

SUPPLY MANAGEMENT®

VOL.28 NO.1 | JANUARY/FEBRUARY 2017

The Big Unknown

page 16



THE PROFESSION EVOLVES 22
 Supply management solidifies its place as a strategic partner

IMPROVING THE PROCESS 26
 Review manufacturing and business processes to cut costs

WHERE THE WATER IS 34
 Understand your company's water-related impacts

Make Technology Work For You. Find out how at ISM Tech 2017.

March 22-24, 2017 // Washington, D.C.



Don't drown in tech decisions.

Learn from the best at ISM Tech 2017

It's no secret that innovations in technology are continuing to bring relentless advancements in capabilities and functionality. Supply management professionals have a choice: Make technology work for you, or tag along and try to keep up. With business leaders expected to spend US\$3.49 trillion* on software and IT services in 2017, there's too much on the line to go it alone. Hear from leaders. Connect with peers. Ask the right questions. Get your plan in place.

Register now at ismtech.org

There are still opportunities to sponsor and exhibit at ISM Tech 2017. Contact ISM Sales for details at ISMSalesDept@instituteforsupplymanagement.org or call 800.888.6276

*Source: "Gartner sees 2.9 percent growth in IT spending in 2017," computerworld.com, October 19, 2016

ISM[™]
INSTITUTE FOR SUPPLY MANAGEMENT

CONTENTS



FEATURES

COVER STORY

16

The Big Unknown

In the year to come, supply management professionals will face uncertainties that range from changing economic arenas to geopolitical threats.

By Sue Doerfler

22

The Evolution of Supply Management

The profession continues to expand its profile, becoming a true strategic partner to the executive suite and a solid career track for young professionals.

By Lisa Arnseth

26

Improving the Process

By reviewing manufacturing and business processes, organizations can discover cost-reduction opportunities.

By Sue Doerfler

ECONOMICS

12

ISM® Manufacturing Report On Business®

The latest PMI® and manufacturing indexes.

13

ISM® Non-Manufacturing Report On Business®

The latest NMI® and non-manufacturing indicators.

14

Markets

International news items and indicators, plus a market trends report.

ISM PUBLISHING STAFF

Thomas W. Derry
Chief Executive Officer

EDITORIAL STAFF

John Yuva
Managing Editor
jyuva@instituteforsupplymanagement.org

Lisa Arnseth
Publications Coordinator

Sue Doerfler
Publications Coordinator

Dan Zeiger
Publications Coordinator

PRODUCTION & DESIGN

James Cain
Design Strategist

ADVERTISING

Kelly Rich
National Event Sales
krich@instituteforsupplymanagement.org

Suzette Tarantini
National Event Sales
starantini@instituteforsupplymanagement.org

Inside Supply Management® (ISSN #1538-733X) is published 9 times a year (January/February, March, April, May, June/July, August, September, October, November/December) by Institute for Supply Management,® 2055 E. Centennial Circle, Tempe, Arizona 85284. Telephone: 480/752-6276, extension 3071 (Editorial), extension 3043 (Advertising). Copyright ©2017 by the Institute for Supply Management®. All rights reserved. ISM® affiliates may reprint articles in their newsletters and magazines with credit given to Inside Supply Management® and author, unless noted otherwise within article. Requests for reprints by nonaffiliates must be approved by ISM®. Please send requests to the address above. Preferred Periodicals Postage paid at Tempe, Arizona, and additional mailing offices. POSTMASTER: Send address changes to: Inside Supply Management®, 2055 E. Centennial Circle, Tempe, Arizona 85284 or email to custsvc@instituteforsupplymanagement.org. Publications Mail Agreement Number 40048267. Send return addresses to: Canadian Institute for Supply Management™, c/o Global Prime Office Network, 130 King St. W Ste. 1800, Toronto, ON, M5X 1E3. Inside Supply Management® is the official publication of the Institute. ISM® members receive the publication as part of their membership fee which represents \$24 of their total fee. This fee is non-deductible from membership dues. Subscriptions to university and public libraries are \$48 annually. Single copies are available for \$15. The authors of the articles published in Inside Supply Management® are solely responsible for their accuracy and content. Opinions expressed in the articles and materials published herein do not reflect the opinions of ISM® unless it is expressly stated that such opinions have been formally adopted by ISM®. The publication of an advertisement by Publisher is not an endorsement of the advertiser nor the products or services advertised. Publisher assumes no responsibility for claims or statements made in an advertisement.



Institute for Supply Management®

2055 E. Centennial Circle

Tempe, AZ 85284

Phone: 800.888.6276

www.instituteforsupplymanagement.org

**COLUMNS**

4

Spotlight

Time for Change
By John Yuva

5

Voices

Supply Management
Certifications to Evolve
By Thomas W. Derry

8

Perspectives

How to Continuously Improve
in Procurement
By Amanda Prochaska

10

Competencies

Building a Sound Development
Plan For Your Career
By Seth Steinberg

32

Research

Time is Ripe for Cognitive
Procurement
By Roberta J. Jennings

34

Insights

Water Use in the Supply Chain
By Heather Rippman

DEPARTMENTS

6

JIT

News, notes and quotes —
just when you need them

38

Point2Point

Focus on supply chain
logistics

40

NewsLine

ISM® member and volunteer
news

SOCIAL MEDIA

Follow *Inside Supply
Management®* on
social media:



@ISM_Magazine



<http://magazine.ism.ws/blog/>

Nail Your Target with an ISM Seminar



Give Your Career the Attention it Deserves with ISM Seminars.

Legal Foundations of Supply Management: The Basics You Need to Succeed (Legal Week)

A broad understanding of legal concepts that impact supply management is a must for today's professionals. From ethics to e-commerce, legal issues play a key role in the supply chain. This seminar will help practitioners understand the laws that affect their work with suppliers and customers. It will examine various aspects of contract law, international contracts and electronic communications. When you complete this seminar, you will have a solid legal foundation to better protect yourself and your organization.

March 6-8, 2017 Atlanta, GA

Contracting: What all the T's & C's Mean (Legal Week)

When it comes to contracting, understanding terms and conditions is essential. Without this key skill, supply management professionals could be placing their organizations in jeopardy. This popular and essential seminar thoroughly addresses many of the standard terms found in most contracts. It also examines the impact of electronic purchasing. Discussions delve into key terminology, clauses that can be used in drawing up agreements, and examples of contract language. The seminar even offers a hand-on approach because participants are encouraged to bring their own contracts, clauses, and/or purchase orders for review.

March 9-10, 2017 Atlanta, GA

Administering Contracts: From Award to Completion

Sharpen your contract administration skills from start to finish. Organizations today demand top-notch skills through every step of the contract process, and this seminar is designed to meet that challenge. Your expert instructor will take you through the steps of contract administration from the time the award is made through acceptance and final payment. Don't miss this opportunity to ensure contracting success.

March 15-17, 2017 Chicago, IL

Fundamentals of Purchasing: The Building Blocks of World-Class Professionalism

Begin with the fundamentals and build a foundation for world-class professionalism. This seminar starts with key procurement and supply management concepts and moves to leading-edge supply chain issues affecting worldwide organizations. Through a variety of interactive methods, participants will explore innovative techniques and effective tools to become valuable assets to their organizations. This foundational seminar will give you the confidence to effectively perform your job.

March 27-29, 2017 Las Vegas, NV

For a complete list of ISM Seminars or to register, visit
www.ismseminars.org





BY JOHN YUVA

SPOTLIGHT

TIME FOR CHANGE

In my nearly 18 years with Institute for Supply Management® (all within the Publications Department), the magazine has evolved to meet the growing needs of the profession and ISM's members.

We've grown from *Purchasing Today*® in the 1990s to *Inside Supply Management*® in 2002. Since then, the content and design have shifted several times to reflect current trends. However, this is the most dramatic transformation we've undertaken with the magazine.

I know you're only on page 4 of the January/February issue, but hopefully you've already noticed this is not last year's magazine. In fact, the new look and feel is the culmination of many months of brainstorming, debating, compromising and finally celebrating the issue that you hold in your hands.

An exercise such as this requires collaboration and communication, of course, but also contracting, change management, project management and supplier relationship management (in our case,

working with an external graphic designer).

What does all this mean to you? It means you'll find the same high-quality content that *Inside Supply Management*® is known for, as well as a new reader experience. It also means that you can depend on your member publication evolving with the times, ensuring our commitment to readers now and in the future.

So, take in the changes and let us know what you think. Your opinion matters to us. **ISM**

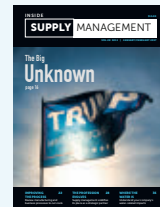
Director of Publications



March 2006



January/February 2014



January/February 2017

ISM® EDITORIAL ADVISORY BOARD

Jami Bliss, CPSM
Teva Pharmaceuticals

Joe Cavinato, Ph.D.
Thunderbird School of
Global Management

Ric Freeman, C.P.M.
Reichhold

Jerry Miller, CPSM, CPSD
Capital One Services

Tom Mulherin
JDA Software Group

Brian Schulties, C.P.M.
Prysmian Group

Joel Sutherland
University of San Diego

Meghan Truchan, CPSM
Bain Capital

Ron Wilson, CPSM, C.P.M.
Wilbur Curtis Company

Dave Wood
Coca-Cola

BY THOMAS W. DERRY

VOICES



SUPPLY MANAGEMENT CERTIFICATIONS TO EVOLVE

A massive data collection and analysis initiative is underway at Institute for Supply Management®, one that will likely impact the entire supply management profession and how you do your job in the future.

Called the ISM® Job Task Analysis (JTA), the two-part study is a comprehensive, rigorous and quantitative assessment of how we do what we do every day in supply management and in supplier diversity.

This data will represent the most comprehensive, authoritative and global examination of the profession. For the supply management JTA, we've received 721,673 data fields collected from 2,600 practitioners in more than 50 countries.

The data will teach us how our profession has evolved, and ultimately, the JTA will result in updated exam specifications for ISM's credentials: Certified Professional in Supply Management® (CPSM®) and Certified Professional in Supplier Diversity® (CPSD™).

There are other programs that claim to offer "certification" in our field, but they aren't built on the scientific foundation that ISM uses in its program, including psychometrically validating every exam question.

Furthermore, ISM has certified competency in our field for more than 40 years, decades longer than similar organizations.

Some so-called certifications are merely certificate programs — often nothing more than a certificate of attendance. Other programs waive examination requirements for certain groups. Some are based on an academic or theoretical understanding of the field.

What separates the CPSM and CPSD certifications from others is they are grounded in rigorous, quantitative analysis and testing for mastery of knowledge, skills and abilities used by practitioners. Every professional with an ISM credential has passed the necessary exams required to earn it. ISM is also the only organization that offers both preparation and testing in English, Simplified Chinese, Spanish, Korean and Japanese.

Thus, when it comes to professional certification, an ancient Latin expression applies: *Caveat emptor* — "Let the buyer beware." **ISM**

Thomas W. Derry
CEO
Institute for Supply Management®

ISM® BOARD OF DIRECTORS

Chair
Hans Melotte
Starbucks Corporation

Kimberly A. Brown

George Chang
GE Aviation

Norbert Dean, CPSM
SeaWorld Parks and
Entertainment

Thomas W. Derry
ISM

Todd Fister
Owens Corning

Beverly Gaskin, CPSM
General Motors Company

Nik Hiremath

Christopher J. Ledger
Palo Alto Networks

Ann Oka

Kristopher Pinnow
B/E Aerospace

Chae-Ung Um, CPSM, C.P.M.
LG Electronics

7 PRINCIPLES OF POWERFUL PROCUREMENT

Best-in-class organizations are maximizing procurement by tapping technology and big data to streamline the source-to-pay process, according to the *SAP Ariba Benchmark Survey*.

The survey analyzed US\$350 billion in spend in more than 3,500 categories for more than 200 companies connected to the Ariba network. The results indicate that the highest-performing companies manage source-to-pay as an end-to-end process rather than a series of tasks, have an integrated platform to manage spend and use technology to fuel collaboration.

"Through their willingness to think outside the box and (use) a technology-enabled, data-driven approach to procurement, top-performing procurement organizations are not only managing more spend (while) achieving greater savings and efficiencies," SAP Ariba's report states, "they are delivering real business transformation."

