ASP, The Art and Science of Practice: What Employers Demand from Applicants for MBA-Level Supply Chain Jobs and the Coverage of Supply Chain Topics in MBA Courses

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We analyzed the text of 704 online advertisements of supply chain management jobs for MBA graduates. The content analysis of these job advertisements provided us with a list of supply chain topics, such as inventory management and supply management, and general skills, such as communication and leadership; it also showed the proportion of advertisements requesting these skills. We measured the relative coverage of the same supply chain topics in MBA-level supply chain electives and operations management core courses in 21 of the top 50 business schools in the United States by analyzing the course descriptions and the cases used in these courses. This enabled us to compare the relative importance of supply chain topics to employers on the “demand” side with the relative importance of supply chain electives in MBA curricula on the “supply” side in these schools. Our analysis indicated that the supply usually matches demand; however, there may be an undersupply of practice- or process-oriented topics, such as forecasting, procurement, supplier and vendor management, and contracts and negotiation. In addition, there may be an oversupply of conceptual and strategy-oriented topics, such as product design, supply chain design, and emerging information technology and management information.

Key words: personnel; data analysis; inventory/production; education systems: operations; forecasting; manpower planning; professional.
an undersupply of practice- or process-oriented topics, such as forecasting, procurement, supplier and vendor management, and contracts and negotiation. In addition, there may be an oversupply of conceptual and strategy-oriented topics, such as product design, supply chain design, and emerging information technology (IT) and management information. We did not investigate the reasons for oversupply or undersupply or whether they are inevitable or undesirable; at best, these results are indicative of the supply and demand for supply chain skills.

Our contribution is twofold. First, our work provides an empirical approach to investigating the knowledge areas and skills that employers require. This approach complements information gathered from employer-educator and alumni-educator forums. The results contribute to a growing list of empirical studies that explore the skill sets for supply chain management and logistics professionals (Murphy and Poist 1994, Giunipero 2000, Gammelgaard and Larson 2001, Handfield 2004, Myers et al. 2004, Mangan and Christopher 2005). The identified skills vary from sector-specific skills, such as warehousing, to general skills, such as communication. While these studies used focus groups or questionnaires, we took the empirical approach of analyzing job ads for supply chain topics and broad skills to complement these studies. Second, we extend and update the work of Johnson and Pyke (2000) in identifying how MBA programs are responding to industry needs. Our results might also be useful to educators and program directors of MBA and other programs who are preparing their students for the job market.

However, our work has limitations. Relative to jobs, our results are broadly indicative rather than definitive because our jobs analysis does not include on-campus recruiting or job ads posted on company websites or in printed media. Relative to MBA courses, the online course descriptions we used are typically quite short and general. In addition, discrepancies often exist between the course description and the material that is actually taught because the author of the online course description is frequently not the instructor. A case description may cover many topics; however, we cannot know which aspect of each individual case the instructor will choose to emphasize or ignore in a lecture. Still, our analyses of course descriptions and cases produced relatively consistent results. Finally, our study of MBA courses is limited to supply chain electives and core operations management courses at only 21 of the top 50 universities; it does not include core marketing or IT-related courses that, at these or at other schools, might also cover supply chain related topics.

Methodology
We acquired demand-side data by collecting MBA-level supply chain ads from Internet job sites; we acquired supply-side data by collecting and analyzing online descriptions of MBA courses and descriptions of cases used in supply chain electives and core operations management courses. We then used content analysis to understand the demand side in terms of the proportion of job ads requiring specific skills. We did the same to understand the supply side in terms of the proportion of elective courses or cases providing these skills.

Data Collection of Job Ads
We obtained job ads for MBA graduates from www.monster.com and www.hotjobs.com. These include ads in which an MBA preference is stated but an MBA degree is not required. We focused on the US job market to ensure consistency of use of words and phrases and to allow comparison with the supply from US business schools. We searched for supply chain management (SCM) and MBA ads posted between the beginning of April 2006 and the end of August 2006 by using the string (SCM and MBA) or ("supply chain" and MBA). We stored these posted ads in a database and deleted duplicate or irrelevant entries to obtain the 704 ads that we used.

Our data comprise the text of these ads and two categorical variables that we manually coded for the specific industry sector, which we adapted from Fortune magazine’s classification and for the level of minimum experience (Table 1).

The ads in our sample range widely across industries. No particular sector dominates; however, in one-sixth of the ads, which were usually from recruiting agencies, we could not determine the employer’s
Director, supply chain management (Watkins manufacturing)
Areas of responsibility include procurement, distribution, sales order entry and management, master scheduling, production planning, warehousing, logistics, and inventory management. You will direct cost containment initiatives to align with the company’s vision, strengthen supplier relationships, and be accountable for contract negotiations. In addition, you will coordinate materials management for the Mexico operations. An MBA and APICS certification are strong pluses. Demonstrated experience developing strategic alliances (global experience a plus) needed. Experience with ERP systems and system implementations highly desired.

Sr. sourcing specialist, sourcing and procurement (Disney)
Description: The Sr. Sourcing Specialist will design and implement their sourcing and procurement strategies. This person will lead efforts to source and procure materials and services to support company operational requirements. The Sr. Sourcing Specialist will build and lead cross-functional teams and will be responsible for developing and implementing strategic sourcing arrangements with preferred suppliers. This individual will continuously improve the company’s procure to pay process by identifying and leading efforts with affected departments to reduce cycle times, improve customer service, and reduce total costs. The Sr. Sourcing Specialist will source and negotiate supply relationships for internal clients.

Table 1: These examples of entries in our database show typical job ads and include our manually coded variables and part of the ad text.

<table>
<thead>
<tr>
<th>Job ad (text variable)</th>
<th>Level/years of experience</th>
<th>Industry sector (categorical variable)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Director, supply chain management (Watkins manufacturing)</td>
<td>5</td>
<td>Manufacturing</td>
</tr>
<tr>
<td>Sr. sourcing specialist, sourcing and procurement (Disney)</td>
<td>2</td>
<td>Entertainment</td>
</tr>
</tbody>
</table>

industry sector. Consulting, computer services, pharmaceuticals, chemicals, and electronics were among the top 11 sectors represented in these ads (Figure 1).

The ads we used are not exclusively targeted to MBAs although they state either an MBA preference or requirement; nearly half (46 percent) require a bachelor’s degree; more than one-fifth (16.6 percent) require or prefer a master’s degree; and only 1.3 percent require or prefer a PhD. The average years of experience requested in the SCM job ads is slightly more than six years; the majority of these ads (612 of the 704 or 86.9 percent) seek graduates with 3 to 10 years of industry experience (Figure 2).

