JOURNAL OF BUSINESS LOGISTICS
STRATEGIC SUPPLY CHAIN RESEARCH

Journal of Business Logistics, 2015, 36(1): 1–8 doi: 10.1111/jbl.12080

Editorial

The Quest for Societal ROI in the Midst of the Perfect Storm: Can SCM Set the Standard for Twenty-First Century Business Education?

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The Academy's dual role is to discover and disseminate knowledge. For most of our tenure, we have focused on research's role in fulfilling this societal mandate. We continue that discussion here by calling for more "actionable" research—something that the supply chain discipline is particularly well positioned to do. We now extend the discussion to pedagogy. As the two epigraphs denote, society is looking for a return on its investment—even a reinvention of the university. Increased costs, poor student achievement, and disruptive technology create an environment perfect for disruption. Yet, if we do our job well, current and foreseeable technologies cannot provide the same kind of transformative education that can be cultivated through community-engaged experiential learning. The good news: The supply chain discipline is perfectly positioned to set the standard for twenty-first century business education.

> *Now a revolution has begun, thanks to three forces: rising costs, changing demand and disruptive technology. The result will be the reinvention of the university.— The Economist (2014b)*
> *In the business world, officials keep an eye on the bottom line. If profits are down, there's a performance audit to identify unprofitable practices... Why not audit higher education?—Mussano and Iosue (2014)*

INTRODUCTION

Throughout history, the Academy has been highly regarded precisely because its role has been to advance knowledge and understanding *for the benefit of society* (see Fawcett and Waller 2011a,b). As academicians, we pursue this noble trust through our research and teaching. Indeed, we justify our valued place in society, arguing that we are "the keepers" of knowledge discovery and dissemination. We take solace in the pretext that what we do makes the world a better place.

Many observers, however—including parents, politicians, and corporate recruiters—are beginning to doubt the traditional story line. Skeptics increasingly question the Academy's contribution to society, asking, "What is the real return on investment for a college degree?" (Belkin 2014). Importantly, this societal reflection is taking place in the midst of a perfect storm of poor student achievement, spiraling college costs, and the rise of disruptive technologies (see Figure 1).

UNDERSTANDING THE PERFECT STORM

To influence the emerging debate, we need to take a look at the components of societal return on investment (ROI) that are capturing policy maker's attention. Then, we need to use the understanding we gain to consider how we can improve society's ROI. Such reflection reveals that logistics and supply chain management (SCM) is perfectly positioned to set the standard for effective twenty-first century business education—but only if we leverage our core strengths. Let us begin our brief investigation by considering the forces that are converging to create the perfect storm.

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Costs That Are Making the Headlines

Not all costs incurred by the Academy are under equal scrutiny. Three costs in particular are attracting attention and shaping decision-maker perceptions: the costs of (1) administration, (2) publishing an "A" article, and (3) student debt.

Administration costs

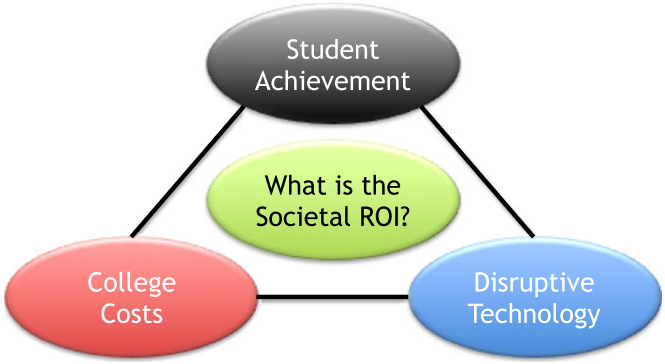
A recent *Wall Street Journal* tagline notes, "In the past decade, college tuition has risen three times as fast as the consumer-price index and twice as fast as medical care" (Belkin 2013). Policy setters are beginning to ask, "What are we paying for?" Richard Vetter, Director of the Center for College Affordability and Productivity, identifies three sources of rising costs (Finley 2013).

