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LATAM COLAB

Academic Program Plan Proposal and Recommendations

Abstract

This document proposes an advanced, postgraduate, STEM program in collaboration with MIT J-WEL and other collaborators, and strategic recommendations for success.

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TABLE OF CONTENTS

Executive Summary	3
Summary of Progress	8
Willingness to Pay Surveys & Analysis	15
Academic Program	19
Draft Program	23
Proposed Program Budget	31
Project Time Frame through Launch	34
Strategic Recommendations	36
Appendices	42



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EXECUTIVE SUMMARY

The following final recommendation report presents the immense progress that LatAm CoLAB has made in the 3-4 short months after submission to Uruguayan stakeholders. Through a combination of quick decision making, setting up of meetings, discussions of academic content, and responsive iterations, all stakeholders were able to propose contributions to the program. The consultants, Akiba Covitz and Lisa Lee, have synthesized all the proposals from potential university collaborators and worked with Uruguayan stakeholders to design an overall recommended academic program proposal that addresses the goals of LatAm CoLAB and integrates each collaborator's unique contribution. The final product is a forward looking, technically rigorous, entrepreneurial program contextualized for the Latin American Region.

ORIGINAL PROGRAM

LatAm CoLAB began as a STEM focused postgraduate program proposal designed by consultants Akiba Covitz and Lisa Lee, in close collaboration with, and under the direction of, representatives from the Uruguayan government and the Inter-American Development Bank (IDB). The primary features of the program included:

1. An academic framework modeled after an entrepreneurial ecosystem that cultivates innovation in the midst of academic learning
2. Multiple, leading U.S. universities in STEM fields as collaborators, instead of a single partner, contributing to five out of nine academic program activities:

- 1) Dedicate two faculty members to be in-residence (in Uruguay) for at least two weeks/academic year. Professors teach hybrid/online course for remainder of term.
- 2) Designate one professor/scholar in residence to spend at least four weeks/academic year at the LatAm CoLAB. Professors tasked with mentoring students and/or start-up leaders + could also take additional time in country as one element of sabbatical.
- 3) Agree to include our program amongst their approved overseas programs, contingent on a partnership with a study abroad provider like the Council on International Educational Exchange or [CIEE](#).
- 4) Admit as study abroad students at least 10 qualified (under the partner school's guidelines) Latin American students.
- 5) Agree to provide an annual stipend to the program to cover costs of running collaborative U.S.-Latin American programming.
- 6) Provide a university sponsored, one-month intensive course in Uruguay.
- 7) Partner in a two-week cross-cultural learning program where U.S. and Latin American students collaborate and spend two weeks consulting on a global project for companies/organizations in Latin America.
- 8) Provide consultation and advisory services to curricular or program development as part of an advisory board or committee.
- 9) Provide access to curriculum and course content that is used at the U.S. university.



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3. 12-months of blended learning (online + in person coursework)
4. Interdisciplinary learning, where technical knowledge is applied to innovation, real world problem solving, and ethical considerations
5. Project-based collaborative learning between students in a multi-use building for innovation and entrepreneurship
6. A hybrid program that was primarily online with two weeks per trimester in person in Punta del Este, Uruguay
7. An in-residence program that takes place in Punta del Este with live streamed lectures, plus in-person visits from US professors

The total estimated operating budget to run both such programs in the next three years was approximately \$33 - \$45 million. This total would include startup costs in year one, and student travel expenses for 100 students in each model in year two, and 300 students in each model for year three, for a total of 800 graduates at the end of 2020.

During the course of the design of the program, the consultants presented initial drafts of such a program to potential U.S. university collaborators with positive interest in participating. After presenting this program to representatives in Uruguay, the second phase of the project was commenced to identify and solicit potential U.S. universities as collaborators to the program.

UNIVERSITY COLLABORATORS

Interest was obtained at the Massachusetts Institute of Technology (MIT) through MIT's Jameel Abdul Latif World Education Lab (J-WEL) and the MIT International Science and Technology Initiatives (MISTI), and also at the Berkman Klein Center for Internet and Society at Harvard University (Berkman). After several rounds of conversations and meetings, the aforementioned parties arrived at soft agreements to collaborate with LatAm CoLAB, with MIT J-WEL leading in providing academic content and instruction. The Program on Negotiation at Harvard Law School (PON) was also contacted by the consultants to play a role in preparing graduates for the real world application of what they are learning in the CoLAB, and PON agreed. The summary of these conversations will be detailed in the Summary of Progress section below.

CHANGES TO ORIGINAL PROGRAM

Several modifications to the program were made in the second phase to accommodate various factors such as student interest levels, availability of U.S. instructors, and budget constraints. The major changes to the program were:

1. **Focus on a Hybrid (Blended Learning Model) only program:** During the course of the second phase of the project, the consultants conducted willingness to pay surveys to test student interest levels in both the hybrid and the in-residence programs at various price points. Initial survey results indicated that students consistently preferred a mostly online program over an in-residence program.



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2. **Include a Blended Learning Model, consisting of 3 modes of content delivery:**
 - a. Self-paced, online courses to be completed when convenient
 - b. Synchronous, online learning (virtual classrooms) with real-time interaction via Minerva Active Learning Forum. This will consist of live T.A. recitations and office hours to be supplied by MIT J-WEL and virtual classroom interactions with classmates.
 - c. Live collaborative learning in person via in-residence periods of the program.
3. **Design 4 academic periods with 3 in-residence periods:**
 - a. Period 1: Foundations (12 weeks online)
 - i. Program Kickoff (1 week in residence)
 - b. Period 2: Foundations II (12 weeks online)
 - c. Period 3: Entrepreneurial Application (5 weeks in-residence)
 - d. Period 4: Integration and Launch
 - i. Program Wrap-up (1 week in-residence)

After discussions with MIT and the two Harvard affiliates, it was decided that it would be best to leverage the availability of instructors during the U.S. academic summers when they could most easily travel to Uruguay to hold in-person lectures, seminars, and workshops for Latin American students. This provides the most value to all parties involved in the program when our collaborators are available. We also wanted to kick off the program with a strong orientation both to introduce the new learning model as well as to inspire and motivate students to persist through the rigorous course year.

4. **The initial location for starting the in-residence program will be at Laboratorio Tecnológico del Uruguay (LATU) campus in Montevideo, Uruguay:** After discussions with Uruguayan representatives, it was decided the program will commence March 2019. Because of the aggressive timeline, and budget constraints, it was mutually agreed that at least the first year of the program will start in Montevideo at LATU, which is a pre-existing entrepreneurial ecosystem that can easily be utilized as a location for students to do in-person coursework during the in-residence portions of the program. This will minimize the initial costs of setting up a facility in a place like Punta del Este, and because of ease of access to LATU campus, we can set up temporary facilities relatively quickly.

PROPOSED ACADEMIC PROGRAM

The following proposal presents a draft of an initial academic program framework and sample curriculum as a starter template for the LatAm CoLAB program. The course contents, dates, topics, and timeline are all **subject to change depending on the needs and constraints of all stakeholders**. We have integrated the following three core content areas into the academic framework, which will be provided by key collaborators:

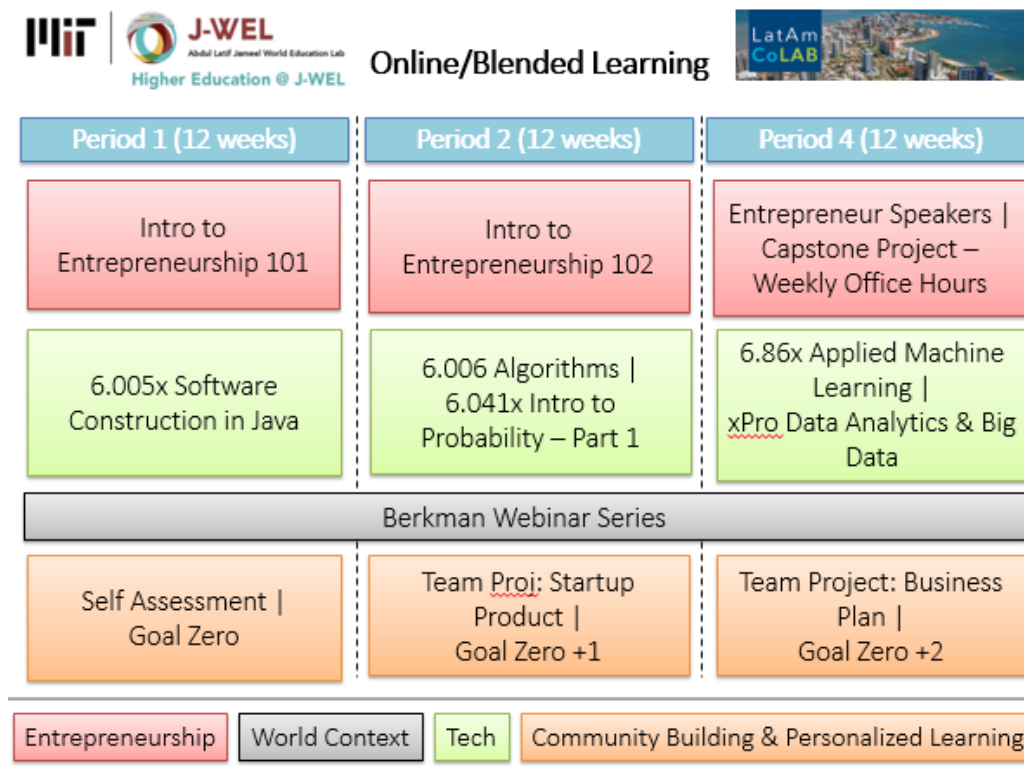
1. Technical Knowledge (MIT J-WEL)



2. Entrepreneurial Application (MISTI, 500 startups)
3. Real World Contextualization (Berkman, PON)

The blended learning approach will be based on a cohort model, centered around creating a strong and collaborative learning community where students interact with each other, work on assignments together, and learn from one another. Thus, specific community building activities will be built into each period of the program to facilitate both personal growth and peer learning. The following figures present a graphical representation of how we envision the overall academic program

Academic Program Overview

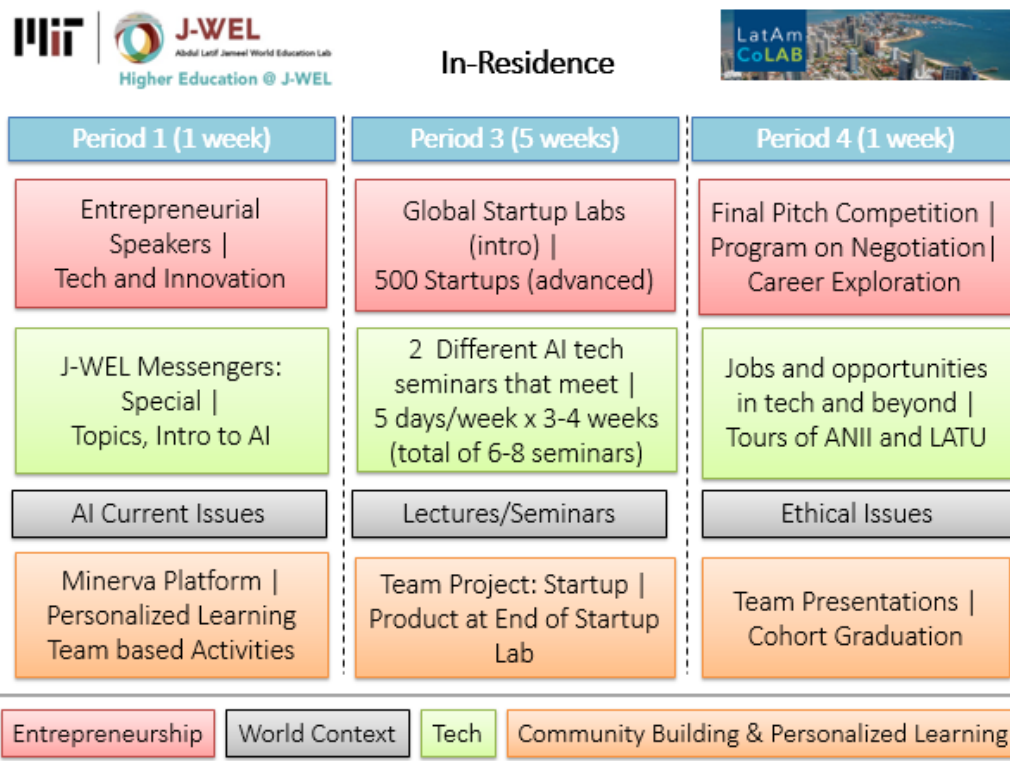




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LATEST PROGRESS

We ended our meetings with MIT and Harvard affiliates with soft agreements to enter into a collaborative engagement. MIT J-WEL proposed providing approximately 8 online courses with dedicated staff, with 5 courses focused on advanced computer programming and artificial intelligence. In addition, MIT J-WEL will provide instructors during the in-residence portions of program, capacity building training for Latin American faculty, as well as assistance with academic program design. The proposed budget for MIT J-WEL collaboration is approximately \$5 million USD over the course of 3 years.

MIT MISTI offered research seed funds, internships, and Global Startup Labs for a budget of approximately \$350,000 USD per year. Berkman Klein Center suggested providing a budget to them and an outline of our desired activities with which we can work out an agreed program. Our current earmarked budget for Berkman is \$100,000 per year. Negotiations with PON are also still ongoing, with Dr. Miguel Brechner, the representative of the government of Uruguay leading the CoLAB's efforts on the part of the government, taking over those negotiations with PON.



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SUMMARY OF PROGRESS

Since the submission of our initial proposal and presentation in November 2017, the proposal was socialized within various ministries in the Uruguayan government and was received positively. This initiated the second phase of the project for the consultants to take our proposed model and identify U.S. university collaborators willing to participate in the program and test the feasibility of our proposed program.

COLLABORATOR MEETINGS AND PROPOSALS

While the first phase of our proposal indicated positive receptivity from various universities such as University of Pennsylvania, Northeastern University, Harvard Extension School, and MIT, the most promising interest came from MIT. As a global, undisputed leader in technology education, digital learning, and creating entrepreneurial ecosystem, MIT was deemed to be the ideal collaborator for the LatAm CoLAB program.

In January, Ady Beitler and Fabrizio Oppertti along with other Inter-American Development Bank constituents visited MIT to initiate discussions for participation in the proposed LatAm CoLAB program. The consultants, Akiba Covitz and Lisa Lee, joined the meetings with Richard Lester, MISTI, MIT REAP, MIT J-WEL. Conversations were also initiated with [Berkman Klein Center for Internet and Society at Harvard University](#) and with the Carr Center for Human Rights at the Harvard Kennedy School of Government, though not in person. MISTI, J-WEL, and Berkman Klein Center seemed the most promising collaborators, and we pursued follow up conversations that resulted in proposals that MISTI and J-WEL submitted for our review. While we received initial proposals from each, for the purposes of this final report, we outline the latest version of proposals below as of April 27th, 2018.

MISTI

MIT International Science and Technology Initiatives ([MISTI](#)) is focused on sending MIT students abroad to gain hands-on international learning experiences and sends faculty abroad to promote international research collaboration. Our primary contacts for MISTI were Griselda Gomez, Managing Director of Mexico Program, and Eduardo Rivera, Program Manager of Chile, Peru, and Argentina. They provided a proposal for collaboration that consisted of:

1. **Research Seed Fund** - these are \$20-30k travel grants given to MIT faculty or researchers to travel to Latin America for the purposes of starting a research collaboration for 1-3 weeks.
2. **Global Startup Labs (GSL)** - is an entrepreneurial bootcamp that can run from June-August, or January.
 - a. A typical 6-7 week program includes a GSL team composed of 4 MIT students, 2 in the area of entrepreneurship (MBAs) and 2 in the technical side (Graduate in



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Computer science). They bring their own curriculum ([Sample Peru Curriculum](#)). Total cost is \$100k.

- i. We have asked them to truncate the program to 4 weeks, which they have condensed down to 5 hour days for 4 weeks with 2 MIT graduate students teaching. Total cost for this is \$80k.
3. **Internships** - these are 8-12 week internships (June-August) for MIT students to work in a LatAm host university, company, or lab.
 - a. Cost is \$10k for each student
 - b. LatAm CoLAB must provide and coordinate available internships locally
 - c. This can be a good opportunity for companies to partner with LatAm CoLAB - to have teams of interns of MIT students, but also include our students as well.

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The Abdul Latif Jameel World Education Laboratory (J-WEL), is a new center at MIT launched in 2017 that “seeks to promote excellence and transformation in education globally. As an incubator for change in education at MIT and around the world, J-WEL provides a platform that engages educators, technologists, policymakers, and societal leaders in addressing global opportunities for education through online and in-person collaborations, workshops, and information sharing events”¹.

