

The State of Business Intelligence and Business Analytics in Academia 2012

In fall 2012, the BI Congress surveyed professors, students, and employers regarding the state of business intelligence and business analytics (BI/BA) curriculum in academia. This effort represents the BI Congress' third survey project since 2009¹.

The following report presents the responses from all three survey groups: professors, students, and employers. The report was used as input for discussion during the 2012 BI Congress 3 in Orlando, FL on December 15 and 16, which was delivered by the Special Interest Group for Decision Support Systems and the Teradata University Network. The BI Congress was supported by its Platinum Sponsors Teradata, SAS, and IBM as well as by Deloitte Consulting, MicroStrategy, NetApp, Tableau, University of Arkansas, Decision Sciences Institute, University of Virginia, Loyola University Maryland, and Stevens Institute of Technology.

Through 2013, we will produce additional deliverables regarding the current (and future) state of BI/BA in academia. In the meantime, this document provides preliminary results for those who were kind enough to complete the survey and who participated in the BI Congress 3 event. Thank you for your support!

Definition:

We define Business Intelligence/Business Analytics (BI/BA) as: The people, processes, and technologies that transform data into insights that drive business decisions and actions. The area of BI/BA receiving much attention these days is referred to as big data.

Methodology:

The professor survey was promoted via academic listservs, academic alliance programs, and the database of past BI Congress and survey participants. The student survey was sent to the study's professors to pass along to their students. Additionally, the student survey was promoted to the student members of the Teradata University Network. Employers were reached through the BI Congress sponsor channels, mainstream BI/BA professional channels (e.g., TDWI, B-Eye Network, thought leader twitter accounts), and select university recruiting listservs. The survey was sent to alumni of University of Virginia's Master in the Management of IT program, which includes several thousand working IT professionals. We had strong response from this particular respondent group, which explains why 52% of the employer sample is located in Virginia.

¹ In fall 2009, the BI Congress distributed a survey asking academics associated with the Association for Information Systems about business intelligence (BI) at their universities. The intent was to obtain a general understanding for the current state of BI in academia. The survey identified that professors were beginning to introduce BI into university curricula by including BI content within existing classes and initiating BI degree programs and concentrations. However, the 2009 BI Congress event found that professors have many hurdles to overcome as they try to move BI forward in universities. To pursue the state of BI in academia at a deeper level, the BI Congress II re-administered the original survey in fall 2010 – and created two additional instruments to capture student and practitioner/recruiter perspectives. The results are publicly available at <http://www2.commerce.virginia.edu/bic3/communications.asp>.

Faculty Survey

The following universities were represented by the 319 professors in this study.

Aalto University	Fudan University
Aarhus University	Georgia Southern University
American University	Georgian Court University
Applied Science University	Göteborg University
Arizona State University	Haaga-Helia University of Applied Sciences
Arkansas State University	Harz University of Applied Sciences
Auburn University	Hawaii Pacific University
Augusta State University	Hochschule Niederrhein
Aurora University	Hong Kong Polytechnic University
Autonomous University of Aguascalientes	HTW Berlin University of Applied Sciences
Avans Hogeschool, University of Applied Sciences	ICFAI Business School
Baker University	Idaho State University
Beihang University	Indian Hills Community College
Ben-Gurion University	Indian Institute of Science, Bangalore
Bentley University	Indiana State University
Bern University of Applied Sciences	Indiana University, Indianapolis
Boston College	Institute of Management Technology
Bowling Green State University	Institute of Mathematics and Informatics
Brigham Young University	Iowa State University
Brock University	ITESM - Tecnológico de Monterrey
Buffalo State College	Ivanovo State University of Chemistry and Technology
California State University, Fullerton	Kansas State University
California State University, Monterey Bay	Lake Land College
Cameron University	Lawrence Technological University
Central Washington University	Lenoir-Rhyne University
Chapman University, Argosy	Lincoln University
Christian Brothers University	Lingnan College
Chungbuk Health and Science University	Sun Yat-sen University
Clemson University	Lipscomb University
Colorado State University	Louisiana State University
Corvinus University	Loyola University, Chicago
Curtin University	Loyola University, Maryland
Dakota State University	Manav Rachna, College of Engineering
Darmstadt University of Technology	Marquette University
Dartmouth College	Marshall University
Deakin University	Massey University
Delta State University	McNeesse State University
Drake University	Meredith College
Drexel University	Merrimack College
East Carolina University	Miami University
EBS Business School	Michigan Technological University
École Polytechnique	Middle East Technical University
Empire State College	Milwaukee School of Engineering
Emporia State University	Mississippi State University
ESADE Business School	Missouri University of Science and Technology
ESC Bretagne Brest	Monash University
Fachhochschule Dortmund	Murdoch University
Fachhochschule Flensburg	Murray State University
Fairmont State University	New Jersey Institute of Technology
Federal University of Sergipe	North Carolina A&T State University
Florida International University	Northeastern University
Florida State University	

Northwest Christian University	University of Melbourne
Norwegian School of IT	Towson University
Ohio University	Transport and Telecommunication Institute
Oklahoma State University	Troy University
Peking University	Tsinghua University
Pepperdine University	Universidad de Colima
Petra University	Universidad de Lima
Philipps University at Marburg	Universidad del Pacifico
Poznan University of Economics	Universidade do Sul de Santa Catarina
Presbyterian College	Universidade Portucalense (UPT)
Purdue University	Universität Stuttgart
Queen's School of Business	Université de Poitiers/IAE
Queens University of Charlotte	Universite Nice Sophia Antipolis
Queensland University of Technology	Universiti Teknologi MARA (UiTM)
Quinnipiac University	University at Albany
Rensselaer Polytechnic Institute	University College Dublin
Riga Technical University	University Maribor
Roanoke College	University of Osnabrueck
Rouen Business School	University of Akron
Rutgers University	University of Alabama
Ryerson University	University of Applied Sciences
Saint Mary's University of Minnesota	University of Arkansas
Salem State University	University of Belgrade, FON
Samford University	University of Bretagne Occidentale
San Jose State University	University of Cincinnati
SENAC São Paulo	University of Colorado, Colorado Springs
Seoul National University	University of Colorado Denver
Shippensburg University	University of Dayton
Silesian University of Technology	University of Denver
Simon Fraser University	University of Dundee
Singapore Management University	University of Georgia
Slippery Rock University of PA	University of Houston
Southeast Missouri State University	University of Houston Downtown
Southern CT State University	University of Illinois
Southern Illinois University Carbondale	University of Indianapolis
Southern University	University of Kentucky
Stephen F Austin State University	University of Leipzig
Stuttgart Media University	University of Ljubljana
Sultan Qaboos University	University of Louisville
SUNY Buffalo	University of Maribor
SUNY Plattsburgh	University of Maryland Eastern Shore
Tarleton State University	University of Maryland University College
Technical University Dresden	University of Massachusetts Boston
Technische Hochschule Mittelhessen	University of Massachusetts Dartmouth
Temasek Polytechnic	University of Massachusetts Lowell
Texas A&M International University	University of Michigan, Dearborn
Texas A&M University, Texarkana	University of Michigan, Flint
Texas A&M University	University of Minho
Texas State University	University of Mississippi
Texas Tech University	University of Mississippi Medical Center
The Russian Presidential Academy Of National Economy and Public Administration	University of Missouri, St. Louis
University of Akron	University of Nebraska, Omaha
University of Economics, Prague	University of Nevada, Reno
University of Findlay	University of New Haven
University of Hong Kong	University of New Mexico
	University of New South Wales

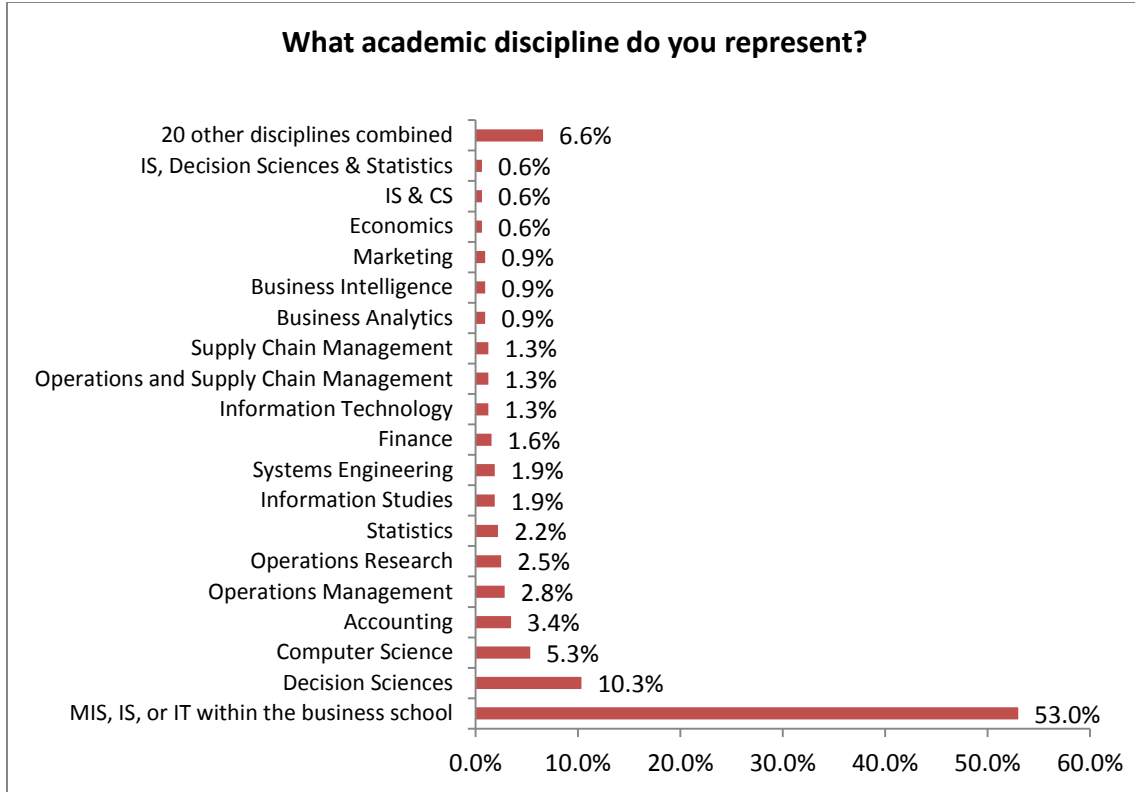
University of North Texas, College of Learning Technologies
 University of North Texas, College of Business
 University of Osnabrueck
 University of Phayao
 University of Piraeus
 University of San Diego
 University of South Carolina
 University of Split
 University of St. Gallen
 University of St. Thomas
 University of Sydney
 University of Tampa
 University of Tennessee
 University of Texas at Arlington
 University of Texas at El Paso
 University of Texas, Pan American
 University of Utah
 University of Victoria
 University of Virginia
 University of Washington Tacoma

University of West Florida
 University of Wisconsin, Milwaukee
 University of Wisconsin, Stout
 Utah State University
 Valparaiso University
 Villanova University
 Virginia Commonwealth University
 Virginia Military Institute
 Vlerick Business School
 Warwick Business School
 Wayne State University
 Webster University
 Western Michigan University
 Western New England University
 Western Washington University
 Widener University
 Winthrop University
 Worcester Polytechnic Institute
 Xavier Institute of Management, Bhubaneswar
 Xavier University

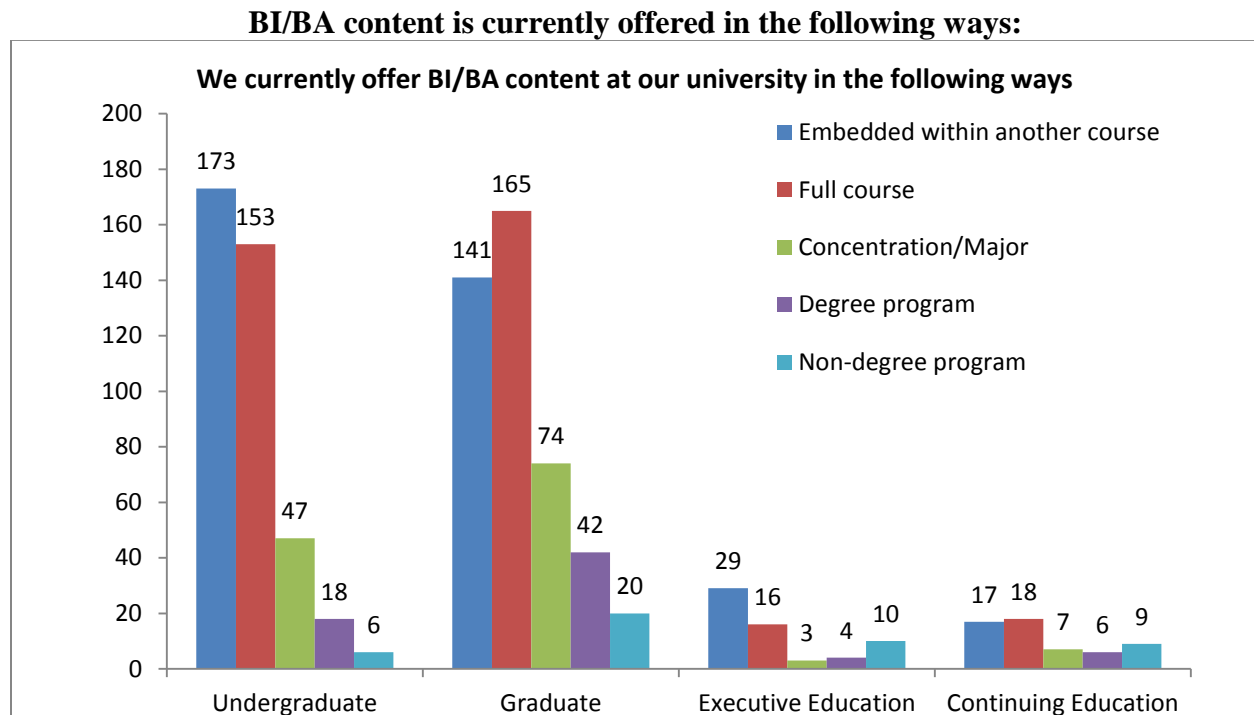
The following 43 countries were represented by faculty:

Country	Frequency	Percent
Australia	11	3.5%
Belgium	1	0.3%
Brazil	3	1.0%
Canada	7	2.3%
China	6	1.9%
Croatia	1	0.3%
Czech Republic	1	0.3%
Denmark	2	0.6%
England	1	0.3%
Finland	2	0.6%
France	5	1.6%
Germany	19	6.1%
Greece	1	0.3%
Hong Kong	2	0.6%
Hungary	1	0.3%
India	4	1.3%
Ireland	1	0.3%
Israel	1	0.3%
Jordan	2	0.6%
Korea	1	0.3%
Latvia	2	0.6%
Malaysia	1	0.3%
Mexico	3	1.0%
New Zealand	2	0.6%
Norway	3	1.0%

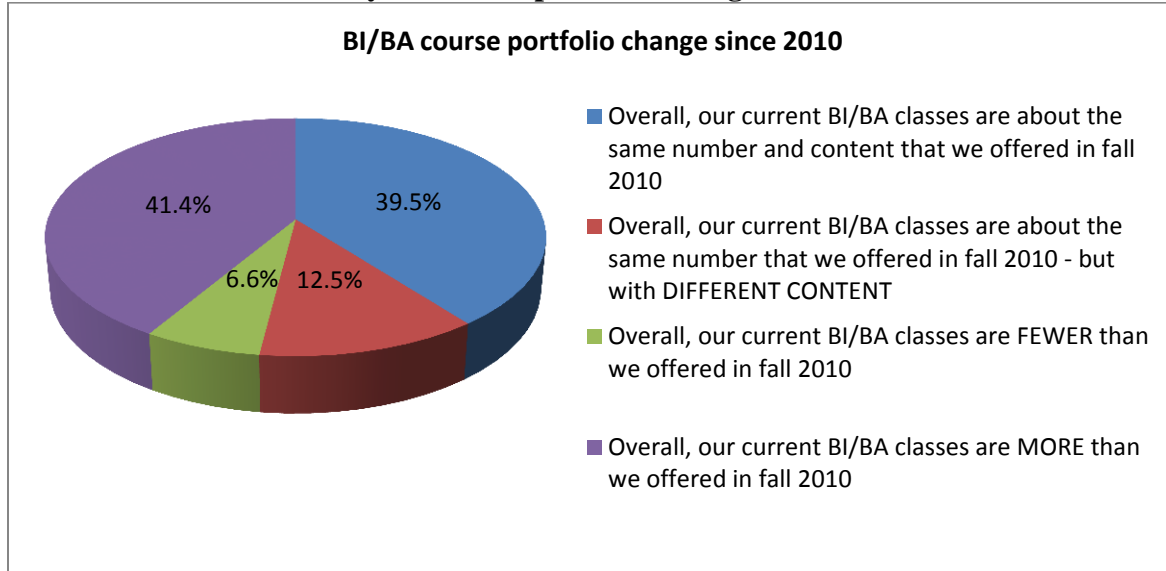
Country	Frequency	Percent
Oman	1	0.3%
Perú	2	0.6%
Poland	2	0.6%
Portugal	2	0.6%
Russia	2	0.6%
Scotland	2	0.6%
Serbia	2	0.6%
Singapore	2	0.6%
Slovenia	3	1.0%
South Korea	1	0.3%
Spain	1	0.3%
Sweden	1	0.3%
Switzerland	4	1.3%
Thailand	1	0.3%
The Netherlands	1	0.3%
Turkey	1	0.3%
UAE	1	0.3%
USA	206	66.5%



“Other disciplines” included: Applied and Computational Mathematics, Business Informatics, Cognitive Science, Design, Engineering (Electrical and Computer), Engineering (Industrial, Software, Management), Entrepreneurship, Learning Technologies, Management and Entrepreneurship, Management and Marketing, MIS within Administrative Science and Policy Studies, Quantitative Analysis, Quantitative Sciences, Marketing Sciences.



How has your BI/BA portfolio changed since 2010?



Across these programs, 41.4% of respondents reported an increase in the size of their BI/BA course portfolio compared with 2010, while almost 40% of respondents reported no change in their course portfolio. Fewer than 7% reported a reduction in their BI/BA courses over the past two years.

The following explanations were offered for the nature and rationale of the changes in the course portfolio since 2010:

- Added a graduate level BI course first offered in spring 2012.
- Added a graduate level course.
- Added a Minor in BA. Added a course in Big Data.
- Added a new UG course; revised the MBA course.
- Added a project using Tableau Public in our DSS class.
- Added courses for Graduate Certificate.
- Added courses in business analytics, data warehousing and BI/BA practicum.
- Added graduate-level Marketing Analytics course. Also added that course to list of courses that fulfill MBA quantitative requirement (which really helped to fill the class).
- Added or enhanced the topics of visualization and text mining.
- Added pricing analytics.
- Adding more specializations as part of MBA and MS programs.
- As this is part of an academic discipline, certain years the BA/BI topic is left out, certain years it is included in the teaching. This is depending on the lesson load.
- BI course is now semi-mandatory course for the IS concentration. Some BI content was added to the databases course. A "big data" elective course will be added this year.
- BI course started from fall 2012. This is the first BI course taught at University of Kragujevac. There are only a few BI courses at Serbian faculties.
- Business case.
- Change of staff also meant change of content - More in depth coverage of BI.
- Changes in technology.
- Changing content of courses to move away from a CIO target to a business analysis focus.
- Content has moved to include more data analysis and optimization and less probability.
- Core undergrad course introduced.
- Data Quality, analytical CRM, business planning because of new BI software releases.
- Did not offer a full course until this year; prior was embedded.

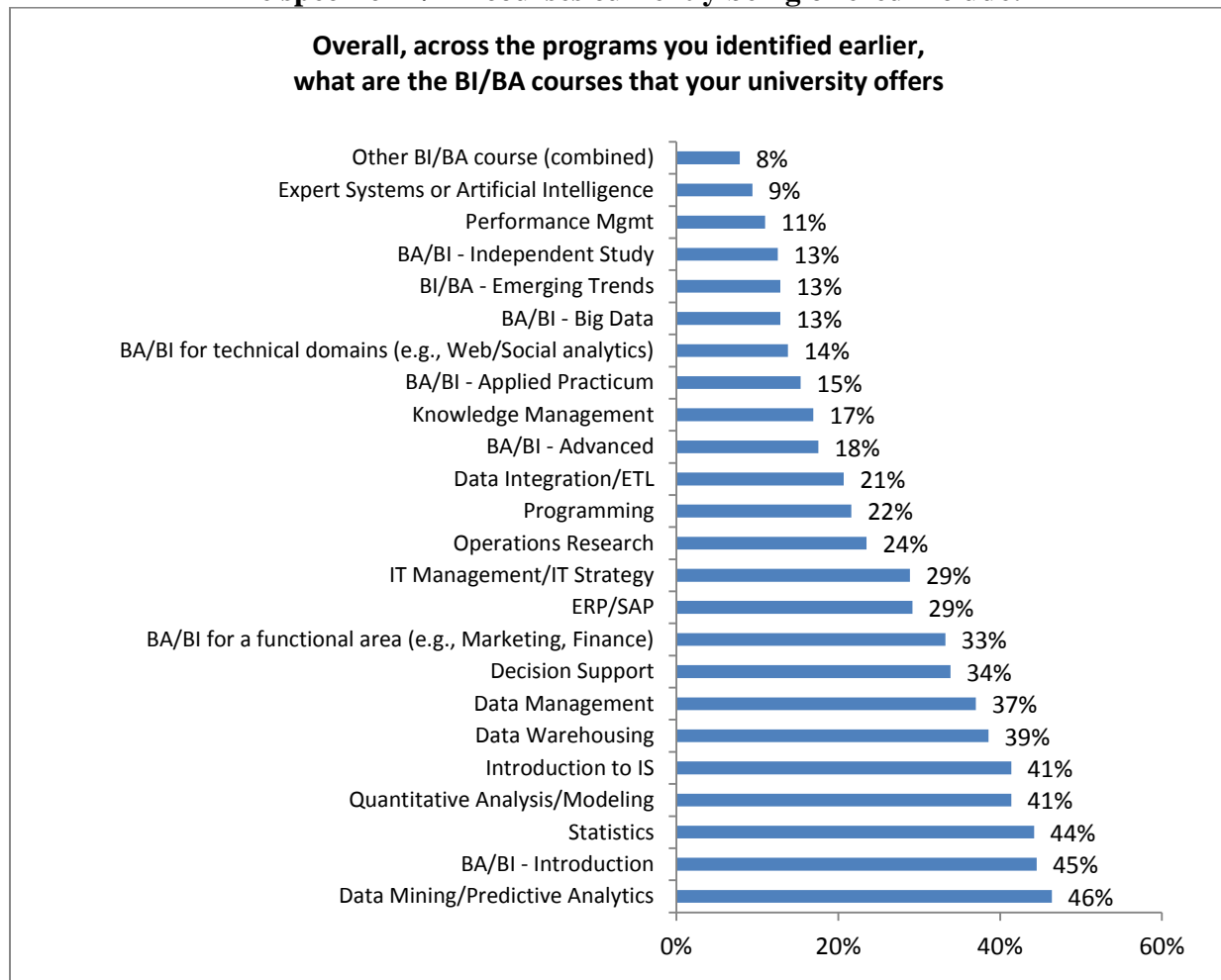
- From Fall 2011, we have offered a new MBA class "Business Analytics and Information Strategy". From Spring 2012, we have offered a new undergraduate Business Analytics class degree (by aligning all existing classes that are relevant to analytical skills e.g. spreadsheets, statistics).
- Greater coverage under analytics umbrella.
- Have implemented Predictive Analytics; will implement Big Data Analytics - Fall 2013; implement "Visualization & Exploration for Big Data" (title not yet formalized).
- I had added more stat/math review portions for functional understanding of the procedures to get results as well as to interpret the results properly.
- I have developed a new Bachelor Course called "Data Mining" since last time. 5 study points (ETCS) - it runs for the second time this fall semester.
- I use my own content.
- I used to show DSS systems, pattern recognition, image processing, regression in a CIT fashion in my classes. Now, I teach data analytics in a more systematic, business driven, decision making, and big data oriented way.
- Included a BI component instead of or replacing existing database management content.
- Included as a concentration within the supply chain major. Move to be more analytical/modeling.
- Including some SharePoint aspects concerning BI.
- Increase in student intake.
- Increased awareness among the students. New Master's program in progress.
- Increasing presence and diversity of BA content within the Business School.
- Instructor initiated changes in the content.
- Integration of a new showcase in Executive Education.
- Introduced a MBA concentration in Business Analytics. As part of this concentration, created a new course called Emerging Analytics Technologies, Platforms, and Applications.
- Introduced topics in data management and big data.
- Many more classes and students.
- Merger of two courses.
- More cases selected in BI/BA area.
- More content and more software tools.
- More course offerings, more faculty involvement.
- More DW and BI on the undergrad level.
- More focus on details of methods.
- More students interested.
- More use of advanced technology in BI course.
- New certificate program that will begin enrolling in Spring, 2013.
- New course dedicated to BA.
- New Data Science.
- New degree is Health Informatics now has BI course.
- New Degree program in IT management this year.
- New degree programs that just started.
- New graduate certificate in Business Analytics.
- New program that will be launched in September 2013.
- Now offering an MBA class (effective Summer 2013). Content more focused and in-depth.
- Number of sections of the grad BI/BA course has increased to an every semester offering.
- Number of students increased and use of more software applications and hands-on exercises.
- Our MBA program has gone from face to face to online. In the old program we offered a Decision Making course, which had statistics as a prerequisite. That course has been replaced with a Managerial Statistics course. In our undergraduate program we will be offering a new course in spring 2013 - Advanced Data Analysis.
- Our official course is focused on classic model-based DSS, EIS and ES/KBS. BI/BA tools is a topic in this course, but we promote also BI/BA as an optional course.
- Overall enrollment dropped due to immigration laws and other macro reasons.
- Program and research center launch.
- The addition of PowerPivot in Excel 2013 is an addition to the course. The addition of SQL 2012 and the data mining modules is an addition to the course.
- The BA major in business analytics (which had evolved over several years, constrained by resource neutrality) launched in the fall semester of 2011, a few weeks after receiving Board of Trustees approval. There were over 60 declared majors, according to the UG Studies Office. Without explanation, a new college administration

halted the major 6 weeks into its launch semester - disallowing new enrollments. Of course, the major has suffered a severe decline in enrollments and interest. It is unclear what the future holds. As all faculty involved in development/implementation of the major are tenured, there is no budgetary issue involved in the major's cessation.

- The department has restructured its concentrations at both the undergraduate and graduate levels such that students choose to concentrate in either IS, decision sciences, or business analytics.
- The number of units (courses/subjects) remained the same as in 2010. However, student numbers have gone up in both units. In terms of content, I have introduced a new topic on social BI and big data. Furthermore, I have introduced a practical assignment focusing on data quality in non-for-profit organizations. Students are required to select a customer-facing service in a real-life NFP and in the context of this service, design and implement a small-scale data quality improvement project.
- The UG course was first offered in Spring 2012 and the Grad course was offered in Fall 2011.
- This material is taught within the data mining and data warehousing subjects, and there are capstone projects which students complete in this field.
- UC changed from quarter to semester system. We have four BI courses at graduate level, BI, Advanced BI, BI Project Management and Data Visualization.
- Undergrad - added a course that focuses on data analytics; graduate - added a course on using BI/BA to manage IT.
- Undergraduate degree plan and graduate concentration are new programs; more classes were added to accommodate same.
- Visual analytics graduate program and associated additions to undergraduate program.
- We added "Business Analytics" and "Corporate Performance Management". Less technical, more applications.
- We added a course in Marketing Analytics. It is very relevant to our majors.
- We are about to make major changes at the MBA level.
- We are adding a capstone course on BI to our graduate curricula.
- We are adding a concentration and certificate in BA.
- We are considering change, not doing change.
- We are offering a specialization at the graduate level and a number of courses at the undergraduate level starting Spring 2012.
- We are offering significantly more BI content because it is central to our future.
- We currently offer a Masters in BI and are introducing a new Masters in Data Science.
- We discontinued the last three of six courses in a Decision Support Services graduate certificate. The first three courses have sufficient enrollment as electives or area of emphasis for MBA, MA, MS students. Generally, few students continued the certificate program after graduation; therefore, the enrollments in the last three courses were very low.
- We do more of it. There is more discussion about its importance in the press and in general media. Employers are asking for it more.
- We established new master's program (Business Informatics) where we have included the course Business Analytics.
- We had the first offering of a BI course for UG students in spring 2012. Eighteen students participated.
- We have added an Analytics Track to our undergrad business program.
- We have continued to evolve the content in our courses, to match the evolving nature of the BI field, particularly with regard to big data and predictive analytics. I also brought articles and white papers to my own BI survey class on Hadoop, and we looked at what it is and how it fits with ETL and DW in general. We have also developed a course that is awaiting university approval in big data analytics. We are currently working on developing another course around visualization.
- We have offered business specific courses where as we used to offer general courses with emphasis on scientific computing.
- We have revisited our curriculum to include more quantitative content.
- We instituted a Graduate Certificate in BI this fall.
- We introduced a 3-course analytics sequence in the undergraduate business core. We revamped our MSBI program.
- We now have a Masters in BA, it started in 2011.
- We now have more voluntary courses which are not part of the official curriculum, but are designed to complement it. This particularly pertains to practical courses (e.g. a course on BI tools).

