

# Top U.S. Supply Chain Graduate University Programs, 2014

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Thirty-five institutions participated in the third edition of our report on U.S. university graduate supply chain programs. Here we identify program strengths and gaps as well as overall progress made in the past three years.

## Key Findings

- University supply chain programs' relevance to modern supply chain organizations has improved markedly through a combination of applied course work and more frequent and applied work experience.
- A combination of program scope, internship and co-op participation, and perceived value by industry differentiates a school's position relative to other programs.
- Supply chain graduate placement rates are between 85% and 100%. Top programs face an "out-of-stock" situation as more corporate recruiters want access to the best and brightest.

## Recommendations

- Work with a select set of university partners to build programs that start with internships and naturally develop into entry-level onramps to secure strong talent that's also a good fit for your supply chain organization.
- Target recruiting activities for the fall semester, rather than spring, or risk the near 100% placement rates shutting you out of that year's candidate pool. Partnerships that offer year-round exposure help here, too.
- Prepare to pay up, particularly for top talent with experience. The average starting salary for graduates is \$78,777 for M.B.A. degrees, \$84,302 for M.S. degrees, and \$133,810 for Ph.D.
- Encourage high-potential mid-career professionals in your organization to take advantage of tuition reimbursement programs to secure advanced supply chain degrees.

## Table of Contents

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Analysis.....	2
Highlights.....	3
2014 Graduate Program Rankings.....	4
The Research Methodology.....	6
A Snapshot of Each Evaluation Criterion.....	7
Program Scope.....	7
Industry Value.....	9
Program Size.....	9
Gartner Recommended Reading.....	11

## List of Tables

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Table 1. 2014 Graduate Supply Chain Program Ranking.....	4
Table 2. Complete List of Participating Graduate Programs.....	10

## List of Figures

---

Figure 1. Top Graduate Programs in Program Scope, Industry Value and Program Size.....	6
Figure 2. Three Evaluation Criteria for Graduate University Programs.....	7
Figure 3. Supply Chain Talent Attribute Model.....	8

## Analysis

Gartner's supply chain university research is back for its third iteration. Intended to support chief supply chain officers (CSCOs), heads of supply chain strategy and supply chain HR partners in building strong portfolios of university recruiting and internship partners, the first note in the series profiled undergraduate programs (see "Top U.S. Supply Chain Undergraduate University Programs, 2014"). This note focuses on U.S. graduate programs. Since we began this research in 2008, these programs have made impressive progress, making significant changes, which have helped grow and improve the supply of supply chain talent. We see four significant areas of growth, three of which should be welcome news to industry:

- The broadening of supply chain curricula to reflect the reality of today's supply chain organizations.
- The exposure of more students to internships and co-ops, and more applied project work — often for sponsoring companies — on-site and in the classroom.
- Dramatic increases in enrollment across the board, and new supply chain degree programs being established.

The fourth area of growth, while perhaps not so welcome for the hiring companies, is great news for supply chain professionals as a community: salaries are up roughly 10% over 2011. Top students from top programs can command a 50% premium over the average and, in many programs, new supply chain graduates handily outearn finance and accounting-focused M.B.A.s.

In the university community, competition between programs is intense, but friendly. With so much growth in programs, and industry sponsors lining up to invest in universities' supply chain centers, the sense is that supply chain has finally "arrived" as a profession. Some details on the broad set of university participants and the graduate programs, specifically:

- Forty-four universities responded to Gartner's broad supply chain university program request for information.
- Thirty-five of these institutions submitted information on 73 distinct graduate supply chain programs: 31 M.B.A. programs, 18 M.S. programs and 24 Ph.D. programs.
- Twenty-five institutions are returning participants to the graduate project; 10 are newcomers. That is, they had existing graduate supply chain programs, but have not previously participated in our research.