Conversations with MIT J-WEL were initiated with Professor Sanjay Sarma, Vice President for Open Learning and Head of the Office of Open Learning, and a former close collaborator of Dr. Covitz with the founding of edX. Through initial conversations, it became evident that J-WEL would be a key collaborator in providing academic content. J-WEL is composed of multiple groups, with Higher Education being one of those offices. **It quickly became clear through working with the Higher Education group's leader, Prof. Hazel Sive, that “Higher Education @ J-WEL” has a visionary, outcome-driven approach that aligns well with the LatAm CoLAB vision. The MIT/J-WEL - LatAm CoLAB Program** will address key goals through customized collaborations with MIT faculty and staff. The principal aspects of collaboration with MIT J-WEL will center around:

1. Academic Content –

- a. Input, counseling, and advising on aspects of LatAm CoLAB curriculum
- b. MIT J-WEL faculty and affiliates as instructors for in-person intensives during in-residences
- c. Provision of five to seven technical online courses with live streaming of T.A./Facilitator sessions from MIT

¹ <https://jwel.mit.edu/about-us>



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- i. Below is a list of possible courses suggested by MIT J-WEL for the program, however due to course hour constraints, we only chose a few fundamental courses to include in the program. **These course offerings are SUBJECT TO CHANGE:**

- 6.004x Computation Structures (10 weeks; 6hrs/wk)
- 6.005x Software Construction in Java (12 weeks; 15hrs/wk.)
- 6.006 Algorithms (intro 12 wks; 12 hrs/wk) or 6.046 Design and Analysis of Algorithms (intermediate)
 - a. These are free Open Courseware offerings. With TA help, they should be useable for the program. There would be no additional cost for these except perhaps for a TA
- 6.008.1x Computational Probability & Inference (12 weeks; 6hrs/wk)
- 6.431x Intro to Probability Part 1 & 2 (16 weeks; 6hrs./wk.)
 - a. 2-part course, it may only be necessary to have one part
- 6.86x Applied Machine Learning (12 weeks; 8 hrs/wk)
 - a. This course is still being built
- xPro: Data Science and Big Data Analytics (7 weeks; 8 hrs/wk) (case-based)
- 15.071x The Analytics Edge (case-based) (12 weeks; 10-15hrs/wk)

2. Capacity Building –

- a. Pre-trainings for local faculty to facilitate courses
- b. Workshops to enable faculty to design curriculum and teach blended learning via J-WEL weeks that are two to three week workshops on the MIT campus.

BERKMAN KLEIN CENTER FOR INTERNET AND SOCIETY

[Berkman Klein Center for Internet and Society at Harvard University](https://cyber.harvard.edu/about) is affiliated with the Harvard Law School and other parts of Harvard University, and focuses specifically on legal and ethical issues related to digital society and cyber space. As an interdisciplinary component focused on responsible, real-world integration of technology, we believe the Berkman Klein Center was the ideal partner, because it:

"bring[s] together the sharpest, most thoughtful people from around the globe to tackle the biggest challenges presented by the Internet. As an interdisciplinary, University-wide center with a global scope, [Berkman] ha[s] an unparalleled track record of leveraging exceptional academic rigor to produce real- world impact. [Berkman] prides themselves on pushing the edges of scholarly research, building tools and platforms that break new ground, and fostering active networks across diverse communities."²

² <https://cyber.harvard.edu/about>



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In addition to research and education, Berkman also builds products and platforms that translate research into action. Conversations with Berkman were initiated with [Mark Wu](#), one of the lead faculty directors of the Berkman Klein Center and Assistant Professor at Harvard Law School. Prof. Wu has frequently traveled and stayed in Latin American and in Uruguay and Punta del Este in particular, and has extensive experience through previous roles at the World Bank and the Office of the U.S. Trade Representative, where he led negotiations on intellectual property matters on several free trade agreements. Prof. Wu readily saw the potential of the LatAm CoLAB initiative. Professor Wu set up initial meetings with his colleagues, [Christopher T. Bavitz](#) is Managing Director of Harvard Law School's Cyberlaw Clinic and [Rob Faris](#), Research Director of the Berkman Klein Center.

A key differentiator between LatAm CoLAB and other technical programs is the specific "world context" component of the curriculum that engages students in thinking about the impacts of the technologies they are using and learning. Partnering with Berkman will facilitate this key element of what the CoLAB will do and why learners will want to be part of it.

We are currently in discussions with Berkman and have proposed several options for collaboration that would be dependent on faculty and affiliate interest in participation. Our most current proposal for collaboration with Berkman includes:

1. **Weekly Online Seminar Series** - Berkman has an ongoing [Tuesday Luncheon Speaker Series](#), where leaders in the field discuss their research and ideas on the issues of the internet and society. Sessions are recorded online and can be curated in a separate web portal for LatAm CoLAB students for discussion.
 - a. We are also proposing a few live webinars from Berkman Fellows to discuss their research topics related to AI or other affiliates doing interesting work in the field.
2. **In-Residence Engagement** - We propose having either a Berkman faculty, fellow, or researcher come conduct a seminar or lecture series during each of the in-residence periods:
 - a. *Period 1 Kickoff*: One to two Berkman affiliates to discuss related topics such as: the responsibility involved in building digital technologies, the most pressing issues of the internet society, and emerging research.
 - b. *Period 3 In-Residence*: Two to four Berkman affiliates to hold a week long seminar series each on a related topic such as Artificial Intelligence and Inclusion, the impacts of commercialization of AI technologies, etc.
 - c. *Period 4 Wrap-Up*: One to two Berkman affiliates to evaluate project proposals for their ethical considerations and hold workshops on topics related to responsible startups, leveraging AI to solve societal challenges, etc.
3. **[Global Symposium on Artificial Intelligence and Inclusion](#)** - Berkman holds a global 3-day conference that brings in thought leaders from around the world to "address both the opportunities and challenges of AI-based technologies through the lens of inclusion,



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broadly conceived.³ In 2017, the conference was held in Rio de Janeiro, Brasil. While it may be too early to seek to host such an event in 2018 in Uruguay, we offered the idea and Berkman remains open to the possibility for a later date.

ACTIVE LEARNING PLATFORM

In order for the LatAm CoLAB's programs and learners to be successful, a true community must be created. All participants in the community – from learners to instructors to administrators – must be able to communicate actively and directly with each other and at a distance. Online learning holds much promise but its ultimate promise of delivering actual learning will not be kept unless the technology used to supplement in-residence elements is nearly as personal as meeting someone in the flesh. What the leading purveyors of online education have found is that retention rates for programs where there is not an active community of highly interactive learners is incredible low. EdX, for instance, has learning completion rates under 10%. Even MIT's Micromasters programs have completion rates in the 25% range.

The LatAm CoLAB must do much better than this for many reasons. From the outset, the consultants made it clear that some form of active learning platform needed to be part of the overall solution in order for it to be successful. There are a variety of video conferencing solutions that could be investigated including BlueJeans, Individeo, Shindig, WebEx, or Zoom, but they are insufficient, in view of not only the consultants, but in the estimation of Prof. Sive from MIT and PON representatives. Those other solutions are really for meetings, and all serve that purpose well. They are not intended to create learning environments or communities. In addition, Schoology, the current learning management system in use by UTEC, the presumed host of the LatAm CoLAB, does not allow for robust, active interaction within the learning community.

The solution recommended by the consultants, in concurrence with J-WEL, MIT, and Harvard leadership, is Minerva's Active Learning Forum (ALF). Minerva's platform is well tested in a learning environment, as Minerva is not only a technology company but also is an accredited university, with bachelor's and master's degree programs. The ALF connects Minerva's students and faculty members on seven campuses around the world, and with higher education industry leading results. Dr. Brechner negotiated a deeply discounted rate for the use of the platform. For this same price, Minerva also provides access to content that might be used in the future by the CoLAB, including course materials on the effective communication skills necessary for entrepreneurs to succeed. This course on Multimodal Communications focuses on learning "to understand and convey information at a high level, gaining practical experience in public speaking, visual communication, design, debate, and artistic expression." Students on the ALF can also create their own classrooms, and invite others within the program to those classrooms, to put the power of connection directly into their own hands. They will be able to use these

³ <https://blogs.harvard.edu/aiandinclusionsymposium/overview/>



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classrooms to complete the assignments in the courses, and will retain access to the platform after they complete the program, to continue the sense of community going forward. They could also use the platform to communicate effectively so that they can create the products and companies that we anticipate coming from CoLAB graduates. **Finally, and most importantly, instructors from MIT and Harvard will be able to hold live, interactive sessions with CoLAB learners as part of the program content delivery.** They will also be able to use the same platform to hold office hours, advise CoLAB learners, and help lead what will become a robust community.

In summary, the proposed use of Minerva for the LatAm CoLAB program includes:

1. **Use of the ALF platform for all the interactive educational elements** supporting all components of the LatAm CoLAB curriculum, including live teaching sessions, office hours, etc. The platform serves as a learning management system where all supporting materials for all courses could be stored and all grading could take place.
2. **Use of the ALF platform for students to communicate and collaborate** with each other during and also after their time as CoLAB participants.
3. **Potential use of the Minerva Cornerstone course on Communications** in future iterations of the curriculum.
4. **Potential access to the Minerva platform for other students at UTEC** and perhaps elsewhere in organizations affiliated with the government of Uruguay.

HARVARD PROGRAM ON NEGOTIATION

The [Harvard Program on Negotiation \(PON\) Global](https://www.pon.harvard.edu/category/pon-global/) is a three day intensive held by Harvard Law School to teach negotiation principles and strategies that have made Harvard famous as a leader in the field of negotiation and conflict resolution. PON Global uses the “time- and road-tested curriculum that has been utilized by more than 30,000 executives. [The proposed program] will provide a framework for negotiation—equipping participants to overcome barriers, manage conflict, and achieve better outcomes at the bargaining table.”⁴

The consultants suggest engaging PON Global as a collaborator for the value it will add to the entrepreneurial component of the LatAm CoLAB academic program. We believe because PON is so highly regarded and effective, this will be an attractive and useful component to draw students to LatAm CoLAB. All participants will also receive a certificate of completion issued by the Program on Negotiation at Harvard Law School.

While pricing for PON Global is still under discussion, PON currently estimates fixed expenses of approximately \$50,000 USD and a per student cost of \$1,500, where the minimum student

⁴ <https://www.pon.harvard.edu/category/pon-global/>



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guarantee will be negotiated (up to 60 students). **As this was a late addition – it has not been included in the budget (Estimated cost will be around \$100-150k).** The consultants recommend that this component be included at the end of the program, once the students have developed a sufficient well of technical and ethical knowledge. PON Global usually partners with regional executive education companies but agreed to consider this partnership because it recognizes the innovative elements of the CoLAB, looks forward to working with the other collaborators involved in the project, and credits the track record of the CoLAB's leadership and the consultants.

500 STARTUPS

500 Startups is a global entrepreneurial venture capital firm with seed programs that support budding entrepreneurs. 500 Startups has recently expanded its portfolio, in partnership with the International Finance Corporation, to include a greater focus on Latin America. LatAm CoLAB leaders in the Uruguayan government have been involved in conversations with the 500 startups to possibly provide an entrepreneurial program during one of the LatAm CoLAB in-residences. These conversations happened independently of the consultants, and we believe are still ongoing. Our understanding is that 500 Startups was approached to engage with LatAm CoLAB to potentially devise a more advanced entrepreneurial curriculum for students who may already have experience as entrepreneurs.



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WILLINGNESS TO PAY SURVEYS & ANALYSIS

In order to evaluate the willingness to pay for our proposed LatAm CoLAB program model, we conducted systematic research, in collaboration with the Inter-American Development Trade and Investment Division. On March 5th, we launched the first WTP survey (Phase 1) and, as we defined the program more clearly, on April 20th, we launched another WTP survey (Phase 2).

PHASE 1

Survey Design

The goal of the survey was to evaluate the willingness to pay of potential students. We used an indirect approach to gauge their price preferences using the Choice Based Conjoint (CBC) Methodology, in which WTP is calculated by asking consumers to choose among several product alternatives.

The surveys consisted of two parts: a) 10 demographic questions such as country of residence, educational status, experience with STEM disciplines, etc.; b) a series of conjoint questions: sets of four competing graduate programs asking respondents to select their preference, including the none option; "Which of these graduate programs would you choose?"

Each program was described using eight program attributes: university offering the program, course modality (on-line, on campus, etc.), commitment (part-time, full-time, etc.), duration, location, curricular content, degree offered (Masters, Advanced Postgraduate Diploma, etc.) and cost of attendance (tuition plus cost of living). In the survey, we tested two LatAm CoLAB program models: hybrid and in-residence, as initially conceptualized:

	Hybrid Program	In-residence Program
University Offering the Program	Universidad Tecnológica de Uruguay (UTEC) in partnership with Harvard/MIT	Universidad Tecnológica de Uruguay (UTEC) in partnership with Harvard/MIT
Modality	Online courses + two in-person weeks per trimester with Harvard/MIT faculty	In-person sessions: most content delivered live from Harvard/MIT + some in-person sessions with Harvard/MIT faculty
Commitment	Part-time	Full-time
Duration	One year	One year
Location	Online + six weeks in Punta del Este, Uruguay	Punta del Este, Uruguay
Curricular Content	Technology, Entrepreneurship and Leadership	Technology, Entrepreneurship and Leadership
Degree Offered	Advanced Postgraduate Diploma (with option to transfer credits to a Master at UTEC)	Advanced Postgraduate Diploma (option to transfer credits to a Master at UTEC)



In terms of cost of attendance, we tested three different price levels for each of the LatAm CoLAB program models:

	Hybrid Program	In-residence Program
Price Level #1	US\$15,000	US\$20,000
Price Level #2	US\$25,000	US\$30,000
Price Level #3	US\$35,000	US\$40,000

In addition to our LatAm CoLAB programs, we tested four STEM-related programs in the market:

- Full-time [technology masters at MIT](#) (\$140k)
- Double degree online masters at [Tecnologico de Monterrey and Carnegie Mellon](#) (\$36k)
- Full-time masters at [Universidad Iberoamericana](#) (\$40k)
- [Online micro-masters](#) + one [full-time semester at MT for a full master program](#) (\$58k)

Sample

The survey was sent via the Conjoint.ly platform to 35,776 randomly selected registered users in the ConnectAmericas platform. Two tablets were raffled among respondents.

We obtained a total of 1,140 responses. Half of the respondents were Colombian (16.9%), Brazilian (14.7%), Mexican (10.7%) and Peruvian (9.8%). Regarding their educational level, most respondents had graduated from college more than five years ago (58.35%). Respondents had an entrepreneurial tendency, with over 50% working on their own companies. Respondents were evenly distributed across various levels of technical /STEM backgrounds. Finally, 83.7% of respondents indicated that they were currently looking for educational programs.

For our results analysis, we focused on the potentially most relevant segment for our program, based on our conversations with key stakeholders. The segment included respondents who: a) had started or created a company; b) wanted to continue their studies; and c) had 5 or more years of STEM experience. This resulted in a sample of 224 respondents.

Results ⁵

Overall, across all universes, Phase 1 results indicate that a large portion of respondents, from our selected sample segment are not interested in any of the STEM programs described (41% - 45% of respondents). However, among those who are interested in a program, the hybrid model was the preferred choice, capturing between 20% to 27% of the total market (depending on its price). Conversely, the in-residence model is not a popular program, capturing only a 4-5% market share, regardless of its price.

⁵ It is important to note that although results focus on the most relevant segment, the same trends were found in the overall sample



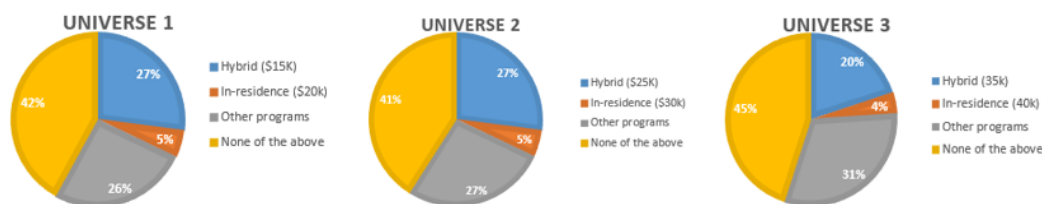
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Concerning the competing programs available, the online double degree offering from [Tecnológico de Monterrey and Carnegie Mellon](#) (\$36k) resulted in a popular choice (11% - 15% market share across universes), while the full-time [masters at Universidad Iberoamericana](#) (\$40k) was the least popular option, representing a 1-2% market share across universes.

