Title: A Framework of Measuring Innovation within the Systems Engineering Context of a Defense Organization

Innovation may involve the introduction of ideas for designing or producing new products, or introducing improvements to products, processes, services or any other aspect of an organization to the market place. A major element for measuring organizational strength is its perception of innovation and the ability of the organization to build on and sustain such strength. While there is no shortage of research and study materials on innovation, there is, however, a shortage of thorough and realistic analysis of the intersection of innovation management, and measurement of innovation within the systems engineering context of defense organizations. In addition, while most research studies seem to adopt a strictly quantitative approach to measuring innovation, they seem to have overlooked the qualitative side of it.

An objective of this research study is to address the need for measuring innovation within the context of a defense organization. In addition, the research presents a new model for measuring innovation within the examined environment, using both quantitative and qualitative measures. The research uses a case study research methodology as a means to present how innovation is actually measured within the examined environment and a number of data collection instruments that include interviews to gather quantitative and qualitative data. The study identified items that could be used to properly manage innovation within the systems engineering context of defense organizations. The proposed model for innovation measurement proved to be more effective in managing and measuring innovation within the context of the examined environment.

Major: Industrial Engineering

Educational Career:
Bachelor's of Avionics Engineering, BS, 1994, Embry-Riddle Aeronautical University
Master's of Computer Science, MS, 2002, Webster University

Committee in Charge:
Dr. Luis Rabelo, Chair, IEMS
Dr. Ahmad Elshennawy, Co-Chair, IEMS
Dr. Gene C. Lee, IEMS
Dr. Waldemar Karwowski, IEMS
Dr. Nizam Uddin, Statistics

Approved for distribution by Dr. Luis Rabelo, Committee Chair, on May 23, 2013.

The public is welcome to attend.