

North American University Supply Chain Programs, Part 3: Ranking the Top Programs

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Gartner assesses North American university supply chain programs and provides insights on the ones doing the best job developing students into supply chain professionals. Because industry has repeatedly pointed out gaps in real-world experience and cross-functional skill sets in recent grads, the programs that require internships and have curricula that reflect a broad supply chain span of control performed best in our assessment.

Key Findings

- Although there is still a perceived gap between industry requirements and program effectiveness, we find evidence that the gap is closing, thanks to a combination of more relevant curricula and required internship programs.
- Generally, in this study, the perceived value by industry practitioners is the biggest differentiator of a school's position relative to other programs.
- Deans, department heads, program directors and professors are using this research to self-assess their programs and, in some cases, make changes.
- Without commensurate corporate investment in employee onboarding and career path design, even the strongest industry/university partnerships won't result in better-performing supply chains.

Recommendations

- Create industry/academia joint learning programs for second- and third-year undergraduate students to motivate and retain them as supply chain majors.
- Increase the number of internships available for third- and fourth-year students to ensure real-world experience and allow hiring companies to build talent pipelines and text out potential hires.
- Establish cross-college curricula and "orchestrator" course work within supply chain programs to better prepare students for the realities of cross-functional business processes.
- Companies should invest in post-hire building of supply chain talent, including onboarding, career path architecture and employee development, at least as much as

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they do in their university recruiting strategies. As difficult as it is to attract and hire top talent, retaining the best and brightest is the real trick.

ANALYSIS

This document was revised on 14 October 2011. For more information, see the [Corrections page on gartner.com](#).

"The only thing that interferes with my learning is my education." — *Albert Einstein*

In a concise string of eleven words, perhaps Einstein best sums up the industry/academia experience gap. Industry looks for recruits who can make contributions to solving real-world problems, but oftentimes feel that they leave university programs lacking adequate skills to make these types of contributions. Recruits may be "book smart," yet deficient in the ways of the working world.

The Supply Chain Council's Supply Chain Talent Academic Initiative (SCTAI) conducted a study in 2010 to gauge the sentiment of students who were enrolled in supply chain programs. The study found that nearly 80% had made the decision to enter the field of study after beginning their university careers, usually on the recommendation of a friend or advisor at that level. It also found that 70% decided to stay in the field after completing an internship and learning of career opportunities. The lesson learned? Attracting, developing and retaining students in degree programs are shared efforts between industry and academia.

In Part 2 of this research, we provided industry's views on the hurdles to and opportunities in meeting the challenges in partnering with academia (see "North American University Supply Chain Programs, Part 2: Industry Rates the Recruits"). The expanding scope of supply chain, its increasing significance as an enabler to business strategy and its potential to drive top-line revenue create needs for new types of talent. Although they're still expected to build working knowledge of specific supply chain disciplines in students, the programs viewed as most valuable by industry will produce a graduate with a broad knowledge of the cause-and-effect relationships between disciplines on end-to-end business processes. Cross-college curricula, experiential learning programs and use of internships earlier at sophomore and junior levels are tools that leading programs will use to produce the well-rounded recruit.

Scope of This Report

Measuring Program Effectiveness

We used the Talent Attribute Model once again this year to assess completeness of university curricula (see Figure 1). The model was created in 2008 and used in our first report (see "Leading U.S. Supply Chain Programs, 2009") (Note: This document has been archived; some of its content may not reflect current conditions). It was developed and tested by AMR Research as a modern and comprehensive model, incorporating the expanding breadth of capabilities that can be found in a modern supply chain. The model is composed of 11 capabilities — seven functional and four enabling — which we refer to as "stations."

Figure 1. Supply Chain Talent Attribute Model



Source: Gartner (October 2011)

With the Talent Attribute Model as the capabilities framework for the ideal supply chain, we test university curricula for the completeness of their offerings against the 11 stations. Effectively, we are testing for curriculum alignment with the functional integration of a modern supply chain. It's especially relevant this year, since our industry surveys continue to show the expansion of the number of functions within the supply chain organization, and a desire by industry for recruits who can grasp big-picture, integrated supply chain concepts.

