going beyond code

Today’s data scientists must be more than mathematicians — they need to understand business needs to provide supply management teams and companies with a competitive advantage.

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Hello Institute for Supply Management® members,

Risk and rewards are the yin and yang of business and life. Business leaders like Warren Buffet warn that “risk comes with not knowing what you are doing.” So, how can you be more calculated in your next move?

This issue of Inside Supply Management® has great stories focused on:

- The evolution of data science in procurement
- The move to Vietnam for sourcing and manufacturing
- The shrinking learning curve for graduates, reflected in university supply chain programs that prepare students for real-life business challenges.

These stories are packed with information, data and examples of how procurement professionals are using their knowledge to avoid risk.

Additional important knowledge can be found in the Manufacturing and Non-Manufacturing ISM® Report on Business®. Amid concerns of a global economic slowdown, there has been increased attention on the Report on Business®, which you have likely seen in the news. The PMI® (manufacturing) and NMI® (non-manufacturing) indexes are great economic indicators for economists, finance professionals and government officials, as well as supply management practitioners.

The Report on Business® is a great tool that is free to members to utilize for their businesses and assist in risk-mitigation planning. For more on how to use this information, check out this post from Inside Supply Management®‘s blog: ismmagazine.org/how-to-enhance-your-rob-dashboards-effectiveness/.

As always, we wish you much success and will continue to do our best to move the profession forward. Happy reading!

P.S. We’d love your feedback. Please connect with us at editor@instituteforsupplymanagement.org.

Angela Miller
Director, Marketing & Publications
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Attaining Institute for Supply Management®’s (ISM®) Certified Professional in Supply Management® (CPSM®) or Certified Professional in Supplier Diversity® (CPD®) designation demonstrates that the individual has achieved an excellence in supply management that is based on real-world competencies and skills that people need.

“In today’s competitive job market, investing in your own development by achieving certification is more important than ever,” says Nora Neibergall, CPSM, CPD, C.P.M., ISM Senior Vice President and Corporate Secretary. “Certification is a meaningful way to demonstrate the value you can bring to an organization.”

But professional development doesn’t stop there. “The supply management profession is evolving, as are the skills you need to continue to excel,” Neibergall says. “We have a continuing education requirement — 60 hours every three years for the CPD and CPSM.” Those who have both certifications can use the same hours to recertify.

There are many ways to earn Continuing Education Hours (CEHs). You can earn three CEHs by renewing your annual ISM membership. Participate in the monthly members-only webinars and earn one CEH for each — that’s a total of 12 hours per year. Attending ISM’s Annual Conference is a great way to get 20 CEHs at one time, so taking part in three consecutive Conferences will earn you the 60 CEHs necessary for recertification.

Other possibilities include:

• Writing an article for Inside Supply Management® magazine or a blog post for Inside Supply Management® Weekly
• Taking an ISM course, seminar or e-learning course
• Teaching an ISM course or presenting at a seminar
• Attending an ISM Chapter meeting.

“The profession is moving so quickly,” Neibergall says. “It’s important for people to know what’s new, what’s next, stay current, develop new skills, challenge themselves and grow into roles that haven’t even been invented yet, because we know the job titles of tomorrow are going to be things we’ve never imagined.”

Sue Doerfler
Senior Writer
Inside Supply Management®
Some of the high increases in business trends during the past year were caused by individuals and industries making advanced purchases in anticipation of shortages, inflation and delivery delays; during recent months this has subsided, and the monthly rates of increase have dropped. In the future, more escalation will push business trends to new heights, but the monthly gains will be less because anticipatory buying will be less.

—The Bulletin of the National Association of Purchasing Agents, August 10, 1966

Industrial-sector jobs in China lost in the last year, with nearly 2 million due to the country’s trade war with the U.S., according to a report by Beijing-based investment bank China International Capital Corporation (CICC). The report did not factor the impact of tariff increases of 10 to 25 percent on US$200 billion of Chinese imports, which took effect in May. “If China-U.S. trade friction escalates, manufacturing jobs will be subject to bigger challenges,” the report said.

Make sure to keep an eye on your email inbox for a Member Monday benefit coming in late September: a template for a supplier risk scorecard that can be used to evaluate current or potential suppliers for your business.

Member Monday is designed to boost the start of the work week with an invitation to member-exclusive events, tools, research and more. Do you know of others who could benefit from ISM membership? Contact Member Services at +1 480.752.6276, opt. 8.

A MOMENT IN TIME

-member Monday
Supplied Risk Scorecard Template

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—The Bulletin of the National Association of Purchasing Agents, August 10, 1966
COMMODODDITIES

Cheese

Price valleys and peaks: Record U.S. supplies of cheese led to a price drop for the second half of 2018. But prices have recovered in recent months (to US$1.82 a pound in July, up 13 cents from the previous month), thanks in part to the price of Class III milk being at its highest since 2014, according to the U.S. Department of Agriculture.

Where does it come from? Why is the nickname “cheeseheads” given to fans of Wisconsin sports teams? If Wisconsin were a country, it would have ranked fourth in the world in cheese production in 2017 at 3.4 billion pounds, behind the U.S. (12.7 billion, counting Wisconsin), France (4.5 billion) and Germany (4.5 billion).

What's it used for? There are certainly less-tasty ways to strengthen your bones (cheese is rich in calcium), give your skin glow (it has plenty of Vitamin B) and help your sleep (cheddar cheese has more tryptophan than Thanksgiving turkey).

And that's a fact: Cheese is one of the biggest products in which national brands’ market share has been threatened by store brands. Last year, Kraft Heinz Co. cut prices on cheese to remain competitive with brands from such stores as Kroger, Albertsons and Walmart, according to The Wall Street Journal.

SUPPLY CHAIN REACTIONS

CAPS Research @CAPSResearch
Your #supplymanagement group’s ability to effectively engage internal business partners is important for business alignment and value creation. How do you engage your internal business partners? #CAPSstats

K Lore Mmutle Sad to see another carrier (New Brighton, Minnesota-based LME, Inc.) close its doors. This has been a rough year for a lot of carriers — hopefully the uptick in volume as we head into the busy season for holiday freight will help out. #freight #carriers #logistics #transportation #supplymanagement

Manuel Montalvo @montalvm Do you know the true value of counterfeit goods in your supply chain? As fakes become more indistinguishable from the real thing, full visibility in the supply chain becomes more essential.

Institute for Supply Management ISM CEO Tom Derry has been named one of the “Top 5 Procurement Influencers” by CPOstrategy magazine!

Andrew Bartolini @andrewbartolini Within large enterprises and large supply chains, demand aggregation can prove to be a highly valuable strategy that can deliver savings, lower #supplymanagement TCO, and provide greater assurance of supply.

ASKING OUR MEMBERS

How Are Business Schools Enhancing Supply Management Education?

At the university level, supply management is a relatively young field of study, so business schools continue to fine-tune their curricula to serve students’ career-preparation needs. Ever-changing and emerging technologies only accelerate this trend, as detailed in the article “Preparing Students to Enter the Workforce” on page 28.

Students and faculty: How is your school maximizing the value of a supply management education? To share your thoughts, email us at editor@instituteforsupplymanagement.org, or leave a comment on our social media pages (the addresses are on page 2). Some entries will be featured in Supply Chain Reactions in the October issue of Inside Supply Management®. ISM
### CHASING THE HIGH-HANGING FRUIT

#### INTRODUCTION
When FreeMarkets pioneered the use of e-sourcing software, management of strategic spend became much simpler and usage has really took off — in this respect, today it is considered the low hanging fruit for procurement teams. Alas, the same cannot be said of transactional procurement; that 20 percent of spend which remains with end users yet represents 90 percent of transactions: in effect, the high-hanging fruit!

But this is now set to change: the latest innovations in machine learning, robotic process automation, and artificial intelligence offer new ways to address this.

AI buzzwords are commonplace these days, but often misused and misunderstood. At Simfoni, our application of these capabilities is clear and simple: Machine learning facilitates classification and cleansing of large, complex data, robotic process automation is used to automate repetitive and predictable transactional activity, and the most complex, true AI, natural language processing supports the user in defining requirements and generating insights: addressing questions such as “What did I buy last time?”, “Are there any new alternatives in the market?” and “How do I specify this requirement?”

But before deploying all this clever stuff, it is really essential to understand just what is being purchased across the business and determine what is and isn’t being managed properly. Most organizations have a pretty good handle on spend with their top suppliers, but few can claim to understand what is going on in the tail.

#### START WITH ANALYTICS
The Virtuosi™ Analytics platform analyzes an organization’s spend to provide CPOs with a set of “lenses” that can separate spend by value and type to inform decision-making. The platform is designed to get to the insights, not simply produce spend cubes. Even with incomplete data we are able to use machine learning to predictively ‘re-build’ data to provide meaningful dashboards.

Simfoni uses a ‘zonal assessment approach’ which segments spend into three primary zones: strategic, tactical & spot buys, and catalog spends. The latter two of which constitute the organization’s tail spend.

In Figure 1, the blue zone represents the strategic spend that has a core, intrinsic value to the organization. Depending upon the industry, this typically accounts for 60 to 70 percent of total spend.

The orange zone comprises tactical and spot-buy spend, which can be of significant value, but is not strategic in nature. Examples often include capital equipment purchases but also occasional services such as repairs or legal advice.