Administrative payrolls: "Colleges have also used the gusher of taxpayer dollars to hire more administrators to manage their bloated bureaucracies." The U.S. Department of Education concurs, noting that administrative positions have grown 50% faster than the number of instructors (Belkin and Thrum 2012).

Administrator pay: "Some college officials are also compensated more handsomely than CEOs." Gordon Gee, former President of The Ohio State University, became the poster child for high administrator salaries, earning $2,000,000 per year (Finley 2013).

Extravagant facilities: "Many colleges... finance Hilton-like dorms and Club Med amenities." Administrators argue that universities must compete via a facilities arms race to attract

Figure 1: Forces converging to create business education's perfect storm.



students and fill classrooms. The Department of Education notes that to finance this arms race, the debt at public four-year schools has tripled since the turn of the millennium to $88 billion (Belkin and Thrum 2012).

Publishing costs

Karl Ulrich and Christian Terwiesch, two professors from the Wharton School of Business, broke down the cost of a single so-called "A" article at $400,000. Ulrich commented, "I'm a scholar. I do research and am supportive of it. But I had never carefully looked at how much it costs. It's fantastically expensive. Can we really afford it? And can we compete without it?" (Byrne 2014).

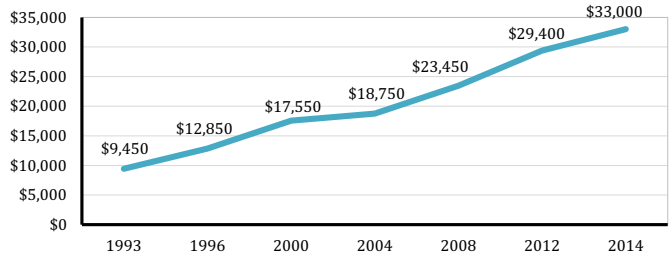
Other estimates place the costs even higher. Roger Martin, former Dean of the Rotman School of Management, calculates that the typical "A" article costs in excess of $500,000. More striking, Martin refined his analysis to calculate the cost of actionable research—that is, research that is relevant to managerial decision making. His finding: Each actionable article costs $1.5 million to produce (Martin 2012).

Our primary concern is not whether or not the estimates are accurate. Arguments could be made that the methods either under- or overestimate actual costs. Our concern is the perception created by the analysis. Martin's estimate that $600 million is spent every year to publish nonactionable research casts doubt that society achieves a decent ROI on business research. Byrne (2014), for example, concludes, "Many faculty articles are read by a limited number of scholars in a discipline and *often have little to no value to practicing managers*."

Student debt costs

Student debt has become big news. Consider a recent *Wall Street Journal* headline, "Congratulations to Class of 2014, Most Indebted Ever" (Izzo 2014). Three statistics stand out. First, total student loan debt in America is over $1.2 trillion (The Economist 2014a). Second, over 70% of bachelor's degree recipients are entering the next phase of life with higher education-related debt. Only 20 years ago, fewer than half of students took on debt to finance college. Third, the amount of debt the average student incurs has grown consistently—that is, year after year—since 1994 (see Figure 2). In fact, adjusted for inflation, the $33,000

Figure 2: Average student debt over time.



that the typical student owed in 2014 is double "the amount borrowers had paid back 20 years ago" (Izzo 2014).

The concern is that college graduates are beginning their professional lives with a debt burden that jeopardizes both their financial future and overall economic growth. For example, student debt makes it more difficult to take out a mortgage. In fact, in 2012, fewer people at age 30 had entered the housing market than at any time over the previous 10 years (Izzo 2014). The upshot: Pundits are beginning to ask, "Is a college education worth the expense?" The data still indicate that the answer is, "Yes." But, as education costs have gone up faster than inflation, median salaries for college graduates have actually dropped in recent years. Moreover, upon graduation, 41% of college graduates now take jobs that do not require a bachelor's degree (Reynolds 2014). These realities are chipping away at the confidence that higher education promises a good ROI for students, their families, and society.