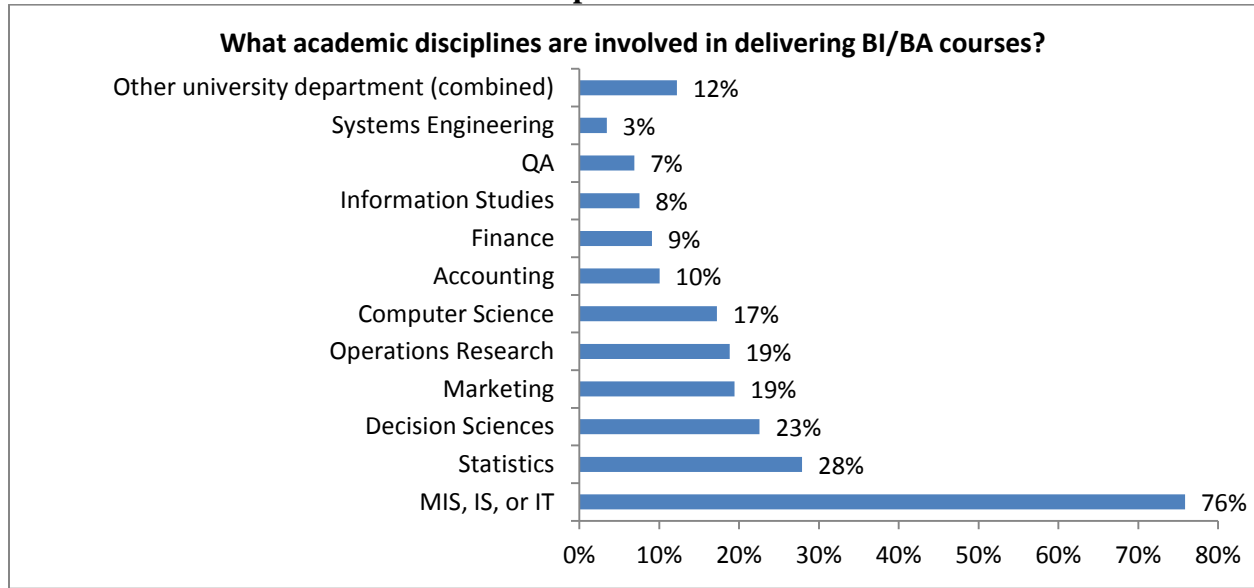
- We offer BI as an elective course, once every four semesters. We offered our first complete course in BI in Spring 2012.
- We received feedback from practicing professionals that encouraged us to make changes.
- We started a one year MS in Analytics program with a small pilot program in 2011-2012. The current class will graduate in May 2013. We are offering more classes AND different content compared with 2010.
- We started an MS in Analytics program in 2011.
- We started the undergraduate specialization in Business Analytics and Intelligence in fall 2011. The graduate degree in Master of Science in Applied Statistics with a specialization in Business Analytics also started in fall 2011 (although the applied statistics degree has been in existence since 1978).
- We're introducing a new course in "data analytics and visualization" in the spring.
- We've added a Data-Driven Decision Making and Knowledge Management courses.
- We've rejuvenated the course.

The specific BI/BA courses currently being offered include:



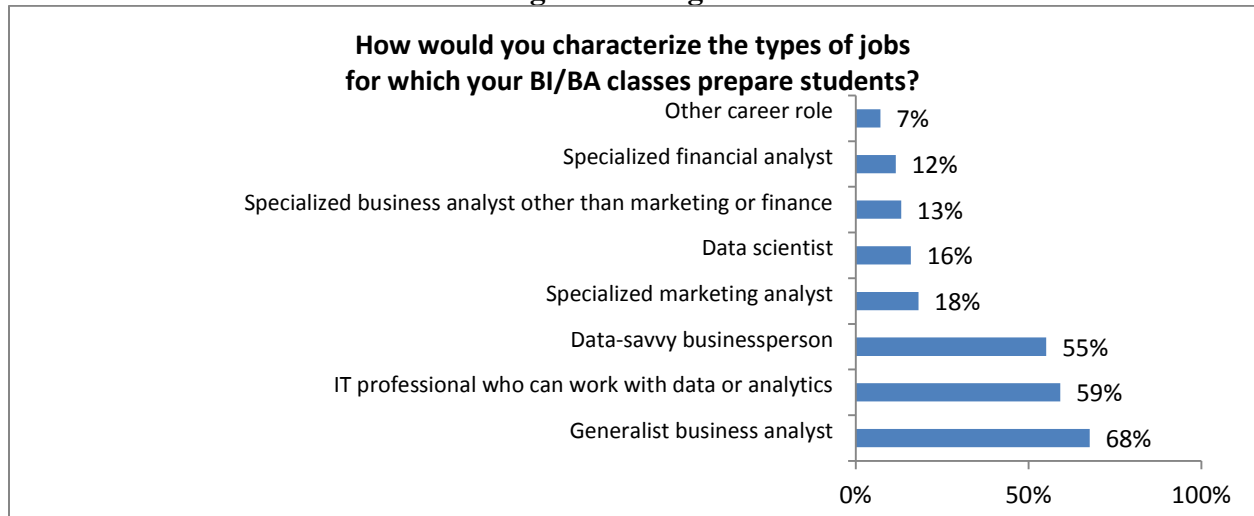
Other BI/BA courses being offered include: Advanced Database Design; Database Security; Analytics Capstone; Supply Chain Problem Solving; Application Studies in Healthcare; Sociology Studies; Evaluation; Business Administration; Research Methods; Campaign Management; Data Quality; Data Science; Data Visualization; Data-Driven Decision Making; Entrepreneurship; ERP/NAV/Jet Reports; Management Support Systems with Practice (SAP); Marketing for Libraries/Information Professionals; MS AX; Network Analysis; Process Modeling; Cost Benefit Analysis; Project Management; Simulation; Text Mining; Tool Overview; Vendor-Specific Practical Courses; and Visual Analytics.

What disciplines teach BI/BA?



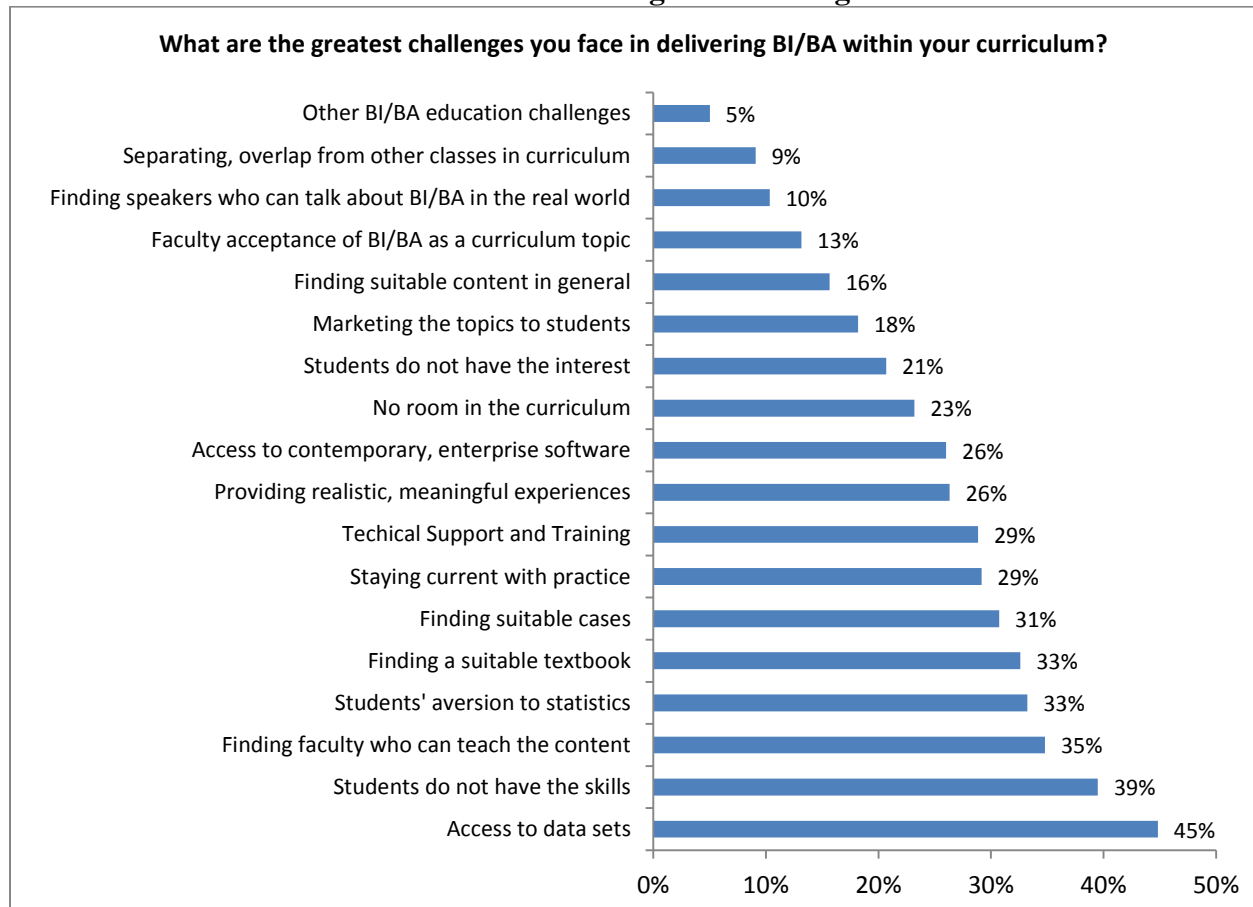
Other university departments that provided faculty resources included: Administrative science & policy studies; Business Analytics; Business Informatics; Business Intelligence; Cognitive science; Interactive Arts and Technology; Economics; Electrical and Computer Engineering; Engineering; Sociology; Educational evaluation; Communication; Entrepreneurship; Health Informatics; Human Resource; Industrial Engineering; Logistics and Operations Management; Logistics Planning & Control Systems; Advanced Supply Chain Management; Management; Mathematics; Operations Management; Public Management; Statistics within the Business College; Strategy and Systems; Supply Chain Management.

Jobs/roles targeted through BI/BA courses



Job types identified included: academician; government officer; bioinformatics; business managers; entrepreneurs; consultant; consultant & big data analytics; corporate management with IT flavor; CFO assistants; data miner; text miner; predictive modeler; data miner/analyst; management consultant; management consulting; member of a BICC team; BICC management; DWH designer; IT management with BI/BA responsibilities; minimally data-savvy businessperson; project management; supply chain management professional.

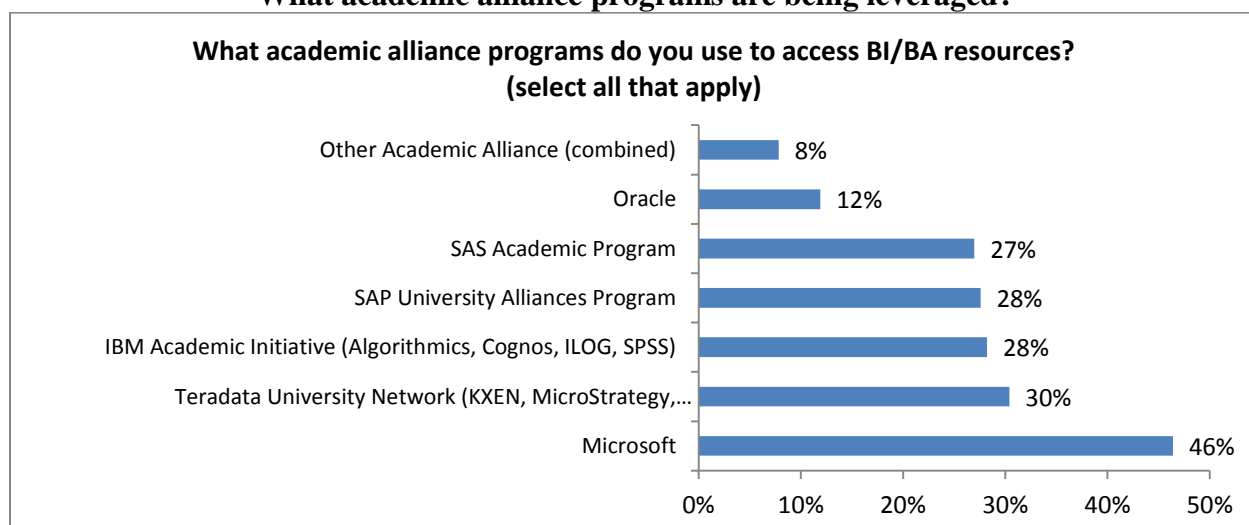
What are the challenges in teaching BI?



Other challenges mentioned included:

- Access to required facilities.
- BI/BA is one of many electives.
- Didactical issues: how to teach BI?
- Not yet able to integrate an interdisciplinary approach across the schools of Business and Technology.
- Lack of administration understanding about the nature of analytics.
- Organizing the program across disciplines.
- Lack of scholarships for students to study the area.
- Selecting topics in order not to exceed the course time allowed.
- Students in general do not know about DM/BI and its scope.
- Teaching students from multiple disciplines.
- Technical infrastructure.
- The extraction of data for BA/BI is not friendly in Navision.
- The traditional dominance of other disciplines in the business curriculum and business school's lack of understanding the market trends in the BI/BA area.
- Set up for these courses takes much more time.

What academic alliance programs are being leveraged?



Other academic alliance programs mentioned were: Revenue Management Solutions; Arcplan; Jedox; Calumo; Clementine; EMC; Frontline Systems; Google; Hortonworks; Hubspot.com; Informatica; MicroStrategy; Open source tools such as Weka and Rapidminer; QlikTech; Qlikview; Agresso; Garp; Hogia; Jeeves; Tableau, PNNL; Salesforce Foundation; and XL miner.

What could academic alliance programs do to better support academics and students?

- Provide more detailed case studies.
- Provide more datasets (for student's assignments).
- Provide tests (for student's exams).
- Allocate a dedicated (local) representative who will visit the school and help set up the lab.
- Provide cases and data sets on several levels (from beginners, advanced, "experts" etc.).
- Access to class materials, software, certification path.
- Access to data sets, software, and professional support.
- Access to remotely hosted or in the cloud BI software and data.
- Accessibility to software and relevant/interesting, realistic business data.
- Allow faculty and students access software in the cloud/sandbox hosted by vendors.
- Training and education supplements.
- Analytical software; expertise.
- Better case studies and data sets for teaching purposes.
- Better case studies, projects, presentations, and videos.
- Better training and access to other faculty resources.
- Cases with data sets
- Examples small enough for homework
- Examples large enough for projects.
- Come to our universities and get engaged with our programs.
- Create more real-life cases that present problems, rather than very "happy" cases with no clear problems. I need content that students can use to identify problems and develop solutions rather than pre-specified answers. It would be incredibly helpful if the alliance programs identified companies who are willing to work with students on projects (provide problems and sample data) allowing students to develop solutions.
- Currently I use Xpress from FICO. It is an optimization software that they give for free as part of the Academic Partner Program.
- Data sets and business problems to accompany the tools.
- Evidence that students will get good jobs.
- Deliver new products and releases in a timely manner.
- Disseminate information regarding BI/BA, and its importance to industry, directly to business school administrators. Bring a mind change to the traditional programs and redefine contents based on industry outlook. Communicate directly to business school administrators on the importance of these skills.
- Highlight new functionalities of SQL server 2012.
- Offer more cloud installations already setup with software and large sample data sets and all free to use for academic purposes.

- Encourage sharing experiences using the programs across universities who are using them, for example, sponsored workshops.
- Encourage the development of mathematical and statistical skills at the primary level, BEFORE students begin their university-level education.
- Engage the University through collaboration agreements.
- Faculty support - teaching material and access.
- Faculty training, practitioner talks in compact YouTube/video presentations. Examples to impress students.
- Finding suitable cases, data sets, suitable text books.
- Focus on the knowledge, skills and application through the provision of real data, rather than focus on tool mastery.
- Focused workshops, working examples/ sample assignments with data.
- Free access to resources so teaching and showing doesn't cost so much.
- Free software, documentation and on-site seminars.
- Good support on the technical side with systems and data sets.
- Marketing the need for more students with BI/BA skills from the corporate side could be helpful.
- Greater access to software/tools, data sets and current case studies and videos.
- Hand out licenses more freely. Access to systems should not be a problem.
- Provide access to software platforms to try out current prevailing industry standards.
- Help us convince other faculty and the administration that alliances are necessary and beneficial.
- Help with pre-configured cases, tutorials, and examples more targeted towards the level of BS (and MS) students in a class rather than professionals, ideally more integrated with the curriculum (conceptual material connected to the cases, tutorials, and examples) and not just cookbook examples. Some of what is available such as the GO! and Northwind datasets and documentation are tough to use. I hear there are some textbooks on the way that may help along these lines, but currently, while material such as IBM's Redbooks is fantastic, it's tough to go through it all and integrate it into a curriculum.
- Host and maintain software and data sets for access via the web.
- I have not figured out how TUN can be useful to me. Provide real data sets.
- IBM Cognos offers very little help. I am not aware of SAS or SAP.
- If they offered links to internships, that would help a lot with student recruitment.
- I'm not sure whether there is a case study around the Adventureworks BI-Database.
- Knowledge transfer, train the instructors. Need a change champion.
- Make instructors more aware of webinar-based training that comes available (time and budget are scarce for travel).
- Teaching materials in Portuguese.
- Meaningful data sets.
- More affordable software.
- More and better cases; more support for data sets that can be used in our MS program; help in getting out the word that BI/BA is important and not a passing fad.
- More data sets.
- More on site support.
- More on-site training since travelling could be difficult and costly.
- More support delivering software (virtual machines for students) in order not to have to run the growing software solutions ourselves.
- Need more continuous involvement with our students and student organizations.
- No fee software and data.
- Not much: we're already receiving good support.
- Offer courseware.
- Offer less expensive software for faculty to encourage utilization in the class.
- Offer more tools for free.
- Organize e-events.
- Our BA/BI material is too introductory to benefit from an academic alliance.
- Our program is unusual in that it teaches analysis as a route to design of visual information systems and organizations as well as analysis per se. We have limited interaction with our Business School, despite the fact that we work in similar areas.
- Overall, the Teradata resources are excellent, but on occasion the students and I find the tutorials and accompanying materials do not always match the software. Students also encounter technical difficulties that seem to be "glitches" and tech support is difficult to find.
- Reduce the price.
- Provide access for free.
- Provide access to a range of meaningfully large data sets (e.g. star schema data marts from a range of industry sectors).

- Provide access to more data sets linked to exercises using their tools. We are about to incorporate SAP Business Objects into our undergraduate and graduate programs, but it would be part of a general course on research methods/analytics. We do not have an MIS program/major/minor.
- Provide access to real life cases (e.g. client stories) and applications (e.g. academic versions of your flagship products).
- Provide additional training resources for professors.
- Provide BA tools at reasonable prices for widespread audience.
- Provide better information about possible career paths.
- Provide BI/BA course materials (PPTs, demos).
- Provide cases to academic staff.
- Provide current real-world data and use cases.
- Provide curriculum material.
- Provide data sets and technical support.
- Provide data sets and tools.
- Provide example data sets.
- Provide examples, exercises, training materials, and case studies.
- Provide free access to programs and share experiences in teaching BI/BA so that we can adopt them.
- Provide good software, data sets, and cases.
- Provide guidance for teaching of students of all levels. Support acquiring software for educational purposes.
- Provide large datasets appropriate for mining.
- Provide learning and tools.
- Provide meaningful case studies, data sets and free software to faculty and students.
- Provide more course materials.
- Provide more datasets.
- Provide opportunities for professors to engage in real-life projects with the vendors and their customers, to enable teaching staff to stay current with practice and consequently design more insightful, realistic and engaging learning activities. Provision of content is a great first step. Our win-win relationship could be taken much further from value exchange to value co-creation.
- Provide tools and resources for students and faculty to minimize the learning curve.
- Provide training courses for faculty.
- Provide training, data sets, examples.
- Provide us with a set of data.
- Provide well-developed but realistic business cases and data sets.
- Providing real-life case studies and data sources (big data).
- Providing software and practice cases.
- Providing step-by-step tutorials for students. Easy software installation for students, so that they can also work at home.
- Providing the hands-on materials for BA/BI in warehouse and supply chain operations.
- Push reminders (sorry, I know that means I am lazy) of what they provide ... especially new things.
- Offer training documents on dimensional modeling, data mining, text mining, sentimental analysis, social media analysis.
- Ready to go case studies and curriculum modules.
- Recommended topics that can be covered in an AIS class. Sample materials.
- Samples of how insights were derived from big data.
- Samples, especially data sets and sample cases.
- SAP BI is too expensive. Microsoft is too complex.
- SAP is too expensive; MSNAA has too much content.
- Sharing of teaching material (e.g. assessment, case studies, etc.).
- Software license, books, news.
- Software on students owned computers.
- Some of the teaching materials need to be improved. Sometimes the step by step instructions do not work as there have been software/system upgrades.
- Suggest curriculum and provide access to datasets and software.
- Supply more training; more technical support; access to clients and data sets.
- Supply guest lectures on the subject.
- Support from SAS Corporation to participate in SAS Analytics conferences. Support to introduce the Enterprise Miner as course in other parts of the world, especially universities in India, Middle East and Pacific islands. I frequently go to these universities and talk about them. They are eager to introduce SAS DM/BI as a course in one way or other.
- Teaching materials using open source tools (not vendor dependent).
- Teradata, Microsoft, IBM academic alliance does not provide access to SPSS tool.

- They can help in bringing cases and experience. For our college, the cost of procurement of, say, Cognos is prohibitive. We need deep educational discounts.
- The on-demand online SAS Enterprise Miner should have more resources to support better performance of the services.
- Some could provide more technical support for schools that utilize their hardware/software.
- This year one of our professors applied for the IBM Watson fellowship as part of our IBM PEP alliance to support development around big data and realistic cases. More financial awards to incent and reward faculty for truly innovative course development would be great.
- To provide expertise for running practical labs.
- Tool provision should be as easy and non-bureaucratic as in the Microsoft case (no stripped down or test versions).
- Train our faculty and help us do workshops.
- Training in their training centers.
- TUN is an excellent example.
- We need more drop in modules for analysis.
- We would like to receive more technical assistance.
- Wider access to a variety of programs, as well as discounted licenses available to recent graduates.

Faculty suggestions for best practices and lessons learned related to their BI/BA teaching:

- Engage with practitioners, if possible through joint research projects.
- Create opportunities for your students to get involved in real-life projects: Not-For-Profits are great to engage with and very appreciative of any help they can get.
- Engage with local and international industry communities - attend their presentations, present your work, participate in industry panels, get involved in TDWI's competition etc. .
- Help your students to build and extend their networks by inviting them to TDWI and/or similar events - they will see the relevance of your unit, get to meet other practitioners and will get to see you as an industry professional.
- Grow a learning community with your current and former students and supportive industry practitioners. Lead by example and, most importantly, love what you do!
- We need to animate students to realize the importance of BI. BI case studies, demonstrations (such as Adventure Works solution), perspectives (jobs, salaries, etc.) have been effective for students.
- SAP University Alliance has a very good student case (called "Global Bike"). Twice, I have made my own data cube and gave it to the students, and some students has managed to "destroy" it both times. Therefore, using the (secured) cube and example by SAP is encouraged.
- Whether you are in the business school or computer science, try to encourage students to reflect on the business value of BI - the curriculum should not just include use of tools.
- I have conducted a study with Meijer corporation having department stores in Michigan, Ohio and Illinois - a 10 Billion Dollar private corporation to decide a separate Baby Center in all their department stores. As a result, they introduced a separate baby center. This was a study to demonstrate the ease and effectiveness of Data Mining approach versus the traditional Statistical approach. The data set consisted of two million transactions.
- I have other studies too in health care. Two million records from Henry Ford Hospital about kidney dialysis.
- There is a 2 day training (ERP and BI) on the campus of SAP in Walldorf/Baden.
- Incorporate case studies and trends in practice to be discussed with practice from BI consultants.
- It would be good to have conferences/workshops on the matter every year.
- Annual Business Analytics Symposium brings practice and academics together.
- Annual SAS Data Mining Shootout is a good opportunity for students to learn the skills in analytics for the real world.
- Be very wary when using any hands-on packages: something unexpected always happens.
- BI/BA is inter-disciplinary in nature. Therefore, any course, major or degree in (or related to) BI/BA will require buy-in from many departments. It will be much easier to create BI/BA courses, majors or degrees, if all participating departments (units) have agreed to work toward a common goal.
- BI/BA should be a core course, not an elective.
- Bring in guest speakers that are experts in the field.
- Calculations of cycle time and on-time order fulfillment in warehousing.
- Cooperation with enterprises (win-win).
- Creating an executive advisory board and engaging industry in various ways have provided great program benefits.
- Data modeling DWH/ETL design on the one hand and application of analysis tools on the other are still separate subjects that differ in requirements, contents, and target groups. Students should have a background in both (to come to meaningful results), but courses need to focus.

- Differentiate between graduate and undergraduate students in terms of presentation. Undergrads need more case studies to demonstrate ROI. Grad students need better statistical preparation.
- Dimensional modeling exercises are the most important thing on almost all topics under the BI concept.
- Doing workshops helps with marketing your program!
- Faculty need adequate training on the applications in order to assist students.
- Flipping the classroom where students work hands-on in class, and lectures moved off line is helpful.
- For the last two years we have adopted a formative assessment approach for the design assignment for the graduate BI Applications course. Students are required to submit the documented design of a multi-dimensional data database and a business focused justification of their design approximately half way through the semester. The design they submit forms the basis of the second assignment that requires them to develop the OLAP database using MS SQL Server Analysis Services. After marking and provide extensive feedback on the design assignment, the students have the opportunity to revise and resubmit the design assignment at the end of the semester. Because many of our graduate students have very strong IT undergraduate degrees and little exposure to business they struggle with (and tend to place lesser importance on) the business justification part of the design assignment. After receiving the feedback, the business relevance aspect of BI design "clicks" with many of them and consequently many of them submit very good assignments at the end of the semester. As a result, I believe that we are producing BI graduates that have a greater understanding of the importance in BI of linkage to the business rather than just IT technicians who think it's just about the technology.
- Guest lectures from industry/practitioners: students love it.
- I (an information systems professor) worked last year with a statistics professor to provide a real-life problem that would be solved by students from both classes. A large local organization was to serve as our test company. The company we worked with didn't have a reasonable dataset (they didn't understand the need for transaction data) and we ended up having to create simulated data for the students to work with. I recommend screening organizations very closely to make sure that they are capable of providing an environment that is suitable for big data analysis. There were also quite a few lessons learned about the different attitudes and mindsets of IS vs. statistics students, but those are probably lessons that folks already know.
- I always share the latest information about what's out there by looking for good videos on Google.
- I disagree with teaching BI/BA in a single course that eliminates the classic course on DSS (where at least a full decision making process is analyzed and classic DSS are designed and built). I consider that this course is fundamental and that the next one or two courses be on BI and BA.
- I have created customized learning experiences for my students based on my work in industry. I do not use a textbook. The course may be taught as a synchronous or asynchronous learning experience.
- I minimize the topics related to statistics. Instead, the focus is on data management (e.g., data cleansing, transformation), data mining techniques, and data visualization. Students seem to enjoy learning BA. Some students say that the BA course is their favorite among business and MIS courses.
- I use the Data Warehousing Fundamentals textbook by Paulraj Ponniah. It provides a good overview of a broad range of topics related to BI and data warehousing.
- If you think your data's clean... look again.
- Implementation takes a lot of time no matter what platform you use.
- It's important to focus on how multidimensional modeling is different from traditional conceptual modeling. Once this is done, then the rest follows easily. Bring in as many examples as possible.
- In our case a strong collaboration with the Boeing Company was a major driver. In addition to funding, Boeing has given us access to data and experts in areas including marketing, operations, engineering and strategy.
- In schools where software investment is used as an excuse to avoid BI/BA courses, open source tools can serve as the best weapons to fight back. My discipline fought successfully with these weapons and established these courses among the popular courses in the curriculum.
- Intelligent tutors.
- Interest in the DSS graduate certificate was ok. However, students rarely completed the entire certificate. A graduate certificate does not seem to carry enough value in industry to warrant the additional time and expense to complete the certificate. Also, some students lacked quantitative skills to continue in the data mining sequence.
- It is a difficult area to teach as a published paper by NITH faculty members Wanda Presthus and Bendik Bygstad have written about. See http://www.eric.ed.gov/ERICWebPortal/search/detailmini.jsp?_nfpb=true&_ERICExtSearch_SearchValue_0=EJ971764&ERICExtSearch_SearchType_0=no&accno=EJ971764 and http://iris.im.uu.se/wp-uploads/2012/08/iris2012_submission_4.pdf.
- It is hard to get financing for the required infrastructure and to make IS/BI a recognized curriculum within the faculty.
- Just as a note, we are planning on offering an online MS in Analytics (pending approval this Spring) for a Fall 2013 start date.
- Laboratory with Microsoft and SQL server for data mining and cubes.