As analysts examined the survey data, seven characteristics emerged that separate best-in-class companies from the rest. SAP Ariba considers those the secrets of high-performing procurement organizations:

- 1) Playing a strategic role and managing more spend than average performers
- 2) Having an integrated platform for managing all procurement spend and experiencing higher sourcing savings
- 3) Managing procure-to-pay from end-to-end with a single point of accountability, resulting in higher PO and invoice efficiency
- 4) Driving more spend toward contracts and e-catalogs
- 5) Analyzing transaction data to optimize payments and lower costs
- 6) Providing an intuitive, self-service environment in which purchasing can be done in an easy and compliant manner, driving down requisition-to-order cycle times
- 7) Automating such tasks as PO and invoice processing to reduce operating costs.



“Don't ever permit the pressure to exceed the pleasure.”

Joe Maddon
 Manager, World Series champion Chicago Cubs



A MOMENT IN TIME

Q: I don't have enough time to do things like securing multiple bids, carrying out value analysis, or conducting negotiations. Can you offer some suggestions?

A: My suggestion is to get out of purchasing. Basically, items such as securing bids, initiating value analysis and negotiations are part of your job as a purchasing professional. If you are not doing these things, you are primarily an order placer. If you are serious about being a purchasing professional, you have to recognize that these items are the very key to doing a quality job. — "Professional Development: Purchasing and Materials Management Focus," *Pacific Purchaser*, February 1985



THE API ECONOMY GOES MAINSTREAM

A technology once limited to software professionals, application programming interfaces (APIs) are being used by such industries as banking and finance, travel, real estate, clothing and entertainment to deliver services to consumers. The importance of what has been labeled the

API Economy “cannot be overstated,” a PointSource white paper states.

The Impact of Legacy Systems on Digital Transformation devotes a section to APIs, which allow software components to communicate with customers. While social media helped light the API fuse, the Internet of Things (IoT) is charging the explosion, as previously siloed and inaccessible data sources are now being profitably leveraged.

The white paper cites Marvel Comics, which has an API allowing developers to obtain information — including cover art, UPC codes, titles and release dates — on any comic published. This enables Marvel to promote its brand through third parties that use the system. APIs also enable businesses using platform as a service (PaaS) to more easily augment data from several different providers.

Robert Medrano, executive vice president of SOA Software, is quoted in the white paper: “(APIs) are the new must-have for business, representing the future of customer and community engagement with far broader implications than traditional web-based business models.”

CYBER THREATS CONTINUE TO HAUNT MANUFACTURERS

About half of manufacturing executives lack confidence that their companies’ assets are protected from cyber threats, according to a report by Deloitte & Touche LLP and the Manufacturers Alliance for Productivity and Innovation (MAPI).

The *Cyber Risk in Advanced Manufacturing* data indicates justified concern, as 40 percent of companies were affected by cyber incidents in the previous 12 months, and of those, 38 percent suffered damages of more than US\$1 million.

Among the report’s other findings:

- Intellectual property is the top data protection concern, chosen by 36 percent of respondents. Consumer data (32 percent) and accidental disclosure of personal information (29 percent) follow.
- Respondents say that most incidents (46 percent) in the last 12 months originated from inside the organization, while 39 percent came from external sources and 15 percent from suppliers and business partners.

COMMODITIES

SHINGLES



Blanket coverage: As long as there are roofs, shingles will likely serve as their primary protection. A typical shingle is 12-18 inches wide and 36-40 inches long, but thousands placed together make up the weather-resisting armor for homes and buildings.

Where do they come from? The most prevalent shingles are made from asphalt and cover 80 percent of homes in the U.S. Roof rolls — the long strips of asphalt-coated felt that top many buildings — have been manufactured since 1893. Other shingle materials

include aluminum and wood sawed from red cedar or pine.

What are they used for? Roofs and roads. Ground shingles, combined with gravel and emulsion, can be used to patch holes in or completely pave roads and driveways.

And that’s a fact: Shingles are lean and green. The industry has touted the recyclability of asphalt shingles. In October, electric car manufacturer Tesla announced it would begin production of solar shingles (made from glass) in 2017. **ISM**



AMANDA PROCHASKA

PERSPECTIVES

PRACTITIONER Q&A



WHAT ARE SOME BEST PRACTICES OR TIPS FOR EMBEDDING CONTINUOUS IMPROVEMENT INTO PROCUREMENT?

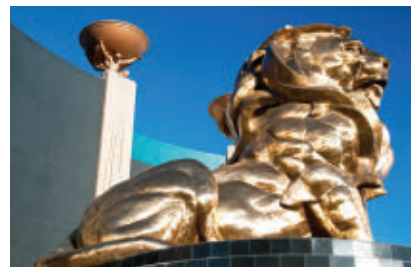
Over my career, I've had the amazing opportunity to work with companies or on programs that were transformative. Through that experience, I have found several common themes for successfully embedding change into organizations:

Get comfortable with questioning everything. If you want to successfully embed continuous improvement into procurement, everyone (and especially leadership) should get comfortable with being uncomfortable. Question everything, even what you think is a truth about your day-to-day duties. Leaders who ask questions lead by example, and should encourage and reward others who do the same.

Process first; eliminate, then automate. You cannot improve your processes until you understand exactly how they are implemented. You might have process flows that are documented, but are they reflecting what is happening? If not, take note of what is occurring today, then determine how to eliminate extra steps or work. Then automate or enable that process

through technology. But don't be tempted to skip to the "silver bullet" (technology) without first examining how effective your processes are. If not, technology will only achieve the same mediocre results, but faster.

Have a governing model. Once you have improved a process, determine who is accountable for ensuring that it does not revert to its previous state while further improving the process. Identify an individual or a group of team members to vet new ideas impacting that process, track KPIs and mitigate risks that might impact the overall success.



THREE PHRASES I FIND MYSELF SAYING ALMOST EVERY DAY AT MY JOB:

"Why are we doing it that way?"

"What is the risk if we stop doing that?"

One of my favorite Lean tools is the 5 Whys. Asking a very simple "why" question about how we are working can lead to transformative thought processes and action to change.

A BOOK THAT HAS MADE AN IMPACT ON MY CAREER:

Three books in the Freakonomics series — *Freakonomics*, *Super Freakonomics* and *Think Like a Freak* — by Steven D. Levitt and Stephen J. Dubner teach that asking the right questions and thinking critically can lead to revolutionary results and solve the world's largest problems. These books have had a huge impact on my career because they challenged me to think outside the norm and ask questions that no one else is willing to ask — all with the intent of changing for the better. They also taught me that you can take what some might think is boring (like economics) and make it entertaining through storytelling and rich examples, which has helped with my change management practices and presentation skills.

THE MOST HELPFUL CAREER ADVICE I'VE RECEIVED WAS:

My dad always told me, "If it was easy, it would be done already." Those words have helped me gain perspective during development of new programs or processes. Making things simple is not easy work. It requires careful understanding of true requirements, selling/promoting the new way we are going to work and building strong teams who can implement things flawlessly.

A SUPPLY CHAIN CONCERN THAT KEEPS ME UP AT NIGHT:

My team is currently tackling several transformative programs while handling multiple conflicting priorities and resource constraints. I am concerned that we will not execute to the level we should because of these factors. One of the most important project management tasks a team can do is to assess risk early and often — and then develop and implement creative mitigation plans. Even though we are moving quickly, we cannot skip this or

any other step in the project planning and management processes.

THE BIGGEST PROFESSIONAL CHALLENGE I'VE HAD TO OVERCOME:

In early 2015, just after I signed a contract to buy a new house, my employer announced it was going to merge with another large consumer packaged goods company. After a few months, it was apparent that the other company planned to bring in a new culture, change operating models dramatically and downsize the corporate workforce significantly. It was the most stressful year of my career. Looking back, I'm grateful for the relationships I have across the industry and country that helped me move past that time. My professional relationships opened many doors to new possibilities, which led to me finding my current dream job. **ISM**

Amanda Prochaska
Vice president, procurement PMO
MGM Resorts International
Las Vegas



WHEN PEOPLE ASK WHAT I DO FOR A LIVING, HERE'S HOW I DESCRIBE MY JOB IN ONE SENTENCE:

My team helps the company receive the best overall value from the suppliers we use every day for the goods and services we need to operate a world-class entertainment company.

BUILDING A SOUND DEVELOPMENT PLAN FOR YOUR CAREER

BY SETH STEINBERG

ISM Mastery Model®

Core Competency: **Business Acumen**

Take charge of your career advancement by using these eight strategies to succeed in today's complex global economy.

There is a new paradigm in career management: You alone are in charge. Unless you're one of the few people lucky enough to participate in a coveted management training program or have a sponsor to help you advance throughout your career, it is critical that you take control of your own career development.

The supply management profession is undergoing a massive talent shift: Today's organizations face the challenge of keeping pace with demand for qualified supply chain talent. The reasons for this "war for talent" are multifaceted; among them are an increasingly complex and interconnected global economy, breakthroughs in disruptive technologies and big data.

Numerous paths can take you to the top of the supply management ladder. However, you need a vision — and you need to create a development plan that's tailored specifically to help get you there.

AN 8-PART DEVELOPMENT PLAN

A personal development plan can have many components, but these eight elements are critical:

1) Start with yourself. A personal development plan can't be "personal" if it's not about you. One way to discover your

core strengths (“signatures”) is to revisit the classic book *What Color is your Parachute?* by Dick Bolles, which contains exercises to help you work through this phase.

You also can gain insight about yourself through an in-depth assessment program or an evaluation conducted by a search firm or by your company. Depending on the assessment, you will learn about your individual strengths and personality traits.

2) Do a “gap analysis” on yourself.

The adage “I’m a generalist and can successfully take on anything that comes my way” no longer works in today’s supply management landscape. Instead, you need to envision the type of job you want and determine the skills you’ll need to get there.

For example, if your goal is to be a director of procurement for a manufacturing company but your sourcing experience is limited to indirect, find opportunities to gain more exposure to direct material categories. Understand that you may have to move laterally to move up. A lateral move might provide an opportunity to gain experience and strengthen core competencies required for the role you desire.

By sticking to your plan, you will be less susceptible to jumping at the “next best thing” that comes along.

3) Build your own board of advisors. Build proactive relationships with mentors and trusted advisors at your current and previous companies, as well as with retained search professionals that focus on your market/sector and functional area of expertise. Many emerging professionals neglect to do this.

4) Focus on continuous improvement. Supply management is a dynamic, ever-changing profession, so your skills need to stay fresh. Obtain certification from Institute for Supply Management® (ISM®) as a Certified Professional in Supply Management® (CPSM®). Familiarize yourself with the ISM Mastery Model®. Take advantage of your company’s tuition reimbursement program. Professional associations such as ISM, conferences and alumni-hosted events also are great vehicles for learning and sharing ideas and industrial know-how.

5) Reject conventional lenses of what makes a job “bigger.”

When creating your development plan, focus on the role you will perform, not the size of the company, business unit or staff, or the reporting structure. Concentrate on that role’s opportunity for impact, level of challenge and visibility as ways to make a job feel “bigger.”

BY STICKING TO
YOUR PLAN, YOU
WILL BE LESS
SUSCEPTIBLE TO
JUMPING AT THE
“NEXT BEST THING”
THAT COMES
ALONG.

6) Know your competition. Like an athlete watching film to prepare for an opponent, know what you’re going up against. Benchmarking can be a powerful exercise, so study the high performance of a peer, subordinate or superior. Also, visit websites like Indeed.com or LinkedIn.com, where there are hundreds of job descriptions for roles like yours.

7) Make a timeline and put it in writing.

A study on goal setting by Gail Matthews, Ph.D., a psychology professor at Dominican University in San Rafael, California, found that people are 42 percent more likely to achieve their goals if they just write them down. Share your development plan with a mentor or close confidant to help hold you accountable. Set milestones over the coming weeks and months to track and build upon your progress.

8) Evaluate your progress. Don’t expect a tool or app to solve your problems or analyze your progress. Instead, use what you know to create a baseline for progress. For example, if you are a Lean Six Sigma guru, you will already be familiar with the

DMAIC (Define, Measure, Analyze, Improve and Control) framework.

