Survey Analysis: Top 25 North American Supply Chain Graduate University Programs, 2016

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Advanced supply chain degree programs continue to proliferate throughout North America. To help CSCOs target their recruiting efforts, this report ranks the top 25 out of 44 campus-based programs, based on Gartner analysis and industry feedback.

Key Findings

- More U.S. and Canadian universities are unveiling supply chain majors and specializations, or rebranding logistics, transportation and operations research-focused programs as supply chain programs. The one-year master of science in supply chain management (MSSCM) is especially popular, and many schools are adding it.

- The core of the 2014 graduate program list remains, with the top 10 in 2016 largely where we left them in 2014. For programs ranked Nos. 11 through 25, there are more surprises and three new entrants.

- The average supply chain curriculum has grown in breadth. A broad, integrated curriculum is now standard, as is basic technology and analytics content. The MSSCM, on average, has a more specialized supply chain curriculum taught over a shorter duration than M.B.A.s with supply chain concentrations.

Recommendations

CSCOs:

- Look closely at the curriculum and specialties when evaluating programs for project work, internships and recruiting partnerships. Even though the name of the program has changed to "supply chain," the curriculum may still reflect a narrower view — of logistics and transportation only, for example.

- Ask the faculty about innovation and the implications of digital business, as well as supply chain planning in your recruiting and board advisory activities with university partners, to ensure that these are included in future plans.
Supply chain organizations that are currently targeting M.B.A. programs only should consider also working with MSSCM programs to court more-experienced hires.

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Survey Objective

Gartner’s biennial North American Supply Chain University Program Survey evaluates the curricula, experiential content and public reputations of accredited, campus-based supply chain programs in the U.S. and Canada, resulting in a top 25 ranking for undergraduate programs and an additional ranking for advanced degree programs (see "Survey Analysis: Top 25 North American Supply Chain Undergraduate University Programs, 2016"). The rankings and accompanying analysis help chief
supply chain officers (CSCOs), heads of supply chain strategy and supply chain HR partners to build effective portfolios of university internship and recruiting partners. The data in this survey is from the 2014-2015 academic year and focuses on the state of campus-based graduate degree programs in the supply chain field.

Graduate program types not addressed by this research are:

- Online-only programs
- Hybrid programs, where the program is largely virtual but punctuated by the class meeting one or two times on campus and/or for a global field trip to different operation locations

These programs are on the rise but, at this early phase in their development, require separate research treatment from traditional, campus-based offerings.

Data Insights

Gartner’s Top 25 University Supply Chain Programs research is back. From our initial coverage of a dozen or so U.S. institutions in 2008, total program participation grew this year to 59 universities in the U.S. and Canada, with 44 reporting data for graduate supply chain programs. As we have updated our understanding of the landscape since publishing "Top U.S. Supply Chain Graduate University Programs, 2014," we have been struck by the growth in enrollments, the caliber of students we meet, and the sobering realization that, even though we are seeing much larger volumes of supply chain graduates, demand still far outstrips supply. Ninety-five percent of M.B.A.s are placed in full-time positions within three months of graduating.

The good news is that the supply chain growth trajectory is positive and extremely steep. Students are flocking to these programs. Total enrollment in the top 25 advanced degree programs has grown 16% from 3,225 full- and part-time students in 2014.

As the number of students has expanded, so have supply chain curricula. Figure 1 shows the types of courses graduate students will typically take to get an M.B.A. with a supply chain concentration, or an MSSCM. We use the Gartner Talent Attribute Model to map schools’ curricula against 12 different focus areas (see the Methodology section). Since launching this research in 2008, the most encouraging developments have been the addition of integrated supply chain content to course lists, and the standardization across many programs of enabling capabilities course work in technology, analytics, project management and strategy.
Figure 1. Comparison of Graduate Supply Chain Curricula, M.B.A.s and MSSCMs

Source: Gartner (July 2016)
Figure 1 shows that:

- Supply chain planning, the core capability family for high-performing supply chain organizations, is taught in fewer than half of participating M.B.A. programs with supply chain concentrations.
- MSSCM programs are more likely to feature planning as a core course — 12 of 18 participating programs have it.
- Services, customer management, and new product development and launch are not well represented in either type of degree program.