For our selected sample segment, demand for both LatAm CoLAB programs is virtually inelastic for the lower price band US\$15k-US\$25k (hybrid) and US\$20k-US\$30k (in-residence). However, in the higher price-band US\$25k-US\$35k (hybrid) US\$30k-US\$40k (in-residence), price elasticity is around -0.7. Thus, in reference to the hybrid model, results from Phase 1 suggest that the program can be priced at either \$15,000 or \$25,000 and demand will remain the same at 27% of the market. When pricing the program at \$35,000, demand decreases to 20%. Thus, results seem to indicate the best price (highest possible) for the hybrid LatAm CoLAB is \$25,000.



PHASE 2

Survey Design

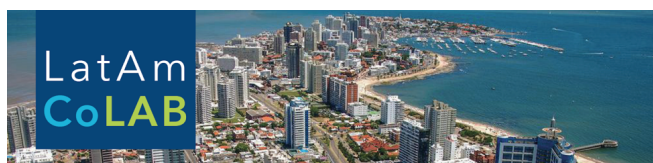
The willingness to pay survey for Phase 2 followed the same design as Phase 1. In relation to the demographic questions, in comparison to Phase 1, we added two questions: a) familiarity with programming languages, and b) English-level proficiency. Then, using the same Choice Based Conjoint (CBC) Methodology as Phase 1, we indirectly gauged the respondent's willingness to pay for the same four STEM-related programs in the market as in Phase 1, plus two LatAm CoLAB programs. Both LatAm programs tested were modeled after the Hybrid model option (based on the survey results for Phase 1). However, in Phase 2, the "location" attribute, included two options: one option required students to travel to Montevideo for 8 weeks, whereas the other one split those 8 weeks into 3 trips of 2, 4, and 2 weeks each.

As far as pricing, four price levels were tested for each LatAm CoLAB alternative on Phase 3: a) \$10,000, b) \$15,000; c) \$20,000 and d) \$25,000.

Sample

The survey was sent via the Conjoint.ly software to 136,958 registered users from the ConnectAmericas platform. Two tablets were raffled among respondents.

We obtained we obtained a total of 2,829 responses. Half of the respondents were Colombian (18.9%), Peruvian (13.6%), Mexican (8.0%) and Brazilian (7.9%). Regarding their educational level, half of the respondents had graduated from college more than five years ago (52.35%). Respondents had an entrepreneurial tendency, with over 68% indicating that they founded a



company during their lifetime. When examining relevant expertise or knowledge for the LatAm CoLAB program, only 20.1% of respondents reported having experience in STEM, and only 27.11% have practical knowledge of at least one programming language. In relation to their foreign language abilities (English proficiency), respondents indicated mid-level proficiency, given that only 21.7% considered themselves advanced speakers and only 4.7% consider themselves native or fully bilingual. Finally, 76.3% of respondents indicated that they were currently looking for educational programs.

For our results analysis, we focused on the potentially most relevant segment for our program, based on our conversations with key stakeholders. The segment included respondents who: a) had experience in STEM and/or knowledge of programming languages; b) had either intermediate, advanced or bilingual/native English-proficiency; and c) wanted to continue their studies. This resulted in a sample of 538 respondents.

Results⁶

Overall, across all universes, Phase 2 results indicate that about a third of respondents, from our selected sample segment are not interested in any of the STEM programs described. However, among those who are interested in a program, there is a preference for splitting the eight weeks in Uruguay into three smaller trips (35% - 38%) over one long trip (33% - 37%). However, although there is a preference for a program with three short trips of two, four, and two weeks each to Uruguay, compared to one with one, eight-week long trip, the market share estimates do not change significantly.

Moreover, Phase 2 results suggest that both LatAm CoLAB models have a very low -even positive- price elasticities for every price range, indicating that the demand curve for the program is inelastic. This means that regardless of the price, demand for the LatAm CoLAB programs remains practically the same. Nevertheless, results suggest that the preferred price for a program with an eight-week travel period is \$10,000 (37% market share), while the preferred price for a program with three travel periods is \$15,000 (38% market share).

	8 week travel period		2-4-2 travel period	
	Market Share	Elasticity	Market Share	Elasticity
\$25,000	34%	0.04	35%	0
\$20,000	33%	-0.09	35%	-0.09
\$15,000	36%	-0.02	38%	0.04
\$10,000	37%		36%	

⁶ It is important to note that although results focus on the most relevant segment, the same trends were found in the overall sample



ACADEMIC PROGRAM

LatAm CoLAB as originally designed has evolved significantly from its inception, however we still maintained the core elements of the program, which center around creating an ecosystem where technology, entrepreneurship, and real world societal impact intersect and inform each other. The academic model as proposed, while details remain to be discussed, is the first of its kind to be launched in Latin America. Through key collaborations with leading education institutions, LatAm CoLAB will leverage the best of what each stakeholder has to offer and integrates all the elements into a comprehensive model: skills + practice + context.

PROGRAM STRUCTURE

Latam CoLAB will be a one-year blended learning postgraduate program focused on advancing technologies. Through our key collaborators, we will source both online content and live instruction through a blended learning program. Blended learning combines online learning with live instruction and classroom interaction for students. This mode of learning was selected because it was low cost, gave easy access to superior content, and allowed flexibility to study for students who could have job obligations.

The program contains a total of 973 hours which include 80 hours for the program's kick-off and wrap-up and 893 hours focused on the three academic content areas: technology (75%), entrepreneurship (19%) and world context (6%). Students are expected to dedicate between 20 – 25 hours per week to online learning for the duration of the program and attend all in person learning in Montevideo, Uruguay. The program will be divided into 4 periods of learning that build on the knowledge of the period before:

- Period 1: Foundations I - 1 week in person + 12 weeks online
- Period 2: Foundations II - 12 weeks online
- Period 3: Entrepreneurship - 5 weeks in person
- Period 4: Integration and Launch - 12 weeks online + 1 week in person (graduation)

Each period of learning will consist of coursework in each of the three academic content areas:

1. **Technical Knowledge (MIT J-WEL) -**

While one of the goals of LatAm CoLAB is to encourage the formation of tech startups in Uruguay, the LatAm CoLAB program differentiates itself from startup incubator or accelerator programs by focusing on equipping students with the knowledge and skills necessary to create technology driven startups. Through its collaboration with MIT J-WEL, the program will provide the foundational skills in computer science and the basics of artificial intelligence, which will be leading the next wave of entrepreneurial ventures. Because of the rigor of the content, online courses will have scheduled recitation times and office hours for students to engage with



J-WEL

Abdul Latif Jameel World Education Lab

Higher Education @ J-WEL

teaching assistants and instructors, as well as form learning groups to work together on assignments.

2. **Entrepreneurial Application (MISTI, 500 startups) -**

While most technical programs are theory based, LatAm CoLAB will focus on entrepreneurial applications of all skills learned. Through short self-paced online entrepreneurial courses, students will gain perspectives on how to apply their technical knowledge to solve customer problems. Students will also gain hands-on experience through the four to five week in-residence period where MISTI will be running its Global Startup Labs, where participants create and prototype of an AI-based solution to a market or societal need.

3. **Real World Contextualization (Berkman Center) -**

A key differentiator for LatAm CoLAB is the framing of the content in real world context. *What are right and wrong responses to AI powered decision making? Who's responsibility is it to protect consumer data? What if AI software only accounts for some segments of the population and not others?* These are all questions that help frame the technical content that students are learning throughout the program. Weaving these themes into the curriculum will be important to preparing LatAm CoLAB students for the issues they will face in building technology solutions. Collaborating with Berkman through its online seminars and live instructor seminars will provide a window into the latest research and developments of the digital society we are creating.

MODES OF CONTENT DELIVERY

The program is comprised of three modes of content delivery that provide an integrated learning approach for the 21st century:

1. **Online Self-paced:** Students take online courses with no set schedule. Using world class MITx content, self-paced online learning provides flexibility for students to cover course content for the entrepreneurship and world context modules (on average 3 hours/week) at their own pace as their schedule allows, within each academic period.
2. **Online Real-time:** Students take online classes with real-time discussions with instructors and other students. Because of the high attrition rate for Massive Open Online Courses, we believe a synchronous (simultaneous/real-time) approach to learning highly complex technical content will improve retention. We recommend assigning an MIT affiliate as a Teaching Assistant for each technical course, with a set meeting time for recitations and office hours. Setting clear deadlines for each assignment will also help set the pace for the course and encourage completion.
3. **In Person Collaborative:** Students take classes in a cohort based model in person, on campus in Montevideo, Uruguay. As academics and educators, the consultants believe the live interaction with instructors facilitate deeper learning, and interactions between students facilitate peer learning. As such, we have designated three periods of in-person collaborative learning at strategic times during the program:



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Abdul Latif Jameel World Education Lab

Higher Education @ J-WEL

- **One week at the beginning (Period 1):** to kickoff and introduce the program and modes of learning, to build student community and motivate them towards completion, to set expectations, and to meet and learn from live instructors and practitioners in the field.
- **Five weeks in the middle (Period 3):** to provide an opportunity for team based collaborative learning and project based learning, to apply entrepreneurial skills, and to engage with instructors in practical applications of technical knowledge.
- **One week at the end (Period 4):** to present final projects for assessment by experts in the field, to gain guidance on next steps, to gain exposure to opportunities in the field, to learn more about companies or entrepreneurs in the field, and to celebrate a year of outstanding learning and progress.

NOT PASSIVE ONLINE LEARNING BUT INTERACTIVE LEARNING

Unlike other Massive Open Online Courses (MOOCs) that often have attrition rates of 90% or more, LatAm CoLAB strives to leverage the best attributes that online learning provides, while minimizing its shortcomings. Low completion rates, detached learning experiences, and lack of interaction are addressed through the [Minerva Active Learning Forum](#). Minerva's learning system – [with a tested](#) and structural emphasis on live, substantive interactions across great distances – was created to allow technology to bring users closer together, despite their geographic separation. This system also allows learners to create their own classrooms in which they can interact with each other. This will allow students to create groups of their own, for the narrower purpose of, for instance, completing projects, or for the broader purpose of creating lasting cohorts that will help graduates create companies.

LEARNING OUTCOMES

At the end of the program, students who graduate from LatAm CoLAB will be proficient in the three areas: technical competence, entrepreneurial problem solving and real world integration. LatAm CoLAB graduates will be able to:

Technical Competence

- Apply a variety of learning algorithms and models in order to solve problems and extract knowledge models from data.
- Design programming frameworks that can address real world problems.
- Communicate clearly and effectively using technical language.⁷

Entrepreneurial Problem Solving

- Develop new and novel approaches to problem solving, through projects or new ventures with the goal of introducing new products or services to the market.

⁷ This would be accomplished through the use of Minerva content, specifically its course on communications, in possible future iterations of the curriculum for the LatAm CoLAB.



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Real World Integration

- Apply their skills and expertise to the world around them, evaluating the challenges and opportunities that technology can provide and its capacity to address real world challenges.

IDEAL STUDENTS FOR LATAM COLAB PROGRAM

For the first year of the program launch, we want to ensure a successful start. To do this, we suggest starting with a small cohort of around 50-75⁸ students with the following attributes:

- Advanced English language skills, some technical language ability preferred
- STEM degree or 5 years STEM experience
- Familiarity with at least 1 computer programming language
- Strong math skills, particularly in advanced math
- Highly self-motivated, disciplined, and proactive
- Entrepreneurial mindset
- Collaborative and interacts well with others

In order to meet these requirements, we suggest that all students:

- Submit a complete program application
- Achieve a minimum TOEFL score (an abridged English proficiency test could also be created for the LatAm CoLAB program)
 - Take a preliminary assessment of math and basic computer science skills during the admissions process. This will be designed in collaboration with MIT J-WEL.
 - Those who score below the minimum will have a period of study to catch up on fundamental math skills necessary to be successful in a Machine Learning/AI discipline, such as: Linear Algebra, Multivariate Calculus, Statistics, and Data Analysis. Online resources for remediation can be found in the appendix.
 - After the study period, students will be asked to retake a similar math assessment in order to achieve a minimum score on before starting the program. This will give students confidence as they enter into the online learning period, ensure that all students have a baseline starting point for learning the material, and may ultimately increase retention.
- Complete a short video interview with randomized questions (live with a staff member or pre-recorded) to evidence personal characteristics such as entrepreneurial mindset, collaboration, discipline and proactivity.

⁸ The financial model (see budget section) starts with the goal of enrolling 100 students as the best case scenario. We believe a first cohort of 50-75 would be a more than adequate start.

DRAFT PROGRAM

The following presents a draft mockup of an academic program overview that could serve as a quick overview for future marketing materials. It presents the ideal layout of the program with contributions from each collaborator. While the consultants understand that agreements are still pending negotiations, we believe the following program will provide the best learning outcomes for students, leverage the value of key collaborators, increase program completion rates, and minimize logistical challenges. The specific dates and courses are subject to adjustment depending on collaborators.















Proposed Program Overview

Period 1	Period 2	Period 3	Period 4
~20 hrs/week 13 weeks 250 hours	~22 hrs/week 12 weeks 264 hours	~43 hrs/week 5 weeks 211 hours	~20 hrs/week 13 weeks 248 hours
Program Kick-Off 40 hrs/week 1 week 40 hours Community Building In-Residence	6.006 Algorithms 12 hrs/week 12 weeks 144 hours Technology Online; real time	6.041x Intro to Probability Part 2 - Inferences and Processes 20 hrs/week 5 weeks 96 hours Technology In-Residence	6.86x Applied Machine Learning 8 hrs/week 12 weeks 96 hours Technology Online; real time
6.005x Software Construction in Java 15 hrs/week 12 weeks 180 hours Technology Online; real time	6.041x Intro to Probability Part 1 - Fundamentals 8 hrs/week 12 weeks 96 hours Technology Online; real time	GSL / 500 Startups 20 hrs/week 5 weeks 100 hours Entrepreneurship In-Residence	xPro: Data Science and Big Data Analytics 8 hrs/week 7 weeks 56 hours Technology Online; self-paced
MITx Entrepreneurship 101 (Spanish) 2 hrs/week 12 weeks 24 hours Entrepreneurship Online; self-paced	MITx Entrepreneurship 102 (Spanish) 2 hrs/week 12 weeks 24 hours Entrepreneurship Online; self-paced	Berkman Live Seminar Series 3 hr/week 5 weeks 15 hours World Context In-Residence	Shaping the Future of Work 4 hrs/week 8 weeks 32 hours World Context Online; self-paced
Berkman Seminar Series 1 hr/week 6 weeks 6 hours World Context Online; self-paced			Capstone Project - Office Hours 2 hrs/week 12 weeks 24 hours Entrepreneurship Online; real time
			Program Wrap-Up 40 hrs/week 1 week 40 hours Community Building In-Residence

NOTE: THE PROPOSED PROGRAM IS UNDER DISCUSSION WITH STAKEHOLDERS -SUBJECT TO CHANGE



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Pre-requisites (9 weeks)		<ul style="list-style-type: none">6.00x Introduction to Computer Science and Programming, any additional Math	
Period 1 Feb - Apr (1 week in person + 12 weeks online)		<ul style="list-style-type: none">Program Kick-Off	
		<i>Technology:</i> <ul style="list-style-type: none">6.005x Software Construction in Java	
		<i>Entrepreneurship:</i> <ul style="list-style-type: none">MITx Entrepreneurship 101 (Spanish) <i>World Context:</i> <ul style="list-style-type: none">Berkman Seminar Series	
Period 2 May - July (12 weeks online)		<i>Technology:</i> <ul style="list-style-type: none">6.006 Algorithms6.041x Intro to Probability Part 1 – Fundamentals	
		<i>Entrepreneurship:</i> <ul style="list-style-type: none">MITx Entrepreneurship 102 (Spanish)	
Period 3 August (5 weeks in person)		<i>Technology</i> <ul style="list-style-type: none">6.041x Intro to Probability Part 2 - Inferences & Processes (WE MUST CONFIRM IF J-WEL CAN DO A LIVE COURSE) <i>Entrepreneurship:</i> <ul style="list-style-type: none">Global Start-up Labs / 500 Startups <i>World Context:</i> <ul style="list-style-type: none">Berkman Live Seminar Series	
Period 4 Sep - Nov (1 week in person + 12 weeks online)		<i>Technology:</i> <ul style="list-style-type: none">6.86x Applied Machine LearningxPro: Data Science and Big Data Analytics	
		<i>Entrepreneurship:</i> <ul style="list-style-type: none">Capstone Project – Weekly Office Hours <i>World Context:</i> <ul style="list-style-type: none">Shaping the Future of Work or Berkman Seminar Series	
		<ul style="list-style-type: none">Program Wrap-up and Graduation (Dec 2-13)	
Optional Content		<i>Technology:</i> <ul style="list-style-type: none">6.004x Computation Structures	
Mode of Delivery:	<i>In-residence</i> 	<i>Online, real time</i> 	<i>Online, self-paced:</i> 



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Abdul Latif Jameel World Education Lab

Higher Education @ J-WEL

IN-RESIDENCE SAMPLE CURRICULUM

Live instruction and interaction is a critical component of the blended learning model. As such, we have built into LatAm CoLAB three separate in-residence periods for in-person learning. The purpose of each in-residence period during the program is to:

- Build and strengthen learning community
- Accelerate learning in specific topic areas
- Engage in project based or hands-on learning
- Prime students for the next phase of distance learning

As such, the content selected for each of the in-residence is specific to the content that precedes it and follows afterwards. The following sample schedules are just examples of how we can integrate key university collaborators for the in-residence periods, however these are still under discussion and subject to change. For the purposes of the sample schedule, One week = five days, Monday – Friday.

