Challenges and Opportunities in Computing Logistics Cost in E-commerce Supply Chain

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Abstract

Revenue generation of a logistics company depends on how the logistics cost of a shipment is calculated. Logistics cost of a shipment is a function of distance & speed of the shipment travel in a particular network , its volumetric size and dead weight. Logistics billing is based mainly on the consumption of the scarce resource (space or weight carrying capacity of a carrier). Shipment's size or deadweight is a function of product and packaging weight, dimensions and flexibility.

Hence, to arrive at a standard methodology to compute accurate cost to bill the customer, the interplay among above mentioned physical attributes along with their measurement plays key role. This becomes even more complex for an ecommerce company, like Flipkart, which caters to shipments from both warehouse and marketplace in an unorganized non-standard market like India.

In this paper, we'll explore various methodologies to define a standard way of billing the non-standard shipments across wide range of size, shape and deadweight. Those will be, usage of historical volumetric / dead weight data to arrive at a factor which can be used to compute the logistics cost of a shipment, also calculating the real/contour volume of a shipment to address the problem of irregular shipment shapes which cannot be solved by conventional bounding box volume measurements. We'll also discuss certain key business practices and operational quality considerations needed to bring standardization and drive appropriate ownership in the ecosystem.

Keywords: Logistics, Logistics cost, Volumetric weight, Deadweight, Contour volume, Real volume

Biography

Pramod Ghadge is currently working as Automation Design Manager in Flipkart Internet Private Limited, India, where he's involved in improving the supply chain logistics through various automation technologies. He earned Master of Science in Industrial & Systems Engineering from National University of Singapore, Singapore and B. Tech in Production Engineering from University of Mumbai, India, and studied entrepreneurial courses at Recanati Business School, Tel Aviv University, Israel. Prior to Flipkart, he has worked in areas like Manufacturing Engineering, Heavy Engineering, Product Design, 3D Printing, IoT across different countries.

Swadesh Srivastava is currently Director of Automation Design at Flipkart. Prior to Flipkart, he has worked at leading technology companies like Intel, Lam Research and Apple in the US. He is a technology leader with diverse global experience across R&D, Product Development, Design & Operations in different industries such as ecommerce logistics, consumer electronics, semiconductors, high-tech equipment. He has a PhD from University of Minnesota and B.Tech from Indian Institute of Technology. Swadesh is also active in non-profit sector, playing executive & entrepreneurial roles.