The good news is that most programs provide exposure to logistics, procurement, integrated supply chain and enabling capabilities. M.B.A. students will get good, broader business exposure. Things to watch out for that may be elusive:

- Deeper experience with supply chain planning, depending on the program you’re working with
- Familiarity with new product development and launch (NPDL)
- Customer management and service

Focusing on NPDL in particular: We see many companies looking for supply chain skills for managing product development and launch processes. With past Gartner surveys indicating that 50% of new product launches fail, this represents a major supply chain pain point for companies, particularly as the scope of supply chain expands to include NPDL activities.

As for real-world experience — the other primary concern of hiring companies, university program leaders have taken this to heart in recent years. With most graduate students having some work experience, it’s a matter of less urgency than it is for undergraduate programs, but the applied experience component is still key. The majority of programs offer applied project experiences for graduate students, doing real supply chain problem solving for companies and public-sector institutions. These may take the form of a capstone project, be supported through a student consulting group or be the focus of a class. As for internships, 12 of 38 M.B.A. programs require them, as do six of 18 MSSCM programs. For many MSSCM programs, particularly those offered on a one-year or part-time basis, students are already employed, but will be angling for promotions or a career switch into supply chain. Supply chain organizations that are currently targeting M.B.A. programs only should consider also working with MSSCM programs to court more-experienced hires or, in the case of two-year, engineering-aligned programs such as those at Georgia Tech and MIT, hires with experience and deeper technical expertise.

2016 Graduate Program Rankings

The 2016 graduate ranking features many familiar names and a few newcomers (see Figure 2). Behind shifts in position since 2014, we see (1) major improvement in curricula, (2) large increases in enrollment and (3) successful efforts on the part of larger, distributed programs to present a consolidated view of their supply chain value proposition.
Figure 2. Top 25 North American Supply Chain Graduate Program Ranking, 2016

<table>
<thead>
<tr>
<th>Rank</th>
<th>University</th>
<th>Rank</th>
<th>University</th>
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<tbody>
<tr>
<td>1</td>
<td>Pennsylvania State University</td>
<td>14</td>
<td>Texas Christian University</td>
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<tr>
<td>2</td>
<td>University of Tennessee</td>
<td>15</td>
<td>University of South Carolina</td>
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<td>3</td>
<td>Michigan State University</td>
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<td>The Ohio State University</td>
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<tr>
<td>4</td>
<td>University of Michigan</td>
<td>17</td>
<td>Syracuse University</td>
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<tr>
<td>5</td>
<td>Massachusetts Institute of Technology</td>
<td>18</td>
<td>University of Pittsburgh</td>
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<td>6</td>
<td>Georgia Institute of Technology</td>
<td>19</td>
<td>North Carolina State University</td>
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<tr>
<td>7</td>
<td>Rutgers University</td>
<td>20</td>
<td>Brigham Young University</td>
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<tr>
<td>8</td>
<td>University of Wisconsin, Madison</td>
<td>21</td>
<td>Howard University</td>
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<td>9</td>
<td>Arizona State University</td>
<td>22</td>
<td>University of Colorado</td>
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<td>10</td>
<td>University of Texas at Dallas</td>
<td>23</td>
<td>University of Kansas</td>
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<tr>
<td>11</td>
<td>University of Texas at Austin</td>
<td>24</td>
<td>Northeastern University</td>
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<tr>
<td>12</td>
<td>Purdue University</td>
<td>25</td>
<td>University of North Texas</td>
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<td>13</td>
<td>Indiana University</td>
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</table>

Source: Gartner (July 2016)

Data for this research is gathered through surveys and interviews of academia and industry. The surveys are designed to identify industry sentiment and recruiting patterns, and to 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 3, to determine comparative position. For a detailed explanation, please see the Methodology section.

**Highlights**

- Pennsylvania State retains its No. 1 ranking. The University of Tennessee moves up one position to No. 2, with Michigan State now at No. 3.
- The biggest upward movers since 2014 are Texas Christian University (10 places), Indiana University (7 places) and the University of Texas at Dallas (6 places).
- The most highly ranked new entrant in the graduate ranking is Purdue University (No. 12). The other newcomers are the University of Pittsburgh (No. 18) and the University of Colorado (No. 22).

**Notable Trends**

- The average graduate supply chain curriculum continues to expand beyond purchasing and logistics. When measured against the 12-point Gartner Supply Chain Talent Attribute Model, we saw the average M.B.A. curriculum expand from 6.2 to 7.2 points. The average MSSCM curriculum expanded from 7.2 to 7.8 points.

