Innovation of the Higher Education System in Haiti Using Immersive Technology

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Abstract

This paper summarizes the results of a project recently completed by the first author as part of the Management of Technology (MOT) program at the University of Minnesota. The project proposed an innovative solution that will bring Haiti to a path of economic development by enhancing educational opportunities for its citizens. Several MOT tools were used to analyze the current condition of the Haitian higher education system and to design a plan that will sustainably carry a short-term and a long-term solution. The proposed solution is the renovation of the higher education system using immersive learning technology.

The project proposes the establishment of a Technology Empowerment Research Center that will facilitate Haitian students to enroll in United States' universities while they are still in Haiti. Technological infrastructure will be in place to connect Haitian students using virtual reality devices to attend live classes in major US universities using immersive 360-degree video experience.

The project first identified business opportunities, interviewing hundreds of Haitians, including students, professionals, and executives, by using the Real-Win-Worth tool [1]. During our expert interviews, four hundred people were invited to take part in a survey to discover their interest in an innovative higher education system, with a response rate of 91%. 57,1 % of people who took the survey were not satisfied with the education they receive in Haiti. 95.2 % of them thought about studying overseas after high-school graduation, 71,4 % of them will prefer to study in the United States. 71.4 % think immersive technology can be a successful way to teach in universities in Haiti, and 61,9 % will prefer immersive over traditional learning.

A SWOT analysis was also conducted on the Haitian higher education system to identify its internal strengths and weaknesses, as well as its external opportunities and threats. This analysis was part of a strategic planning step to find external partners in the United States, with universities and other institutions, for the new center. Porter's five forces analysis [1] was used to determine weaknesses and strengths in the education system and to help understand the competitiveness of the education sector in Haiti.

The Technology Foresight Dynamics (TFD) toolset [1] were used to analyze the available technology portfolio and the relevance of available tools for higher education in Haiti. This analysis helped identify the pros and cons of different products and solutions that could be deployed for remotely delivered immersive education.

The collected data helped to create a Business Model Canvas to identify the value proposition, the cost of the structure, and the revenue streams. Both start-up and running costs were estimated. As we continue to create more partnership with an American institution, we are currently working on the purchase of land to build the Center in Haiti. We are also finalizing all legal documents both in the United States and Haiti to launch the project by fall 2022.

More information about the project and its recommendations is available at www.terch.org.

References

S. Lafleur (2020), *Innovation of the Higher Education System in Haiti Using Immersive Technology*, Capstone Project Report, Technological Leadership Institute, University of Minnesota, Minneapolis, USA

Biography

Sem Lafleur is the Founder and President of the Technology Empowerment Research Center – TERC, and he is a Senior IT Program Manager at the Office for Business and Economic Development at the University of Minnesota. He holds a Bachelor of Science degree in Agriculture and Environment from the American University of the Caribbean, and a Master of Science in Management of Technology from the University of Minnesota. His research interests include immersive technology, renewable energy, digital transformation, and industry 4.0.

Tariq Samad holds the Honeywell/W.R. Sweatt Chair and is the director of graduate studies for the M.S. in Management of Technology degree program at the Technological Leadership Institute at the University of Minnesota. He also holds an adjunct faculty appointment in the Department of Electrical and Computer Engineering. He joined TLI in May 2016 after a 30-year career with Honeywell, for the last half of which he was Corporate Fellow with Honeywell Automation and Control Solutions (ACS). During his career with Honeywell, he contributed to and led automation and control technology developments for applications in electric power systems, clean energy, building management, the process industries, automotive engines, unmanned aircraft and advanced manufacturing. From 2015 to 2016, he also served as the first Global Innovation Leader for Honeywell ACS. Dr. Samad holds a B.S. in Engineering and Applied Science from Yale University and M.S. and Ph.D. degrees in Electrical and Computer Engineering from Carnegie Mellon University. He is a Fellow of IEEE and on the Board of Governors of IEEE TEMS.