This spend consumes a disproportionate amount of time and is difficult to manage efficiently to extract value. Furthermore, it is often required urgently and tends to “shout” louder than strategic initiatives. Seeking solutions that separate responsibility for these purchase types makes a lot of sense as it keeps the category manager focused on their primary objectives.

Finally, the green zone contains high-frequency purchases that are standard and commonly available with the highest number of transactions and suppliers, and the lowest spend value. For this zone, organizations should seek to deploy self-service catalogs, marketplaces and call-off agreements.

#### FIGURE 1: SPEND MANAGEMENT ZONES

<table>
<thead>
<tr>
<th>Strategic Spend</th>
<th>Tactical Spend</th>
<th>Catalog Spend</th>
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When spend is segmented in this way, it is easier to define the spend management strategy and to understand what needs to be closely managed by in-house specialists and what can be better managed through a dedicated tail-spend platform.

This segmentation approach is a useful guide, but segmenting spend into strategic, tactical and catalog is not as simple as ranking spend by value and by supplier.

Our analysis goes deeper: for example, certain vendors can provide strategic products as well as lower value standard products and services, so grouping their entire spend in the strategic category would be to miss out on other leverage opportunities. Virtuosi™ analyzes total supplier spend, category and supply market competitiveness segmenting spend using an in-built opportunity assessment module.

Business intelligence software produces out-of-the-box visuals that are attractive to look at and easy to interpret. Dashboards are designed to investigate specific areas for operational improvement, such as contract compliance, item standardization, vendor consolidation, duplicate payments and supplier diversity among many others.

Finally internal data can be meshed with external data relating to supply risk or commodity data to produce rich correlations that have predictive capabilities, enabling faster and better decisions.

Once completed, the zonal analysis can be used to tailor the solution design required to capture opportunities and streamline the supply base.

**TAIL SPEND TECHNOLOGY**

Organizations increasingly recognize that managing tail spend is a golden opportunity to reduce non-core spend by as much as 20 percent whilst also making process changes that improve operations right across the business.

In tackling the tail spend conundrum the holy grail is to increase spend under management: user adoption!

Practitioners often look to a software suite to facilitate the process; but the issue is not simply a software challenge. The primary obstacle to adoption is that users need content support, and clever rules or algorithms to guide them through the process. It’s really due to the lack of this kind of intelligent, automated support that full-suite solutions fail to deliver the promised value.

On the other hand, some organizations have sought to address the problem by outsourcing tail spend. The fundamental issue here is that nothing has changed. A provider’s resource is effectively doing the same manual activity as before, the only difference is that it lowers cost by performing services from a lower cost base. Adoption remains poor because the end user experience has not improved.

At Simfoni, we determine that a successful tail spend solution has three core elements:

1) Buying desk operations which are in close proximity to the supply market,
2) Technology that is quick and easy for end users with a high degree of predictive support,
3) Pre-populated content that facilitates rapid and accurate requirements definition.

Simfoni’s Vitesse™ platform incorporates all 3 core elements in a single integrated platform solution which is purpose-built for tail spend. The system automates 75% of the quotation management process, meaning that more spend can be competitively tendered, thus wringing out more savings.

Ready access to proven suppliers also speeds up the quotation cycle time thereby improving the end user experience and in turn drives adoption. And by setting up catalogs and frameworks vendor reductions of over 50% are commonplace, whilst manual transactions are reduced by more than 70 percent.

**CONCLUSION**

When the time is right to target the high-hanging fruit, the first step is for the procurement leader is to use analytics to inform a zonal spend management strategy separating strategic spend from tail-end spend. The next step is to devise a technology-enabled delivery model that blends buying desk capabilities with a purpose-built software platform which is pre-populated with content that users are guided through using AI-driven techniques.

This model is gaining a lot of ground. Procurement doesn’t want to become a bottleneck for lower-value spend when there are bigger issues to attend to, but equally does not want end users free to source from unapproved or uncompetitive vendors. The approach solves an array of risk and compliance challenges whilst generating significant savings.

Best of all these solutions work harmoniously with existing systems — organizations no longer have to be chained to full-suite providers.

**ABOUT SIMFONI**

Simfoni is a global leader in the provision of analytics and spend automation. Our platform approach combines technology, content and enablement services that work seamlessly to drive operational improvement.

Chicago, London, Dubai, Abu Dhabi, Melbourne
info@simfoni.com
Institute for Supply Management’s 2019 Salary Survey shows that, as they progress in their careers, male supply management professionals earn significantly more than women. A review of business literature on identifying methods of ensuring equity in raises and promotions raised two potential solutions — one quantitative and one qualitative.

**Quantitative solution:** Harvard Business Review’s January 2019 article “Why Companies’ Attempts to Close the Gender Pay Gap Often Fail” states that solving “a constrained optimization problem” allows companies to target “raises to women whose pay is driving the gap” based on statistical analysis while considering performance and fairness. Furthermore, the article adds that this augments the transparency and equity of the pay structure and is more monetarily effective than a blanket approach of providing 10-percent raises to all women, which can be cost prohibitive.

**Qualitative solution:** Gap Inc. has long been lauded for its gender equal-pay structure, which has been reviewed and confirmed by third-party auditors. In the University of California, Berkeley’s Haas School of Business 2017 case study Eliminating the Gender Pay Gap: Gap Inc. Leads the Way, authors Kellie A. McElhaney and Genevieve Smith wrote that Gap Inc.’s corporate culture catalyzes women to bridge the gap via “policies and practices including diminishing psychological barriers, encouraging mentorship, being family friendly, and more.” With a culture founded on “collaboration, inclusion, and close relationships,” Gap Inc. constructed “a structure for women’s advancement” and pay equity.

**Bottom line:** Harnessing the power of both solutions to create a holistic approach may prove to be the most effective method of closing the gender pay gap. Gender biases have no place in the professional world of supply management. Through a two-pronged strategy that capitalizes on the best data-driven decisions as well as shaping the sociology of our profession, this gap can disappear by 2025.

**PHRASES I OFTEN SAY AT MY JOB:**

"Stand on the shoulders of giants.”  
— Variation of a quote by Isaac Newton.

"Strive for the three-way win in negotiations and supplier relationships." This is based on a 2013 Inc. magazine article, “3 Win-Win Business Relationships,” by Aaron Aders, founder and CEO of LEIF Technologies.

“How does this impact the triple bottom line and its social, environmental and financial factors?”
**A BOOK THAT HAS IMPACTED MY CAREER:**

*The Goal: A Process of Ongoing Improvement* by Eliyahu M. Goldratt and Jeff Cox taught me the essence of Lean Six Sigma and the theory of constraints. A supply chain is only as strong as its weakest link. In supply management, a business is only profitable if its suppliers do not have resource constraints. This book shows how lean manufacturing concepts flow into the procurement profession — and that we must constantly re-evaluate and improve on our supplier relationships and contracts to augment the bottom line of the business.

---

**THE MOST HELPFUL CAREER ADVICE I’VE RECEIVED WAS:**

Develop your own board of directors — a network of peers and mentors you seek guidance from.

**THE BIGGEST PROFESSIONAL CHALLENGE I’VE HAD TO OVERCOME:**

Change management. When I started my new job last year, I was thrown into the fire of an intense resistance to change from the internal customers in one of my categories. With no category strategy to speak of, our maverick spend was off the charts. Putting discipline into the sourcing process — including negotiating a long-term agreement with a high-quality and low-cost supplier — put a target on my back and made my team wary of the supplier.

Shifting team members’ perspective to understanding that the standardized process reduces lead time, overhead and constraints — which makes their jobs easier — took many months of biweekly calls with the supplier and team to openly discuss concerns and how they are being addressed.

Over time, tensions eased as internal associates felt their voice was being heard by me and the supplier. By breaking down barriers to communication between the end user and the supplier, I helped create a mutually beneficial working relationship between the supplier and my team.

Ultimately, this reduced lead time by 20 percent and cost by 30 percent while enhancing service quality by a factor of 10 through ensuring that industry standards were followed.

**A SUPPLY CHAIN CONCERN THAT KEEPS ME UP AT NIGHT:**

How do we maintain healthy competition and strategic partnerships despite niche markets and consolidated supply bases? ISM

Matthew Charnell  
Category buyer  
W.L. Gore & Associates  
Phoenix

---

**HOW I DESCRIBE MY JOB IN ONE SENTENCE:**

I provide products and services to internal customers through negotiating contracts that augment symbiotic relationships with the supply base while focusing on lead time, cost and quality.
Anticipating change, getting creative in problem-solving and stretching intellectual boundaries can help supply management organizations succeed in today’s complex and challenging environment.

If you look into the future of your organization, chances are you envision it becoming more complex — because everything is changing at a fast pace. With the evolution in supply management and digitalization of supply chains, the ability to discover new approaches to identifying problems and generate ideas to solve them has become a significant business competency — one that requires organizations to become more responsive, agile, creative and entrepreneurial.