- All M.B.A.s will take finance and accounting. Almost 70% of M.B.A.s will have a targeted course on performance management and analytics, with 42% having course-based exposure to supply chain technology and tools. In MSSCM programs, finance exposure is not guaranteed, but two-thirds of graduates will take supply chain technology course work and over 80% will focus on analytics. Technology has not made its way into advanced degree courses for supply chain as aggressively as we have seen in undergraduate programs, where 75% of programs feature a supply chain technology class.

- The average starting salary for M.B.A.s with a supply chain concentration is $83,597, up from $78,227 in 2014. The average starting salary for a campus-based MSSCM is $79,232, down from $84,302. We attribute this to a significant portion of students in these new programs going straight from undergraduate to graduate programs and having no/lower salary histories compared to the midcareer students.

- Of advanced supply chain degree holders, 79% are placed before graduation and 95% are placed within three months of graduating.

Figure 3 looks at program performance in greater detail, highlighting some excellent programs that barely missed the cutoff for the graduate top 25.
For program scope, where a diverse, balanced program based on the Gartner Supply Chain Talent Attribute Model received the highest marks, the top programs were Penn State and Syracuse, followed by Arizona State; Case Western Reserve University; Indiana University; Purdue; Rutgers; Texas Christian University; the University of Alabama, Huntsville; the University of Michigan; the University of Texas at Austin; the University of Texas at Dallas; and the University of Wisconsin, Madison.

Industry value leaders tend to have large, externally facing supply chain centers and strong partnerships with big companies; their graduates command premium salaries. This year, we see the big three again dominating the category: Michigan State, Penn State and the University of Tennessee. MIT and the University of Michigan received the second-highest scores here, followed closely by Georgia Tech and the University of Wisconsin, Madison.
Based on a combination of full-time faculty and the number of part-time and full-time students, the largest programs are Georgia Tech, Penn State and the University of Texas at Dallas.

Internships have been core to our ranking since its inception, forming a key input to the industry value score. We used to award points on a binary basis — programs that required internships or co-ops to graduate received one point; programs that didn’t got zero points. For graduate programs, because we are evaluating campus-based full- and part-time programs where internships may or may not figure heavily, we’ve altered the methodology. This time we awarded full points for required internships and co-ops, but also took into consideration other measures of real-world experience, including programs that require projects undertaken on behalf of companies as well as programs where students have more professional work experience prior to enrolling.

Figure 4 lists programs with required internships or co-ops, programs that don’t require internships but do require client projects, and finally programs where students average six or more years of professional experience when they enter the program.

**Figure 4. Supply Chain Graduate Programs With Required Internships, Required Client Projects or High Average Years of Experience, 2016**

<table>
<thead>
<tr>
<th>Required Internship or Co-Op</th>
<th>Required Client Projects</th>
<th>High Avg. Years of Experience</th>
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<td>Arizona State University</td>
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<td>Howard University</td>
<td>Brigham Young University</td>
<td>University of Alabama, Huntsville</td>
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<td>Indiana University</td>
<td>Bryant University</td>
<td>University of Missouri, St. Louis</td>
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<tr>
<td>Northeastern University</td>
<td>Iowa State University</td>
<td>University of Wisconsin, Milwaukee</td>
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<tr>
<td>Pennsylvania State University</td>
<td>Loyola University Chicago</td>
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<tr>
<td>Purdue University</td>
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<td>Texas Christian University</td>
<td>Rensselaer Polytechnic Institute</td>
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<td>University of Wisconsin, Madison</td>
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Note: High average years of experience equates to six or more years of professional experience prior to entering program.

Source: Gartner (July 2016)
Methodology

Gartner sent out individualized request for information (RFI) links to 69 supply chain program contacts at universities in the U.S. and Canada. In total, 44 graduate programs responded and provided complete RFI responses for campus-based advanced degree programs. We followed up with respondents where RFI responses were incomplete or unclear, and consulted university websites and course catalogs for additional information on program and course content. Responses and clarifications were collected throughout the spring of 2016.

