐ Pseudonym
Investigator's Signature_____ Date_____

INFORMERET SAMTYKKEERKLÆRING

Vesteuropæiske universiter i verdensklasse: Et case study beskriver procesforløbet forbundet med udformningen af en førsteklasses videregående uddannelsesinstitution i Danmark

INTRODUKTION

Du inviteres hermed til at deltage i et interview, en observation og/eller dokumentindsamling. Du er blevet udvalgt til at deltage i denne undersøgelse, da du i øjeblikket fungerer som administrativ medarbejder, underviser eller studerende på et ambitiøst, førende og globalt forskningsuniversitet i Vesteuropa eller er en embedsmand, der spiller en rolle i dit lands uddannelsespolitik og derfor har en stor viden om sådanne institutioner. Formålet med undersøgelsen er at fokusere på udformningen af vesteuropæiske universiteter i verdensklasse og på hvilken proces, videregående uddannelsesinstitutioner gennemgår for opnå såkaldt elitestatus. Investigator Brian W. Samble er ph.d.-studerende ved uddannelsen Higher Education Administration på University of Tennessee Knoxville og er i færd med at afslutte dette forskningsprojekt som en del af færdiggørelse af sin ph.d.-grad.

OMFANGET AF DELTAGERNES MEDVIRKNING

☐ Interview

Interviews forventes at vare cirka én time. Lydoptagelser vil blive brugt i forbindelse med transskription. Transskriptioner bliver kodet og analyseret. Temaer, fortolkninger, resultater og påstande vil derefter blive gentaget baseret på de oprindelige data, der indsamles af forskeren.

☐ Observation

Observationer forventes at tage mellem en til to timer. Der vil blive taget feltnoter efterhånden som observationerne foretages. Observationerne kan omfatte faciliteter, møder, klasser, campusrundvisninger, aktiviteter, arrangementer osv. Det er tilladt at tage billeder, mens du foretager observationerne. Feltnoterne bliver kodet og analyseret. Temaer, fortolkninger, resultater og påstande vil derefter blive gentaget baseret på de oprindelige data, der indsamles af forskeren.

☐ Dokumentindsamling

Dokumenterne vil blive indsamlet af forskeren og kan omfatte dagsordener/mødereferater, artefakter, fotografier, missionserklæringer, brochurer osv. Dokumenterne bliver kodet og analyseret. Temaer, fortolkninger, resultater og påstande vil derefter blive gentaget baseret på de oprindelige data, der indsamles af forskeren.

FORDELE

Fordelene ved at deltage i undersøgelsen omfatter indhentning af mere viden om fænomenet universiteter i verdensklasse og særligt indhentning af mere viden om din egen uddannelsesinstitution efterhånden som den udvikler sig til at blive et førende, global eliteuniversit. Universitetet vil også få international opmærksomhed gennem offentliggørelse og præsentation af data og resultater fra denne undersøgelse. Din deltagelse vil bidrage til denne dialog.

RISICI

Risici omfatter tab af data, identitetseksponering og/eller en fremprovokering af følelsesmæssige reaktioner. Der vil blive taget forholdsregler for at undgå identitetseksponering ved hjælp af et pseudonym, hvis du vælger at forblive anonym. Der vil ligeledes blive taget forholdsregler for at forhindre tab af data, eftersom de anvendte enheder vil blive låst elektronisk med kodeord, og papireksemplarer vil blive opbevaret sikkert i et aflåst skab. Den anden risikoovervejelse er, at spørgsmålene ikke udgør mere end en minimal risiko i tilfælde af at spørgsmålene fremprovokerer psykisk stress.

FORTROLIGHD

Dit universitet, kontor og andre identificerende kendetegn ved organisationen vil blive identificeret. Dit kontor/din titel vil kun blive anvendt, hvis de ikke direkte identificerer dig, og såfremt du ønsker at forblive under pseudonym og ikke ønsker at blive identificeret. Personlige oplysninger (dvs. dit navn) vil kun blive anvendt, hvis de er angivet som "rigtigt navn" på underskriftslinjen. Hvis "pseudonym" er angivet, opretter forskeren et pseudonym til dig. Dataene vil bidrage til en undersøgelse om vesteuropæiske universiteter i verdensklasse. Undersøgelsen kan blive offentliggjort, præsenteret og/eller blive delt med publikum på University of Tennessee, det universitet, hvor undersøgelsen foretages og/eller større akademiske sammenslutninger og organisationer. Du kan sende investigatoren en skriftlig anmodning om at få adgang til dine personlige oplysninger.Universitetet modtager en endelig version af undersøgelsen.