Like with any investment, you want to see a return for your time and effort. Seeing a return means having metrics and a baseline for progress.

BET ON YOURSELF

By having a vision and creating a personal development plan that includes these eight factors, you can maximize your value to your organization.

To achieve your goals, you need to stick to your plan and bet on yourself. Take a leap of faith that you will be successful. Remember that you must take charge of your career; no one else is going to do it for you. **ISM**

Seth Steinberg is a senior associate at Korn Ferry in New York, a global people and organizational advisory firm.

Economic activity in the manufacturing sector expanded in December, and the overall economy grew for the 91st consecutive month, say the nation's supply executives in the latest Manufacturing ISM® *Report On Business*®.

The December PMI® registered 54.7 percent. The New Orders Index registered 60.2 percent, an increase of 7.2 percentage points from the November reading of 53 percent. The Production Index registered 60.3 percent, 4.3 percentage points higher than the November reading of 56 percent. The Employment Index registered 53.1 percent, an increase of 0.8 percentage point from the November reading of 52.3 percent. Inventories of raw materials registered 47 percent, a decrease of 2 percentage points from the November reading of 49 percent. The Prices Index registered 65.5 percent in December,

an increase of 11 percentage points from the November reading of 54.5 percent. The PMI®, New Orders, Production and Employment Indexes all registered new highs for the year 2016, and the forward-looking comments from the panel are largely positive. Of the 18 manufacturing industries, 11 are reporting

PMI® @ 54.7%

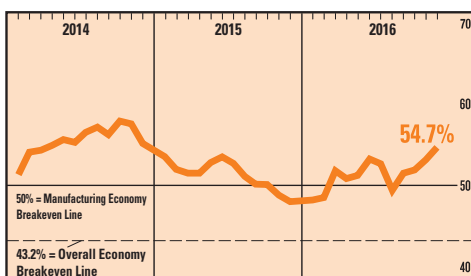
growth in December in the following order: Petroleum & Coal Products; Primary Metals; Miscellaneous Manufacturing‡; Food, Beverage & Tobacco Products; Apparel, Leather & Allied Products; Paper Products; Machinery; Electrical Equipment, Appliances & Components; Computer & Electronic Products; Fabricated Metal Products; and Chemical Products.

‡Miscellaneous Manufacturing (products such as medical equipment and supplies, jewelry, sporting goods, toys and office supplies).

MANUFACTURING AT A GLANCE

Index	Dec Index	Nov Index	% Point Change	Direction	Rate of Change	Trend* (months)
PMI®	54.7	53.2	+1.5	Growing	Faster	4
New Orders	60.2	53.0	+7.2	Growing	Faster	4
Production	60.3	56.0	+4.3	Growing	Faster	4
Employment	53.1	52.3	+0.8	Growing	Faster	3
Supplier Deliveries	52.9	55.7	-2.8	Slowing	Slower	8
Inventories	47.0	49.0	-2.0	Contracting	Faster	18
Customers' Inventories	49.0	49.0	0.0	Too Low	Same	3
Prices	65.5	54.5	+11.0	Increasing	Faster	10
Backlog of Orders	49.0	49.0	0.0	Contracting	Same	6
New Export Orders	56.0	52.0	+4.0	Growing	Faster	10
Imports	50.5	50.5	0.0	Growing	Same	3
OVERALL ECONOMY				Growing	Faster	91
Manufacturing Sector				Growing	Faster	4

*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 expanded in December, as the PMI® registered 54.7 percent, an increase of 1.5 percentage points from the November reading of 53.2 percent, indicating growth in manufacturing for the fourth consecutive month and the highest reading of the year. A reading above 50 percent indicates that the manufacturing economy is generally expanding; below 50 percent indicates that it is generally contracting. In addition, if the PMI® for December (54.7 percent) is annualized, it corresponds to a 3.6 percent increase in real GDP annually.

COMMODITIES REPORTED

Commodities Up in Price: Aluminum (2); Brass; #1 Bundle Scrap; #1 Busheling Scrap; Copper (2); Corrugate (3); Corrugated Boxes (2); Methanol (3); Natural Gas; Nickel; Petroleum Fuels; Scrap Steel (2); Stainless Steel (9); Steel (12); Steel – Carbon Sheet; Steel – Cold Rolled (2); Steel – Hot Rolled; and Titanium Dioxide.

Commodities Down in Price: Ethylene; HDPE Resin; and Plastic Resins (2).

Commodities in Short Supply: Electronic Components.

Note: The number of consecutive months the commodity is listed is indicated after each item.

Economic activity in the non-manufacturing sector grew in December for the 83rd consecutive month, say the nation's purchasing and supply executives in the latest Non-Manufacturing ISM® Report On Business®.

The NMI® equaled its 12-month high by registering 57.2 percent in December, matching the November figure. The Non-Manufacturing Business Activity Index decreased to 61.4 percent, 0.3 percentage point lower than the November reading of 61.7 percent, reflecting growth for the 89th consecutive month, at a slightly slower rate in December. The New Orders Index registered 61.6 percent, 4.6 percentage points higher than the reading of 57 percent in November. The Employment Index decreased 4.4 percentage points in December to 53.8 percent from the November reading of 58.2 percent. The non-manufacturing sector closed out the

year strong, maintaining its rate of month-over-month growth. Respondents' comments are mostly positive about business conditions and the overall economy. The 12 non-manufacturing industries reporting growth in December — listed in order — are: Mining; Retail Trade; Finance & Insurance; Information; Arts, Entertainment & Recreation; Construction; Other Services*†; Health Care & Social Assistance; Professional, Scientific & Technical Services; Utilities; Transportation & Warehousing; and Accommodation & Food Services.

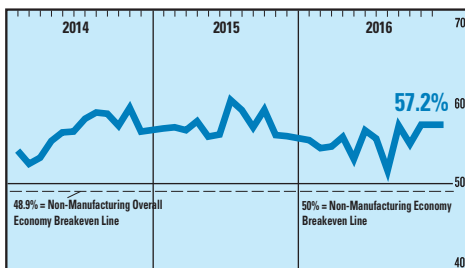
NMI® @ 57.2%

*† Other Services (services such as Equipment & Machinery Repairing; Promoting or Administering Religious Activities; Grantmaking; Advocacy; and Providing Dry-Cleaning & Laundry Services, Personal Care Services, Death Care Services, Pet Care Services, Photofinishing Services, Temporary Parking Services and Dating Services).

NON-MANUFACTURING AT A GLANCE

Index	Dec Index	Nov Index	% Point Change	Direction	Rate of Change	Trend* (months)
NMI®	57.2	57.2	0.0	Growing	Same	83
Business Activity	61.4	61.7	-0.3	Growing	Slower	89
New Orders	61.6	57.0	+4.6	Growing	Faster	89
Employment	53.8	58.2	-4.4	Growing	Slower	7
Supplier Deliveries	52.0	52.0	0.0	Slowing	Same	12
Inventories	52.0	51.5	+0.5	Growing	Faster	4
Prices	57.0	56.3	+0.7	Increasing	Faster	9
Backlog of Orders	48.0	51.0	-3.0	Contracting	From Growing	1
New Export Orders	53.0	57.0	-4.0	Growing	Slower	4
Imports	50.0	54.0	-4.0	Unchanged	From Growing	1
Inventory Sentiment	61.5	60.5	+1.0	Too High	Faster	235
OVERALL ECONOMY				Growing	Same	89
Non-Manufacturing Sector				Growing	Same	83

*Number of months moving in current direction. Non-Manufacturing ISM® Report On Business® data is seasonally adjusted for the Business Activity, New Orders, Prices and Employment Indexes.



NMI®

In December, the NMI® registered 57.2 percent, the same reading registered in November, indicating continued growth in the non-manufacturing sector for the 83rd 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. An NMI® above 48.9 percent, over a period of time, generally indicates an expansion of the overall economy.

COMMODITIES REPORTED

Commodities Up in Price: Copper (3); Corrugated Boxes (2); #1 Diesel Fuel (4); #2 Diesel Fuel; Fuel (2); Gasoline* (3); Labor (3); Medical Supplies; Natural Gas; Paper; Shrimp; Soy Products; Stainless Steel Products; and Steel Products.

Commodities Down in Price: Beef (5); Butter; Cheese; Corn; Gasoline*; and Lumber Products.

Commodities in Short Supply: Lab Supplies; Labor (15); Labor — Construction (9); and Labor — Temporary (4).

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

MARKETS

UNITED STATES

The U.S. risk management, insurance advisory and consulting industry was projected to finish 2016 with revenue of US\$32.8 billion and annualized growth of 3.2 percent, according to a report by IBISWorld. Over the past five years, the industry has enjoyed strong revenue growth as the economy has improved since the recession. During the recession, demand for insurance services was lacking, and providers were forced to keep prices low. As demand has risen and premium costs have trended upward, profits have ballooned. Conditions are expected to remain favorable to the industry during the next five years, the report says. "Insurance premiums will likely rise, boosting spending power and increasing demand for industry services," says Evan Hoffman, an IBISWorld industry analyst.

UNITED KINGDOM

The luxury packaging market is forecast to grow by a compound annual rate of 4.96 percent to US\$23 million by 2021, according to a report by Beige Market Intelligence. Sustainable and personalized packaging is fueling the growth for luxury goods — particularly luxury beverages. The largest customer base resides in the U.K., where the luxury whiskey business is in high demand. "The whiskey business is very specific to the U.K., and (we) are looking at a high thickness for boxboard, (so) it is definitely an interesting area," says Christer Nordman, head of product development for Pankaboard, a Finnish cartonboard manufacturer.

ROMANIA

The Romanian consumer electronics market is expected to grow at a compound annual rate of 13 percent by 2020, according to a report by Technavio. A rising demand for flat-screen televisions is charging the growth; TV sales accounted for about 30 percent of the country's consumer electronics market in 2015, and sales of flat-screen TVs have grown by 11 percent in the last two years. Also, an increase of health consciousness in Romania has raised demand for such wearable devices as smartwatches and physical activity-monitoring bracelets. Markets for those devices are projected to grow at an annual rate of 15 percent until 2020.

GROWTH PROJECTED TO CONTINUE IN 2017

BY BRADLEY J. HOLCOMB, CPSM, CPSD, and ANTHONY S. NIEVES, CPSM, C.P.M., A.P.P., CFPM

Supply management professionals project economic growth in the U.S. in 2017, as Institute for Supply Management's *Fall 2016 Semiannual Economic Forecast* reports that they are optimistic that the recovery that began in mid-2009 will continue.

Manufacturing-sector survey respondents indicate that they expect revenues to increase in 16 of 18 manufacturing industries, and the non-manufacturing sector reports that 14 of its 18 industries will see higher revenues. Capital expenditures, a major driver of the U.S. economy, are expected to increase by 0.2 percent in the manufacturing sector and decrease by 0.2 percent in the non-manufacturing sector. Manufacturing expects its employment base will grow by 0.6 percent, while non-manufacturing projects employment growth of 1.2 percent.

MANUFACTURING

Two-thirds (67 percent) of survey respondents expect manufacturing revenues to increase in 2017. The panel of purchasing and supply executives expects a 4.6 percent net increase in overall revenues for 2017, compared to a 0.9 percent increase reported for 2016.

Highlights from respondents in the semiannual forecast include:

- Respondents report operating at 81.9 percent of their normal capacity, up 0.2 percentage point from April 2016. Purchasing and supply executives predict that capital expenditures will increase by a modest 0.2 percent in 2017, compared to the 7.3 percent increase reported for 2016.



QATAR

The market for copper pipes, coils and fittings in Qatar and surrounding nations is expected to grow at a compound annual rate of 8 percent through 2021, according to a report by TechSci Research. The country is preparing for a surge in development, thanks in big part to its hosting the 2022 FIFA World Cup. The planned city of Lusail is projected to cost US\$45 billion to develop and should boost HVAC and plumbing infrastructure in Qatar, raising demand for copper pipes, coils and fittings. The market for those products in the region is usually robust due to the hot climate, driving the need for air conditioning and refrigeration production.

