

## Research and Management Insights

### All You Need Is Trust? An Examination of Interorganizational Supply Chain Projects

Andreas Brinkhoff, Özalp Özer, Gökçe Sargut

Effective management of supply chains requires integration and synchronization of processes across suppliers, manufacturers, warehouses, and stores. When successful, supply chain projects (such as, electronic data interchange, vendor managed inventory, and consignment warehousing) present significant opportunities for channel partners to achieve this requirement. Hence, supply chain project success—for example, the timely attainment of project goals within budgetary constraints—necessitates closer examination. To do so, Andreas Brinkhoff, Özalp Özer, and Gökçe Sargut interviewed representatives of large manufacturing firms and retailers (with annual revenues in excess of 250 Million Euros) and collected extensive survey data on successful and unsuccessful projects. The data was used to test a model of success that explores the effects of trust and dependence between partners, as well as factors directly related to projects such as between-firm communication and within-firm commitment. The authors empirically show that trust between partners is important in shaping communication and employee/top management commitment within each firm, leading to project success. Another finding is that dependence between partners – generally assumed to pose significant challenges for partnerships – has very little influence on project success. The authors also categorize supply chain projects according to their decision rights configuration. This categorization provides a powerful conceptual tool in determining how success factors can have different impact on performance based on the characteristics of a project. The findings provide insights on how to effectively manage supply chain projects.

### Estimating the Impact of Understaffing on Sales and Profitability in Retail Stores

Vidya Mani, Saravanan Kesavan, Jayashankar M. Swaminathan

The ability to match store labor with variable customer demand in a timely and cost-effective manner is an important driver of retail store performance. Many retailers today are still in the process of evaluat-

ing the value of traffic counting technology in labor planning. Vidya Mani, Saravanan Kesavan, and Jayashankar Swaminathan combine traffic data with sales and labor data to demonstrate the value of traffic information in labor planning to retailers. They find that staffing decisions based on traffic can yield higher profits since customer traffic captures the true demand potential of a store. An important staffing related decision that retailers need to make is determining how many weeks in advance they need to schedule associates for work. The authors demonstrate the relative impact of these decisions on store profits by quantifying the impacts of forecast errors and minimum shift length on store performance.

### Promotion Planning and Supply Chain Contracting in a High-Low Pricing Environment

Andreas Breiter, Arnd Huchzermeier

Demand forecast errors threaten the profitability of high–low price promotion strategies. Andreas Breiter and Arnd Huchzermeier show how to match demand and supply effectively by means of two-segment demand forecasting and supply contracts. They find that demand depends on the path of past retail prices, which leads to only a limited number of reachable demand states. However, forecast errors cannot be entirely eliminated because competitive promotions entail some degree of random (i.e., last-minute) pricing. A hedging approach can be deployed to distribute demand risk efficiently over multiple promotional campaigns and within the supply chain. A retailer that employs a portfolio of forward, option, and spot contracts can avoid both stockouts and excess inventories while achieving the first-best solution and Pareto improvements. The authors provide an improved forecasting method as well as stochastic programs to solve for optimal production and purchasing policies such that the right amount of inventory is available at the right time. By connecting a stockpiling model of demand with the supply side, they derive insights on optimal risk management strategies for both manufacturers and retailers in a market environment characterized by frequent price promotions and multiple discount levels. The article employs a data set of the German retail market for a key generator of store traffic – namely, diapers.

### **Contracting for Capacity under Renegotiation: Partner Preferences and the Value of Anticipating Renegotiation**

Eda Kemahlioğlu-Ziya

Many original equipment manufacturers (OEMs) have outsourced manufacturing to contract manufacturers (CM). One reason is demand uncertainty, which makes investment in manufacturing capacity risky, and outsourcing shifts the risk to the CMs. Typically, CMs manage this risk by signing contracts that require the OEMs to buy a minimum level of capacity regardless of demand realization. Cancellation clauses of such contracts obligate the OEM to pay hefty financial penalties in the event it cancels the order because demand is lower than the firm-commitment level. Especially if the CM has other customers that may need extra capacity, renegotiating the contract is an alternative to enforcing financial penalties. Eda Kemahlioğlu-Ziya studies renegotiations that reallocate excess capacity among the CM's customers and identifies when an OEM benefits most from such renegotiations: An OEM with low buyer power, who is unable to negotiate a low wholesale price upfront, may gain more from renegotiation than a strong OEM. An OEM's post-renegotiation profit is higher if the other OEM in the renegotiation deal has high buyer power *and* high demand variability. If the OEM's demand has low coefficient of variation, it is more profitable to leave the CM out and directly renegotiate with the other OEM.