VEDERLAG

Der betales ikke vederlag for detalgelse i denne undersøgelse. Hvis interviews tilfældigvis finder sted på caféer eller lignende tilbyder jeg gerne at dække dine omkostningerne forbundet med køb af mad og drikkevarer.

DELTAGELSE

Din deltagelse er frivillig, og du kan afvise at deltage uden at det får nogen konsekvenser for dig. Hvis du beslutter dig for at deltage, kan du trække dig fra undersøgelsen uden at det får nogen konsekvenser for dig og uden at miste de ydelser, som du ellers er berettiget til at modtage. Hvis du trækker dig fra undersøgelsen, før dataindsamlingen er afsluttet, bliver dine data sendt tilbage til dig eller destrueret. Meddelelse om tilbagetrækning fra undersøgelsen skal ske skriftligt og sendes til enten forskeren eller dennes afdelingsleder inden den 1. januar 2014. Efter denne dato vil de pågældende data blive anvendt med

henblik på at opfylde formålet med undersøgelsen. Kun deltagere, der er 18 år eller derover, vil blive interviewet.

KONTAKTOPLYSNINGER

Hvis du har spørgsmål vedrørende undersøgelsen eller den dertil knyttede proces (eller du har fået bivirkninger som følge af din deltage i denne undersøgelse), bedes du kontakte forskeren, Brian W. Samble, via e-mail på: bsamble@utk.edu. Hvis du har spørgsmål vedrørende dine rettigheder som deltager, bedes du kontakte Office of Research Compliance Officer på (865) 974-3466.

SAMTYKKE

Jeg har læst ovenstående oplysninger. Jeg har modtaget en kopi af denne formular. Jeg indvilliger i at deltage i denne undersøgelse.

Deltagers navn (blokbogstaver) _____ Dato_____
Deltagers underskrift_____ Dato_____

Angiv din navnepræference til brug for undersøgelsen: ☐ Rigtigt navn ☐ Pseudonym
Investigators underskrift _____Dato_____

APPENDIX B: INTERVIEW PROTOCOLS

Administrator Protocol

Topic Domain: Motivation To Pursue Top-Tier Status
Lead off question: Aarhus University recently endeavored in its 2013-2020 Strategy to enter the world's global elite universities, aspiring to enter the 'Top 50'. Could you discuss some of the reasons that led the university to embark on this mission?

[*categories of interest: theoretical framework applications – institutional isomorphism (mimetic, normative, coercive; principal-agent relationship*]

Possible follow-up questions:

1. How may a 'Top 50' or, world-class university in Denmark be described in comparison to others already considered to have achieved such status?
2. How would a world-class university in Denmark be different than other contexts?
3. What criteria are used to evaluate the university's progress? Where does the top 100 come from?
4. How do the Parliament or the Ministry of Science, Innovation and Higher Education perceive the Aarhus University's ambitions?
5. Some observers may suggest Aarhus University competes with other national institutions such as Copenhagen, perhaps even for grant funds. How is Aarhus better positioned than other institutions in Denmark to become world-class?

Topic Domain: Policy Design and Implementation
Lead off question: Could you tell me about the process the university has taken to become a top global institution?

[*categories of interest:* How Aarhus actualizes their conceptualization of the world-class university – at the university level and the department level, what are the barriers not necessarily publicized, what evidence supports the informant's claims]

Possible follow-up questions:
1. What role does your office play in the university's overall excellence strategy?
2. What might be some of the challenges your office faces in reaching this goal?
3. Does the university strategy to become 'Top 50' enter into conversations at the department level? How so? Would you be able to provide any copies of meeting minutes, etc.?

Topic Domain: Institutional Support/Institutional Priorities
Lead off question: Could you describe any ways in which the university or your office incentivizes efforts to become 'Top 50'?

[*categories of interest*: internal support, support to attend conferences, develop skills, become more competitive, identify the most well regarded and least regarded areas of campus)

Possible follow-up questions:
1. Are there other offices on campus you would say are central to joining the 'Top 50'?
2. Are there other offices on campus you would say are peripheral to joining the 'Top 50'?

Government official affiliated with the Danish Ministry of Science, Innovation, and Higher Education or other governmental representative with influence in higher education.

