Western Decisions Sciences Institute, 2016 Conference, Las Vegas, Nevada

Abstract as Revised for Submission

Title: Understanding Partnerships (Outsourcing) for Production/Logistics Operations

Author: Willard Price, PhD, PE; Emeriti Professor of Operations and Engineering Management Eberhardt School of Business; University of the Pacific 3601 Pacific Avenue, Stockton, California 95211; 209-946-2638 (office) wprice@pacific.edu

Increased research is certainly needed on outsourcing/contracting-out of all stages within the product development cycle. Less attention required on outsourcing decision-making and more examination of contract service design and performance. This is especially valuable as traditional contract manufactures seek to serve a wider variety of industrial sectors across a deeper range of development/operations stages. Early outsourcing concentrated on manufacturing of electronics, clothes, toys and other cheaper products, yet now the search is broadening to product design, especially for the emerging Internet of Things.

This new arena for study is the reach of outsourcing arrangements (contracts) across the entire product life – R&D, product design, production design, operations, logistics, service and return, repair, recall and recycling. The Service Sector is also fertile ground for similar contracting partnerships. Partners/Outsourcees may also share in capital investment and risk, becoming partial owners of parent companies and certainly more real partners than just contractors.

Outsourcing decisions are increasing easier to defend as contract designers/ manufacturers demonstrate more competence with stronger worker performance. As contractors gain a larger share of economic activity, they have access to more capital, the ability of amass facilities and production equipment and, with experience, can be trusted to produce quality operations for components, products and logistics.

A parent company should not take quality, employee capabilities, job design, automation and information technology or working conditions for granted, especially across the globe. They should demand high performance, stimulated by prudent contracting methods.

Yet weak performance will enhance "reverse globalization" and a return to near or home economy sourcing. Evidence suggests Globalization is shifting back to home countries, so there is cause to investigate outsourcing back home. One example studied here is Apple's intention to build new computers in Texas, using outsourcing actor FLEX (previously know as Flextronics).

FLEX is a strong and active outsourcing contractor (number two globally in electronics manufacturing), well known by the author. This study creates a research model to investigate contract design, production and logistics. The model is built on evidence from FLEX practitioners and based upon these topics:

- 1. Distribution of outsourcing effort across the global platform and the development cycle
- 2. Nature of employer-employee relationships within the contractor's direction
- 3. Theory of job design and worker preparedness for outsourced tasks
- 4. Workstation choices across the inevitable human-machine interface, including the decision to design human autonomy and/or machine autonomy
- 5. Social responsibility to addresses workplace conditions, community protections, environmental and other social objectives
- 6. Design of contract agreements to ensure performance and lessen disputes

Once the initial data is used to build a model for outsourcing activity, alternative concepts and methods for contracting can be identified. Further research can look for variations across contractors and relate those variations to outsourcing performance and contractor retention and growth.