Period 1: Kickoff and Primer for Program (1 Week)

The purpose of period 1 in-residence is to introduce and orient students to the learning environment of LatAm CoLAB, outline expectations, form learning groups, and lastly, prime students with the mathematical skills necessary to succeed in the online learning portions that follow. We suggest a two-week orientation period, where students meet Monday - Friday for eight hours each day to cover the following content:

- Learning environment, goals, expectations, and small groups
- Introduction to current issues in AI and data privacy, its societal impacts, and entrepreneurial problem solving
- Orientation for blended learning via Minerva Active Learning Forum



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Higher Education @ J-WEL

Period 1: Sample Program Kick-off (5 days)

Time	Mon	Tues	Wed	Thurs	Fri
9:00 AM - 10:00 AM	Welcome	Berkman: The Future of AI	Berkman: AI in Society	Berkman: Data Privacy	Berkman: Diversity in AI
10:00 AM - 11:00 AM	Program Orientation	Entrepreneur: The Future of AI	Tech: Online Class - Software Construction (for the purposes of familiarizing with Minerva and forming learning groups)		
11:00 AM - 12:00 PM	Learning Group Formations	Personal Learning Goals	Entrepreneur Speaker	Corporate Speaker	Investor Speaker
12:00 PM - 1:00 PM	Networking Reception	Lunch			
1:00 PM - 2:00 PM	Berkman	J-WEL: The future of AI	JWEL: Intro to Machine Learning	J-WEL: Foundational Concepts for AI	J-WEL: Intro to AI
2:00 PM - 3:30 PM	Team-based Challenge	Team-based Communication Challenge	Tech: Online Class - Software Construction (doing assignments in teams via Minerva Platform)		
3:30 PM - 5:00 PM	Minerva Platform Tutorial	Design Thinking Exercise	Rapid Prototyping	Customer Testing	Pitch Presentation Skills

Entrepreneurship	World Context	Tech	Community Building & Personalized Learning
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Period 3: Entrepreneurial In-Residence (Five Weeks)

The five week entrepreneurial in-residence is strategically scheduled after students have gone through the foundational coursework and have some skills to design or develop technical solutions. The structure of the five weeks will be eight hour days, five times a week with space on the weekends for students to bond, relax, and form community. All classes will be live, interactive, and project-based. The in-residence will center mainly around student teams that will build an AI based product or solution to a problem. We also see it as an opportunity for students to interact with MIT staff and Harvard affiliates through the Berkman Center. A sample schedule could look like the table outlined below. We can adjust the hours depending on the availability of instructors, and it is recommended that we leave occasional gaps of time for students to catch up on work or to decompress from a packed schedule. For example, we could leave a Wednesday morning free each week for students to work on assignments, talk to instructors, or catch up.

Period 3: Five Weeks In-Residence

	Week 1 (M-F)	Week 2 (M-F)	Week 3 (M-F)	Week 4 (M-F)	Week 5 (M-F)
9:00 AM - 10:00 AM	Berkman Lecture: The Dangers of Algorithmic Bias	Berkman Lecture: Diversity and Inclusion in AI	Free Period to catch up	Guest Speakers from Latin American Tech Entrepreneurial Community	Berkman Lecture: Case Studies in the ethical dilemmas facing tech giants
10:00 AM - 12:00 PM	MIT J-WEL Short Course: OCW Artificial Intelligence (4 wks – needs a professor)	MIT J-WEL Short Course: Intro to Probability 2 (4 weeks to finish)	MIT J-WEL Lecture: Instructor/Speaker as arranged (e.g. AI principles)	MIT J-WEL Seminar: Cesar Hidalgo on Data-Driven Policy Making (1 week seminar)	MIT J-WEL Week-long Intensive
12:00 PM - 1:00 PM	Lunch				
1:00 PM - 5:00 PM	MISTI GSL: Understanding Markets & Identifying Opportunities OR 500 Startups	MISTI GSL: Customer Acquisition and Product Market Fit OR 500 Startups	MISTI GSL: Business Model and Operations OR 500 Startups	MISTI GSL: Product Plan and Pitch OR 500 Startups	MIT J-WEL Week-long Intensive
5:00 PM - 6:00 PM	Team Time or Office Hours	Guest Lectures - local ecosystem	Hands-on learning or free time	Team Time, practice/guidance	Guest Lectures or Speaker dinners

Entrepreneurship

World Context

Tech

Community Building & Personalized Learning



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Period 4: Wrap-Up - Program on Negotiation and Final Presentations

The last in-residence can either be one week or more. We think it is important to have a final presentation in-person, since teams will be working together in the last period to complete a prototype and business plan. Because one of the goals of the program is to encourage students to launch tech enabled startups in the Uruguayan region, we believe making this an in-residence will be important to attract students to stay in the region. The challenge is to fill the time with enough content and incentives to make it attractive to students to come. Some suggestions to make this in-residence valuable are:

- Pitch Presentation to well-known entrepreneurs, incubator programs like 500 startups, investors, or leading companies who can be judges
- Taking students on tours of important innovation hubs in Uruguay such as LATU and ANII
- Providing a prize for winners of the pitch competition - either a cash prize or some grant for the ANII incubator program, encouraging students to enter into the incubator program would also help us in our goal to attracting students to the region.
- Career Fair or Career Guidance - we can invite employers from well-known companies or established startups to recruit, advise, or interview students during period 4
- Open up to a wider audience - we could hold an innovation conference or expo, where students will be able to demonstrate their ideas and progress to a broader audience
- Master Classes by well-known practitioners in the field - if this is open to a wider audience, it may attract more speakers
- Three-day Harvard Program on Negotiation – this is a world renowned program and will be useful to students seriously considering starting ventures, as negotiation skills will be valuable in a startup with limited resources



Period 4: Negotiation and Program Wrap – up (1 week)

Time	Mon	Tues	Wed	Thurs	Fri
9:00 AM - 10:00 AM	Welcome	3 – Day Program On Negotiation ⁹			Pitch Competition
10:00 AM - 11:00 AM	Entrepreneur Speaker				
11:00 AM – 12:00 PM	Tech Firm Tour				ANII Tour
12:00 PM - 1:00 PM	Lunch				
1:00 PM - 2:30 PM	Review program Year				Award Ceremony Luncheon and Graduation
2:30 PM – 5:00 PM	Tech/Career Expo				
5:00 PM – 6:00 PM	Dinner with Tech Entrepreneurs, Industry Leaders, Investors, and UY Innovation Leaders (speakers to share about working, doing business, and launching startup in UY)				

Entrepreneurship

World Context

Tech

Community Building & Personalized Learning

If cost or additional travel prove to be serious obstacles to an in-residence at the end of the program, we can make it optional for students to attend. However, this could impact our ability to gauge student progress and program impact. We would also lose a valuable opportunity to attract students from outside of Uruguay to stay in the region. One way around this may be to subsidize the airfare for students traveling to Uruguay for the last in-residence, which would cost about \$1000 USD round trip per student.

⁹ Latest program addition. Not included in budget (see pages 13-14 for more details)



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Abdul Latif Jameel World Education Lab

Higher Education @ J-WEL

A NOTE ON INCLUDING LOCAL FACULTY

A key aspect of the MIT J-WEL collaboration is its emphasis on capacity building of local university faculty. Higher Education @ J-WEL proposes customized two to three week long workshops for Latin American faculty to come to MIT to learn pedagogy, curriculum design, and blended learning. These will be intensive hands-on workshops where Latin American faculty will be introduced to state-of-the-art MIT-style pedagogical techniques and approaches to learning design. Participants will complete the workshops with tangible learning products to take back to their universities. The budget for the capacity building workshops have already been built into the J-WEL budget and are part of the J-WEL membership benefits.



PROPOSED PROGRAM BUDGET

During the five-year period, the LatAm CoLAB program is expected to generate between \$12M – \$16M in operating revenue.¹⁰ Tuition and fees have been set at \$15,000 – 20,000 for Uruguayan students and \$20,000 – 25,000 for students outside of Uruguay, in the high and low scenarios respectively (see Tables below).

Operating expenses account for one startup year (Phase 1) plus four years of programming costs. Total expenses during the five-year period range between \$24M – \$35M, in the high and low scenarios respectively (see Table 2 below). The unitary cost, however, decreases over time by achieving economies of scale. Thus, the cost per student starts at \$40,566 - \$57,838 on Phase 2 (first operating year) and decreases by 46% – 43% in Phase 5, resulting in a cost per student of \$21,955 – \$32,988.

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
Total Students	0	100	150	200	250
Uruguayan faculty	-	-	15	20	30
Uruguayan students	-	50	60	80	120
Other LATAM students	-	50	75	100	150

Note. Uruguayan faculty does not pay tuition and fees.

	Phase 1		Phase 2		Phase 3		Phase 4		Phase 5	
Scenario	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>
Total Tuition & Fees	-	-	1.8M	2.3M	2.4M	3.1M	3.2M	4.1M	4.8M	6.2M
Total Expenditures	2.7M	3.7M	4.1M	5.8M	4.7M	6.9M	5.7M	8.4M	6.6M	9.9M
Exp. per student	-	-	41K	58K	31K	46K	29K	42K	21K	33K
Annual Net Loss	2.7M	3.7M	2.3M	3.5M	2.3M	3.8M	2.5M	4.3M	1.8M	3.7M

¹⁰ The model includes two possible scenarios: "low" and "high". These refer to two different ranges in which each of the costs could fall, depending on unknown circumstances.



It is important to note that the financial model solely accounts for operational costs of running the program (no up-front investment has been calculated). Operating expenses include:

- Faculty salaries include rates for one Dean, one Associate Dean and the local faculty, with additional faculty benefits at 28%. Local faculty were calculated assuming that each technical course will also have a local professor to facilitate student learning and for capacity building purposes.
- Staff salaries and benefits correspond to Administrative Assistants, Program Managers, General Support, Information Technology Support, Resident Advisors (part-time support during travel periods) and local Teaching Assistants (online & in-residence), with benefits at 28%.
- Consultant Fees include ongoing international consulting fees from Phase 1 through Phase 5.
- Memberships include all required fees by the program partners: J-WEL, Berkman Center, MITI, Minerva, and outside lecturers.
- Recruitment and Marketing refers to all promotional expenses required to advertise the program in the LATAM region. These costs were model after American university budgets, yet adjusted to the LATAM reality and resources.
- Administrative Operational Expenses includes cost such as computer supplies, advertising, accreditation, recruitment faculty/staff and others.
- Adjusted Educational Support Expenses correspond to costs that will support and enhance faculty and student experience. These costs were model after American university budgets, yet adjusted to the LATAM reality and resources.
- Incubator Expenses account for a four-month incubator program for selected student teams (up to four members each) in order to develop their proposed tech venture. The Student Incubator Expenses include housing expenses and a living stipend for four months (the living stipend is meant to cover meals and other personal expenses not provided by the program).
- Campus Facilities Lease/Management Fee accounts for the physical space required for the in-residence components (three travel periods across the duration of the program).
- Student Expenditures includes travel (only for non-Uruguayan students), housing, meal, and activities expenses. For this, we estimated three travel periods across the duration of the program

1. J-WEL Mark-up of Proposal

AS OF APRIL 25, 2018

The following proposal presents the latest mark up of offerings proposed by MIT J-WEL, and is subject to further discussion and changes.



Proposal: The MIT/J-WEL<> LatAm CoLAB Program

We propose a collaboration between MIT/J-WEL and LatAm CoLAB to devise an important new model for post-graduate education.

LatAm CoLAB is a technology focused, 12-month blended learning program for Latin American postgraduate students. The program combines the best course content provided by top U.S. technical universities with in-person entrepreneurial community building through an intensive interdisciplinary curriculum. The goals are to attract top talent from Latin America and contribute to the economic development of Uruguay, the broader region and the world. A key goal is build relevant capacity in Uruguayan faculty through collaborative Workshops and training.

The Abdul Latif Jameel World Education Laboratory (J-WEL), based in the MIT Office of Open Learning, has the goal to *promote excellence and transformation in education around the world*. **Higher Education has immense power:** giving students access to *knowledge* that uncovers their talents, developing *competencies* preparatory for meaningful careers, and promoting responsible *leadership* in society. **MIT education is uniquely powerful through its combination of problem-solving focus; entrepreneurial culture; hands on learning; incorporation of digital tools and incorporation of learning science.**

Higher Education @ J-WEL has a visionary, outcome-driven approach that aligns well with the LatAm CoLAB vision. The MIT/J-WEL - LatAm CoLAB Program will address key goals through customized collaborations with MIT faculty and staff. The outcome will be a new education model, new curriculum with groundbreaking teaching and learning modalities, development of top faculty, and education of students who are technically confident, entrepreneurial learners with skills and knowledge necessary to address regional and global challenges.

We propose multiple lines of collaboration resulting in a new blended learning and hands on program that is of high value to students, and will make a crucial contribution to Uruguay and Latin America. Key elements of the collaboration follow.

- MIT/J-WEL will collaborate with LatAm CoLAB to set up a new Advanced Postgraduate Diploma for Uruguay/Latin America.

- The Program can be cited as ‘developed together with MIT/J-WEL’.
- The overarching goal is to educate graduates who are *technically confident, entrepreneurial, problem-solvers*, who can contribute to the economy and society of their local region, their country and the world.
- Program duration is initially 12 months, with a LatAM CoLAB **Advanced Postgraduate Diploma** that will comprise credit towards a Master’s degree.
- Projection is to a two year Master’s degree.
- Curriculum will be devised to promote **technical competency**, specifically:
 - Computer Science and Machine Learning
 - Data Science and Analytics We will need to keep in mind that there is a MicroMaster’s coming on line, and we may want to do something more creative.
 - Biosciences/Data Science - Would be groundbreaking.
- A further key focus is **training in entrepreneurship** to devise startups relevant to technical training, contextualized for Latin America.
- Top quality material, prepared by MIT faculty, will be used in a ‘blended’ format to develop a Learning Community of enrolled students. As feasible, MIT faculty and students will be guides and mentors for LatAm CoLAB students.
- To promote learning success, groups will form recitation units , and will meet at designated times to work on problems together. There will be a live Teaching Assistant for each course, as feasible.
- Webinars by MIT experts , in addition to regular course material, will be prepared specifically for LatAm CoLAB. (question of re-use)
- MIT students (J-WEL Ambassadors) and staff (J-WEL Messengers) will be part of the LatAm CoLAB through visits and in-person interaction with enrolled students, as feasible.
- Uruguayan faculty will develop teaching skills at MIT-run **Pedagogy and Curriculum Workshops**, and develop a contextualized curriculum relevant to each course offered.
- The LatAM CoLAB Program is projected to begin in March 2019, with the following three year sequence.
 - Year 1 will be a hybrid model, with distance and in person education; with up to 100 students. One technical specialization (AI and Machine Learning) will be offered.
 - Year 2 will continue with a hybrid model for 100 students, and could include 50 residential students.
 - Year 3 will include 100 hybrid, 100 residential students, and addition of a second technical specialization.

Costing

LatAm CoLab will join Higher Education @ J-WEL as Charter Members for a period of three years, at 1 million USD/year. All workshops delivered will be customized based on the needs outlined in this Framework and will fall within the Special Projects budget. We estimate that a total cost of \$1.9 million per year (including J-WEL Charter membership) for three years will deliver a high impact program.

Specific customized requests may incur additional costs.

Specific areas of LatAM CoLAB/MIT-J-WEL collaboration are indicated below.

1. ASSESSMENTS: STUDENT QUALIFICATIONS and PROGRAM OUTCOMES

Competency Assessments will determine suitability for admission to the LatAm CoLAB Program and efficacy of outcomes. These will be devised in collaboration with J-WEL staff and other MIT units.