Data for this research is gathered through surveys and interviews of industry and academia. The surveys are designed to quantify industry requirements, and gather information on university program composition, including numbers of students and professors, as well as the scope of the curriculum. Three categories are evaluated, using the research methodology detailed in Figure 2, to determine comparative position in the study.

Figure 2. Three Evaluation Criteria for University Programs (Undergraduate Example)

Undergraduate Industry Value		40%
<i>More than 400 respondents in 2010 survey of industry sentiment on university supply chain program effectiveness</i>		
Recruit mentions	Number of respondents indicating that they recruit from this program	
"Best" mentions	Number of respondents indicating they view this as the best program	
<i>Fifty-four university respondents to RFIs on supply chain programs</i>		
Undergraduate internships	Internships required for completion of an undergraduate program	
Average starting salary		
Undergraduate Program Size		20%
<i>Fifty-four university respondents to RFIs on supply chain programs</i>		
Number of full-time professors		
Number of supply chain majors		
Undergraduate Program Scope		40%
<i>Using the Gartner Talent Attribute Model as the target framework</i>		
Number of stations taught	How well the curriculum aligns with all 11 stations in the model	

Source: Gartner (October 2011)

The Research Methodology

Our methodology for this year's program assessments extends on what was used in our inaugural report in 2009, adding other dimensions for evaluation. In 2010, Gartner sent an RFI to our contacts at supply chain programs in the U.S. and internationally. We followed up the RFIs with interviews with many of the schools, and conducted research on university websites and

course catalogs to ensure that the RFIs were complete and accurate. Responses and clarifications were collected through 2010.

Here are some details on the university participants:

- Fifty-three universities responded to the RFI.
- Thirty-six schools submitted information on undergraduate supply chain programs.
- Thirty-four schools submitted information on graduate-level supply chain programs.
- Often, but not always, supply chain graduate programs are hosted within business schools.
- Nineteen schools from 2009 returned to participate in this year's research, with 17 new participants.

The foundation for this ranking of supply chain programs was based on program-supplied RFI information, but additional input into the "industry value" component of the ranking comes from a survey of current supply chain and recruiting professionals. Survey respondents said that the quality and effectiveness of the recruiting pool are improved when students have real-world experience. Gartner, in turn, has responded by assessing each program's use of internships. We feel this is an indicator of a program's focus on providing relevant learning experiences for the real world and the effectiveness of its industry partnerships (that is, the source of internships).

The RFIs were sent to a Gartner internal database of supply chain industry contacts, with links to the survey posted by the universities. The evaluation criteria for the university programs appear in Figure 2. The final placement of university programs in our relative comparison is based on a composite score of three categories: industry value, program size and program scope.

For ranking purposes only, the internal database responses were used for the "program mentions" and "best program" scoring. Although the survey responses received via university distribution of the survey link were useful for our overall market analysis, it would have biased the results to use that data in our ranking.

The supply chain course score used for the undergraduate and graduate-level "scope" ranking is based on the courses listed in RFI responses and on the evaluation of course catalogs against the supply chain Talent Attribute Model. A higher score indicates more complete coverage of the 11 supply chain stations.

A Snapshot of Each Evaluation Criterion

Industry Value

Once again this year, indicators of perceived industry value are the schools on which recruiters focus, the programs viewed as having the best quality of recruits and, finally, the average starting salaries for program graduates.

This year, we also added internships as an explicit indicator of industry value. Our rationale is that industry sets up internships in partnership with institutions where the overall program and its students align well with a company's needs. Beyond that, we view programs that require internships to be indicative of programs that are preparing students to solve real-world problems through real-world experience, which are two key and recurring gaps in our industry survey of university program strengths.

This combination of mentions, best mentions, average salary and required internship (or other real-world experience) makes up a composite view of perceived industry value.

Program Scope

We framed the scope of a supply chain with the Talent Attribute Model. As we evaluated programs, we looked for curricula that aligned with the 11 stations of the model. Client interviews through the past year indicate that industry places a premium on supply chain recruits who have a broad understanding of supply chain concepts and the cause-and-effect relationships between the disciplines.

Program Size

The number of supply chain students and professors in the program provides quantification of a given university's ability to sustain a pipeline of supply chain management (SCM) recruits for industry. Even though the need for quality and quantity of recruits for supply chain continues to be a theme as we talk to industry clients, program size received relatively less weight than in previous outings. Also, to fairly contrast programs, we considered undergraduate and graduate student populations separately. We also considered only full-time professors engaged in classroom delivery of supply chain courses or research related to the supply chain program.