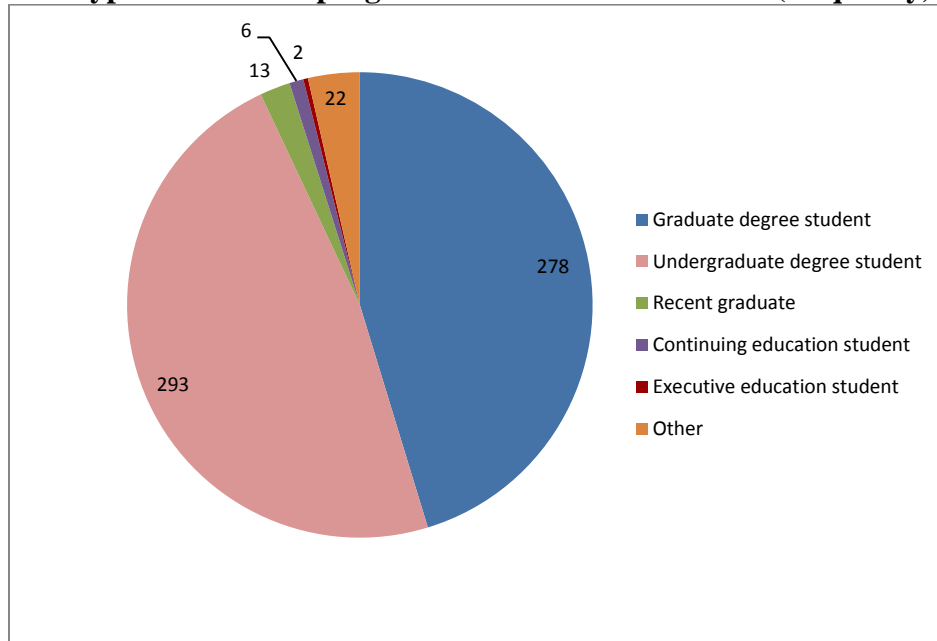
- Learned that cloud-based applications (SAS, some specialized CRM/analytics & marketing analytics software) are critical to in-class, student hands-on learning due to lack of readily available PC labs (students bring their own laptops to class, use cloud-based applications in class).
- For the marketing discipline, a business case-based course works very well, especially at the graduate level.
- Letting freshman students know about the excellent job market in BI, DWH and Data Management helped us recruit from within.
- Make shorter examples that students will see immediate results after using the case.
- Must take a holistic, inter-disciplinary, school-wide approach.
- My MBA students (most are business professionals) are asked to find in their company a BI problem and propose a solution.
- Need a passionate academic supported effectively by an alliance program with access to real data.
- Need to get students interested early and emphasize the importance of data analysis.
- Need to keep students engaged with practical applications.
- Remain independent from vendors; do not rely on vendors' views when teaching concepts; present at least two different vendor views after having presented concepts; apply your own cases (the same with different vendor solutions).
- Start early in this area - it is moving very rapidly and difficult to keep up with all areas.
- Students do not appreciate dry managerial aspects of BI; they look for more practical (or perhaps technical) features to use in their (future) job. Students today are very job-aware.
- Students like BI very much. Tons of jobs around for SAP BI and Microsoft BI in Germany. We will create a certification program in 2013. Lessons learned: BI is moving to CRM, to mobile devices, in the Cloud and to Microsoft SharePoint. SharePoint is a big driver for BI here in Europe.
- Students like the on-hands experience but the assignments need to be given at the beginning of the semester to give students more time.
- Support staff are needed for good labs. It helps if the school has a very active eco-system for industry engagement. It helps if the school has strong internal capabilities for a) handling legal documents with companies, and b) assuring the security and privacy of data from private sector partners.
- Support, support, support (training, technical, faculty, students, recruiters, data sets, etc.) is critical for success of a dynamic BA curriculum.
- We don't do enough work with data.
- For the courses to be successful, we need to incorporate advanced technology. Without technology, the courses are not appealing to students nor do they have job market value.
- The importance of open source software is growing in the real world. Practicing BI/BA using open source is a valuable learning experience.
- Use multiple (at least more than one) platforms. Real/realistic datasets are essential.
- We are developing a Masters in Business Analytics that will be multi-disciplinary and include six BI/BA courses.
- We combine faculty from Computer Science and Business Administration in the course - this works well.
- We have continued to develop new courses and to enhance coursework in existing courses to not just keep the knowledge and skills of the students on the leading edge, but also to keep them aware of what is out there and to develop their ability to evaluate the myriad and fast moving world of BI technologies and tools. One of the best things we can do is to stay current ourselves and focus our research on BI so we are also contributing to knowledge in the area as well as distributing it. Over the past four years, I have chaired several dissertations on BI and most of our doctoral students take at least the masters level survey BI course and the data mining course, regardless of their specific research area. These two courses are also now required of all MS students in our department.
- We have found that for analytics programs to be successful, they need to be graduate level focused.
- We have incorporated basic BI/BA topics into core courses. As for elective BI/BA courses, the grad students seem to "get it" that this is an important area for today's business environment. Graduate enrollment in our 4 semester hour elective course has grown over the past 3 years. Most undergrads do not understand the importance of these skills and many are averse to math oriented courses even though they are critical to functional areas such as marketing and finance (not just IS). We have brought employers and recent UG alumni who did "get it" back to campus to help bust these conceptions at events sponsored by our Career Services department.
- We include our research case studies within the curriculum. We use guest speakers to address current practice.
- We now have a Center for Business Analytics that is a school wide initiative led by folks in Marketing and Computer Information Systems. This has raised the visibility of the area in all our programs and with alumni and recruiters.
- We really benefit from using the SAP ERP simulations games-they create valuable and large data sets that mimic real companies. Our biggest issue is getting students to major in MIS--our enrollments are relatively low compared to all other business majors.
- We run our own platform: www.bicn.eu.
- Working with colleagues in BI.
- I have written extensively on this topic. See http://csc-studentweb.lr.edu/swp/Berg/BB_index_main.htm.

Student Survey

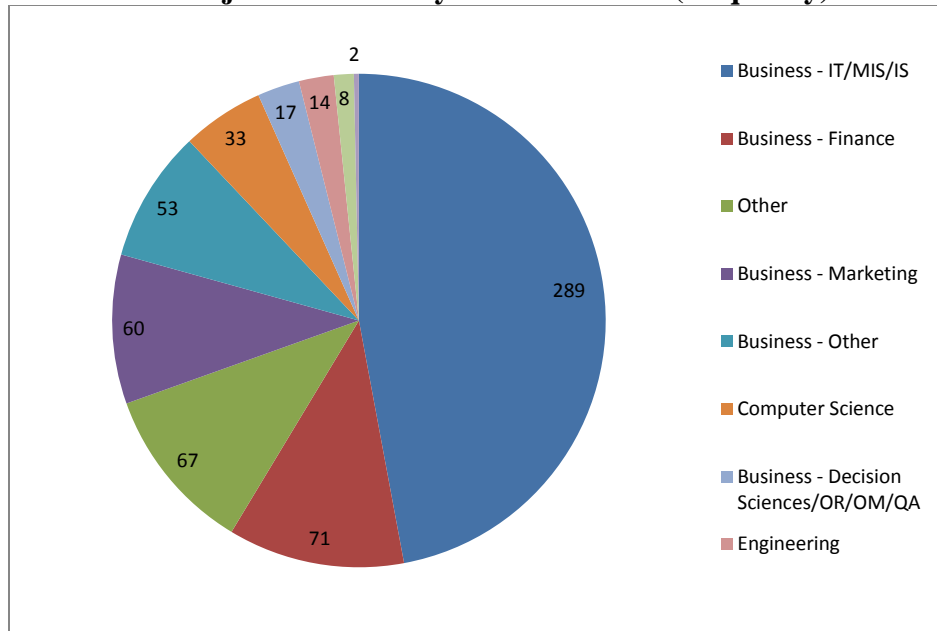
614 students responded from 96 different universities. The universities represented included:

Åbo Akademi University	Northern Kentucky University
Argosy University	Nova Southeastern University
Arizona State University	Oakland University
Auckland University of Technology University	Oklahoma State University
Ben-Gurion University of the Negev	Park University
Boise State University	Pennsylvania State University
Brigham Young University	Pepperdine University
California State University Los Angeles	Ryerson University
California State University San Marcos	Salem State University
California State University Monterey Bay	Santa Clara University
Carnegie Mellon University Qatar	Skema Business School
Central Connecticut State University	Southeast Missouri State University
Clark University	St Francis Xavier University
College of St. Scholastica	St Joseph University
Columbia College, Chicago	Szent Istvan University
Cork Institute of Technology	Universidad Autonoma de Aguascalientes
Cornell University	Universidade Nova de Lisboa
Corvinus University	Université de Sherbrooke
CQUniversity	University Institute of Lisbon
Delta State University	University of Reading
Dundee University	University of Alabama
East Carolina University	University of Arkansas Fayetteville
EAE Business School	University of Cincinnati
Florida International University	University of Dayton
Furman University	University of Dundee
George Washington University	University of Georgia
German University in Cairo	University of Gloucestershire
Golden Gate University	University of Kragujevac
Griffith University	University of Macau
Hellenic American University	University of Missouri
Help University	University of Nebraska Kearney
Ho Chi Minh City University of Information Technology	University of Nevada Las Vegas
Hochschule Niederrhein University of Applied Sciences	University of Newcastle
Indiana State University	University of North Carolina Greensboro
Instituto Tecnológico y de Estudios Superiores de Monterrey	University of North Texas
James Madison University	University of Northampton
Lamar University	University of Northern Iowa
Lebanese International University	University of Oxford
Letterkenny Institute of Technology	University of São Paulo
Linköping University	University of Sherbrooke
Loyola University Maryland	University of Sydney
Loyola University Chicago	University of Southern California
Michigan Technological University	University of Virginia
Monash University	University of West Georgia
Mount Saint Vincent University	Utah State University
National Chiao Tung University	Washington State University Vancouver
National Institute of Technology Warangal	Xavier University

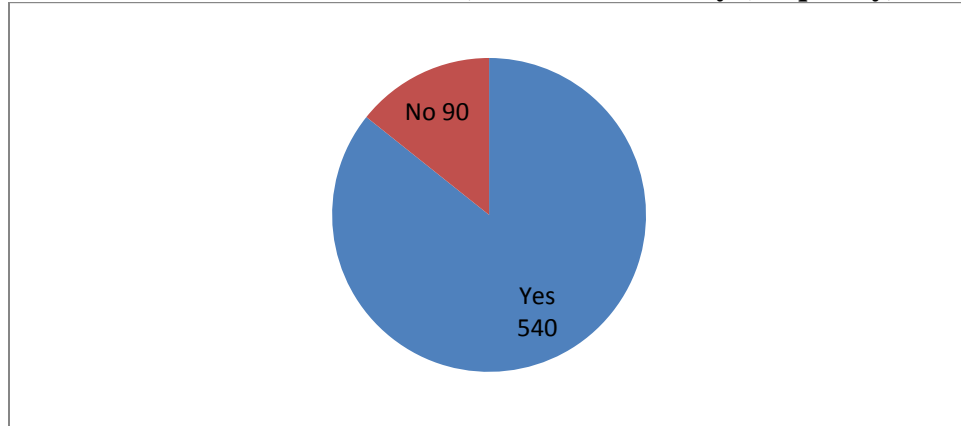
The type of academic program students are enrolled in (frequency):



The major area of study of each student (frequency):

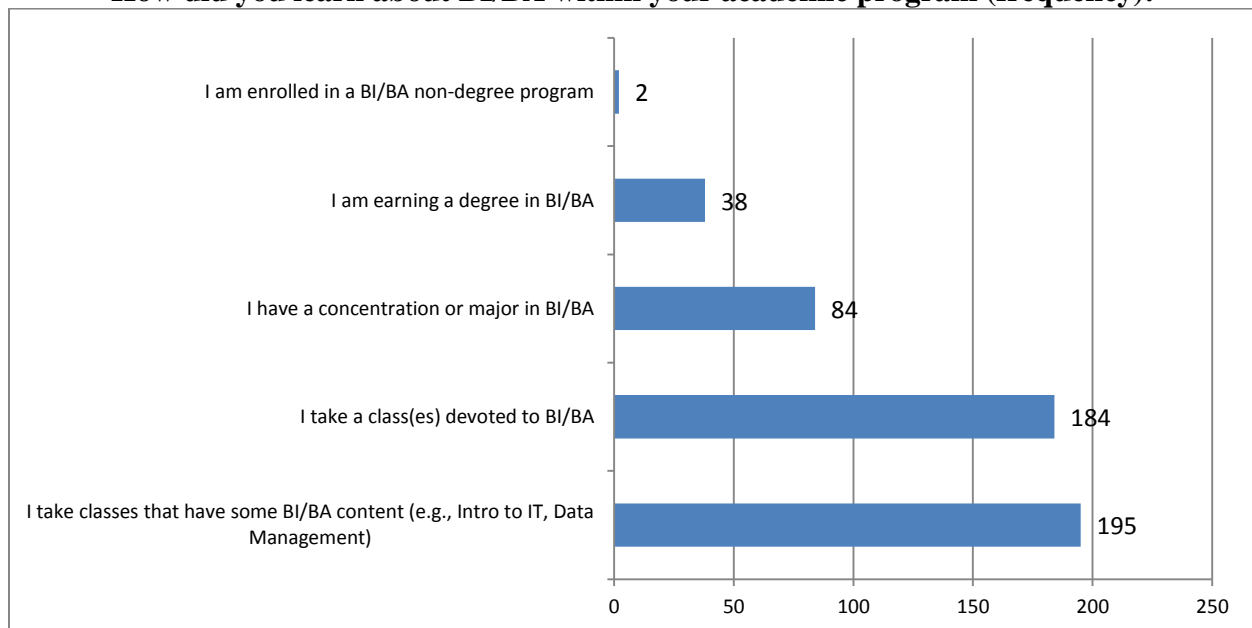


If student has taken or is currently taking at least one BI/BA course (or a course that contains some BI/BA content) at their university (frequency):

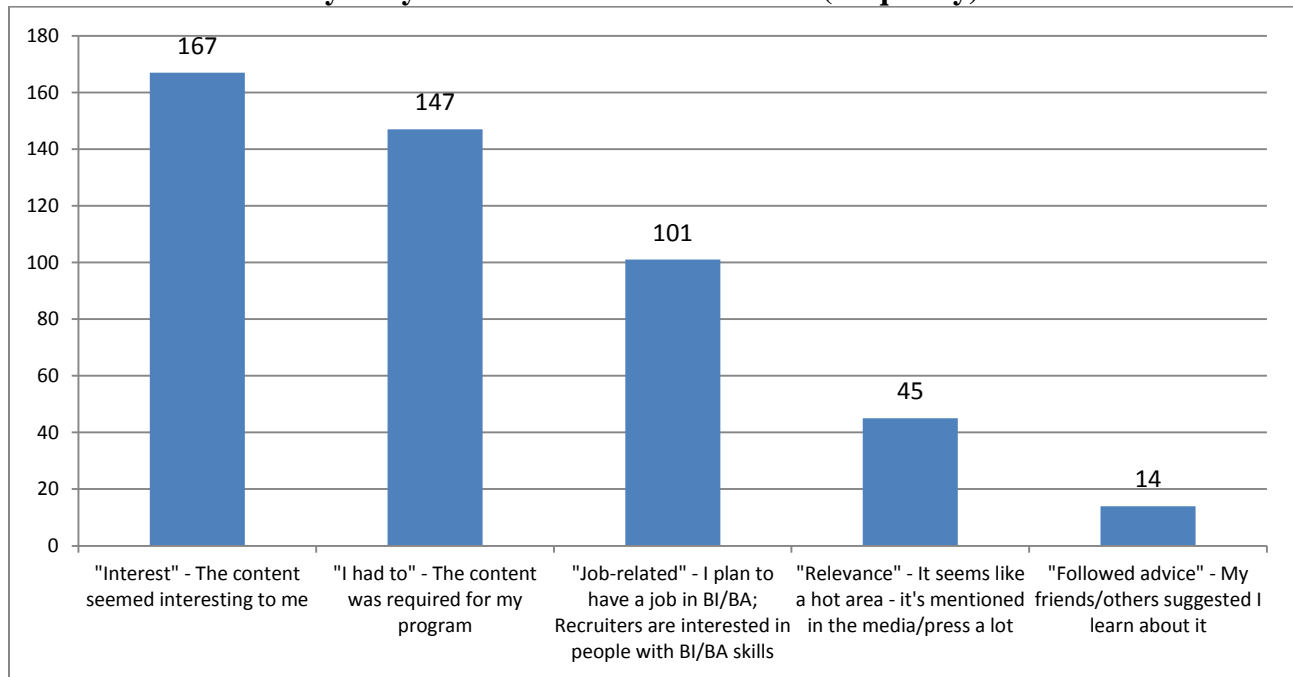


If yes, Why?	If no, Why not?
<i>The 540 responses to “why yes” fell under three main themes: (1) Students found the material interesting and wanted to learn more about the BI/BA trend in industry; (2) They felt it was important for their future career aspirations; (3) They indicated that the course was a required part of the curriculum.</i>	<i>Of the 90 response to “why no,” most responses included reasons such as they were unaware of the course or was not offered in that name at the university or that they plan to take it in the future.</i>

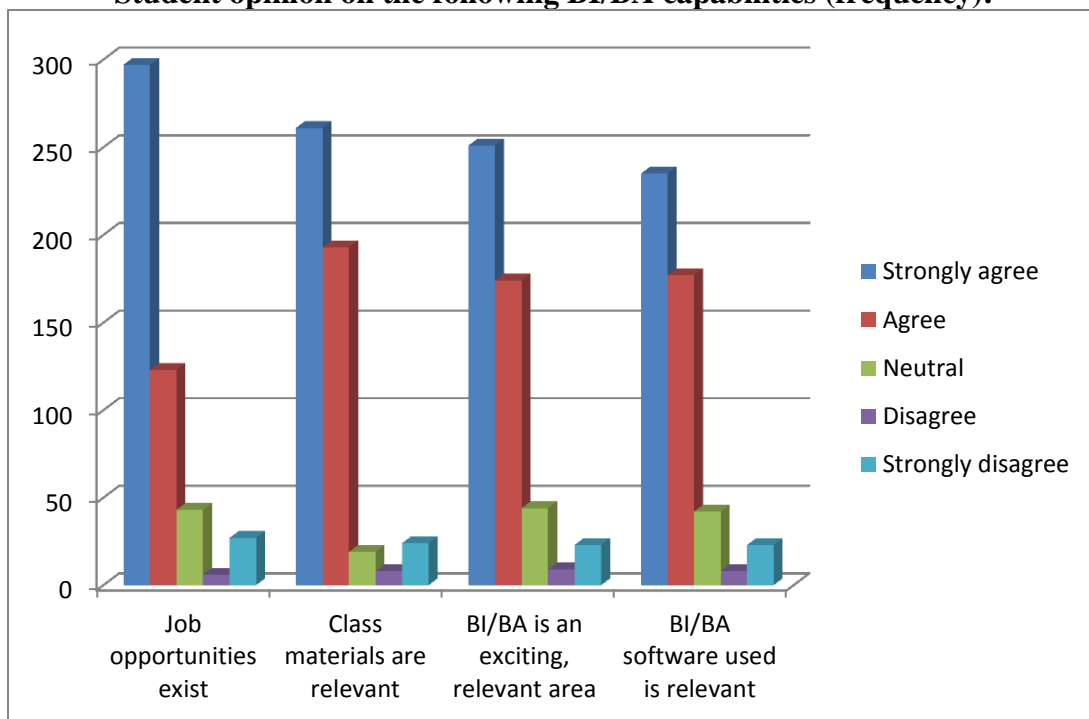
How did you learn about BI/BA within your academic program (frequency):



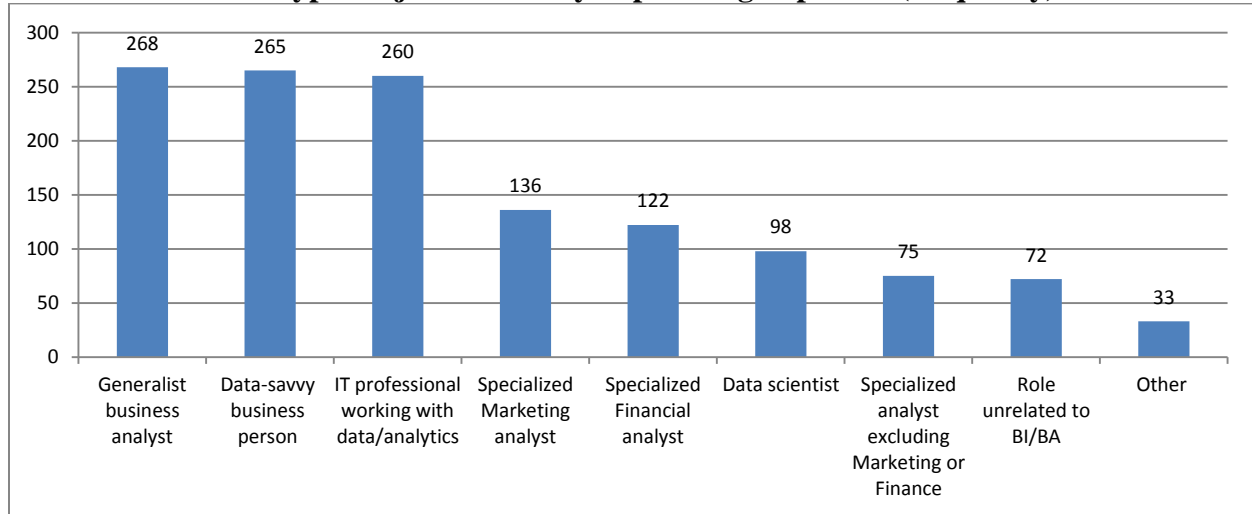
Why did you choose to take a BI course (frequency):



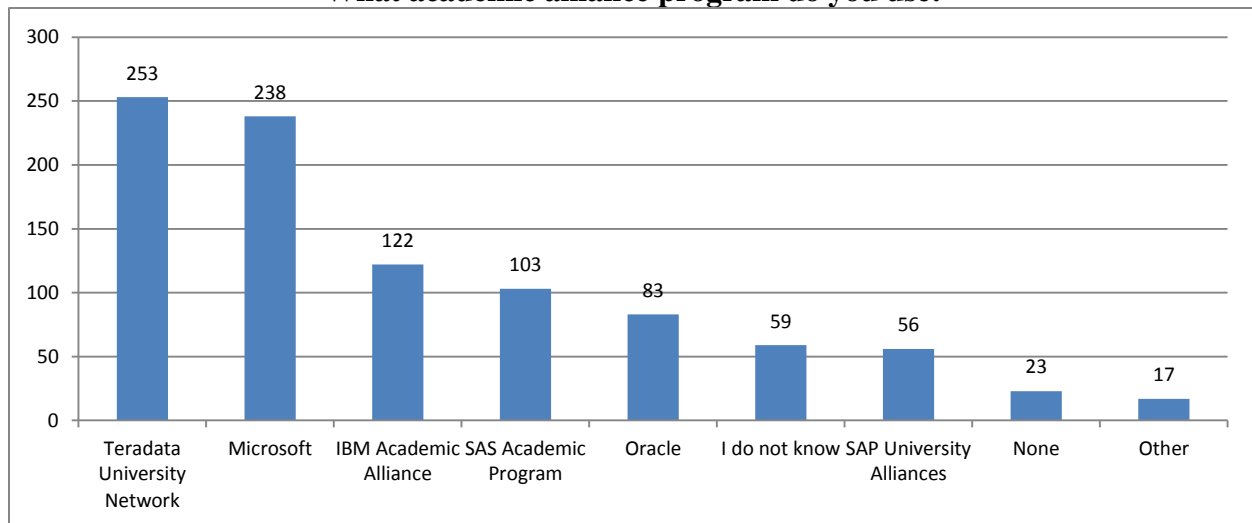
Student opinion on the following BI/BA capabilities (frequency):



What types of job roles are you planning to pursue (frequency):



What academic alliance program do you use:



What does Business Intelligence/Business Analytics (BI/BA) mean to you:

- A chance at a good job.
- A chance to understand the working data of a business.
- A disciplined way of discovering knowledge out of structured and unstructured data.
- A field that enables businesses to track its customers and understand its customers in order to adapt to consumer demand in future transactions.
- A form of communication between data and a user that efficiently gives the user the information they are seeking so he or she can make better business decisions.
- A graphic way of presenting data for analytics.
- A holistic view of a business that uses analysis and IT to obtain information about the business and its processes to facilitate decision making.
- A job.
- A means to analyze the enterprise performance.

- A medium to develop large scale decision support system that helps managers in organizations.
- A mixture between the uses of business and technology so that companies can use their data accurately to make decisions that can help the business perform efficiently.
- A new opportunity in improving my career and making myself more marketable.
- A powerful tool that will play an integral part of the business process.
- A process of collecting data, analyzing, and making decision.
- A set of powerful techniques of data analysis required to get the most of any large amount of data.
- A system that sorts out large amounts of data. It displays connections between individuals.
- A technique to use to get the critical and the important aspects data.
- A way to help make decision using data analysis.
- A way to improve processes and make efficient business decisions.
- A way to managed information and analyze data. To be used for a purpose such as market analysis, or tendency.
- Ability to make better decisions by using the knowledge of the company.
- Ability to collect, maintain and organize a business's information so that it is easily analyzed and synthesized for decision makers.
- Ability to integrate systems for faster response.
- Ability to take large amounts of data and make them available to decision makers in a coherent fashion.
- Ability to use business and IT and provide intelligent solutions to enhance an organization's operations efficiently and effectively.
- According to me, BI is the use of smarter software's and technology to quantify, analyze the data. So that the information can be used for betterment of a process or solve business related problems.
- Acquiring and making sense of the data to serve business purposes.
- Acquiring and utilizing business data to improve performance.
- Adds breath to my degree program.
- Advertising that is more applicable to me.
- An important part of daily life as a Financial Analyst and an exciting topic.
- An important tool which gives me insight into the technological development of business and how business and technology are connected.
- An opportunity to show data in a clear and better way
- An overall learning of how to look for useful information from a data warehouse to help a company to make decisions and trying to learn how to let every department in a company cooperate and work efficiently.
- An umbrella term of collection of tools, technology, method, that allow the users / companies to collect, maintain, organize the knowledge from the data collected and aim for competitive advantage.
- Analyzing a business to optimize the processes within it through technology in order to improve the efficiency of the business.
- Analysis data, which can be used for decision making.
- Analysis of data to arrive at better management decisions.
- Analysis of data to be able to make viable decisions.
- Analytics/statistics of data.
- Analytics for making sound business decisions.
- Analyzing and compiling data from data warehouses to provide an accurate description of the company's status.
- Analyzing business data.
- Analyzing data and applying findings to better business practices.
- Analyzing data and making decisions based on the meaningful interpretation of data.
- Analyzing data and metrics to gain a competitive advantage.
- Analyzing data gathered by a company in an effort to make it more useful to the firm's operations.
- Analyzing data in order to guide better business decisions, predict outcomes, and/or alter procedures in order to improve performance.
- Analyzing data in order to provide executives with information to make critical decisions.

- Analyzing data to assist decision makers to make sound decisions thus enabling an organization to perform positively in a highly competitive market.
- Analyzing data to help build models that drive decision making in business.
- Analyzing data to make informed business decisions.
- Analyzing data to provide insights to clients.
- Analyzing data using technology to improve business practices.
- Analyzing data within and related to an industry to make measurable improvements.
- Analyzing data to generate information needed to for a specific purpose.
- Analyzing information to make better decisions.
- Analyzing large amounts of data to draw conclusions that can lead to actionable recommendations.
- Analyzing large chunks of data.
- Analyzing the fine details of business aspects.
- Analyzing vast amount of data and discovering patterns and relationships in order to make the right business decisions.
- Analyzing vast amounts of data to assess, discover, and improve all aspects of a business. The ability to take raw data and transform it into workable information that can be used to make business decisions.
- Answering business problems with proper justification based on historical data.
- Anything dealing with information technology and its projects within a business.
- Application of machine learning (or artificial intelligence) techniques to problems from business areas.
- Applications that help to provide a more accurate and easier way to analyze a business' state.
- Applying predictive analytics to solve business problems.
- Applying statistical analysis to business problems.
- As an aspiring management consultant, I believe that BA is the future in data-driven insights that can reduce uncertainty for businesses.
- Auditing information and data that can be used or/and create business strategies such as decision making, planning and formulation.
- BA helps business organizations make a better decision.
- BA is the process of analyzing data, drawing actionable insights, and making decisions based on those insights.
- BA offers opportunities to learn how to use the massive amounts of data available for businesses for the betterment of the business.
- Based on a wide range of data available, BI is the ability to consolidate it into meaningful KPI's that can be used to help business make decisions and spot trends.
- Behind the scene elements of every business operation and decision to innovate.
- Being able to actively interpret and leverage financial data.
- Being able to gather useful information from individual data and display in a way others can understand so they can make better decisions with it.
- Being able to process and organize information in an accurate and efficient manner.
- Being able to use data collected to improve help your business processes.
- Being able to utilize data to create value for a company.
- BI = Business insight, KPI, Balance Scorecard BA = Prediction, patterns, classification
- BI can broadly classified as analytics, methods, business performance methodologies etc..., which help the decision makers job easy and a way to identify the most suitable and reliable decision.
- BI could help find more business opportunities for the enterprise. It includes methodology, tools, concepts and so on related to business and technology.
- BI deals with discovering new and unknown information from existing data and identifying opportunities which can be used to implement a business strategy.
- BI encompasses an organization using data and transforming it into useful information that may be used to better understand customers (CRM) or increase efficiency within the organization. BI also plays a major role in strategy and decision making within every organization. It assists organizations in understanding historical or real time trends and how to position them for the future.
- BI is having intelligence in the business world. BA is being analytical in the business world.