From a public-perception standpoint, the nature and direction of the costs of higher education give pause to the thoughtful observer evaluating the question of societal ROI. Costs appear to be out of control. Equally important, critics argue that the Academy's priorities are misplaced. With this in mind, let us take a closer look at the numerator of the ROI equation.

Student Outcomes That Are Making the Headlines

Today, the question increasingly driving the ROI debate—even more than increasing costs—is, "Are Colleges Producing Career-Ready Graduates?" (Korn 2014a). Regrettably, evidence shows that a college degree fails to guarantee that students possess valued skills. Many pundits further argue that the higher education experience falls short on instilling the attitudes and habits young people need to transition into professional roles. Let us take a closer look at what influencers are saying about each of these issues/outcomes.

The skill gap

What skills do graduates need to be successful in entry-level jobs? Bud LaLonde's annual survey of career patterns in logistics consistently identified three core skills as critical: (1) problem solving, (2) communication, and (3) people/teaming (Ginter and LaLonde 2001). Other recruiter surveys have confirmed the importance of this skill set. For example, a 2013 study by the Association of American Colleges and Universities identified the following recruiter priorities:

1 Critical Thinking
2 Complex Problem Solving

3 Written Communication
4 Oral Communication
5 Applied Knowledge in Real-World Settings

Unfortunately, these are exactly the skills recruiters at leading business schools say they are struggling to find in today's graduates. For example, a 2014 study by Hult International Business School found, "students lack self-awareness, can't work in teams, have poor critical-thinking skills and come up short on creativity" (Korn 2014b). Further, a Gallup survey of business leaders indicated that only 11% "strongly agree" that "today's graduates have the skills and competencies that their businesses need" (WSJ 2014). Of note, in a separate Higher Ed/Gallop poll of 800+ college presidents, "few felt that their schools are successfully teaching critical-thinking skills" (Korn 2014a). In this context, such unity of opinion across buyer/supplier relationships regarding "product" quality is striking.

What is at the root of this skill gap? Employers in the Hult study argued that business schools do not measure student abilities rigorously enough (Korn 2014b). Other studies support this proposition, showing that students are earning higher grades, but learning less. In one study that analyzed student scores on the Critical Learning Assessment over a four-year time period (freshman to seniors), almost 4 in 10 students did not "demonstrate any significant improvement in learning" (Choate-Nielsen 2013). Richard Vedder summarizes the problem, saying, "Declining academic standards and grade inflation add to employers' perceptions that college degrees say little about job readiness" (Vedder and Denhart 2014).

The attitude gap

Recruiters consistently say that to compete, they need to find and hire entry-level managers who are ready to hit the ground running. Unfortunately, research from the Center for Professional Excellence led *Wall Street Journal* writer Rachael Silverman to conclude: "Entry-level workers are an entitled, unprofessional bunch." Specifically, recruiters noted that many graduates lack the following basic attributes of professionalism: "appropriate appearance, punctuality, regular attendance, honesty, attentiveness and sticking with a task through completion" (Silverman 2013).

How did we arrive at this point of poor preparation? In their 2011 book, *Academically Adrift*, sociologists Richard Arum and Josipa Roska noted that schools reward students for minimal effort. Following the 2014 publication of *Aspiring Adults Adrift* Arum described the student educational experience as follows:

> *They weren't adequately prepared during college to make successful transitions. They didn't develop critical thinking, complex reasoning [skills] and the ability to communicate in writing. [And] they didn't develop the attitudes and dispositions during college associated with adult success.*
> *For many, [students'] typical experience was they studied alone little more than an hour a day, and for that effort they received high grades. The students in our study who studied alone five or fewer hours a week had a 3.2 grade average. So they learned in college that success comes relatively easily. (Korn 2014a)*

Another commentator elaborates on both the process and the potential outcome, saying,

> *There has been so much grade inflation in high school and college, so much pressure to move students along regardless of their academic accomplishment, that it is unsurprising to find large numbers of graduates lacking the skills required for available jobs. They may also lack the patience and discipline to learn those skills: If you haven't been required to meet demands in order to receive good grades, then patience and discipline are less likely to be among your habits. For graduates who do find work, the reality of employers' expectations may come as a shock. (Jacobs 2013, A15)*

