

Rutgers Supply Chain Management Thought Leaders



Healthcare Reform and Supply Chain Management?

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Healthcare providers are under attack, feeling cost, quality, variety, volume, consolidation and competitive pressures similar to those faced in manufacturing. The manufacturing sector has addressed these pressures using integrative supply chain management (SCM) approaches. So, why not simply apply SCM in healthcare? To do so, at least two distinctive healthcare characteristics ought to be considered: changes in the reimbursement system and the key role of physicians as supply chain partners.

Volume-based reimbursement methodologies have historically focused industry executives on the topline, resulting in underdeveloped mechanisms to accurately track and reduce costs. Today, the federal government is attempting to refocus healthcare providers from volume to value – aligning cost, quality and outcomes through innovative reimbursement approaches such as Accountable Care Organizations (ACOs) and the Affordable Care Act (aka, Healthcare Reform). As a result, providers are becoming more sophisticated in tracking costs, managing processes, and measuring outcomes. For example, in their white paper, Dr. Phil Oravetz and Mr. Adam Kelchlin from Oschner Health System (OHS) in Louisiana discuss how OHS recently implemented a reverse cost engineering approach in 16 of their highest cost services. In Orthopedics, this involved identifying key cost categories (supply costs, length of stay management, and operating room time) and implementing supply chain standardization, process engineering, and patient-focused care standards. Through the use of these techniques, OHS projects an annual savings of \$8M (in 2013). Physician engagement was at the top of the list of success drivers for OHS, leading to the second distinctive characteristic of the healthcare delivery supply chain – physician autonomy.

A few years ago, Drs. Larry Smeltzer and Vidya Ramanathan wrote about hospitals in the proceedings of Decision Sciences Institute, stating that “probably no other organization in the United States has such important members who are not employees but perform their work within the organization.” Some studies suggest that as much as 80% of hospital costs are driven by physicians, yet today only about 25% of attending physicians are employed by hospitals. Further, many times physicians work in an environment plagued by an ‘agency dilemma.’ In other words, the physicians’ duty to provide high service levels to patients, manage costs for the hospital, while receiving reimbursement for their work from insurance companies collide to create the perfect storm of role ambiguity and potential inefficiency. For example, a physician may order additional diagnostic tests which increase the patient’s perceived service level, but drive up total system costs. In response, there has been a resurgence of physician employment initiatives on the part of hospitals, but these have been

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Rutgers Supply Chain Management Program Ranked #3 in U.S. by Gartner Supply Chain Leaders

met with mixed results. Given this, relationship management – a key concept from SCM – can yield favorable results. I recently surveyed over 300 hospitals in 47 states and found that neither physician employment, nor social capital with physicians are individually sufficient to help hospitals improve efficiency. Rather, when hospitals build social capital with physicians, while employing them, process improvement strategies can improve hospital efficiencies.

It is clear that we must improve the effectiveness and efficiency of healthcare delivery. Cutting-edge health systems are finding SCM approaches useful in improving performance, but only when implemented with real physician engagement and integration across the system's sites of care. Moving forward, expect SCM to receive even more attention as a key driver of healthcare delivery improvement.

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Supply Chain Disruptions and Risk Management

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Supply chain disruptions are a reality of a globalized market, and they are becoming more frequent, making a good supply risk management strategy a critical business imperative. Statistics show that over the past 30 years, the number of reported natural disasters has increased by almost 400%. In a major 2012 survey, 80% of the surveyed companies reported that they experienced a significant supply or demand disruption within the past 2 years, with most leading to a loss of revenue and/or profits. Every supply chain has risks, both internal and external. Supply chain disruptions not only affect an organization directly, but can also cascade throughout the supply chain to suppliers and customers. A formal approach to supply risk management will help you survive these challenges and may even provide an advantage over your competitors. To be successful, this has to be a formal and collaborative effort involving your key internal and external stakeholders. Communication between trading partners, and transparency of information, is critical for the strategy to be effective. You can significantly mitigate risks in your supply chain by actively identifying and managing vulnerabilities. There are commercial products and best practices available within the industry to help you create a risk management plan. It is important to note that it is not a one-off process that you can do and then put on the shelf. Risks, and also your mitigation strategies, change over time and circumstance, so you should review and update your supply risk management plan at least once per year.