- BI includes various analytic tools and methods which enable enterprise to make better decision and improve business performance by analyzing data.
- BI is a collection of information and stats that allows a business to strive and innovate through the analysis of this data.
- BI is a field of decision support systems which provide tools to convert the existing data into information to be used by the decision makers to support their decisions factually.
- BI is a field which is a combination of software application and any kind of data which is used to identify patterns of data in order to maximize business profit.
- BI is a term that involves DW, DM, Metadata, tools, methodology for analytics purposes. It also supports the decision-making process.
- BI is a term used to describe various activities implemented by businesses to meet a business need and build value. These activities include data warehousing, analytics, and data application support, to name a few.
- BI is a very interesting subject and it is very useful and critical in the business world. I took this class last semester and I'm glad that I've gained valuable knowledge in BI/BA.
- BI is a way that a company can keep track of how their company is doing. They can keep up with operational data to make quick decisions or can utilize historical data to see trends within the organization. BI also allows for helpful recruiting practices as well as other HR functions. BI is integrated in all aspects of a business that will allow for the organization to be profitable. BI and BA essentially help the business run.
- BI is a way to take the vast amounts of data available in the world and convert it into information that can truly be useful for a company.
- BI is about deriving insights and knowledge that can be leveraged for business value from data collected using technology.
- BI is all about analyzing data and finding metadata about the data.
- BI is an umbrella term that includes the tools, technologies which gives the ability for an organization to collect, maintain, and organize knowledge and make decisions based on the data.
- BI is an umbrella term that combines architectures, tools, databases, analytical tools, applications, and methodologies.
- BI is an umbrella term which involves a set of methodologies, tools and applications to transform Data into useful information to support a better decision in a business.
- BI is finding interesting and important trends in a business to help strategic decision making. The information could be gained through various tools. T
- BI is the "science" of using available IT systems and tools to facilitate reporting and analysis of business metrics past, present and future to communicate understanding to decision-makers in a business and facilitate operational / strategic action.
- BI is the ability for a computer to assist business actions such as recommendation based on prior history. BA is the data that is condensed into visuals.
- BI is the ability of the organization to exploit information from their data in order to make better decisions and support the decisions-makers at all levels. BA is a set of analytic tools and staff skills to measure and detect relations between data. The aim of BA is exploring the business performance in the past to answer business questions and to make plans.
- BI is the process for gathering, storing, accessing and analyzing data to help make better decisions.
- BI is the process that helps in decision making in various issues of business.
- BI is the understanding of business processes, BA in analyzing business methods.
- BI is used to take the existing data to make predictions about the future. BI is used in every industry.
- BI it the ability to collect, maintain and use the knowledge to your best benefit.
- BI means the gathering of data already available to help in making and implementing decisions beneficial on a vast scale. BA - I have no valuable knowledge of it.
- BI means data turned into information to make strategic decisions or to help in making strategic decisions.
- BI means the ability to take regular data and work with it to generate models and to create user-friendly data that non-technical users can understand.
- BI means the analysis of company stored data be it structured or unstructured. When analyzed, the data

can present insights into a company's performance - either operationally or financially etc.

- BI means the process by which data is collected on a specific process, and then analyzed in order to influence and improve future processes. It must revolve around the company's strategy, first and foremost, and be used by the company in order to further that strategy.
- BI/BA are somewhat related to defining business processes and the study of them to improve them.
- BI/BA helps distill large volumes of information into actionable summaries for business leaders in today's corporate environments.
- BI/BA is a very good area to gain experience. My interest was always in database creation, maintenance and retrieval. So, I loved learning about BI/BA tools and various concepts related to them.
- BI/BA is a way of organizing information in order to facilitate business operations.
- BI/BA is the ability to convert raw data into meaningful information that can help to make important decisions.
- BI/BA is an umbrella term for all techniques, methodologies and process managers or analyst take in order to make business critical decisions. It essentially involves extracting useful information from data (which could be in any form) and putting it to use to propose and predict solutions for real world business problems.
- BI/BA is being able to use technology to solve business problems.
- BI/BA is collecting, maintaining and organizing information and knowledge.
- BI/BA is concerned with extracting actionable information from organizational data.
- BI/BA is the use of data and information to make business decisions.
- BI/BA is the use of technology techniques to extract and analyze data to answer questions from a business perspective.
- BI/BA is very vital to the whole business world as well as all classes I have to take it in order to get my business degree in Finance.
- BI/BA is when businesses use information technology and data to improve business processes and make better informed decisions.
- BI/BA means a leap forward in the way we conduct business and the way we analyze problems by using technology to evaluate vast quantities of data to make smart business decisions.
- BI/BA means applying technology to business processes.
- BI/BA means leveraging data to create value.
- BI/BA means that decisions are properly researched and measured with the help of sophisticated tools.
- BI/BA means the analysis of business performance using metrics. Analyzing these performances will help the business arrive at conclusions for why scenarios happened in the past, what can be done now, and what will happen in the future.
- BI/BA means using information technology tools to enhance business decision-making.
- BI/BA provides businesses with an opportunity to better know their customers so that they can serve them more profitably.
- BI/BA is a relatively new area which has started gaining popularity only recently in industry. There is tremendous potential for jobs in BI/BA in the future. I have a computer science background and have worked on databases extensively; hence BI/BA presents a good growth opportunity for me.
- BI/BA to me is the collection, organization and maintenance of knowledge. It is essential to the world as we know it today.
- BI/BA to me means a knowledgeable and mathematical approach to business decisions.
- BI/BA to me means using information systems, and data to add efficiency and productivity to a business and its processes/functions.
- Big data is a long run trend in business and across all sectors. Business analytics drive everything from operational efficiency to understanding customers. Skills are crucial to making sense of the complex, interconnected world we live in.
- Briefly, BI/BA is the set of methodologies for collecting, analyzing, and data distribution.
- Broad category of applications, technologies, and processes for gathering, storing, accessing, and analyzing data to help business users make better decisions.
- Business analytics mean analyzing data, including big data, in order to benefit the company in some way.
- Business Analytics / Business Intelligence is an umbrella term including data warehousing, enterprise

information management, enterprise performance management, analytic applications, and governance, risk, and compliance.

- Business analytics allows for data driven decisions through statistical analysis of certain areas within a company.
- Business Analytics is the means by which a company or business makes sense of all the information and data that they are presented with. The data is used to react and make decisions quickly.
- Business Analytics is the skill of examining raw business data through various statistical methods and tools to understand the business performance over the years. It can also be used as a forecasting tool to estimate the business future growth prospects. It helps in analyzing new insights of the business in terms of opportunities, threats, strengths & weaknesses. Business Analytics work on data that is collected through various business intelligence systems like BO, SAP, Congo's, and Elkview etc. Business Intelligence is a way through which organizations are able to collect & provide various relevant data pertaining to the business.
- Business Analytics is an amazing analytical software that helps us analyze huge repositories of data and market research observations. These analytical results help analyze and understand the flow of data within organizations to make an assessment of the kind of target consumers an organization has so as to help serve them better.
- Business analytics is important to me because I think that there is value to be added if employees understand different customer/client metrics and how to change them. I hope to learn these skills so that I can apply them in the working world.
- Business Analytics means analyzing a business and its processes in order to understand how to improve processes and make the business run more effectively and efficiently.
- Business Analytics means using historical data regarding people, products, and operations to enhance efficiency by creating statistical models that identify core problems or core strengths.
- Business analytics means using the vast amounts of data available to help make meaningful business decisions for the company. This can range from shaping a firm's strategic direction to simply reducing cost in a specific area. Essentially, analytics is the pursuit of making sense out of a collection of unintuitive data.
- Business information that assists in decision making.
- Business Intelligence means the overall knowledge of how a business environment works. Business Analytics is just the analysis of over a business or business environment to gain some kind of knowledge.
- Business intelligence (BI) is the ability of an organization to collect, maintain, and organize knowledge. This produces large amounts of information that can help develop new opportunities. Identifying these opportunities, and implementing an effective strategy, can provide a competitive market advantage and long-term stability.
- Business Intelligence and business analytics have become core tools to guide business decisions, develop strategies and create new opportunities.
- Business Intelligence is a way a company can organize information for further investigation. It becomes a core part of a business since all of the information becomes centralized.
- Business intelligence facilitates the fast and intuitive exploration of information to support the enhancement of knowledge about a business and its environment, and thus support better decision making.
- Business Intelligence for me is a way to provide effective solutions to the real business problems irrespective of any domain by analyzing relevant data.
- Business Intelligence helps an organization collect, maintain and organize data/knowledge than can in the short and long term help develop more opportunities. Business analytics focuses a bit more on developing and understanding the business performance based on data and statistics.
- Business intelligence includes having the ability to turn real-time data from a variety of sources into useful information from a competitive, political, and environmental standpoint and act upon that information.
- Business intelligence is a broad category of applications and technologies for gathering, storing, analyzing, and providing access to data to help enterprise users make better business decisions. BI applications include the activities of decision support systems, query and reporting, online analytical processing (OLAP), statistical analysis, forecasting, and data mining.
- Business intelligence is a business's ability to collect, organize, and analyze information to turn it into

knowledge and/or opportunities for the firm. This allows the firm to establish a competitive advantage. Data mining is one of the strategies for BI.

- Business intelligence is a field of study where the data in different format/level from different areas is gathered, analyzed, and produces the result that will be used to support the business. More importantly, that result will be used to make the system more effective, efficient, and competitive in the market.
- Business intelligence is a framework to collect, organize and process business data into information and then transform it into knowledge and utilize that knowledge to formulate and help business decisions.
- Business intelligence is a piece of software designed to integrate all the information by various databases and display it in a meaningful way to allow managers to make strategic decisions.
- Business Intelligence is a set of methodologies, processes, architectures, and technologies that transform raw data into meaningful and useful information used to enable more effective strategic, tactical, and operational insights and decision-making.
- Business Intelligence is a way of collecting data and information and providing it in a useful format.
- Business Intelligence is a way of taking data a company collects and making it more meaningful.
- Business Intelligence is an important part of being a business major. To do your personal best as a business major is to understand your craft and master it. This begins with the Intelligence and grows to a successful entrepreneur.
- Business Intelligence is having knowledge in management, IT and finance.
- Business Intelligence is just making things simpler and getting the maximum out of what is available to you.
- Business intelligence is new insight gained by examining business data. Analytics is the process of manipulating the data to lead to intelligence.
- Business intelligence is the ability to gather, maintain, and organize business data.
- Business Intelligence is the basic knowledge required today for the business environment. It's helping the companies choose a better way to flourish by meeting the customer requirements. The subject has a wide area and is a real help for performing market survey and other analytics which helps organizations to take strategic decisions.
- Business Intelligence is the compilation of human capital and technology. Analytics is the analysis of BI to move forward in the best way.
- Business Intelligence is the interpretation of data for the use in business decisions. BI is something I really enjoy and wish to be involved in when I start my career, so for me that definition means I would have the potential to help inform on major decisions in my business using all the valuable data we may have gathered.
- Business Intelligence is the major factor in where a business is going. It is the foundation the business must build around.
- Business Intelligence is the process of gathering information and analyzing it to find meaning through the use of analytic tools.
- Business Intelligence is the use of Big Data to draw conclusions and solve problems.
- Business intelligence is using or arranging business data into a meaningful context for the purpose of learning and improving business processes. Business Analytics is the process of finding the meaningful information within data.
- Business Intelligence is vital to an organization's skill set, in that it allows it to collect, maintain and organize knowledge to in turn develop opportunities. These opportunities allow the organization to gain a competitive advantage.
- Business Intelligence means being able to analyze important data and get results. It gives businesses a competitive advantage.
- Business intelligence means collecting, analyzing and execute decision making based on knowledge organized through technological avenues.
- Business Intelligence means the ability of an organization to collect and maintain knowledge.
- Business Intelligence means the culmination of information utilized to make strategic business decision. It involves analyzing data gathered and utilizing it to make decisions.
- Business Intelligence means the knowledge and information needed to run a business as efficiently as possible.
- Business intelligence means understanding business and then then giving solutions to improve the

business.

- Business intelligence or analytics for me is to interpret the underlying data in a manner which will help the business achieve success, as it helps knowing where the issue is and also provides prediction based on past trends.
- Business Intelligence or Business Analytics is the process which uses real world data in its raw form, change it into structured data and then use some data analytic techniques like manipulation/mining/classification etc., to identify some pattern in the data and present that in a visually pleasant way to business people.
- Business Intelligence to me is the back bone of future organizations which will not only make companies increase revenues but will enable companies to catering needs to human beings.
- Business Intelligence transforms the giga, tera, peta, or exabytes of data into something meaningful. Wal-Mart can provide the infrastructure needed to warehouse large amounts of data, but it's useless unless it's interpreted. Leveraging BI, firms can standardize enterprise-wide best practices, so all branch offices can leverage the collective efficiencies of their coworkers and competitors.
- Business Intelligence/Analytics are systems that allow organizations to make the most of their data and information, but consolidating it into data warehouses and then allowing users to manipulate it into useful information that leads to more informed decision making.
- Business Intelligence/Analytics represents the insights/valuable information a company extracts from the huge amount of data it has to deliver better products, services to customers, to improve its functioning etc.
- Business Intelligence/Business Analytics help business managers take correct decisions. Business Intelligence tells how the organization is performing and the areas that it needs to focus to increase revenue and decrease costs. While BA helps predict the scenario in future. Thus BI/BA are very important for any organization regardless of the scale of its operation.
- Business Intelligence/Business Analytics is composed of many tools that help businesses make decisions that will improve their futures. There are several different tools used such as dashboards and scorecards, EIS, data mining, data warehousing, etc. These all improve businesses by predicting patterns visually and allowing companies to quickly retrieve data that use to be impossible or that would take much longer.
- Business Intelligence/Business Analytics means providing useful decision making information from the overwhelming amount of data companies posses. BI/BA uses the human intuition combined with technical tools to accomplish this task.
- Business intelligence/business analytics to me, means using technology to improve business functions and to be able to forecast and gauge reports based on business performance.
- Business intelligence makes me think of information or data. Especially the collection, reporting or storage of the data. This information is used in the business for decision making and operations.
- Business Modeling with Data Mining.
- Business, to me, is a core foundation for building up a successful career to carry me into the future.
- Businesses using software to analyze and use data to accomplish needs and goals.
- Collect, store, analyze data and propose alternatives of action.
- Collecting and analyzing data about business.
- Collecting business data, applying models to that data, and analyzing the results to glean actionable business insights.
- Collecting data or organizing data that meets the needs of the end users and is in a form/format that is easily comprehensive to end-users.
- Collecting data that can be used to the companies advantage and turn it into a competitive advantage.
- Collecting, analyzing, and using data to make informed business decisions instead of going off of one's gut or past experience.
- Collecting, organizing and using data.
- Combining area of business and analysis.
- Combining statistical analysis with business planning.
- Compiling data and creating clear, concise outlets of information.
- Converting raw data into workable intelligence that can change the world around us.
- Current data analysis. Decision making support.

- Currently, it means life for me. I am so much passionate analyzing the data that I cannot stop learning these concepts. I definitely feel BI/BA is a key through which companies can get a competitive advantage.
- Data analysis.
- Data Analysis and Reporting.
- Data driven DSS.
- Data for understanding the business and making better business decisions.
- Data input to information output.
- Data Mining.
- Data Mining - reducing costs and increasing revenues for a firm through descriptive, predictive, or prescriptive analytics techniques.
- Data mining and visualization.
- Data mining for the benefit of decision making.
- Data mining helps making business decision.
- Data mining, Microsoft Excel pivot-table, Microsoft dynamics NAV, Microsoft Dynamics AX.
- Data mining, NAV, Dynamics AX.
- Data Warehousing.
- Data-mining, report in Microsoft Dynamics NAV, analytics in Microsoft Dynamics NAV.
- Data-mining, reports in Microsoft Dynamics NAV, analytics in Microsoft Dynamics NAV, Excel- Pivot table.
- Date-mining, reports in Microsoft Dynamics NAV, analytics in Microsoft Dynamics NAV.
- Decision making help for entrepreneurs.
- Decision support systems. Main key to business success.
- Dig into data and come up with strategies.
- Driving executive decisions based on data mined from company databases.
- Ease to forecast.
- Effectively leveraging data and knowledge to make better business decisions.
- Empowering business users by making data available to support decision making.
- Enabler for businesses to understand operational performance and target new opportunities by better understanding of customers.
- Ensuring the proper business personnel has timely and accurate data to make informed business decisions.
- Equity research. Lots of data crunching. Quantitative analysis. Building models.
- ETL. Reporting. Data mining.
- Executing proper skills, resources, tools, and strategies throughout the business world.
- Exploration of past data and using it for future business decision.
- Extract knowledge from data.
- Extracting the maximum business guidance available based on the meaningful analysis of recorded data from every part of the organization.
- Finding hidden data.
- Finding the meaning behind data and using data to better serve business functions.
- For me, business intelligence is a term that encompasses the tools, techniques, systems, processes, etc. that are used to transform data into meaningful outputs to drive business decisions. Including, but not limited to data mining, decision support, OLAP, dashboards, and reporting.
- Future of IT.
- Gaining and organizing data, then using it to make informed business decisions.
- Gaining business insight through intelligent analysis of business data.
- Gaining business knowledge and mining the data to make business decisions.
- Gaining information to make business decisions.
- Gathering as much information as possible about the strategy and systems of a business, and then using that information to make improvements upon that business model.
- Gathering data and putting into organized information on which to make business decisions.

- Gathering, cleaning, storing and making available information in the right format at the right times to allow more effective and accurate decision making and reveal previously unknown truths.
- Generally Data analysis is a representation of invisible relations in a concise manner!
- Getting a smarter way to run a business project in nowadays. And have a connection between technology and business operation.
- Getting the most value out of the data/information your business has.
- Great choice of career; great field of study.
- Having a clear understanding of breaking technologies within the business realm and the overall world.
- Having an infrastructure in place that facilitates data mining and reporting for decision support.
- Having the ability to transform data into meaningful information that can be used to solve problems.
- Help me making decisions.
- Help me to make the decision more effectively and efficiently.
- Helping top management to make strategic decisions by displaying or presenting insights of the business.
- Helps me analyze data in order to make better and more informed decisions.
- Hoping to get the job in this field
- How technology along with tools of statistics and mathematics can help learn new and sometimes eye opening insights about a particular business and thus providing us with information that can be leveraged for reaping more benefits.
- How to analyses data to use in business decision making.
- How to make the business efficient and effective with technology, analyzing business process and IS and giving business competitive edge.
- How you can use IT to make your business more competitive or gain competitive advantage over competitors.
- I believe it support better business decision-making, which is extremely important because we need to take time to analyze any decisions before we make them.
- I have no idea what this means.
- I have no idea, understanding the technology that is associated with underlying business decisions?
- I haven't taken any classes on BI, but I do know that it is vital for a firm's success.
- I think it is a new approach on the way information is used. Finding the real value of information through methodologies, techniques, patterns and technologies.
- I think it tells us how to use information to make the decision.
- I think that business intelligence and analytics is a growing field that is part of our lives. As a marketing student I think that it is a quantifying tool but also smart decision making tool.
- I would sum up Business Intelligence as turning data into information that is useful for decision making.
- Identifying opportunities, and implementing an effective strategy.
- Identifying, retrieving and displaying relevant data in a way that adds value to the organization.
- Improve in decision making in order to provide quality care to patients.
- Improving my knowledge about BI and implement it to nonprofit oriented organization like library and how to use it in an appropriate time for problem solving.
- In my opinion, BI is the strategic driver of an organization by supplying the relevant information necessary for decision-making to propel an organization to meet its long-term goals.
- In my opinion, business intelligence refers to the concept of utilizing information technology in order to meet a business need, while business analytics more explicitly refers to those methods, skills, etc. used to perform a thorough analysis of an organization's data. Though each term may bring different ideas to mind, the ideas that come from each go hand-in-hand.
- In my perspective, it is the steps that companies take in order to gain a better outlook of the operations taking place within an organization.
- Is a term that encircles methods, tools and ways to make business run more efficiently and make decisions in the right time with the right information?
- Is an umbrella term that refers to a variety of software applications used to analyze an organization's raw data. BI as a discipline is made up of several related activities, including data mining, online analytic processing, querying and reporting.
- It gives me the tools and analytical basis for better understanding data and making more informed

decisions.

- It helps me to understand how to improve a firm's performance with the modern technology and data warehouse.
- It helps us predicting the future outcomes based on the previous data we have. It also introduced me to different tools.
- It is a combination of a number of technological concepts that are being brought together for the sake of providing a single point of truth decision support system.
- It is a comprehensive system that may help organizations to quickly and accurately analyze and decide what action should be taken immediately to achieve organizations' goals.
- It is a discipline which is of immense value to corporate world, which helps them to gain an edge in running their business, by making valuable decision making and improving their relationship with customers who are the God in disguise to the business world.
- It is a fundamental aspect of the business world that keeps companies running smoothly.
- It is a kind of application which serves to provide business solutions and analyze the business.
- It is software for presenting aggregated and calculated information to users in a good looking platform. The information provides the users to understand the business in depth for example sales by region, profitability per customer, customer segmentation and distribution. The information is usually presented in a graphical way or report way which can help managers or users to make strategic decision in order to help the business operation.
- It is a tool in help a decision making.
- It is a tool to identify the insights from the whole business process. The company could use the insights to run business efficiently.
- It is a very important area to study. Having a high level view of data for upper level managers is extremely important in the corporate environment.
- It is about interpreting the huge amount of data.
- It is all about reporting and analysis of data.
- It is essential to understand when you want to utilize business efficiency. BI is an upper level concept that if you understand you can understand every other tool easier.
- It is my dream field to work in.
- It is the computer aided mining of data repositories in search of significant trends, comparisons, relationships, or opportunities.
- It is the knowledge of what goes on in a business.
- It is the natural evolution of DSS; it assists business users/units/executives in making good business decisions.
- It is what the future of Information Systems will revolve around.
- It means a lot as it is important to be technologically literate.
- It means a lot. We live in a society where almost everything is become more and more technologically advanced and to learn this information is extremely useful.
- It means a platform to store, maintain and retrieve data that translates into critical information that provides deep insights for decision making and planning for a corporation.
- It means all the crucial processes involved in extracting knowledge from data.
- It means analyzing data in such a way that it can be applied to the decisions businesses make.
- It means being able to analyze past results and predicting the future.
- It means being able to use intelligent programming in order to enhance the efficiency of a business's operation.
- It means collecting, maintaining, organizing and analyzing data for the use of the business. It helps a business in a way that it makes processes more efficient and effective.
- It means distilling coherent and managerially significant relationships from company data warehouses and presenting these relationships in a clear and digestible fashion to company management. An honest and relevant analysis of available data can often lead to great savings and productivity and guide the direction of a company.
- It means finding ways to interpret data in a better and efficient way.
- It means how businesses set up their networks and systems.

- It means that I would be able to provide better information and retrieve information that will help to improve my decision making in business.
- It means that you take data and transform it into something that allows you to see the data in otherwise different, and hopefully insightful, ways.
- It means the future of the business world.
- It means the programs/software within a business that allow a manager to properly run his company efficiently.
- It means the study of how converting hard data from a company's data infrastructure and converting into meaningful information in order to help create better decision making.
- It means the use of business to perform other scientific aspects in an organization.
- It means the use of refined data statistically through technology, processes, application and other tools to help in business planning and decision making.
- It means to be able to analyze and familiar with business components. Being not only able to understand but also being able to apply business in real life situations.
- It means to be able to mine data to answer and solve business related problems.
- It means to be able to work with computer systems within the company, in order to enhance company performance.
- It means we have to strive to gain as much knowledge as we possibly can in order to compete in the world we live in today.
- It means world to me.
- It still confuses me a little; I think it is about how computers help us do our jobs.
- It will be helpful in a career of advertisement and sales. I wish I had learned more about it before my last internship.
- It's the management and analysis of information to create valued information that can be used by the customers to generate value in the company.
- It's a broad term that encompasses all the infrastructure, software, users, and other pieces that come together to utilize data in order to drive business.
- It's a process of collecting data and decision making by cooperation. It is very useful and helpful because people couldn't make decision or operate a company by intuition only.
- It's a process of managing business knowledge within an organization and incorporating this knowledge to increase opportunities, improve decision making and efficiency etc. within the organization.
- It's a really challenging subject, but actually - I think it is quite interesting and attracting.
- It's a tool to know a company better.
- It's a tool to analyse the data and helps on decision making.
- It's a vital part of managing and analyzing information, useful and necessary for all sizes of businesses and non-profits.
- It's an umbrella containing different tools, technologies, architectures, and methodologies that help manager make decisions.
- It's pretty cool software that can generate cool reports for managers that come in handy for making decisions.
- It is the data behind business decision that supports any idea or project. It means connection between all the departments and business units as a whole so that company functions are aligned. It's necessary.
- It's the management and treatment of information to transform it into valuable resources for an organization.
- Jobs, Recognition, Interest.
- Knowing how the business works from the inside. What makes it work and function as a business? Not the products or services themselves but how they are all put together.
- Knowing how to find and use information to make decisions on different situations.
- Learning systems to help you sift through intimidating amount of data to find patterns/trends/inconsistencies and ultimately use those findings to make decisions.
- Looking at and analyzing data that comes into a business and modeling business strategies based on that data. This could mean internal systems, or policy.
- Making good decisions.

- Making businesses more efficient.
- Making good use of data.
- Making informed decisions in all facets of business based on the analysis of historical trends through the use of existing data.
- Making sense of data, to help business make informed decisions.
- Making sense of huge amount of data to derive meaningful and actionable insights in order to drive business performance.
- Making sense of tons of data.
- Making the best use of the data to see what is currently happening and to predict what is likely to happen in the future and take appropriate decisions/actions to support and improve the business.
- Making the right decision.
- Making things run more efficiently for businesses.
- Managing data and information to make business decisions.
- Managing data throughout the organization; building systems and processes to collect and analyze data to obtain useful information; putting the right data in front of the right people at the right place at the right time.
- Microsoft Navision, Accessing the Navision database from Excel.
- Mining data for solutions to problems.
- More information could be generated from the raw data gotten from operation systems. Help business decision maker to make a better strategy.
- My life.
- New future and a better job.
- New ways of structuring data to allow analytic queries. Visualization of results to aid understanding.
- Obtaining knowledge and being able to apply the knowledge to make better business decisions from data you have on hand.
- One of the best ways in which I could achieve a true and real differentiation of my company versus the competitors. A real advantage.
- Online analytical processing, analytics, data mining, process mining, complex event processing, business performance management, text mining, predictive analytics etc.
- Organizing data to better make decisions and facilitate the jobs of others.
- Organizing operational databases into a structure for reporting.
- Potential to develop businesses, consult and direct organizations to perform better, build up my career.
- Powerful tool to discover useful information for better decision making.
- Process of collecting, analyzing and applying data to business decisions.
- Processed information that helps in business decision making.
- Processes to help lead businesses to competitive advantage.
- Program that allows general management to interact with data to make business decisions.
- Provide accurate information to managers and executive to take better decisions for the company.
- Providing actionable information to key decision makers at the appropriate time.
- Providing useful information to management to support decision making.
- Regression and forecasting in excel.
- Scrutinizing data to learn insights relevant and pertinent to a business.
- Secret to an organization's success. An amazing subject which has been and will keep evolving for years.
- Set of tasks an organization works to understand the structure and operations of the company and the favorable solutions that are needed to achieve its competitive goals.
- Sifting through Big Data stored in massive server arrays in Data Warehouses, using sophisticated search and analysis algorithms and heuristic methods to generate reports indicating obscure relationships and trends.
- Software, what makes my studies simpler and later my job. (For example: Microsoft Dynamics Navision).
- Solutions to monitoring business processes.
- Someone who analyzes business material.

