



2020 Analytics Capstone Projects – Request for Proposal

We welcome you to the 2020 Master of Business Analytics (**MBAn**) Capstone Project application process. This document will outline what is required to propose an analytics project for your organization to work with our MIT students and faculty.

What is the MIT Master of Business Analytics Program?

Launched in March 2016, the MBAn program is a world-class 12-month rigorous degree program focused on applying the tools of modern data science to solve real-world problems in business and society. The full-time data science program includes three semesters: fall, spring, and a summer capstone. Students in the program have strong mathematical, computer science, and statistical backgrounds. We are a STEM classified program.

What is the Class Profile?

The MBAn Class of 2020 profile is below:

- **Class Size:** 60 students, **Admit Rate:** 6%, **Females:** 40%
- **Average GPA:** 3.9/4.0, **Average GRE Quant:** 168/170
- **Average Work Experience:** 6 months, **Average Age:** 23 years
- **Undergraduate Degrees:** Aerospace Engineering, Applied Math, Chemical Engineering, Civil Engineering, Computer Science, Economics, Finance, Industrial Engineering, Management, Mathematics, Mechanical Engineering, Operations Research, Physics, Statistics
- **Undergraduate Universities:** Berkeley, Bocconi University, Carleton College, Carnegie Mellon, Ecole Centrale Paris, Ecole Polytechnique, Emory, Erasmus, Georgia Tech, Haverford, Imperial, Indian Institute of Technology, Johns Hopkins University, KIT, LSE, McGill, Michigan, MIT, Nanyang Technological University, NYU, Purdue, Rice, Telecom ParisTech, University of Queensland, UCL, UCLA, UCDS, U.S. Air Force Academy, U. Miami, U. Mississippi, U. Pittsburgh, U. of Toronto, UVA, UT Austin

Please refer to the Class of 2020 preview book for a better understanding of our students' backgrounds. The official Class of 2020 resume book will be available to organizations in early December.

What is the MIT Analytics Capstone Project?

The Analytics Capstone Project reflects MIT Sloan's commitment to action learning. In building a portfolio of proposals from which our students will select, we are looking for projects that fit in a variety of industries and sectors, address a diversity of types of problems, require advanced depth of analysis, and have insured availability of clean and rich data at the outset of the project.

Your organization is invited to provide your data, time, and insights to enable student teams to deliver actionable solutions and impactful findings. From the organization's perspective, the project should have **high business relevance** and value, but should not be thought of as a consulting engagement. Detailed project descriptions are critical since some projects will not be selected.

If your organization's project proposal is accepted, you will be invited to campus to pitch the project to the MBAn students during the third week of January 2020 on Pitch Day. During this time, you will be given the opportunity to get to know the students and conduct interview sessions. You will also be able to network with peer host organizations.

Two MBAn students will be matched to each project. The students will work on the project for a period of **7 months**. Throughout the spring semester, students will work remotely from campus with your organization as well as with a dedicated faculty advisor. Each student is expected to devote approximately 10-12 hours per week working on the project. Following successful completion of the spring term, students will work on-site at your organization for a **10-week full-time summer residence period** with guidance from their faculty advisors.

At the end of the 10-week summer residence at your organization, students will submit a detailed project report, and your organization will be asked to provide a performance evaluation. The students will be required to deliver a final presentation to both your organization as well as a group of faculty from the MIT Operations Research Center.

Who are the Host Companies?

The host companies are from diverse industries. The common thread is that the proposed project is consistent with the analytical themes of the course. Please refer to page 5 for sample companies we have worked with in the past.

What is the Project Proposal Process?

The process starts with submission of the "**Request for Proposal**" included in this document by October 1, 2020 (see page 4). The project proposals are evaluated by the MBAn academic team and accepted projects are presented to the students in January for bidding and matching.

What Additional Documents are Needed?