2. COURSE CONTENT and APPROACH

- Curriculum will encompass specialized technical subjects, and how these can be associated with entrepreneurship.
- The Program will form a close Learning Community, that will promote student engagement and success.
- **A unique learning curriculum will be prepared, using selected content from the MITx platform.** Curriculum will run live to LatAm CoLAB students, with MIT personnel as guides and teaching assistants. Training of Uruguayan personnel will proceed in parallel to define a region-contextualized blended learning curriculum.
- It is envisioned that the three trimesters will form a logical progression that sets the framework for increasing expertise and effectiveness with entrepreneurial problem-solving in tech-driven fields. For example:
 - Trimester 1: Foundations
 - MITx courses in entrepreneurship
 - Initial tech specializations in focus area
 - Trimester 2: Startup expertise
 - Global Startup Labs and developing a startup
 - Further tech specialization courses
 - Trimester 3: Integrating for the future
 - Ethical considerations
 - Complete tech specialization field
 - Focus on initiating start-up company
 - It is suggested that a student take:
 - two courses in Entrepreneurship
 - six courses in the field of specialization

- two relevant to Integrating for the Future
- Global Startup Labs Bootcamp

- **Subject content**
- **Content will be in English unless noted, with transcripts for all material in Spanish.**

Entrepreneurship (2 courses)

- MITx Entrepreneurship 101 (in Spanish or English) (6 weeks; 4hrs/wk)
- MITx Entrepreneurship 102 (in Spanish or English) (6weeks; 4hrs/wk)

We will need initial assessments to gauge student abilities.

Proctored exams need to be live and in-person.

Computer Science, Machine Learning and Data Science (6 courses)

- [6.004x Computation Structures](#) (10 weeks; 6hrs/wk)
- [6.005x Software Construction in Java](#) (12 weeks; 15hrs/wk)
- [6.006 Algorithms](#) (intro 12 wks; 12 hrs/wk) or [6.046 Design and Analysis of Algorithms](#) (intermediate)
 - These are OCW offerings. With TA help, they should be useable for the program. - these are free, without license fee
 - Ask if UTEC can source a TA locally
- 6.008.1x [Computational Probability and Inference](#) 12 weeks; 6hrs/wk) - can make optional?
- 6.431x Intro to Probability 1 & 2 (16wks; 6hrs/wk)
 - This is a two part course, it may only be necessary to take the first
- [6.86x Applied Machine Learning](#) (12 weeks; 8 hrs?/wk)- still being built
- [xPro: Data Science and Big Data Analytics](#) (7 weeks, 8 hrs/wk) (case-based)
- 15.071x The Analytics Edge (case-based) (12 weeks, 10-15hrs/wk) may be a lot

Integrating for the Future

- 15.662x Shaping the Future of Work

Possible 3rd year specialization: Bioscience and Bioengineering

- OCW: Introduction to Bioengineering
- 7.00x Biology-Introduction to Biology: Secret of Life
- 7.28x Molecular Biology
- OCW: Biomedical Engineering: Developing Professional Skills

3. SUPPORT FOR BLENDED LEARNING

- We define 'blended learning' as 'use of online subject material in conjunction with personal interactions, including problem-solving related to the subject'. This is a powerful mechanism to engage students, and promote their success
- As J-WEL members, Uruguayan education leaders and faculty will be invited to members-only J-WEL Weeks. These signature events present MIT-style educational innovation that will contribute to development of the Program.
- The extensive online curriculum can be customized with site licenses, that allow material to be shown/hidden, change due dates, enroll students and set the grading policy.
- Final curriculum will be devised in consultation with MIT faculty and staff, including customized curriculum and assessments, as useful.
- Technology (the [Minerva Active Learning Forum](#) platform will be used to support live interactions among the student cohort, and teachers).
- MIT trainees/staff will act as TAs for online courses.
- In parallel, Uruguayan faculty will be trained at MIT to lead the blended learning curriculum.
- J-WEL Ambassadors (run in collaboration with MISTI) will be recruited by LatAm CoLAB to come to Uruguay for teaching.
- Webinars by MIT faculty will explore relevant topics including integration of course materials and pedagogical practices.
- J-WEL Messengers are staff members who would visit LatAm CoLAB to provide hands-on problem-solving and other strategies that promote an effective learning process.
- Estimate 15 faculty to go through workshops for each year

4. CAPACITY BUILDING

- We propose a customized J-WEL Workshop at MIT that will build capacity among Uruguayan faculty.
- The Workshop will impart state-of-the-art approaches and promote Uruguayan faculty teaching in the LatAm CoLAB Program and at their home universities.
- In each case, participants will be nominated by their university and LatAm CoLAB, and selected by J-WEL, after an application and skype interview.
- Workshops take place at MIT to allow incorporation of maximal faculty and senior staff. They run over January or in the June-August period.
- Refresher mini-courses can be run in Uruguay through the J-WEL Messenger program.

LatAm CoLAB faculty will be introduced to state-of-the-art MIT-style pedagogical techniques, elements of curriculum design and customized design of a desired course, including blended learning approaches as desired. At MIT, faculty members participate in intensive, hands-on workshops that encompass material in each module. Modules are taught by MIT faculty and senior staff.

Each participating faculty member will design or re-design an entire course; or use MITx material to define curriculum, including blended learning curriculum, relevant to Latin America.

There are three sections.

i. Pedagogical methods

Modules include:

- Constructive alignment
- Presentation skills
- Classroom management
- Motivation
- Active learning, growth mindset
- Assessments, strategy and design
- Problem-based curriculum
- Hands on approaches

ii. Curriculum Design

Emphasis is on MIT-style problem-solving methods, Science of Learning, and EdTech/online tools. Inclusion of entrepreneurial skills into higher education is becoming increasingly important to meet unemployment challenges, and the program includes exposure to the MIT innovation culture and startup development. Specific subject content is part of the curriculum.

Modules include:

- Science of Learning and problem solving
- Use of Online Education and EdTech Tools
- Entrepreneurship in the Curriculum
- Research as a Learning Tool
- Case Studies in MIT Education
- **Each J-WEL Curriculum Design participant designs (or redesigns) a complete course while at MIT, ready to implement.**
- Curriculum is developed at MIT, with extensive input from faculty and staff, including schedules, lectures, skills development, complex problems.
- Groups plan implementation and implications of the newly developed material for higher education in their respective institute and country.
- Successful participants receive certification from MIT/J-WEL.

iii. Blended Learning

Participants will understand and construct a blended learning curriculum relevant for their context. We define 'blended learning' as 'use of online subject material in conjunction with in person interactions, including problem-solving related to the subject'.

Curriculum draws on aspects of the Curriculum Design unit (ii above).

Modules include:

- General strategies to blend online and in-person
- Access to MITx online education technology courses that provide a background in blended learning and examples of educational technologies (e.g., "The Design and Development of Educational Technology" and "Implementation and Evaluation of Educational Technology")
- Case studies in blended learning at MIT, from multiple faculty
- How to select certain MITx material from published courses
- YouTube and other excerpts
- Self-paced time to rework curriculum as blended
- Presentations and final curriculum

Certification.

After completion of the Program, successful participants receive certification from MIT/J-WEL

Followup: MIT/J-WEL will follow up with each participant to assess outcomes after the first semester of teaching a newly devised course. A Strategic Report related to outcomes of the Workshop will be prepared.

2. J-WEL Proposed Budget

AS OF MARCH 14, 2018

The following proposed budget is subject to change depending on final terms on course offerings and agreements. All notes were written by consultants for internal use.

J-WEL Proposed Budget for LatAm CoLAB Collaboration (as of Mar 15, 2018)

Services Agreement					
	Year 1	Year 2	Year 3	Totals	
	2019	2020	2021		
Private Courses for LatAm CoLab -- In the agreement this goes in as a single lump sum amount.					
Program Coordination	\$ 223,000	\$ 197,000	\$ 165,000	\$ 585,000	for a team of people to run operations/management: Hazel is PI, maybe a comp sci person
Instruction	\$ 703,000	\$ 741,000	\$ 880,000	\$ 2,324,000	Live TA for all courses, custom webinars from MIT faculty (plus prep); JWEL messengers going to UY, digital learning fellows who are post-docs, instructors in a particular** Let's talk about what a JWEL messenger program looks like
MITx Course Licenses	\$ 95,000	\$ 145,000	\$ 280,000	\$ 520,000	11 courses for first 2 years: 100 students for year 1, 150 students for year 2, 300 students and 2 specializations for year 3
Student Success Course	\$ 110,000	\$ -	\$ -	\$ 110,000	Building the student assessments (exams and assignments) and program assessments - distributed across 3 years (price can come down)
	\$ 1,131,000	\$ 1,083,000	\$ 1,325,000	\$ 3,539,000	
MIT Sloan Bulk Licensing					
Artificial Intelligence for Business Strategy	\$ 221,000	\$ 332,000	\$ 442,000	\$ 995,000	We are still considering if we want to pay for this course - but include in budget for now.
	\$ 221,000	\$ 332,000	\$ 442,000	\$ 995,000	
MIT xPro Bulk License					
xPro: Data Science and Big Data Analytics	\$ 68,000	\$ 102,000	\$ 136,000	\$ 306,000	
	\$ 68,000	\$ 102,000	\$ 136,000	\$ 306,000	
J-WEL Person Weeks					
Additional J-WEL Person Weeks	\$ 75,000	\$ 75,000	\$ 75,000	\$ 225,000	Capacity building workshops for 15 UY faculty to go to MIT for a 3 week workshop
	\$ 75,000	\$ 75,000	\$ 75,000	\$ 225,000	
Total	\$ 1,495,000	\$ 1,592,000	\$ 1,978,000	\$ 5,065,000	
Budget adjusts with the # of students enrolled in each online course					
NOTES:					
1. Instruction - includes cost of live TA instruction online, a faculty to run the course, plus travel costs to UY for 8 week in-residence					
2. Course license fees include a flat course fee of about \$5000, plus a per student enrollment fee					
3. MIT Sloan Bulk Licensing is a different more expensive fee than the other courses, we may consider dropping or swapping this out, but include it in the budget for now					
4. J-WEL Person weeks - covers the cost of 3 weeks of training at MIT for UY faculty and staff, but it does not include travel or accommodation - so please insert a line for that					

3. J-WEL Charter Membership Benefits



J-WEL MEMBERSHIP BENEFITS

J-WEL provides structured engagements for change focused on educational challenges of local concern and global impact.

J-WEL AFFILIATE MEMBERSHIP (Annual membership fee: \$50,000 US)

- Send 2 people to each of J-WEL Week 1 and J-WEL Week 2, annual members-only events.
- Access members-only online portal with early releases of pertinent research, online learning webcasts, newsletters, annual summaries, and notifications of J-WEL events, news, and publications.
- Receive early exposure to research projects in the area of learning.
- Interact with J-WEL members, MIT faculty, staff, students and others for purposes of recruitment and internships.
- Receive discounts to MIT learning content and certificates: 10 annual complimentary certificate licenses for MITx MOOC courses; a 5% discount for MIT Bootcamps (subject to the participant being admitted); 5% discount on course certificates from MIT xPro, MIT Professional Education, and MIT Sloan School of Management Executive Education.

J-WEL SUSTAINING MEMBERSHIP (Annual membership fee: \$200,000 US)

- Send 6 people to each of J-WEL Week 1 and J-WEL Week 2, annual members-only events.
- 10 person-weeks at J-WEL Exchanges (e.g., 10 people at a 1-week Exchange OR 5 people at a 2-week Exchange).
- Nominate one person to a strategic input group that will provide feedback to J-WEL on preferred directions for practice and research for the relevant collaborative.
- Access members-only online portal with early releases of pertinent research, online learning webcasts, newsletters, annual summaries, and periodic updates and notifications of J-WEL events, news, and publications.
- Receive early exposure to research projects in the area of learning.
- Interact with J-WEL members, MIT faculty, staff, students and others for purposes of recruitment and internships.
- Receive discounts to MIT learning content and certificates: 40 annual complimentary certificate licenses for MITx MOOC courses; a 15% discount for MIT Bootcamps (subject to the participant being admitted); 15% discount on course certificates from MIT xPro, MIT Professional Education, and MIT Sloan School of Management Executive Education.

J-WEL COMPREHENSIVE MEMBERSHIP (Annual membership fee: \$500,000 US)

- Send 18 people to each of J-WEL Week 1 and J-WEL Week 2, annual members-only events.
- 30 person-weeks at J-WEL Exchanges (e.g., 30 people at a 1-week Exchange OR 15 people at a 2-week Exchange).
- Nominate one person per collaborative, for any or all of the collaboratives, to a strategic input group that will provide feedback to J-WEL on preferred directions for practice and research.
- Access members-only online portal with early releases of pertinent research, online learning webcasts, newsletters, annual summaries, and notifications of J-WEL events, news, and publications.
- Receive early exposure to research projects in the area of learning.
- Interact with J-WEL members, MIT faculty, staff, students and others for purposes of recruitment and internships.
- Receive discounts to MIT learning content and certificates: 120 annual complimentary certificate licenses for MITx MOOC courses; a 15% discount for MIT Bootcamps (subject to the participant being admitted); 15% discount on course certificates from MIT xPro, MIT Professional Education, and MIT Sloan School of Management Executive Education.

J-WEL CHARTER MEMBERSHIP (Annual membership fee: \$1,000,000 US)

- Send up to 18 people to each of J-WEL Week 1 and J-WEL Week 2, annual members-only events.
- Up to 30 person-weeks at J-WEL Exchanges (e.g., 30 people at a 1-week Exchange OR 15 people at a 2-week Exchange).
- Nominate one person per collaborative, for any or all of the collaboratives, to a strategic input group that will provide feedback to J-WEL on preferred directions for practice and research.
- Access members-only online portal with early releases of pertinent research, online learning webcasts, newsletters, annual summaries, and notifications of J-WEL events, news, and publications.
- Receive early exposure to research projects in the area of learning.
- Interact with J-WEL members, MIT faculty, staff, students and others for purposes of recruitment and internships.
- Receive discounts to MIT learning content and certificates: 120 annual complimentary certificate licenses for MITx MOOC courses; a 15% discount for MIT Bootcamps (subject to the participant being admitted); 15% discount on course certificates from MIT xPro, MIT Professional Education, and MIT Sloan School of Management Executive Education.
- In addition to the above benefits, \$500,000 (minimum) will be earmarked for additional products and projects, as mutually determined. The detail benefits, terms, and fees will operate under a separate agreement.

Benefit	Member Level			
	Affiliate	Sustaining	Comprehensive	Charter
Collaboratives: pK-12, Higher Ed, Workplace Learning	Choose one	Choose one	All three	Up to three
J-WEL Weeks: 2 per year, members-only	Up to 2 participants to each J-WEL Week	Up to 6 participants to each J-WEL Week	Up to 18 participants to each J-WEL Week	Up to 18 participants to each J-WEL Week
J-WEL Exchange: 1 per year		10 person-weeks	30 person-weeks	Up to 30 person- weeks
Strategic input group		1 collaborative	Any or all collaboratives	Any or all collaboratives
Early exposure to sponsored and other research projects	Included	Included	Included	Included
Potential research participation		Included	Included	Included
MITx MOOCs per year (Massive Open Online Courses)	10 complimentary registrations	40 complimentary registrations	120 complimentary registrations	120 complimentary registrations
MIT xPro, MIT Bootcamp, MIT Professional Education, and MIT Sloan School of Management Executive Education courses	5% discount	15% discount	15% discount	15% discount
May seek interactions with students through the J-WEL Ambassador Program, for purposes of teaching assistance, recruitment and internships	Included	Included	Included	Included
Access to interim webinars, newsletters, and reports	Included	Included	Included	Included
Custom projects				Included

4. MISTI Proposal

AS OF APRIL 27, 2018

The following proposal presents the latest draft of offerings proposed by MISTI, and is subject to further discussion and changes.

MIT International Science and Technology Initiatives
MISTI Uruguay program overview
April 2018

Eduardo Rivera

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Massachusetts Institute of Technology (MIT)

Ranked the top engineering university in the world, MIT is a leader in higher education and research. The Institute is committed to advancing knowledge and educating students in science, technology and other areas that will best serve the nation and world. The motto *Mens et Manus* underscores MIT's culture of learning by doing.

Over 1,000 professors teach in 32 academic departments and conduct research at dozens of interdisciplinary labs and centers. Seventy-eight present and former members of the MIT community have won the Nobel Prize, including nine current faculty members. Thirty-nine current and former members of the MIT faculty have received the National Medal of Science. There are 20 MacArthur Fellows among current MIT faculty and staff.

Students form the core of MIT. Of nearly 11,000 students on campus, roughly 4,300 are undergraduates and 6,500 are graduate students. MIT offers 46 undergraduate major and 49 minor programs. Fields of study include architecture, engineering, management, science and humanities. Eighty-seven percent of MIT undergraduates participate in faculty-led, hands-on research projects before they graduate. In 2012, nearly 40 percent of MIT's graduating class had spent time abroad for an internship, public service, volunteer or academic program during their time at MIT.

Since its founding in 1861, MIT has fostered a problem-solving approach that encourages researchers to work together across departments, fields and institutional boundaries by combining science and engineering. The resulting collaborations have included thousands of fruitful partnerships with industry, research and government partners.