## Highlights

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- Pennsylvania State University leads the graduate rankings at No. 1, retaining its leading position from previous years.
- Newcomers to the graduate list were Brigham Young University (BYU), Howard University, Marquette University, Northeastern University, the University of Arkansas and the University of North Texas.
- The most highly ranked new entrant in the graduate field was BYU, at No. 14.
- The biggest upward movers in the ranking since our previous report were the University of Tennessee, the University of Texas at Austin, North Carolina State, the University of Kansas (all advanced seven places) and the University of South Carolina (six places).
- Average program scope is up; in graduate programs, we see the equivalent of adding nearly one additional functional area to the curriculum.
- Twenty-six of 35 universities offer formal training in supply chain applications and tools in their graduate supply chain programs, including ERP, supply chain planning (SCP) and network optimization.
- Eighty-five percent teach supply chain analytics in some form, showing that industry demands for these skills have been heard loud and clear. As you might expect, all 24 Ph.D. programs have a heavy emphasis on analytics.
- The average starting salary for graduates is \$78,777 for M.B.A. degrees, \$84,302 for M.S. degrees and \$133,810 for Ph.D. degrees, reflecting prior years of experience as well as the value of the degree. The highest reported starting salary for advanced supply chain degrees

overall was for Ph.D.s graduating from the University of Tennessee: \$150,000. MIT leads for M.S. starting salaries with \$116,000, and Michigan for M.B.A.s at \$112,000.

- In looking at the curriculum for each program, the place where the most progress has been made is in adding more business and strategic content (i.e., enablers in our talent model). The two areas least supported are new product design and launch, and supply chain services and customer management, the outer edges of today's supply chain organization.

## 2014 Graduate Program Rankings

The top U.S. graduate supply chain programs balance broad curricula, real-world experience and strong industry reputations to rise to the top. Penn State again claimed the No. 1 position in our graduate ranking. The upstarts this year were the University of Texas, Austin, and the University of Wisconsin, both of which broke into the top 10 after ranking 15th and 14th, respectively, in 2011. Of these upstarts, Brigham Young University is rookie of the year, at No. 14 right out of the gate. All three upstarts have innovative curricula and required internships and/or work experience.

**Table 1. 2014 Graduate Supply Chain Program Ranking**

1	Penn State University	15	North Carolina State University
2	Michigan State University	16	University of Texas at Dallas
3	University of Tennessee	17	Northeastern University
4	University of Michigan	17	University of Kansas
5	Georgia Institute of Technology	19	University of Arkansas
6	Arizona State University	20	Indiana University
7	The Ohio State University	21	University of Maryland
8	University of Texas at Austin	22	Marquette University
9	Massachusetts Institute of Technology	23	University of San Diego
9	University of Wisconsin	24	Howard University
11	Rutgers University	24	Texas Christian University
12	University of South Carolina	24	University of Houston
13	Syracuse University	24	University of North Texas
14	Brigham Young University		

Source: Gartner (September 2014)

Data for this research is gathered through surveys and interviews of industry and academia. For a detailed explanation, please see the Research Methodology section. Three categories are evaluated, using the research methodology outlined in Figure 3, to determine comparative position in the study. We explore program performance in greater detail in Figure 1:

- **Curriculum breadth and depth.** For program scope, where a diverse, balanced program based on Gartner's Talent Attribute Model (see the Research Methodology section) received the highest marks, the top performers were Penn State and the University of Michigan, followed closely by Arizona State, Georgia Tech, Syracuse, Texas A&M, the University of Texas, Austin, and the University of Texas, Dallas.
- **Supply chain brand.** Michigan State, the University of Tennessee and Penn State are all closely grouped at the top of the industry value category. Penn State scores highest among all universities for number of mentions by industry, which reflects its long-established program and strong brand with the supply chain community at large.
- **Program size.** State universities lead here with many full-time professors and large full-time and part-time student enrollments. MIT is the largest private supply chain degree-awarding institution.
- **Applied work experience.** Programs that scored highest for internships and work experience exposure were Arizona State, BYU, Georgia Tech, Michigan State, North Carolina State, Northeastern, Syracuse, the University of Arkansas, the University of Kansas, the University of South Carolina, the University of Tennessee, the University of Texas at Austin and the University of Wisconsin. All of these programs require internships or co-op participation as part of their M.B.A. programs. Howard University, Penn State, and Rutgers do not require internships, but have at or near 100% participation in such programs.