Considering the typical industry experience of US MBA students, this suggests that the pool of job ads also includes recent MBA graduates.

Data Collection of MBA Courses
We considered the US business schools in a top-50 business schools list (Appendix 5) because of the visibility of these schools; we also wanted to avoid any selection bias. However, any inferences would only be indicative because MBA programs in universities that are not in this list might cover supply chain topics differently in their courses. We focused on US business
schools only to ensure consistency of MBA programs because all the programs that we considered are two-year programs (ranging from 18 to 21 months) unlike many European programs that are one year in length. In addition, this enabled us to compare supply chain topics offered in US schools with the requirements of the jobs, which are also based in the United States. We obtained 37 supply chain elective descriptions and 36 core operations courses available online from these 50 MBA programs in 2006–2007 (the online course information about supply chain electives and operations management core courses are not all from the same programs). We also collected 26 detailed syllabi of supply chain management electives and 21 syllabi of core operations management courses from academic colleagues at 21 of these 50 universities. The 21 universities are Columbia University, Carnegie Mellon University, Dartmouth College, Duke University, Georgia Tech, Harvard University, MIT, Northwestern University, Stanford University, UCLA, UC Irvine, University of Cincinnati, University of Florida, University of Maryland, University of Michigan, University of North Carolina at Chapel Hill, University of Pennsylvania, University of Washington, University of Rochester, Washington University, and Yale University. Cincinnati is not on the U.S. News 2006 list; however, we were able to obtain detailed information about its curricula. From these detailed syllabi, we compiled a list of 84 business cases for supply chain electives and 51 cases for core operations courses and then obtained their descriptions.

The detailed course syllabi indicate that business schools differ in the supply chain topics they emphasize in their supply chain electives and core operations management courses. This might also be true of MBA programs that are not in the top-50 list. Moreover, MBA programs have different structures; even the business schools that we studied offer their courses, whether core or elective, in different formats—six weeks (half-semester), 10 weeks (quarter), or 14 weeks (semester).

The syllabi also show that business schools in our sample use business case studies heavily. We analyzed the contents of the case studies weighted by the number of universities using each case. Most schools cover at least one business case study during each session of a course. Each case may cover many topics and each topic may be covered by any of a number of cases across these schools. For example, two Harvard Business School (HBS) cases—Supply Chain Close-Up: The Video Vault and Hamptonshire Express—illustrate how certain supply contracts influence the buyer’s order quantities. However, there are many cases, and only eight cases in our sample are used by more than five of the 21 business schools (Table 2).

The same applies to operations management courses; there are only a few cases that appear in both supply chain electives and operations management core courses (Table 3).

### Content Analysis

We analyzed the text, i.e., the words and phrases, of the job ads using content analysis, “a research technique for making replicable and valid inferences from text (or other meaningful matter) to the contexts of their use” (Krippendorff 2003, p. 18). Content analysis is not widely used by operations management researchers; however, “in other business disciplines [it] has been firmly established as a methodological tool” (Montabon et al. 2007, p. 1002).

Content analysis entails analyzing the occurrence of relevant words and phrases in text data. Such data can have a huge volume of words and phrases. For

### Table 2: This table shows popular supply chain management cases from among the 84 cases mentioned in 26 course syllabi from 21 business schools.

<table>
<thead>
<tr>
<th>Supply chain management case</th>
<th>Number of schools (of 21) using the case</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barilla Spa (A) (HBS 1994) by J. Hammond</td>
<td>13</td>
</tr>
<tr>
<td>Sport Obermeyer (HBS 1996) by J. Hammond and A. Raman</td>
<td>10</td>
</tr>
<tr>
<td>National Bicycle Industry Co. (Wharton 1993) by M. Fisher</td>
<td>7</td>
</tr>
<tr>
<td>Supply Chain Close-Up: The Video Vault (HBS 2003) by V. Narayanan and L. Brem</td>
<td>6</td>
</tr>
<tr>
<td>Hewlett-Packard: DeskJet Printer</td>
<td>5</td>
</tr>
<tr>
<td>Supply Chain A &amp; B (Stanford 2001) by H. Lee and L. Kopczak</td>
<td>5</td>
</tr>
<tr>
<td>Hamptonshire Express (HBS 2002) by V. G. Narayanan and A. Raman</td>
<td>5</td>
</tr>
<tr>
<td>Li and Fung (A): Internet Issues (HBS 2005) by F. W. McFarlan and Fred Young</td>
<td>5</td>
</tr>
<tr>
<td>Supply Chain Management at World Co. Ltd. (HBS 2001) by A. Raman and M. Fisher</td>
<td>5</td>
</tr>
</tbody>
</table>
Table 3: This table shows popular operations management cases from among the 51 cases mentioned in 20 core-course syllabi. Cases marked with an asterisk are also popular in supply chain electives.

<table>
<thead>
<tr>
<th>Operations management case</th>
<th>Number of schools (of 21) using the case</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toyota Production System (HBS 1992) by K. Mishina</td>
<td>15</td>
</tr>
<tr>
<td>National Cranberry Cooperative (HBS 1988) by R. Shapiro</td>
<td>11</td>
</tr>
<tr>
<td>Barilla Spa (A) (HBS 1994) by J. Hammond</td>
<td>9*</td>
</tr>
<tr>
<td>Hewlett-Packard: DeskJet Printer</td>
<td>8*</td>
</tr>
<tr>
<td>Supply Chain A &amp; B (Stanford 2001) by H. Lee and L. Kopczak</td>
<td></td>
</tr>
<tr>
<td>Sport Obermeyer (HBS 1996) by J. Hammond and A. Raman</td>
<td>7*</td>
</tr>
<tr>
<td>Kristen Cookies (HBS 2006) by R. E. Bohn</td>
<td>5</td>
</tr>
<tr>
<td>Manzana (HBS 1991) by S. C. Wheelwright</td>
<td>5</td>
</tr>
<tr>
<td>Shouldice Hospital (HBS 2004) by R. Hallowell and J. Heskett</td>
<td>5</td>
</tr>
</tbody>
</table>

example, in our study, the total word count for the job ads that we used to understand the industry needs (the demand-side analysis) exceeded 250,000. Using a computer-based data-mining tool is a good analysis method for such a large volume (Osborne et al. 2001). For the analysis of the demand side, which involves analyzing 704 job ads, we used the WordStat content analysis software by Provalis Research.

