

UPS

MEASURING PACKAGE-CARE IN THE UPS SHIPPING ENVIRONMENT

Tauber Students:

John Krzemien – EGL (BSE/MSE Computer Science Engineering)
Avi Ryan – Master of Business Administration
Nandini Venkateswaran – Master of Business Administration

Project Champion:

Mike Eaton – Vice President Plant Engineering

Project Liaisons/Supervisors:

John Gutmann – Sr. Project Manager Plant Engineering
Gina Hutchins – Director Industrial Engineering

Faculty Advisors:

Amitabh Sinha – Ross School of Business
John Anastasios Hart – College of Engineering

Communication Coach:

Bob Halstead – Ross School of Business

UPS is a global leader in logistics, offering a broad range of solutions including the transportation of packages and freight, the facilitation of international trade, and the deployment of advanced technology to more efficiently manage the world of business. Headquartered in Atlanta, UPS serves more than 220 countries and territories worldwide. In 2010, UPS had \$49.6 billion in revenue, delivered 3.94 billion packages and documents (15.6 million per day) and serviced 8.5 million customers daily. UPS employees 400,600 employees worldwide and has 1801 operating facilities.

Increasingly, consumers perceive the external appearance of their package in which their product is delivered as part of the product itself. As a result, external package condition plays a greater role in customer satisfaction. UPS has many processes in place including facility automation, process monitoring, methods and training, and auditing to prevent and address package condition concerns. Because UPS is constantly striving to improve, they engaged our Tauber team to provide a fresh perspective on improving package condition and to:

- 1) Develop a device to measure the factors that impact package appearance
- 2) Create a methodology in which to use this device
- 3) Establish a financial model to identify areas that will result in a cost effective improvement solution.

The Tauber team developed the Package Environment Evaluation Tool (PEET) which measures acceleration, and static and dynamic compression in the package environment. To complement the device, we developed a methodology to collect and analyze system-wide data to determine the root causes of package-condition issues. The data collected from this methodology allows statistic analysis tools such as regression and trend analysis of damage costs, volume, and frequency. In addition it will allow the user to choose 48 system representative routes from over 400,000 possible options.

Finally, our team performed a financial analysis, which shows the cost of package condition issues due to damage costs and customer churn. We analyzed the data to determine the most help needed facilities based on damage cost and damage frequency. From the package condition, we can also determine which issues the device should be targeted to address.

Our recommendation to increase the performance of the below average performance facilities to average levels could result in a net savings of \$5.5M per year.

This project represents the first stage in the development of a tool to more effectively pinpoint package care improvement areas. In the future, our device and methodology can be used to identify additional package care improvement opportunities. Further financial analysis will identify the impact of these improvements on future reductions in damages and on customer churn.