

Obsolescence management for long-life systems

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Abstract: Obsolescence issues continue to grow for many major industries as the lifecycles of most electronic parts decrease in light of the consumer demands for the most updated technology. This talk focuses on forecasting obsolescence for a DoD application and describes a method to forecast the likelihood of lifecycle duration to support a proactive strategy to manage future obsolescence events--specifically when a part or object is no longer obtainable from the original supplier. This methodology will then be applied to a case study on an electronic part. We demonstrate the feasibility of forecasting the risk of a part going obsolete and the conditions where the method works well. The basis is the calculation of corresponding probabilities of obsolescence for each part in a system via reliability theory and Bayesian calculations. This approach is extended by examining the shortening of product life cycle curve which leads to the prediction of obsolescence. The research presents an innovation in system level obsolescence.

Bio: Dr. Christina Mastrangelo is an Associate Professor of Industrial & Systems Engineering at the University of Washington. She holds BS, MS and Ph.D. degrees in Industrial Engineering from Arizona State University. Dr. Mastrangelo is responsible for the department's graduate systems engineering education program. Her research interests include the areas of operational modeling and prediction for quality and manufacturing, system-level modeling for infectious disease transmission, lung-cancer screening and healthcare delivery operations, and hierarchical modeling for obsolescence management. Dr. Mastrangelo's research is sponsored by NSF and ONR.