MIT International Science and Technology Initiatives (MISTI)

MIT's flagship international program, MISTI connects MIT students and faculty with research and innovation around the world. Working closely with a global network of premier corporations, universities and research institutes, MISTI matches MIT students with internships and research opportunities worldwide. MISTI Global Seed Funds provide funding for faculty to jumpstart international projects and encourage student involvement in faculty-led research. Rooted in the MIT *Mens et Manus* tradition, MISTI is a pioneer in applied international studies.

MISTI Country Programs

MISTI's country programs aim to strengthen ties and enhance collaboration between MIT and a particular country. These programs identify and build linkages between MIT and foreign corporations, universities and research institutes through student and faculty activities on campus and in country. Possible activities include student internship and teaching programs, a faculty seed fund, corporate and other partnerships and on-campus events. Country programs receive oversight from an MIT faculty director; day-to-day operations are handled by a program manager.

MISTI Uruguay

In this proposal, we present four MISTI programs (Seed Funds, Internships, Global Entrepreneurship workshop), including timeframes and possible connections with the initiative. This proposal also includes a sponsorship budget.

Goals

MISTI supports MIT's educational [mission](#) by creating hands-on, international learning experiences for MIT students and bolster the Institute's research mission by promoting collaborations between MIT faculty members and their counterparts abroad.

In the current MIT Global strategy, Latin America is a priority region. In this context of growing international cooperation, MISTI and MIT would like to promote and further develop their exchanges with the region, and to give those exchanges greater visibility.

By collaborating with ANII - Uruguay MISTI looks to support MIT mission in the Latin-American region to reach universities, labs, public and private organizations. MISTI Uruguay will develop new ties and encourage existing networks between Uruguay's knowledge communities and organizations and MIT.

Objectives

MISTI –Uruguay will:

Provide a framework of cooperation to establish at least two MISTI programs in connection with Uruguayan institutions, researchers and students.

Increase quantitatively and qualitatively the cooperation between MIT researchers and Students and their counterparts in Uruguay.

Encourage multidisciplinary approaches in education, research and technological innovation.

Facilitate the collaboration between researchers and students in areas of science, technology and innovation.

MISTI Global Seed Funds

The MISTI Global Seed Funds (MISTI GSF) grant program promotes early-stage research collaboration between faculty, researchers and students at MIT and their counterparts abroad. Country-specific funds support travel and meeting costs to facilitate exchange between participating teams. The maximum grant is \$30,000 for an 18-month grant period. Winning teams are expected to seek outside funding to sustain their collaborations beyond the grant period. MISTI Global Seed Funds welcomes proposals from all disciplines represented by the five Schools at MIT, and priority is given to new projects that propose a balanced exchange between MIT and international participants.

MISTI GSF is composed of a general pool of funds for projects in any country and country-specific funds for collaboration with Belgium, Brazil, Chile, China, France, Germany, India, Italy, and Japan, Mexico and Russia. This growing initiative has awarded over \$6 million to 304 projects in a wide range of disciplines. Tangible outcomes reported by grantees, including papers published, grants obtained and new career paths for students, point to seed funds as a practical, cost-effective way to spur international research collaboration from the ground up.

Seed Funds timeline:

May:	Call for proposals opens
September:	Deadline for submission.
December:	Seed funds are granted.
February :	Funds are transferred to the researchers.
Duration:	Up to 18 months

MISTI Internship Program

MISTI country programs draw on MISTI's 35 years of expertise in placing MIT students with hands-on internship and research opportunities abroad. Programs match students with summer and year-long internships at corporations, universities and research institutes in country. Candidates are selected on the basis of their resume, superior academic standing, letter of motivation, professors' recommendations and an interview. They are matched with a project that closely aligns with their skills and interests while meeting the needs of the host. Prior to their internships, students are educated in the language, culture and history of the host country through MIT coursework and training sessions on pertinent economic, political and social issues.

MISTI currently sends more than 600 students annually to companies and labs in 19 countries: Argentina, Belgium, Brazil, Chile, China, France, Germany, India, Israel, Italy, Japan, Peru, Korea, Mexico, the Netherlands, Russia, Singapore, South Africa, Spain and Switzerland. MISTI's applicant pool reflects the general student distribution at MIT: 50 percent engineering majors, 25 percent science, 15 percent architecture, 5 percent management and 5 percent humanities, arts and social sciences. The majority of MISTI interns are

undergraduate students or recent graduates (70 percent), and the rest are graduate students. MISTI internships have led to patents, publications and permanent hires with companies around the world.

Internships timeline:

December:	Deadline for student applications
June to August:	Students intern in universities and companies
Duration:	between 8 and 12 weeks

Out of cycle internships (graduated, absence leave students): all year around Deadline for submission.

MISTI Global Entrepreneurship Workshop

MIT Global Entrepreneurship Workshop collaborates with universities in emerging regions and organizes advanced courses taught by MIT student/instructors. Our courses focus on entrepreneurship & business, focusing in technology and innovation. Components of the course include detailed curriculum, case studies, guest lectures, and networking events, all to help our students think about the commercial applications of their ideas. The entrepreneurship workshop it's an intensive hands-on experience intended to teach, in four weeks, the basics of entrepreneurship, based on Bill Aulet's "disciplined entrepreneurship" methodology.

Concurrent to its courses, MIT Global entrepreneurship workshop scales its impact by transferring teaching expertise to our partner universities so that they can incorporate components of our courses with little intervention.

The global entrepreneurship workshops shares part of the curriculum and faculty direction with the MIT Global Startup Labs, that since 2000, has sent over 150 MIT instructors to teach over 2000 students in 14 countries, resulting in the creation of businesses and the addition of course offerings at our partner universities.

Timeline:

February:	Deadline for student applications
June to July:	Students will teach GEW at local universities
Duration:	4 weeks

Administration

A MISTI-Uruguay fund will be established. MISTI will designate a program manager, responsible to administer and supervise all related activities. The designated manager will be the main point of contact for all the proposed activities. The fund will follow all standard MIT and MISTI administrative procedures.

Budget

MISTI requires the following resources in order to launch a new country program based on a three-year minimum commitment:

Costs (per year):

1 Global Entrepreneurship Workshop (includes all administrative costs, instructor's preparation and trainings, materials, instructor's health and emergencies insurance, flights, housing, meals and stipends)	\$64,000
MIT + MISTI overhead	\$16,000
Total cost	\$80,000

3 MISTI Seed Funds per year (includes all administrative costs and marketing materials, each grant up to 30,000)	\$90,000
MIT + MISTI overhead	\$22,500
Total cost	\$112,500

3 MIT undergraduate and graduate research or industry Internships (includes all administrative costs, intern's preparation and trainings, materials, health and emergencies insurance, flights, housing, meals and stipends)	\$30,000
MIT + MISTI overhead	\$7,500
Total cost	\$37,500

5. MISTI Draft GSL Curriculum

AS OF APRIL 25, 2018

The following proposal presents the latest draft of the Global Startup Labs curriculum for a condensed 3-4 week Global Startup Labs program by MISTI, and is subject to further discussion and changes.

Global Entrepreneurship Workshop
4 weeks program (same program, higher intensity can be done in 3 weeks)
5 days a week, 5 hours a day (afternoons)
Two (2) MIT instructors

The entrepreneurship workshop it's an intensive hand on experience intended to teach, in three weeks, the basics of entrepreneurship, based on Bill Aulet's "disciplined entrepreneurship" methodology. The course will look to deliver the fundamentals of entrepreneurship & business skills, focusing in technology and innovation.

Schedule

This is a 4-weeks program, starting in June 2019. Class will be held Mondays - Fridays afternoons from 1 pm to 6pm. Last hour every day will be the time for students to advance and receive guidance in their startups, time to guess lectures, networking sessions and others. In the mornings, instructors will be available for one to one meetings.

Class Curriculum

Content

The curriculum will be modeled after many incubator courses at MIT, having as a main methodology Bill Aulet's "disciplined entrepreneurship". It will include two major topics, which are the key ingredients to launching a successful tech venture:

1. Entrepreneurship & Business Skills
2. Soft Skills (Communication, Leadership, Teamwork, etc.)

Startup Teams

Students will be grouped into teams of 3-4 students, and these teams will work throughout the course to form and launch their tech startup. We will often dedicate time during the class to group work sessions and group meetings with the instructors. During the course, students will work as a team to develop a startup business idea for a technological product. Students will pitch this idea during the culminating event of the course - pitch day.

Additional Activities

In addition, in coordination with the local partners, instructors will be inviting guest lectures to speak during the class to share their experiences with the students.

Teaching Style

The MIT style of learning is “learning by doing”. The entrepreneurship workshop is a hands-on workshop, where MIT instructors will serve as mentors. They will introduce topics with an interactive lecture. No more than 10-15% of the course will consist of instructor lecturing. The remainder of the time is dedicated to hands-on activities, tutorials, group-work, exercises, etc. Students will often learn material on their own. Instructors may ask students to present material to the class.

Materials

Students should come prepared with basic desktop materials, a notebook, and a laptop. If possible, a guide text will be required:

Aulet, Bill. Disciplined Entrepreneurship: 24 Steps to a Successful Startup. 1. Hoboken: Wiley, 2013

Class Participants

20-40 Students participating in the Latam Colab

Mentors

The MIT instructors will be inviting some people to join the class as “mentors”. These are individuals who have valuable business and/or technical experience and will serve as mentors to student startup teams. They have more flexibility regarding their participation in the class, as they may or may not choose to attend all class sessions. Class mentors may include professionals, university lecturers, and/or graduate students.

Class Community

Because the group of students will have diverse backgrounds and experiences in entrepreneurship, there is much to be learned from each other. This will be the focus of the culture within the course: a community that shares knowledge with each, and takes the initiative to work together. This includes collaboration among teams, as students will be expected to provide constructive criticism of their peers’ work to learn from each other’s successes and failures. It is expected that the students will take an active role in supporting and fostering the class community.

MIT Instructors

This course will be taught by two (2) MIT graduate level students who have both startup and corporate working experiences prior to MIT.

Language

The course will be conducted in English. When possible, support materials will be provided in Spanish. Students are welcome to work with their fellow students in Spanish.

Participation & Student Expectations

This is an intensive workshop. Students must commit to attending every, and prepare for each session.

Students are expected to:

- Arrive on-time
- Listen attentively
- Complete in-class assignments
- Help other students
- Learn on their own
- Study/Work at home and on the weekends
- Present to the whole class on learned material when asked

Tentative Course Schedule

Week	Entrepreneurship Skills	Soft Skills (to be modified by instructors)
Week 1	<ul style="list-style-type: none">● Market Segmentation● Select a Beachhead Market● Build an End User Profile● Calculate the Total Addressable Market (TAM) Size for the Beachhead Market● Profile the Persona for the Beachhead Market● Full Life Cycle Use Case	<ul style="list-style-type: none">● Design Thinking● Team building icebreakers● Teamwork & Leadership● Finding one's passion & purpose
Week 2	<ul style="list-style-type: none">● High-Level Product	<ul style="list-style-type: none">● Making an impact in

	<p>Specification</p> <ul style="list-style-type: none"> Quantify the Value Proposition Identify Your Next 10 Customers Define Your Core Chart Your Competitive Position Map the Process to Acquire a Paying Customer Calculate the Total Addressable Market Size for Follow-on Markets 	<p>the world</p> <ul style="list-style-type: none"> Success & happiness Marketing & sales Physical & Mental wellbeing Finances & Funding Communication & public speaking skills
Week 3	<ul style="list-style-type: none"> Design a Business Model Calculate the Cost of Customer Acquisition (COCA) Set Your Pricing Framework Calculate the Lifetime Value (LTV) of an Acquired Customer Map the Sales Process to Acquire a Customer Identify Key Assumptions 	<ul style="list-style-type: none"> Presentation development skills Global Entrepreneurship landscape
Week 4	<ul style="list-style-type: none"> Test Key Assumptions Define the Minimum Viable Business Product (MVBP) Show That "The Dogs Will Eat the Dog Food" Develop a Product Plan Pitch your product. Pitch competition 	<ul style="list-style-type: none"> Industry specific info - FinTech/EdTech/Gov Tech Running a company Legal considerations

Costs

The cost of the program is USD \$80,000, includes all MIT and MISTI overhead, administrative costs, travel costs for the instructors, stipends and other expenses.

DRAFT: This Curriculum Is Still Under Discussion

6. Harvard Global Program on Negotiation Flyer

AS OF APRIL 16, 2018

The following presents a Program on Negotiation Flyer with an overview of the general program.

NEW!

PROGRAM ON NEGOTIATION
HARVARD LAW SCHOOL



PON GLOBAL

**A NEW EXECUTIVE EDUCATION OFFERING FROM THE
PROGRAM ON NEGOTIATION AT HARVARD LAW SCHOOL**



Supporting our mission to improve the theory and practice of negotiation around the world, the Program on Negotiation (PON) at Harvard Law School is pleased to launch a new and innovative blended learning program—PON Global. Composed of dynamic videos and video conferencing segments that feature senior PON faculty and facilitated by an on-the-ground, PON-certified trained instructor, this groundbreaking program will, for the first time ever, bring PON's negotiation concepts, techniques, and curriculum to people around the world.

THE PROGRAM

This three-day program will take place at designated partner facilities in host countries, and largely mirror the extremely popular Executive Education program that PON has offered in Cambridge, Massachusetts, for more than 30 years: Negotiation and Leadership.

Featuring time- and road-tested curriculum that has been utilized by more than 30,000 executives, PON Global will provide a framework for negotiation—equipping participants to overcome barriers, manage conflict, and achieve better outcomes at the bargaining table.

In this program, participants will have the opportunity to test their beliefs and assumptions, overcome emotional and rational biases, examine complex negotiation scenarios, and discover a range of competitive and cooperative negotiation strategies. In video sessions featuring our expert faculty, executives will broaden their understanding of negotiating concepts, acquire proven negotiating techniques, and have the opportunity to put their learning into practice through in-class exercises.

THE REQUIREMENTS

This exclusive program admits a select group of participants per session. All participants must speak English fluently.

THE CERTIFICATION

Upon successful completion of the program, all participants will receive an official certificate from the Program on Negotiation at Harvard Law School.

THE FACULTY

PON-trained instructors will engage participants in interactive exercises and role-plays that allow them to apply new concepts and lessons to real-world negotiation scenarios.

Dynamic video sessions and virtual “chats” will feature PON faculty—the same expert negotiators, professors, researchers, and thought leaders who teach PON's on-the-ground courses in Cambridge, Massachusetts.

www.executive.pon.harvard.edu

PON GLOBAL

A NEW EXECUTIVE EDUCATION OFFERING FROM THE
PROGRAM ON NEGOTIATION AT HARVARD LAW SCHOOL



SOME OF THE LEADING NEGOTIATION SCHOLARS WHO WILL BE PART OF PON GLOBAL INCLUDE:

Max Bazerman: Jesse Isidor Straus Professor of Business Administration at Harvard Business School, Co-Director of the Center for Public Leadership at Harvard Kennedy School

Gabriella Blum: Rita E. Hauser Professor of Human Rights and International Humanitarian Law at Harvard Law School. Co-Director of the HLS-Brookings Project on Law and Security

Robert Bordone: Thaddeus R. Beal Clinical Professor of Law at Harvard Law School. Founding Director of the Harvard Negotiation and Mediation Clinical Program

Jared Curhan: Sloan Distinguished Associate Professor of Organization Studies at MIT's Sloan School of Management

Sheila Heen: Lecturer on Law at Harvard Law School.

Alain Lempereur: Alan B. Slifka Professor at Brandeis University. Director of the Masters' Programs in Coexistence and Conflict at the Heller School for Social Policy and Management

Robert Mnookin: Samuel Williston Professor of Law at Harvard Law School, Chair of the Program on Negotiation at Harvard Law School, Director of the Harvard Negotiation Research Project

Jeswald Salacuse: Henry J. Braker Professor of Law at the Fletcher School of Law and Diplomacy at Tufts University

James Sebenius: Gordon Donaldson Professor of Business Administration at Harvard Business School. Director of the Harvard Negotiation Project.