However, we carried out content analysis of supply chain and operations management courses and cases manually because of possible inconsistent terminology that required familiarity and careful reading for classification (Mar Molinero and Xie 2007). In addition, the word count was manageable in comparison to the job-ads database. Upon reading each course description or case description, we noted whether or not it covered each of the skills listed in the skills list that we used for content analysis of job ads by entering a 0 or 1 in a table that showed supply chain topics in columns and course descriptions or case descriptions in rows (Mar Molinero and Xie 2007). Each column total then indicated the proportion of courses or cases covering the particular topic.

Essentially, this is what the computer software did with job ads to provide the proportion of job ads requiring each topic. The backbone for such analysis is the “dictionary”—the specification of words and phrases, i.e., “key words,” under various named categories to create counts under each topic or skill when a word or phrase under that category is found in a record. Krippendorff (2003, p. 287) notes that most content analyses would benefit from building special-purpose dictionaries although doing so from scratch can be a formidable task. We determined key words from the text of ads, i.e., from scratch; however, we associated these with categories (and subcategories) corresponding to topics (and subtopics) listed by Johnson and Pyke (2000) and to broad skills listed by Sodhi and Son (2008) (Tables 4, 5, and 6).

After listing 13,080 words and phrases up to six words long that are in the text of supply chain job ads, we placed appropriate words and phrases as “key words” in these categories and subcategories (Tables 4, 5, and 6). For example, we placed phrases such as supplier relationship management and vendor management, which occur in the ads, into category E (Sourcing and supplier management) and subcategory E4 (Supplier and vendor management). We started with the list of the most frequently occurring words and phrases and then supplemented these with other words from the list of 13,080 words and phrases that would describe any subcategory because we wanted to address a potential “long tail” problem whereby infrequently occurring words from different ads could nonetheless collectively represent an important skill required by many employers.

Categories for text are neither mutually exclusive nor exhaustive relative to ads. An ad can be in more than one category (this also applies to our analysis of cases and course descriptions). Likewise, it is possible that an ad does not belong to any category because it does not include any key words that are in the dictionary; this was not true in our study. However, note that key words under subcategories and categories are mutually exclusive.

We also appended the dictionary used by Sodhi and Son (2008) for their analysis of OR job ads, making suitable modifications to incorporate general skill categories, such as communication. We ended up with 15 more categories, each of which included subcategories (Table 6). Each subcategory has many words and phrases attached to it to enable the software to determine whether or not a particular job ad belongs to a category or subcategory.

We had 27 categories with 86 subcategories—these describe different needs of employers—and
Categories and subcategories of supply chain topics and subtopics

A. Location and supply chain design∗
   A1. Facility location
   A2. Supply chain design/restructuring
B. Transportation and logistics
   B1. Material handling/warehouse management
   B2. Transportation
   B3. Logistics
C. Inventory and forecasting
   C1. Inventory and materials management
   C2. Forecasting
D. Marketing and channel restructuring
   D1. Customer-relationship management
   D2. Distributor or channel management
   D3. Replenishment (ECR/quick or accurate response)
   D4. Pricing
   D5. Marketing (general)
E. Sourcing and supplier management
   E1. Make/buy decision
   E2. Supply management
   E3. Procurement
   E4. Supplier and vendor management
   E5. Contracts and negotiation
F. Information and electronic-mediated environments
   F1. E-commerce
   F2. ERP systems
   F3. E-procurement
   F4. Business-to-business
   F5. Emerging information technology/managing information
G. Product design and new product introduction
   G1. Product design (product variety/postponement)
   G2. New product introduction
H. Service and after-sales support
   H1. Customer service
   H2. After-sales service
I. Reverse logistics and green issues
   I1. Environmental issues
   I2. Returns and reverse logistics
J. Outsourcing organizational and alliances
   J1. Outsourcing
   J2. Organizational issues (coordinate/collaboration)
   J3. Alliances
K. Metrics and performance
   K1. Metrics
   K2. Performance-related (incentives, etc.)
L. Global issues
   L1. Global management
   L2. Government issues
   L3. Global (other—tax, currency, etc.)

An example of category, subcategory, and key words

F. Information and electronic-mediated environments (Category)
   F2. ERP systems (Subcategory)
      (Key words)
      ERP
      ERP and advanced planning
      ERP implementation
      ERP package
      ERP systems
      ERP systems experience
      ERP/ERM
      ERP/financial
      ERP/MPR
      ERP/ERP/forecasting
      ORACLE
      SAP
      BAAN
      Enterprise resource planning

Table 5: This table illustrates the key words that belong to the subcategory F2 in category F.

Results: Supply Chain Topics Required by Employers

As far as the number of ads goes, sourcing and supplier management (57.2 percent of the ads) and inventory and forecasting (51.6 percent of the ads) are clearly quite important to employers (Table 7). Next are skills and knowledge pertaining to information and electronic mediated environments (37.1 percent), mainly because familiarity with ERP systems is a requirement for many jobs, and marketing and channel restructuring (34.2 percent). Skills related to transportation and logistics (30.3 percent), metrics and performance (27.4 percent), and service and after-sales support (25.7 percent) are also very much in demand by employers.

At a more granular subtopic level, Table 8 shows the subcategories that appear to be important to employers.

These subcategories provide additional information about the category-level analysis. For example, much of the importance of category F (Information and electronic mediated environments) is because of subcategory F2 (ERP systems). Note that most of the important subcategories are consistent with the findings at the category level shown in Table 7.

To take an even more granular view of employer demand of supply chain topics, we examined the top specific words and phrases in the ads. The benefit of these key words and their importance in terms of the proportion of job ads requiring them lies in providing specific topics for designing supply chain courses and
Results: Broad Skills Required by Employers

The results regarding skills indicate that the top five skills are all “soft” skills that a particular supply chain course might not provide; however the MBA program as a whole might provide them. The students may have already acquired such skills (Table 9) before embarking on their MBA studies.

Communication, which includes written and verbal communication and presentation skills, is the most commonly demanded skill; pertinent key words appear in 53 percent of the ads. Leadership skills, the ability to run an organization, to bring about change, or to lead a team, are requested in 46.7 percent. Project management, which we should not confuse with project scheduling as taught in some management science courses, and which includes the ability to handle multiple projects, manage projects, and lead projects, appears in 42.3 percent. Team-related skills are demanded in 36.2 percent; this category includes interpersonal skills, which 21.6 percent request, and the ability to work in a team. General analytical skills, which focus on problem solving, are also highly in demand—28.8 percent request them.