CHINA

China is expected to solidify its position as the world's largest business travel market in 2017, with a forecasted 8.4 percent increase to US\$344.6 billion, according to a report by the Global Business Travel Association. By comparison, U.S. business travel spending is expected to reach \$293.1 billion this year. "China accounts for nearly 25 percent of global business travel spending, up dramatically from a 5 percent share in 2000, demonstrating the truly global nature of today's economy," says Michael W. McCormick, GBTA executive director and COO. The projected business travel spending growth for this year is lower than the 9.2 percent increase China had in 2016, mirroring the slower growth of the country's overall economy.

Information in this report was gathered from the following sources:

Beige Market Intelligence — www.beigemarketintelligence.com • **Global Business Travel Association** — www.gbta.org • **IBISWorld Inc.** — www.ibisworld.com • **Technavio** — www.technavio.com • **TechSci Research** — www.techsciresearch.com

- Manufacturers expect labor and benefit costs to increase an average of 2.5 percent. Respondents also expect the U.S. dollar to strengthen against all seven currencies of major trading partners, as was the case in 2016.
- The panel predicts the prices paid for raw materials will increase 1.3 percent, after a reported 0.4 percent decrease in prices for 2016.

NON-MANUFACTURING

Fifty-seven percent of non-manufacturing supply management executives expect their 2017 revenues to increase. They expect a 4.1 percent net increase in overall revenues, compared to a 2.7 percent increase reported for 2016.

Highlights from the semiannual report include:

- Respondents report operating at 85.2 percent of normal capacity, down from 86.5 percent from April 2016. However,

they forecast that capacity will rise by 3 percent in 2017, and capital expenditures will decrease by 0.2 percent.

- Respondents in non-manufacturing industries expect the prices they pay for materials and services to increase by 1.8 percent. They also forecast their overall labor and benefit costs will increase 2.5 percent.
- Profit margins are reported to have increased in the second and third quarters of 2016, and respondents expect them to increase between now and April.

The complete *Fall 2016 Semiannual Economic Forecast*, released December 8, is available at www.instituteforsupplymanagement.org/About/MediaRoom. **ISM**

Bradley J. Holcomb, CPSM, CPSD, is chair of the Institute for Supply Management® Manufacturing Business Survey Committee. **Anthony S. Nieves, CPSM, C.P.M., A.P.P., CFPM**, is chair of the Institute for Supply Management® Non-Manufacturing Business Survey Committee.



January | February 2017

COVER STORY



The Big Unknown

BY SUE DOERFLER

In the year to come, supply management professionals will face uncertainties that range from changing economic arenas to geopolitical threats.

The U.S. presidential election may be over, but there is lingering apprehension about the new administration's policies, as well as the possibility of slowing economic growth and a recession. Labor woes continue as baby boomers retire, leaving other workers struggling to gain needed skills. Interest rates have gone up slightly, fueling investment and expansion concerns. Brexit passed but has yet to be implemented. China is transitioning from a manufacturing-based to a consumption-based economy. And numerous geopolitical threats loom.

This year, more so than in the last few years, brings uncertainty and a host of challenges for supply management practitioners as they strive to handle changing economic, political and global issues.

U.S. ECONOMIC OUTLOOK

Prior to the presidential election, the U.S. economy had been strengthening: Consumer spending was up, wages were rising faster than inflation, unemployment was around 5 percent, and GDP was growing, albeit at a slower pace than the 2.6 percent recorded in 2015.

The election of Donald Trump likely will change that growth trend, says Bernard Baumohl, chief global economist at The Economic Outlook Group, LLC in Princeton, New Jersey. He forecasts 2017 U.S. GDP growth to be 2 percent, lower than the 2.7 percent he had predicted under a Hillary Clinton presidency.

“There will be some issues, but the new administration will try to promote job growth, tax cuts and infrastructure spending, and will try to modify Obamacare.”

— CHRIS CHRISTOPHER, IHS Markit



The reason? Trump believes he can handle the U.S. economy the way he runs his businesses, Baumohl says. “That would be a grave mistake,” he says. “His proposals to slash personal and corporate taxes while boosting federal spending on infrastructure and defense do not sit well with many conservative Republicans because they will explode the budget deficit. So I expect Congress will push back and dilute his stimulus program. That means consumers and businesses will also pull back on spending,” he says.

“Another major concern is that Trump has threatened to impose substantial tariffs against Mexico and China. If he goes through with it, we must then anticipate they will retaliate against the U.S.,” says Baumohl. “That would trigger a trade war at a time when the U.S. economy is growing at barely 2 percent. That’s not much of a buffer to protect the economy from slipping into a recession.” Baumohl, however, says that if there is a recession, he would expect it to be mild, lasting about two quarters.

Economist Chris Christopher of IHS Markit in Lexington, Massachusetts, has an alternate take. While he agrees that trade growth will be impacted, he says that the strong economic momentum leading into this year will have a positive effect. “At the moment, GDP numbers seem strong, employment numbers are chugging along and the financial markets are doing well,” he says. “There’s no reason to believe that there’s a heightened sense of a recession anytime soon. It’s a possibility — we think about 20 percent. If it were to happen, it would be at the end of the year.”

Other factors point to a good growth outlook, Christopher says, one being the Republican-controlled House of Representatives and Senate. “There will be some issues, but the new administration will try to promote job growth, tax cuts and infrastructure spending, and will try to modify Obamacare,” he says. “All of these are positive.”

Two other considerations affect the outlook:

Unemployment. Although unemployment has been relatively low, talent shortage has been an issue — and it’s been an impetus for rising wages. “There are more than 5 million job openings right now, and companies are struggling to fill many of them because people don’t have the skills for these jobs,” Baumohl says. “I expect salaries to go up as companies try to attract the best workers or find other workers and retrain them.”

Interest rates. The strengthening U.S. economy was a factor in the Federal Reserve Board raising its benchmark interest rate a quarter percentage point in December, according to Christopher. But there could be another underlying reason for raising rates, Baumohl says. "Should the economy stumble under a Trump administration, the Fed wants to have an opportunity to then lower rates," rather than entertain a negative-interest rate strategy that may not result in economic stimulation, he says.

EFFECTS ON SMALL AND MIDSIZE BUSINESSES

Prior to the election, the Fed had projected to raise rates to about 2 percent by 2018. If the economy were to continue to grow, Christopher expects the Fed to follow suit by raising rates a bit more.

Such a move could affect small to midsize businesses that are looking to borrow money. "Small and midsize companies are critical when it comes to generating jobs and capital investment spending, more so than large multinational companies," says Baumohl. "Small and midsize companies hire three out of every four workers in the country." Easing governmental regulations affecting these businesses should be among the top concerns of a new administration, he says.

Many of those regulations were developed in response to the 2008 financial crisis, to prevent such a situation from happening again, says Dru Shiner, chief sales officer at C2FO in Fairway, Kansas. Some regulations, such as Basel III, which addresses banking risk, have adversely affected how small and midsize companies raise capital, he says: "Thus, what's happened is that a small- or medium-sized company's access to liquidity and funding at rates commensurate with 2008 levels has contracted significantly."

According to C2FO's *2016 Working Capital Outlook Survey*, more than 40 percent of the 1,800 small to midsize businesses surveyed in the U.S., United Kingdom, Italy, Germany and France indicated their working capital needs have increased since 2015. The figure was 47 percent among U.S. companies. The survey also found that borrowing is most



expensive in the U.K. and U.S., and U.S. respondents said that high interest rates were their biggest challenge in securing financing.

"The good news is that 61 percent of those surveyed are focused on future long-term growth, and more global corporations are partnering with their suppliers to offer innovative working capital solutions that encourage mutual success," Shiner says.

GLOBAL ECONOMIC LANDSCAPE

Despite working capital needs among businesses, the global economy is expected to grow in 2017. Baumohl predicts 2017 global GDP growth to be 2.9 percent, up from the 2.4 percent forecast for 2016. The International Monetary Fund forecasts global GDP somewhat higher at 3.4 percent for 2017, saying, however, that "prospects differ sharply across countries and regions," according to its October 2016 *World Economic Outlook*.

Indeed, economic conditions differ around the world. About 25 percent of global GDP is produced in countries with a negative interest rate regime, Christopher says. Central banks in the Eurozone, Japan, Denmark, Sweden and Switzerland have put their interest rates into negative rate territory to spur lending and increase spending in an attempt to help their economies, he says.

The Big Unknowns

U.S. CONCERNS

- Talent shortages
- Potential recession
- Slower pace of GDP
- Changing interest rates
- Working capital needs
- Possible trade tariffs against China and Mexico

GLOBAL CONCERNS

- Working capital needs
- Volatility in Saudi Arabia
- No clear emerging markets
- Rising wave of protectionism
- North Korea's potential nuclear threat
- China's push for sovereign control of South China Sea

Baumohl says that this negative-rate strategy “isn’t working as well or as quickly as policymakers there had hoped.”

Other global economic considerations, Christopher says, include:

- Brazil and Russia are inching out of their recessions.
- China, once a key factor in the increase in overall global trade, is transitioning from an economy focused on construction and heavy manufacturing to a services economy.
- Vietnam is developing into a manufacturing destination.
- Oil prices will likely gradually increase, potentially spurring growth in energy-related fields.
- A stronger dollar points to more global exports to the U.S. (and fewer U.S. exports).
- A rising wave of protectionism/isolationism — the kind that inspired the Brexit vote — is also affecting global trade.

Baumohl considers Brexit to be more of a political crisis for Europe than a global economic concern. However, the vote has led to economic issues in the U.K., where the pound dropped in value following the vote. “Financial markets were crushed repeatedly after the vote,” Baumohl says, “but the shock has now subsided. The markets bounced back. The economic news coming out of the U.K., for example, is looking better than it did before.”

The U.K. High Court ruled in November that Parliament must approve before the process to leave the European Union can be initiated, causing the pound’s value to increase. And there is still nervousness and anxiety about potential long-term implications of Brexit, Baumohl says. But he expects the regions most affected will be the U.K. and Europe, saying they will likely experience slower growth than they would have otherwise.

OTHER GLOBAL CONCERNS

In addition to economic factors, looming geopolitical threats have the potential to impact the global marketplace. “These threats could lead to serious disruptions that could affect the whole supply chain network over the next two years,” Baumohl says.

They include:

Potential volatility of Saudi Arabia. Various forces “are focusing on destabilizing that country, undoing the monarchy,” Baumohl says. “If that succeeds, we could see oil, for the first time in a while, shoot up to triple digits. That certainly could affect the cost of production around the world and can obviously affect supply management as well.”

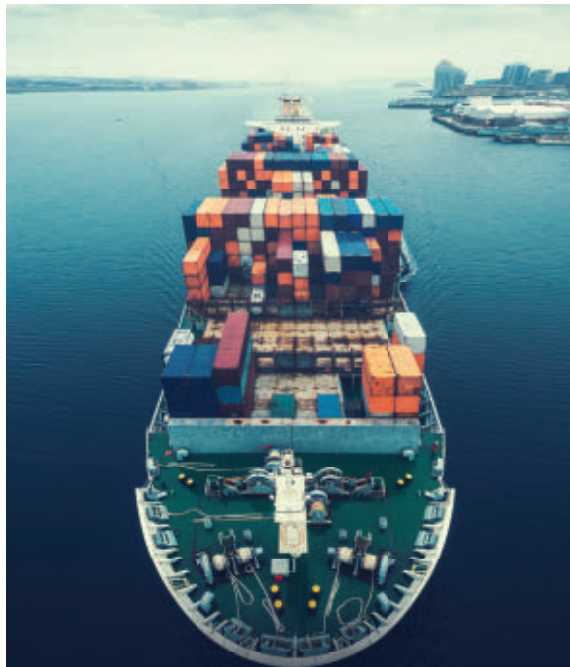
North Korea’s potential nuclear threat. According to reports, North Korea in 2016 launched more than 20 missiles, some of which reached as close as 200 miles from Japan’s coast. “Japan is now faced with the possibility of having to raise taxes to fund a military program, maybe to become, for the first time, a nuclear military power,” Baumohl says.

China’s determination to have sovereign control over the South China Sea. A July ruling by the Permanent Court of Arbitration at The Hague determined that China had no legal basis to claim sovereignty over the South China Sea. China has said it will not abide by the ruling. “If they don’t abide by it, countries like Indonesia, the Philippines, Vietnam and Japan will look to the U.S. to take a stand against China,” Baumohl says.