Figure 1. Top Graduate Programs in Program Scope, Industry Value and Program Size

Program Scope Leaders	Industry Value Leaders	Program Size Leaders
Pennsylvania State University	Michigan State University	Pennsylvania State University
University of Michigan	University of Tennessee	Rutgers University
Arizona State University	Penn State University	Massachusetts Institute of Technology
Georgia Institute of Technology		Michigan State University
Syracuse University		University of Tennessee
Texas A&M University		University of Texas at Dallas
University of Texas at Austin		Arizona State University
University of Texas at Dallas		The Ohio State University
Indiana University		
Massachusetts Institute of Technology		
Michigan State University		
North Carolina State University		
Rutgers University		
The Ohio State University		
University of North Texas		
University of San Diego		
University of Tennessee		
Washington University		

  

<b>Highest Score in Category</b>
<b>Second-Highest Score in Category</b>
<b>Third-Highest Score in Category</b>

Source: Gartner (September 2014)

### The Research Methodology

Our methodology for this year's program assessments is similar to the methodology followed in the 2010-2011 research. We sent RFIs to our numerous contacts in U.S. supply chain programs. We also followed up the RFIs with conversations 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 throughout the end of 2013.

The foundation for this ranking of supply chain programs was based on program-supplied RFI information, with additional input into the "industry value" component of the ranking comes from ongoing surveys of current supply chain and recruiting professionals. 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: program scope, industry value and program size.

Figure 2. Three Evaluation Criteria for Graduate University Programs

Criteria Weighting	
<b>Graduate Program Scope</b>	
Number of stations taught across programs	40%
<b>Graduate Industry Value</b>	
Recruit mentions	40%
"Best" mentions	
Graduate internships	
Average starting salary	
<b>Graduate Program Size</b>	
Number of full-time professors	20%
Number of full-time students	
Number of part-time students	

**Source Key:**

How well curriculum aligns to Gartner Talent Attribute Model
Industry respondents to Gartner CSCO and Research Circle Surveys
University respondents to Gartner RFI

Source: Gartner (September 2014)

A Snapshot of Each Evaluation Criterion

**Program Scope**

We framed the scope of a supply chain with an updated, slightly expanded version of the Gartner Supply Chain Talent Attribute Model (see Figure 3). We added two new stations, financial management and demand-driven value networks (DDVNs). DDVN is a measure of specific cross-functional content in a program. Examples encountered in our research include courses focused on "Life Cycle Affordability" and "Supply Chain Performance Management." We collapsed two customer-facing functions into one station: "Customer Management/Service Supply Chain," bringing the new number of attributes to 12.

As we evaluated programs, we looked for curricula that aligned with the 12 stations of the model. Our research since the late 2000s indicates that industry places a premium on supply chain recruits that have a broad understanding of supply chain concepts and the cause-and-effect relationships between the disciplines, what we call supply chain orchestration (see "Drive Your Talent Strategy Using Gartner's Supply Chain Talent Pillars").

The Supply Chain Talent Attribute Model (Figure 3) was initially created in 2008 and used in our first and second university rankings (see "North American University Supply Chain Programs, Part 3: Ranking the Top Programs" from 2011) (Note: This document has been archived; some of its content may not reflect current conditions). We developed and tested it as a modern and comprehensive model, incorporating the expanding breadth of capabilities that are found in a modern, high-performing supply chain organization. The model is composed of 12 capabilities — one foundational, six functional, four enabling and one cross-functional — based on our DDVN framework. We refer to these 12 capabilities as "stations."