The remaining categories refer to technical skills, which are also high in terms of the proportion of ads stating a requirement for them. These include spreadsheet and database—the ability to use MS Excel and MS Access (26.4 percent), basic IT (26.0 percent) and the use of word processing and presentation software, modeling (23.0 percent), statistics (12.1 percent), and programming (7.7 percent).

The high proportion of ads requiring basic IT or programming is striking. Certainly, all employers

Table 7: The percentage of supply chain job ads correspond to each supply chain topic. Totals exceed 100 percent because each ad can fit into multiple categories; therefore, any comparisons across tables should be made by scaling all percentages by the column total.
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Interfaces 38(6), pp. 469–484, © 2008 INFORMS

Table 8: The proportion of ads for each subtopic among supply chain topics (A to L) appear in decreasing order. Totals exceed 100 percent because each ad can fit into multiple categories. Any comparisons across tables should be made by scaling all percentages by the column total.

<table>
<thead>
<tr>
<th>Cat.</th>
<th>Supply chain subtopic</th>
<th>Ads (%)</th>
<th>Cat.</th>
<th>Supply chain subtopic</th>
<th>Ads (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>Inventory and materials management</td>
<td>42.8</td>
<td>D3</td>
<td>Replenishment (ECR/quick or accurate response)</td>
<td>3.4</td>
</tr>
<tr>
<td>C3</td>
<td>Procurement</td>
<td>40.1</td>
<td>D4</td>
<td>Pricing</td>
<td>3.0</td>
</tr>
<tr>
<td>E4</td>
<td>Supplier and vendor management</td>
<td>34.9</td>
<td>J1</td>
<td>Outsourcing</td>
<td>3.0</td>
</tr>
<tr>
<td>E2</td>
<td>ERP systems</td>
<td>33.0</td>
<td>F5</td>
<td>Emerging information technology/managing information</td>
<td>2.7</td>
</tr>
<tr>
<td>D5</td>
<td>Marketing (general)</td>
<td>28.0</td>
<td>I1</td>
<td>Environmental issues</td>
<td>2.7</td>
</tr>
<tr>
<td>B3</td>
<td>Logistics</td>
<td>25.3</td>
<td>F2</td>
<td>Distributor or channel management</td>
<td>2.3</td>
</tr>
<tr>
<td>C2</td>
<td>Forecasting</td>
<td>25.3</td>
<td>F1</td>
<td>E-commerce</td>
<td>1.6</td>
</tr>
<tr>
<td>D4</td>
<td>Marketing (general)</td>
<td>24.7</td>
<td>F3</td>
<td>E-procurement</td>
<td>1.0</td>
</tr>
<tr>
<td>K1</td>
<td>Metrics</td>
<td>20.7</td>
<td>E4</td>
<td>Supplier and vendor management</td>
<td>1.3</td>
</tr>
<tr>
<td>L2</td>
<td>Government issues</td>
<td>19.9</td>
<td>H1</td>
<td>Procurement</td>
<td>1.3</td>
</tr>
<tr>
<td>E5</td>
<td>Contracts and negotiation</td>
<td>16.5</td>
<td>H2</td>
<td>After-sales service</td>
<td>1.1</td>
</tr>
<tr>
<td>G2</td>
<td>New product introduction</td>
<td>14.8</td>
<td>A2</td>
<td>Supply chain design/restructuring</td>
<td>1.0</td>
</tr>
<tr>
<td>E2</td>
<td>Supply management</td>
<td>10.8</td>
<td>E1</td>
<td>Make/buy decision</td>
<td>0.9</td>
</tr>
<tr>
<td>K2</td>
<td>Performance-related (incentives, etc.)</td>
<td>10.5</td>
<td>A1</td>
<td>Facility location</td>
<td>0.0</td>
</tr>
<tr>
<td>B2</td>
<td>Transportation</td>
<td>8.9</td>
<td>B1</td>
<td>Material handling/warehouse management</td>
<td>0.0</td>
</tr>
<tr>
<td>L1</td>
<td>Global management</td>
<td>4.7</td>
<td>F4</td>
<td>Business-to-business</td>
<td>0.0</td>
</tr>
<tr>
<td>J2</td>
<td>Organizational issues (coordinate/collaboration)</td>
<td>4.1</td>
<td>I2</td>
<td>Returns and reverse logistics</td>
<td>0.0</td>
</tr>
<tr>
<td>D1</td>
<td>Customer-relationship management</td>
<td>3.8</td>
<td>J3</td>
<td>Alliances</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>394.1%</td>
<td>L3</td>
<td>Global (other—tax, currency, etc.)</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Table 9: This table shows the proportion of job ads that require each skill. Totals exceed 100 percent because each ad can fit into multiple categories. Any comparisons across tables should be made by scaling all percentages by the column total.

<table>
<thead>
<tr>
<th>Category</th>
<th>Skill</th>
<th>Ads (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>Communication</td>
<td>53.0</td>
</tr>
<tr>
<td>U</td>
<td>Leadership</td>
<td>46.7</td>
</tr>
<tr>
<td>R</td>
<td>Project</td>
<td>42.3</td>
</tr>
<tr>
<td>S</td>
<td>Team</td>
<td>36.2</td>
</tr>
<tr>
<td>N</td>
<td>General analytical</td>
<td>28.8</td>
</tr>
<tr>
<td>W</td>
<td>Spreadsheet and database</td>
<td>26.4</td>
</tr>
<tr>
<td>O</td>
<td>Basic IT</td>
<td>26.0</td>
</tr>
<tr>
<td>V</td>
<td>Modeling</td>
<td>23.0</td>
</tr>
<tr>
<td>T</td>
<td>Statistics</td>
<td>12.1</td>
</tr>
<tr>
<td>Q</td>
<td>Programming</td>
<td>7.7</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>302.2</td>
</tr>
</tbody>
</table>

expect MBAs to have word processing, presentation software, and spreadsheet skills. Thus, because nearly 26 percent of the employers mention these skills, we surmise that this reflects their dissatisfaction with their MBA (and possibly other) hires. However, we do not expect employers to use their MBA employees as programmers. Many ads request skills in SQL and spreadsheet programming using VBA; we suspect that the high proportion of ads in the programming category reflects employers’ needs for comfort that their new hires will be able to use enterprise or other software rather than program it. This is confirmed by ad counts at the subcategory level in which both programming languages and programming miscellaneous are mentioned in a relatively low proportion of ads.

To improve the granularity of our demand analysis, we examined the subcategories (Table 10).

The results are consistent with the findings at the category level.

We can repeat this with the key words in the ads (Appendix 2). The top-occurring key words give us a sense of what employers want. The benefit of the key words is that universities can use them and their relative occurrence in job ads to evaluate their MBA-program offerings.