In the 2018 Incumbents Strike Back: Insights from the Global C-Suite Study by the IBM Institute for Business Value, a survey panel of CEOs, CFOs, chief operating officers and chief information officers reported on how they are changing their value propositions and scaling their value chains. Among the findings: Encouraging experimentation, co-creation and collaboration in bringing about change is considered an important practice. The study concluded that a strategic advantage for the organization is created through (1) a dynamic and shared vision of where the industry and/or profession is heading, (2) an open culture that fosters new ideas and rewards fast failure and (3) agile operations, including investment in employee development.
BUILDING INNOVATIVE CAPACITY AND AGILITY

Supply managers can influence those around them to think differently about their work, explore new areas for improvement and identify new opportunities by applying these innovative and entrepreneurial approaches:

Anticipate change; don’t just wait and see. In today’s competitive landscape, unlike that of a few decades ago, organizations like Amazon defy standard industry categorization and competition — and disruption can come from all directions. Therefore, it is impossible to foresee every single unique outcome of a situation.

To cope with this situation, professor Rita Gunther McGrath of Columbia Business School calls for a shift from a learning-to-plan approach to a planning-to-learn one. If you know a storm is forming, you might not know exactly where and how hard it will hit, but you can anticipate some damage. That means supply managers must improve their foresight.

However, don’t confuse foresight with forecast. Forecasting is used to estimate future sales, but the forecasting process assumes continuity of an existing business model — making the process much less useful with decisions amid the emergence of disruptive technologies or new business models. Foresight requires the ability of abstract thinking. Managers must conceptualize their business model so its basic logic can be applied to new scenarios.

Encourage problem finding, not just problem-solving. No matter the business problem, we often feel the urge to fix it as quickly as possible. Some problems are routine — and resolving them merely requires doing what worked last time. However, it’s more likely that we’ll encounter complex problems that demand creativity to solve them.

Before rushing to solve a problem, make sure you have identified the real issue by asking these questions: What does the problem remind you of? What past learning or experience can you bring to the situation? Who or what could help? Who brought the problem to you and why? What are the frustrations and conditions surrounding it?

Those with children know how they quickly learn new skills by watching others. Apply this same idea: Others may have experienced the same frustrations before, so look outside your organization — and even your industry. Try to gain a different perspective, but first make sure you build a rich network of trusted personal contacts to consult.

Identifying the real problem may take more time, but it is likely to lead to a solution that works instead of one that creates a cycle of even more serious problems.

Think like a designer. Today’s complex business environment has so many moving parts that no one can gain agility by standing alone. Think of entrepreneurs, who are excellent in building and utilizing trusted networks.

Be open to other views, knowledge and insights before you identify a problem or need. Facilitate a discussion that centers on problems and seek answers from those who have experienced them firsthand, including employees, customers and suppliers. When you attend conferences and trade shows, take the time to learn from other businesses about how they tackle and resolve problems or capitalize on opportunities.

Most people interact primarily with those in their line of work or industry. Getting outside these boundaries can lead to breakthrough ideas and solutions that we can take back to our organizations.

However, the above actions require mutual respect and trust. Supply managers should set explicit goals and share them with their network. Transparency brings mutual trust. Managers can also seek collaboration through building interdependencies in their networks. In other words, don’t build a Rolodex — build your own ecosystem.

Engage in entrepreneurial practices for innovation. According to LinkedIn, the soft skills most in demand in 2019 are creativity, persuasion, collaboration, adaptability and time management. These skills can lead to greater performance if the company environment (1) promotes the continual flow of ideas and (2) embraces change.

Provide as much information as possible to employees. Knowledge stimulates creativity, and people cannot solve problems they don’t know exist. Give employees permission to say “yes” to customers, suppliers or others they interact with, and make sure they have the resources they need to solve problems on the spot.

Encourage experimentation. Rather than relying on incentives, give meaning to employees’ work. Reward a “nice try” instead of focusing only on mistakes. Recognize people who solve problems in a different way, so others get the courage to model their behavior.

Innovative, agile companies rely on every member’s creative contributions to achieve growth and success. By adopting innovative and entrepreneurial approaches, they can succeed in today’s complex and challenging environment. ISM

Nezih Altay, Ph.D., is a professor and director of the master's in science in supply chain management program and Lisa Gundry, Ph.D., is a professor and director of the master's in science in entrepreneurship program in the Driehaus College of Business at DePaul University in Chicago.
Economic activity in the manufacturing sector contracted in August, and the overall economy grew for the 124th consecutive month, say the nation’s supply executives in the latest Manufacturing ISM® Report On Business®.

The August PMI® registered 49.1 percent. The New Orders Index registered 47.2 percent, a decrease of 3.6 percentage points from the July reading of 50.8 percent. The Production Index registered 49.5 percent, a 1.3-percentage point decrease compared to the July reading of 50.8 percent. The Employment Index registered 47.4 percent, a decrease of 4.3 percentage points from the July reading of 51.7 percent. The Supplier Deliveries Index registered 51.4 percent, a 1.9-percentage point decrease from the July reading of 53.3 percent. The Inventories Index registered 49.9 percent, an increase of 0.4 percentage point from the July reading of 49.5 percent. Comments from the panel reflect a notable decrease in business confidence. August saw the end of the PMI® expansion that spanned 35 months, with steady expansion softening over the last four months. Of the 18 manufacturing industries, nine reported growth in August, in the following order: Textile Mills; Furniture & Related Products; Food, Beverage & Tobacco Products; Wood Products; Petroleum & Coal Products; Nonmetallic Mineral Products; Machinery; Miscellaneous Manufacturing‡; and Chemical Products.

### MANUFACTURING AT A GLANCE

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*Number of months moving in current direction. Manufacturing ISM® Report On Business® data is seasonally adjusted for the New Orders, Production, Employment and Supplier Deliveries Indexes.

PMI®
Manufacturing contracted in August, as the PMI® registered 49.1 percent, a decrease of 2.1 percentage points from the July reading of 51.2 percent. This is the lowest reading since January 2016, when the index registered 48 percent. The PMI® contracted for the first time since August 2016 (when it registered 49.6 percent) and ended a 35 month expansion period in which the composite index averaged 56.5 percent.

### COMMODITIES REPORTED

**Commodities Up in Price:** Polypropylene; Scrap; and Steel — Hot Rolled*.

**Commodities Down in Price:** Aluminum (5); Aluminum Products (2); Caustic Soda; Corrugated Boxes (3); Natural Gas; Crude Oil; Pulp; Steel (2); Steel — Hot Rolled*; Steel Products* (8); and Steel — Stainless.

**Commodities in Short Supply:** Electronic Components; and Helium (2).

Note: The number of consecutive months the commodity is listed is indicated after each item. *Reported as both up and down in price.
Economic activity in the non-manufacturing sector grew in August for the 115th consecutive month, say the nation’s purchasing and supply executives in the latest Non-Manufacturing ISM® Report On Business®.

The NMI® registered 56.4 percent. The Non-Manufacturing Business Activity Index increased to 61.5 percent, 8.4 percentage points higher than the July reading of 53.1 percent, reflecting growth for the 121st consecutive month. The New Orders Index registered 60.3 percent; 6.2 percentage points higher than the reading of 54.1 percent in July. The Employment Index decreased 3.1 percentage points in August to 53.1 percent from the July reading of 56.2 percent. The non-manufacturing sector’s rate of growth rebounded after two consecutive months of cooling off. The respondents remain concerned about tariffs and geopolitical uncertainty; however, they are mostly positive about business conditions. The 16 non-manufacturing industries reporting growth in August — listed in order — are: Real Estate, Rental & Leasing; Accommodation & Food Services; Public Administration; Retail Trade; Utilities; Construction; Professional, Scientific & Technical Services; Other Services; Agriculture, Forestry, Fishing & Hunting; Transportation & Warehousing; Finance & Insurance; Health Care & Social Assistance; Arts, Entertainment & Recreation; Information; Mining; and Management of Companies & Support Services.

NON-MANUFACTURING AT A GLANCE

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*NMI® (Non-Manufacturing) @ 56.4%

In August, the NMI® registered 56.4 percent, 2.7 percentage points higher than the 53.7 percent in July. The non-manufacturing sector grew for the 115th consecutive month. A reading above 50 percent indicates the non-manufacturing sector economy is generally expanding; below 50 percent indicates the non-manufacturing sector is generally contracting.

**COMMODITIES REPORTED**

**Commodities Up in Price:** Dairy (4); Electrical Components; Medical Supplies; Office Supplies; and Steel Products*.

**Commodities Down in Price:** Diesel; Gasoline; Plastic Products; and Steel Products* (2).

**Commodities in Short Supply:** Construction Subcontractors (20); Labor (11); Labor — Construction (41); and Labor — Temporary (2).

*Indicates both up and down in price. Note: The number of consecutive months the commodity is listed is indicated after each item.
MARKETS

UNITED STATES 🇺🇸

Small businesses with 300 or fewer employees showed a slight decrease in hiring in July, according to the Small Business Employment Index (SBEI) by CBIZ, Inc., a Cleveland-based management services company. The month-over-month hiring decrease of 0.43 percent was expected, as employers typically adjust to lower demand during the summer months, says Phil Nof tsinger, executive vice president, CBIZ employee benefits. Low national unemployment might also be a factor, Nof tsinger adds, citing a tight labor market in which it’s more difficult for small businesses to hire qualified workers. “Essentially, the employable population needs to increase, or we will continue to see flat numbers for the rest of the year,” Nof tsinger says. Industries with a hiring decline included nonprofits, transportation, education services, accommodation and food services, and professional services. The information-services, insurance and construction industries were among those reporting an increase.