Highlights From This Year's Report

- Pennsylvania State University again tops our rankings for both undergraduate and graduate programs.
- There were 17 new programs evaluated in this year's study, and 14 of them made one or both lists.
- Eleven undergraduate programs were first-year participants in this ranking. Eight graduate programs were newcomers.
- Mean industry value score was 5.7 out of 10. The median was 5.5.
- The most highly ranked new entrant in the undergraduate field was the University of Texas at Austin at No. 6. Stanford was the most highly ranked new graduate entrant (No. 11).
- There were significant advances made by select programs — notably, Rutgers in both the graduate and undergraduate categories, and Georgia Tech in the undergraduate rankings.

How the Universities Stacked Up

Undergraduate Programs

The top U.S. undergraduate supply chain programs share balanced excellence across curricula, graduate performance in the real world and overall reputation. Penn State again claims the No. 1 position, but upstarts this year included Rutgers, University of Texas at Austin and Marquette (see Figure 3).

Figure 3. Undergraduate Supply Chain Program Ranking



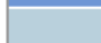
1. Pennsylvania State University	14.5 Lehigh University
3. Georgia Institute of Technology	14.5 Marquette University
3. Rutgers University	16. Syracuse University
3. Arizona State University	19.5 Indiana University
5. Michigan State University	19.5 University of South Carolina
6. University of Texas at Austin	19.5 Auburn University
7.5 Ohio State University	19.5 Texas Christian University
7.5 University of Wisconsin at Madison	19.5 University of Nevada at Reno
9.5 Texas A&M University	19.5 University of Kansas
9.5 University of Tennessee	23. University of North Texas
12. University of Maryland	24.5 Iowa State University
12. Western Michigan University	24.5 Rider University
12. Stanford University	

Source: Gartner (October 2011)

Though smaller by comparison to the other programs in the top five and most other undergraduate programs we evaluated, Wisconsin scores highest in our industry value category, edging its way to the top with a solid score in our newest category, required internships and co-op programs (see Figure 4). Penn State, Georgia Tech, Michigan State and Syracuse are all closely grouped at the top of the industry value category. Georgia Tech scores highest among all universities for the sheer number of best mentions by industry, which reflects its strong brand with the supply chain community at large.

Figure 4. Top Undergraduate Programs in Industry Value, Program Scope and Program Size

Top Undergraduate Programs by Industry Value	Top Undergraduate Programs by Scope	Top Undergraduate Programs by Size
University of Wisconsin	Pennsylvania State University	Pennsylvania State University
Pennsylvania State University	Arizona State University	Georgia Institute of Technology
Georgia Institute of Technology	Rutgers University	Arizona State University
Michigan State University	University of Texas at Austin	Michigan State University
Syracuse University	Stanford University	Ohio State University
	Marquette University	Texas A&M University
	University of Kansas	Rutgers University
		University of Tennessee
		University of Maryland
		Indiana University

	Highest score in category
	Second-highest score in category
	Third-highest score in category

Source: Gartner (October 2011)

Programs that scored highest for internships were Rutgers, University of Texas at Austin, Rider, Syracuse, North Texas, South Carolina and Wisconsin. Graduates of programs that scored highest in internships tend to command higher starting salaries, but we did identify the University of Texas as a "best buy" program (from a corporate recruitment standpoint), where real-world exposure is extensive, but starting salaries are relatively modest.

For program scope, where a diverse, balanced program based on the Talent Attribute Model received the highest marks, the top performer was Penn State, followed closely by Arizona State, Kansas, Marquette, Rutgers, Stanford and University of Texas.

If there is a message in the performance of these programs, it's that balance is key to building positive perception. For the top five programs, all perform at or better than the midpoint in all categories, and lead in some.

Graduate Programs

Many familiar names from the undergraduate list pop up again in our graduate ranking, with Penn State again grabbing the No. 1 spot. Programs that rate on the graduate list, but not undergrad, are University of Michigan, MIT, University of Texas at Dallas, University of San Diego, University of Florida, North Carolina State and Oklahoma (see Figure 5).