Some of these skills may be generic in the sense that employers require them of any employee, not just an employee with supply chain or MBA qualifications. To see which skills are generic, we compared these MBA job ads to more than 1,000 US operations research (OR) jobs ads by looking at the proportion of job ads requesting each skill. Using an arbitrary threshold of a 10 percent point difference between the
percentage of jobs requiring these skills, we found that skills pertaining to communication, spreadsheet and database, basic IT, team, and project management appeared to be in similar demand for both types of job ads (Table 11).

For example, communication skills are requested in 53 percent of the supply chain job ads and 59.4 percent of the OR job ads; the difference is small.

### Results: Supply Chain Topics Covered in MBA Courses

We analyzed core operations management courses separately from supply chain electives. The coverage of supply chain topics (Table 4) in the core courses was low relative to those in the supply chain electives (Table 12).

We could adjust the coverage of supply chain topics in the elective courses with that in the core courses.

However, the correlation between coverage in the electives alone and that of the sum with operations management courses is 96 percent for course descriptions and 98 percent for case descriptions across the 12 supply chain categories (A–L). Therefore, little is lost by focusing only on the supply chain electives. However, we did analyze the operations management core courses further; Appendix 3 provides details.

Based on our analysis of supply chain electives, categories B (mentioned in 48.6 percent of the online course descriptions), F (47.2 percent), and C (43.1 percent) are the top three categories (Table 12). However, based on our analysis of the 84 cases covered in the elective courses at the 21 institutions, categories C (covered in 32.1 percent of the cases), D (26.2 percent), G (25 percent), and L (25 percent) appear to be the supply chain topics that are covered most frequently (Table 12). We shall later see that despite these differences, the two analyses are markedly consistent in indicating undersupplied topics.

At the subcategory level (Table 13), the results resemble those of the category-level analysis with course descriptions.

B3 (mentioned in 40.3 percent of the online course descriptions), C1 (38.9 percent), and F5 (23.6 percent) appear to be the supply chain topics that are most frequently covered in the online course descriptions.

---

### Table 10: Subcategories of skills are listed by descending proportion of job ads requiring these subskills. Totals exceed 100 percent because each ad can fit into multiple categories. Comparisons should be made by scaling all percentages by the column total.

<table>
<thead>
<tr>
<th>Subcat.</th>
<th>Subskills</th>
<th>Ads (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>U2</td>
<td>Leadership general</td>
<td>41.5</td>
</tr>
<tr>
<td>R1</td>
<td>Manage projects</td>
<td>37.1</td>
</tr>
<tr>
<td>P3</td>
<td>Written and verbal skills</td>
<td>29.8</td>
</tr>
<tr>
<td>P1</td>
<td>General communication</td>
<td>28.6</td>
</tr>
<tr>
<td>W1</td>
<td>MS Excel</td>
<td>23.9</td>
</tr>
<tr>
<td>S2</td>
<td>Team-related skills</td>
<td>22.3</td>
</tr>
<tr>
<td>S1</td>
<td>Interpersonal skills</td>
<td>21.6</td>
</tr>
<tr>
<td>N3</td>
<td>Problem-solving skills</td>
<td>18.8</td>
</tr>
<tr>
<td>P2</td>
<td>Presentation skills</td>
<td>15.5</td>
</tr>
<tr>
<td>O3</td>
<td>Word and PowerPoint</td>
<td>12.9</td>
</tr>
<tr>
<td>O2</td>
<td>MS Office</td>
<td>12.2</td>
</tr>
<tr>
<td>N1</td>
<td>Analysis</td>
<td>10.1</td>
</tr>
<tr>
<td>W2</td>
<td>MS Access</td>
<td>9.5</td>
</tr>
<tr>
<td>V7</td>
<td>Model development</td>
<td>9.1</td>
</tr>
<tr>
<td>R2</td>
<td>Lead projects</td>
<td>7.2</td>
</tr>
<tr>
<td>U3</td>
<td>Team leading</td>
<td>7.0</td>
</tr>
<tr>
<td>O1</td>
<td>General PC skills</td>
<td>6.8</td>
</tr>
<tr>
<td>U1</td>
<td>Change management</td>
<td>6.8</td>
</tr>
<tr>
<td>V3</td>
<td>Optimization</td>
<td>5.8</td>
</tr>
<tr>
<td>N2</td>
<td>General abilities</td>
<td>5.7</td>
</tr>
<tr>
<td>V4</td>
<td>Optimization applications</td>
<td>5.3</td>
</tr>
<tr>
<td>Q4</td>
<td>Web applications</td>
<td>5.0</td>
</tr>
<tr>
<td>V5</td>
<td>Decision science and analysis</td>
<td>4.7</td>
</tr>
<tr>
<td>T3</td>
<td>General data analysis</td>
<td>4.0</td>
</tr>
<tr>
<td>T5</td>
<td>Data modeling</td>
<td>3.4</td>
</tr>
<tr>
<td>V6</td>
<td>Decision support</td>
<td>2.8</td>
</tr>
<tr>
<td>R3</td>
<td>Projects—miscellaneous</td>
<td>2.7</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>360.1</td>
</tr>
</tbody>
</table>

### Table 11: This table shows a comparison of supply chain and OR job ads at the category level based on skills and degree types. Skills P, W, O, S, and R (in bold) show a similar proportion of ads requiring them for both supply chain management and OR and may be considered generic. Totals exceed 100 percent because each ad can fit into multiple categories. Any comparisons across tables should be made by scaling all percentages by the column total.

<table>
<thead>
<tr>
<th>Category/broad skill required by employers</th>
<th>SCM (%)</th>
<th>OR ads (%)</th>
<th>Difference (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M Other operations management</td>
<td>66.8</td>
<td>41.8</td>
<td>25.0</td>
</tr>
<tr>
<td>U Leadership</td>
<td>46.7</td>
<td>35.0</td>
<td>11.7</td>
</tr>
<tr>
<td>R Project</td>
<td>42.3</td>
<td>36.8</td>
<td>5.5</td>
</tr>
<tr>
<td>S Team</td>
<td>36.2</td>
<td>35.3</td>
<td>0.9</td>
</tr>
<tr>
<td>O Basic IT</td>
<td>26.0</td>
<td>27.4</td>
<td>−1.4</td>
</tr>
<tr>
<td>W Spreadsheet and database</td>
<td>26.4</td>
<td>29.5</td>
<td>−3.1</td>
</tr>
<tr>
<td>P Communication</td>
<td>52.0</td>
<td>59.4</td>
<td>−6.4</td>
</tr>
<tr>
<td>N General analytical</td>
<td>28.8</td>
<td>42.3</td>
<td>−13.5</td>
</tr>
<tr>
<td>V Modeling</td>
<td>23.0</td>
<td>49.5</td>
<td>−26.5</td>
</tr>
<tr>
<td>T Statistics</td>
<td>12.1</td>
<td>47.8</td>
<td>−35.7</td>
</tr>
<tr>
<td>Q Programming</td>
<td>7.7</td>
<td>46.4</td>
<td>−38.7</td>
</tr>
<tr>
<td>Total</td>
<td>369.0</td>
<td>451.2</td>
<td></td>
</tr>
</tbody>
</table>