GERMANY 🇩🇪

The value of Germany’s listed real-estate market decreased by 7.1 percent (US$8 billion) in the second quarter of 2019, according to research by the European Public Real Estate Association (EPRA). Germany’s listed real-estate market is $104.9 billion, the largest in the region, but uncertainty over rent-control laws was a big reason its value took a hit during the quarter, says Ali Zaidi, EPRA director of research and indexes. The United Kingdom lost 4.5 percent in value ($4 billion). “The U.K. and Germany are the two most influential markets in value terms, and both are experiencing specific political conditions that have negatively impacted investor sentiment, disproportionately affecting the value of the wider European market,” Zaidi says.

EGYPT 🇪🇬

Hoping to capitalize on its location and infrastructure to become a major player in international gas trade and distribution, Egypt will begin importing natural gas from Israel by the end of the year, Reuters news agency reports. The US$15-billion agreement, which will bring natural gas from two Israeli offshore fields into the Egyptian gas grid, is being hailed as the most significant deal between Egypt and Israel since the nations concluded their peace treaty in March 1979. More deals are likely in the Levant Basin region of the Mediterranean Sea, where several big gas fields have been discovered in the last 10 years. In January, representatives from eastern Mediterranean countries met in Cairo and agreed to work toward creating a regional gas market to cut infrastructure costs and offer competitive prices.

Hong Kong Protests Bring Geopolitical-Risk Concerns

BY DAN ZEIGER

The images of protestors filling terminals at Hong Kong International Airport (HKIA) were frequent on news broadcasts in August. The latest expression of discontent in the city with mainland China brought airport passenger operations to a standstill, with departures canceled and check-ins delayed over a two-day period.

Supply managers took notice: HKIA is the world’s busiest cargo airport, handling 5.1 million metric tons of packages and mail in 2018. It’s estimated that 40 percent of cargo transported to and from HKIA consists of passenger-flight belly freight. And considering that, as of press time, tensions between many of Hong Kong’s residents and China were still raging, how one of the biggest logistics hubs in the world could be affected — and for how long — became one of procurement’s biggest geopolitical-risk concerns.

“It’s similar to the impact from a natural disaster, but you might not know how long the (disruption) is going to be,” says Shay Scott, Ph.D., MBA, executive director of the Global Supply Chain Institute at the University of Tennessee at Knoxville, Tennessee, where he is also a faculty member. “With a typhoon, you’ve got a disruption of a day or two, and then things usually start to recover. (In Hong Kong), you’ve got the uncertainty of not really knowing whether you’re going to have that reliable transit link or not. That can be quite disruptive.”

CHINA’S IMPOSING PRESENCE

The most recent round of protests resulted from a bill that would allow extradition to China. The bill was withdrawn, but still remaining is years-long sentiment that China’s growing political and cultural influence has chipped away at the “one country, two
Hong Kong Protests Bring Geopolitical-Risk Concerns

Systems’ principle under which Hong Kong — a former colony of the United Kingdom returned to Chinese sovereignty in 1997 — operates as a semi-autonomous state.

Escalating tensions between Hong Kong and China could have a significant impact on global supply chains, especially considering Beijing’s trade turbulence with the U.S. Cargo on smaller vessels from such countries as Vietnam and Cambodia is often transshipped at larger-capacity ports like Hong Kong. “The situation could become gasoline being poured on the fire from the trade war,” Scott says.

Options for Supply Managers

To determine how to proceed in Hong Kong, Scott says, procurement organizations can rely on two strategic tenets in times of instability:

• Intelligence. Large companies will have resources in Hong Kong, but many organizations will seek intelligence from their suppliers, asking such questions as: Are protests impacting road traffic and port activity? “This is where choosing a provider that’s a balance of cost, quality and service really pays off, as opposed to choosing a provider that is purely based upon cost,” Scott says.

• Agility. Where can cargo be rerouted? Does the supply chain need to be shortened? Should production be moved closer to the customer base?

Scott notes that supply chain configuration decisions can’t be made instantly in the wake of a situation like the unrest in Hong Kong. However, procurement organizations should have already evaluated their global operations as the U.S.-China tariff tit-for-tat escalated.

“The trade war or geopolitical instability like we’re seeing in Hong Kong,” he says, “has forced supply managers to think about how to better manage risk and complexity.” ISM

Dan Zeiger is Senior Copy Editor/Writer for Inside Supply Management®

Information in this report was gathered from the following sources:

CBIZ, Inc. — cbiz.com • European Public Real Estate Association — epra.com • IHS Markit — ihsmarkit.com • Reuters — reuters.com •
The Straits Times — straitstimes.com

China

Sales of light vehicles (LVs) — cars, SUVs and light trucks — fell nearly 10 percent year-over-year in China, the 12th consecutive month of sales declines, according to research by IHS Markit, the London-based global business data information and services provider. LV sales in China from July 2018 to June totaled 25.4 million, down more than 10 percent from the prior 12-month period. (There were 17.1 million LV sales in the U.S. during the same period, a decrease of 1.5 percent from the previous 12 months.) “One of the major axioms of the global automobile industry, that China will continue to be a growth engine of world auto sales, is no longer the case,” says Daniel Yergin, IHS Markit vice chairman. “Whether declining LV sales in China are a blip in a multidecade upward trajectory or the beginning of a ‘new normal’ of slower — and at times negative — growth is the key question.”

Singapore

A fourth consecutive month of double-digit decreases in exports combined with the slowest second-quarter economic growth in a decade has dashed hopes of a recovery by the end of the year in Singapore. The Straits Times, a Singapore newspaper, reported that non-oil domestic exports slumped 17.3 percent year-over-year, with shipments in the key electronics sector sinking by nearly a third. Singapore’s second-quarter gross domestic product growth was almost flat, at 0.1 percent. “It’s that familiar sinking feeling again,” Irvin Seah, a senior economist at Singapore-based DBS Bank, told The Straits Times. He added: “(We see further decline, and the pace of decline has also accelerated. What we can hope for in a best-case scenario is for the numbers to start to stabilize towards the fourth quarter.”
Today's data scientists must be more than mathematicians. They must provide supply management teams and companies with...
Beyond code

Practitioners — they need to understand business needs to
with a competitive advantage. By Sue Doerfler
Technology is shaping the roles of the future, says Karin Visser, senior director, intellectual property development at global management consulting firm Korn Ferry in Amsterdam, Netherlands. “In a lot of organizations, jobs are tied to working on data, data analysis, predictions, artificial intelligence (AI), machine learning and the like,” she says. “We see it in all kinds of businesses. Everything an organization collects — from its clients, suppliers or logistics — can be looked at and learned from. And more business can be made from it.”

In its 2018 Future of Jobs Survey, the World Economic Forum states that through 2022, there will be increasing demand for data analysts and scientists — across all geographies as well as in numerous sectors — due to the accelerating need for specialist roles pertaining to understanding and leveraging emerging technologies. Additionally, more data is available than ever before — and it’s projected to exponentially grow, says Michael Prokle, Ph.D., lecturer at Northeastern University’s College of Professional Studies in Boston and senior data scientist at Fortune Brands Global Plumbing Group. “With more data available, companies are asking what they can do with it,” he says. “For companies, data is the differentiator.”

But having data is not enough. It needs to be analyzed and translated to address business needs. And for organizations to optimize and become more transparent, agile and efficient — and to distinguish themselves from the competition — they must use data to create predictive modeling and new processes. That’s where the data scientist comes in.

“Data scientists are able to take what we humans use as cognitive, everyday capabilities and translate that into the data elements needed to create more cognitive, predictive AI-type solutions,” says Marco Romano, procurement data and analytics officer at IBM in Portsmouth, England.

The Right Skills

The data-science role definition has evolved over the past five to 10 years. Many data-science professionals have a heavy quantitative-math background, strong coding skills and are armed with computer-science degrees. But as the supply management profession evolves, quantitative and coding skills may not be enough for the role. Just as it’s imperative that organizations have the right data to analyze, it’s becoming increasingly crucial to have the “right” data scientists — those with some degree of procurement and business acumen.

“Existing open-sourced technologies are significantly decreasing the effort needed on coding,” Romano says. “So, data scientists are becoming more knowledgeable of the business, and there’s more of a balance between business and technology. The data-scientist role will continue to morph — and become more business aware, procurement aware and supply chain aware, and less focused on coding.”
He continues: “It’s one thing to build a solution because it’s technically sound. It’s another to build a solution that adds value to the practitioner who is doing the job. Those two aren’t always the same thing — but they should be.”

Understanding the business and speaking the same language is increasingly important for those in the role, Prokle says: “Successful data science professionals really need to understand the strategy as well as the needs of stakeholders and act as a translator. For example, when addressing pressing business needs or when innovating new data-science solutions, the data scientist needs to be able to translate the business need into a model, validate data-driven insights and translate to the stakeholder by expressing model assumptions and sensitivity.” Issues arise when the person doesn’t have the business skills to convey effectively what business leaders are looking for, he says.

Having such skills is a plus, but the need for business and procurement knowledge may depend on the level of the role, Visser says: “At the higher level, you really need people who can connect the business questions with all the data and data analytics. The team working on it doesn’t need to have the business insights in that kind of detail. If managers can explain what they are looking for and how they want to do it, those data scientists can do that work.”

