



EDUCATIONAL AND FINANCIAL SUSTAINABILITY IN THE AFTERMATH OF THE COVID-19 PANDEMIC: IMPLICATION OF LEAN MANAGEMENT AND CONTINUOUS IMPROVEMENT STRATEGIES AT THE UNIVERSITY OF MEMPHIS

I. Introduction

The public including parents, students and taxpayers, regulators, business organizations, and the academic community are taking a closer look at higher education institutions to find ways to hold them more accountable for achieving their mission of providing higher education with affordable and relevant curriculum while preparing students for leadership roles in a modern, the technology-driven and globally competitive marketplace. A 2012 study of 1,700 public and private higher education institution suggests that about one-third of colleges and universities have been on an unsustainable financial path and another 28 percent are at the risk of becoming unsustainable¹. Tuition at public universities and colleges has significantly increased in the past decade (about 9% in 2012) as state governments have slashed university funding. Recent higher education is being perceived as costing too much and achieving too little. In recent years and prior to the 2020 COVID-19 pandemic, financial positions of many colleges and universities were strong because of higher enrollment and generous endowments but conditions have changed for many of these institutions.²

Colleges and Universities in the United States are anticipating a significant revenue loss resulting from the pandemic. For example, the University of Michigan anticipates a loss of up to \$1 billion whereas Harvard University is expecting a \$750 million revenue shortfall in 2020.³ The revenue shortfall for the University of Memphis for 2020 is estimated at \$50 million. Recently, the University of Memphis has been ranked among the world's top universities and is only one the three honored in such a high ranking in the State of Tennessee (in addition to

Vanderbilt and The University of Tennessee) according to the 2021 Times Higher Education World University Rankings.⁴ The University of Memphis is in the process of obtaining a Carnegie level 1 research institution. Its education sustainability of offering affordable and high-quality education as well as relevant and impactful research and service is essential in this process. Figure 1 presents a model of education sustainability.

The 2020 COVID-19 pandemic has significantly altered business as usual for colleges and universities from primarily in-class learning to mostly virtual learning requiring more efficient and effective ways to meet the imposed financial challenges and restructuring of operations to ensure continuity and sustainability. The long-term sustainability of colleges and universities is vital to the economic growth and prosperity of our nation in preparing the next generation of human capital. The short-term financial effects of the pandemic on The University of Memphis include cash flow deficiencies resulting from losing dining revenues, parking fees, refunding of tuition and fees, room and boarding fees, and long-term uncertainty relevant to the continuation of delivering affordability and sustainability of education. The university has addressed the short-term budget effects of the pandemic by appointing a university wide Budget Reduction Taskforce on July 7, 2020. The Budget Taskforce has made several recommendations/strategies to address the immediate shortfall of \$17M, known as Phase I.

The long-term effects of the pandemic and sustainability of education at the University of Memphis are addressed by the Working Group of the Standing Advisory Budget and Finance Committee of the Faculty Senate (WGBFS), which was established on September 1, 2020. The WGBFS is charged with examining the sustainability and affordability of education at the University of Memphis in the aftermath of the COVID-19 pandemic by reviewing the educational activities of Academic Affairs Units. The review of all Academic Affairs Units will

be conducted by using lean management and continuous improvement strategies presented in Figures 1-3, based on the financial and non-financial metrics outlined in Appendix B and strengths, weaknesses, opportunities, threats, safeguards/sustainability (SWOTS) analysis described in Appendix A, data gathering of Appendix C , and report preparation of Appendix D.

II. Institutional Background

The social distancing response to the COVID-19 pandemic mandates that universities and colleges worldwide to transform their programs and courses to virtual and online classes for the foreseeable future. The COVID-19 pandemic has also caused many financial challenges for universities and colleges because of significant and continuing reductions in student enrollment and public sources of funding including government financial supports. The CARES Act provides some financial assistance by allocating \$32 billion to support all levels of education and \$7 billion for student aid. The University of Memphis (UoM) has considered guidelines provided at local, state, and federal levels to ensure a safe environment for students, staff, and faculty, maintain the education quality, and secure sustainability and financial health of the university.

Sustainable education starts in the classroom where we train future generations of workforces and leaders to better understand community and market demands for higher education. The main objective of the UoM is to provide educational services to the community in creating, disseminating, and implementing knowledge. The main goal is to transform the University from Carnegie level 2 to level 1 in terms of research, academic and non-academic programs, serve the diverse students, and tailor our education programs toward the needs of students, neighborhood, or district betterment involvement.