---

*Interfaces 38(6), pp. 469–484, © 2008 INFORMS*
In addition, the items from the A, L, and J categories, which employers previously identified as less important (Table 8), were identified as among the most frequently covered topics in MBA classes. These include A2 (31.9 percent), L1 (26.4 percent), and J2 (16.7 percent).

We did the same analysis on cases (Table 13). Similar to the category results with cases, the most covered topics were C1 (26.2 percent), L1 (20.2 percent), and D2 (16.7 percent). However, 7 of 28 subcategories, such as B1 (Material handling/warehouse management) and F2 (ERP systems), are not covered by the cases—at least by those in our sample.

Comparison of “Demand” and “Supply” of Supply Chain Topics
To indicate the extent to which educators are actually covering topics of interest to employers in their supply chain electives, we made a scatter plot of the coverage of these topics (indicated by the proportion of course descriptions) against the demand for these topics (indicated by the proportion of job ads).

The resulting plot (Figure 3) indicates the top five oversupplied supply chain topics, i.e., those that business schools emphasize more than employers do; these are A2 (Supply chain design/restructuring), F5 (Emerging information technology/managing information), B3 (Logistics), J2 (Organizational issues (coordinate/collaboration)), and G1 (Product design (product variety/postponement)). Other oversupplied topics are L1 (Global management), F1 (E-commerce), D3 (Replenishment), and D2 (Distributor or channel management).

Likewise, the top five undersupplied topics as indicated by the same scatter plot (Figure 3) are E3 (Procurement), E4 (Supplier and vendor management), D5 (Marketing (general)), F2 (ERP systems), and C2 (Forecasting). Some of the topics identified as undersupplied are K1 (Metrics), E5 (Contracts and negotiation), H1 (Customer service), and G2 (new product introduction).

From the scatter plot, we can see similar results of the proportion of cases versus the proportion of job ads for each subskill. To make the results clearer, we also developed a scatter plot showing the gap (demand-supply) with supply being measured both ways (Figure 4) to determine if there are any supply chain (sub) topics that are indicated as being oversupplied or undersupplied by using course descriptions or cases. Given the potential for high measurement error associated with either analysis on the supply side, having consistent results gave us more confidence in the findings.

It is clear from the scatter plot of the gap and the top right (bottom left) quadrant that many subtopics are undersupplied (oversupplied) regardless of how we analyze the supply, i.e., by cases or by course descriptions (Figure 4).

Table 14 shows the subtopics that are undersupplied and oversupplied in both analyses.

It appears that undersupplied topics are practice- or process-oriented, while oversupplied topics are conceptual or strategic. However, there are many subtopics that are evenly matched, reflecting the results from the topic-level analysis that, in general,
there is a good match between demand and supply in supply chain management education. This information can inform the debate on the purpose of business schools in preparing leaders versus the employers’ need for specific knowledge and skills.

Interestingly, we do not find much gap in surveys of academics and practitioners when we consider only the high-level supply chain topics. We surveyed the academics who attended the Supply Chain Thought Leadership Roundtable (St. Louis, Missouri, July 27–29, 2006) about the relative importance of the concepts captured in the 12 categories of supply chain topics. These supply chain academics were representatives of various universities including: Clemson University, Columbia University, Eindhoven University of Technology, Dartmouth College, Georgia Tech, Hamburg University, Harvard University, Hong Kong University of Science and Technology, Kobe University, Lehigh University, London Business School, MIT, Purdue University, Stanford University, University of Augsburg, UCLA, University of Cincinnati, University of Michigan, University of Minnesota, University of North Carolina, University of Pennsylvania, USC, University of Santa Clara, and Washington
We surveyed 36 academics and received 32 responses—a response rate of 89 percent. We also sent out 50 surveys via e-mail to UCLA alumni and recruiters working in the area of supply chain management, purchasing, or procurement and received 22 responses—a 44 percent response rate. We also asked the respondents to provide suggestions for educators. Appendix 4 shows their recommendations.

We asked both sets of respondents about the relative importance of supply chain topics for MBA graduates using a seven-point Likert scale with all 12 categories (Table 4) and compared the responses that these two groups provided. For comparison, we normalized the respective scores of each respondent (academic or industry professional) across categories so that the total score for each respondent was 48, i.e., an average score of 4 (on a seven-point Likert scale) for each of the 12 categories. This avoided the possibility that some people might give consistently low scores to all

University. The industry respondents were representatives of the following companies: Boeing, Claim Jumper Restaurant, Clorox, Deloitte & Touche, Dole Fresh Fruits, General Motors, Hewlett Packard, Hitachi, IBM, Ingram Micro, Intel, Mattel, Mervyn’s, Nestlé, Neutrogena, Pepsi, Pfizer, Raytheon, and Xilinx.

