ABSTRACT

PERTAMINA and PT. Inosco Surya Pratama are the supply chain multi-agent networks, that active in distributions of agricultural chemical, industrial chemical and lubrication products. The lack of the coordinations presence and the informations distortion presence that involving among others ordering and delivering from the lower level to the upper level was lead to the occurrence of information distortion, in which the ordering number was not appropriate with the sales number so that it will generated the very fluctuated condition. Variability increase from the bottom level toward the top level in a network supply chain was called with bullwhip effect.

Effect of the presence of the bullwhip effect in a network supply chain among others the need of each facility to increase the safety stock on the order to provide the service level, the occurrence of inappropriateness of production scheduling and the inefficient of the usage of resource, labor, and transportaion.

The bullwhip effect measurement was done through the data aggregation calculation, then it was result: The product/outlet variance coefficient average ($\sigma_1$) was 1.51, the product variance coefficient average ($\sigma_2$) was 1.31, and the variance coefficient for outlet ($\sigma_3$) was 1.02.

From the calculation it was also known that PERTAMINA experienced the bullwhip effect ($\sigma_3 = 1.35$), while on PT. Inosco Surya Pratama did not experienced the bullwhip effect ($\sigma_3 = 0.68$).

The centralized demand information method, the every day low price method were any methods could be used to reduce the occurrence of bullwhip effect on the distribution chain of PERTAMINA and PT. Inosco Surya Pratama.

Keywords: Bullwhip effect, data aggregation and variance coefficient.