But would there be such a stand? “We don’t know how Trump is going to react,” says Baumohl. “Will he be aggressive and put a greater naval presence in the area to show that the U.S. won’t allow China to gain sovereign control over that region? Or will he be more passive?”

Baumohl, who calls this situation “the biggest threat to the freedom of the seas since World War II,” adds that it is particularly significant to supply management professionals.

“What troubles me most is this area is a very critical maritime route for not just Asian countries but also U.S. firms that deal with goods coming out of China, Vietnam and Malaysia,” he says. “Fifty-five percent of the world’s entire merchant fleet tonnage and 65 percent of all natural gas shipments in the world pass through this area. So many countries in that area depend on those routes that China now claims it is sovereign over.”



THE PERMANENT COURT OF ARBITRATION AT THE HAGUE DETERMINED THAT CHINA HAD NO LEGAL BASIS TO CLAIM SOVEREIGNTY OVER THE SOUTH CHINA SEA.

PLANNING FOR DISRUPTIONS

Volatile global economic and geopolitical situations can affect organizations in different ways. Thus, Baumohl suggests supply management professionals look at where their assets are located, then determine the probability of disruption and where risk is likely to be greatest. Having specialized teams dedicated to handling those risks and who understand the political and economic dynamics at play can help to properly assess situations.

Baumohl also recommends that organizations conduct stress tests. "Introduce what-if scenarios — adverse hypothetical scenarios that could disrupt the supply chain network of your industry," he says. "Ask yourself what the most vulnerable points in the chain are and what you can do to protect yourself in those kinds of scenarios. You must anticipate. These rigorous stress tests are going to become increasingly crucial as companies prepare for what's going to be a very unstable geopolitical environment."

To mitigate risk, organizations should develop contingency or governance plans that can be implemented quickly, Baumohl says. "If you don't have them, you could suffer reputational risk. Your clients could abandon you," he says. "You need to show your customers that you've taken precautions and that they can depend on you."

A contingency plan could include shifting production to unaffected locations, expanding into new territories and enlarging the supplier base, Christopher says. For example, if

an organization has locations in Vietnam and China, and an issue arises in China, operations could feasibly be switched to the Vietnamese site, he says.

THINKING AHEAD

Unlike in past years, there are no clear emerging markets, Christopher says. "Supply management professionals are going to have to search for the opportunities. The days of hyper-globalization are over," he says. "Going back 15 years, it was easy to know what to do. You knew you had to be in China. Right now, you're not sure where to be."

That underscores the theme of uncertainty characterizing 2017. The new U.S. presidential administration with its yet-to-be-determined policies, increasing capital needs among small and midsize businesses, the talent shortage, and volatile economic and geopolitical concerns make it difficult to predict exactly how the year will play out.

Baumohl says that supply management professionals need to be prepared for disruptions to the supply chain. "This year poses a serious problem for anyone who orchestrates or monitors the distribution network of their goods traveling around the world," he says. He suggests approaching the year with caution and contingency plans. **ISM**

Sue Doerfler is a publications coordinator for *Inside Supply Management*®.

Supply/Management

Apple Inc. has the following job opportunities in Cupertino, CA:

Global Commodity Specialist (Req#9TU75T) Coordinate the costs, contracts, & escalations of service material suppliers. **Construction Development Manager (Req#9X6S6F)** Rspnsbl for prgrm & proj mgmt of Global Retail dvlpmnt. Travel req'd 20%. **Supply Demand Planner (Req#9FD2BE)** Rspnsbl for prdct availablty & revnue plan attainmnt for a prdct through forecst dmnd, inventory & sell through. **Supply Demand Planner (Req#9TE352)** Forecast demnd, inventory, & multi-channel sell through. **Supply Demand Planner (Req#9MSPJT)** Plan, sched & monitor the mvmnt of materials thru the product cycle to determine req mtrls purchases. Travel req: 30%. **Operations Engineering Project Coordinator (Req#9UP2AY)** Meet stated sched & customer experience goals to successfully launch prdcts. **Development Manager (Req#9EYTSF)** Rspnsbl for world wide procurement & strateg mgmt of cosmetic elements used in Apple store cnstrctn. Travel req'd 20%. **Supply Demand Planner (Req#9ZHQRF)** Execute the most cost-effctve supply chain soltns for AppleCare **Supply Demand Planner (Req#9T6646)** Oversee demand planner actvities assoc w/ srvc parts for AppleCare. Refer to Req# & mail resume to Apple Inc., ATTN: D.W., 1 Infinite Loop 104-1GM, Cupertino, CA 95014.

Apple is an EOE/AA m/f/disability/vets.

THE EVOLUTION OF SUPPLY MANAGEMENT

The profession continues to expand its profile, becoming a true strategic partner to the executive suite and a solid career track for young professionals.

BY LISA ARNSETH

The supply chain is the lifeblood that keeps the heart of most businesses beating in a volatile economy. The supply management role is growing in importance, as executives come to realize the holistic value of supply chain innovation and partnerships. No longer is the supply chain viewed as a place to cut costs. It's now a fundamental and carefully-valued piece of a healthy, long-term business strategy.

Today's business climate is dynamic, and the supply management profession has continued to adapt and change accordingly. Years ago, the word "purchasing" was commonplace, and represented the rather transactional role in which procurement professionals were classified. In fact, Institute for Supply Management® (ISM®) was known as the National Association of Purchasing Agents when the organization was founded in 1915. Over time,

the profession matured, and the term "supply management" grew in prominence. The name of the association was changed to ISM on January 1, 2002, to reflect the evolution of the role of procurement.

In 2017, ISM continues its ongoing work to promote and stimulate the supply management profession by releasing an updated definition of the term "supply management," last revised in 2010. "The contribution of supply management continues to grow in importance, as businesses and institutions rely more and more on supply management professionals not just for cost savings, but for increased innovation and contributions to top-line growth," says Nora Neibergall, CPSM, CPSD, C.P.M., senior vice president and corporate secretary at ISM. "It's time to revisit the definition to ensure it adequately reflects the breadth and depth of the practice."



DEFINING THE PROFESSION'S SCOPE

In 2016, a committee comprised of ISM executives and Board of Directors members began the work of shaping the updated definition (see box on page 25). The goal was to highlight the many roles and areas of influence supply management is responsible for, and ensure ISM's approach to supply management was relevant and current. ISM Board member Ann Oka, who also served on the committee, says the new definition highlights the way the role has evolved to manage internal and external resources to grow a company's top and bottom lines. "It seeks to articulate the integration of

supply management activities into the attainment of company goals in ways that go beyond managing inputs and extend to managing relationships and capabilities," says Oka. "I particularly think the concept of 'linkage' is a critical one — building the connections between internal and external resources to create synergy and innovation is key."

The updated supply management definition from the *ISM Glossary of Key Supply Management Terms* is as follows:

Supply management is the identification, analysis, determination, procurement and fulfillment of the goods and services an organization needs to meet short- and long-term

objectives. By managing external partners' capabilities and linking them to organizational goals, supply management contributes to the strategic direction of an organization through total cost and capabilities management.

By effective oversight and engagement of people, processes and relationships, supply management creates competitive advantage through innovation, cost management, quality improvement, asset optimization, risk mitigation, social responsibility and sustainability.

The definition is more extensive than previous versions, but has been designed to read "less like an academic definition," says Neibergall.

"For practitioners, I think the new definition brings life and substance to what they do. It also stresses the pivotal role supply management fills to bring elements external to the organization together with internal processes and stakeholders." She says the emphasis on relationship management and integration of core business practices was a necessary addition to the official phrasing to define supply management, especially given its key role in most companies.

"This is the age of supply management. Companies, government and other institutions cannot operate successfully with less-than-optimum supply networks," says Neibergall.

Supply management is poised to continue its evolution as a trusted business partner due to its ability to handle risk.

MORE PULL WITH THE C-SUITE

This new phrasing and explanation of supply management's reach and expanded responsibilities promote the progress of the discipline to company executives and other members of the C-suite, says Steve Miller, CPO of P.F. Chang's in Scottsdale, Arizona, and former ISM Board of Directors member. "Senior leaders often underestimate both the value that can come from an engaged supply base and the risk it presents if supply management is performed in an undisciplined or haphazard way. By fully defining the contributions supply management can make, we will elevate executive awareness to the importance of professional leadership in this set of processes and activities," he says.

Oka agrees and believes senior leaders should view supply management as a strategic function that broadens the capability of the

organization through extension into the supply chain. "The organization that can best manage these relationships (in the supply chain) has access to ideas, innovation and efficiencies that are far greater than those bounded by an individual company," she says.

Thomas W. Derry, ISM's CEO, travels extensively on behalf of the organization and has met scores of individuals around the globe who share their firsthand experiences regarding the power supply management can have on an organization. "There are numerous examples of companies that, thanks to their relationships with suppliers, have entered new markets and lines of business," says Derry.

He adds: "Supply management professionals are in unique positions to recognize opportunities outside of what a company might already be doing." As an example, Derry recently met with a plastics manufacturing company doing business primarily with auto manufacturers that developed a new product line of defibrillators for a cardiac science equipment provider. "This brand-new application for the company came about," Derry says, "because supply management professionals were able to apply their expertise across industries and sectors and cultivate valuable, innovative relationships."

A CAREER WITH ENDLESS POTENTIAL

Each year, more universities around the world are adding degree programs in the supply management field. That's because young people are

recognizing the strategic position and career paths inherent in the supply management profession. Today, it's plausible to climb the career ladder all the way to CPO — and even CEO — by starting with a first step in supply management.

The exposure to a wide range of executive positions both inside and outside a company is a strong draw for many who consider a procurement-based career. "Pursuing a career in supply management means an individual might have the opportunity to play a more strategic role in the company," says Oka. "Interfacing at a higher level with both internal and supplier organizations provides opportunity for career development and growth. It's an exciting time to be in this field."

Derry also believes the opportunity for young supply management practitioners to interact with senior vice presidents, CEOs and other C-suite executives is one of the unique aspects of the profession. "In other types of corporate jobs, you might not have a chance to meet this range of professionals. But in supply management, you do," he says. "And you learn so much from these interactions. You can learn how they negotiate for results, how they deal with challenges, how they react under pressure and much more."

Another reason supply management is a solid career path choice is its predicted stability. Supply management is poised to continue its evolution as a trusted business partner due to its ability to handle risk. That is a strength propelling the profession forward, says Derry.

"While cost is at the forefront of what supply management professionals do, practitioners in this field are increasingly responsible for handling risk, ranging from financial to reputational," he says. "There will always be risks to manage and mitigate. When consumers have questions about things like the company's sustainable practices, the CPO and the supply management organization is responsible for owning that risk at the end of the day."

FUTURE PROGRESSION

In the coming years, supply management professionals will need to be proactive and understand changes outside the traditional supply management function, according to the *Futures Study 2020* by CAPS Research, a program jointly sponsored by Arizona State University and ISM. Released in June 2016, the study compiled responses from more than 110 supply management professionals regarding what they expect the profession to look like in four years. The study determined that supply management will be considered

an integrator — balancing needs of multiple business units and partners, both vertically and horizontally.

“The function is particularly suited to do this because (it) sees a span across all spend areas in the organization,” said Thomas J. Kull, associate professor of supply chain management in the W. P. Carey School of Business at Arizona State University in Tempe, Arizona, in a YouTube video summary of the survey results.

Among other roles, supply management professionals will need to be information sources

and disseminators. Thanks to increased connectivity and ongoing technology innovation, the ability to gather, analyze and share supply management-related knowledge will likely become more streamlined and accessible.

“Technology and data intelligence will play a major role in transforming the practice of supply management in the future,” says Neibergall. “It will be very exciting to watch this space.” **ISM**

Lisa Arnseth is a publications coordinator for *Inside Supply Management*®.

SUPPLY MANAGEMENT AND SUPPLY CHAIN MANAGEMENT: THEN AND NOW

The definitions of supply management and supply chain management have undergone a transformation. Here’s a look at the previous definitions, compared to their latest iterations.