Figure 3. Supply Chain Talent Attribute Model



**Foundational**

1. Finance

**Functional**

- 2. Plan
- 3. Source
- 4. Make
- 5. Deliver
- 6. Service/  
Customer  
Management
- 7. New Product  
Design & Launch

**Enabling**

- 8. Strategy &  
Change  
Management
- 9. Governance &  
Project  
Management
- 10. Performance  
Management &  
Analytics
- 11. Technology  
Enablement

**Cross-Functional**

12. Demand-Driven  
Value Network

Source: Gartner (September 2014)

Using the Talent Attribute Model as a capabilities framework for the ideal supply chain, we rated university curricula for the completeness of their offerings against the 12 stations. Effectively, we are testing for curriculum alignment with the functional integration of a modern supply chain; the supply chain course score used for the "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 12 supply chain stations.

The Talent Attribute Model continues to be relevant, as our latest surveys continue to show the expansion of the supply chain organization (see "Survey Analysis: Chief Supply Chain Officers Conquer Organizational and Capability Challenges to Grow") as well as a desire by industry for recruits who can grasp big-picture, integrated supply chain concepts.

### Industry Value

Once again this year, indicators of perceived industry value are the schools on which recruitment efforts focus, the programs viewed as the "best" by industry practitioners, and the average starting salaries for program graduates.

We also continue to include internships as a primary indicator of industry value, including part-time internships during the school term, full-time internships off-term and co-ops, where students work full time during the term in lieu of attending classes (more often a feature of undergraduate than graduate programs). 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 year's assessment altered the methodology slightly to give credit on a sliding scale to programs that put some students through internships; programs with higher percentages of students going through internships get more points.

This combination of recruiting mentions, "best" mentions, average salary and internship exposure makes up a composite view of perceived industry value.

### 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 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, we continue to give program size a 20% weighting. While we counted both full-time and part-time graduate students in the enrollee totals, we considered only full-time professors engaged in classroom delivery of supply chain courses or research related to the graduate programs.

Table 2. Complete List of Participating Graduate Programs

Advanced Supply Chain Degree Programs	M.B.A.	M.S.	Ph.D.
Arizona State University	X	X	X
Brigham Young University	X		
East Carolina University	X		
Georgia Institute of Technology	X	X	X
Howard University	X		
Indiana University	X	X	X
Iowa State University	X		X
Marquette University	X		
Massachusetts Institute of Technology		X	X
Michigan State University	X	X	X
North Carolina State University	X	X	
Northeastern University	X		
Penn State University	X	X	X
Rutgers University	X		X
Syracuse University	X	X	X
Texas A&M University			X
Texas Christian University	X	X	
The Ohio State University	X	X	X
University of Arkansas	X		X
University of Houston	X		X
University of Kansas	X	X	
University of Maryland	X	X	X

University of Michigan	X	X	X
University of Missouri — St. Louis	X		X
University of North Florida	X		
University of North Texas	X		X
University of San Diego	X	X	
University of South Carolina	X		X
University of South Florida	X		X
University of Tennessee	X		X
University of Texas at Austin	X	X	X
University of Texas at Dallas	X	X	X
University of Wisconsin	X		
Washington University	X	X	X
Wright State University		X	
Note: Reflects supply chain degree programs offered during the 2012-2013 academic year. Does not account for supply chain concentrations or certificates that may be offered.			

Source: Gartner (September 2014)

## Gartner Recommended Reading

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

"Top U.S. Supply Chain Undergraduate University Programs, 2014"

"Drive Your Talent Strategy Using Gartner's Supply Chain Talent Pillars"

"Revise Supply Management Organizational Design and Talent Management to Meet Future Needs"

"Achieve Demand-Planning Functional Excellence by Establishing a Forward-Thinking Talent Strategy"

"Survey Analysis: Chief Supply Chain Officers Conquer Organizational and Capability Challenges to Grow"

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