- Someone who knows a lot about business. They know the inside and outside of a business.
- Something new, interesting and profitable. Way to make ideas into profit and better solutions.
- Statistical and analytical expertise.
- Strangely useful tools! I hope I can combine it with my Marketing background to come up with more powerful ideas.
- Study of business and how it incorporates technology.
- Study to increase efficiency in business process.
- Studying what it takes to optimize a business's profits.
- Taking data and making turning it into intelligence that can be used by management/an organization for decision making.
- Taking data from various sources and using IT to analyze it in order to advance business processes and augment strategy.
- Taking data that is received from various vendors regarding the company's products, and using the data to analyze customer trends, etc.
- Taking data, turning it into information that is easily accessible to end-users in consistent fashion.
- Taking large amounts of data and synthesizing it to provide information/knowledge, and to tell a story.
- Taking massive amounts of data and driving insights from analysis that can be used to guide business decisions.
- Taking raw transactional/tabular data and transforming it into information that can be analyzed and used to make meaningful business decisions.
- Technology which helps to investigate pros and cons of Business Areas, which helps to boost the performance in the future.
- Technology, methodology, software that can enable executive answer analytical queries.
- The ability for an organization to collect, maintain, and organize knowledge.
- The ability for an organization to take all its capabilities and convert them into knowledge.
- The ability for businesses to analyze large sets of data from different parts of their value chain and leverage the data to improve internal and external business operations.
- The ability of an organization to collect, maintain, and organize knowledge.
- The ability of an organization to collect, maintain, and organize knowledge.
- The ability to analyze large amounts of data from different sources and make informed decisions.
- The ability to capture, interrogate, learn from and improve the use of data for an organization to improve that organization and its capacity to be competitive and profitable.
- The ability to collect, measure and transform data into purposeful information.
- The ability to derive knowledge from collected data that can be used in strategic decision making.
- The ability to make educated business decisions using various aids that have been provided throughout his/her education and work experience.
- The ability to make the most informed answer with the given information.
- The ability to turn data into intellectual material that can be used to improve a part of a business.
- The ability to use information smartly in order to gain a competitive edge over competitors.
- The ability to use previously useless collections of data for diagnostic purposes, and to improve our understanding of an organization/process/market.
- The analysis of information for decision making.
- The analysis of important company data that can be used to develop and implement effective business strategies.
- The analyzing of raw data in order to make strategic decisions in an organization.
- The application of methods and computer software and hardware in order to transform, import, and use data to make better business decisions.
- The basis for making important decisions in business.
- The behind-the-scenes work in businesses. Organizing, collecting, and sustain knowledge.
- The bridge between technical and managerial. The connection between technical specifications and needs of a business and the other functions (Finance, Marketing, Operations, etc.).
- The collection and use of accurate data to make informed business decisions.

- The collection, organization, and implementation of business data for the purpose of making decisions.
- The delivery of appropriate (aggregated) information to the people that need it.
- The future of our industry.
- The gathering of data from diverse sources that, when considered together, help predict customer behavior.
- The knowledge and data to measure performance and the ability to improve the impact the business (technology) has on the outcomes.
- The latest methods and technology that supports business decision making and enables innovation and progress by advancing information tracking analysis capabilities.
- The means to introduce process improvements and/or simplification and provide necessary tools for business analytics.
- The method and tool help us to analyze data and make the decision. And it's the trend that we need useful and practical way to deal with big data.
- The method to organize, taking advantage by extracting the previously invisible value from vast amounts of information available.
- The organization of data and extraction of valuable insights from such databases.
- The people, processes, and technologies that transform data into insights that drive business decisions and actions.
- The possibility to navigate through information easily.
- The power to analyze big amounts of data and facilitate decision making.
- The process and tools enabling metrics to be measured that enable businesses to make appropriately informed decisions.
- The process of analyzing the correct data using the correct method to derive insights related to the operations or strategy of a business.
- The process of reviewing internal and external data to get a better understand of your organization, allowing you to take actions to improve offerings and evolve with market. It's the backbone of a leaning organization.
- The study of businesses to allow them to make good decisions.
- The study of data to make business decisions based on the data.
- The studying of data relevant to a business that will help the business make better decisions and eventually help its bottom line.
- The technology that is used to help run a business.
- The tools that allow me to analyze data and identify new opportunities.
- The use of business information or data to better predict the future of the business and the value add in business related decisions.
- The use of computers to "mine" and analyze business data to spot opportunities/risks that may otherwise go unnoticed and to incorporate in decision-making practices.
- The use of data, in conjunction with IT advances, to better understand business problems and utilize various techniques to improve processes.
- The use of large data sets to gain an advantage in business decision support.
- The use of statistics to make informed decisions at all levels of a firm.
- The use of technology to ease analysis and to organize data in a company.
- The way a collects, maintains and organizes its gained knowledge.
- The way that businesses use the information towards their advantage.
- The world runs on BI.
- This is a very brand new definition for me. But BI/BA is a solution for all enterprises.
- This is my main research area. To me, BI/BA tools can provide valuable information to assist users to accomplish decision making on semi-structure tasks.
- To find way to collect, organize, and refine information into useful and advantageous information to aid in decision making.
- To learn to make data-driven and data-prof type of decision.
- To me it is taking all of the data generated by a business or other entity and using it to make informed decisions based on trends and other hints the data provides.

- To me, BI and BA are disciplines concerned with processes, technology, and human resources that are leveraged toward the use of data to drive strategic business decisions.
- To me, BI helps an organization to keep up with the trend and secure its role or competitiveness as a market player if not a market leader. BI increases the efficiency for an organization to be able to review its historical data and solve the current problems its facing thus helps to predict its future development.
- To me, BI/BA is the opportunity to uncover valuable information from data that would not otherwise be known. It creates competitive advantages and allows one to capitalize on trends that are not obvious to the naked eye. BI/BA and big data are the future of business.
- To me, BI/BA means software for gathering the historical sales or customer data of a company to find trends and opportunities that might have otherwise gone unnoticed.
- To me, BI/BA means using advanced software to make sense of data and present it in a way that makes it useful for decision making.
- To me, business intelligence is gathering certain information that is important to a business, which helps these businesses in their day-to-day decision making.
- To me, business intelligence is the process of transforming large amounts of data (big data) into actionable, decision-making information.
- To me, Business Intelligence means all the information a company uses and stores.
- To me, it encompasses all aspects of business as one initiative program.
- To me, it is a way in which key pieces of data can be pulled up on short-notice for the sake of important decision-making.
- To me, it means gathering data from products, customers, employees, anything related to the business, and organizing the data in ways that provide relevant solutions to company problems or ideas for growth.
- To me this means that a person figures stats and compares the risks of a business.
- Tool to analyze raw data to interesting fact which can be useful for business & decision making.
- Tools or processes that turn large amounts of data into useful information, for better and faster business decisions. It may also include charts and graphs.
- Tools that helps to make business works easier.
- Tools that make it easier to effectively analyze data to improve business effectiveness.
- Tools to facilitate the transformation of data into valuable information.
- Tools to help managers make better decisions.
- Tools, methodology and concepts for making decisions.
- Transform data into information to obtain knowledge.
- Transformation of data into information (or knowledge/wisdom) through enabling technologies.
- Transforming data into information that leads to better decision making within a business.
- Transforming data into insights that drive strategic decisions.
- Turning data into actionable intelligence to drive business decisions. It is the most proactive way to gain insight into customers, employees, and everything in between. It shows how biased surveys can be and their uselessness. Actual human activity and numbers are the most valuable data and extracting and using that data is what makes the best companies.
- Turning data into information.
- Turning data into information that can be reliably leveraged for decision making and to reveal otherwise hidden information.
- Turning data into information then into knowledge.
- Umbrella term including measures & methods of planning analyzing and forecasting.
- Understand the chaos.
- Understanding business and finding ways to analyze it and using it.
- Understanding the inner workings of business in order to capitalize on opportunity.
- Usage of IT to create business solutions.
- Use data to generate information and make business decision.
- Use information method, analysis for future decision and improvement.
- Use technology to help make things easier, same more time.
- Using a company's stored data to help make good business decisions and gain new insights.

- Using a company's stored data to help make good business decisions and gain new insights.
- Using accurate data to make improved business decisions.
- Using and analyzing data to draw out patterns and conclusions that can be used to drive business decisions.
- Using computer programs to organize and analyze business data.
- Using Computer Software to extract data and deduce useful results for profitable business decisions.
- Using data and statistics to actively make informed, meaningful, and helpful (e.g. profitable) decisions within a company.
- Using data derived from businesses to analyze in order to make better decisions.
- Using data intelligently using the various tools available.
- Using data on consumers, trends, the industry, almost anything, to find patterns, plan for the future, become more efficient, or solve a problem.
- Using data to analyze business and create efficiencies.
- Using data to deliver information that is valuable to the business.
- Using data to inform business decisions.
- Using data to make business decision.
- Using data to make decisions.
- Using data to make informed business decisions and detect patterns.
- Using electronic methods to gather insights, make recommendations, or find trends in business processes to create value.
- Using information technology to make sense of the large and disparate sets of data that exist.
- Using information to make business decisions.
- Using information to track patterns and hidden data to help provide business value and help make businesses make better business decisions.
- Using information tools to better understand the workings of a business.
- Using organizational data to gain insight and competitive advantage.
- Using programs to make sense of data/information in a meaningful way.
- Using quantitative data as the basis for business decisions.
- Using skills and technologies to help with analyzing business data and plan for the future.
- Using software/ tools to analyze data and use the information gained to make informed decisions.
- Using technological applications and strategies to better run your business, effectively, efficiently, keeping current with the competition in the marketplace.
- Using technology to collect, organize and analyze data for the purpose of making decisions and develop opportunities.
- Using technology to gather and analyze data/information.
- Using the databases of a transactional system to obtain information that can be used to improve the business side of the company.
- Using the gathering of data and processing of information to improve business efficiencies and society.
- Using the knowledge and applying tools of technology efficiently to create value for business enterprises.
- Using the science of data mining to make informed decisions and see patterns in consumer markets.
- Using various types of data to provide a competitive advantage, realign business models, enhance customer service and a myriad of other benefits. BI/BA is the future of how companies can leverage data to increase, and keep, revenue, market share and customers.
- Utilizing tools to analyze business data with the goal of making better, more informed business decisions.
- Well, it should be clearer to me now after having taken a course, but I really just came out with the feeling that I didn't like all the aspects of it. It's also my understanding that it is important these days.
- Working with data to identify trends in the marketplace that can be applied to business strategy in order to maximize revenue.

What is your favorite part of learning business intelligence/business analytics:

- A lot of the work involves numbers and analyzing how the different numbers effect an organization. I enjoy seeing the patterns and giving recommendations based on the patterns of numbers I see. I enjoy the more solitary work involved.
- Algorithmic.
- All its applications.
- All the ways you can use the data.
- All types of predictive analytics.
- Analyzing data, working with Data warehouse and OLAP Cube; making business decision.
- Analysis. I like problem solving in a general way. I like the process of defining a problem, exhaustively searching for a solution, applying the best solution, and the accomplishment of the solution.
- Analyzing data and relating back to business problem.
- Analyzing the DATA and making Predictions.
- Analyzing the data that has been collected.
- Apply tools to demo the thoughts.
- Applying it at my current job to advance my knowledge and to practice to become better. I want my own BI team within my department in the future.
- Applying it to my experiences this summer.
- Applying it to the real world.
- Asking questions of the data. Learning new tools.
- Association Mining.
- Basic idea, theory and how to use & apply for certain scenarios.
- Become familiar with skills that I may need to use throughout the business workplace when I get out of college.
- Becoming knowledgeable about using technology to gather and analyze data relevant to my field of interest.
- Being able to apply it to my current internship.
- Being able to apply it to real world situations.
- Being able to apply the skills learned to answer relevant questions, and seeing the endless possibilities and ways that these skills could be used.
- Being able to apply what I learned to what I do now for my job.
- Being able to get to the core of a problem and prove it with analytics.
- Being able to relate real-world problems to manageable solutions. BI/BA seemed such an abstract science before I took the class, but its practicality and applicability without a tremendously steep learning curve makes the tools we use very powerful.
- Being able to take something ambiguous and turn it into something specific.
- Being able to understand patterns and trends in the data.
- BI could be efficiently applied to the working field. Appropriate decision making is important in most business occupations.
- BI processes are always being created.
- BI related methods.
- Big Data.
- Building actual models that solve real-world problems / issues.
- Building cubes in Microsoft Analysis Services.
- Building Dashboards, Queries, ETL, Cubes.
- Building models that are very powerful.
- Business Analytics itself.
- Business performance management.
- Case analysis.
- Case studies.
- Case study and presentation.
- Collecting the data and manipulating it using different tools.

- Collecting the result from the collected & organized data.
- Coming up with interesting predictions.
- Communicating with BI tools.
- Comparing the various systems, such as expert and KM, and how they differ from one another.
- Computers.
- Constantly learning new things.
- Corporate Law.
- Create the data cube and present the information with reporting tools.
- Creating displays for the data.
- Creating DW, OLAP, and data mining.
- Creating information systems such as databases, or spreadsheets.
- CRM.
- Cutting edge.
- Dashboards.
- Data analysis.
- Data exploration.
- Data Mining.
- Data mining and Dashboard, because I can get lots of experience and good ideas from process and face different challenge.
- Data mining and problem solving.
- Data mining and Text mining.
- Data preparation.
- Data Presentations, Different ways of visualizing data using various Business Analytical Tools.
- Data science.
- Data visualization.
- Data Warehouse.
- Data warehouse, BI's general.
- Data. I like to play with data. Every time I find some pattern in the data it is like an invention.
- Data/text mining.
- Data warehousing.
- Decision Trees.
- Design and Programming Models; Create cubes.
- Designing database for reporting, star schema.
- Developing technical skills needed for any position in a modern organization.
- Dimension Modeling.
- Discover some interesting facts about the data using SAS and SPSS which can impact a business.
- Discover unknown trends.
- Discovering information in data that would otherwise never be found.
- Discovering no tools that I can use at my level and reading about IT discoveries.
- Discovering weird, surprising revelations from data.
- Doing a group project to create a real database (MS Access).
- Doing something new and useful or innovation in the technology.
- Doing the practical part.
- Doing the XL Miner assignments.
- ETL.
- Examining the potential for competitive advantage of advanced BA techniques for corporations.
- Experimenting with different BI tools and getting the required information.
- Explore the BI concepts.
- Exploring and analyzing data through predictive analysis and Enterprise Miner 7.1.
- Exploring different BI tools.

- Exploring different software for BI.
- Favorite part is expose the hidden facts in the data which are highly valuable, by interpreting the results presented by the BI tools like IBM SPSS modeler, SAS EmM.
- Finding apparently unrelated connections.
- Finding applicable capabilities within my current job and getting exposure to the types of programs that are current and add experiential value to a resume.
- Finding insights even if just in sample data.
- Finding patterns.
- Finding patterns in complex data.
- Finding patterns in data.
- Finding the trends.
- Fun getting the answers.
- Gaining a deeper understanding and appreciation of its capabilities.
- Gaining knowledge in a unique area.
- Gaining understanding of the business.
- General knowledge.
- Get to know how technology makes our planet better and makes us live smarter.
- Getting a clean data at the end. The excitement from knowing nothing to getting a sense of something is going on.
- Getting hands on experience via exercises and term project.
- Getting hands on with software.
- Getting the chance to further my knowledge on a topic I use daily.
- Hands on data mining.
- Hands-on experience using real world software.
- Having the experience as a part of my toolset.
- Having to build skills in decision making and 'fishing' out information from data using analytical and statistical techniques.
- Hearing my professor's examples of real world applications.
- Helpful data.
- Helps smarter decision-making that is backed up by solid facts and figures.
- How applicable it is for almost any and all positions.
- How applicable it is to almost everything I enjoy about business. It makes ambiguous problem solving easier.
- How BI/BA applies to everyday life. The decisions made by using BI/BA affect every single person in the world, even if they do not know it. There is so much data out there needing to be sorted through and I find that interesting. The combination of strong soft skills and the ability to learn new technologies is way to stay ahead in our competitive world.
- How different it is from other areas of study.
- How does BI relate to Marketing/Management?
- How does IT work in a business?
- How fast technology moves and the amazing insights you can learn.
- How information and data can be used to finalize a decision for a business future goals and plans.
- How it case be used in businesses.
- How relevant and interesting it is.
- How relevant it is to the real world! Learning something new that I've previously had no exposure to.
- How to make data useful.
- How to organize and mine data; database.
- How to protect myself then when graduated how to protect businesses of any size. How to create data usage that benefits every department and can supply any data when requested.
- How to use the different programs.
- How very relevant is, and how much potential the field has to change and improve upon how people do business.

- How visual the information is being presented. It's easy to make comparisons and see trends.
- I am able to relate the information we learn in class and see how it relates to businesses. Being able to connect the dots with real world knowledge and examples is very helpful.
- I can discover and predict new things based on what I had.
- I can learn new methods to analyze data, such as Access.
- I enjoy finding the results of regressions on SPSS.
- I enjoy learning about different businesses who have implemented Business Intelligence tools successfully.
- I enjoy learning the real-world software used in companies.
- I hope that it will be applicable in my future career as an accountant.
- I know that it will help me in the real world.
- I learn things I didn't know about.
- I like the "process" part most, like BMP. Because it is also useful for our daily life.
- I love learning how databases and queries actually function.
- I think it is very relevant to what I want to do with my career.
- I'm aware it exists now.
- I'm fascinated with BI.
- Implementation of BI in gambling industries.
- Insight creation and presentation.
- Interesting.
- Interesting results.
- Interpreting the significance of data and understanding what data provides the most relevant insight for decision making.
- Is working with SAS and reading the case studies on how businesses apply BI.
- IT for decision making.
- It helps me prepare for my career! IT is incredibly interesting especially because I love working with computers.
- It introduced me to a new world/area of business I was never aware of.
- It is an under-represented skill in the undergraduate intern market.
- It is challenging.
- It is interesting and relevant to the real world!
- It is practical and very interesting.
- It is really neat to see what kinds of things you can learn from data.
- It is relevant to potential career fields that I might pursue.
- It is something I can relate to since both of my parents are business owners.
- It is such a new area of study that can really move a business. It uncovers things from data that was previously unused.
- It is very current and I think I will be valuable and competitive in the job market because of it. It is also very interesting.
- It shows privation of theoretical concept like statistics.
- Its applicability to real life situations.
- Its applications.
- It's exciting to learn and discover things which were just before your eyes all these days, but you never knew they were.
- It's pragmatic to the real world. I can take what I learned in Data Management one step further.
- It's very new to me, different than other topics I have had exposure to.
- Just sitting down and working with the software with no general goal other than learning.
- Know the real business world with more specific details.
- Knowing how to use computers in the business world.
- Knowing that is an extremely useful skill to have.
- Learn how to draw conclusion from data.

- Learn new concepts by applying tools to answer business questions.
- Learning about all the applications and uses it had had in so many companies. I enjoy reading cases weekly because it puts you in touch with the real world and most courses don't do that.
- Learning about Big Data and companies, such as Wal-Mart and Facebook, which are using it in amazing ways.
- Learning about how real companies have used the data to develop their competitive advantage.
- Learning about it in general.
- Learning about IT.
- Learning about statistics - statistics/data are fascinating.
- Learning about the databases and developing the key concepts that I will need in the real world.
- Learning about the decision making process and how that impacts the design of business intelligence systems.
- Learning about the fantastic new technology that is coming out.
- Learning all about what goes on in different types of businesses.
- Learning and seeing how it can be applied in the real world.
- Learning by the case method, that is reading a case and having in class discussions with my peers regarding the content.
- Learning how it works.
- Learning how to create the structure that supports a BI system.
- Learning how to improve the real world.
- Learning how to interpret information.
- Learning how to manipulate data.
- Learning how to take data, and turn it into something useful.
- Learning how to turn massive amounts of data into relevant insights that can affect company performance.
- Learning how to uncover information that can be used to make decisions and can create competitive advantages.
- Learning new cutting edge strategies that current business intelligence professionals are currently using.
- Learning new processes.
- Learning new programs and advancing my skills.
- Learning new software....compartmentalization.
- Learning new techniques and gaining greater understanding of the subject as a whole.
- Learning new techniques for gathering and presenting data.
- Learning new tools, models, concepts, and apply them on practice through exercises.
- Learning new ways of extracting information and patterns from data and the ways in which new ideas have been used by businesses.
- Learning new ways of looking at things and the tools that allow companies to do that.
- Learning new ways to understand big data.
- Learning of real company applications and success/failures.
- Learning real world applications.
- Learning something that applies to the real world.
- Learning SPSS Modeler and SAS software. Data mining algorithms.
- Learning techniques that can help me to better manage vast amounts of data and make complex decisions more proficiently.
- Learning the different methods in data mining.
- Learning the different ways of handling/looking at the data.
- Learning the interesting ways that companies use data.
- Learning the methods associated with breaking data apart and putting it together again in meaningful models.
- Learning the new ways businesses analyze social media.
- Learning the various tools and software.
- Learning to interpret how tools use the business intelligence theories and algorithms and present with the

predictions.

- Learning to manipulate data to obtain desired information.
- Learning ways to apply data to make decisions.
- Link BI with real operation.
- Making cubes and the dimensional model and how data is useful.
- Making sense and discovering hidden meanings in data.
- Making the data work for you.
- Manipulating the data.
- Manipulation of massive amount of data and making sense of it.
- Marketing.
- Mining data, data structure, and some hand-on work.
- Model building.
- Modeling, solving problems.
- Most of the topics are interesting. But I think what really interest me is of how to create an appropriate multidimensional model that well-suited the business requirement
- My favorite part is how to interact with a data warehouse.
- My favorite part of learning business intelligence/business analytics is just learning new things and gaining the experience.
- My teacher is so excited about it that it makes it encouraging, I also see a lot of growth for this area of business in the future so that is exciting as well.
- Networking with experienced Tutors and colleagues.
- New software.
- New theory and technology.
- Newness.
- Nothing, find it confusing.
- Numerous applications.
- OLAP and cube computation and preprocessing.
- Once learned it will help to enhance my business criteria.
- Parsing data to enable insights.
- Practice all the BI tools and software.
- Predicting the future.
- Predictive Modeling, Big Data Analytics.
- Predictive Modeling.
- Providing insight where there was none, data wrangling.
- Reading cases on how companies have used to compete in the market.
- Reading relevant and interesting case studies.
- Real world applications of business analytics and examples.
- Real world case studies.
- Realization of how widely relevant this skillset is.
- Real-world application, learning to think critically.
- Real-world skills and knowledge are acquired and make me marketable for future positions.
- Relevance, I think it's interesting.
- Relevant to anything I could do to start my career.
- Reports and dashboards.
- Revealing knowledge from vast collection of data, technical skills, critical thinking, BI architecture, competitive advantage brought by BI, BI application.
- Review case studies and reading the white papers.
- Reviewing real world applications of BI and the effect on operations as a result of BI through case studies and research.
- SAS.
- SAS and Data Mining.

- SAS, SPSS.
- Seeing the dashboard.
- Seeing how a system develops and the complexity.
- Seeing how different businesses find ways to use their data.
- Seeing how technology can improve a business.
- Seeing how theory is applied to real life case studies.
- Seeing how it allows businesses to function.
- Seeing the potential uses for data and learning the statistical analysis that determines its relevance. This is one of the most difficult things for me, but an area in which I felt my knowledge was lacking.
- Seeing the results.
- Seeing the tools that are helping businesses to achieve their goals.
- Setting up a DW.
- Simulation and Modeling.
- Software and data visualizations.
- Software support and how results make the analysis interactive creative and yet depth full.
- SQL and SAS.
- Statistics and mathematics.
- Strategy of Business Intelligence, data collection.
- Study cases that companies use BI as a way to transform their business or to enable them keep up with consumers' expectation in dynamic business world.
- Technical aspects of BI/BA systems.
- Technology.
- Technology related to the future.
- Telling recruiters about it.
- Text Mining, Predictive Modeling, Web Analytics and so on.
- Text mining, visualization.
- That it helps me understand what companies are trying to do, and sheds some light on where we might go as a country.
- The ability to apply knowledge to decisions from individual pieces of data.
- The ability to apply single variables that have little relevance to decisions alone with other variables to make educated business decisions.
- The ability to apply the principles of BI/BA to my projects in my job to meet business needs.
- The ability to maximize BI tools and processes.
- The advantage it gives you in the workplace.
- The advantage the specific knowledge of it gives to a graduate student reentering management.
- The amount of different data that can be generated from it.
- The analysis of the information, I like most of the process of this area.
- The calculations and what conclusions appear after analysis.
- The case study that shows a successful implementation of intelligence/analytics tools in a company.
- The concept that it can earn you money.
- The concepts of big data and data mining.
- The convergence of data and IT.
- The dashboard.
- The data, I love raw data as it challenges me to organize it into a meaningful form and derive meaning for it.
- The degree of flexibility in enacting a business intelligence decision.
- The enormous power of the current software products is truly stunning. I have enjoyed exposure to multiple software solutions and platforms and have been encouraged to engage and explore through class (and out of class) activities and assignments.
- The examples that we learn in class are very interesting.
- The excitement of being in a growing field.

- The experience gained.
- The fact that it is an emerging field and people are starting to notice the importance of it.
- The great knowledge about clients and business that I obtain because of the use of BI.
- The insights, not the actual software or hardware side.
- The integrative nature of it in combining business, data, and statistical disciplines.
- The lectures are fun to attend, also observed innovative products development from industry.
- The new technologies that we learn about and upcoming technologies that we will be using in the future.
- The opportunities that have opened up for me.
- The potential of its application for any business small or large.
- The power and relevance of business intelligence that can drive better decision-making in business and beyond and, i.e. driving socially responsible policies.
- The powerful conclusions that can be drawn from it.
- The practicality of using BI/BA to improve a business and add value to a company.
- The projects and the case studies and its relevance to real world. Most importantly I enjoy the process or the thinking which goes by before reaching a solution.
- The relevance.
- The relevance and actual use in the real world.
- The software and the applications part. People who invented these applications are truly genius.
- The tools that are used to work on BI/BA.
- The understanding of how companies use BI to add value.
- The use of dashboards to provide insightful information at any given about how a firm is performing.
- The use of emerging technologies to provide information for business decisions.
- The way huge amount of data is managed and vital knowledge is being extracted.
- There are a lot of external factors that play a vital role when developing a BI app and learning how to manipulate those factors to your advantage in order to deliver the right results is a challenge and at the same time interesting.
- There is a right answer.
- Think how to join information.
- This is a booming field that is becoming highly important as technology becomes more integrated into key business operations.
- This is the cutting edge of information systems. When the Singularity appears, this is where it make its presence known.
- To learn about various tools.
- To learn how it is related with really actual companies, as twitter and Facebook.
- To make the analysis of what information is needed and build the structure to find it.
- To see the transformed data to the useful information.
- To Work with real Data Warehouse System and do some evaluation with OLAP.
- Too ambiguous.
- Topics learned can be learned right away.
- Try some BI software working in real world.
- Trying to find new ways to create a competitive advantage.
- Trying to understand how the data structures differ from the relational 3rd normal form model.
- Turning processes into diagrams to look for problems.
- Uncovering new pattern in data.
- Uncovering the hidden information in a sea of data.
- Understand how a BI architecture can support the business. And how people make better decisions using BI.
- Understanding Data.
- Understanding data points.
- Understanding how important is aligning BI on corporate strategic objectives.
- Understanding how managers work and what we can provide for them.

- Understanding how to make sense of data and finding trends and patterns.
- Understanding the business. Learning new software. Designing & modeling.
- Understanding the intricacies to how and why systems and new technology works.
- Understanding the world of business through BI.
- Understanding there is an easier way to follow business relationships and trends.
- Understanding to put things together.
- Understanding what I'm learning is related to real-world decision making and consulting services.
- Using IT programs.
- User interface design. OLAP modeling.
- Using BI tools. Reading some salient case studies - e.g. what-not-to-do.
- Using business software systems.
- Using case studies from real experiences.
- Using data on a day-to-day basis. I love data!
- Using data to solve business problems.
- Using excel to solve problems such as LP models, and sensitivity questions regarding the model
- Using it in real life.
- Using real life examples and extracting meaning from data.
- Using real world business situations in class for projects makes things interesting and relevant. Using current or recent situations to apply information learned in class and see how it impacts a business is my favorite part of learning BI/BA.
- Using software to extract meaningful, actionable information from large amounts of data.
- Using software to gain meaningful information from large amounts of data.
- Using software to present information in an attractive way.
- Using the software.
- Using the software to analyze large amount of data.
- VENDORS.
- Virtualization.
- Visualization of data.
- We work on computers.
- Web mining.
- What intelligent people are coming up with that is disrupting what the world communicates.
- When it's connected to marketing or business cases.
- When knowing how they work in real life and how this work create value.
- Word, Excel.
- Working on the tools presented to me.
- Working sessions. Working with real world software.
- Working with BI tools.
- Working with data from all different industries.
- Working with machine learning algorithms.
- Working with Microsoft access.
- Working with Microsoft SSAS, developing cube and reports.
- Working with numbers.
- Working with SQL Server.
- Working with the analysis programs.
- You can see the difference it makes in a business.

What is your least favorite part of learning business intelligence/business analytics:

- A lot of the terminology is similar and can at times be confusing.
- Access.
- Accounting.
- Algorithms.
- All of the different models and diagrams (ER, DFD, Star Schema, etc.).
- Analyzing.
- Approaching the problems.
- BI has loads of theoretical concepts.
- Building KPI's.
- Business performance management/monitoring.
- Business terms.
- Can be very complex and hard to follow. People can be at various levels depending on their background which can make it hard to follow along.
- Can be weighted down by technical speak.
- Can sometimes be tedious, complicated, and difficult.
- Changing gears from my normal humanities classes - it is a huge transition in thought process.
- Cleaning data.
- Clusters.
- Coding.
- Collecting Data.
- Complex tools.
- Complexity.
- Complicated.
- Comprehending the statistical models and algorithms.
- Concerns about data integrity.
- Confusing.
- Confusing programs.
- Content is sometimes too technical and boring.
- Covering topics already familiar.
- Crunching numbers.
- Dashboards.
- Data mining.
- Data warehouse, because it's too technical to me, which I feel complicated and bored.
- Database management.
- Database related aspects.
- Data Mining.
- Data warehousing topics.
- DB schema.
- Deciding which information to use.
- Deep statistical analysis.
- Defining the nuanced differences between some concepts.
- Delving deep into more technical aspects of BI.
- Details.
- Difficult MIS.
- Doing exams.
- Doing queries.
- Doing the business documentation.
- Drawing decision trees to find the optimal decision.
- Easy to make mistakes.