Newark Industrial Solutions Center (NISC) Pilot Launched at Rutgers

By Kevin Lyons, Ph.D., Assistant Professor, Department of Supply Chain Management and Marketing Sciences (SCMMS)

Small businesses and the manufacturing sector have long been described as two critical components that make up the backbone of the U.S. economy. When small business and manufacturing are thriving (innovating, profitable, public/private investments, hiring, competing globally, etc.), the economy thrives. However, for many years leading up to the recession of 2008, small business and manufacturing in Essex County/Newark have not performed well compared to national manufacturing firms with similar profiles and economic characteristics (Figure 1). This lack of performance is due to many challenges, including global competition and the lack of investment, innovation, experienced workforce, and public policies and regulatory issues that have not kept pace with the economy. We can witness these challenges right outside the borders of our Rutgers Newark Campus and within the City of Newark, New Jersey, where there are over 400 small – large manufacturers in a multitude of commodities and services.

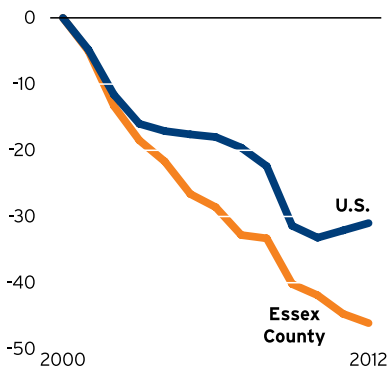
The Rutgers Center for Supply Chain Management (CSCM) at Rutgers, The State University of New Jersey, located in Newark, New Jersey, commenced a research project to enhance the resource-based and collaborative capacity of its newly-launched Newark Industrial Solutions Center (NISC). Housed at Rutgers-CSCM, NISC's mission is to develop, strengthen, and promote Newark's industrial competitiveness and economic development utilizing Rutgers-CSCM's applied and embedded supply-chain and business

NISC @ SCMMS Launched!

NISC was launched by Rutgers-SCMMS in June 2013, with seed funding from the Brick City Development Corporation and Rutgers Business School. To date, the project has made a few early accomplishments. These include: working with five Newark-based manufacturers on supply chain and logistics; developing new industrial production database decision-making tools, business development strategies, and workforce development strategies; and developing new customer-demand and effort decision analysis tools.

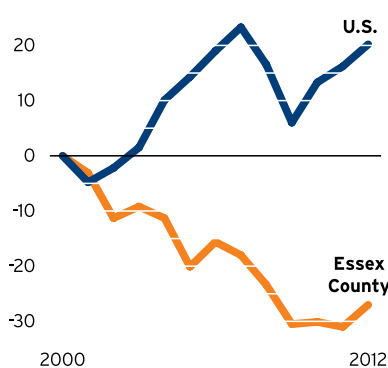
ESSEX COUNTY'S MANUFACTURING SECTOR HAS UNDER-PERFORMED THE NATIONAL SECTOR

Percent Change in Manufacturing Employment, 2000–2012



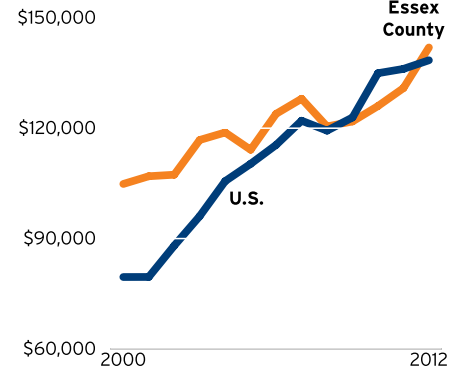
-3.5% U.S. Annual Growth
-4.8% Essex Annual Growth

Percent Change in Manufacturing Output, 2000–2012



2.2% U.S. Annual Growth
-2.8% Essex Annual Growth

Manufacturing Output Per Job, 2000–2012



6.0% U.S. Annual Growth
2.1% Essex Annual Growth

Source: Brookings analysis of Moody's Analytics estimates.

Figure 1

development tools and hands-on capabilities. This mission is informed by a demonstrated vision for civic engagement and problem solving with local and regional collaborators, including but not limited to the City of Newark, Brick City Development Corporation, Newark Regional Business Partnership, Newark Workforce Investment Board, New Jersey Institute of Technology, and the New Jersey Manufacturing Extension Program.