**Understanding Value**

Increasingly, companies are emphasizing data science through the creation of executive-level data roles, Visser says: “What you see more and more is a chief data officer or chief digital officer.” C-suite boards, she adds, “see this as a very important development, and that it needs to get a lot of focus.”

Still, a chief data role in procurement is rare, Romano says, adding that he is aware of only one organization besides IBM that has a procurement-specific data officer. “But procurement organizations are starting to realize that there is a need for somebody who transforms the business of procurement in terms of data, data strategy and data governance, and develops a technology roadmap that includes analytics and cognitive,” he says. “Once you start to work on foundational data, master data management and the technology roadmap, you create the environment where a data scientist can begin to add significant value — because the role can help augment and accelerate that process significantly.”

However, the role of data scientist doesn’t make sense for all procurement organizations — at least not yet. Less-mature organizations that have no data strategy have no need for the role, Romano says: “If you don’t have the data, the aspiration, the vision and the leadership guidance that says this is the direction for the business, there is no need for a data scientist.”

“**The data-scientist role will continue to morph — and become more business aware, procurement aware and supply chain aware, and less focused on coding.**” — MARCO ROMANO IBM

Some companies might not understand the value the role can provide a supply chain organization, Prokle says. “Executives have a difficult situation where they need to understand enough about the latest technology advancements to get a broad knowledge to evaluate the opportunities to impact their organization,” he says. “Secondly, they must prioritize between competing opportunities, all of which have different associated risk profiles, investment and resource needs as well as projected timelines. ‘Where do I start in my organization? How do I create the most value quickly?’ That isn’t easy.”

Not all companies have supply chain data science on their radar yet — or they are just starting to explore it, Prokle says: “However, the most innovative companies and those that have the supply chain at the core of their business are leading supply chain data-science excellence.”

And those who hire the right talent — data scientists who understand the business needs and how effective supply management can fulfill them — can distinguish themselves from the competition.

*Sue Doerfler is Senior Writer for Inside Supply Management®.*
IBM’s procurement data scientists help identify the “art of the possible” not only with existing data, but through the infusion of new data.

“The advantage to having data scientists within our organization is that they develop a better understanding of how procurement and supply chains operate — and even more of a nuance about how we as a procurement organization operate and what the needs of the practitioner are day to day,” says Marco Romano, the company’s procurement data and analytics officer, based in Portsmouth, England. “They understand what really adds value for buyers.”

Also, the procurement data scientists can share best practices pertaining to data science, data modeling and architectures with others in the IBM data-science community, he says: “I view it as getting the best of both worlds: They are in procurement — they learn procurement and get to work with our practitioners — but at the same time, they have a broader community to draw on.”

Collaborative Approach
Tasked with designing and building the function’s data and data models, IBM’s procurement data scientists often work with the company’s chief information officer (CIO) and other developers within the IBM community to create solutions, Romano says: “There’s a partnership between the procurement developers and data scientists and the developers from our CIO office, who work together to build these new solutions.”

He adds, “It’s a unique setup. Many organizations have the CIO do the development work, since they don’t have developers in procurement. We find that having developers in procurement working with the CIO gives us the best results. We really are involved with our data scientists in the development of new capabilities for procurement.”

Using agile design principles, the collaborative team — consisting of clients, data scientists, the CIO and procurement developers — works together to identify practitioner pain areas and needs, create a development roadmap and execute the solutions.

For example, a buyer might want a specific pain point addressed. “The data scientists are able to solicit more information just by prodding, pushing, asking the right questions and understanding what the ask is,” Romano says. “Then, they ask, ‘Have you thought about this?’ So, it’s introducing the art of the possible. When you look around the room, you start to see the light bulbs going off. And the next minute, you’re going down a path that they hadn’t thought of. I attribute that to design thinking as well as having those data scientists in the room, which helps articulate the art of the possible.”

One collaborative solution is IBM’s Pricing IQ, a price-prediction tool that the company’s buyers use to determine the competitive marketplace price of products and services. Another is a cognitive contracting solution, now in pilot stage, that uses artificial-intelligence (AI), Watson-based technology to evaluate, compare and author contracts. The technology can (1) analyze a variety of unstructured documents, (2) understand important elements within those documents and (3) augment buyers’ ability to execute contracting activity quickly and accurately, Romano says. “We want our buyers focused on higher-value work, not redlining contracts,” he says. “Our AI tools do that for us, which allows our buyers to really act as consultants for the business.”

Augmenting Practitioners
The collaborative approach, Romano says, enables AI-based solutions that supplement the procurement practitioners with capabilities that include:

• Gaining insights that otherwise would be difficult because the data is too complex or disparate
• Researching industry trends, giving practitioners time to do more strategic work.

“The idea is to augment the buyers by providing them richer insights and limiting the time they need to get to a decision point by having the system propose what the solution could and should be,” Romano says. “Or at least present the buyer with alternatives, so the buyer can spend his or her time consulting, talking to clients and working with suppliers on value-add activities — and not doing research, because it’s already been done for them.”

Having data scientists within the procurement function who understand the business enables the “art of the possible” through collaboratively developed solutions that augment practitioners and improve the company’s competitiveness. — Sue Doerfler
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Vietnam RISES after the Trade-War Alarm

By Dan Zeiger

Long considered a sleeping giant for sourcing and manufacturing, the Southeast Asian country is courting companies hit with rising costs and heavy tariffs in China — but how much business is it truly open for?

As founder of a firm that helps companies source and manufacture in Asia, Jim Kennemer in recent years has taken myriad calls from executives about doing business in Vietnam, many out of curiosity. Last year, however, the call he received from a packaging company executive was out of urgent necessity.

The trade turbulence had just started to heat up between the U.S. and China, where the packaging company — which does more than US$20 million in business annually — had always had most of its manufacturing operations. “(The company) started in China because most start there,” says Kennemer, managing director of Cosmo Sourcing, which helps find suppliers and factories for businesses ranging from startups to Fortune 500 companies. “Management wasn’t really keen on leaving China. But when the trade war happened, (the executive) came to me and said the tariffs were hitting hard.”
Kennemer fielded quotes for the company, which learned it could reduce costs by about 5 to 10 percent by moving manufacturing to Vietnam — in addition to the savings from avoiding tariffs in China. What’s more, the Vietnamese factories used the same German-made machinery, meaning no change in materials, specifications or processes. “This was something the company probably should have looked at before the trade war started,” Kennemer says.

The packaging company’s happy ending is the kind of result many organizations and supply managers hope to find in Vietnam. After years of rising labor and production costs in China — bottom-line pressures that have been worsened by tariffs — the bordering country of Vietnam, with its 97 million residents and one of the world’s fastest-growing economies, is being increasingly considered an alternative. “(The manufacturing) community has accepted that the tariffs are going to be in place for quite some time,” says Timothy R. Fiore, CPSM, C.P.M., Chair of the Institute for Supply Management® Manufacturing Business Survey Committee. “They’re figuring out ways to deal with it. We’ve had a year and a half of this with China, and people are moving product out of China to avoid the trade ramifications that now appear to be a long-term issue.”

Vietnam’s viability as a long-term answer is a work in progress. For years, the country has been considered a sourcing and manufacturing
power in waiting, but the emergence was designed to happen over time, not seemingly overnight due to an exodus from China. As a result, Vietnam has embraced foreign direct investment and other market reforms to help fund desperately needed infrastructure in the Communist state. Its young workforce, however, must be groomed for more high-tech manufacturing.

But this new status for Vietnam — which exported $25 billion of goods to America in the first five months of this year, a 36-percent increase from the same period in 2018 — is no mirage, says Kamala Raman, senior director analyst at Gartner, the Stamford, Connecticut-based global business research and advisory firm. “Vietnam has been seeing a significant increase in local manufacturing and trade for the last 10 years,” she says. “So, this recent activity only adds to that trend, and one can confidently say this isn’t happening just because of the immediacy of a trade issue.”

Furniture and Textiles Power

The rise of Vietnam as a supply destination has not come out of the blue. The country was described as a “rising dragon” in Southeast Asia as far back as 2010, and such companies as Adidas, Nike, Canon and Samsung made pre-trade war headlines for moving operations there. While Samsung, the South Korean smartphone giant, employs more than 150,000 workers in Vietnam and has the resources to set up production there, the country’s manufacturing calling card has been in furniture and textiles, not technology.

Vietnam exported $25 billion of goods to America in the first five months of this year.

Stamford-based Lovesac Co., which specializes in modular sectionals and beanbag chairs, also is giving Vietnam more furniture manufacturing business. The company plans to move all production out of China by the end of 2020, with about 40 percent moving to Vietnam as part of an overall effort to diversify its manufacturing base, founder and CEO Shawn Nelson says. “We were looking to manufacture outside of China, and this process began more than a year before the tariffs situation,” he says. “After looking in Central Europe, Southeast Asia, Africa and Mexico, we determined that Vietnam was the logical choice. Labor will be cheaper. We’re a little apprehensive about all the flow that’s going there and what that will do to the labor markets, but the labor dynamics are a good fit for us.”

Nelson elaborates: “Sectional furniture requires a more specialized setup and labor. But once that’s in place, it’s very replicable. So, Vietnamese factories love our business because it doesn’t change. We’re very consistent in production and can achieve great economies of scale.”