Daniel Shapiro: Associate Professor of Psychology at Harvard Medical School/McLean Hospital, Associate Director of the Harvard Negotiation Project

Guhan Subramanian: Joseph H. Flom Professor of Law and Business at Harvard Law School, H. Douglas Weaver Professor of Business Law at Harvard Business School

Lawrence Susskind: Ford Professor of Urban and Environmental Planning at the Massachusetts Institute of Technology, Director of the MIT-Harvard Public Disputes Program



Max Bazerman



Gabriella Blum



Robert Bordone



Jared Curhan



Sheila Heen



Alain Lempereur



Robert Mnookin



Jeswald Salacuse



James Sebenius



Daniel Shapiro



Guhan
Subramanian



Lawrence
Susskind

About the Program on Negotiation at Harvard Law School

Widely recognized as the preeminent leader in the field of negotiation and negotiation research, the Program on Negotiation is an interdisciplinary, multiuniversity research center based at Harvard Law School. **Harvard | MIT | Tufts**

www.executive.pon.harvard.edu

7. Harvard Global Program on Negotiation Expenses

AS OF APRIL 15, 2018

The following presents a Program on Negotiation Expenses table which are typical to running a PON program. Typically, Global PON partners with an international entity to run the program in the city, where the partner incurs fixed expenses of around \$50,000. PON and the local partner then split the revenue per student (approximately \$3,000 each student) after all local venue expenses have been deducted.

Confidential Memorandum:

Costs per PON Global Program (variable)

Total PON Expenses:

PON Pedagogy Licensing and Curriculum Development Fee	fixed at \$20,000
PON On-site Instructor Fee (\$5,000 per day)	fixed at \$15,000
PON Instructor Fee for 1 hour Videoconference on Day 1	fixed at \$1,000
PON Instructor Fee for 1 hour Videoconference on Day 3	fixed at \$1,000
VideoCam Studio Cost for Days 1 and 3	fixed at \$1,000
PON Instructor/Managing Director Airfare & Transportation	budgeted at \$10,000*
PON Instructor/Managing Director Hotel (5 nights) and Meals	budgeted at \$5,000*
PON Website Marketing allocation	fixed at \$500
Case Materials Expense (e.g. MODE)	at cost
Materials Expense (shipped to host country: lanyards, pens, certificate materials and shipping costs)	fixed at \$600

Total Partner Expenses:**

Venue Including Food and Beverage for 3 days for 60 participants	
Audio-visual, technical support, on-site	
Marketing	
Financial Processing Fees	
Printing of Program Materials	
Optional: Photographer and videographer for future marketing efforts	

*Managing Director's travel and hotel costs for an inaugural course offering (or new course location)

**To be determined in advance and included in the contract

7. Online Resources for Math Skills for Machine Learning

The following presents a listing of free online resources for students who need to take refresher courses on the math skills necessary for Machine Learning coursework. Course list was sourced from <https://towardsdatascience.com/the-mathematics-of-machine-learning-894f046c568>.

Suggested Free Online Courses for Math Skills for Machine Learning

- Khan Academy's [Linear Algebra](#), [Probability & Statistics](#), [Multivariable Calculus](#) and [Optimization](#).
- [Coding the Matrix: Linear Algebra through Computer Science Applications](#) by Philip Klein, Brown University.
- [Linear Algebra—Foundations to Frontiers](#) by Robert van de Geijn, University of Texas.
- [Applications of Linear Algebra, Part 1](#) and [Part 2](#). A newer course by Tim Chartier, Davidson College.
- Joseph Blitzstein—[Harvard Stat 110 lectures](#).
- Larry Wasserman's book—[All of statistics: A Concise Course in Statistical Inference](#).
- Boyd and Vandenberghe's course on [Convex optimization from Stanford](#).

8. Online Course Descriptions

The following presents the full course descriptions of the online courses proposed by J-WEL that were included in the draft academic program. Descriptions were taken from the edX website and any Open Courseware website. All courses are subject to discussion and change.

Online Course Descriptions

Course Name	Description
Pre-requisites	
6.00x Introduction to Computer Science and Programming	<p>6.00x is an introduction to using computation to solve real problems. The course is aimed at students with little or no prior programming experience who have a desire (or at least a need) to understand computational approaches to problem solving.</p> <p>It is a challenging and rigorous course in which the students spend a lot of time and effort learning to bend the computer to their will.</p>
Required Courses	
Program Kick-Off	<p>In-person program orientation for students to meet MIT faculty, researchers and affiliates (in person or live online). This week includes getting students familiar with the Minerva platform, forming learning groups and, finally, students will start the online content as a cohort. Students also attend seminars with guest speakers, entrepreneurs, industry leaders to introduce students to Artificial Intelligence and its applications.</p>
6.005x Software Construction in Java	<p>This computer science focuses on writing good software using modern software engineering techniques.</p> <p>In this course, you will learn what software engineers mean by "good" code -- safe from bugs, easy to understand, and ready for change. You will also learn ways to make your code better, including testing, specifications, code review, exceptions, immutability, abstract data types, and interfaces.</p> <p>This is a challenging and rigorous course that will help you take the next step on your way to becoming a skilled software engineer.</p>
MITx Entrepreneurship 101 (Spanish)	<p>Many seemingly great ideas and technologies come to a sudden halt in the face of one simple, inescapable question: "Who is your customer?"</p> <p>MIT has been asking its student entrepreneurs this question for many years – and with great success. The 25,600 companies started by MIT alumni generate \$2 trillion in revenue and have created 3.3 million jobs. If MIT were a country, it would be the 11th largest economy in the world.</p> <p>This is entrepreneurship – so don't expect a lecture. Every class session will be an in-depth and focused case study of MIT entrepreneurs from areas as diverse as mobile applications, 3D printing, power electronics, international development, and watchmaking.</p> <p>You will learn, through the stories of MIT entrepreneurs, how to go from idea or technology to the necessary understanding of who and why will want to buy your product. Specifically, you will learn how to:</p> <ul style="list-style-type: none"> • Identify prospective customers • Interview them • And finally, select the right customers for your business.

Berkman Seminar Series (pre-recorded)	Each session features a pre-recorded conversation about cutting-edge Internet issues and research. Guest presenters, including academics, entrepreneurs, students, lawyers, fellows, architects, designers, visionaries and others, offer an issue, a provocation, or a problem as a discussion input, and who engages our community to help further research, inform policy, and/or challenge assumptions.
6.006 Algorithms	Introduction to mathematical modeling of computational problems, as well as common algorithms, algorithmic paradigms, and data structures used to solve these problems. Emphasizes the relationship between algorithms and programming, and introduces basic performance measures and analysis techniques for these problems.
6.041x Intro to Probability Part 1 - Fundamentals	<p>The world is full of uncertainty: accidents, storms, unruly financial markets, and noisy communications. The world is also full of data. Probabilistic modeling and the related field of statistical inference are the keys to analyzing data and making scientifically sound predictions.</p> <p>This course introduces the general framework of probability models, multiple discrete or continuous random variables, expectations, conditional distributions, and various powerful tools of general applicability. It is a challenging class, but will enable you to apply the tools of probability theory to real-world applications or your research.</p> <p>Probabilistic models use the language of mathematics. But instead of relying on the traditional "theorem - proof" format, we develop the material in an intuitive -- but still rigorous and mathematically precise -- manner. Furthermore, while the applications are multiple and evident, we emphasize the basic concepts and methodologies that are universally applicable.</p>
MITx Entrepreneurship 102 (Spanish)	<p>Ask not what your customer can do for you – ask what you can do for your customer.</p> <p>Just as important as finding your customer is creating a great product that will solve the customer's problem. How will customers acquire your product? How will it solve the customer's problem? What value will your product bring? What is your secret sauce? How do you stack up vis-à-vis the competition?</p> <p>From fields as diverse as virtual immortality, small business marketing, urban design, language education, healthcare, and entrepreneur support services, we use in-depth case studies of entrepreneurs to examine how they developed their product concepts, solved their customer's problem, established a clear value proposition, refined their secret sauce, and understood their competition.</p>
6.041x Intro to Probability: Part 2 – Inferences and Processes	This course will be offered in-person. This course follows Introduction to Probability: Part I - The Fundamentals, which introduced the general framework of probability models, multiple discrete or continuous random variables, expectations, conditional distributions, and various powerful tools of general applicability. Part 2 will then continue into further topics that include laws of large numbers, the main tools of Bayesian inference methods, and an introduction to random processes (Poisson processes and Markov chains).

	It is a challenging class, but will enable you to apply the tools of probability theory to real-world applications or your research.
Global Startup Labs	<p>MIT Global Startup Labs partners with universities in emerging regions and organizes advanced courses taught by MIT student/instructors. Courses focus on mobile and Internet technologies, and are structured so that students are awakened to the commercial possibilities of the technologies. Components of the course include detailed technical curriculum, funded business competitions, guest lectures, and networking events, all to help our students develop and realize their ideas.</p> <p>Students will work in teams in order to develop a solution to a real world challenge.</p>
500 startups	<p>Designed for students who already have a business venture of their own and want a more sophisticated start-up course / guidance.</p> <p>500's mission is to discover and back the world's most talented entrepreneurs, help them create successful companies at scale, and build thriving global ecosystems.</p> <p>Students will work in teams in order to develop a solution to a real world challenge.</p>
Berkman Live Seminar Series	Harvard-affiliated faculty offer one-week short courses about cutting-edge Internet issues and research. Guest presenters, including academics, entrepreneurs, students, lawyers, fellows, architects, designers, visionaries and others, offer an issue, a provocation, or a problem as a discussion input, and who engages our community to help further research, inform policy, and/or challenge assumptions.
6.86x Applied Machine Learning	<p>Machine learning methods are commonly used across engineering and sciences, from computer systems to physics. Moreover, commercial sites such as search engines, recommender systems (e.g., Netflix, Amazon), advertisers, and financial institutions employ machine learning algorithms for content recommendation, predicting customer behavior, compliance, or risk. As a discipline, machine learning tries to design and understand computer programs that learn from experience for the purpose of prediction or control. In this course, you will learn about principles and algorithms for turning training data into effective automated predictions.</p> <p>Topics include representation, over-fitting, regularization, and generalization; topics such as clustering, classification, recommender problems, probabilistic modeling, reinforcement learning; and methods such as on-line algorithms, support vector machines, neural networks/deep learning, hidden Markov models, and Bayesian networks.</p>
xPro: Data Science and Big Data Analytics	<p>Every day, your organization generates new data on your customers, your processes, and your industry. But could you be using this data more effectively?</p> <p>Did you know 90% of the world's data has been created in just the past few years? Faced with overwhelming amounts of data, organizations</p>

	<p>are struggling to extract the powerful insights they need to make smarter business decisions. To help uncover the true value of your data, MIT Institute for Data, Systems, and Society (IDSS) created this online course for data scientist professionals looking to harness data in new and innovated ways.</p> <p>Through in-depth lectures from renowned faculty from across MIT, you'll acquire the theories, strategies, and tools you need to answer questions such as:</p> <ul style="list-style-type: none"> • What is clustering and when should I use it? • What is the best way to design experiments and conduct hypothesis testing using my data? • How should I do model selection and avoid over-fitting? • What are the latest trends in machine learning? • How do graphical models and network models differ? • How does making predictions on temporal data differ from other types of data?
Shaping the Future of Work	The goal of this course is to explore and develop plans of action for improving the job and career opportunities for today and tomorrow's workforce. If we take the right actions we can shape the future of work in ways that meet the needs of workers, families, and their economies and societies. To do so we first have to understand how the world of work is changing, how firms can compete and prosper and support good jobs and careers, and how to update the policies and practices governing the world of work.
Capstone Project – Office Hours	Student teams can access office hours with experts for guidance on their team projects that propose solutions to real world challenges (developed in Global Start-up Labs / 500 Startups – period 3).
Program Wrap-up	In-person program wrap-up and graduation. Final program may include: final pitch competition (student capstone projects), career exploration, seminars with applications of AI, coding Competition, amongst others.
Optional Courses	
6.004x Computation Structures	<p>Digital systems are at the heart of the information age in which we live, allowing us to store, communicate and manipulate information quickly and reliably. This computer science course is a bottom-up exploration of the abstractions, principles, and techniques used in the design of digital and computer systems. If you have a rudimentary knowledge of electricity and some exposure to programming, roll up your sleeves, join in and design a computer system!</p> <p>Topics include digital encoding of information, principles of digital signaling; combinational and sequential logic, implementation in CMOS, useful canonical forms, synthesis; latency, throughput and pipelining.</p>

9. Sample Detailed In-Residence Program Structure

Sample Detailed In-Residence Program Structure

The following presents a detailed breakdown of how we conceive of structuring the 5 week in-residence period. We believe in breaking up the content, and suggest offering more conceptual content focused on expanding understanding of AI technology and concepts in the mornings, and doing more hands-on entrepreneurial application of skills in the afternoon. This provides a more integrated and interdisciplinary learning experience for students and allows space for them to independently link concept and application without forced assignments. We want to be careful in not overloading too much technical content or assignments during the in-residence, as the most valuable part of learning in person is engaging with content directly and sharing perspectives with others. Since the online coursework is very technical and focused on mastering skills, we do not want to offer more of the same during in-person learning.

- **Mornings 8am - 12pm or 9am - 12pm:**
 - Berkman (1 hour lecture) - this can be a short course to be facilitated by a professors, a series of topical seminars led by Berkman affiliates with discussion groups, or lectures on the most current issues in AI. We suggest 3 weeks of structured content, and 1 week of guidance on ethical implications of student projects.
 - J-WEL (2 - 3 hours depending on availability) - Depending on availability, we have allotted time in the mornings for students to dive into more technical content via J-WEL appointed messengers, faculty or MIT affiliates. This can take the form of:
 - Short Courses: We can do a 2-4 week short course that meets 5 days a week for 2-3 hours/day to cover some topical area. Examples could be a condensed version of the [Open Courseware course on Artificial Intelligence](#) or we could finish out Intro to Probability 2 so that we have space for a course on AI.
 - Weekly Seminars: These can be seminar style classes that meet each day for 2-3 hours to discuss more deeply the ideas in AI, machine learning, and intelligence. Students generally enjoy seminars as it gives them lots of time to interact with professors or instructors, but is not as work intensive as other courses.
 - Lecture Series: These can be a series of lectures pertaining to AI or some related field, where the speaker is a professor, researcher, or practitioner in the field to share their research or insights.
 - **Afternoons 1pm - 5pm or 6pm:**
 - MISTI Global Startup Labs (GSL)- Entrepreneurship Curriculum: The GSL course is meant to be an introduction to the full entrepreneurship life cycle. While the GSL curriculum is typically 6-7 weeks long and consists of 7 hours a day, we have asked to have it condensed for the purposes of

our program. The result is a 4 or 5 hour class without the mobile tech app creation component. Instead, students will come up with Prototype solutions to some customer problem to be solved through AI technology. This prototype will be what students will work on for the remainder of the program to produce an actual working minimum viable product.

- 500 Startups - for students who may have already started their own business in the past or who are interested in more advanced content in entrepreneurship, we are currently in discussions with 500 startups in Latin America to create a short curriculum for the purposes of the course. While it would be nice to have content from 500 startups, if it doesn't work out in time, we believe GSL would still be a valuable experience for any student.

10.Full LatAm CoLAB Budget

AS OF APRIL 26, 2018

The following budget presents all projected expenses for launching and running the LatAm CoLAB program from 2018-2022. Please note, we have included all student costs, including travel and lodging, as part of the operating expenses. We calculated this to provide an estimate of what it would cost for a student to attend the full program. It is up to LatAm CoLAB to decide who should absorb those costs. All other notes and assumptions have been laid out clearly in the last three pages. While consultants have tried to use reasonable expectations of local costs and faculty and student enrollment numbers, we understand these numbers are subject to change and will directly impact the overall budget numbers.

