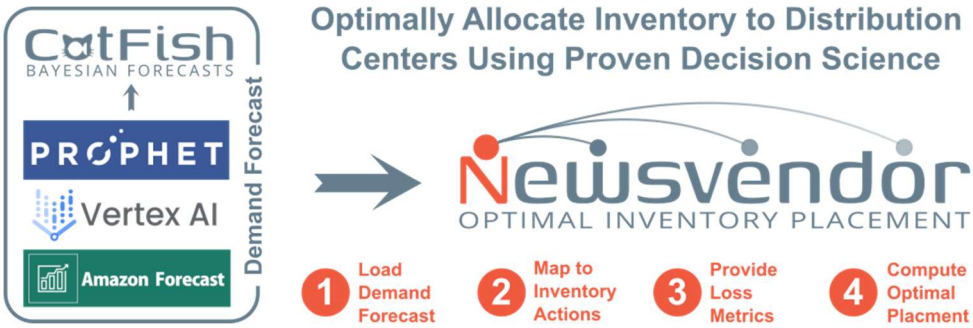
Seeking Letters of Support for Newsvendor's NSF Grant Application

Petabyte Economics seeks Letters of Support* for its National Science Foundation (NSF) grant application to do Phase I R&D on a new product called "Newsvendor."

Newsvendor will be the world's first optimal inventory placement system grounded in Bayesian decision theory that correctly accounts for supply and demand risks.



Why did you call it Newsvendor? In economics, the newsvendor problem is when a seller must decide how many newspapers to stock when demand is uncertain.

Why does the newsvendor problem matter today? Modern supply chains rely on elaborate networks of transshipment and last-mile distribution centers to store products. Recent history has shown that a failure to properly account for potential supply disruptions and demand changes when deciding inventory placement in distribution centers can cost staggering amounts in foregone profits and societal benefits. Sophisticated multidimensional newsvendor models can determine optimum inventory levels across products, geography, time, and other dimensions even when the future is extremely uncertain.

What's your key innovation? Our key innovation is an efficient, scalable machine learning method for optimizing multidimensional risk functions using big data. Our method can leverage recent developments in multi-GPU clusters to compute optimum inventory placement at grains suitable for modern supply chains.

Who are the R&D team? Dr. Ed Egan (ed@petabyteeconomics.com) and Prof. John Geweke are the Principal Investigators for the NSF grant. Prof. Geweke is a leading scholar in decision theory and optimization and has authored more than a hundred papers in peer-reviewed journals on these topics. Dr. Egan is a commercialization expert specializing in big data computational economics. They both have extensive experience developing forecasting and supply chain optimization technologies for one of the world's largest retailers.

* Letters of Support do not imply an agreement or an intent to purchase. See NSF 23-515 Program Solicitation, p18, "[Letters of Support indicate] that a legitimate business opportunity may exist should the technology prove feasible. The letter(s) must contain affiliation and contact information for the signatory stakeholder".