Topic Domain: Motivation To Pursue Top-Tier Status
Lead off question: Two state-supported higher education institutions, the University of Copenhagen and Aarhus University, have recently gained renown by some rankings as among the best 100 universities in the world. Now Aarhus wishes to enter into the world's top 50. What is the importance of having national universities in these global rankings?

[*categories of interest*: impetus for policy plan, selection criteria for WCU, regional contribution]

Possible follow-up questions:
1. Could you tell me about what motivated Aarhus University to take on this initiative?
2. Denmark is home to other state-supported universities with research missions. Is Aarhus in a special position compared to others to pursue this vision?
3. How would a world-class university contribute to the region and/or the Danish people?

Topic Domain: Policy Design and Implementation
Lead off question: Could you describe the role of the ministry in relation to the university's plan to become a top 50 university?

[*categories of interest*: steering role, incentives, external governance, ideal next steps]

Possible follow-up questions:
1. Does the ministry provide any direct support or offer any incentives to the university to help it achieve its goals.
2. Some observers may argue that most world-class universities must raise significant revenues, one avenue of which is through tuition fees as is common in the U.S. and U.K. In some Nordic countries, tuition is now charged to international students. What is the ministry's stance towards tuition fees to raise funds at public research universities?

3. How would you describe the autonomy granted to the Aarhus University? What decision-making authority is granted to the university? What authority does the ministry retain?
4. What steps should the university ideally take to better position itself to reaching this goal?

Topic Domain: Quality Assurance
Lead off question: How has Aarhus performed in reaching the desired goals of the ministry?

[*categories of interest*: evaluation criteria, assessment, incentives, challenges]

Possible follow-up questions:
1. In Denmark, there seems to be a growing trend towards performance-based funding. Is this the situation and if, so, can you explain what performance criteria is considered?
2. 2. What challenges will Aarhus encounter on its journey to the Top 50?

Faculty/Academic Protocol

Topic Domain: Building a World-Class Professoriate
Lead off question: Recently, Aarhus University announced plans to enter the world's 'Top 50' universities. Some consider such a status to be a sign of a world-class university. What are your thoughts on this initiative? What makes for a world-class faculty.

[*categories of interest*: qualifications (doctoral degrees), young/new faculty development, state of growth in faculty ranks and at what tier, social construction of world-class]

Possible follow-up questions:
1. Tell me about what it is like to be a faculty member at the university?
2. How would you describe the qualifications necessary to become a faculty member at the Aarhus University? Have the institution's expectations of qualifications changed at all in recent years? Have the faculty ranks been expanded?
3. Are there programs that assist faculty to become acclimated to teaching/research?
4. For what criteria are promotion based upon? Have the institution's expectations changed in recent years?

Topic Domain: Curriculum & Pedagogy
Lead off question: Would you describe the curriculum at Aarhus as *innovative*? How is it innovative? Where do you see the curriculum going in the next decade?

[*categories of interest*: innovations in curriculum, use of English language in teaching/ English academic programs, autonomy, assignment expectations of students, extent of interdisciplinary options in curriculum]

Possible follow-up questions:
1. Some may say a world-class university necessitates an interdisciplinary curriculum. How to do feel about this statement and have you observed this at the university?
2. Would you say Aarhus has any *niche* academic areas?
3. How has the use of English changed at Aarhus? When would you say this transition started?
4. How do you assess student learning in your classes?
5. How much autonomy do you have regarding teaching and research at this institution?

Topic Domain: Research & Institutional Support
Lead off question: Tell me about how the research culture has changed in recent years?

[*categories of interest*: international cooperation on academic research, means and scope of knowledge dissemination, extent of support for professional development, challenges]

Possible follow-up questions:
1. What is the institution's expectation of your performance in regard to research?
2. How does the institution provide support for you to conduct or share research?
3. How are students included in the research you or your department conducts?
4. How is research completed at the university shared with the regional, continental, and/or global community?
5. How could the university better support you in research? In teaching?

Student Protocol

Topic Domain: The Students' Academic Experience
Lead off question: Why did you choose to come to the Aarhus University?

[*categories of interest*: perceived quality of institutional prestige, impressions of academic experience, knowledge/availability of resources]

Possible follow-up questions:
1. If I was to attend this university, could you walk me through a typical class?
2. What are some of the assignments you are expected to complete in your classes?
3. What may be some of the resources the university offers to support students like you?
4. Tell me about any obstacles you encountered to succeeding as a student at the university?

5. Aarhus University recently announced its intention to elevate the institution into the world's top 50 universities within the next decade. What are your thoughts on this goal?