Gaps between the skills and attitudes employers seek and those possessed by graduates are creating a potential supply and demand problem. For instance, CEOs in the Hult International study, warned that if universities "don't shape up soon," recruiters will "cut back on hiring" (Korn 2014b). Global competitiveness is also at stake:

> *A first-ever international comparison of the labor force in 23 industrialized nations shows that Americans ages 16 to 65 fall below international averages in basic problem solving, reading and math skills, with gaps between the more- and less-educated in the USA larger than those of many other countries... The problem, the new findings suggest, is with younger U.S. workers, who lag in nearly every category. (Toppo 2013)*

Decision makers are taking note of these disappointing outcomes and assessing how to challenge the status quo.

Disruptive Technologies that Are Making the Headlines

Higher costs and lower academic achievement make higher education susceptible to technological disruption. Many analysts have identified online education—especially MOOCs (Massive Open Online Courses)—as the source of this potential disruption. The *New York Times* declared 2012 as the "Year of the MOOC" and in 2013, *The Economist* queried, "Will MOOCs Kill University Degrees?" (The Economist 2013). Thomas Friedman, author of *The World is Flat*, declared, "Nothing has more potential to lift more people out of poverty" (Chafkin 2013) and Clayton Christensen, author of the *Innovator's Dilemma*, predicted, "15 years from now, more than half of the universities will be in bankruptcy." *The Economist* explains,

> *With low startup costs and powerful economies of scale, online courses dramatically lower the price of learning and widen access to it, by removing the need for students to be taught at set times or places. The low cost of providing courses—creating a new one costs about $70,000—means they can be sold cheaply, or even given away. (The Economist 2014a)*

Certainly, a MOOC that can reach from 20,000 to 200,000 students offers a very favorable cost-per-student-taught equation.

The student convenience and reach also appear to favor the growth of MOOCs. However, several questions remain to be answered. Consider the following.

Dropout rates
Fewer than 10% of the people who sign up for a MOOC actually finish the course. MOOC advocates note that as the classes are free, many students view the experience as similar to "borrowing a book from the library and browsing it casually or returning it unread" (Marcus 2013).

Pass rates
Among students who complete a MOOC, pass rates are between 24% and 51%—only about 50% of the pass rate for more on-campus classes (Fowler 2013). In other words, for every 100 people who sign up, only about five actually master the material (Chafkin 2013).

Current clientele
Most of the people who sign up for MOOCs already have a bachelor's degree. The key point: These students tend to have more discipline and know better exactly what skills they need to build than typical 18- to 25-year-old college students.

Multitasking
A study of edX videos (edX is one of largest MOOC providers) showed that most students watch edX videos between midnight and 2 a.m.—a time when attention spans tend to be short and multitasking opportunities abound. In fact, the same study revealed that certificate-earning students spent a median time of 4.4 min watching 12- to 15-min videos (Fowler 2013).

Cheating
In a distance learning, self-monitoring setting, it is almost impossible to verify that the person who signs up for a class is the same one who is doing the homework and taking the tests.

Learning
Despite the hype, we really do not yet know how effective the MOOC learning environment is. Shanna Jaggars, assistant Director for Columbia University's Community College Research Center, found that "all students performed less well in online courses than in face-to-face ones, but the gap was even wider among those with lower GPAs, men and African-Americans" (Fowler 2013).

Credit toward a degree
As a result of the preceding issues—combined with the threat that MOOCs might cannibalize on-campus offerings—few universities offer college credit for MOOCs. Accreditation is critical to the future growth of online education.