The country’s high-tech manufacturing capabilities are lagging, due to a less-mature workforce and that Vietnamese producers must import such raw materials as steel, smartphone hardware and chemicals. But Kennemer, who is based in Vietnam for five months each year, says the workforce — half of which is age 40 or younger — pays attention to details. “In terms of quality, I’ve been impressed,” he says. “The workers are meticulous, whether it’s in large-scale manufacturing or getting the small things right, like stitching. That shows their level of focus and the high-tech potential.”

Infrastructure Challenges

When Kennemer evaluates factories in Vietnam, the hired drivers he uses often think they’ve made a wrong turn, since it seems impossible for a manufacturing facility to be located on a dirt road. That typifies the sourcing environment in Vietnam, where transporting products is a bigger headache than manufacturing them. The country ranked 39th in the 2018 Logistics Performance Index by The World Bank, and its infrastructure ranked 47th.
Roads are regularly bottlenecked, railway-port connections are insufficient, and the country’s largest cargo airports in Ho Chi Minh City and Hanoi have Level-3 (the highest) congestion classification from the International Air Transportation Association. In May, plans were approved for construction of an international airport in the southern Vietnam province of Long Thanh.

Perhaps the most pressing infrastructure issue is port capacity: “Vietnam has a lot of ports, which is rare for that part of the world, but it needs more deepwater-port (capacity),” Nelson says. “There’s catching up to be done there.” Vietnam’s 320 ports (44 of them seaports) handled 11.5 million 20-foot equivalent units (TEUs) of container cargo volume in 2018, according to the Vietnam Maritime Corporation. However, the World Economic Forum ranks Vietnam 80th among 139 nations in quality of port infrastructure.

Last year, the Hai Phong International Container Terminal deepwater port opened in northern Vietnam, with the capacity to handle vessels as large at 14,000 TEUs, and Vietnam’s government is encouraging foreign investment to develop other ports. Cai Mep International Terminal in southern Vietnam has even more capacity, as it can accommodate vessels of 18,000 TEUs. However, many shippers prefer to use the smaller Cat Lai Port, which is closer to the nation’s commercial hub of Ho Chi Minh City and other manufacturing districts.

Smaller vessels account for approximately 80 percent of container shipments to and from the country, cargo that is more likely to require transshipment at larger-capacity ports in Singapore and Hong Kong — which companies considering Vietnam must account for, Raman says. “That international container traffic must go through Hong Kong or Singapore adds a layer of complexity if you’re looking to move from China,” she says. “There will be increased freight costs and three or four more days of lead time because products have to make another stop before they head to the U.S.”

**Staying Ahead of the Curve**

Asked for his best advice for organizations interested in moving production to Vietnam, Nelson says, “Have a tree that you planted there years ago.”

Amid reports of maxed-out manufacturing capacity in Vietnam and factories turning down orders, some experts have warned that this window of operations-shifting opportunity is closing, especially for smaller companies that cannot provide their own resources and lack negotiating power. “For complex manufacturing, you need factory labor and engineering capability,” Raman says. “You need a supplier ecosystem. All of that takes time to build, and until then, Vietnam has only a fraction of the capabilities that can be found in China.”

Kennemer says there is still manufacturing capacity to be found, at least through the end of this year. “Highest-quality factories that do work for companies like Nike are at capacity, but there are smaller factories where that’s not an issue,” he says. “I’ve run into some facilities that are not taking new business until next year, but I’ve still been able to find capacity for clients.”

Perhaps a larger issue is the specter that Vietnam’s new sourcing and manufacturing momentum could be halted by a single tweet. President Donald Trump has wagged a rhetorical finger at the country, saying in June that “Vietnam takes advantage of us even worse than China.” As of press time, no trade deal between the U.S. and Vietnam was in the works. But aside from duties of 400 percent on steel levied in June, the Trump administration has not announced significant new tariffs on Vietnam.

Slapping duties on Vietnamese products could hurt America’s leverage with China, Kennemer notes. In July, Vietnam and the European Union finalized a trade agreement that will phase out nearly all tariffs between the two parties, which could lessen the pain of duties levied by the U.S. However, Vietnam has aimed to not cross Washington, and began clamping down earlier this year on transshipments — exports from China and elsewhere that briefly stopped in Vietnam and were relabeled as Vietnamese to avoid American tariffs.

Nelson says that Trump’s trade policy can be “unpredictable,” which is one reason Lovesac is exploring additional countries for production. However, he’s confident that Vietnam is a true trade-war winner, making it an ideal country in which to establish a manufacturing base.

“It’s never too late (to explore Vietnam), but I think you want to stay ahead of where the puck is going,” Nelson says. “A part of me wishes we were further ahead in this process, but we were lucky to get a lot done before the tariffs hit. You always want to keep asking what’s next, but the smart supply chain manager should be operating in Vietnam right now.”

Dan Zeiger is Senior Copy Editor/Writer for Inside Supply Management®.

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Preparing Students to Enter the Workforce

By Sue Doerfler
To stay on top of trends and needs in supply management, universities offer courses in such topics as data analytics and work with company- and industry-partner organizations to teach skills to be used after graduation.
North Carolina State University’s (NCSU) Poole College of Management recently made what it considers a long-overdue change: It added more analytics content to its undergraduate program, based on input from its Supply Chain Resource Cooperative’s board of advisers.

“Employers, particularly those who hire our undergraduate students, have been encouraging us for a few years now to introduce more analytics content,” says Don Warsing, associate professor of operations and supply chain management at NCSU in Raleigh, North Carolina. “They’ve encouraged us to emphasize Microsoft Excel skills and increase students’ comfort level with using the program by using it as a tool to analyze and present data in a way that allows managers to make better decisions.”

So, Warsing and his team revised a course that’s required for operations- and supply chain management-concentration undergraduate students. First offered during the 2018-19 academic year, the revamped course is built around five case studies that students analyze using Excel.

“It was well received by the students,” Warsing says. “I’ve already had a few students who are now in jobs contact me to say they’re using the tools they learned about in the classroom, including some of the case scenarios we analyzed and the methods that were introduced to them in the course.”

To prepare the professionals of tomorrow so they can help organizations stay competitive in an evolving supply management profession, universities are increasingly incorporating trends and needs like data analytics and soft skills into their curricula. They are working with supply chain professionals to craft the courses, bringing in guest speakers to share experiences and hiring professors of practice — current or former supply managers — to teach courses. They’re developing certificate programs to enable students to pursue specialized areas of study and establishing supply management resource cooperatives and centers for supply management excellence where students, thought leaders and professionals can connect.

“I don’t think we’d be a good college of business if we weren’t listening to the marketplace,” says Warsing. “That’s really what drives this — the employers that are seeking our students, the feedback we’re getting from them, the kinds of jobs they’re offering and where our students are seeing success.”

Imparting Knowledge

Universities are in the business of creating and disseminating knowledge. “As professors, we are trained researchers,” says Thomas Choi, Ph.D., Harold E. Fearon chair of purchasing management at the W. P. Carey School of Business at Arizona State University in Tempe, Arizona. The university — which offers bachelor’s and master’s degrees in supply chain management and global logistics management, and a doctoral program — has formed partnerships with companies to advise on curriculum and research, as well as connect with students and faculty. “We teach our students theories and tools that are proven over time,” Choi says. “More than anything else, we need to teach them how to think and learn and make decisions.”

One area in which that is happening is data, which is becoming a component of many college programs, especially given the growing need for people with skills to extract decision support out of data. Rob Handfield, Ph.D., Bank of America Distinguished university professor and executive director of NCSU’s Supply Chain Resource Cooperative, says that part of that skill is understanding what makes good data and how to extract it.

“A lot of analytics work involves manipulation of the data in a format where you can use it: cleansing the data, making sure that it’s organized and that the taxonomies are correct,” he says. “So, working with data sets in general is an important part of what students learn through the practicum classes we offer with our corporate partners. We try to set the students up with projects where they are dealing with large data sets, including spend data, supplier quality data, or inventory data. They quickly realize that not all data is ‘good’ data. An important part of working with analytics is recognizing that the quality of the data is key to the quality of the insights derived.”

Practical Learning

One type of course helps students put what they learn into action: the practicum, which is part of the graduate as well as undergraduate program at NCSU, which has a business analytics honors track as part of the undergraduate program. At the graduate level, the university also offers a certificate in applied data analytics and data management in addition to an MBA with a concentration in supply chain management.
In a practicum course, students spend a semester on a project sponsored by a company partner. “Most of those projects involve working with a real data set that is messy; it doesn’t always present itself the way you thought it would,” Warsing says. “The students learn how to dig through the data to get to the kinds of answers they are looking for. Having a well-defined tool kit, where you know what kinds of software programs to apply and what kind of tools — like Excel or some of the advanced tools covered in our analytics tracks — can help them get to what they’re looking for in the data. That’s an important skill.”

Having that skill — and not having to learn it on the job — can be a big benefit for new graduates. “We hear back from students, ‘I learned so much in this project. Not only did I get the job because I could talk about the project on the interview, but once I started, I could start the job running,’” Handfield says. “There are definitely advantages to that practical-learning aspect in undergraduate courses. But we are also quick to point out the theoretical components of supply chain that come in handy when it comes time to analyzing the cleansed data.”