- Esoteric theory.
- Estimation Models.
- Fear of not finding a good fit within an organization.
- Few practical skills were learned.
- Fighting with data formatting/preprocessing issues.
- Figuring out how to analyze the data.
- Figuring out how to code to get what I want.
- Figuring out how to do things that aren't intuitive.
- Finance numbers.
- Finding a job that is specific to business analysis.
- Gathering data and result discrepancies.
- Generating the model.
- Getting stuck in programs and not knowing where to go.
- Getting stuck on the technical language and aspects.
- Going through all types of data to filter.
- Going through theory to find missing links.
- Governance (IT governance) like CobIT and ITIL.
- Green technology in the coal industry, because my previous working experience is in coal business
- Having to do the written part of assignments (e.g. background, requirements analysis, and design justification).
- Having to explain things that I don't understand.
- Having to use a software that I have no knowledge of.
- Hearing about the tons of data that needs to be analyzed.
- HHRR Analyst.
- Highly technical work.
- Homework.
- Homework assignment.
- How Data Miner can be complicated to understand.
- How far out of reach it seems for someone not so integrated in the technological world.
- How specialized it is and how difficult it is to master.
- How tedious it could be sometimes.
- How things change so much.
- I actually don't have one. I like BI and find I must love it in order to learn all that I can about it. I give it no bad attitude.
- I am not familiar with some technologies.
- I can honestly say there was nothing I didn't enjoy whilst learning about BI, although I wish I could have covered some areas in more detail such as statistics and data mining.
- I don't like the lectures and prefer the hands-on activities.
- I feel like I'm learning to use the software and not necessarily theories that may translate to a different software program.
- I might not ever use it.
- I wish the class was exclusively online, I don't feel like I learn much by coming to class.
- Identifying the needs of the departments that need to identify areas for improvement.
- I'm not certain there is enough time to garner BI knowledge in 16 weeks.
- I'm really bad at understanding it.
- In my case is not a TI or just technology expert, I'm a Commercial Engineer with marketing experience and the majority of the students are people specialized in technology. I feel they talk a complete different language.
- Irrelevant data.
- Is knowing how difficult it can be to extract meaningful information from Big Data. The task is daunting in nature, but also exciting.

- It can be boring sometimes.
- It can be little confusing and overwhelming.
- It can be monotonous. Mixing up class is always good.
- It can be very time-consuming.
- It can seem highly technical from an onset, but is not too technical once you get the hang of it.
- It is a lot of clicking to set it up.
- It is difficult in some aspects.
- It is difficult, but it is worthwhile.
- It is easy to get lost in the semantic weeds.
- It is fairly difficult.
- It is frustrating instructions are not always clear.
- It is generally a dull subject.
- It is not a least favorite; I should say I am still discovering the various options provided by the tool to present best and valuable information in the data provided.
- It is not what I want to do with my life.
- It is quite complicated to retain everything about the subject.
- It is very new to me so I get frustrated sometimes when I don't get it right away.
- It seems overwhelming at times.
- It'll be the technological part. While talking about system, data, or information, it's pretty hard for someone didn't have any basic knowledge about IM.
- It's a broad sector of learning. A more specific view of it would create better understanding.
- It's a lot of hard work.
- It's a lot of numbers and a lot of excel charts.
- It's a whole new "IT Language" for me.
- It's boring.
- It's hard to say which one I like least as all play a special role and I liked them all.
- It's kind of boring.
- It's repetitive when you don't get the intended results.
- It's tedious dealing with large amounts of data
- It's very interesting, but I'm just not the best at it.
- Just trying to decide what kinds of filters to apply when searching for data you need.
- Kind of dry and boring sometimes.
- Lack of depth.
- Lack of enterprise wide application to simulate tasks.
- Lack of hands on opportunities.
- Laws.
- Learn more about the data processing.
- Learn some contents.
- Learning about different data marts.
- Learning about the numerous vendors.
- Learning about the tool.
- Learning all the abbreviated terms.
- Learning simply how to do data mining without learning what is means.
- Learning specific software not used at place of employment.
- Learning SQL, but once I got the hang of it, it wasn't too bad.
- Learning the definitions (i.e. theoretical part).
- Learning the hard ware and soft wear and all the technical terms.
- Learning the history of BI.
- Learning to navigate BI/BA software.
- Learning various platforms.
- LEGAL.

- Lengthy process.
- Linear Programming.
- Long hours of studies - Big area of study.
- Lot of theory needed to understand the concepts. Nevertheless they are fun to learn once you know the basics strong.
- Lot to learn.
- Making the queries.
- Many different terms used to describe the same thing.
- Massive amount of data that might be deleted permanently.
- Mathematics.
- Memorizing the definitions.
- Model building, use of statistical techniques and statistics in general.
- Modeling the dimensions, hierarchies etc.
- Monotony.
- Most of it.
- Most people classmates have no clue about BI. Feel like am bent slowed down by peers.
- Moving at an uncomfortably fast pace through the software.
- My least favorite is to memorize some acronyms.
- My least favorite part is initially getting to know the software; although it becomes exciting once past that.
- My least favorite part of learning business intelligence/business analytics is nothing...I don't have a least favorite part.
- Normalization.
- Not always being able to fully understand how data is collected, it is always easier to derive insight when you understand the data well.
- Not always understanding how certain tools apply to real life situations.
- Not enough experience yet to have an honest opinion.
- Not enough hands on/coding.
- Not enough in class work of applying knowledge we've learned in class to business situations.
- Not have enough time to learn the software and processes deeply enough.
- Not having a strong IT background, I sometimes struggle with the technical aspects of learning new BI/BA tools. I wish I had more time to better learn the analytics tools and delve deeper into the subjects we are learning rather than just getting the homework done.
- Not knowing when to apply what model, and looking through the many details to build up the big picture.
- Not learning the ground-level setup of the tools.
- Not sure if we are dealing with primary data sources from the industry. I do not like the help option available within the software. It does not help much in understanding the multiple components and specific functionality of the software. Hard to understand its working, takes quite some time to get familiar with it and have the software loaded on one's own laptop.
- Not yet knowing quite how large / relevant the industry will end up being.
- Open source BI applications.
- Oracle.
- Organizational dynamics / politics.
- Performing case studies and presentations.
- Performing case studies and presentations.
- Process Modeling.
- Process to synthesize data not always exciting.
- Project management.
- Quantitative part, have to deal with math.
- Reading materials.
- Reading some case studies which seem to be of dubious relevance given their age.

- Reading the textbooks.
- Reading through technical details, or learning about lots of processes with specific terms/meanings in a large group setting. For this type of material, it'd be a lot easier to learn and pick up in smaller group settings with more individualized attention.
- Receiving a grade for it.
- Repetition.
- Reporting.
- Researching the data itself.
- Results are often ambiguous.
- Running boring models without applying them to real cases/decisions.
- Syntaxes.
- So many tools out there that are very business specific. They are also expensive, so the type of businesses that can use them are limited.
- So much information to absorb.
- Software.
- Software application.
- Some material is really difficult.
- Some of the abstract methods of data collection (e.g. different computer programs that companies use) and not being able to use these in class. I would like to see more practice of these applications and less learning about the actual theory.
- Some of the material is a bit dry at times.
- Some of the programming needed.
- Some part is difficult to understand.
- Sometimes a course is only as good as the professor teaching it, and we have some mediocre professors.
- Sometimes I feel it is too formulaic when individuals analyze data.
- Sometimes is frustrating learning new software.
- Sometimes it can be confusing with the way it is presented.
- Sometimes it just doesn't make sense but we're told to just go with it.
- Sometimes it is a very time consuming application.
- Sorting through irrelevant information.
- Sorting through what data is important and what is not.
- Spending hours trying to learn how to use the computer programs such as access and excel.
- SQL.
- SQL and Database Management.
- SQL and SAS.
- Statistical analysis.
- Statistical mathematics.
- Still haven't found one but may be processing time for big data's. But Hadoop and map reduce technologies are there to help us. :)
- Stressful.
- Study the literature and case studies.
- Studying data examples that I have zero interest in.
- Switching from program to program.
- Takes time to process.
- Technical aspects and databases.
- Technical Jargon.
- Technique part.
- Technology skills.
- Terminology. Since this is a new area of study for me, some of the terms and practices needed clarity.
- That it is easy to forget if you are not using the software consistently.
- The absolute need to focus on data quality.

- The amount of "theory" in data analytics.
- The amount of software and time you must devote to each one outside of just learning the concepts.
- The 'black box' aspect of some of the learning algorithms that BA programs use.
- The cliché is that you can make data say whatever supports your argument. I struggle with knowing I am setting up the data properly and getting the results with a minimum of bias.
- The complexities make it tough to see the big picture when studying large scale implementations of BI.
- The concept is so big that sometimes you lose grasp.
- The concepts and relational modeling.
- The crowded classroom that doesn't allow for us to perform examples in class.
- The design process of BI/BA.
- The different software and continuous databases that you have to use.
- The difficult terms that are similar overall but very different when you drill down deeper.
- The difficulty and trial and error BI takes.
- The difficulty in seeing the generalizability of our models. We often use very simple data sets, so it is sometimes difficult to see how our problem sets compare to specific business problems I'm thinking about.
- The difficulty of learning to utilize the software and get it to do what you want it to do.
- The fact that most software tools used in BI apart from Oracle, are hard to come by for practice.
- The fact that not many people know about analytics and how important it is.
- The focus on SQL to code data... I have little interest in coding.
- The information can be quite dry at times.
- The IT is a little bit hard for a MBA student.
- The key words. I hate to remember the definitions of these key words that I already understand how to use the technology.
- The lack of a good resource. In my Business Intelligence class we have discussed the many products and resources available that can be used for data storage, manipulation, mining, etc., however when trying to learn more about products or where to get data, I've found it to be a difficult task. I wish there was a better resource for students to learn about these products and how they can be used.
- The lack of implementation experience gained from theoretical research.
- The massive number of answers to the same problem. I guess that's both a positive and a negative.
- The operations function tends to bore me to most.
- The overuse of initials and abbreviations.
- The pace at which the tools change. Learn one and it gets bought out by a competitor and replaced with a different product.
- The potential error to the result if I made one tiny mistake.
- The reading is sometimes dry.
- The software.
- The software is clunky. Convincing people that you are right with your analysis and that the data is actionable.
- The software.
- The statistics part of it.
- The technical aspects.
- The tediousness of the work once in a while.
- The terminology and frameworks.
- The theoretical part!
- The use of only one program.
- The vast amounts of aids/tools that continue to enter the market that are necessary to keep up with the evolving business analytics frontier.
- The volume of material.
- The warehousing and programming aspect.
- Theoretical foundation of business intelligence.
- Theoretical topics like BPM, Scorecards and DSS.

- There are not a lot of comprehensive learning materials.
- There are still many problems that may arise.
- There are very few enjoyable parts. Our professor struggles to make it interesting.
- There is a lot to get through and I felt that we moved either too quickly or didn't learn it by heart enough.
- To know how the technology is going on.
- To understand the technical side of data warehouse architecture.
- Too ambiguous.
- Too few courses offered.
- Too many tools to learn.
- Too much math-based theory that are generally forgotten. Statistics is great, but making it math-based becomes too burdensome!
- Topics can be dense.
- Traditional BI.
- Trying to construct a process model without sufficient instruction.
- Trying to wrap my head around what the pre-built functions are actually doing to derive the results.
- Tutorials tend to be long, repetitive, and do a poor job of fully explaining how to use programs without further help from the professor.
- Using ACCESS.
- Very complicated and difficult to understand if you've never had exposure to the topic.
- Very tedious.
- Waiting for my computer to run the models.
- We didn't get to spend a lot of time on it.
- Working with programs like SQL.

What other comments would you like to share:

- A fantastically interesting subject.
- A final project helps me a lot to understand how to develop ER and make a database/data warehouse.
- A great way to understand how a business can harness the power of its performance.
- All business students should take at least one class of BI.
- Although it's really hard for a MBA student, it's still interesting.
- Are there any certifications that student can pursue to prove/testify our understanding and skill?
- As a student it is very interesting some of the times and sometimes I feel it as dry. But I personally BI/BA is going to lead the world in the future.
- Awesome area for IT.
- Because it is such a new field, I feel like none of my friends or family really know what I'm studying when I mention business analytics.
- Better explanation what is BI/BA will be great to promote classes on this topic.
- BI is a fast growing area and in today's world of huge amount of data it is very necessary.
- BI is a great subject which needs constant learning and needs students interest more than being just a class.
- BI is the real thing. You can get 100% of what you really need in your work.
- BI is a very good subject, but if it is taught with real-time examples it is very useful.
- BI is a very interesting and challenging field. It is more about how IT is used in the business world and its relevance.
- BI is definitely necessary for future IT manager.
- BI is exciting indeed but a little difficult to fully follow it without working as an IT person or a manager that used to be part of the process or with an experienced point of view of business. To most "ordinary" students without related knowledge or experience, the only thing that we can do seems to be reading and trying to absorb the causes and consequences from real world cases.
- BI is the future. It is very interesting and there are lots of opportunities in this field.

- BI is very important for any business administrators and for research people who is working on big data research.
- BI is very interesting area in IT... Everyone who is interested in BI should explore it.
- BI/ BA is not just a course which can be taken in college. It is a direction to think and can be applied in many aspects of life.
- BI/BA are usually quite boring and long to teach, there should be short session that could make the educational experience visually appealing and interactive hands-on.
- BI/BA is a very exciting field, especially since it is so young in the business world - professionals in this field will be on the frontier for quite a time.
- BI/BA is still a new field to explore.
- BI/BA requires experience in order to get a job. It would be great if there was some sort of real world experience when under taking the unit.
- Business intelligence is a vast analysis area which needs a lot of learning and research. However a lot of tools are available in the market to help do the analysis and discover some interesting facts. Students just need to explore these tools and use their mathematical and statistical knowledge to discover this information.
- Business Intelligence is a very interesting field, I love it.
- Detailed notes for the models should be provided.
- Email me if there are opportunities to practice BI on Teradata website that may not have been made clear during the course.
- Emphasize its application to the current development of businesses.
- Focusing on the social media analytics is very interesting due to its high relevance for millennial.
- For a student who have no basic idea about technology, BI is interesting but hard to understand in the beginning. But it does help in the future.
- From a student's perspective I believe students should be more educated about BI, since it has to do with better decision making essential to a company. I think the steps of BI and learning how to collect, manage, and organize knowledge should be taught in schools.
- Given the opportunity I would continue my learning into the area of big data and data science.
- Good choice.
- Great mix of business and technical.
- I have fallen in love with this stuff. Given more time to focus on individual data mining tasks using the tools, it would have been even more valuable to the student.
- I believe that most of the companies feel that BI is very expensive implementation which on the contrary if planned properly can prove to be inexpensive. Industry consulting assignments as part of Co-Ops should be encouraged for better understanding of myths around BI acceptance and possible resolutions.
- I do love the BI development. But in the real world, or just now, the entry level positions are very few. It is really hard for students to get in after school.
- I do not think students realize the need for soft skills in a work environment. I myself did not realize this until I went in for interviews for careers in BI/BA. Companies are looking for the combination of soft skills and technical savvy, which is not easy to find.
- I enjoyed learning about BI and am now more aware of all of the ways I will use it in my future career.
- I feel availability of real data is important in order to get real insights. If this data is available then the learning experience will be more enjoyable. But I am satisfied with what TUN is offering.
- I feel that as a field, BI/BA is underrated and under-appreciated as a potential career path. Students oftentimes dismiss this field because they falsely associate it with highly technical aspects of IT or Computer Science - aspects which turn them off. I once had such a view but was proven wrong once I took courses in this field. As consequence, I look forward to pursuing and starting a BI/BA career.
- I feel the field is growing but largely overlooked by the other academic disciplines. Outreach efforts should be employed to break through the silos within business school departments.
- I have heard about how Canadian Tire has used BI to become efficient and turning data into meaningful results in first year.
- I have worked at 2 co-op placements and have dealt with BI applications at all of them. I think it would be an extremely relevant and important thing to teach students who are interested in a career in business and IT.

- I just wish more time could be spent learning the BI/BA system. Classes don't do it justice to really learn what is necessary.
- I learned about it in Marketing. Companies should be weary amount how much data they gather because it could be resource draining. You can have all the information but not know what to do with it.
- I love analytics, I will apply it to every job I ever have (because it's relevant to almost every job). Having strong analytical capabilities is just as important as having strong communication abilities in the way it cuts across many areas of business. I believe it is a quality that will make me more capable of taking lateral moves across industries, which is important in this economy.
- I love it! I loved the class I took and I think that this should be stressed as an important topic in the future of business. Everyone should take a class on BI.
- I personally want to learn more IT work. Junior level classes but still haven't learned much more than I already knew.
- I recommend students not only to enroll in BI technical subjects but also in core finance or accounting ones to have a general knowledge of the departments you will need to provide service. Becoming "purple" is a must for a BI consultant.
- I think BI is a kind of new and exciting area which has become the necessary part of company and life. Therefore, I expect that in the future there will be more and more classes to take and free software to use. And many people will get benefits from BI/BA.
- I think BI is essential to a business and is a field if used appropriately, will yield in greater innovation and quality. I wish basics of this were thought as a separate course at my university.
- I think BI is extremely relevant to the new generation of marketing because of the analytic capabilities it provides. I believe it is important for anyone seeking employment in the corporate sector that will have exposure to the data warehouses BI deploys.
- I think BI needs to be covered more for all business students. People who don't understand BI/BA don't know what information is available to them to make decisions. If the people making decisions for an organization don't utilize the data they have they will make poor decisions. More people need to know and understand BI.
- I think I would need to use it to really understand it.
- I think is an important topic to have some knowledge if you plan to become a Manager or Director in a big company, because is the path that everyone is migrating to.
- I think it is fascinating especially when you incorporate/ examine business ethics in its application.
- I think it's a wonderful area of study, and would welcome learning more on the subject; especially at a graduate level.
- I think it's an important area of business to be knowledgeable about because it touches a quite large range of business sections, from dealing with competition and competitive advantages to efficiently making good decisions in business oriented organizations.
- I think that BI needs to be more taught and given more importance in Business schools. I come from a European business school and BI/BA, wasn't brought to my attention as I would have liked it to be. Thanks to the class I'm taking I'm considering changing career path.
- I think that more needs to be done to get students interested in the field. Most people and students do not understand what BI is and how it benefits organizations.
- I think that the schools should get businesses to support the programs by providing partial internship programs for specific classes. This way there can be some real practice and perspective for the students.
- I think this class should be combining case and practical exercises.
- I think this is the wavy of the future.
- I took the classes that constitute a concentration in BI, and then discovered that the concentration can only be declared at the graduate level. I would love to see an undergrad track devoted to BI/BA.
- I took this class last semester & my professor was great. Any IT/business student should consider taking this class.
- I was hoping for a little more technical review of BI in my BI specific class. I am in the middle of the course so there may be more to come.
- I would like to add that I believe gaining the knowledge and the experience from taking courses involving BI/BA is very beneficial to students who are seeking employment in certain fields where this knowledge is used. It will give them a leg up on the competition so to speak.

- I would like to learn more about this topic, and I think cases are best way.
- I would like to request for an advice on how I can apply and actually obtain a job in the BI area. Or if there are other options that might help me understand this area much better, I would highly appreciate any input. One semester only and taking other classes is not enough to equip student with the most qualified expertise in trying to apply for jobs.
- I would like to see more detailed cases on how companies use BI.
- I would like to share that at first view BI seems like a theoretical class but in the 4th class I was very glad to interact with some web tools to make some reports that it means that the BI is another world based also in programing and some design in the reported but oriented in the analytics of a business.
- I would love it if there's training component in my course for real BI tools such as MicroStrategy. And not just showing us a glimpse of it but have it as a project where we have to use it extensively.
- I would love to have BI/BA as my career.
- I would love to see a PhD program in BI.
- I would love to see BA pushed more into core and even required curricula. Integrating it with traditional stats courses would prepare students for a changing workplace.
- Ideal for anyone to understand going into a company.
- If I can plan the subject content, I would introduce more BI software in the market and provide more Live examples for students. I also want to know about SAP BI tool and Cognos BI tool and their features, benefits and competitive advantages for companies.
- I am glad I learnt BI before getting a job. This will give me at least a basic idea about BI.
- In my course, it is part of a module called Digital Business and is only one chapter.
- In my opinion BI/BA are very important tools that allow us to gain lots of knowledge. Especially for administrators and people who run business and take important decisions daily. Universities should include classes about BI or BA for their students.
- In Vietnam, Oracle then IBM dominate the market for DBMS & BI/BA tools. I am a developer for CSC VN and I did not know about Teradata. Teradata may become more popular by providing certificates.
- Interactive classes.
- It is a great course and as BI grows in demand in the industry I believe it should be made mandatory for students studying information systems.
- It is a topic that I find very interesting and is very practical for many business functions!
- It is a useful and interesting class.
- It is a very good subject. My professor thought us the subject in a very practical approach and it was very helpful.
- It is a very interesting area which offers lots of opportunity.
- It is a very interesting field to go into with endless opportunities for those who like analytics and critical thinking.
- It is a very interesting area. It's not just about the technology but also how technology may enable business to create competitive advantage. It also challenge my thinking to see IT in business context, not just the technology side.
- It is an interesting field.
- It is clearly important. Therefore, more time needs to be dedicated to it if we're expected to understand/want to use it.
- It is definitely interesting getting to know how the business world works and all its function.
- It is fun and I love it.
- It is helpful and very rewarding after you know how to use certain programs.
- It is interesting and even exciting.
- It is just sad that I'm not learning anything using BI/BA related software. The closest thing to it in my curriculum is MS Office 2010.
- It is so much more helpful to learn the tools when using real scenarios/examples, and not follow only made-up examples from the book.
- It is very useful, but hands-on tests would help show if we truly understand the processes or not.
- It is vital to the success of an organization that the user of the analytics has a vast knowledge of all the tools made available to make good decisions.

- It should be developed into a course with a planned syllabus. I am a software developer but not all the computer science students are developers, BI/BA could be a very handy and career determining to those students.
- It should be mandatory for IT/IS students.
- It was a wonderful way to get into the health care IT field! I love my job and how applicable BI/BA is in it.
- It would be nice if real world business cases are provided with the course to perform BI/BA and make a smart decision on the case.
- It's a process to learn it, still trying to.
- It's an underutilized program at our university. There is a shortage of BI professionals, but most people aren't aware.
- It's great.
- It's necessary, though it's hard.
- It's very exciting and non-monotonous field. I love it!
- Learning exercises would have more impact in teaching than reading and studying from a book. Think back to when you started using computers and up to now. Have you ever used book studies or manuals to use a computer or any software application? Why should teaching it be any different?
- Love the Teradata Student University website.
- Making sense and gaining insights from data is a major challenge that affects most markets, industries, and business functions (e.g.: marketing, IT, sales, customer service, accounting, etc.). I hope that both disciplines will get more exposure in the curriculum offered by universities than they currently do, as students need to get properly trained in those disciplines to be successful in today's business environment.
- Materials that help guide users through using statistical models and algorithms would be helpful. It would also be beneficial for other business majors (finance, marketing) to have a BI as required courses tailored to their specific areas.
- More examples of real world applications of BI are really helpful to understanding BI.
- More. More. More.
- My BA program is more developed than most but seems to focus largely on technical skills without taking the next step toward strategic decision making.
- My professor in my BI class is great!
- My teacher makes the content interesting--without him, I don't know if I would enjoy BI/BA as much nor see the real-world relevance.
- Need more access to systems that can handle large data sets.
- Need to concentrate more on predictive analytics and less on traditional BI.
- No professional in the current world can live without working with data. Students who plan to make a good career need to have skills in data analysis.
- Not emphasized enough. Not enough classes offered to capture interest of non-concentrating IT majors (i.e. finance, HR and marketing majors).
- Only artificial intelligence is available to MIS major. I don't know if BI is the same as AI. It would be nice if department of Management Information system make available this class to MIS major.
- Only when you can do it with a computer, it's meaningful and practical. Just reading textbooks won't help.
- Please include more Business Analytics and Meta Data Design.
- Please take time to go through the help documentation as they are very nice. Read at least couple of good articles about data mining to get motivated into learning data mining.
- Portfolio completion is a tedious, but necessary objective to help prepare students to keep track of their academic achievements throughout their college career.
- Practice need time, be patient!
- Some cases should be implemented in a nonprofit oriented.
- Students must be given real time morphed data from the companies. Students find it very hard to gather data from various sources and get disheartened. To encourage BI/BA, companies should tie up universities to at least provide them with some business understanding so that they can use students for

solving their problems. Not many students have business understanding.

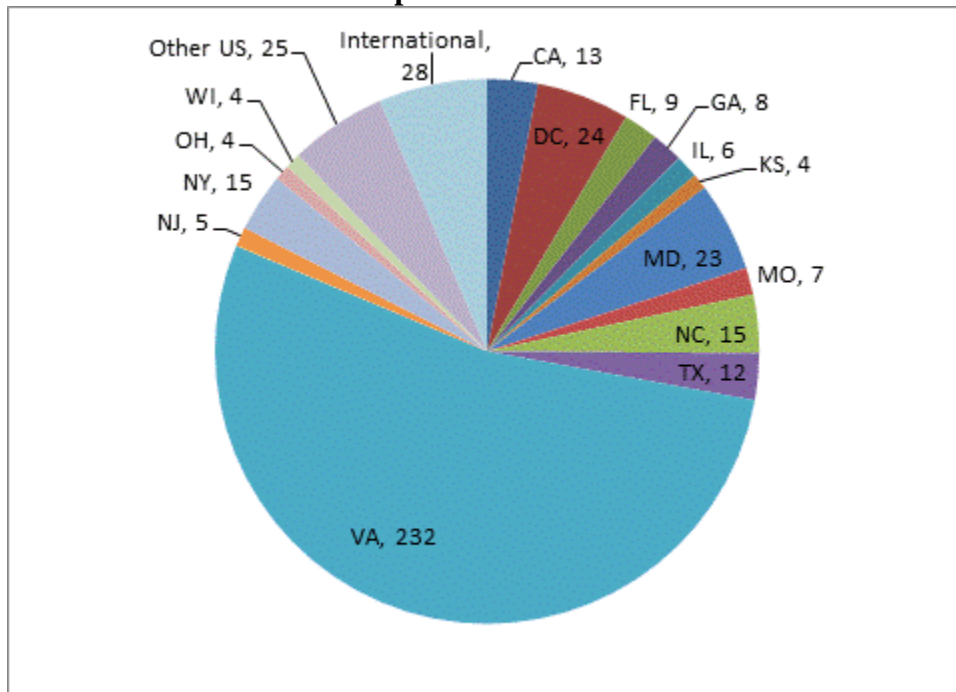
- The area of teaching BI/BA seems to still be looking for clear direction about program content and courses.
- The BA course I have enrolled in is interesting as of now. Also, it would be beneficial for us if we get to learn some more new BA/BI tools that the companies are currently using.
- The class as a whole helped me learn about how BI/IT systems are organized, planned and implemented.
- The future is based on the predictive modeling e.g. consumer behavior can be calculated and reduce cost and increase opex etc.
- The more classes offered the better.
- The subject is changing so fast, we have already revised the syllabus.
- There are many BI/BA jobs out there so it's a booming profession.
- There is a perceived need to align nomenclature across the Atlantic. 'Big Data' appears to have different meanings (including this survey!) and the seniority of a 'Data Scientist' differs significantly (US = UK salary x 2)!
- There needs to be more courses offered in the field! A general class is nice but I'd love to see a more advanced program at our school. It'll be interesting to see how this expansion overlaps/differs from the IT concentration currently offered.
- There should be a comprehensive easy to follow documentation and a number of videos and books /Journals of real cases that have used Business Analytic to tackle a crisis.
- There should be more emphasis in text analytics as it is going to be the future in the area of predictive analytic cs.
- There should be more focus on SAS in classrooms when dealing with systems and there needs to be more classes on data warehousing.
- There's so much that can be learned that I do not feel as if you can really teach all of the important concepts in four classes. I wish the school required/offered more BI/BA courses than those are currently available.
- This class needs to be taught VERY rudimentary. Do not focus on how to use the software, focus on what the software is DOING. Emphasize the action with the results, not the results themselves. Results are NOTHING in this field if you can't use them. Otherwise you will just be another institutional research department, but we are the big movers in the 21st century. Data scientists are gold, and my peers never recognized that after taking the data mining class. The class should be taught as if the teacher is the CEO and we have to convince them to steer the business in our direction based off our analysis.
- This course introduced a whole other side to understanding business.
- This field is very important to the business world just as of lately have companies even the playing field with these things through the use of Google Analytics. The market for professionals with a knowledgeable background in this field is growing rapidly.
- This has been one of the most challenging and rewarding courses I have taken in my graduate program. While there is not a use for BI/BA skills in my current role, I expect I will need these skills in the near future and will be prepared.
- This is a great area to learn about at school. More courses in this area should be added to our curriculum for undergraduates.
- This is a very important class to take especially as far as making important business decisions and strategies.
- Though BI/BA tools are getting accessible to students, there is still a lot that needs to be done for them to be more accessible. For example, there are a lot of software which only come with a 30 day trial period. If that can be at least extended till the student completes the course, it can be more helpful.
- Understanding business analytics seems necessary to success in any business career.
- Using technology for better decision making is something I would like to do.
- Very helpful.
- Very interesting area from my perspective. With this knowledge we can find good jobs all over the world. But, problem in Serbia is the fact that we don't know what companies really expect from the beginners. We need more realistic problems from industry for solving, the best way to become experts.
- Very promising aspect but also hard to follow. If you want to absorb a large amount of information, do it quick somehow or they will become out-of-date very soon & the value will depreciate with time.