Clearly, MOOCs have not performed the way Sebastian Thurn had envisioned when he cofounded Udacity. Rather, Thrun noted, "We have a lousy product" (Chafkin 2013)—one better suited for "the top 5% of the student body, but not a great thing for the bottom 95%" (Selingo 2014). To date, MOOCs have followed the path of the Hype Cycle (Figure 3). That is, they began with the "Peak of Inflated Expectations" and fell into the "Trough of Disillusionment." However, the MOOC experiment is really just beginning. If MOOCs continue on the hype cycle, they will emerge into the "Slope of Enlightenment" and arrive at the "Plateau of Productivity."

As MOOCs move toward the Plateau of Productivity, they may yet become the threat to the university degree that *The Economist* continues to hype. When, and if, this progression occurs, the scale economies, low costs, and reach promised by MOOCs will tempt policy makers to disrupt the value proposition of traditional universities. Simply put, knowledge transfer at extremely low costs beats poor skill building at a high cost.

SCM AND THE STANDARD FOR TWENTY-FIRST CENTURY BUSINESS EDUCATION

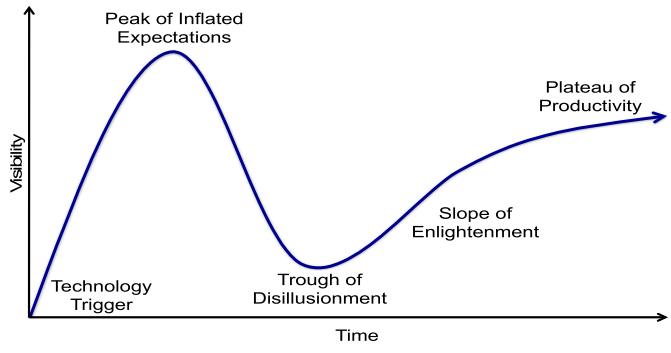
Poor MOOC performance is keeping the perfect storm just beyond the horizon. However, the existing ROI outcome (poor return/high costs) means that the threat is not going to dissipate on its own. A proactive response on our part can, however, diminish the threat. Let us briefly discuss what we as supply chain academics can do in both research and teaching domains to influence the future policy debate.

Relevant Research

Martin (2012) articulated a clear need for the Academy to rethink its knowledge-discovery value proposition. Martin called for more actionable research—research that makes a difference to decision makers and provides a tangible ROI. The supply chain discipline is perfectly positioned to lead the resurgence of managerially relevant research. After all, supply chain research is naturally actionable.

We specialize in research that explains real phenomena—the ones managers must grapple with every day in their quest to create value. Table 1 shows that we have consistently called for research that is relevant to managers' current, emerging, and future challenges. When we stay true to our rubber-meets-the-road roots, we use theory as the foundation for prescription. Our belief that diagnosis (theory's explanatory power) precedes prescription (managerial action) exemplifies Lewin's (1951) statement that "There is nothing more practical than a good theory." However, we can still improve our research ROI by addressing the following issues.

Figure 3: The hype cycle.



Research with practitioners

Waller et al. (2012) specifically called for academics to proactively engage with practitioners—not only just in data collection but also in seeking meaning and publishing. Such research is possible (see e.g., Liker and Choi 2004; Smith et al. 2011; Van Hoek et al. 2014) but rare. Moreover, we seldom see joint research in academic journals. More often, published research with practitioners is targeted to practitioner outlets. We should engage practitioners to bring more meaning to rigorous academic literature.

Address the tough questions

Too often, the publish-or-perish pressure we face leads us to pursue fast hits and high article counts. One result: We continue to