The evaluation criteria for the programs appear in Figure 5. The final placement of university programs in our relative comparison is based on a composite score of three categories:

- Program scope
- Industry value
- Program size

Where programs tied, we looked at program scope and advanced the program with the higher score. Where programs were still tied on program scope, the program with the higher score for internships, project work and average years of experience was advanced.
Criterion 1: Program Scope

*Weighted at 40%*

We framed the scope of supply chain with our Supply Chain Talent Attribute Model, which consists of 12 attributes: one foundational (finance), four enabling, six functional and one cross-functional (see Figure 6). As we evaluate programs, we look for well-rounded curricula since industry puts a value on that. We then assess "well-rounded" by comparing the curricula of programs against our Talent Attribute Model, which represents a wide variety of disciplines and should be taught to prepare students for careers. The supply chain course score used for this component ranking is based on the courses listed in RFI responses and any publicly available course catalog data.
Figure 6. Gartner Supply Chain Talent Attribute Model

Criterion 2: Industry Value

Weighted at 40%

Industry value has an industry-facing survey component and an internal component. In parallel with sending out surveys to the university programs, we also conduct a survey where we ask supply chain practitioners across sectors two simple questions:

1. In your professional opinion, what are the top five supply chain university programs?
2. What are the top five supply chain programs your company recruits from?
Points are accorded for each mention.

From the university-provided data, we add scores for average starting salary and applied experience, including required internships, required client projects and students' average years of experience prior to enrolling.

**Criterion 3: Program Size**

*Weighted at 20%*

The number of supply chain students (part-time and full-time) and full-time faculty 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 pure quality of recruits continues to be a theme as we talk to industry clients, we continue to give program size a 20% weighting. We counted only full-time faculty engaged in classroom delivery of supply chain courses or research related to the supply chain program.

**Participating On-Campus M.B.A. Programs With Supply Chain Concentrations**

- Arizona State University
- Bowling Green University
- Brigham Young University
- Bryant University
- Georgia Institute of Technology
- Howard University
- Indiana University
- Iowa State University
- Lehigh University
- Loyola University Chicago
- Marquette University
- Michigan State University
- North Carolina A&T University
- North Carolina State University
- Northeastern University
- Pennsylvania State University
- Rensselaer Polytechnic Institute
Rutgers University
Syracuse University
Texas Christian University
The Ohio State University
University of Arkansas
University of Houston
University of Kansas
University of Michigan
University of Missouri, St. Louis
University of North Texas
University of Pittsburgh
University of San Diego
University of South Carolina
University of South Florida
University of Tennessee
University of Texas, Austin
University of Texas, Dallas
University of Wisconsin, Madison
University of Wisconsin, Milwaukee
Wayne State University
Western Illinois University

**Participating On-Campus M.S. in Supply Chain Programs**

- Case Western Reserve University
- Georgia Institute of Technology
- HEC Montreal
- Loyola University Chicago
- Massachusetts Institute of Technology (MIT)
- North Carolina A&T University
- Purdue University
Rensselaer Polytechnic Institute
Syracuse University
Texas Christian University
University of Alabama, Huntsville
University of Colorado
University of Houston
University of Kansas*
University of Michigan
University of Pittsburgh
University of San Diego
University of Texas, Dallas

*For U.S. military officers only

Participating On-Campus Ph.D. Programs in Supply Chain, Logistics and/or Operations Research

Arizona State University
Georgia Institute of Technology
HEC Montreal
Indiana University
Iowa State University
Marquette University
Massachusetts Institute of Technology (MIT)
Michigan State University
Pennsylvania State University
Rutgers University
Syracuse University
The Ohio State University
University of Arkansas
University of Houston
Gartner Recommended Reading

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

"Supply Chain Guide to Gartner’s DDVN Research Framework"

"Prepare for the Future With the Supply Chain Talent Maturity Model"

"The Supply Chain Profession Arrives: A Report Card"

"Predicts 2016: Chief Supply Chain Officers Wrangle With Cybersecurity, Sustainability and Retaining Women in the Profession"

"Survey Analysis: Top 25 North American Supply Chain Undergraduate University Programs, 2016"

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

Evidence

This research is based on findings from the 2016 Gartner Supply Chain University Top 25 Survey, and the 2016 Gartner Industry Value University Survey. Please see the Methodology section for more information.

Additionally, it is based on findings from the 2016 Gartner Industry Value University Survey. We surveyed Gartner’s contact list of supply chain practitioners in the U.S. and Canada (433) and received 41 responses.

¹ From a Gartner supply chain research study in November and December 2010, which surveyed over 300 supply chain and product development leaders via web-based and phone-based surveys.
The focus of the study was on NPI and life cycle value in regard to business strategy and performance, governance, practices, globalization and technology.
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