- We are mostly concerned about good manuals to software tools.
- We could use some books on our language. I am not familiar with any BI book on Serbian language. :)
- We need more dedicated courses to BI and Data Science.
- We should do more SQL.
- Wish I knew more about it.
- Wish our course had time for open discussions as this is truly an interesting subject.
- With so many people going into this space, what will be the emerging trends going forward? Will this influx lead to a commoditization of BI/BA so much so that it will result in less value created from such analysis?

Employer Survey

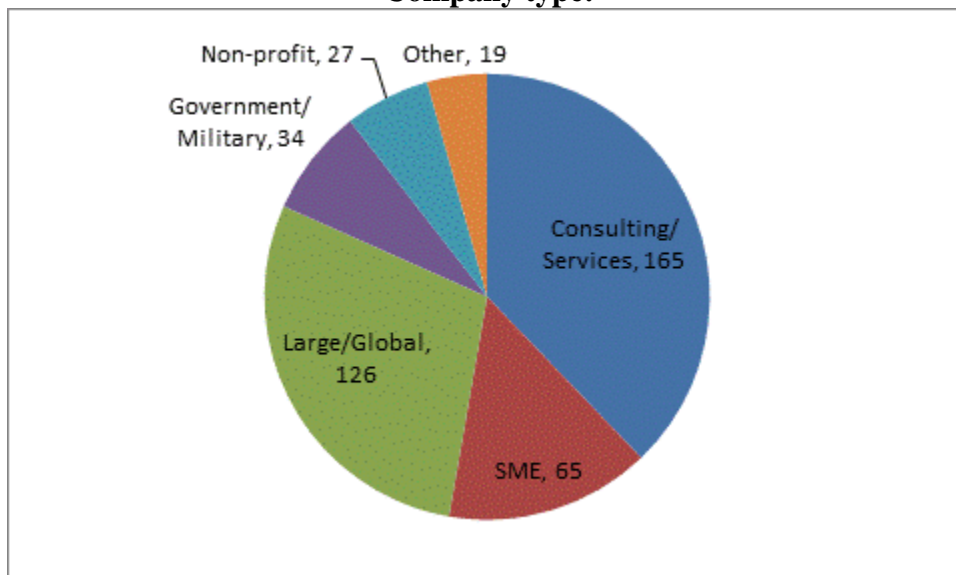
446 practitioners responded to this survey. 308 of these respondents actually participate in the hiring process (e.g., recruitment, interviews, selection, training/staffing). Other than the demographics and final comments, the following results are based on the responses from the latter 308 individuals.

Respondent location:

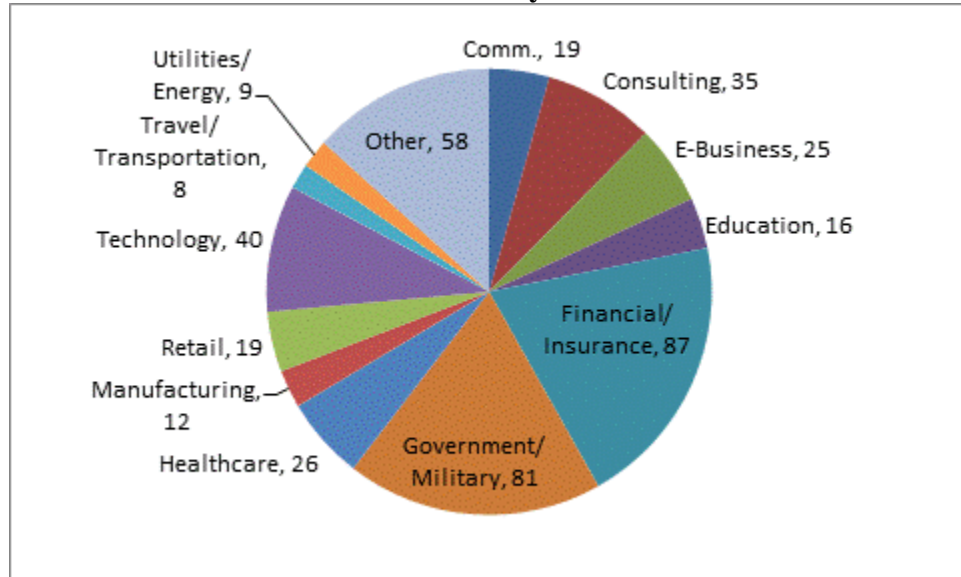


States represented in "Other US" include: CT, DE, ID, LA, MA, MI, MN, NE, NH, UT, PA, RI, TN, WA

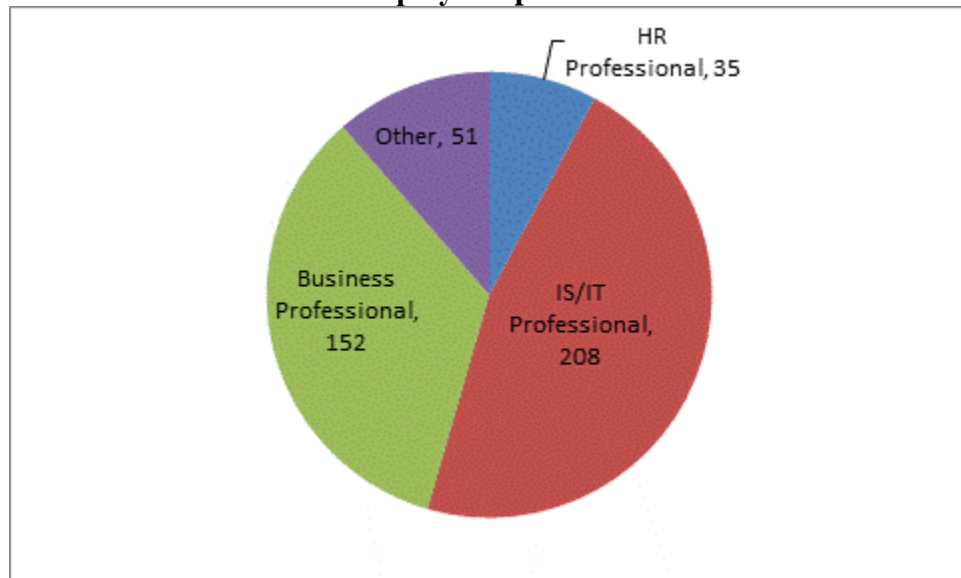
Company type:



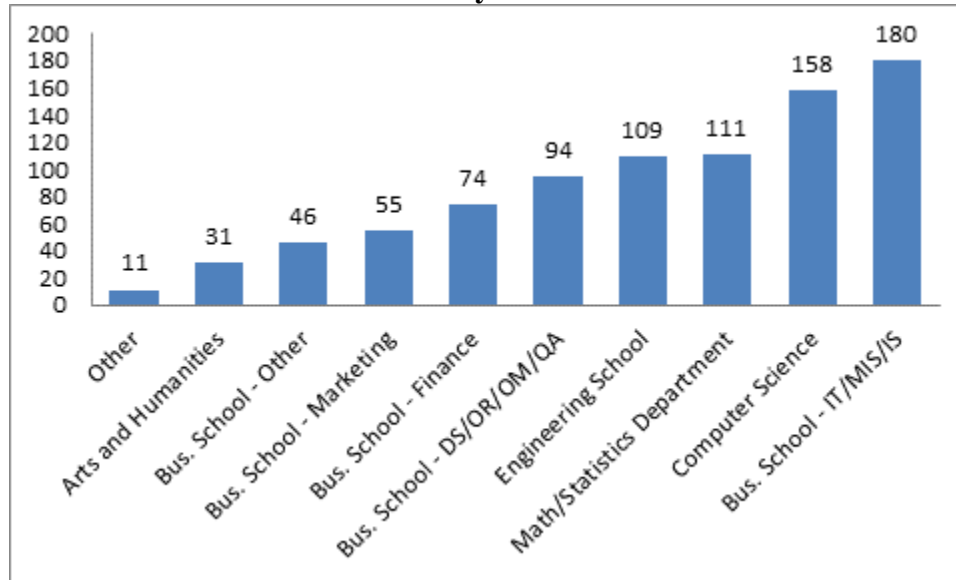
Industry:



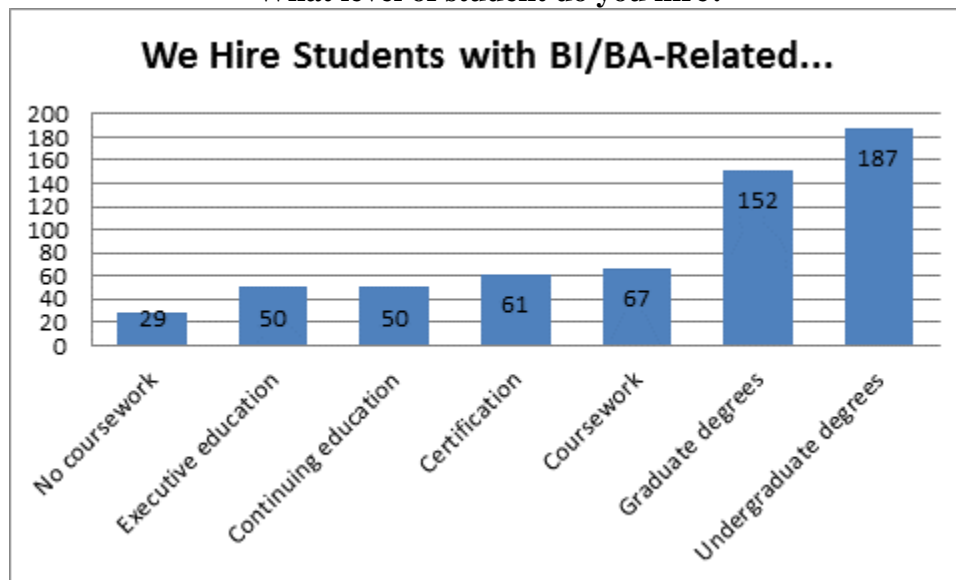
Employer's position:



From where do you hire BI skills?

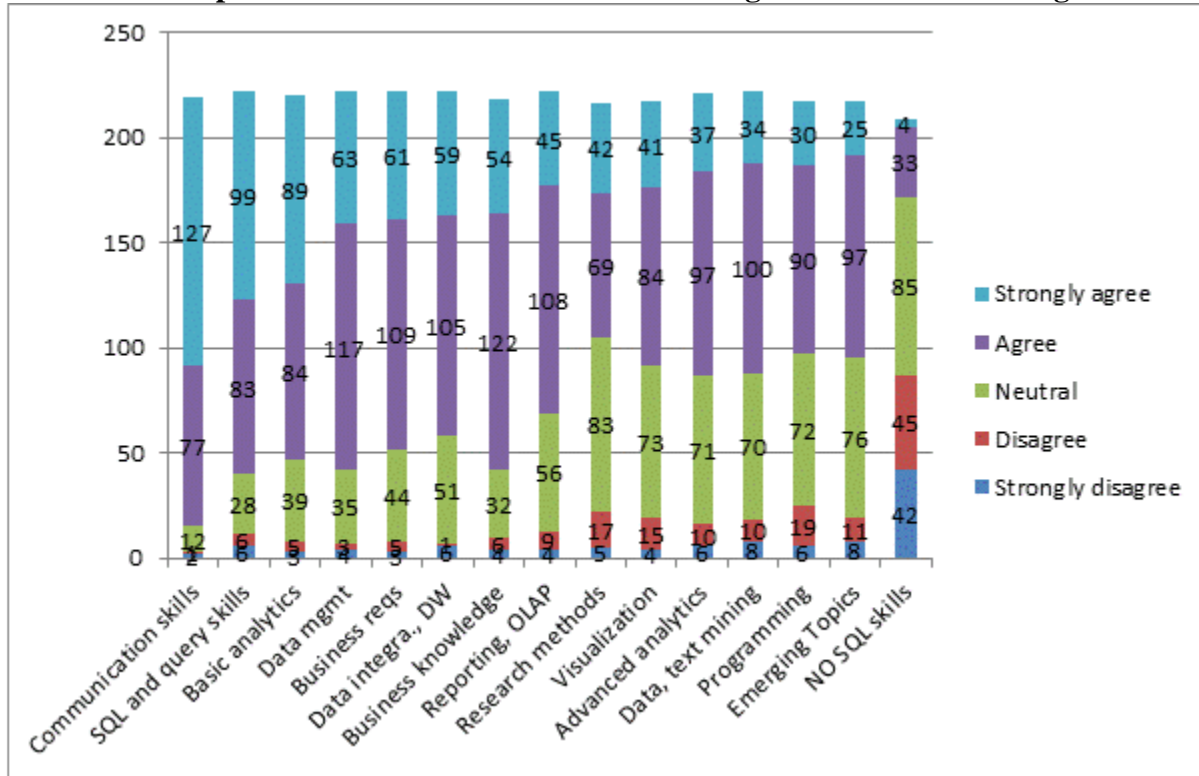


What level of student do you hire?

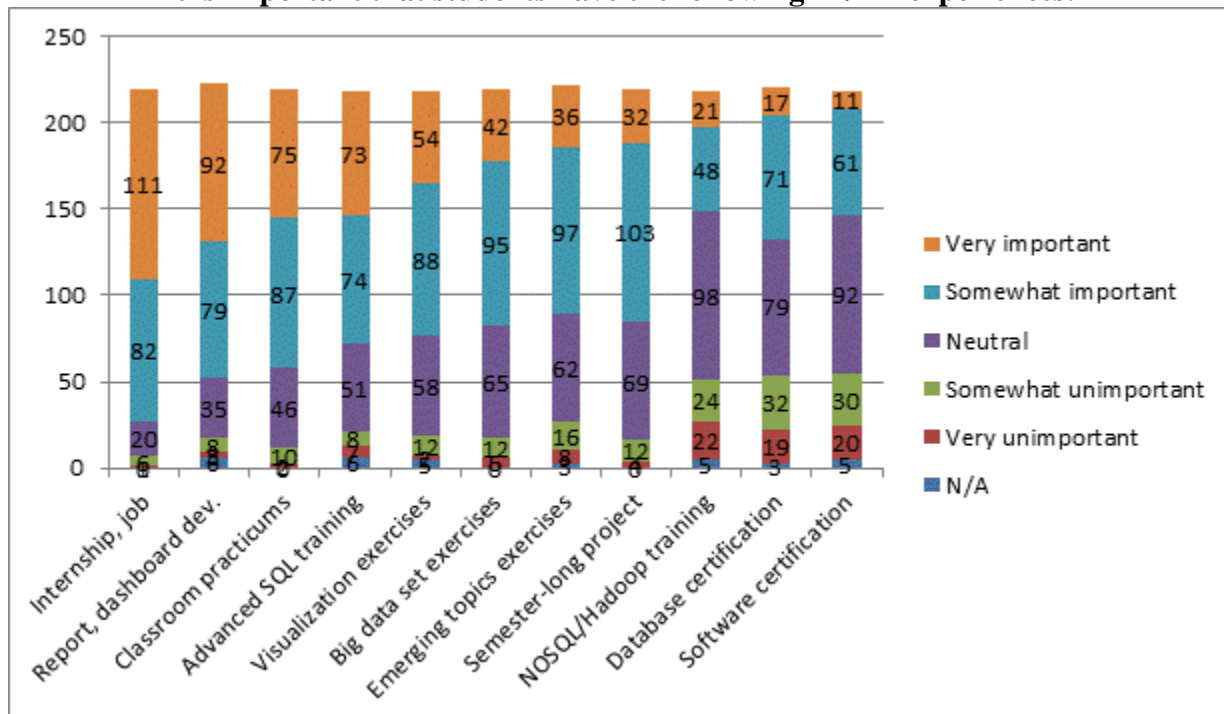


When asked specifically about what student certifications matter to the hiring process, only 15 employers provided input (most mentioned that technical or vendor certification was not a requirement for hiring, but an added bonus).

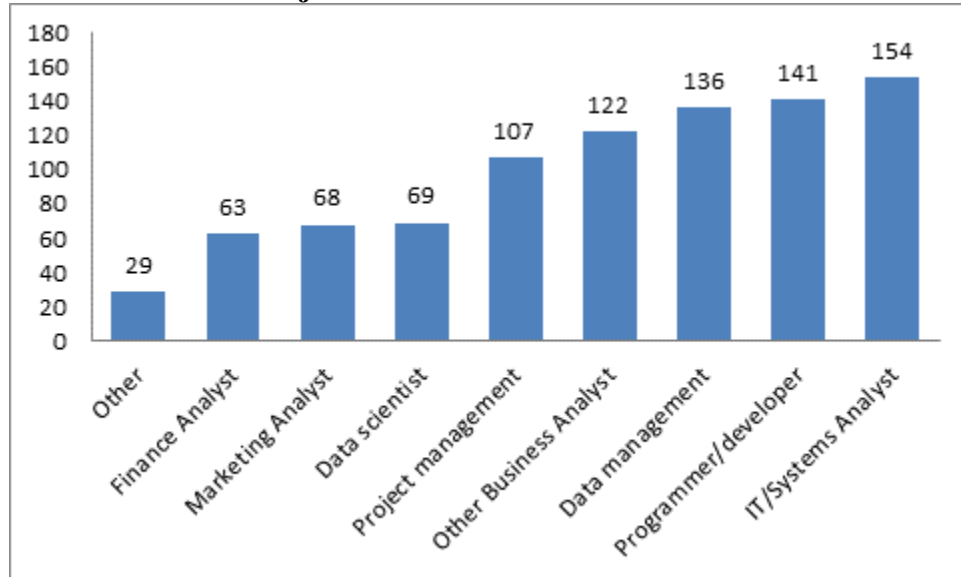
**When I recruit for BI/BA roles,
it is important that students have the following coursework/knowledge:**



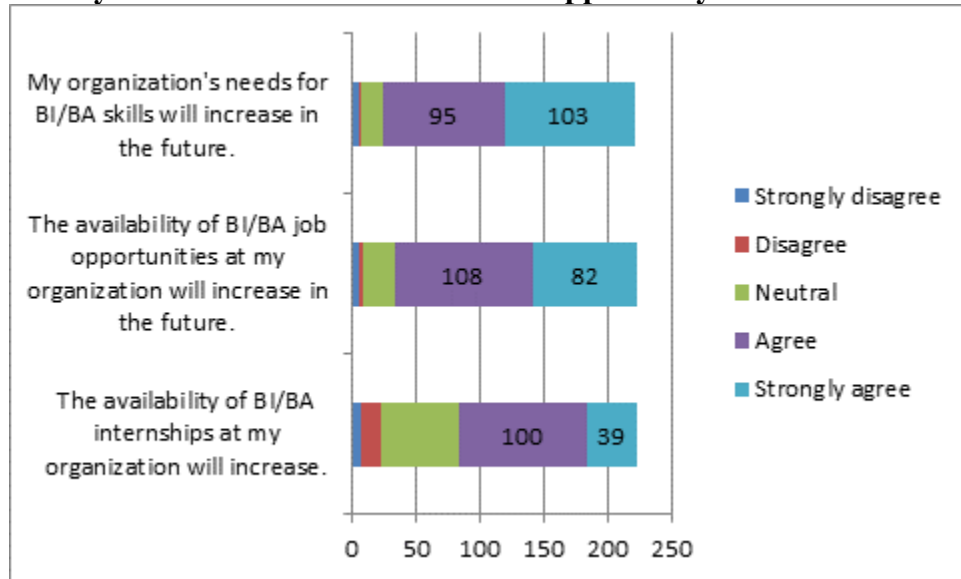
**When I recruit for BI/BA roles,
it is important that students have the following BI/BA experiences:**



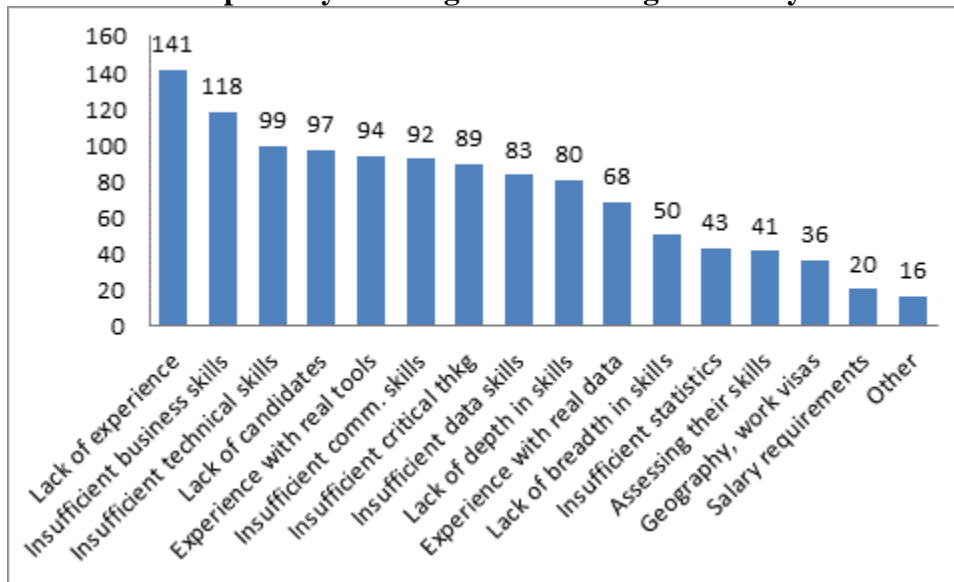
What kinds of BI/BA jobs are available for students out of universities?



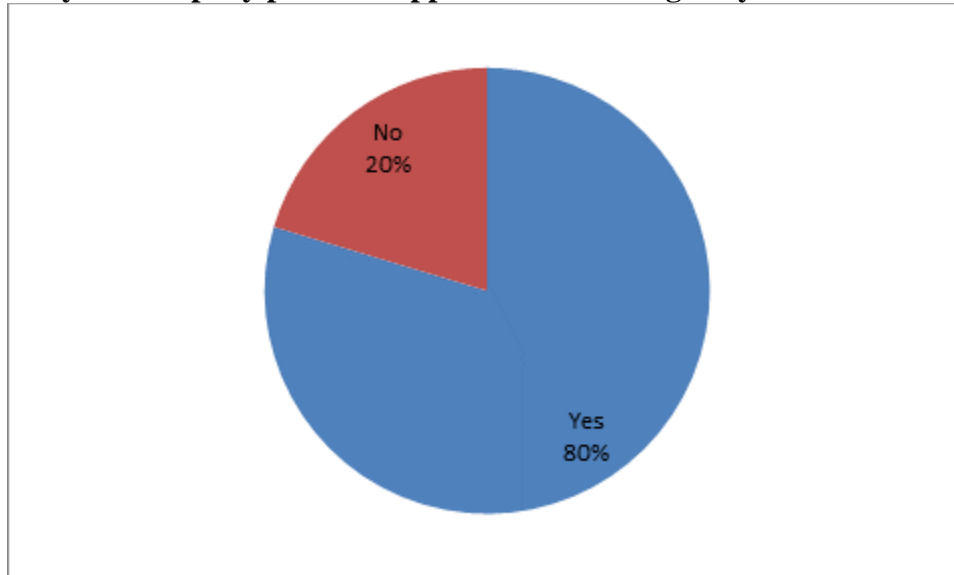
How would you describe the future need and opportunity for BI/BA in the future?



What are the primary challenges when hiring university students?



Does your company provide supplemental training for your BI/BA hires?



If yes, what type of supplemental training do you provide?

- One week-long intro to our standards and practices
- 18-month training & development program with mentorship
- 4 weeks classroom training, 1 week practicum, 6 weeks pro bono project
- 80 hours of technical and business process-related coursework, in addition to on-the-job mentoring
- A variety of training (e.g. project management, communications, technical, etc.) is provided to employees along with tuition assistance for continuing education
- Agile Project Management, SQL Training
- Analyst development program which consists of mandatory training and rotational program
- Any work related training - up to 5k per year
- Application specific training, SDLC processes, and mentoring with senior analysts

- attendance at industry conferences and annual training - at least one course
- Based on individuals background and needs
- BI certification academy, SW tools training
- BI tools
- Big Data Training and Certification and general data management
- Books, online and group training
- Boot camp
- Boot camp, courses and certifications
- Both on the job and external
- Business / domain expertise training
- Business Analytics
- Our company's internal university - consulting training. Tool training in data integration and BI tools
- Certain projects may send to training, allow study for certifications. Our company has online training courses
- Classroom training and OJT (including mentorship)
- Classroom, self-study, OTJ
- Combination of ongoing training programs through our internal university
- Communication & presentation skills, requirements documentation, prototyping/agile methodology
- Company and domain-related: HL7, agile practices, requirements analysis, basic life sciences
- Company and off-site classes
- Corporate culture training, training in the tools we use, data, and analysis
- Couple of hours of training on how requirements gathering is done using proprietary frameworks, etc.
- Data Analytics, Mining, Hadoop, visualization, etc.
- Database, SQL Query Tools, BI Tools
- Depending on business unit - could be real world or theoretical work with scientists, no extra training, or OJT with various tools
- Depending on the department, something that will go deep on specific toolsets
- Depends on functional area
- Domain specific training programs
- Each staff member has an individual development plan based on their skills and experience. Some of the training in technical, some on business concepts, and some on communication skills
- External and internal courses
- We are forced to offer basic courses through HR, CBT, and hands on preparation and coaching, very much like high school
- Generally initiated by employee - educational reimbursement / career development
- Generally we run 1 week boot camps for the specific area they are hired into
- Hadoop, columnar database, Hive, SQL, etc.
- Hand-on experience with leading COTS tools
- Hands-on and experiential learning using real-world case studies
- Hands-on, mentoring, and on-line training
- I am with IBM Global Business Services, and we call our program "Consulting by Degrees." It transitions a college hire into their first consulting engagement by equipping them with the requisite skills described in the survey above
- If necessary, SAS, SQL and / or Marketing. Possibly Data Quality training
- In-house DMBI training as well as support of additional training and certifications not offered internally
- In-house courses, with varying levels of applicability
- Internal and external
- Internal courses, funding for external learning
- Internal training, some external training for business skills
- It is not specific to BI/BA more general consulting 2 year rotational program
- Knowledge needed for the job
- Learning Tree, Kimball University
- Mentoring from experienced Full Time Employees
- Microsoft courses

- Modeling, Analysis, etc.
- More internal on the job training
- New tools, Communications, Presentations
- OEM training for the tool-sets used at the company
- Often toolset such as Business Objects, Cognos, etc.
- OJT and Formal
- OJT, Mentoring, Shadowing
- On the job
- On the job, mentoring, and training
- On the job, new hires learn about how our organization actually works, how to understand and work with imperfect data sets, and how to distill insights for non-quantitative stakeholders
- Onboarding, basic consulting skills, certifications, master classes, mentoring
- On-job training in SQL, SAS, Web Analytics packages
- Online training from major learning institution on Project Management, DB Management, software training on Microsoft Office suites, Soft skills training such as Leadership training
- Our Developers and Consultants have a wide range of career enhancing programs available at IBM. Continued learning and certification is stressed
- Parallel programming, applied mathematics (for real world business challenges), general business
- PMP; CISSP; Agile Scrum
- Practically everything. Most of the grads cannot write for the business world, don't know how to do real research, they need help with time management, etc.
- Product specific
- Product specific training
- Professional training
- Project Management, management, etc.
- Provide funding for skill development. Providers of training are all outside out organization
- Relevant courses, depending upon skill gaps and potential
- Report Writing, Universe Creation, Advanced Analytics Concepts
- SAS
- Seminars, training thru various third party vendors whose services we use
- Soft skills, online training in topics of their choice, MS office training, mentoring
- Software certification and general training through the Learning Tree
- Software skills, data modeling, requirements gathering, facilitation
- Software training, data management and governance training, SQL Excellus
- Software/Tool training (e.g. MicroStrategy, Cognos, etc.)
- Specific developer tools, conferences on BI/DW
- SQL, Dashboards, etc.
- SQL, Data Management, BPMN
- Statistical refresher, programming basics, hands-on project involvement
- Statistics, use of software required for the job, speaking / presentation, leadership and other training as appropriate
- Strong on-boarding Curriculum, SQL, Advanced Excel, Power Pivot, Cube/OLAP
- Systems training
- TDWI Courses
- Technical and product specific to my company
- Technical tools, data modeling
- Technology certifications; Project Management; Business- specific training
- Technology training, business process training
- Tools, teaming
- Track of courses designed by an outside training partner
- Training depends on customer needs/employee professional development
- Training in Microsoft technologies, object oriented development and data management
- Training in specific software tools being used

- Training on BI and analytics tools, training in regards to our business model
- Training provided on SAP Business Objects
- Two weeks of orientation training - systems, working with case teams, etc.
- Using tools that clean up data (R, SQL etc.) - even Excel for smaller data sets
- Varies by job
- Varies, normally vendor-specific - Oracle OBIEE, Informatica ETL, etc.
- Various data analytical tools
- Vendor or other training is part of our ongoing career development for all of our employees
- We have an eight week training course in our solutions with a week of actual project work in the middle
- We have an extensive Analyst Development Program which is structured and lasts for 18 months
- We hire recent grads and teach them on leading BI / DM tools like SAP Business Objects, Informatica, Microsoft, IBM, others. In addition, we teach data modeling and other concepts
- We provide at work training to help familiarize the new hires with our business model, and make sure they understand the standards and operating model
- We train them in-house using real projects and materials that our people have used in the industry
- We typically pair the new BI/BA hires up with an experienced data scientist or engineer to provide additional on-the-job training and mentorship
- Web based courses, internal sessions
- Week-long training, online professional training

How can universities better prepare students for BI careers?