The theory-based courses are important so students understand how to go about applying practical learning. For example, the revised course doesn’t use real data sets — because it’s a theory-based course — but it has a realistic focus, Warsing notes: “We want students to understand the key principles we are covering in class, and we’re using admittedly synthetic case data in order to emphasize those principles. Since this data is purposefully not very messy, students will understand what they’re looking for, the kind of decision they’re trying to make, and how to get there through this data. The hope is that later on, students will then be able to tie this theory to practice, either in a practicum course or future job.”

Since the courses mirror real-life experiences, students learn to recognize if they have the right data — or if they need additional data or information so that the right decisions can be made, Warsing says: “They learn that they may need to inform their organizations: ‘If you really want to make that decision well, there is another data item we don’t have at this point in time, but that you’re going to have to extract from within your business. If you did have that data, however, here is the decision you could make.’”

Communication Is Key

The ability to communicate with coworkers and managers is an important skill also being addressed in university supply chain management departments. For example, in NCSU’s redesigned course, students learn how to write a memo communicating data analysis and the resulting decision to management as part of the deliverable. “I structure it so it is only 250 words long — it has to be concise,” notes Warsing. Several times a semester, students are required to present their conclusions in written form. This teaches them how to communicate with stakeholders and others within the organization — and what management requires: the summary and the decision, but not necessarily how they arrived at them, he says.

“As our students get more technical, communicating to a less-technical audience becomes an important skill,” Warsing says. “So, a student may have done detailed mathematics and analysis, but if you have the right communications skills, you don’t have to walk your audience through the mathematical details to get them.
to understand the results. Being able to distill your analysis into a well-communicated result is also an important skill. That comes through practice.

“Our undergrads struggle with that. They want to go through the details and show you everything they did. Management doesn’t want to see the details. Managers want to be confident that you know what you’re talking about — and that you did the analysis — but ultimately, they want to know the decision elements and next steps.”

**Upskilling Opportunities**

In addition to courses that reflect current and future business needs, another trend is flexible programs, namely those for an online graduate degree. Such programs give students who can’t attend classes on-site — whether they live elsewhere or are working and want to upskill or change professions — the flexibility of completing the courses at times of their convenience. Some even enable students to work at their own pace.

In 2012, the University of Wisconsin-Platteville began offering classes in its Master of Science in integrated supply chain management online program, says David Heimerdinger, program coordinator and senior lecturer. Initially, the focus was to attract students from the Midwest, but thanks to partnerships with some University of California schools and their certificate programs, the online program is attracting students from a variety of locations, backgrounds and fields of study.

“We have students coming from all areas, including manufacturing and health care,” Heimerdinger says. “Many are students in the field trying to advance. Others are trying to get into supply chain areas and have degrees in other related or unrelated subjects.” Skills are the core of the program. The integrated approach includes the university’s industrial engineering and industrial studies departments and business school. Such an approach enables students to learn all aspects of business — beyond the curricula of business courses — which Heimerdinger says sets the degree apart and gives the university a niche.

“The focus, depending on the course, is from a different perspective,” he says. “Some of our courses are focused on business perspectives, others on industrial studies or the production side. And some offer an engineering perspective. For example, students may have a business degree but not an engineering background — but the courses they are taking are going to give them insight as to what an engineer’s role is in supply chain management.”

An integrated program is ideal for students who are already in supply chain roles, many of whom, Heimerdinger notes, “have been pushed into the roles through job changes or promotions. Once they’ve moved into the roles, they decide they want to further themselves and get the knowledge base that goes along with it. They’re using our program to catch up and get the big picture, so they understand it all.”

Most of the program’s students are looking to learn skills they haven’t gained from their undergraduate degree or working environment, Heimerdinger says: “We allow businesses to grow their own people. We provide the opportunity to learn the trade a bit faster.”

**Future Thinking**

Through certificate programs, company partnerships, courses tailored to trends and needs like data analytics, and other measures, universities today are training students to enter the workforce with skills they can use.

“If nothing else, we’re preparing students to critically think about the supply chain — about what new things that have come up as well as what’s new in technology,” Heimerdinger notes. “If nothing else, we’re creating better critical thinkers.”

Such an ability helps supply managers make better decisions, he says: “If you know what’s happened in the past, you know what is supposed to happen.” When a new challenge occurs, they can use critical-thinking skills to determine how to fix it, he says.

Choi concurs, saying, “What we do is teach our students appreciation, inclination and ability to think, reason and communicate with their coworkers. Then, after they graduate, they can begin to learn relevant things in their workplace.”

— **THOMAS CHOI, Ph.D.**

Arizona State University

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Choi concurs, saying, “What we do is teach our students appreciation, inclination and ability to think, reason and communicate with their coworkers. Then, after they graduate, they can begin to learn relevant things in their workplace. … Many more new things will come up — and they won’t be afraid to try them out.”

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Sue Doerfler is Senior Writer for Inside Supply Management®.
Apple Inc. has multiple positions available for the following job opportunities in Cupertino, CA: Refer to Req# & mail resume to Apple Inc., ATTN: D.W., 1 Infinite Loop 104-1GM, Cupertino, CA 95014:

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2. Strategic Sourcing Coordinator (REQ#7323396)
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   1. Strategic Sourcing Lead (REQ#4148396)
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   2. Supply Demand Planner (Req#SDP62019)
      Forecast demand, inventory, and multi-channel sell through.

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1. Supply Demand Planner (REQ#3968396)
   Forecast demand, inventory, & multi-channel sell through.
   Apple is an EOE/AA m/f/disability/vets.
Managing Third-Party Risk Demands Tailor-Made Solutions

BY MARY SIEGFRIED

Managing third-party risk has always been a concern for supply management professionals, but with today’s complex supply chains, vocal consumers and a greater reliance on suppliers for parts and services, the challenge is even greater. Third-party risk management must delve into such issues as financial stability, corporate social responsibility (CSR) and brand reputation. Assessing, managing, measuring and monitoring supplier risk are complicated tasks that might require changing corporate culture or updating technology tools.

A recent Critical Issue Exchange (CIE) event hosted by CAPS Research, the Tempe, Arizona-based program jointly sponsored by Institute for Supply Management® and Arizona State University, examined third-party risk management, discussing challenges faced by supply managers as well as best practices in managing and measuring risk. A CAPS Research report, Measuring and Managing Risks in the Supply Chain, was discussed, and five companies delivered presentations about their third-party risk management programs.

THE CHANGING FACE OF RISK
One reason supplier risk management is critical today is that purchased parts and services play such a large role in the supply chain, according to Tobias Schoenherr, Ph.D.,

Since threats can vary by company, there is no single approach to protect supply chains, and a procurement department’s mitigation objectives can collide with organizational goals.
Hoagland-Metzler endowed professor of purchasing and supply management at Michigan State University in East Lansing, Michigan, Schoenherr, one of the report’s authors, said that about 85 percent of a car consists of parts from suppliers.

The evolving role of consumers and social media is another reason he believes risk management is important. “Consumers are more vocal than ever before,” Schoenherr said. “If your company has an issue, it could be on social media before you’re even aware of it.”

Some of the key objectives of a third-party risk management program include:

- Identifying relevant risk for different categories
- Measuring risk and leveraging data analytics
- Helping supply management and the overall business learn from past risk challenges
- Communicating risk to internal business partners

**KEY RISK CHALLENGES**

The risk-related topics CIE participants identified as top supply chain concerns include:

**Supplier health.** Workforce problems that plague suppliers, such as capacity, labor shortages, overtime pay and high worker turnover, can directly impact the buying company. That’s why supply management professionals said they need to be aware of such risks and work with suppliers on addressing the issues.

**Internal struggles.** Breaking “old-school thinking” and building internal awareness of supplier relationships are key steps in risk management. Participants said supply management organizations should “build a brand” around their ability to assess and manage risk for business partners. This often involves a change in corporate culture, which needs endorsement by upper management. That’s because risk-management measures aren’t always completely aligned with goals and initiatives across the business.

**Financial risk.** This took on added importance after the Great Recession, and it continues to be a focal point of risk-management programs. The process of understanding, managing and monitoring the financial risk of a supplier involves (1) working closely with commodity and buying teams and (2) educating business partners about including financial risk in the sourcing decision. Obtaining thorough, updated supplier financial information continues to be a risk-management struggle.

**Data-management tools.** Data is key to a solid risk-management program, but supply management leaders say they struggle “pulling and putting all that data together to tell a story.” Finding the right tools to gather, assess and store needed third-party information, then analyzing the data to measure and monitor risk are ongoing challenges.

**RISK-MANAGEMENT BEST PRACTICES**

There is no one-size-fits-all solution to managing third-party risk, and solutions often must fit the company’s industry, the organization’s risk tolerance and any federal/state regulations that guide the business. The risks to assess, measure and monitor can vary among companies. Some of the major risk categories identified in the CAPS Research study and by participants include supplier risk performance, CSR, compliance, geopolitical, supply market, technology and macro-economic.

A global financial company presented its third-party risk program, noting that over the years, the program has become a “one-stop shop for risk management.” The supply management organization created a risk-management framework with pre- and post-contract phases that include five stages, from due diligence to ongoing oversight.