Figure 5. Graduate Supply Chain Program Ranking

1. Pennsylvania State University	14. University of Wisconsin at Madison
2. University of Michigan	15. University of Texas at Austin
3.5 Michigan State University	16. Texas A&M University
3.5 Rutgers University	17. Indiana University
5. Arizona State University	18. University of South Carolina
6. Syracuse University	19. University of San Diego
7. Massachusetts Institute of Technology	20. University of Florida
8. Ohio State University	21. University of Maryland
9. Georgia Institute of Technology	22. North Carolina State University
10. University of Tennessee	23. University of Oklahoma
11. Stanford University	24. University of Kansas
12. Lehigh University	25. Auburn University
13. University of Texas at Dallas	

Source: Gartner (October 2011)

For industry value — the most influential yardstick in the rankings — there appears to be a "Big Four" among graduate programs. Penn State, Michigan, Georgia Tech and Michigan State are close together, and far ahead of the pack, in all industry value subcategories: recruit mentions,

industry best-program mentions, required internship/co-op and average starting salary. Top program scope scores, with maximum coverage of the 11 stages of the Talent Attribute Model, were achieved by Arizona State, Lehigh, Penn State and Rutgers.

Penn State ends up dominating the graduate list because of its high industry value score, broad and deep program scope, and size (see Figure 6).

Figure 6. Top Graduate Programs by Industry Value, Program Scope and Program Size

Top Graduate Programs by Industry Value	Top Graduate Programs by Scope	Top Graduate Programs by Size
Georgia Institute of Technology	Arizona State University	Georgia Institute of Technology
Pennsylvania State University	Lehigh University	Ohio State University
University of Michigan	Pennsylvania State University	Pennsylvania State University
Michigan State University	Rutgers University	Michigan State University
Syracuse University	Michigan State University	Rutgers University
University of Tennessee	Massachusetts Institute of Technology	University of Texas at Dallas
	Ohio State University	
	Syracuse University	
	University of Michigan	

■	Highest score in category
■	Second-highest score in category
■	Third-highest score in category

Source: Gartner (October 2011)

M.S. Versus M.B.A.: The Difference

One major difference in program scores is that M.B.A. programs tend to require internships or have them integrated as a mainstream opportunity compared to M.S. and Ph.D. programs. Since we heavily weighted required internships in our assessment this year, with all other things being equal, the M.B.A. program, with required internships, would have the edge over an M.S. program, with optional internships.

Conclusions

In the first incarnation of this research in 2009, we asked, "What does it mean to run a great university supply chain program in the United States?" and proceeded to lay out definitions for industry value and program scope. Our finding at the time was that scope needed to expand, as did opportunities for working on real-world problems. In this second edition, we can happily say that programs have made progress in two key areas:

- Adding course work that reflects the expanding span of control of supply chain
- Strengthening industry partnerships that promote quality internships and opportunities for students to participate in hands-on projects

Capability gaps that have yet to be addressed by a suitable combination of curricula and experiential exposure include finance and risk management, sustainability, and global operating environments. Also, while more programs are expanding scope to go deeper into top-line-oriented areas of the supply chain, such as product innovation and aftermarket services, there is still a concern that new hires are not coming on board with the right orientation toward orchestration — that is, the enabling skill sets in the Talent Attribute Model: strategy and change management, governance and relationship management, and performance management and analytics. As industry boards and recruiters continue to press on these needs, we would expect to see greater cross-curriculum cooperation, as well as more industry-sponsored competition and project opportunities that emphasize these skills.

Finally, we would press undergraduate programs to supply these opportunities sooner rather than later. Data gathered in 2010 validates that nearly four in five students decided on a supply chain career while at a university, and 70% decided to stay with the major because of internships and career opportunities. For this reason, more targeted projects and internship vehicles for second- and third-year students are a must.

RECOMMENDED READING

Some documents may not be available as part of your current Gartner subscription.

"North American Supply Chain University Programs, Part 1: Why Co-Investment in Supply Chain Talent Is a Must"

"North American Supply Chain University Programs, Part 2: Industry Rates the Recruits"

"Help Wanted: Two Leaders to Orchestrate Value in the Modern Supply Chain"

"Lessons Learned From Chemical Supply Chain Leaders: Refill Your Talent Pipeline"

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