As an active stakeholder-participant in the development of a Newark manufacturing strategy by the city's Newark Manufacturing Initiative from 2012-13, Rutgers-CSCM committed itself to applying its resources to participating in problem solving and partnerships addressing pressing local/regional economic development matters—specifically, those that implicate supply chain sustainability, new innovation, technology and small business competitiveness in the city in which it is based. For instance, the upcoming Port expansion

will allow existing Newark industries, for the first time, the opportunity to integrate global export opportunities into their business development strategies. Rutgers' vast supply chain, procurement, environmental sustainability, commodity and logistics expertise utilized the existing Newark industrial profiles to model options for future economic growth potential and provided resource-strapped local businesses strategies to invest and prepare for the upcoming Port Newark expansion.

The project plan is to achieve the following objectives:

1. Providing a measurable increase in industrial competitiveness and business development opportunities. The objective is that the businesses that we work with will increase their supply chain capacity and business reach by understanding and utilizing the tools that we develop throughout and by the end of the grant period.
 - Project-specific metrics and benchmarks that will be developed at the outset of the performance period in collaboration with Joseph C. Cornwall Center for Metropolitan Studies at Rutgers University, with anticipated input from the Edward Bloustein \ School of Public Policy and Planning, Eagleton Institute, and the Office of Research and Assessment.
2. Creating a "one-stop" site for manufacturers to access customized support in the area of supply chain sustainability, including assistance with supplier readiness, market research, and integrated business planning. Note: vehicle-to-grid mobile NISC Lab unit to provide services in-the-field is being developed.
3. Connecting greater Newark area manufacturers to face-to-face (F2F) and business-to-business (B2B) networks that promote supply chain competitiveness by boosting domestic sourcing, innovation, new technology, and distribution.
4. Strengthening budding partnerships between industry consortia (supply chain, purchasing, healthcare, sustainability, energy, natural resources, insurance, policy, etc.), the city of Newark, and local and regional intermediaries to promote resource efficiency strategies.
5. Through hands-on consultation, working with underperforming small businesses with limited supply-chain and/or workforce capacities to improve their participation in the development of their emerging business development strategies.
6. Providing industry-specific supply-chain simulations and models that will help companies increase their decision-making skills to the point where they can develop and execute critical decisions on their own and sustain a self-sufficient trajectory.

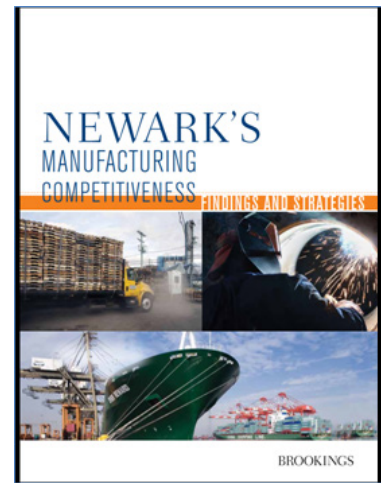


Figure 2

These objectives will support early-stage implementation of three elements of the City of Newark's manufacturing strategy, Newark Manufacturing Initiative (NMI). This City-led effort identified the manufacturing challenges and opportunities (see: <http://www.brookings.edu/research/reports/2013/05/28-newark-manufacturing-mistry-vey-shearer>) in the Brookings report titled 'Newark's Manufacturing Competitiveness: Findings and Strategies,' which was released in May 2013 (Figure 2) following considerable market analysis and stakeholder participation. Rutgers SCMMS research for this report identified opportunities in enhanced market access, sustainable supply chains, and industrial resource efficiency. The NMI strategy has been embraced by the City of Newark and stakeholder-partners citywide and regionally, including Rutgers Business School, Brick City Development Corporation (BCDC), and the New Jersey Institute of Technology (NJIT).

The mission of NMI and NISC is to boost local and regional industrial competitiveness through knowledge sharing, strategy development, resource alignment, and coordinated, multi-stakeholder projects and programming. The report sets forth multiple goals that together constitute Newark's new strategy for industrial retention and growth. Rutgers' NISC is a direct outgrowth and response to the City's efforts to support the goal of promoting sustainable supply chains, healthier market access, innovation and resource efficiency for the small and mid-sized manufacturers of the greater Newark area.

For a brief video highlighting NISC's mission and early-stage goals, please visit: http://www.youtube.com/watch?v=alxXdqFz_eY.

Meet our Center Faculty



Dr. Lei Lei, Chair and Professor, Department of Supply Chain Management and Marketing Sciences, and Director, Center for Supply Chain Management



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