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**Brian P Kelly\*** (bkelly@bryant.edu), 1150 Douglas Pike, Smithfield, RI 02917. *Application of Modified Shannon Entropy.*

Increasing complexity in corporate supply chains creates a need for an objective measure of the waste a given corporate structure implies. This research treats the vector of probabilities as a signal in the context of Information Theory. However, the traditional Shannon's Entropy is not entirely suitable since it is primarily a measure of certainty in the distribution of signals. Our modification seeks to refine the measure to incorporate a measure of the unintended costs generated by specific inventory combinations. This paper will delineate the formal properties of the modified entropy formula. This will include how the entropy relates to lexicographical ordering of probability vectors. Thus we will show how the entropy can be applied to other settings where the vector components have an inherent preference order. (Received September 22, 2011)