At the University of Memphis, the administrators and the entire management team are facing significant challenges brought on by the COVID-19 pandemic. Among these challenges are protecting students and employees in terms of safety and health, changing the work environment to enable remote working, performing human capital risk assessment, dealing with supply chain disruption, and modifying the financial budget to provide adequate cash and liquidity. These challenges provide opportunities for universities to maintain continuity, sustainability and efficient transformation of their education, business, financial, and operational functions. The University of Memphis has responded to the challenges brought on by the COVID-19 pandemic by appointing a Budget Reduction Taskforce on July 7, 2020. The Budget Taskforce has made several recommendations/strategies for the following two phases:

1. Phase I - Recommendations/strategies to address the immediate known shortfall of \$17M.
2. Phase II - Recommendations/strategies to address any additional budget shortfalls because of a decrease in enrollments and/or additional financial impacts given the ongoing difficulties related to the COVID-19 pandemic.

The effective implementation of these two phases require a comprehensive and coordinated approach by the central administration and all colleges, schools, and departments in consultation with the faculty senate in assessing and managing their activities. The lean management and continuous improvement strategies (LMCIS) provide a blueprint for and effective and guided execution of this complex task. The following sections provide insight into the basic features of the LMCIS and how they are applicable to institutions of higher learning as they make necessary adjustments in response to the unusually difficult circumstances brought on by the COVID-19 pandemic.

III. Lean Management

The concept of lean management is very relevant in the post-COVID-19 era and applicable to the charge of the WGBFS in addressing education sustainability at the University of Memphis. There are three guiding principles of the lean management as related to the charge of the WGBFS: (1) promoting the main objective of delivering high quality, sustainable and affordable education by focusing on effective teaching, productive research, and impactful service; (2) implementing continuous improvement of identifying strengths and concerns and finding ways to consciously improving the education process; and (3) eliminate waste and duplication by optimizing the use of resources and restructuring, reengineering, and integrating activities. The lean management concept makes explicit link between cost management (cost centers) and performance management (revenue centers) as they are affected by managerial strategy in response to the COVID-19 challenges. The lean management is a process of examining efficiency, effectiveness, and program results to offer high-quality and affordable and sustainable educational programs. Two managerial concepts of cost management relevant to the cost centers and performance management relevant to revenue centers are interdependent and should be integrated in achieving lean management and operational objectives and effectiveness. Cost management addresses the budget cuts of phase I in the context of lean management, whereas performance management focuses on continuous improvement in achieving sustainable high-quality education and generating revenues.

IV. Continuous Improvement

Continuous improvement strategies involve classifying university activities into four categories: value-adding, non-value adding, essential, and nonessential. This approach has traditionally been used by business organizations.⁵ The focus on continuous improvement has become more crucial in the aftermath of the COVID-19 pandemic. The university and its finance function and the CFO in consultation with the Faculty Senate are by necessity in a position to work with administration and colleges, schools, and departments in assessing what activities to restructure and what activities to prioritize. In the post-COVID-19 environment with advanced technological innovation, continuous improvement becomes crucial in gaining a competitive advantage and maintaining sustainability. Continuous improvement can enable the university to responsibly respond to challenges brought on by the COVID-19 pandemic and effectively implement recommendations of the Budget Taskforce. University activities and activities of each Academic Affairs unit in particular can be classified into four categories as depicted in Figure 2:

A. Highest Value-Adding and Essential

These activities add value to the university's main purpose and mission of offering high-quality, affordable, and sustainable education and are essential in maintaining the continuity and sustainability of the university. These activities such as teaching, and research are adding value and any disruption can have detrimental effects on sustainability. Examples of these activities are productive undergraduate, graduate, and PhD programs with effective teaching, productive research, and meaningful services. All academic programs that are cost-effective and efficient are considered value-adding and essential.

B. High Value-Adding but Less-Essential

These are activities that are considered as value-adding but not necessary revenue generating and may be reduced without losing the value-added feature through re-engineering and restructuring. Colleges, schools, and departments should consider optimizing these activities in the post-COVID-19 pandemic and in the light of the current budget cuts. Example of these activities are excessive administrative and staff activities and related compensation.

C. Low Value-Adding but Essential

These are activities that do not add value but are essential. Example of these activities are administrative and staff activities including physical plant. However, activities such as middle-level managerial positions (e.g., associate deans, directors, unnecessary staff) should be minimized, especially in the post-COVID-19 era.

