Responding to the Lehman Wave: Sales Forecasting and Supply Management during the Credit Crisis

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Friday, February 18, 2010 – 1:30 p.m. – 108 Carl H. Lindner Hall

Abstract: We analyze the strong dip in the manufacturing industry seen at the end of 2008 and provide evidence from various sources that it was caused by cumulative de-stocking, triggered by the bankruptcy of Lehman Brothers. This de-stocking created a giant dampened wave, the so-called Lehman wave. We model the Lehman Wave using system dynamics and validate the model using data from Royal DSM. We show that aggregate supply chains behave according to well-researched beer game behavior. The model gives a very good prediction of sales development during the credit crisis. We provide insights into how these results can be used to improve sales forecasting and supply chain management during times of severe crises.

Bio: Jan C. Fransoo is a professor of Operations Management and Logistics in the School of Industrial Engineering at Eindhoven University of Technology in the Netherlands. He holds an MSc in Industrial Engineering and a PhD in Operations Management & Logistics from Eindhoven University of Technology. He also serves as Research Director of the European Supply Chain Forum, a collaborative effort with about 25 large multinational companies. He is currently also vice-president of Dinalog (Dutch Institute for Advanced Logistics), a national center of excellence in the area of supply chain management. Professor Fransoo held various visiting appointments at US universities, including Stanford University and the University of California at Los Angeles, and is a visitor at MIT CTL during the Spring semester of 2011. He currently serves as Senior Editor of Production and Operations Management and is editorial board member of five other journals. He has published over 60 papers in academic journals and presented at many academic and industry conferences. As part from his academic activities, Professor Fransoo has conducted dozens of projects with industry. He also serves on various governmental and nationwide committees in the Netherlands, such as the Strategisch Platform Logistiek (Strategic Platform on Logistics), which advises the Dutch government on the national logistics strategy.

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