PREVIOUS DEFINITIONS:

Supply Management

The identification, acquisition, access, positioning and management of resources and related capabilities the organization needs or potentially needs in the attainment of its strategic objectives.

Source: Institute for Supply Management®

Supply Chain Management

The design and management of seamless value-added processes across organizational boundaries to meet the real needs of the end customer. The development and integration of people and technological resources are critical to successful supply chain integration.

Source: *The Supply Management Handbook* by Joseph L. Cavinato, Ph.D., C.P.M., Anna E. Flynn, Ph.D., C.P.M. and Ralph G. Kauffman, Ph.D., C.P.M. (2006)

2017 UPDATED DEFINITIONS:

Supply Management

Supply management is the identification, analysis, determination, procurement and fulfillment of the goods and services an organization needs to meet short- and long-term objectives. By managing external partners’ capabilities and linking them to organizational goals, supply management contributes to the strategic direction of an organization through total cost and capabilities management.

By effective oversight and engagement of people, processes and relationships, supply management creates competitive advantage through innovation, cost management, quality improvement, asset optimization, risk mitigation, social responsibility and sustainability.

Source: Institute for Supply Management®

Supply Chain Management

Supply chain management is the end-to-end management of all supply, operations and logistics functions used in the flow of goods, services and information from raw material through the finished product or service’s sustainable resolution.

Source: Institute for Supply Management®

A hand with a black watch is pointing at a chalkboard covered in white chalk drawings of business diagrams, including pie charts, flowcharts, and arrows. The background is dark, and the hand is in the foreground on the left side.

Improving the Process

By reviewing manufacturing and business processes, organizations can discover cost-reduction opportunities.

BY SUE DOERFLER



In Stan J. Woszczyński's 36 years in manufacturing management, cost reduction has been a key issue wherever he's worked. That's the case in his current role as chief manufacturing officer at Cummins in Columbus, Indiana.

"I think it's because the competition gets continually larger and more global and because customer expectations become more demanding," he says. "Given those things, there's always a pressure on cost. And shareholders are always looking for profitability."

Cost reduction is a universal and global issue that transcends industries, locations and business units. To best achieve it, experts say, supply managers should review their current business and manufacturing processes. They need to look beyond cost of materials to find other areas — including inventory reduction, workflow reorganization, equipment optimization, waste minimization and supplier negotiation — in which cost reduction can be attained.

ANALYZE COST STRUCTURES

Evaluating cost structures is a good place to start, says Russell Rasmus, managing director and manufacturing global lead at Accenture Strategy in Kansas City. He recommends deviating from the frequently used top-down cost approach, explaining that inflation and growth rates shouldn't be the only factors determining product price/cost.

"Companies look at their cost basis and too often try to adjust their current year budget forecast based on last year's cost performance, often adding to the cost structure with an allocated growth/inflation percentage," Rasmus says.

Instead, supply management professionals should adopt a bottoms-up approach, leveraging competitive internal or external benchmarking to ensure they have true visibility to their costs and only allow costs that are required to meet demand, says Rasmus. To do so, he proposes using what he calls a zero-based supply chain approach to find opportunities for cost improvement. The approach drives true cost and performance transparency across a broad range of categories:

Labor use. Are there manufacturing line automation opportunities on the direct labor side? Are there indirect labor savings opportunities through operating model or capability/function centralization actions?

Capital utilization. Are manufacturing facilities being used efficiently? Are there locations that are underused? Are the locations optimized for future demand?

Overall equipment effectiveness. Are assets delivering value to their full potential? What are the costs associated with maintenance and repair? Is there equipment downtime that could be recovered to increase productive capacity?

Direct and indirect materials. Are common sourcing strategies being deployed across plants and divisions? Is MRO management a strategic lever or a tactical action?

Digital. Could digital capabilities be used to streamline the decision-making process? Is information flowing properly between manufacturing centers, or from manufacturing to other functions within the organization? Could digital allow supply managers to make more fact-based and financially-based decisions as they make tradeoffs on capacity?

accomplish them. "Generally, 60 percent to 70 percent of the cost of our products is materials, 15 percent to 20 percent is conversion and the rest is overhead, warehousing and logistics," Woszczyński says.

On the manufacturing side, a key issue is to ensure plants are rationalized to demand on both an individual and network basis, he says. Concerns and questions include:

- Are the plants manned on the right number of shifts?
- Is the right amount of overhead associated with them?
- Is a plant fulfilling demand for one market? Or is it part of a network that fulfills demand for a variety of customers?

"We analyze this by looking at capacity versus demand, to make sure that we're in a range that makes good operating sense," Woszczyński says. "As we look at improvements on a specific line, we start with a lean manufacturing tool — value stream mapping." This technique identifies where waste or other issues might be occurring within the process. "Next, we'll use a variety of techniques to help solve those problems," he says.

For issues with simple solutions, Cummins adopts a "just do it" attitude by assigning appropriate resources, Woszczyński says: "For more technically difficult problems, we may use Six Sigma tools to help identify the details and factors that influence a process to ensure we're addressing the right areas."



A key issue is to ensure plants are rationalized to demand on both an individual and network basis.

Supply chain and manufacturing integration.

How well is manufacturing integrated with upstream and downstream partners in the supply chain?

After uncovering your cost structure and identifying poor performing cost and performance categories, supply managers need to set new cost targets and enable the levers that best impact the attainment of the new cost target, Rasmus says. He recommends that organizations conduct such an analysis on an annual or periodic basis. "It's not a one-and-done approach," he says. "It needs to become part of your ongoing business planning process and engrained in your culture of cost and performance competitiveness."

TAKE A HOLISTIC VIEW

Cummins' approach has been to take a holistic look at reducing manufacturing costs. The company, which designs and manufactures engines and power systems, focuses on finding where improvements can be made within its cost structure and taking required actions to

Cummins employs other strategies that include:

Standardizing key manufacturing processes. This enables the organization to determine the best and most efficient ways to conduct those processes — for example, the best way to torque a cylinder head to a cylinder block — and to make sure every plant does it the same way, Woszczyński says.

Focusing on reducing energy consumption. "We're always looking at things like energy reduction, waste reduction and the use of water to reduce our utility bills," he says. "For example, we invested in energy-efficient lighting and air compressors. We reduced water consumption through investing in efficient water chillers and by using a water-balance calculation process to find and fix leaks."

Using technology when it makes sense. "The use of automation is becoming more prevalent in places where a process might not be as safe as you want it to be or may not be as high of quality," Woszczyński says. "In the old days, the valves in our engines were set with wrenches and feeler gauges. There was always a variation — because the work differed person to person." Turning to robotics to do the work has resulted in lowered labor costs, reduced risk of injury to workers and a more consistent product, he says.

Focusing on reducing materials costs. "This is accomplished in a cross-functional manner among manufacturing, purchasing, engineering and suppliers — looking to see if there's a way we can take material

out, change material or change designs all to help reduce product and logistics costs," Woszczyński says. "We also look at ways to improve the performance and the quality of our products."

Seeking input from its shop floor-level employees. "We try to use all the talents that are available to us," and these employees help in problem-solving, says Woszczyński. "A lot of those value stream-mapping and Six Sigma tools are done using the shop floor employees because they have firsthand knowledge."

For example, Cummins gives its hourly employees, who work within a team-based system, responsibility to correct or improve various aspects of their work because of their detailed process knowledge. This includes cycle-time improvement, safety-issue abatement and other shop floor-related situations, Woszczyński says.

TAKE A REGIONAL APPROACH

ACSS, a Phoenix-based company that designs and manufactures safety avionics systems, uses several similar strategies, says Will Glass, a buyer/planner at the company. One is holding lean events and kaizen activities on the factory floor, which has resulted in efficiencies in the assembly process, he says.

The company — a joint venture between L3 Communications and Thales — also turns to local and regional suppliers to cut overall manufacturing costs, he says. "When I came into this business, our sheet metal supplier was in Chicago and our circuit-card assembly was in Alabama," he says. "We've migrated almost everything to the West Coast region, and production is so much faster. By having local suppliers, you can negotiate better warehousing terms, particularly if they're willing to absorb some of the holding costs." For example, Glass says, ACSS's local sheet metal distributor is willing to do weekly or biweekly shipments, so inventory stays low and the company doesn't pay freight. Glass achieves bigger price breaks if he can consolidate as much business as possible to the supplier.

Glass says local suppliers also can provide another advantage: service. For example, if parts have been mislabeled, a supplier in another state isn't going to fly to Phoenix to fix the problem, but a local supplier will send out someone that day, he says. "Thus, I'm not losing time on the production floor," he says. "If I sent all the parts back, I would have had to pay for two freights while losing a week of production. I would have spent more money, whereas on the quote, it looked like a cheaper price."

Glass says that organizations should look to other cost-reduction strategies that include:

Looking for corporate synergies to get better buying power. ACSS has a variety of sectors, each of which use some of the same materials. "If, for example, we each use aluminum, we can get buying power in aluminum," he says. "If we each have common hardware parts and common processes, we can achieve a lower price because we're buying more and consolidating."

Outsourcing certain processes. The company's products contain cable harnesses, which are labor-intensive to construct. The company outsources them to a supplier in Mexico, resulting in a lower unit cost and greater efficiency, he says.

AREAS OF IMPROVEMENT FOR COST AND PERFORMANCE TRANSPARENCY



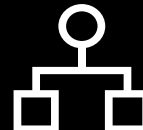
Labor use



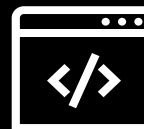
Capital utilization



Overall equipment effectiveness



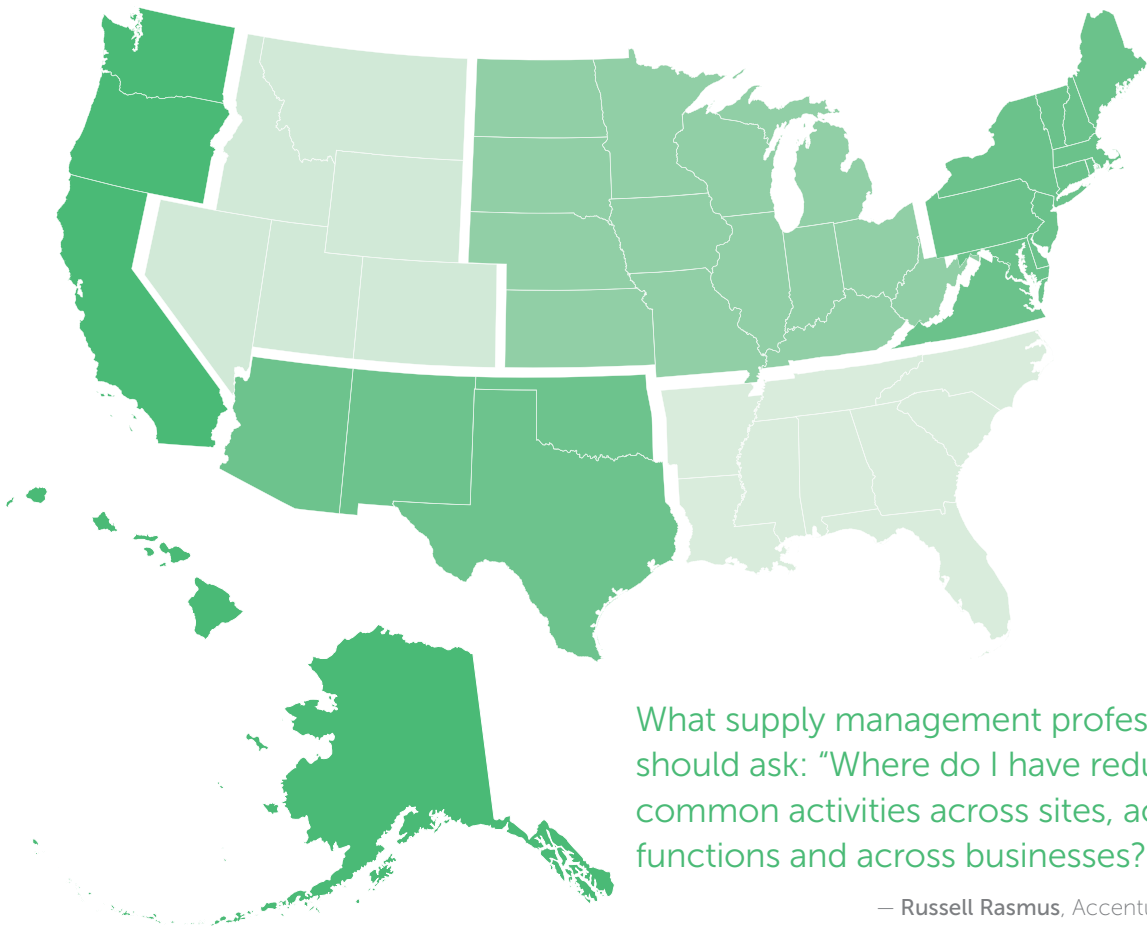
Direct and indirect materials



Digital



Supply chain and manufacturing integration



What supply management professionals should ask: “Where do I have redundant/common activities across sites, across functions and across businesses?”