We ask all host companies to sign an **NDA** (included in this package) because confidential information will be supplied to the Capstone teams. The Dean signs all NDAs on behalf of all student teams. Careful consideration should be given to the nature of the data that will be required for the course because MIT only wants to execute NDAs when confidential information is being shared. Otherwise, MIT will keep all company information secure and destroy it at the end of the project, regardless of the existence of an NDA. Company NDAs and student-signed NDAs are not permitted but we will consider reasonable edits to the standard NDA template. MIT and your Company will also sign a **Statement of Work** (included in this package) which acknowledges the scope of the project and each Parties' roles and responsibilities.

It is important to start the NDA and SOW process early so that all necessary documents are signed before the teams select projects.

Are the Projects Considered Work for Hire or Research?

No. The students are getting course credit for this activity which is considered an experiential student project, not an internship or work for hire. The projects are not considered research. They are student projects resulting in a final presentation to Company management and a final course paper for a grade. No external publications of the work is anticipated.

The project results in students using academic tools applied to company information to make recommendations about the proposed business issue. MIT does not consider these recommendations to be intellectual property.

The Company has a broad license to use the students' work and embed them into business processes

but the students retain ownership of their work product. As such, projects should not require use of trade secrets and care should be taken when Company intellectual property is shared.

How do Students Obtain Company Network Credentials?

In the summer, it is usual for companies to credential the student teams on their networks to complete the project. All additional credentialing documents must be tailored to students, not interns, employees or consultants. Many of our students are on Visas that require that they maintain their student status throughout their degree program.

How is Company Information Shared with the Students?

Companies typically work with their IT department to figure out the best way to share information with the students. Some companies provide a company laptop to the students, others let students use their personal laptops. Some companies also provide access to a secure cloud server.

What is the Capstone Project Timetable?

Sep - Oct, 2019	Preliminary project discussions with host organizations
Nov 1, 2019	Final project proposals due. Selected host organizations notified and invited to Pitch Day
Nov 15, 2019	Host organizations and MIT execute and sign the NDA and SOW, Finalized Project Proposals to be sent to students
Dec 2, 2019	Class of 2020 Resume Book provided to host organizations
Jan 15, 2020	Sample Dataset due from host organizations
Jan 21-22, 2020	Host organization Pitch Day, interviews and matching process at MIT
Feb through May 2020	Students work on projects with host organization remotely from MIT campus – recommended 10-12 hrs per week per student
Jun 8-Aug 14, 2020	Students work on-site with host organization (40+ hours per week per student) for a 10-week full-time summer residence experience
Fri, Aug 21, 2020	Capstone Showcase held at MIT and final reports delivered to host organizations. Grade recommendations provided by host companies
Fri, Aug 28, 2020	Students graduate and are available for full-time employment

What Are the Costs and Benefits to Your Organization?

The cost to sponsor the 7-month Analytics Capstone Project is **\$60,000** flat fee per project. Each project will be comprised of two students and a faculty mentor. There is no fee for submitting a project proposal. The benefits to sponsoring a Capstone Project include:

- Help with addressing your organization’s business problems which require advanced analytical techniques and receive recommendations with descriptive, predictive and causal data analysis
- Access to high quality analytics students for recruiting, including invitations to networking activities, social events and formal interviews
- Opportunity to develop a deeper relationship with MIT Sloan, the Operations Research Center and all of our Portfolio of Programs, which include analytics degrees from the undergraduate to the doctoral levels

MIT will be responsible for conducting all necessary administrative duties for the students as well as providing for any reasonable expenses (including travel) incurred by the students while working on the project of up to \$5,000 for the 7-month term. This \$5,000 is included in the \$60,000 flat fee.

Request for Proposal

We invite you to propose projects for the MIT Master of Business Analytics (**MBAn**) students for the seven-month period from January to August 2020.

What is Required in the Proposal Submission?

We request the following information as part of your project proposal:

Project Title and Submitting Organization

Please indicate the name of your company/organization as well the division/team name if applicable. Please also indicate the location of the project.