The program also includes an independent, internal subject-matter experts (SME) group. The SMEs have expertise in such areas as compliance and information security. The group’s independence is critical, as it recognizes the importance of objectivity and that there can be competing priorities within the company.

A large automobile manufacturing company shared information about its supplier financial stability group, a key part of the company’s risk-mitigation program. The group is outside of the purchasing department and includes staff from accounting and purchasing. It focuses on financial-risk monitoring and distressed supplier support. The group, the presenter explained, has successfully assessed and monitored suppliers’ financial health because it (1) has a history of good supplier relationships, (2) uses financial data only for risk-management purposes and (3) does not share data with the purchasing department.

Other companies detailed their efforts to better manage third-party risk, discussing how their organizations (1) focused on segmenting the supply base to better understand various risks suppliers could present, (2) created risk profiles on suppliers to get a more integrated view of risk, and (3) designed a center of excellence that investigates, audits and monitors suppliers.

It’s clear that supply management organizations are at different stages in their third-party risk management journey. However, supply chain leaders understand the importance of measuring and monitoring risk, and they are continually searching for best practices to protect their supply chains — and their companies — from constantly evolving threats.

Mary Siegfried is a freelance writer based in Chandler, Arizona. CAPS Research is the premier source for supply management research, metrics and events. For more information, visit www.capsresearch.org.
How to Be an Influencer for Ethical Decision-Making

BY HELEN ECKMANN, ED.D.

Today’s global supply chains and workforces operate within diverse cultures and perspectives, making our businesses stronger both operationally and financially. However, these diverse perspectives and cultures can present business situations in which ethical decision-making is not clear cut, resulting in unintended consequences.

Many organizations believe that following a strict code of ethics is the obvious path. But it’s not always so simple. In fact, some ethical decisions are extremely complex. Individuals see ethics, rightly and wrongly, through their own cultures, personal lenses and filters. These filters are developed through life’s journey, where each experience or encounter offers a new perspective or personal-lens adjustment.

While employees and suppliers have unique journeys and stories to tell, there may be instances in which ethical decisions made through individual lenses are not clearly aligned with corporate expectations. In this situation, supply managers must effectively communicate corporate values, principles and behavioral expectations to address these areas, so there will be no question regarding (1) expected behaviors and (2) consequences of deviation from the corporate values and principles.

IMPACTS ON ETHICS

Supply chains and ethical decision-making are impacted by...
many relevant and sometimes difficult issues like protection of information, cybersecurity, human trafficking and corruption. During ethical decision-making training, the question always asked is, “What’s the right answer?” Consider these situations:

**Cybersecurity.** The cyber threat to the security of company and personal information is often considered the No. 1 risk to business today. Controls and policies put in place to protect information systems require users to stop, think, and act. The effectiveness of cybersecurity programs is often dependent on individual adherence to such policies as encryption of data and removal of attachments, restriction of internet use and the like.

Supply management professionals are often faced with time and business objectives that put pressure on them to act quickly and to expedite processes. However, ignoring a company policy in deference to expediency or urgency can result in catastrophic damage to the business. How does this become an ethics issue? Knowingly disregarding company policy — for example, to encrypt documents or protect data — is, by itself, an ethics issue.

**Human trafficking.** Most major companies have anti-human trafficking policies that put restrictions on sourcing and require high levels of oversight. When trying to meet tough target-pricing objectives, does your company source from low-cost — and low-compliance — countries identified by the U.S. State Department’s Trafficking In Persons (TIP) report as Tier 3?

**Corruption.** What is considered corruption in the supply base can vary by location. For example, what your company considers legal and acceptable business practices can be at odds with cultural, local or regional practices. Bribes are an obvious ethical consideration; however, financial and business practices differ among cultures and must be considered.

**CHAMPIONING ETHICS**

Successful supply management professionals build strong supplier and customer relationships that are representative of the company’s values. Supplier business-conduct standards help communicate corporate values and expectations; personal conduct either reinforces or countermands these value statements.

When faced with ethical decisions, it’s essential to (1) take the necessary time for consideration, (2) seek varying perspectives, (3) consider not only the ethical act but how it’s perceived, (4) conduct difficult discussions in a positive way and (5) remain in a position to correct problems.

Don’t rush decisions. Taking time to contemplate complex ethical decisions before acting will lead to better outcomes than being forced into bad decisions because of real or perceived time constraints. Asking for a “strategic pause” to think can be difficult, but it is sometimes necessary.

The idiom “seeing the forest for the trees” can apply to ethical decision-making. Through our individual filters, we get so close to the apparent facts that we lose sight of obvious options. Seeking input from those with differing perspectives can help clear our filters and see the situation with a more informed lens.

It’s been said that perceptions become reality — and that ignoring how people perceive you can be to your detriment. While this may sound unfair, in a world with a 24/7 news cycle, we must always consider how our actions can be perceived by our company’s leadership, employees, peers and the press. For example, we all have a right to state our opinions or protest an injustice; however, we need to be aware that there might be unintended consequences if the perceptions of our actions conflict with the company’s values.

Our ability to have difficult discussions in a positive way is often impeded by polarized social, cultural and political views. Listening to and understanding opposing views and perspectives opens our mind for clearer ethical decision-making. Combative banter and insistence on making specific viewpoints known typically leads to ineffective communication and can result in making uninformed or poor choices. At the same time, not discussing hard issues can lead to misunderstanding and frustration — culminating in acceptance of unethical behavior through our acquiescence. As supply chain professionals, we must be prepared to have sensitive ethical conversations so clarity can be reached.

**INSISTING ON ETHICS**

Many unethical decisions are made because individuals or corporations felt there was no other choice. Staying in a position where you are able and willing to correct problems can be hard when circumstances seem out of your control. Getting diverse perspectives, thinking about the options and having a transparent conversation will remove filters and present alternative choices.

In business, unethical decisions can damage personal and company brands. Thus, it is essential for supply management professionals to clearly, concisely and regularly communicate ethical expectations. ISM

Helen Eckmann, Ed.D., is associate professor of business administration in the School of Business and Professional Studies and chair of the governance and appeals committee at Brandman University in Irvine, California.
INTERMODAL

U.S. railroads originated 1,023,394 carloads in June, a 20.7-percent decrease from May, according to the Association of American Railroads (AAR). Traffic for the first six months of the year was 6,552,218 carloads, down 2.9 percent from the same period in 2018.

AIR

WorldACD Market Data’s air cargo yield was US$1.77 in June, down 1 cent from May and a 6.3-percent decrease from the same month the previous year. Total chargeable weight was down 8.9 percent year-over-year and down 6.8 percent compared to May.

OCEAN

The Drewry Global Container Port Throughput Index was 132.8 in May, a 2.2-percent increase from the previous month. The index was up 1.1 percent from May 2018. Five of the six regions had increases, led by North America (up 4 percent) and Asia (2.5 percent).
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Logistics grade: Powered by one of the busiest ports in the world, the Netherlands is a top-tier logistics locale. The country ranked sixth in The World Bank’s Logistics Performance Index in 2018, but its aggregated ranking — which is derived using results from 2012, ‘14, 16 and ‘18 — is second, behind Germany.

Infrastructure: The Port of Rotterdam — the biggest in Europe — had a record-setting first six months of 2019. The port’s authority reported throughput of 240.7 million tons from January through June, a 3.4-percent increase over the same period the previous year.

The customs house: While the Rotterdam port’s traffic has boosted its revenue to fund physical and digital infrastructure, its most critical lifeline could be limited for a second straight year. The Rhine River, which winds 800 miles through the Netherlands, Germany and Switzerland, could be impassable to large barges due to drought-induced low water levels. Last year’s disruption delayed materials shipments from Germany, slowing that country’s economy.

E-Commerce, Trade Among Dynamics Driving Digitized Aviation Freight

Rising consumer delivery-speed expectations have already put pressure on freight forwarders and air-freight services to invest in technology. Escalating trade turbulence and industry consolidation will increase the urgency, leading to a big revenue gains for air freight technology services, according to ABI Research, an Oyster Bay, New York-based global tech market advisory firm.

Revenues for air freight technology services are expected to exceed US$1.7 billion by 2024, with a 17-percent compound annual growth rate. Slot reservations, goods tracking, online quoting and digital invoicing are among the business processes that will be improved by digitizing aviation freight services, ABI Research states.

“Beyond analytics and platforms, the international air freight industry will need to redefine the notion of delivery. Emerging opportunities include cold chain enhancements, near real-time visibility and 30-minute deliveries via unmanned aircraft systems,” says Susan Beardslee, ABI Research’s principal analyst for intelligent transportation and e-freight. “Competitors who do not embrace the evolution and lag behind early adopters will have to face inefficiencies, decreased profits, their partners and their customers.”

Consecutive quarters of gains by Boeing Co. before the Chicago-based aviation giant reported its biggest quarterly loss on record — US$2.94 billion in the second quarter of 2019. A 35-percent drop in sales (to $15.8 billion) was attributed primarily to deliveries of the 737 Max jetliner being on hold as the company waits for U.S. regulators to approve the aircraft’s return to service. The Max has been grounded since March following two fatal crashes.
Is there someone you’d like to recognize within your organization? An individual who exemplifies innovation, leadership and a sense of community? Nominate a rising star or a tenured pro who has made a difference in supply management.

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