Topic Domain: Comprehensive Experience
Lead off question: What does the university do really well?

[*categories of interest: perceived strengths, perceived weaknesses, location's helpfulness or hindrance, contribution to student life*]

Possible follow-up questions:
1. In your opinion, what could the university improve upon to become a better place?
2. What is life like on campus? Can you name a specific event the university sponsors?
3. What is it like to study in Aarhus? What are the benefits? Barriers?

Topic Domain: Research Opportunities
Lead off question: How does the university support you in conducting research?

[*categories of interest:* institutional encouragement, enabling student/professional success and/or engagement with field, enabling global knowledge exchange opportunities]

Possible follow-up questions:
1. Could you describe any research projects either you worked on or worked with a faculty member on?
2. Could you describe any academic conferences you have attended?
3. Does the university support students in any travel experiences outside of Denmark?

APPENDIX C: OBSERVATION PROTOCOL

Observation #_____
Date_____
Start Time_____
End Time_____
Location_____
Purpose_____
_____

Preliminary Notes
_____
_____
_____

Composite of Physical Environment:

TIME	DESCRIPTION	OBSERVER COMMENTS

Composite of Physical Environment:

Composite of Physical Environment:

Composite of Physical Environment:

Composite of Physical Environment:

APPENDIX D: TRANSLATOR'S PLEDGE OF CONFIDENTIALITY

This pledge of confidentiality posits all documents, records, and data submitted to the University of Massachusetts Translation Center for the purposes of the research study *The World-Class University in Western Europe: A Case Study Describing the Process of Designing an Elite Higher Education Institution in Denmark* led by investigator Brian W. Samble remain confidential and that identities of persons, places, and things named therein all documents, records, and data remain confidential and are not to be shared with anyone other than the aforementioned investigator.

_____ _____

Investigator's Signature Date

_____ _____

UMASS Translation Center Official's Signature Date

APPENDIX E: DOCUMENT SUMMARY FORM

THE WORLD-CLASS UNIVERSITY IN WESTERN EUROPE

FOR INTERNAL USE ONLY

Origin: ☐ Researcher-Generated ☐ Participant-Provided ☐ Publically Available

Name of Document_____ Type_____

Source Retrieved From_____ Date_____

Brief Synopsis of Document/Artifact/Photograph:

Significance:

Leads to Pursue For Additional Documents

APPENDIX F: CONTACT SUMMARY FORM

THE WORLD-CLASS UNIVERSITY IN WESTERN EUROPE

FOR INTERNAL USE ONLY

Data Source: Interview Observation

Date of Interview/Observation_____/Time of Interview/Observation_____

Location(s)_____

If Interview, please indicate: Administration Faculty Student Gov't Official

If observation, please indicate site:_____

Main Outcomes of Interview/Observation:

List what was learned for each topical question domain:

Leads to Pursue in Subsequent Interviews/Observations:

VITA

Brian W. Samble was raised in the town of Wilbraham, Massachusetts. In 2009, Brian graduated from Saint Anselm College located in the beautiful State of New Hampshire with a BA in History and a certificate in Secondary Education. Brian worked as a Resident Assistant, led several campus organizations, and was an ambassador at the New Hampshire Institute of Politics while a student at Saint Anselm College. In 2011, Brian graduated from Boston College with a MA in Higher Education Administration. Brian worked as a Graduate Staff Assistant in the Office of Residential Life, earning experience in both housing and community standards. At Boston College, Brian also worked as a Graduate Assistant for the Office of the Dean for Student Development (ODSD) where he gained additional experience in adjudicating student conduct cases. During the summers, Brian worked as an Assistant Director of Operations and Campus Life Manager for the Boston University Tanglewood Institute, an institute within the College of Fine Arts that, during the summer months, is home to classical young musicians and vocalists tucked away in the picturesque Berkshire town of Lenox, Massachusetts. Brian completed the Title IX Coordinator and Administrator Training & Certification Course offered by ATIXA in September 2013.

In 2014, Brian graduated from the University of Tennessee with a PhD in Higher Education Administration. Brian currently serves as a Hall Director in the Department of University Housing in addition to previously holding a graduate assistantship in housing as an Assistant Hall Director and an internship with the Office of the Vice President for Academic Affairs for the University of Tennessee System. Brian is passionate about student affairs and academic affairs, international higher education systems, and hopes to

continue research and practice in the area of how organizational systems may best enable student success and achieve governmental policy objectives.