Table 1: *JBL* calls for actionable research

Reference	Editorial	Topic
Fawcett et al. (2011)	Cinderella in the C-Suite: Conducting Influential Research to Advance the Logistics and Supply Chain Disciplines	• Complexity • Customer Experience • Globalization • Humanitarian Assistance • Public–Private Partnerships • Risk Management • Sustainability • Total Cost Decision Making
Fawcett and Waller (2011b)	Moving the Needle: Making a Contribution When the Easy Questions Have Been Answered	• Interorganizational Trust • Design for Customer Experience • Change Processes
Waller and Fawcett (2012b)	The Total Cost Concept of Logistics: One of Many Fundamental Logistics Concepts Begging for Answers	• Total Costing
Fawcett and Waller (2012)	Mitigating the Myopia of Dominant Logics: On Differential Performance and Strategic Supply Chain Research	• Global Supply Chain Design • Value Cocreation
Waller and Fawcett (2012a)	The Impact of Supply Chain Management Research: You Can't Unring a Bell!	• Strategic Sourcing • Commercializing New Products • Logistics in Buyer–Supplier Relationships • Cross-Functional Integration • E-Commerce Supply Chain Strategies
Waller and Fawcett (2013)	Data Science, Predictive Analytics, and Big Data: A Revolution that Will Transform Supply Chain Design and Management	• Big Data and Predictive Analytics
Fawcett and Waller (2013)	Considering Supply Chain Management's Professional Identity: The Beautiful Discipline (Or, "We Don't Cure Cancer, But We Do Make a Big Difference")	• Professional Identity • Value Creation • Network Evolution • Technology Adoption and Deployment
Waller and Fawcett (2014)	Click Here to Print a Maker Movement Supply Chain: How Invention and Entrepreneurship Will Disrupt Supply Chain Design	• Additive Manufacturing (i.e., 3D Printing) • The Maker Movement
Fawcett and Waller (2014b)	Supply Chain Game Changers—Mega, Nano, and Virtual Trends—And Forces That Impede Supply Chain Design (i.e., Building a Winning Team)	• Big Data • Additive Manufacturing • Autonomous Vehicles • Borderless Supply Chains • Supply Chain Security • Trust
Fawcett and Waller (2014a)	Can We Stay Ahead of the Obsolescence Curve? On Inflection Points, Proactive Preemption, and the Future of Supply Chain Management	• Supply Chain Design • Change Management • Supply Chain Education

answer the easy questions and make only minor, incremental steps forward in our understanding of the problems that really vex practitioners. Answering the hard questions requires more time and resources. The current emphasis on counting articles in the tenure-and-merit-pay system does not support—much less promote—the messy, nuanced, multimethod, and longitudinal research that is needed to gain and articulate deep insight into persistent and emerging managerial dilemmas. Unfortunately, the peer-review process also impedes the exploration of tough questions. Simply put, reviewers do not like the messy research required to tackle messy problems.

Message more appropriately

Some pundits argue that academics should write more often for practitioner outlets. We agree (see Waller and Fawcett 2014). However, we also believe supply chain academics should make a more concerted effort to make all of our research more accessible. Rigor does not require esoteric, hard-to-read writing. We can, and should, follow Carter's (2008) advice to write the front and back ends of our research in a way that attracts practitioner interest. As we focus on better storytelling, we will likely spend more time thinking about the "So, what?" and "Therefore, what?" questions that would lead us to conduct more relevant research.

Relevant Teaching

Over the past decade, studies of student skills valued by recruiters articulate a clear need for the Academy to rethink its knowledge-dissemination value proposition (see Table 2). These studies call for more experiential education—education that helps students learn to think critically and creatively to solve problems and deliver a tangible ROI. Yet, the Academy as a whole has not embraced experiential learning. After all, like relevant research, experiential learning is messy. It requires that students get out of their comfort zones—often "failing" in their early attempts to acquire valued, but hard-to-build skills recruiters are looking for. Once again, the supply chain discipline is perfectly positioned to deliver an outstanding experiential education. We can improve our teaching ROI by addressing the following issues.

Community engagement

Martin (2012) noted that to make research more real, we need to engage in more case-based investigations. The logical extension is to embrace more case-based learning. Cases are ideally suited for teaching the topics and challenges encountered in a modern supply chain world. Further, it is a short step from case-based research to community-experiential learning (Fawcett and Fawcett 2011). We have found that supply chain professionals are excellent partners in the case writing and case teaching processes. Bringing executives into the class to team teach cases elevates student preparation, engagement, and learning. The executives also have the opportunity to prescreen potential hires in a more objective and revealing setting. SCM is, of course, well suited for other types of community engagement including plant tours, class projects, field consulting studies, student-led research projects, and membership in professional associations.