— Russell Rasmus, Accenture Strategy

All of this equates to taking a total-cost perspective when reducing costs through manufacturing and business processes, Glass says. “While Company A may be cheaper, it’s less reliable and results in more scrap and freight charges, while Company B is more expensive but offers much better quality with no freight,” Glass says. “You have to take all of that into consideration.”

EXPLORE NEW BUSINESS PROCESSES

When looking for opportunities for cost reduction at the factory, in materials and during production processes, companies should also examine their business processes.

Rasmus says that the concept of shared services, a practice more commonly found in planning and back-office areas of organizations, has made its way into manufacturing environments. What supply management professionals should ask, he says, is, “Where do I have redundant/common activities across sites, across functions and across businesses? Can these activities be managed or operated centrally? Can they be industrialized?”

For example, it might be more efficient for organizations to centralize certain levels of their engineering-specification labor pool rather than spread them across many sites/geographies, says Rasmus. Pooling resources with common skills and common capabilities to an entire manufacturing network can result in better use across all sites, he says. Digital can often enable new shared services capabilities and drive performance improvement in the process.

DEVELOP A STRATEGY THAT WORKS

Organizations are always looking for ways to reduce costs. And by reviewing manufacturing and business processes — whether using a perfect-cost, holistic, total-cost or other approach — they can discover opportunities for efficiencies and improvement in areas that include the production line, labor, materials costs, waste and shared services.

“You can no longer set a manufacturing strategy and just let it sit,” Rasmus says. “There are too many new and changing demands on manufacturing environments today. Challenging manufacturing costs and performance is an activity you need to revisit on an annual basis to remain competitive in the marketplace — because the competition is only continuing to get better.” **ISM**

Sue Doerfler is a publications coordinator for *Inside Supply Management*®.



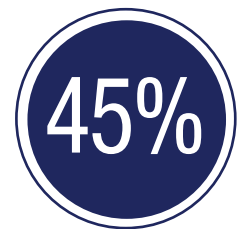
ISM Travel & Events 2017

Your Ticket to First-Class Procurement

If you're now supporting the travel and events category for your organization, we have some great news: The experts at ISM Travel & Events 2017 are here to help you manage all the moving parts you need to keep track of. Join us in Miami to learn about responsible travel management, how to create a successful T&E program and how to adapt to this evolving category.

“The topics presented were relevant and useful for me today. The networking opportunities were valuable because the size of the program was such that allowed for more personal conversations with individuals.” – *T&E 2016 attendee*

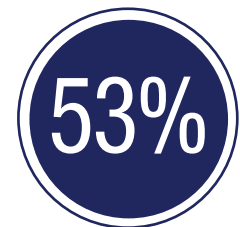
Register today at ismtravel.org.



of business travelers work for organizations with ill-defined travel security policies



of business travelers don't know who to alert in a crisis



have no emergency phone number to call when abroad



TIME IS RIPE FOR COGNITIVE PROCUREMENT

BY ROBERTA J. JENNINGS

Systems that provide the ability to interpret and share data can help companies think — and do — bigger.

We're living in an interesting age. Many businesses are realizing, as they strive to gain competitive advantage, that the next new "natural" resource isn't something from the ground. It's data.

As a society, we're generating unprecedented amounts of structured and unstructured data, and the technology industry has found ways to capture it all. However, merely capturing the data doesn't provide benefit unless it can be used for progress or improvement. Many would say we are "data rich, but knowledge poor." Enter the possibility of cognitive tools — specifically cognitive procurement.

What is cognitive procurement? It's a category of software and technology systems so sophisticated that they do not just regurgitate or repackage data, but analyze, compare, find correlations and identify trends to the extent that they "think." The following attributes have been voiced as differentiating factors to describe cognitive systems:

- The system can understand data, both structured and unstructured, and natural language.
- The system can reason, taking into account underlying concepts and relying on various confidence levels.
- The system can learn by accepting feedback and incorporating that feedback into future recommendations.
- The system interacts with users in a natural, intuitive, user-friendly way.
- Cognitive systems go beyond analyzing data at the source and gather data from multiple sources and analyze it together, weighing and considering sources accordingly.
- The system is not merely measuring or checking activity against set parameters. Beyond compliance, it offers solutions that add value to the process.
- With the vast amount of data it accumulates, the system can make correlations that haven't been specifically dictated. In other words, it can estimate what information you're seeking before you know what you're looking for.

- The more information and use the tools get, the more value they can generate. A tool's ability to "learn" and be predictive in its models is a key differential.

The key factors enabling this revolution are a wealth of data and emerging cloud technologies that allow this data to be captured, shared and accessed by many. Combine these with the ability to design a system that can analyze complicated layers of information, and you've got cognitive solutions that enable firms to leap from doing things better to doing better things.

THE MOST IMPORTANT CONSIDERATION IS THAT DATA MUST BE ACCURATE FOR A COGNITIVE TOOL TO DO ITS JOB PROPERLY.

COGNITIVE TOOLS IN ACTION

These tools are in the early stages of development, but it's clear to see the potential applications.

Supplier or supply market assessment. For those new to sourcing in a category, a cognitive tool can pull information into an easily digestible format to help identify potential new suppliers, run objective RFI assessments and identify risk factors.

Spend management. Cognitive tools can analyze supplier consolidation opportunities, savings/payment term opportunities and costs of noncompliance.

Supply/materials management. Systems can assess reliability and performance issues on products and services. They can adjust production planning by predicting, for instance, maintenance needs and anticipating bottlenecks relative to inventory/delivery.

Demand forecasting. When a cognitive tool can blend multiple data streams, it can find correlations or patterns in demand or sales behaviors.

Risk management and mitigation. With risk management, sometimes the information that would help you avoid some type of loss is not information that you knew you should be paying attention to. It's unpredictable. Cognitive tools can assess that mass data landscape and identify multitier dependency situations — pinpointing where vulnerabilities could occur. Currency risk, political risk, weather, regulations, strikes and labor issues all need to be monitored relative to an enterprise's supply chain.

Contract management. These systems could become a robust repository for contracts and agreements, analyzing contracts for performance versus terms and instigating corrective action, renegotiation or other supplier management

activities. Imagine an organization that has acquired another company and all its contracts. Cognitive tools can analyze those for the acquiring firm's standards and drive contract personnel activity to address areas of concern.

Specific technologies have emerged that are enabling the cognitive environment. For example, cloud technology

means that enterprises can place large amounts of data in a secure format and location that is safe but easily retrievable. Service-oriented architecture tools are systems that are designed to talk to other systems, not necessarily people, but can act smartly

like people and ask questions of other systems. The Internet of Things is a large subset of the concept of fully distributed computing.

THE DEAL BREAKER

The building blocks that make this entire field of cognitive tools possible are data. Data can be structured or unstructured, but the most important consideration is that data must be accurate for a cognitive tool to do its job properly. It can be extremely challenging to cleanse data, determine weights for various classifications of data and ensure that there is some standardization among measures. Firms may feel confident about data generated through their own ERP systems, but the situation gets murkier when also feeding external data into a cognitive system. The opportunity cost of not ensuring accurate data can be great. Not only is there the chance for misguided advice or action through a cognitive system, but even with simpler systems, inaccurate data will lead to distrust from users.

In fact, when discussing risk issues related to cognitive procurement tools, the No. 2 risk is some unknown force hacking into a system and causing disaster. The primary risk is that inaccurate information is input, or old, less-reliable information is given more weight than it should, resulting in poor decisions and financial loss.

Many experts say that the next 5-10 years will be revolutionary for procurement, thanks to these types of tools. Ultimately, tools are likely to emerge that satisfy any size organization and budget, so recognizing the role they will be playing in future procurement operations is vital. **ISM**

Roberta J. Jennings is a research associate for CAPS Research in Tempe, Arizona.

WATER USE IN THE SUPPLY CHAIN

BY HEATHER RIPPMAN

Look beyond your organization's walls to find where risks and impacts exist.

In a world where population growth and economic development are testing the limits of natural systems, and the availability of resources can no longer be relied upon, organizations need to understand the multiple dimensions of their dependence on water. They must analyze where they rely on water in their supply chain, the risks associated with their use of it and ways to manage those risks.

Many companies begin by focusing on their internal operations, where opportunities to improve water efficiency or wastewater quality can be straightforward to identify and implement. The cost savings benefit the company directly, and progress toward a sustainability target is easy to measure and communicate. However, an organization's most significant water-related impacts, risks and opportunities aren't often found in direct operations. Instead, they more closely relate to raw materials and water-intensive processes throughout the global supply chain.

WHERE THE WATER IS

Globally, most of the water used for human purposes — an estimated 80 percent — is for agriculture. Smaller volumes are needed for industrial processing and domestic uses. It's similar in the supply chain, where an organization's most substantial water impact by volume is often associated with the cultivation of agricultural raw materials for food, fiber products and packaging. Materials processing and product assembly generally require smaller volumes of water; however, where processes generate polluted wastewater, effective chemical management and water-efficiency improvements yield benefits beyond just reducing water use.





We're waiting for your story.

Your magazine. Your knowledge. Your stories.

Contact John Yuva, managing editor of *Inside Supply Management*[®]
800/888-6276, extension 3021 or jyuva@instituteorsupplymanagement.org

Water also is essential to a supply chain's labor component: It's critical to the health and well-being of workers. Lack of safe and reliable access to water and sanitation at the workplace and in communities can have adverse impacts on productivity, attendance and turnover — and related effects on safety, quality, delivery and price.

BUSINESS-RELATED WATER RISK

No matter where water is in the supply chain, there are business risks associated with its use. Those risks come in several forms:

- Physical risk, where unmet demand, scarcity or pollution threaten a reliable and cost-effective supply of water
- Regulatory risk, where policymakers may seek to manage shared water resources by enacting changes to permits, allocations, rate structures or water-quality standards
- Reputational risk, where real or perceived impacts such as excessive use, waste, pollution or capture of public resources may result in criticism of a company, undermine its sales and impact brand value.

When evaluating the potential for water-related business risk,

WHEREVER WATER IS IN THE SUPPLY CHAIN, THERE ARE BUSINESS RISKS ASSOCIATED WITH ITS USE.

organizations should consider that a diversity of materials and lack of data on local water availability make it difficult to properly assess the situation. There are tools to determine where water risks might be most severe. These include the World Resources Institute's Aqueduct Water Risk Atlas and the World Wildlife Fund's Water Risk Filter.

But to gain the data that is most relevant to their supply chains, organizations should conduct in-depth assessments of all their locations. These local water-risk assessments should include such factors as total renewable source water from rainfall, reliance on groundwater or water from adjacent watersheds, demand forecasting, climate projections, and political or social factors that may influence water policy, allocations or rate structures.

MITIGATING RISK

Organizations with diverse supply chains across multiple geographies, dissimilar climates and different stages of economic development face complex local water-related risks. Some of those risks may be alleviated at the corporate level by

substituting less water-intensive materials or ingredients or by shifting sourcing away from water-stressed regions. But supply management professionals may find local solutions by working with suppliers across industry sectors and sourcing regions. Doing so can help improve water stewardship across an entire watershed, thus reducing water-related risks, strengthening partnerships and making it possible to grow or maintain production capacity for key raw materials and components.

