Assessment of Biologistics Research and Practices: Proposing a Cutting-Edge Research Agenda

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Abstract: A formal definition for the term "biologistics" is absent in the academic literature. The term may be applicable to different supply chains (SCs) with time- and temperature-sensitive categories of products, henceforth referred to as T-S products, including: (a) biological products; (b) pharmaceutical products; and (c) perishable products. One common characteristic of these supply chains is that the products require careful monitoring (temperature), safe handling, and timely delivery. The features of time and temperature might be related to potential combinations of the competition, inherent characteristics of the product or the nature of product demand. The key characteristic of the T-S product arise from the fact that the attributes associated with its quality and value continuously diminish due to expiration of time or inconsistencies in the temperature. Supply chains of food, fast fashion, healthcare and humanitarian relives are other examples of T-S supply chains. Note that all these supply chains share at a minimum the time-sensitive character. Effective biologist management calls for multifaceted, multidisciplinary and collaborative research by teams of academicians and practitioners. The research would demand innovations in a multitude of areas including logistics and supply chain management, business analytics and intelligence, information technologies, and the engineering and science of packaging.

The ***primary agenda*** of this proposed research is to prepare a comprehensive assessment of the state-of-the-art of biologistics research and practices. Our goals are to: (a) conduct a comprehensive and critical review and assessment of the current academic and industry biologistics literature and practices; (b) identify and conduct interviews with a representative sample of local executives in logistics and supply chain management areas to validate our finding in the literature and also learn about current best practices and issues in biologistics; (c) develop an academic paper on the current status of biologistics and submit the paper for publication to the top-tier academic journal; (d) prepare a white paper to communicate our findings with supply chain executives and practitioners; (e) conduct a workshop to disseminate the results of the research and receive feedback from the academic community, the private and public sector; and (f) propose a research agenda to the U of M

community. In achieving the study's goals, we plan to work primarily with logistics and supply chain management academics around the world and companies in our community.

Our research method would rely on Content Analysis (CA) Approach for a critical review of the current academic literature on the supply chain of T-S products. In addition, we'll apply Interview Method to conduct a series of interviews with local executives in the logistics companies with aim of developing an in-depth understanding of the practices and issues relevant to the supply chains of T-S products. Integrating the outcomes of the two research method, we'll develop a research framework to highlight the critical research areas and provide research guidelines to the academician and practitioners.