Table 2: Skills and traits recruiters are seeking

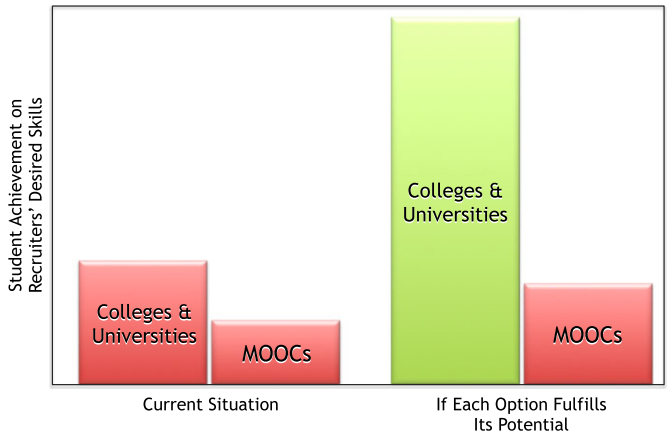
Wall Street Journal Survey of Recruiters (Alsop 2003)
1 Communication and interpersonal skills
2 Ability to work well within a team
3 Analytical and problem-solving skills
4 Personal ethics and integrity
5 Leadership potential
6 Fit with corporate culture
Association of American Colleges and Universities (2013)
1 Critical Thinking
2 Complex Problem Solving
3 Written Communication
4 Oral Communication
5 Applied Knowledge in Real-World Settings
6 Ethical Judgment and Integrity
7 Capacity for Continued Learning
Forbes Survey of Employers (Casserly 2012)
1 Professionalism (86%)
2 High Energy (78%)
3 Confidence (61%)
4 Self-Monitoring (i.e., *Ability to work without guidance*)
5 Intellectual Curiosity (i.e., *Ability to learn new solutions*)

Experiential content

Taking advantage of SCM's natural affinity for professional engagement is just the first step. To set the standard for twenty-first century business education, we need to embrace technology so that we can flip the classroom and incorporate formative assessment. The technology to do this is widely available and will help us do three things that will improve the learning culture in the classroom:

1 Bring accountability to class preparation,
2 Help us understand exactly how well our students are grasping concepts and learning new skills,
3 Free up time for experiential learning activities (e.g., cases, simulations, games, object lessons).

Figure 4: Comparing educational business models and value propositions.



Importantly, this third point plays very well to supply chain's strengths. We have an abundance of real-world, experiential content that we can bring into the classroom to enhance relevance and real skill building.

CONCLUSION

The Academy is under pressure to perform better its dual role of knowledge discovery and dissemination—and it should be! (Association of American Colleges and Universities 2013). From almost any objective measure, the societal ROI is underperforming. Business schools are failing to deliver on their value proposition of producing actionable knowledge that leads to better decision making and students who are career ready. If the Academy were a stock, analysts would rate it a "Sell." Recognizing this, at the September 2014 editorial review board meeting, during a discussion about how professors are rewarded for the number of publications in "A Journals" rather than the impact of the research on management practice, Doug Lambert noted, "If you were not part of the Academy, if you looked at this system from the outside, you would think it is corrupt from top to bottom." In a response-to-thought-leader article published in this issue, Doug and his co-author Matias Enz implore us to have the "courage to change."

The good news: We have the time and the ability to change—to deliver a much needed value proposition and an outstanding ROI. Even at their best, the MOOC business model of enabling "professors to spread their knowledge to vastly larger audiences" is not the same as providing a truly experiential learning environment (see Figure 4). The critical thinking, engagement, teamwork, ideation, and collaboration skills engendered by an experiential education are difficult to acquire watching a YouTube video—no matter how polished or convenient it is. As members of the supply chain academic community, it is time to adopt two mottos that will lead to a better ROI and a figurative "Buy" rating:

- Research into Reality
- Community-Engaged Experiential Education

If we execute to these mottos, we will make a difference worth investing in!

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