Organizations often adopt an audit-based approach, which can improve such aspects as water-use efficiency, wastewater-quality compliance and availability of on-site water and sanitation for workers. But even when such policies are effective, they don't address drivers of water risk that originate outside the fence line of farms or facilities, which include demand or pollution by other users, ineffective resource allocation, and insufficient environmental protection by government regulators.

In contrast, by taking a capacity-building approach, supply management professionals can (1) engage their suppliers in providing local context and risk assessment, (2) identify appropriate targets and milestones and (3) improve their capacity for external engagement and collective action as stewards of the water resources they rely upon to do business.

For example, in the California Water Action Collaborative, leading food and beverage companies are collaborating with policymakers and environmental organizations to manage water use, improve watershed resilience and promote conservation

and restoration of headwaters and vulnerable ecosystems in response to drought in the western U.S.

Most operational or supply chain compliance-based approaches produce only incremental improvements in water management, water-use efficiency or wastewater quality. Watershed scale approaches, however, can reduce negative impacts, deliver cost savings and form the basis of a more comprehensive water stewardship program.

When analyzing where they rely on water in their supply chain, organizations need to look beyond their four walls to identify where risks, impacts and opportunities for improvement might be. By performing in-depth assessments of each of their locations and working with suppliers and others to improve water management, they can form a strategic approach to water stewardship and risk mitigation. **ISM**

Heather Rippman is a senior research associate on the corporate sustainability team at the Pacific Institute in Oakland, California.

ISM Diversity 2017

Uncovering Unconscious Bias

March 1-3, 2017 | Orlando, FL

With two fantastic keynote speakers and more than 10 educational sessions to choose from, you'll get the tools you need to master a diverse world.

Register today at www.ismdiversity.org

Are you interested in sponsoring or exhibiting at ISM Diversity 2017? Contact ISM Sales at 800.888.6276 or ISMSalesDept@instituteforsupplymanagement.org.





5 TRUCKING TRENDS TO TRACK

The trucking industry remains a logistics lifeblood and one of the biggest drivers of the U.S. economy, responsible for moving nearly 70 percent of the nation's freight tonnage, according to American Trucking Associations.

There's room for revenue growth. ATA data indicates that 81 percent of earnings in the shipping industry is connected to trucking, and revenue is expected to increase by two-thirds in the next five years. That suggests stability, but changes to trucking are coming as the industry adds new technologies and aims to retain drivers.

A white paper by Peloton Technology, *Five Important Trends in Trucking*, examines what's in store for the industry:

1) Automatic emergency braking (AEB). This safety feature has been on large trucks since 2006 but should see widespread use in the next two years. The increased presence is designed to curb the 4,000 deaths and 70,000 injuries annually from collisions with trucks.

2) Electronic stability control (ESC).

This system is now required on large trucks and buses. The National Highway Traffic Safety Administration (NHTSA) estimates the requirement will save up to 49 lives, prevent up to 1,759 crashes and provide net economic benefits of more than US\$300 million each year.

3) Driver shortages. The industry is struggling to replace retiring drivers. The ATA estimates that 890,000 new drivers will be needed through 2025, and with an average annual pay of \$40,060, candidates are not abundant. What the industry hopes is a solution: incentives.

4) Driver incentives. While higher base pay is evidently not a trend, trucking companies are offering monetary incentives for safety, low idle time and on-time deliveries.

5) Video event recorders. On-board cameras that record continuously or in an event-based mode are considered reckless-driving deterrents and sources of objective information for crash evaluation. However, drivers have raised objections, citing privacy concerns.

The report states that "the trucking industry will evolve more in the next 10 years than it has in the last 50."

Source: peloton-tech.com

SPEED AND PACKAGING INFLUENCE ONLINE SHOPPERS

Online retailers' shipping speed is one of the biggest factors in their ability to gain repeat customers, according to a recent report by Dotcom Distribution.

How Fast Delivery and Quality Packaging Drives Customer Loyalty indicates that 87 percent of online

DATA POINT

120,000

Number of temporary employees added by Amazon.com during the holiday shopping season. The online retail behemoth anticipated that — thanks to the abundance of touch-screen and robotic technology — most temp hires could be trained in as little as two days.

shoppers identified delivery time as a key factor in the decision to shop with an e-commerce brand again. Two-thirds of survey respondents said they would pay more to get same-day delivery if they needed a package by a deadline, such as a birthday or holiday. And 47 percent would pay more simply to get the order delivered sooner.

Customers care about aesthetics, too, the report finds. Forty percent of respondents said they would be more likely to purchase from an online retailer that offers premium packaging, and 61 percent indicated that branded or gift-style packaging gets them more excited about receiving and opening the package.

"(The) study helps retailers identify how they can increase brand loyalty via shipping practices, (and) it also shows how customer expectations are changing year over year," says Maria Haggerty, Dotcom Distribution CEO. "E-commerce is taking over the retail market, so brands must ensure they ... deliver the packages that customers expect in the most personal way. Fulfillment and a coveted unboxing experience are a huge part of that."

Source: www.dotcomdist.com



SHIPPERS WANT TO EXPEDITE CLIMATE COMMITMENTS

The International Chamber of Shipping (ICS) hopes that carbon-dioxide reductions and other United Nations climate-change commitments for the industry are implemented in 2018.

Simon Bennett, ICS director of policy and external relations, told attendees at November's U.N. COP22 conference in Morocco that the commitments — developed with the International Maritime Organization (IMO) — should come with a "global mechanism" for enforcement within five years. He added that much of industry prefers a carbon tax.

However, Bennett noted, a carbon tax "remains very controversial and is not yet universally supported" within the shipping sector.

Climate protection advocates have expressed concern that the IMO's climate-plan "road map," agreed to in 2016, will take longer than planned to fully implement and enforce.

An emissions-reductions agreement for the airline industry takes effect in 2021 but does not become mandatory until 2027. There is also uncertainty of the impact of a Trump presidential administration on global climate endeavors.

Source: maritime-executive.com

LOGISTICS

INVENTORY ACCURACY



Definition: One of the key yardsticks of distribution-center performance, inventory accuracy measures how closely inventory records match the physical inventory. Good inventory accuracy results in less overstock or deadstock, more on-time and accurate shipments to customers, more efficient use of warehouse resources and better data for budget planning.

Field guide: River Island, which sells clothes and apparel at 280 stores worldwide and online, used a pilot program featuring RFID technology at seven stores to raise inventory accuracy to 97 percent, helping boost sales. The London-based company plans to implement the program at each store, anticipating that quickly-updated

inventory information will lead to the most accurate automated restocking.

Factoid: Companies have more than bottom-line motivations to strive for optimum inventory accuracy — it's a matter of compliance with the law. Sarbanes-Oxley (SOX) legislation made inventory accuracy a key component of federally-mandated corporate financial disclosure. "Too often, we put (inventory reconciliation) off since it is not a priority and we can get to it later. No longer. SOX is very implicit that our financial records be accurate and timely," states a session description from Institute for Supply Management's 2006 Annual Conference. **ISM**

Affiliate Leadership Training Program Coming to Orlando in May

The ISM Affiliate Leadership Training Program will be held on May 19-20, 2017, in Orlando, Florida. Attendees will gain insight into what works and what doesn't for other affiliates, hear from the Affiliate Advisory Council and leave with fresh ideas and a better understanding of the volunteer role.

Affiliate Leadership Training Program attendees receive a discount on ISM2017 Annual Conference registration. Details will be in the registration confirmation email.

For registration and more event details, visit the ISM Training Calendar located in the drop-down menu under Conferences & Events at the ISM website: www.instituteforsupplymanagement.org.

ISM Committees Seek Volunteers

Applications are being accepted through March 31, 2017, for volunteer positions on the following ISM committees: Affiliate, Group and Forum Relations Committee, Certification Committee, Committee on Sustainability and Social Responsibility, and Ethical Standards Committee.

For information about the positions and to fill out an online application form, go to the ISM website and select About ISM, then Volunteer Interest Form.

ISM Affiliate Excellence Awards Criteria Simplified

The Affiliate Excellence Awards program was established to recognize affiliates that demonstrate operational and educational excellence. The 2016 award criteria have been simplified to eliminate the submission process and ensure all affiliates are eligible.

Recipients of the Affiliate Excellence Award receive:

- Recognition at ISM2017, including an announcement at the Volunteer Recognition Banquet.
- Authorization to use a special winner's logo (to be provided in electronic form) on all affiliate correspondence, programs and other materials.

The Affiliate of the Year will also receive a US\$2,500 ISM credit, to be used by the affiliate in one of three ways: (1) sending a representative to ISM2017 to receive the Affiliate of the Year Award, (2) participating in ISM seminars and/or programs, or (3) acquiring ISM educational products for the affiliate. Recipients have one year from the date of award notification to use the credit.

The criteria to determine the recipients of the Affiliate Excellence Award and Affiliate of the Year are membership growth and/or retention, percentage of members with ISM certification, dues payment status and number of members who attended ISM2016.

Affiliate data will be sent to the Affiliate Advisory Council for consideration. The Council will select the Affiliate of the Year, Affiliate Excellence Award winners and affiliates who deserve honorable mention. **ISM**

AD INDEX

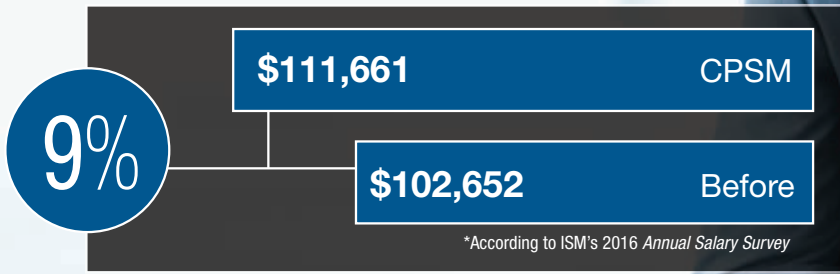
Apple, Inc.	21
ISM2017	BC
ISM CPSM® Certification	IBC
ISM Diversity 2017	37
ISM Publications	35
ISM Seminars	3
ISM Tech 2017	IFC
ISM Travel & Events 2017	31
Karrass	Outsert



Awarded

I was ~~passed over for~~
the promotion.

A CPSM® Can Make All the Difference.



CPSM® Certification



Where are you on the road to success?

There is a reason ISM® has certified more than 60,000 supply management professionals worldwide. This professional achievement is highly valued by employers and organizations around the globe.

The Certified Professional in Supply Management® (CPSM®) certification recognizes a mastery of key competencies in global supply management and leadership.

Expand your knowledge of:

- Sustainability in a global market
- Strategic sourcing and supplier management
- Risk and compliance
- Forecasting and materials management
- Contracting and negotiations
- Cost, price and finance
- Leadership essentials

CPSM Bundle Options – Save 15%

Print Diagnostic Option

- CPSM *Diagnostic Practice Exam*
- CPSM *Study Guide*
- ISM *Professional Series*

Web Diagnostic Option

- CPSM *Diagnostic Practice Exam, Web version*
- CPSM *Study Guide*
- ISM *Professional Series*

It's easy to get started.

Take the CPSM *Diagnostic Practice Exam* and assess your knowledge level. Use your score report to identify areas of study. Then, take advantage of the CPSM *Study Guide*, ISM *Professional Series*, and online resources and seminars.

Learn more at instituteforsupplymanagement.org/CPSM or call Customer Service at +1 480.752.6276, opt. 8.



ISM2017

Critical Insights. Powerful Results.

Register Early. Save 40% for individuals and 50% for teams of 5 or more.*



David Cameron

The former Prime Minister of the United Kingdom will keynote regarding current geopolitical and public-policy issues, many of which impact global business and the supply chain. Cameron promises to deliver a riveting and eye-opening firsthand account of his own experiences, including those surrounding the Brexit vote, during his tenure as Prime Minister.

Colin L. Powell

Like supply managers everywhere, General Colin L. Powell, USA (Ret.) is no stranger to delivering short-term supply solutions — and leadership — during a time of crisis. As former Chairman of the Joint Chiefs of Staff, Powell assembled a multibillion dollar supply chain involving 42 nations during Operation Desert Storm in the Persian Gulf.



*Off onsite pricing.

ism2017.org



ISM2017

May 21-24, 2017 • Orlando