Figure 4: This graph illustrates the difference between demand and supply using both cases and courses. The top right (bottom left) quadrant shows undersupplied (oversupplied) supply chain topics as indicated by both case descriptions and course descriptions. The concentrated cluster in the center shows that many subtopics are well-matched.
Subcat. | Supply chain subtopic | Courses (%) | Cases (%) | Subcat. | Supply chain subtopic | Courses (%) | Cases (%)
--- | --- | --- | --- | --- | --- | --- | ---
A1 | Facility location | 5.6 | 4.8 | F2 | ERP systems | 11.1 | 0.0
A2 | Supply chain design/restructuring | 31.9 | 8.3 | F3 | E-procurement | 6.9 | 0.0
B1 | Material handling/warehouse management | 5.6 | 0.0 | F4 | Business-to-business | 4.2 | 6.0
B2 | Transportation | 13.9 | 4.8 | F5 | Emerging information technology/managing information | 23.6 | 15.5
B3 | Logistics | 40.3 | 15.5 |  
C1 | Inventory and materials management | 38.9 | 26.2 | G1 | Product design (product variety/postponement) | 13.9 | 8.3
C2 | Forecasting | 4.2 | 10.7 | G2 | New product introduction | 0.0 | 13.1
D1 | Customer-relationship management | 1.4 | 3.6 | H1 | Customer service | 6.9 | 6.0
D2 | Distributor or channel management | 13.9 | 16.7 | H2 | After-sales service | 1.4 | 1.2
D3 | Replenishment (ECR/quick or accurate response) | 13.9 | 1.2 | I1 | Environmental issues | 0.0 | 2.4
D4 | Pricing | 2.8 | 4.8 | I2 | Returns and reverse logistics | 0.0 | 0.0
D5 | Marketing (general) | 5.6 | 3.6 | J1 | Outsourcing | 8.3 | 9.5
E1 | Make/buy decision | 4.2 | 2.4 | J2 | Organizational issues (coordinate/collaboration) | 16.7 | 1.2
E2 | Supply management | 9.7 | 10.7 | J3 | Alliances | 5.6 | 4.8
E3 | Procurement | 8.3 | 0.0 | K1 | Metrics | 9.7 | 4.8
E4 | Supplier and vendor management | 5.6 | 1.2 | K2 | Performance-related (incentives, etc.) | 11.1 | 8.3
E5 | Contracts and negotiation | 2.8 | 0.0 | L1 | Global management | 26.4 | 20.2
F1 | E-commerce | 9.7 | 7.1 | L2 | Government issues | 2.8 | 0.0
F2 | ERP systems | 61 | 80 | L3 | Global (other—tax, currency, etc.) | 1.4 | 1.2
H1 | Customer service | 61 | 91 |  

Total: 368.3% (courses) and 224.1% (cases)

Table 13: This table shows the proportion of online course and case descriptions with words and phrases corresponding to supply chain subtopics in supply chain electives. Totals exceed 100 percent because course or case description can fit into multiple categories. Any comparisons across columns or tables should be made by scaling all percentages by the column total.

categories, while others might give consistently high scores. Normalizing ensures that all people allocate a total of 48 points across the categories.

The mean scores for academics differ by at most a half point from the mean scores of industry professionals for each of the 12 categories; this results in a similar profile of the importance they accord to these categories relative to MBA graduates (Figure 5). Therefore, it would appear that academics are aware of the relative importance of topics to the industry despite the variance around the mean scores for each category.

Conclusions

Our primary goal was to identify what employers want from MBA graduates in terms of knowledge of
specific supply chain topics and broad skills. We analyzed the text of 704 online job ads for MBA graduates and concluded that employers want knowledge of topics such as inventory and material management (43 percent of job ads), procurement (40 percent), supplier and vendor management (35 percent), and ERP systems (33 percent). The broad skills that employers want from MBA graduates are general leadership (42 percent of job ads), ability to manage projects (37 percent), written and verbal skills (30 percent), and familiarity with Microsoft Excel (24 percent).

Furthermore, using the same supply chain topics at two levels of granularity in the job ads analysis, we analyzed the text of 37 course descriptions and 84 business cases used in MBA-level supply chain electives in 21 of the top 50 business schools. We supplemented this by analyzing operations management core classes with 36 course descriptions and 51 cases. Although this analysis was interesting (Appendix 3), it provided only marginal incremental contribution to the analysis of supply chain electives.

Finally, we compared the relative coverage of supply chain topics by educators to the relative demand for these topics by employers. This comparison, done using both cases and course descriptions, indicated that there may be an oversupply of conceptual and strategy-oriented topics, such as product design and supply chain design, and an undersupply of practice- or process-oriented topics, such as procurement, supplier and vendor management, and forecasting, at least in the electives taught at the schools in our sample. Practical suggestions that practitioners offer to educators (Appendix 4) complement this undersupply. For example, academics need to develop a standard supply chain terminology and more cases on metrics, performance measures, and globalization.

Future research is needed to confirm whether there is a systematic pattern of undersupply or oversupply by MBA programs as a whole, taking such core courses as marketing or accounting into consideration. If the gap between skill supply and demand is real, one possible reason could be that some topics are covered at places other than the business schools. Employers expect that MBA students will have had a few years of industry experience before they began their MBA programs. In addition, MBA students might want to learn skills better suited to, for example, management consulting rather than manufacturing. Finally, whether such a gap is inevitable or undesirable is part of a larger debate on business education; however, we hope that our results will catalyze informed discussion on these issues.

Appendix 1

<table>
<thead>
<tr>
<th>Cat.</th>
<th>Key words (%)</th>
<th>Ads (%)</th>
<th>Cat.</th>
<th>Key words (%)</th>
<th>Ads (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C Inventory</td>
<td>26.6</td>
<td>E Vendors</td>
<td>6.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E Purchasing</td>
<td>25.9</td>
<td>E Supplier management</td>
<td>6.3</td>
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<td>B Logistics</td>
<td>25.3</td>
<td>E Supplier relationships</td>
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<td></td>
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<tr>
<td>E Procurement</td>
<td>24.7</td>
<td>B Warehousing</td>
<td>6.0</td>
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</tr>
<tr>
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<td>G New products</td>
<td>6.0</td>
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</tr>
<tr>
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<td>M Operations management</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>F SAP</td>
<td>17.0</td>
<td>M Process improvements</td>
<td>4.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C Forecasting</td>
<td>16.9</td>
<td>K Performance metrics</td>
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<tr>
<td>F ERP</td>
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<td>M Black belt</td>
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<td></td>
<td></td>
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<tr>
<td>M Six Sigma</td>
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<td>J Collaboration</td>
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<td>H Customer requirements</td>
<td>4.0</td>
<td></td>
<td></td>
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<tr>
<td>C Material</td>
<td>12.4</td>
<td>H Customer satisfaction</td>
<td>3.7</td>
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<tr>
<td>F ‘Oracle’</td>
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<td>L Service levels</td>
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<tr>
<td>H Customer service</td>
<td>9.5</td>
<td>M Green belt</td>
<td>3.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B Transportation</td>
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<td>E Supplier quality</td>
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<td></td>
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<td>K Performance management</td>
<td>3.3</td>
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<td>G New product</td>
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<td>M Audit</td>
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<td>M Business processes</td>
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<td>F ERP systems</td>
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<td>E Supplier selection</td>
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<td></td>
</tr>
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<td>E Supply base</td>
<td>7.1</td>
<td>E Contractual</td>
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</tr>
</tbody>
</table>

Table A.1: This table’s data show the top subcategory-level key words and the respective proportion of ads associated with the (grandparent) categories (A to L).

