

Carnegie Mellon Study Finds Shopping Online Results in Less Environmental Impact

March 3, 2009

Contact: [Chriss Swaney](#)
Carnegie Mellon University
412.268.5776
Contact: [Elain Ordiz](#)
Buy.com
213.438.8710

Buy.com's E-commerce Model Demonstrates Reduced Carbon Dioxide Emissions and Energy Consumption Compared to Traditional Retailing

PITTSBURGH, Pa. and ALISO VIEJO, Calif.— A new study by Carnegie Mellon University's Green Design Institute found that shopping online via Buy.com's e-commerce model reduces environmental impact with 35 percent less energy consumption and carbon dioxide emissions than what is produced in the traditional retail shopping model.

Using data provided by Buy.com®, the Internet Superstore™, and building on previous Green Design Institute studies, Carnegie Mellon researchers compared the energy use and carbon dioxide emissions associated with delivering a flash drive from a manufacturer to a home via the traditional retail channel and Buy.com's e-commerce channel.

Considering retail and e-commerce logistic differences, the largest contributors to energy consumption and carbon dioxide emissions were from customer transport for traditional retail, and packaging and last mile delivery to customer homes for e-commerce. Approximately 65 percent of total emissions generated by the traditional retail model stemmed from customer transport to and from retail stores.

"In a study of this nature with numerous variables, we took great care to estimate average case performance using simulations and approximations," said H. Scott Matthews, associate professor of [civil and environmental engineering](#) and [engineering and public policy](#) at Carnegie Mellon and research director of the [Green Design Institute](#). "We were able to show that in the majority of cases studied, the Buy.com e-commerce model does perform better than shopping at traditional retail in the areas of carbon dioxide emissions and energy consumption."

Traditional brick-and-mortar retailers generally have items shipped from distributors to regional warehouses where they are distributed to individual stores before reaching customer homes. Buy.com operates a unique virtual model in which products are shipped directly from distribution partners to customers, eliminating a significant step in the retail supply chain.

Carnegie Mellon researchers found that the traditional retail distribution model, combined with factors such as product packaging and customers driving to and from stores, resulted in greater energy consumption and carbon dioxide emissions than in the Buy.com online shopping model.

"Consumers are looking for ways to live a more environmentally conscious lifestyle, whether that be recycling at home, reducing paper and packaging consumption or purchasing products that have less impact on our natural resources," said Neel Grover, CEO and president of Buy.com. "This study solidifies that online shopping is another avenue they can embrace to help lower their carbon footprint and energy consumption."

Buy.com is a member of the Green Design Consortium at Carnegie Mellon's Green Design Institute and is continuously working toward becoming a more environmentally conscious retailer. Buy.com's unique virtual model helps reduce the company's impact on the environment, and the online retailer is working with manufacturer partners to institute more environmentally sound practices, such as decreased packaging.

In addition, Buy.com introduced the Green Electronics Council's Electronic Product Environmental Assessment Tool (EPEAT®) rating on its site to allow consumers to purchase more environmentally friendly computer desktops, notebooks and monitors. A listing of EPEAT offerings sold through Buy.com can be found at <http://www.buy.com/store/epeat/64501.html>.

The study, "Life Cycle Comparison of Traditional Retail and E-Commerce Logistics for Electronic Products: A Case Study of Buy.com," can be found at www.buy.com/green and at <http://www.ce.cmu.edu/GreenDesign>.
See more at: http://www.cit.cmu.edu/media/press/2009/03_03_online_shopping.html#sthash.ypiK6gQg.dpuf