Purpose and Nature of the Project

Please state what the proposed project is expected to accomplish in terms of the business analytics context:

- The particular issue or problem to be addressed, including the areas of business strategy or operations, challenges encountered in previous efforts to resolve (if any)
- The importance of the proposed project and anticipated impact (monetary or non-monetary) as well as actions that may be taken as outcomes of the project
- The technical requirements of the team (i.e. any specific programming languages or software tools)
- The specific timeline and key dates (if applicable)

Data Requirements and Access

By January 15, participating organizations must have a sample dataset prepared and available for review by the MBAn program team. We want to avoid a team being held up waiting for data at the outset of the project. We will work with you to resolve any questions surrounding this request and to verify that the data component of the project is ready for the students.

Primary Contact and Other Information

Provide the name, contact information, title, and role of the primary contact person for the project in your organization. Also include locations (city, country) of any on-site visits potentially necessary for data and information gathering.

Non-Disclosure Agreement (**NDA**) & Statement of Work (**SOW**)

MIT Sloan has a standard non-disclosure agreement (NDA) and statement of work (SOW) for all projects within the MBAn Action Learning curriculum. A copy will be provided to each project proposing organization as soon as your interest is indicated. The NDA and SOW must be executed by MIT Sloan and your organization for your project proposal to be accepted.

Further Information

If you would like to submit a capstone project proposal or if you have any questions, please contact the Master of Analytics program (BusinessAnalytics@mit.edu). You can find more information about our program at this website: <http://mitsloan.mit.edu/master-of-business-analytics>.

Capstone Project Statistics

- During our first Capstone Project launch in 2017, we had 8 projects from 6 companies supporting a pilot student class of 16 students
- In 2018 (our 2nd year), we accepted 15 Capstone Projects from 12 companies for a cohort of 30 students. Of the 6 companies participating from 2017, 4 returned for a second year.
- For 2019 (our 3rd year), we accepted 22 Capstone Projects from 18 companies for a cohort of 44 students. Of the 12 companies participating from 2018, 9 returned to offer another project
- For 2020 (our 4th year), we are seeking **30 Capstone Projects** for a cohort size of 60 students

Please click here to view final posters from for 2019: [2019 Analytics Capstone Posters](#)

Example Analytics Capstone Projects from 2018

#	Company	Location	Industry	Project Topic
1.	Anheuser Busch (AB-Inbev)	New York City	Retail	Revenue management optimization using zip-code level sales analytics
2.	BCG Gamma <i>(Offered 2 projects)</i>	Boston, MA	Consulting	Using machine learning to improve sales and marketing effectiveness in brick-and-mortar retail channels
3.	BMW Group	Munich, Germany	Automotive	Vehicle configuration optimization
4.	GroupM (WPP)	Copenhagen, Denmark	Marketing	Predicting consumer clusters within the automotive, real estate and retail industry verticals using digital behavior datasets
5.	IBM Watson	Cambridge, MA	Technology	Deep Learning driven dialog agents for reasoning over knowledge in enterprise context
6.	MailChimp	Atlanta, GA	Marketing	Identifying trending products for automated marketing
7.	MBTA	Boston, MA	Transportation	Daily route optimization for the RIDE, a door-to-door shared-ride paratransit service
8.	McKinsey <i>(Offered 3 projects)</i>	Boston, MA	Consulting	Using deep learning to build a natural language understanding system. Developing a predictive micro-targeting insurance tool.
9.	MFS	Boston, MA	Financial Services	Building an enhanced client segmentation model
10.	StubHub (eBay)	San Francisco, CA	Technology	Live event dynamic pricing: Identifying real time arbitrage opportunities
11.	Swiss Re	New York City	Insurance	Predicting and pricing the risks and impact of wildfires
12.	Walmart	San Bruno, CA	Retail	Unlocking eCommerce growth with a Machine Learning inventory management tool