Appendix 2

<table>
<thead>
<tr>
<th>Cat.</th>
<th>Key words (%)</th>
<th>Ads (%)</th>
<th>Cat.</th>
<th>Key words (%)</th>
<th>Ads (%)</th>
</tr>
</thead>
<tbody>
<tr>
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<td>26.3</td>
<td>O Computer skills</td>
<td>5.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R Leadership</td>
<td>23.3</td>
<td>R Project teams</td>
<td>5.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>O Excel</td>
<td>22.3</td>
<td>U Team environment</td>
<td>5.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P Communication skills</td>
<td>16.2</td>
<td>N Problem solving</td>
<td>4.8</td>
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<td></td>
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<tr>
<td>N Problem solving</td>
<td>14.6</td>
<td>P Written and verbal</td>
<td>4.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S Interpersonal</td>
<td>11.1</td>
<td>P Ability to communicate</td>
<td>4.4</td>
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<td>S Interpersonal skills</td>
<td>11.1</td>
<td>P Excellent written</td>
<td>4.4</td>
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<tr>
<td>R Leadership skills</td>
<td>9.1</td>
<td>R Verbal communication</td>
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<td>O PowerPoint</td>
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<td>R Multiple projects</td>
<td>4.3</td>
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<td>P Presentation skills</td>
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<td>U Management skills</td>
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(Appendix 2 continues on next page.)
Appendix 2. (Continued)

<table>
<thead>
<tr>
<th>Cat.</th>
<th>Key words for skills (%)</th>
<th>Ads</th>
<th>Cat.</th>
<th>Key words for skills (%)</th>
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<td>R</td>
<td>Multiple projects 4.3</td>
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<td>U</td>
<td>Management skills 4.1</td>
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<tr>
<td>V</td>
<td>Modeling 8.0</td>
<td>R</td>
<td>Project manager 4.0</td>
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<tr>
<td>P</td>
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<td>V</td>
<td>Decision making 4.0</td>
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<tr>
<td>P</td>
<td>Excellent communication 7.4</td>
<td>P</td>
<td>Written communication 3.7</td>
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<tr>
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<td>Strong communication 7.0</td>
<td>Q</td>
<td>&quot;SQL&quot; 3.3</td>
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<tr>
<td>U</td>
<td>Team members 7.0</td>
<td>W</td>
<td>MS Access 3.3</td>
<td></td>
</tr>
<tr>
<td>O</td>
<td>Microsoft Office 6.8</td>
<td>P</td>
<td>Written and oral 3.1</td>
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<tr>
<td>R</td>
<td>Change management 6.8</td>
<td>V</td>
<td>Capacity planning 3.1</td>
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<tr>
<td>R</td>
<td>Program management 6.0</td>
<td>N</td>
<td>Attention to detail 3.0</td>
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<tr>
<td>V</td>
<td>Optimization 5.8</td>
<td>R</td>
<td>Project plans 3.0</td>
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<tr>
<td>U</td>
<td>Team player 5.5</td>
<td>P</td>
<td>Verbal and written 2.8</td>
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<tr>
<td>O</td>
<td>MS office 5.1</td>
<td>U</td>
<td>Organizational skills 2.8</td>
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</table>

Table A.2: This table’s data show the top key words from analysis of job ads for broad skills and the respective proportion of ads not including the various degrees and supply chain management.

Appendix 3

We created a categorization for operations management topics while analyzing operations management courses. However, this is only at a high level; we did not develop any subcategories. While Table 13 shows the coverage of specific supply chain topics (categories A to L), Table A.3 shows the coverage of operations management topics.

<table>
<thead>
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<th>Operations management topic</th>
<th>Proportion of Courses (%)</th>
<th>Cases (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OM1 Process analysis (types of processes, product-process matrix, bottleneck analysis, capacity analysis)</td>
<td>97</td>
<td>29</td>
</tr>
<tr>
<td>OM2 TOM/JIT/Lean</td>
<td>58</td>
<td>18</td>
</tr>
<tr>
<td>OM3 Queuing theory</td>
<td>14</td>
<td>16</td>
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<tr>
<td>OM4 Inventory theory</td>
<td>33</td>
<td>4</td>
</tr>
<tr>
<td>OM5 Operations strategy</td>
<td>50</td>
<td>25</td>
</tr>
<tr>
<td>OM6 Simulation</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>OM7 Product development process/time-based competition</td>
<td>19</td>
<td>2</td>
</tr>
<tr>
<td>OM8 Project management</td>
<td>25</td>
<td>4</td>
</tr>
<tr>
<td>OM9 Cross-functional collab</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td><strong>315.00</strong></td>
<td><strong>102.00</strong></td>
</tr>
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</table>

Table A.3: This table shows the percentage of operations management core course and case descriptions pertaining to an operations management topic at the category level. Totals exceed 100 percent because each course or case description can fit into multiple categories.

Appendix 4

Supply chain industry professionals provided the following suggestions for educators.

—There is a need to stress project management skills for planning precontract and postaward administration time and a need to address risk management.
—Supplier quality/deficiency/issue resolution, contract law, and Microsoft Project are important.
—There is a need to understand how to manage a supplier milestone for performance.
—In designing courses, please include topics such as total cost of ownership, supplier metrics, and project management.
—Topics such as IP ownership, contract negotiation, and risk management are important.
—Supply chain visibility and forecasting are important to my business.
—Getting the right metrics is one of the keys to SCM. Please cover topics regarding managing supply chains with multiple performance measures.
—Negotiation and influencing skills are very important.
—As SCM becomes more mature, we need more detailed analysis to get good ideas.
—Please include analytical SC analysis. We look for people with great analytical skills, i.e., expertise in databases and great Excel skills with large data sets.
—An MBA should have a basic understanding of supply chain practices, performance measures, and information systems. I have encountered many MBAs who do not!

Appendix 5

1. Harvard
2. Stanford
3. University of Pennsylvania
4. MIT
4. Northwestern
6. University of Chicago
7. Columbia
7. UC Berkeley
9. Dartmouth
10. UCLA
11. Duke
11. University of Michigan
13. NYU
13. University of Virginia
15. Yale

(Appendix 5 continues on next page.)
Appendix 5. (Continued)

<table>
<thead>
<tr>
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<td>18</td>
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<td>18</td>
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</tr>
<tr>
<td>20</td>
<td>UNC at Chapel Hill</td>
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<td>22</td>
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<tr>
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<td>Texas A&amp;M</td>
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Table A.4: This table lists the U.S. News & World Report 2006 ranking of US business schools.

References