- Create "packaged" internship proposals. For us, it is difficult to envision how a program would work
- 1) CO-OPs or internships so that students understand what BI/BA really is and is not and 2) Experience in business (understanding market analysis, process analysis, or financial analysis) so that they understand the reason they are utilizing the data
- Adding a course on BI/BA along with concepts on DW and data marts
- At our company, the student recruits are phenomenal but they have a hard time passing our case interviews. The more the school can do to prepare these students would truly be beneficial
- Better communication skills and relationship with other people
- Better integration of business and technical disciplines
- Better Stats/Math skills, better writing skills, and more independent research
- Better training and understanding of current tools used in the marketplace
- BI/BA careers are not just about technology. Statistics and business classes are extremely important
- Bring in representatives with real world problems and give the students 2-4 weeks to provide solution alternatives and proof of concepts
- Business knowledge, BI modeling, comm. skills, best practices
- By partnering with firms like SAP and System Integrators (Deloitte, IBM, etc.) to tailor the BI curriculum to what is required in the marketplace. Simple book knowledge is no longer sufficient, although it is necessary as the first step
- Candidates with a natural curiosity of wanting to understand how things work is key. This curiosity makes them better able to research business processes; ask the right questions when forming business requirements; coupled with a detail-oriented nature to tighten up business requirements and processes. We believe universities can equip students with tools to get organized when presented with a project or business requirements. They can teach students methods to break down problems into manageable units/items, and tackle them by asking the right question to the right people
- Communication Classes, Analysis Classes, Case Interview Prep
- Concentrate on product/vendor - hands-on skills using a specific set of technologies
- Continue integrating real-world projects for actual companies
- Cover basics, such as relational database, operating systems (Linux), programming (java, c, or C++), and the newer topics
- Create an engaging course work using real-world data, and get the BI/BA students comfortable with tight deadlines, uncertainty, and the better/faster/cheaper viewpoint
- Develop certifications for experienced professionals who understand the business to be trained as data scientists

- Develop partnerships with leading enterprise technology companies (ex. IBM, SAP, Oracle, Informatica, MicroStrategy, Teradata, Salesforce.com) where the students develop new solutions on these technology platforms (co-innovation partnerships)
- Develop specialized majors for data analysis, information sciences, etc. that focus on relevant courses and real world examples. We need candidates that bring new ideas to the table rather than engineers and business majors who we have to teach ourselves
- Encourage and facilitate practical work experience opportunities
- Encourage certification on BI platforms, such as SAS and R
- Encourage internships and research efforts to build skills
- Encourage students to get certified in latest BI related software products. Provide rigorous practical coursework that align with real-world business needs
- Encourage students to participate in crowdsourcing/x-prize contests around analytics. They are starting to crop up in lots of places. Great way to get real world experience
- Engage with businesses to have more internship programs
- Ensure that students truly understand the types of questions to ask and why to ask them. Then make sure they have competency with the tools to get those answers
- Expose them more to applying quantitative problems, not just theory and methods, but use of them, especially statistics and visualization. Visualization and the ability to deal with uncertainty are most important
- First, get out in the communities and promote internships. Second, work on basic communication skills with emphasis on English comprehension
- Focus on business challenges solved by BI/BA capabilities
- Focus on stronger interpersonal skills and improved problem solving capabilities
- For grad students in particular, they need to understand that even though they have advanced degrees, they will be starting at the bottom and need to prove themselves within their work environment in order to progress in their career
- For those wishing to enter IT, but not as a developer, it is essential to "think" like a developer in some ways. By that I mean have a logical thought pattern that a developer can follow. We experience difficulty when placing BA people in front of a customer and having them promise them system enhancements that technically can't be done without serious security and authentication issues. Requirements gathering training is essential because some analysts we have are not well versed in the proper questions to ask our customer to pull out what we need. We like to "measure twice, cut once", and our users are pretty IT challenged
- Getting companies to sponsor BI/BA projects for real-world exercises. This would lend credibility to their knowledge and exposure to business uses of data
- Give projects where students can display the results and code used to generate the results on the web
- Give the students real BI business cases. Focus on locally common used ETL tools and reporting tools. Give the students a higher level understanding for SQL. Make the students better at implementing reporting needs to real life. Make sure the students can convince a customer how a BI solution is valuable for the business
- Give them a solid foundation in data - relational and non-relational - and statistics and machine learning. Give them a solid foundation in the physical side of these as well as the logical
- Give them hands-on experiences with analytical tools. Provide SQL skills (important)
- Give them internships with real-life experience
- Greater exposure to real world topics and issues
- Hand-on experience with leading COTS tools
- Hands on, theory
- Hands-on BA course. Semester Projects around requirements gathering
- Have them complete hands-on projects with the current/emerging technologies
- Heavy focus on SQL training
- Help them understand how to relate the data issue that they are solving to a business problem
- Help them understand how to work with BI customers (decision makers) to get from data set to dashboards, visualizations, or whatever they need. They need to be able to be proactive in providing options that can then be tailored
- Hiring is investment intensive from the corporate perspective, and more and more frustrating. Many new recruits lack the basic knowledge required to function in a professional work environment, lack the traditional work ethic, and more importantly lack the ability to transfer skills and adapt to changing customer and corporate

requirements. With a leaner more senior professional work force there is not sufficient time to mentor new recruits and run the business. So much time is spent coaching and teaching the very basics. The expectation is that new recruits must/should be better prepared, demonstrate initiative, critical thinking, and have a degree of independent action. Limited mentoring time should be spent refining the basics and developing new skill sets but that's more than often not the case. Those that do come with these skill sets advance quickly to better pay and positions of increased responsibility and autonomy. Those without or who fail to demonstrate these traits often end up in the lower 25% of corporate performers, require additional time to manage, and are often forced out or leave within a year. Many of the senior management are baffled that newer recruits don't master many of the basic skills in high school or even at home. Our HR dept. is forced to pick up the slack in helping assist recruits with the basics. Sometimes it seems like directors and managers have to raise a second family but in the professional work space

- I think that synergy between companies such as IBM and the academic community need to increase. There needs to be alignment not only with the technical aspects of Business Analytics, but the real world application of those technologies
- Improve partnerships with DAMA, TDWI, IIBA, and PMI
- Intern partnerships are critical so that students can get the experience. It is a catch-22: we cannot hire someone without experience yet they can't get experience without getting a job
- Internships
- Internships / partnerships with corporations -- real world experience is everything. Research and academic exercises are not preparing the next generation of BI/BA workers properly. Avoid the temptation of endorsing certifications above practical experience. The PMP serves as a fantastic example of folks passing a test, though who can't manage a project on day one. Experiences are truly the best learning experience to be encouraged and incorporated
- Internships and business guest speakers
- Internships, projects, "real-world experience"
- Internships--exposure to a variety of industries
- Interview prepping; demeanor, asking questions, etc.
- Introduce analytics and data management programs
- Lack of exposure or awareness of real-world tools (e.g. Teradata). Students only exposed to free/open source low end tools and view the world through that. They think that Hadoop is a good platform for running SQL for example
- Make arrangements for real-world project and internship experience
- Make students take messy data and clean it up. The data clean-up takes 70-80% of the time for most of our projects
- Mastery of the basics (SQL, schema design, and understanding business requirements). We find that we have problems finding people who understand the questions that the clients should be asking of the data
- Merge general business education with information systems and data management fundamentals
- More case studies and more participation from local thought leadership in BI/BA
- More case studies, practical application
- More cooperation with businesses to create course work curricula that includes working on real projects in real world
- More depth in BI/BA coursework. Providing knowledge and skills in real-world BI and DBMS tools. Providing vision in the evolution of BI/BA knowledge and tools
- More experience with ambiguous problems, less defined solutions in coursework
- More hands-on experience with relevant BI tools
- More hands-on projects with real companies; internships, etc.
- More industry interaction. Some degree of prep before putting them into a company
- More internships
- More management/critical thinking
- More practical analysis training and experience -- not just theory or the technical how to, but actual training on analysis
- More practical applications
- More practical experience. Produce people who can understand both business requirements and IT/data products

- More practical projects
- More real world projects
- More real-world classwork by partnering with corporations
- More software tool exposure
- More tool experience
- More work on understanding the data and its relevance and/or importance to making critical business and marketing decisions
- Much better understanding of the fundamentals. That is, not only knowing "how" but "why." Also knowing how to do quality control
- Providing more real-life, hands-on experience
- Need a strong base with a wide breadth of skill-sets, not focused on emerging technologies, which rapidly change
- Need to prepare students with a good balance of business and technical skills. Too often a student is weighted too far in one direction
- Networking with peers - importance to maintain and broaden personal professional network
- On the technical side, use current tools. Emphasize the business analyst skills - softer skills, such as teasing out requirements & designs from user needs
- Partner with companies. Based on company culture, there is NO one-size fits all skillset for someone working the BI/analytics space It depends on what the company needs. Heavy technologist vs. heavy business-savvy person that knows the depth/breadth of technology. We find that our BI/analytics team is constantly evolving, which makes placing candidates a moving target
- Partner with companies to train students using business cases. Also, implement commercial BI/BA products so that the students can be ready when they enter the professional life
- Partnerships with large employers that emphasize internships
- Practical opportunities for the student. The university should continue to fully understand and mature public and private enterprise requirements for BI/BA and then scope curricula to deliver coursework that will deliver on those requirements
- Practical projects for business deals
- Prepare students with a blend of technical aptitude, business fundamentals and spirit of creativity. As they develop business savvy in the workplace (through experience), they'll be empowered to create smart analytical/technical solutions that solve relevant business problems. People with "bridge skills" are rare
- Prepare them for the practical realities of companies: limited resources; bureaucracy/red tape, org politics/silos, resource prioritization, etc.
- Prepare them with real-world situations to get a better understanding of business processes, more practical knowledge. Better communication skills
- Programming, critical thinking, and communications skills are crucial. Critical thinking is difficult to evaluate based on resume alone but you can evaluate this during an interview. Students who can navigate well through problems have a leg up. A strong confidence level in databases and data management helps quite a bit. A student candidate with dual business and computer science/information systems major stands out quite a bit
- Promote internships and building relationships with employers
- Provide as much hands-on experience as possible in working on practical business problems using modern tools and techniques. Such experiences could be gained by leveraging course projects, and establishing strong internship programs in which students can gain experience
- Provide better access between students and alumni for internships to give students more real world experience
- Provide practical business experience with real-world data
- Provide real world exercises with companies and how they are using BI/BA skills
- Providing more practical knowledge and experience with real world technical tools
- Put them on paid or unpaid or funded internships
- Real business world experience; real data
- Real world case studies like HBR
- Real world projects, experience, and tools. Less theory & more hands on training
- Real-life projects and hands-on exercises. Partner with business to develop them. Develop training for professionals with deep functional background so that the can apply analytics into their existing areas. Provide online training

- Real-world customer interaction skills
- Require internships
- Requiring internships as part of credit hours
- Simulate business problems which require students to apply critical thinking and creativity to arrive at what questions business leaders might ask, what data should be mined, and how to best visualize that data
- Simulate what kinds of questions businesses might ask and review how to display answers. Visualization is truly an art that can be taught. Working through exercises and discussing different graph uses in business cases would be very beneficial experience
- Skills can be easily taught. However, attitudes on how to approach work and interaction with others are generally harder to teach on the job
- Specific tracks focused on analytics, business requirements, emerging tools and technology
- Real world projects using real data. Would also like to see more general experience with JavaScript in our space – it's really lacking and is such a critical need out there today. Most candidates with analytical skills want the consultative positions being in front of clients but there are only so many of those jobs. Need more data nerds that actually work to provide the decision science solutions
- Stay current!
- Students must have better communication and critical thinking skills
- Subject matter expertise is very important to produce and understand result sets. BI/BA needs to be broadly applied and students must be encouraged to use critical thinking to derive insights
- Teach them how to communicate and work towards actual data/analysis experience rather than textbook research from years back. This environment changes completely every 5 years
- Technical courses with the actual tools that we use (e.g., database (oracle,db2,teradata), ETL (Data Stage, Informatica), query (BOBJ, Cognos, MSTR)
- Technical/Fundamental Concepts are very important. Tools change/differ but students can pick them up
- The Intelligence community has a dearth of opportunities for US Citizens with a willingness to undergo the clearance process and work on data mining, text mining, and Big Data/Cloud programs. We need to target and recruit students who enjoy analytics so that they get both the software programming and business skills to ensure that there is a bench of talented citizens to support this need
- The more exposure you can provide to real business challenges and actual data sets, the better
- There are two areas of resources that we recruit. Typically we are looking for customer facing resources with undergraduate business skills, great communication skill, and structured programming experience. The issue with these resources is the structured programming experience typically isn't strong enough with undergraduate programs. On the BI side, we typically look for CS or Engineering students for their strong programming skills, but the issue with these resources is their communication skills. We have been successful finding good candidates though
- There is more data available in universities than the real world. Make it available and show the value of Big Data with practical experiences
- They need to be doing applied work, solving real problems while doing their coursework. Make them write more - not just papers, but creating executive-level briefings
- This doesn't just apply to BI/BA, but helping students to understand that they won't lead the department day one. Top performers will be on the fast track, but often students are disillusioned when they don't get the recognition of a manager, day one
- Through collaboration with data and stats savvy enterprises like Procter Gamble, Wal-Mart, Exxon, Goldman Sachs, Homeland Security, FDA...
- Throw out the undergraduate curriculum, apply the Graduate Curriculum to the undergraduate, and upgrade the Graduate Curriculum.
- Train them in three primary areas (order of importance): 1. How to get along w people; 2. Business domain knowledge; 3. Technical skills in current applications (BOBJ, SQL, Tableau, etc
- Understand that it's not just about getting the data - it's how it can be used to make decisions
- Universities need to better partner with companies in getting the necessary skills aligned with the future. It's not enough to just have technical skills but students need to possess good communication skills and the ability to apply and work within a business environment. Social media is the next big thing, and BI is hot on analyzing the data but no one has the ability to take the data and act on it in real time. For example I can get at social media data but if I wanted to address a customer by sending a coupon or discount etc., one cannot. In addition,

BI in the social media space needs to be able to be integrated with the business process models for sale, customer service, billing, etc. Still a ways to go

- Use of better technology and fewer group projects; allow students to learn as individuals or in small groups. No hiding
- Use real-world scenarios and examples. Partner with a firm (business owner) and vendor (Software) to develop a curriculum or internship program
- We are finding a big disconnect regarding the students and the preparedness for the actual interviews. They do not do their homework in regards to the company etc.
- We see a shift to Computer Science intersection with Statistical Analysis. As a result, more focus on big data, open source tools, R programming, versus SAS, etc.
- Work experience on real business problems. Specific experience/certifications with the tools used in the real world
- Work with large data sets and techniques for working with data at scale; using a variety of different tools - many people are "one-trick" ponies
- Working with data visualization tools that are industry standard as well as using programming languages built for data analysis like Python
- Would like to see more students with practical, hands on experience with developing quantitative solutions to business problems

Is there anything else to share?

- A recent graduate is a tough sell for a BI/BA position at our company due to lack of experience with our tools and/or practical business experience
- Ability to clearly communicate is absolutely critical
- Collaboration skills are essential as are communication skills
- Communication skills are very important and often overlooked. This includes written (email, briefs) and oral communication. Also, I have found that many of the new graduates jump into solutions or specifics without focusing on overall business needs (immediate to future). I see this in many folks with IT degrees. I actually prefer people with limited IT skills in the role of analyst who have real world business experience under their belt
- Although the current company I work for does not hire BI/BA professionals, when I did in my past a certification in this discipline was always a major plus for someone if they have a certification in their field of study
- Analytical ability and natural inquisitiveness are more important than technological skills. Those are the most important skills I look for
- As a BI practitioner, it's hard to train people, and it's hard for them to get what Business Intelligence is. It's not something everyone easily gets or understands. Also, a lot of background helps understand how things relate (Database/ Star Schema/ ETL/ Reporting/ etc.)
- BI/BA is more end user-oriented. So, the core technical skills should be well augmented with skills in requirements gathering, defining a solution architecture, and communicating effectively with non-technical folks. It requires a lot more personal interactions with non-technical business users, so a mindset beyond hard-core programming capability must be inculcated within the students from the outset
- Continue the integration of business and technical skills. Students need to have both types of knowledge
- Create ways to present data that is compelling to decision makers
- It is critical to understand the business. It's not a technical position
- Data Governance, Data quality, metrics, and business and IT architecture are critical to the success of BI/BA. Understanding data quality criticality levels, preventive and detective control mechanisms, manual and automated touch points for data flow
- Data Science is an emerging role that has been difficult to staff. The ability to understand a new dataset, manipulate it and visualize it in a compelling way is very important in my industry
- Do not focus solely on tools because they are a small part of the puzzle. Focus on outcomes and expected results (process and business change/impact)
- Encourage students to get involved in Professional Business Groups
- Exceptional BI/BA-oriented people are very difficult to find, but they tend to be those who have some significant background in programming and/or database knowledge

- For those of us in the workforce who are attempting to drive the next stage of information evolution, it would be great to see graduate-level online degrees emerge that blend information architecture, statistics/analytic, data management and emerging technologies
- Get serious about teaching young people and CE students with real practical skill sets that can be applied in the real world and NOT just a brand of cool-sounding courses that employers can't use
- Getting potential employers to do cases/capstones is always a good idea. (We do this with CMU, for example--- it works very well.)
- Good know-how of technology, and business as well (e. g. CRM, marketing, ...)
- Hands on Experience!
- Hands-on, hands-on, hands-on. The more complex and challenging the problems that the students can directly tackle, the better positioned they will be to succeed in real world settings
- Hit the basics, give student some fundamentals so we can build and develop newer, dynamic skill sets required in the business world geared to our customers' needs/requirements
- I really find it useful in my job to have had training in analytics and especially SQL
- I think that universities and academia would benefit from partnering with commercial BI/BA vendors. The competition among the BI vendors is immense and new/complex products are being introduced all the time. Partnering with the vendors would allow universities to introduce these tools to the students. It will help students learn the tools way before they start their professional careers. It can also help vendors allow students to improve/enhance the BI products. Universities could also introduce a minor in BI
- I would like to see an increased focus on Business Analytics in the academic world. Data is clearly going to be an ongoing issue for the foreseeable future. BA will play an important part of that. Greater synergy is paramount in my mind, help students gain access to real world scenarios and situations. You will find that most if not all highly respected BA practitioners in the field will have a very different view of what is pragmatic and realistic as compared to their in-house colleagues. For example, we could have a highly technically proficient individual that would flounder in the field due to an imbalance in ability to communicate with and understand our client's needs
- Innovation is key - as is communication and tailoring your communication to the audience with whom you are interacting
- Insurance provides a lot of opportunity for new data analysis. Our company has been on the forefront of packaged OLTP products and has only started to scrape the surface of OLAP
- Interpersonal skills, communication skills
- It seems like the focus of most academics concerning BI is a little outdated. It is difficult for businesses to keep up with the progress and changes concerning BI. It is therefore crucial that the students are up to date with what stirs in the world of BI. There are too many cases where we get students who are outdated in their approaches to BI
- It seems like there is a strong disconnect between the entry-level IT workers in BI/BA and the entry level business workers in BI/BA. In particular, the entry level IT workers appear to have little understanding of the complexity of business processes, strategy and operations -- so they tend to oversimplify the problem of reporting and analysis. They are overly focused on the technology challenges of data movement and storage. On the other hand, those entry level business workers in BI/BA roles tend to oversimplify the technical complexities and organizational risks inherent in mismanaging those assets. They have built datasets on their own in tools like MySQL, Access, SAS, etc. as part of their college studies but really don't have any grasp of what the overall technology infrastructure in a company of any size looks like. Given the fact that BI/BA sits on the bubble between IT and the Business, I think the academic programs targeted at developing talent for this area need to assist students in each focus area to understand enough of the other to work effectively
- It's common for me to go to a client and see poor BI/BA capabilities. Typically, the BI/BA is based more on IT requirements and out of the box reporting, rather than having the reporting based on business-developed KPIs
- I've certainly noticed that while skills such as SQL and advanced Excel are not necessary in my position, individuals who possess these skills are leaps and bounds above those who do not
- More awareness of BI/BA should be done. A majority of the Government Dept/Agencies still view it as another reporting tool. The real information mining and business intelligence hasn't occurred yet as it is not considered a value add
- More experience with BI tools
- More practical, less theoretical – more case study work

- Most newcomers to the practice have little or no understanding of the principles and critical concepts of database management systems and database design and therefore struggle to design and implement effective solutions for BI
- My company staffs projects primarily through relationships with other companies, and I would bet that a large number of very small companies do the same. I realize there might be very talented university BI/BA students out there but without a network or channel to small companies (and no way to prove expertise) it will be hard for the very small company to engage with them. There is a dichotomy between small companies relying on proven reputation and young people not yet having the chance to prove themselves. Recognizing that especially in economies like today where young people often just need a chance, I wonder if there is a solution around this?
- My personal observations show students focused on gadgets and some industry hype but lack fundamental concepts some of which continue to be the main underpinning for many of the latest technologies
- Needs are growing quickly
- We are not specifically hiring BI/BA professionals, but the skills are directly applicable to our data analyst roles
- One of the challenges today for employers is how to define "Big Data" and how it is materially different from the data being gathered and analyzed today. Many business leaders are reluctant to make bigger investments in data solutions because they don't fully understand the benefits that result from gathering and analyzing unstructured data along with the basic structured data. Additionally, business leaders seem to be moving toward more analytical skill-based hiring than before in an effort to reduce the dependency on IT personnel for insights
- Overall someone who is comfortable translating business requirements into an LDM/PDM and who is very comfortable with SQL will do very well
- Please ensure that your graduates are comfortable with data cleansing and the process involved in finding and fixing data integrity issues upstream as well as in the existing data warehouse. Too often new hires straight from academia are surprised when they need to figure out how to extract the required data and cleanse it before conducting an analysis
- Provide a great foundation in Data Modeling, Systems Approach, and user interface
- Providing realistic examples of BI/BA to students through case studies and hands-on experiences would provide an understanding of how solid, reliable information can empower a business entity with making key decisions
- Similar large group projects lead to similar stories during interviews. Try to diversifying and encourage unique projects. (No more social media-based work. I get it that everyone is on Facebook.)
- Some of the folks who support our BI related tasks are contractors with skills in specific COTS BI tools
- Students may consider building resume supplements to enhance their opportunities. I would encourage a student to develop visuals of data projects, dashboards, reports, etc. that they have created during the school year. A few key pieces of completed work using accepted business tools would be invaluable during an interview
- Students must gain practical experience in ETL, data warehouse design, and development and gain experience with industry leading tools (Informatica, Microsoft, SAS)
- Students need real world experience - work coops and internship experiences need to step it up. Many students are not getting what they need - their assignments need to push them, and that is not happening consistently
- The banking industry offers lot of opportunities for BA analytics to reduce compliance risk and enhance customer experience
- The BI world seems swamped by tool jockeys. It will be important going forward to have BI/BA professionals with breadth and depth of business functional skills, a systems engineering perspective about the technologies that are used for DW and BI, a general knowledge of the IT landscape and data center environment, and the ability to see how BI/BA improves business performance
- The BI/Analytics space is set to grow immensely in the coming years according to leading market research firms. While visualization is an important component for the consumption of information, the real needs are on the integration and governance of data. Data is the new oil
- The biggest problem that I have seen with hiring college students is the lack of real-world experience. We compensate by providing training when we hire them. Universities can better prepare their students by providing opportunities for them to work in simulated industry projects instead of just teaching programming and database skills
- The biggest problem we have in hiring students is the lack of directly applicable business experience and the lack of knowledge of real-world technologies. Without those, client's don't want them working on their

projects. So even at a low entry-level salary, students become more costly to the company because of their bench time compared to an experienced, higher-salaried person that can be fully billable right out of the gate

- The DOD is very focused on use/development of vocabularies and ontologies to facilitate information sharing, including business intelligence/analytics. It would be good if students had at least a high-level understanding of this area, just as they should of enterprise architecture
- The government is overwhelmed with information that is not integrated or interoperable. Therefore, they struggle every day to make important decisions with inadequate information. They realize the problem, but do not know how to solve it given the distributed architecture they have. There is a movement to think Enterprise, create DWs, and mandate new systems report out so that metrics can be collected and analyzed. The problem is - this is retrofitted and will take some time. They need to phase in this process over time and have a better understanding of what they want to measure in order to make informed decisions in a fiscally-constrained environment. This is what I have been working with customers on over the past few years. I see the same problem over and over. It is solvable, but will take time
- Having specific experiences in BI would be very attractive coming into the workplace
- BI MS degree should be wider in scope, which means more time to cover and digest all subjects
- The US economy demands more MIS/CIS graduates. Job positions in the future will be less oriented around "BI developers" and more around "Data Scientists." Data Scientists will use tools (ex. SPSS, SAS) to mine trends from large volumes of data, giving business context, and identifying solutions to business problems (ex. out-of-stock situations for retailers and consumer products companies)
- There is a big gap between developers of BI systems (data warehouses and reporting layers) and the business analyst who should be articulating the analytical needs of that system
- There is a growing need for Data Scientists
- There is an opportunity to better prepare and enable students entering the job market by providing opportunities to apply acquired knowledge and skill to solve complex (and real world) business problems. A student who can clearly demonstrate (e.g. show evidence of their work, clearly describe the process, etc.) their ability to apply their knowledge and skill in a practical manner to solve business problems will go a long way to making them more competitive in the hiring process
- There is huge gap in demands for trained data scientists
- There seems to be a significant tradeoff between real-world preparation and theoretical rigor. I need students to have both
- These are important skills and are currently in short supply. The need to make sense of big data will only grow
- Understand that the academic ideal is not usually what exists in corporations
- Understanding the standardized tools for BI would be helpful
- We are in the process of converting to SAP as has a significant proportion of our industry. If not already being addressed, curriculum that addresses the nuances and challenges of fully integrated enterprise management systems could helpful in preparing students for positions in the workplace. Specifically, experience with data warehousing and data mining could prove to be useful, particularly if it could be done in the context of specific software suites
- We are interested in candidates who understand the importance of business intelligence, who know how to present information, and who understand how to contextually apply information to support strategy development
- We haven't needed to hire an individual with a BI/BA background recently. However, we are currently competing for projects/programs that have a BI/BA component and could be hiring such an individual or individuals in the future. Typically, our company recruits experienced hires - this has been a function of the labor categories and rates bid on our contracts
- We need more data scientists with skills in statistics, modeling, understanding structured and unstructured data
- We need to revive CRISP-DM or other data mining standards for the profession. Data expertise in the future will be like financial accounting is today; we need the equivalent of FAASB
- We value internships, prior work experience, and the desire to learn and problem solve
- I would have benefited greatly from having more practical application of BI in the business world, such as using BI tools to perform analytics, maybe participating in a group project that would grow that skill set
- I would like to see more schools with specific BI areas of focus within the business school
- Written communication is still key for business. In addition to customer communication, employees are expected to write blogs, create instructional materials, and contribute to knowledge bases

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For more information about this survey, please contact Barbara Wixom, University of Virginia at bwixom@virginia.edu, Thilini Ariyachandra, Xavier University at ariyachandrat@xavier.edu, or John Mooney, Pepperdine University at jmooney@pepperdine.edu.

Barbara H. Wixom is an associate professor of IT in the McIntire School of Commerce at the University of Virginia and a research affiliate at the Center for Information Systems Research at the Massachusetts Institute of Technology's Sloan School of Management.

Thilini Ariyachandra is an associate professor of MIS in the Williams College of Business at Xavier University.

John Mooney is an associate professor of IS and Technology Management at the Graziadio School of Business and Management, Pepperdine University and a research affiliate at the Center for Information Systems Research at the Massachusetts Institute of Technology's Sloan School of Management.