April 29, 2004

Mr. Scott Miller  
Director of University Initiatives  
BellSouth Corporation  
1155 Peachtree St. NE  
Atlanta, GA 30309-3610

Dear Mr. Miller,

Please accept the following submission to the Product Development and Managers Association Student Recognition Awards program on behalf of the Military Logistics Team from the Management of Technology core course taught at the Georgia Institute of Technology by Professor Stylianos Kavadias. I will serve as the point of contact for the team regarding this submission.

Following Operation Iraqi Freedom, the Army recognized that, at every echelon, logistics operations had notable shortfalls. The impact of these shortfalls is best stated in the 3rd Infantry Division After Action Review, “During Operation Iraqi Freedom (OIF), the Third Infantry Division (Mechanized) (3ID [M]) moved farther and faster than any other ground offensive operation in history. Victory was accomplished through brute force logistics...However, with numerous logistical challenges throughout the operation...many units operated dangerously low on ammunition, fuel, water, and other sustainment items.”

Senior logistics leadership in the Army recognizes the need for rapid change in the Army's supply chain and has made it their highest priority task. Our goal was to assess the utility of an optimization routine that maximizes the rate of ammunition re-supply to combat vehicles while reducing the risk to the ammunition trucks and their crew. To determine the utility or not, we initially sought to answer four questions about this ammunition distribution routine. Is there demand for an automated logistics tool such as cargo distribution optimization? What echelons in the Army supply chain want or need this capability? How can this capability be achieved? How can the capability be implemented, once achieved?

Our project group answered these questions using a compressed product development process, utilizing three teams working in concert to gather relevant information while ensuring our critical gateways were met. The three teams were demand, feasibility and applicability. Ideally, the three teams would have worked sequentially more so than simultaneously, but the combination of cooperative efforts and near real time information sharing, via a restricted access web site, allowed us to accomplish all goals and exceed our expectations within the designated time frame.

The demand team conducted research in two manners. First, relevant articles, After-Action Reviews and historical documents were reviewed for applicable lessons, general characteristics of technological solution, and to determine the level of importance being placed on logistics reform by senior leadership. Additionally, the demand team conducted a web-based survey of current and past logisticians throughout the Army to get specific information on desired characteristics and capabilities of any technological resource being considered and to determine the importance of change on the user level.

The feasibility team utilized a parallel approach while pending results from the demand analysis. They developed initial specifications for a new technology and subsequently researched components that would allow the implementation of this routine on a proprietary system. Simultaneously, they studied existing hardware, software and networking systems throughout the Army to determine if the opportunity to leverage existing technology existed. To aid the applicability team, this team also quantified several implementation characteristics like cost and required training for the two systems.
The applicability team focused on the managerial issues associated with implementing a new technology applied to the specific situation we faced. The demand analysis uniformly showed the need to implement information sharing capabilities in the Army supply chain as quickly as possible, and surprisingly showed little interest in an optimization capability provided information sharing was close to real time. The feasibility team developed a method of augmenting the capabilities of existing Army hardware, software and networking capabilities with a potential cost savings on the order of 100-million dollars and with little additional training requirements (measured in hours) beyond current training on the existing system. The applicability team coalesced this information into an implementation plan that maximized the effectiveness, a performance measure more essential to success in military operations than the efficiency of the supply chain, of Army logistics, while reducing the cost and training requirements of implementation. They also explored the portability, security and scalability issues associated with implementing this technology.

Through this study, we achieved results that were beyond the initial scope of our analysis, but are clearly applicable in the newly developed plan to modernize the Army supply chain. We fully intend to present this report to the Army Science Board in a formal manner and to circulate it through multiple military channels for consideration.

Respectfully,

Jason A. Miseli  
Captain, United States Army  
Graduate Student  
School of Industrial and Systems Engineering  
Georgia Institute of Technology