D. Lowest Value-Adding and Less-Essential

These are activities typically excluding academic programs that neither add value nor are considered essential and thus must be restructured, consolidated, or eliminated in the post-COVID-19 era to ensure continuity and sustainability. Example of these activities are unnecessary administrative, staff, and instructor positions. At the present time the WGBFS is unaware of any University of Memphis academic programs that should be judged to be, “Non-Value-Adding and Non-Essential”.

V. Plan of Action

Colleges and universities have developed a multi-phase plan for reopening their on campus activities with varying timeframes for implementing each phase all with the final phase aiming at allowing students, staff, and faculty return to campus eventually. Some classes can continue to be online and conducted virtually with remote learning. The business recovery,

- 17. Improvements for optimal/efficient/effective organizational structure**
- 18. Ways to improve efficiency and efficacy of the organization structure
(e.g., merging, consolidation, elimination and expansion)**
- 19. Others (please specify)**

Comments: Please feel free to comment on the COVID-19 pandemic and its impacts on educational and financial sustainability of your college. Thank you for your cooperation and assistance.

Appendix D
XYZ COLLEGE/DEPARTMENT/PROGRAM
Review Report

Submitted to
Budget and Finance Committee
The Faculty Senate
Provost Office
The University of Memphis

March 2021

This report consists of a summary of the modifications made, the experiences gained, lessons learned in response to the COVID-19 pandemic. Recommendations relevant to educational and financial sustainability of colleges, departments, and programs are for ongoing and future continuous improvement in the post-pandemic era at the University of Memphis. This report details specific challenges, opportunities, strengths, weaknesses, findings, conclusions, recommendations, and comments.

General Charge of WGBFC:

- Conduct financial and educational sustainability reviews of various academic units at the University of Memphis.

Specific Charges of WGBFC:

- Reviewing and evaluating efficiency of administrative faculty and staff support in each unit.
- Reviewing and evaluating academic programs and identifying low producing programs that may be unsustainable and need restructuring, downsizing, or consolidation.

Procedures

Procedures and step-by step processes should be established in effectively discharging the above charges including:

- Focus on educational and financial sustainability of your college, department, and program in the post-COVID-19 pandemic era (see Figure 1).
- Classify your activities in the college, department, and program to value-adding, essential, non-value-adding and non-essential (see Figure 2).
- Review the assessment rubrics (key performance indicators, see Appendix B) for each academic unit to assure a thorough knowledge of the goals (outcomes) and objectives (actions) established for units.
- Review data analysis for each objective to determine the extent to which reasonable expectations and attainable goals were met. State and justify the reason (s) for your findings (see Figure 3). If not met, what is needed to increase the likelihood that the objective will be met in the post-pandemic era including modifying and revising objectives and means to achieve objectives
- Substantiate your findings using SWOTS (see Appendix A and Figure 3) analyses for each objective to reflect findings that support your review comments.
- Include specific review recommendations and/or comments for each objective /goal for the rubric (see Appendix B).

- Prepare the self-assessed and faculty driven review report after all assessment data for the college, department and degree program have been reviewed. Be specific and relate conclusions and recommendations to specific findings and objectives.
- Discuss the entire review process with appropriate faculty in the college to assure engagement, participation and impacts from faculty as well as input and that your recommendations represent faculty in the college.

Findings**Conclusions****Recommendations****Comments**

Endnotes

¹ Blumenstyk, G. 2012. One-Third of Colleges Are on Financially ‘Unsustainable ‘Path, Bain Study Finds. The Chronicle of Higher Education (July 23). Available at http://chronicle.com/article/One-Third-of-Colleges-Are-on/133095/?cid=at&utm_source=at&utm_medium=en#top

² Deloitte. 2020. COVID-19 impact on higher education. Available at <https://www2.deloitte.com/us/en/pages/public-sector/articles/covid-19-impact-on-higher-education.html>

³ World Economic Forum (WEF). 2020. An economist explains how COVID-19 will impact universities. July 16, 2020. Available at <https://www.weforum.org/agenda/2020/07/will-universities-learn-from-lockdowns/>.

⁴ Times Higher Education. 2020. The World University Ranking. Available at <https://www.timeshighereducation.com/world-university-rankings>

⁵ Rezaee, Z, Agrawal, S and H. Pak. 2006. Continuous improvement: An activity-based model. *Management Accounting Quarterly* (Spring), 14–22.