### **The Effectiveness of Management-By-Walking-Around: A Randomized Field Study**

Anita L. Tucker, Sara J. Singer

Anita Tucker and Sara Singer studied a Management-By-Walking-Around (MBWA) program designed to increase frontline employees' perception of organizational performance. Their 18-month long program required senior managers to visit the frontlines of their organizations to solicit employees' safety concerns and to work with middle managers to resolve the problems. To test the effectiveness of the MBWA program, Tucker and Singer compared the change in nurses' perception of improvement in 56 work areas in 20 randomly selected treatment hospitals to 138 areas in 48 randomly selected control hospitals. Counter to their hypothesis, Tucker and Singer found that, on average, the MBWA program had a *negative* impact on perceived improvement. However, additional analysis of the treatment work areas revealed that the MBWA program was successful at improving perceptions when easy-to-solve problems were prioritized for solution efforts. In addition, work areas in which senior managers were responsible for ensuring

that identified problems got resolved achieved improvement. These results lend support for process improvement approaches that create a bias toward action. In contrast, prioritizing high-value problems failed to produce improvement. Thus, senior managers' physical presence on their organizations' frontlines is helpful when it enables active problem solving, but could backfire if employees' improvement ideas are ignored.

### **Does a Store Brand Always Hurt the Manufacturer of a Competing National Brand?**

Jun Ru, Ruixia Shi, Jun Zhang

Store brands, created and controlled by retailers, have shown tremendous growth in the retail sector in the past decade. Retailers love store brands because they brought higher margins than national brand. On the other hand, it is commonly believed that store brands hurt the manufacturers of competing national brands. Jun Ru, Ruixia Shi, and Jun Zhang show that such a belief is not necessarily true. When the retailer is a dominant player in the supply chain, the national brand manufacturer may in fact benefit from a competing store brand introduced by the retailer. The key for the manufacturer of national brand to benefit from the store brand is to keep on innovating to ensure a proper quality gap between the national and store brands.

### **Managing Supplier Competition and Sourcing Sequence for Component Manufacturing**

Li Jiang

Nowadays, most manufacturers across industries source components from external suppliers, and, more often than not, they follow some sequence in sourcing to synchronize production activities and reduce excessive holding cost. On the supply side, it is common for multiple suppliers to offer perfectly substitutable components, and online reverse auction has been widely adopted as an effective means for supplier selection. The interplay between sourcing sequence and competitive environment influences channel performance in a subtle, and sometimes dramatic, way. Compared with sourcing various components at the same time, sequentializing sourcing process can benefit both the manufacturer and the suppliers themselves, and it is even possible for all channel parties to agree on the same sourcing sequence. Moreover, the manufacturer can practically manage the competition environment for its components according to their positions in the overall sourcing sequence. Appropriate measures can lead to a better and sometimes substantially improved profit performance to every individual firm, while mismanagement can result in devastating consequences.

### **Benefits of Hybrid Lateral Transshipments in Multi-Item Inventory Systems under Periodic Replenishment**

Kevin Glazebrook, Colin Paterson, Sandra Rauscher, Thomas Archibald

Shortages of stock within multi-location inventory networks increase costs and impact service levels. Glazebrook et al. have proposed a method which reduces the impact of stockouts by utilising hybrid lateral transshipments. Their approach determines the most cost effective stock movement to satisfy the immediate demand however it additionally seeks to use the opportunity to rebalance stock and thus minimise the chance of future shortages. The authors have demonstrated that such an approach offers significant cost benefits when compared to a conventional approach of only satisfying the current shortage. They were motivated by retailers who operate networks of outlets supplying car parts; and by considering inventory networks more widely, with features such as stocking multiple types of inventory and demand patterns that can vary over time, the methodology is applicable to a range applications and an enhancement on previous approaches.

### **An Experimental Investigation of Pull Contracts in Supply Chains**

Andrew M. Davis

Andrew Davis investigates supply chain contracts in a setting where a supplier uses its inventory to directly satisfy a retailer's demand. These "pull" contracts, have increased in popularity in practice but have not been studied experimentally. In a controlled laboratory setting, with human participants acting as retailers setting contract parameters, the author evaluates a wholesale price contract and two coordinating contracts. In theory, the two coordinating contracts should greatly outperform the traditional wholesale

price contract. However, the data from the author's experiment suggest that the benefit of the two coordinating contracts over the wholesale price contract is less than expected. The author identifies that this result is due to retailers setting one contract parameter too low, and the other contract parameter, the wholesale price, too high, relative to the optimal benchmarks. He develops a behavioral model to explain this behavior, and then directly tests it in the lab. Specifically, in this follow-up laboratory experiment, the author again has retailers set contract parameters, but hides certain information pertaining to realized demand and payments to suppliers, and finds that retailers make significantly better decisions, and thus higher profits.

### **The Pursuit of Productivity**

Roger W. Schmenner

Automation, downsizing, and economies of scale are often thought to be effective policies to follow in pursuit of productivity. Yet, one must be cautious about them. They only work to promote gains in productivity when they lead either to reductions in variation (quality, quantities, or timing) and/or in throughput time (the "clock time" it takes to produce something from start to finish). Swift, even flow – when variation and throughput time are reduced – should be the guiding principle. Indeed, all of the major step-function increases in productivity, from the Industrial Revolution onward and no matter the sector of the economy, have involved the concept of swift, even flow. The factory itself, interchangeable parts, integrated supply chains, the moving assembly line, lean operations, and more are testament to the power of the concept. Each of these innovations moved materials through their processes more quickly and with less variation. That fact is what reduced cost and waste and not automation, downsizing, or scale by themselves.