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Studies on Quantification and Reduction of Bullwhip Effect In Supply Chain Management

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Abstract : In general a supply chain of an organization comprises of purchasing raw materials, manufacturing the same to finished product and distributing the same to end customers. The various stages involved in the chain are materials receiving as raw materials, material transformation and shipment to the user's .At every stage value is added to the product. The supply and demand in the chain may have large variance resulting in bullwhip effect or demand amplification. Literature reported that the research on bullwhip effect was mainly on demonstrating its existence, search for its formulation and developing methods to address to negative effects. Literature further reported analytical treatment with manufacturing models on methods of demand forecasting supply shortage anticipation, batch ordering and price variation. Through literature reported analysis of Bullwhip effect an in-depth study on quantification of Bullwhip effect was not touched upon by researches. There were only discrete references in the literature on the measurement aspects of Bullwhip effect and methods to reduce the effect. an attempt is make in this paper to quantify the Bullwhip effect and means to address reduction of the effect, through a systematic analysis of all the factors affecting the orders to suppliers and sales to buyers .the major contribution of present work is to propose methods to quantify the

bullwhip effect in a supply chain and the means to address the same. These studies are likely to pave way for further research in this area.