Summary Budget

Description	Phase 1		Phase 2		Phase 3		Phase 4		Phase 5	
	February 2018 - January 2019		February 2019 - January 2020		February 2020 - January 2021		February 2021 - January 2022		February 2022 - January 2023	
	Low	High	Low	High	Low	High	Low	High	Low	High
<u>REVENUES</u>										
Total Tuition & Fees	\$ -	\$ -	\$ 1,750,000	\$ 2,250,000	\$ 2,400,000	\$ 3,075,000	\$ 3,200,000	\$ 4,100,000	\$ 4,800,000	\$ 6,150,000
Total Operating Revenue	\$ -	\$ -	\$ 1,750,000	\$ 2,250,000	\$ 2,400,000	\$ 3,075,000	\$ 3,200,000	\$ 4,100,000	\$ 4,800,000	\$ 6,150,000
<u>PROGRAM EXPENDITURES</u>										
Total Faculty Salaries & Benefits	\$ 106,560	\$ 177,600	\$ 140,580	\$ 226,740	\$ 140,580	\$ 226,740	\$ 174,600	\$ 275,880	\$ 242,640	\$ 374,160
Total Staff Salaries & Benefits	\$ 87,040	\$ 174,080	\$ 102,105	\$ 192,788	\$ 159,705	\$ 302,868	\$ 285,145	\$ 548,628	\$ 315,865	\$ 599,828
Total Consultants	\$ 375,000	\$ 650,000	\$ 375,000	\$ 650,000	\$ 375,000	\$ 650,000	\$ 375,000	\$ 650,000	\$ 375,000	\$ 650,000
Memberships	\$ 1,595,000	\$ 1,595,000	\$ 2,145,000	\$ 2,145,000	\$ 2,292,000	\$ 2,292,000	\$ 2,858,000	\$ 2,858,000	\$ 3,264,000	\$ 3,264,000
Recruitment and Marketing	\$ 125,000	\$ 245,000	\$ 150,000	\$ 295,000	\$ 175,000	\$ 345,000	\$ 225,000	\$ 445,000	\$ 225,000	\$ 445,000
Administrative Operational Expenses	\$ 360,000	\$ 820,000	\$ 622,500	\$ 1,130,000	\$ 790,000	\$ 1,430,000	\$ 792,500	\$ 1,435,000	\$ 797,500	\$ 1,445,000
Adjusted Educational Support Expenses (25%)	\$ 26,250	\$ 58,125	\$ 75,703	\$ 122,322	\$ 83,750	\$ 128,750	\$ 83,750	\$ 128,750	\$ 83,750	\$ 128,750
Incubator Expenses	\$ -	\$ -	\$ 18,285	\$ 30,137	\$ 33,285	\$ 55,137	\$ 66,570	\$ 110,273	\$ 66,570	\$ 110,273
Student Incubator Expenses	\$ -	\$ -	\$ 13,920	\$ 24,000	\$ 27,840	\$ 48,000	\$ 55,680	\$ 96,000	\$ 55,680	\$ 96,000
Campus Facilities Lease/Management Fee	\$ -	\$ -	\$ 40,000	\$ 60,000	\$ 40,000	\$ 60,000	\$ 40,000	\$ 60,000	\$ 40,000	\$ 60,000
Total Program Expenditures	\$ 2,674,850	\$ 3,719,805	\$ 3,683,093	\$ 4,875,986	\$ 4,117,160	\$ 5,538,494	\$ 4,956,245	\$ 6,607,531	\$ 5,466,005	\$ 7,173,011
<u>STUDENT EXPENDITURES</u>										
Student Travel Expenses	\$ -	\$ -	\$ 373,500	\$ 907,800	\$ 560,250	\$ 1,361,700	\$ 747,000	\$ 1,815,600	\$ 1,120,500	\$ 2,723,400
Total Student Expenditures	\$ -	\$ -	\$ 373,500	\$ 907,800	\$ 560,250	\$ 1,361,700	\$ 747,000	\$ 1,815,600	\$ 1,120,500	\$ 2,723,400
TOTAL EXPENDITURES	\$ 2,674,850	\$ 3,719,805	\$ 4,056,593	\$ 5,783,786	\$ 4,677,410	\$ 6,900,194	\$ 5,703,245	\$ 8,423,131	\$ 6,586,505	\$ 9,896,411
Total Expenditures per Student			\$ 40,566	\$ 57,838	\$ 31,183	\$ 46,001	\$ 28,516	\$ 42,116	\$ 21,955	\$ 32,988
Annual Net Profit/(Loss)	\$ (2,674,850)	\$ (3,719,805)	\$ (2,306,593)	\$ (3,533,786)	\$ (2,277,410)	\$ (3,825,194)	\$ (2,503,245)	\$ (4,323,131)	\$ (1,786,505)	\$ (3,746,411)
Cumulative Net Profit/(Loss)	\$ (2,674,850)	\$ (3,719,805)	\$ (4,981,443)	\$ (7,253,591)	\$ (7,258,852)	\$ (11,078,785)	\$ (9,762,097)	\$ (15,401,916)	\$ (11,548,602)	\$ (19,148,328)
Average of High and Low Expenditures	\$3,197,328		\$4,920,189		\$5,788,802		\$7,063,188		\$8,241,458	

Hybrid Program Model
Detailed Budget

Description		Phase 1 (startup)			Phase 2 (first year)			Phase 3			Phase 4			Phase 5				
		April 2018 - January 2019			February 2019 - January 2020			February 2020 - January 2021			February 2021 - January 2022			February 2021 - January 2022				
		FTE/Units	Low	High	FTE/Units	Low	High	FTE/Units	Low	High	FTE/Units	Low	High	FTE/Units	Low	High		
REVENUES																		
Tuition	[1]																	
Faculty Student Tuition		-	\$	-	\$	-		-	\$	-	\$	-		20	\$	-	\$	-
Uruguayan Student Tuition		-	\$	-	\$	-	50	\$	750,000	\$	1,000,000		60	\$	900,000	\$	1,200,000	
Non-Uruguayan Student Tuition		-	\$	-	\$	-	50	\$	1,000,000	\$	1,250,000		75	\$	1,500,000	\$	1,875,000	
Total Tuition & Fees		-	\$	-	\$	-	100	\$	1,750,000	\$	2,250,000		150	\$	2,400,000	\$	3,075,000	
University Contributions	[2]	-	\$	-	\$	-	-	\$	-	\$	-		-	\$	-	\$	-	
Uruguay Contributions	[3]		\$	-	\$	-		\$	-	\$	-			\$	-	\$	-	
Inter-American Development Bank Contributions	[3]		\$	-	\$	-		\$	-	\$	-			\$	-	\$	-	
Corporate Contributions			\$	-	\$	-		\$	-	\$	-			\$	-	\$	-	
Research Funding			\$	-	\$	-		\$	-	\$	-			\$	-	\$	-	
Office Space Lease	[4]		\$	-	\$	-		\$	-	\$	-			\$	-	\$	-	
Total Operating Revenue			\$	-	\$	-		\$	1,750,000	\$	2,250,000			\$	2,400,000	\$	3,075,000	
PROGRAM EXPENDITURES																		
Dean		1	\$	45,000	\$	75,000		1	\$	45,000	\$	75,000		1	\$	45,000	\$	75,000
Associate Dean		1	\$	38,250	\$	63,750		1	\$	38,250	\$	63,750		1	\$	38,250	\$	63,750
Full Time Faculty		-	\$	-	\$	-		-	\$	-	\$	-		-	\$	-	\$	-
Part Time Faculty		-	\$	-	\$	-		-	\$	-	\$	-		-	\$	-	\$	-
Local Faculty	[5]	-	\$	-	\$	-	7	\$	31,500	\$	45,500		7	\$	31,500	\$	45,500	
Total Faculty Salaries			\$	83,250	\$	138,750			\$	114,750	\$	184,250			\$	146,250	\$	229,750
Full Time Faculty Benefits @ 28%			\$	23,310	\$	38,850			\$	23,310	\$	38,850			\$	23,310	\$	38,850
Part Time Faculty Benefits @ 8%			\$	-	\$	-			\$	2,520	\$	3,640			\$	5,040	\$	7,280
Total Faculty Salaries & Benefits			\$	106,560	\$	177,600			\$	140,580	\$	226,740			\$	174,600	\$	275,880
Administrative Assistants		1	\$	15,000	\$	30,000		1	\$	15,000	\$	30,000		2	\$	30,000	\$	60,000
Program Managers		1	\$	18,000	\$	36,000		1	\$	18,000	\$	36,000		2	\$	36,000	\$	72,000
Resident Advisors (part-time support for travel periods)		-	\$	-	\$	-		1	\$	2,769	\$	4,615		1	\$	2,769	\$	4,615
Lab Support		-	\$	-	\$	-		-	\$	-	\$	-		-	\$	-	\$	-
General Support		1	\$	15,000	\$	30,000		-	\$	-	\$	-		-	\$	-	\$	-
Information Technology Support		1	\$	20,000	\$	40,000		1	\$	20,000	\$	40,000		1	\$	20,000	\$	40,000
Professional Support		-	\$	-	\$	-		-	\$	-	\$	-		-	\$	-	\$	-
Teaching Assistants (abroad)		-	\$	-	\$	-		-	\$	-	\$	-		-	\$	-	\$	-
Teaching Assistants (local)	[6]	-	\$	-	\$	-	16	\$	24,000	\$	40,000		24	\$	36,000	\$	60,000	
Total Staff Support			\$	68,000	\$	136,000			\$	79,769	\$	150,615			\$	124,769	\$	236,615
Total Benefits @ 28%			\$	19,040	\$	38,080			\$	22,335	\$	42,172			\$	34,935	\$	66,252

Hybrid Program Model
Detailed Budget

Description		Phase 1 (startup)			Phase 2 (first year)			Phase 3			Phase 4			Phase 5		
		April 2018 - January 2019			February 2019 - January 2020			February 2020 - January 2021			February 2021 - January 2022			February 2021 - January 2022		
		FTE/Units	Low	High	FTE/Units	Low	High	FTE/Units	Low	High	FTE/Units	Low	High	FTE/Units	Low	High
Total Education Staff Salaries & Benefits		\$ 87,040	\$ 174,080		\$ 102,105	\$ 192,788		\$ 159,705	\$ 302,868		\$ 285,145	\$ 548,628		\$ 315,865	\$ 599,828	
Legal		\$ 25,000	\$ 50,000		\$ 25,000	\$ 50,000		\$ 25,000	\$ 50,000		\$ 25,000	\$ 50,000		\$ 25,000	\$ 50,000	
Lobbyist		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	
Management Consulting (US)		\$ 300,000	\$ 500,000		\$ 300,000	\$ 500,000		\$ 300,000	\$ 500,000		\$ 300,000	\$ 500,000		\$ 300,000	\$ 500,000	
Other Consultants (US)		\$ 50,000	\$ 100,000		\$ 50,000	\$ 100,000		\$ 50,000	\$ 100,000		\$ 50,000	\$ 100,000		\$ 50,000	\$ 100,000	
Total Consultants		\$ 375,000	\$ 650,000		\$ 375,000	\$ 650,000		\$ 375,000	\$ 650,000		\$ 375,000	\$ 650,000		\$ 375,000	\$ 650,000	
J-WEL		\$ 1,495,000	\$ 1,495,000		\$ 1,495,000	\$ 1,495,000		\$ 1,592,000	\$ 1,592,000		\$ 1,978,000	\$ 1,978,000		\$ 2,178,000	\$ 2,178,000	
Berkman Center		\$ -	\$ -		\$ 100,000	\$ 100,000		\$ 100,000	\$ 100,000		\$ 100,000	\$ 100,000		\$ 100,000	\$ 100,000	
MISTI		\$ -	\$ -		\$ 350,000	\$ 350,000		\$ 350,000	\$ 350,000		\$ 350,000	\$ 350,000		\$ 350,000	\$ 350,000	
Minerva	[7]	\$ 100,000	\$ 100,000		\$ 150,000	\$ 150,000		\$ 200,000	\$ 200,000		\$ 380,000	\$ 380,000		\$ 586,000	\$ 586,000	
Lecturers from outside of above networks		\$ -	\$ -		\$ 50,000	\$ 50,000		\$ 50,000	\$ 50,000		\$ 50,000	\$ 50,000		\$ 50,000	\$ 50,000	
Memberships		\$ 1,595,000	\$ 1,595,000		\$ 2,145,000	\$ 2,145,000		\$ 2,292,000	\$ 2,292,000		\$ 2,858,000	\$ 2,858,000		\$ 3,264,000	\$ 3,264,000	
Brand Marketing		\$ 35,000	\$ 70,000		\$ 35,000	\$ 70,000		\$ 35,000	\$ 70,000		\$ 35,000	\$ 70,000		\$ 35,000	\$ 70,000	
Marketing Materials		\$ 40,000	\$ 75,000		\$ 40,000	\$ 75,000		\$ 40,000	\$ 75,000		\$ 40,000	\$ 75,000		\$ 40,000	\$ 75,000	
Recruitment Costs		\$ 50,000	\$ 100,000		\$ 75,000	\$ 150,000		\$ 100,000	\$ 200,000		\$ 150,000	\$ 300,000		\$ 150,000	\$ 300,000	
Recruitment and Marketing		\$ 125,000	\$ 245,000		\$ 150,000	\$ 295,000		\$ 175,000	\$ 345,000		\$ 225,000	\$ 445,000		\$ 225,000	\$ 445,000	
Books & Subscriptions	-	\$ -	\$ -	100	\$ 5,000	\$ 10,000	150	\$ 7,500	\$ 15,000	200	\$ 10,000	\$ 20,000	300	\$ 15,000	\$ 30,000	
Computer Supplies		\$ 20,000	\$ 50,000		\$ 20,000	\$ 50,000		\$ 30,000	\$ 75,000		\$ 30,000	\$ 75,000		\$ 30,000	\$ 75,000	
Food & Entertainment		\$ 5,000	\$ 10,000		\$ 12,500	\$ 25,000		\$ 12,500	\$ 25,000		\$ 12,500	\$ 25,000		\$ 12,500	\$ 25,000	
Recruitment Faculty/Staff		\$ 20,000	\$ 40,000		\$ 15,000	\$ 25,000		\$ 15,000	\$ 25,000		\$ 15,000	\$ 25,000		\$ 15,000	\$ 25,000	
Employee Travel		\$ 15,000	\$ 35,000		\$ 15,000	\$ 35,000		\$ 25,000	\$ 50,000		\$ 25,000	\$ 50,000		\$ 25,000	\$ 50,000	
Moving Expenses		\$ 10,000	\$ 30,000		\$ 15,000	\$ 35,000		\$ 15,000	\$ 35,000		\$ 15,000	\$ 35,000		\$ 15,000	\$ 35,000	
Accreditation		\$ 5,000	\$ 25,000		\$ 20,000	\$ 40,000		\$ 20,000	\$ 40,000		\$ 20,000	\$ 40,000		\$ 20,000	\$ 40,000	
Maintenance Contracts		\$ 5,000	\$ 10,000		\$ 20,000	\$ 40,000		\$ 25,000	\$ 50,000		\$ 25,000	\$ 50,000		\$ 25,000	\$ 50,000	
Postage & Freight		\$ 5,000	\$ 10,000		\$ 5,000	\$ 10,000		\$ 5,000	\$ 10,000		\$ 5,000	\$ 10,000		\$ 5,000	\$ 10,000	
Advertising		\$ 100,000	\$ 250,000		\$ 200,000	\$ 300,000		\$ 200,000	\$ 300,000		\$ 200,000	\$ 300,000		\$ 200,000	\$ 300,000	
Faculty & Student Retreats		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	
Laboratory Supplies		\$ -	\$ -		\$ -	\$ -		\$ 25,000	\$ 75,000		\$ 25,000	\$ 75,000		\$ 25,000	\$ 75,000	
Educational Expenses		\$ -	\$ -		\$ 10,000	\$ 40,000		\$ 20,000	\$ 50,000		\$ 20,000	\$ 50,000		\$ 20,000	\$ 50,000	
Information Technology Operating Expenses		\$ 125,000	\$ 250,000		\$ 200,000	\$ 350,000		\$ 250,000	\$ 400,000		\$ 250,000	\$ 400,000		\$ 250,000	\$ 400,000	
Information Technology Maintenance Agreements		\$ 10,000	\$ 20,000		\$ 15,000	\$ 30,000		\$ 50,000	\$ 100,000		\$ 50,000	\$ 100,000		\$ 50,000	\$ 100,000	
Telephone Expenses		\$ 20,000	\$ 40,000		\$ 20,000	\$ 40,000		\$ 20,000	\$ 40,000		\$ 20,000	\$ 40,000		\$ 20,000	\$ 40,000	
Administrative Fees		\$ 10,000	\$ 25,000		\$ 25,000	\$ 50,000		\$ 35,000	\$ 70,000		\$ 35,000	\$ 70,000		\$ 35,000	\$ 70,000	
Miscellaneous		\$ 10,000	\$ 25,000		\$ 25,000	\$ 50,000		\$ 35,000	\$ 70,000		\$ 35,000	\$ 70,000		\$ 35,000	\$ 70,000	
Administrative Operational Expenses		\$ 360,000	\$ 820,000		\$ 622,500	\$ 1,130,000		\$ 790,000	\$ 1,430,000		\$ 792,500	\$ 1,435,000		\$ 797,500	\$ 1,445,000	
Product Budget or Seed Investment	[8]	-	\$ -	\$ -	1	\$ 15,000	\$ 25,000	2	\$ 30,000	\$ 50,000	4	\$ 60,000	\$ 100,000	4	\$ 60,000	\$ 100,000
Travel Expense - Faculty/Advisors	[9]	-	\$ -	\$ -	1	\$ 1,400	\$ 2,000	1	\$ 1,400	\$ 2,000	2	\$ 2,800	\$ 4,000	2	\$ 2,800	\$ 4,000
Housing Expenses - Faculty/Advisors		-	\$ -	\$ -	1	\$ 245	\$ 700	1	\$ 245	\$ 700	2	\$ 490	\$ 1,400	2	\$ 490	\$ 1,400
Meal Expenses - Faculty/Advisors		-	\$ -	\$ -	1	\$ 140	\$ 270	1	\$ 140	\$ 270	2	\$ 280	\$ 540	2	\$ 280	\$ 540
Faculty/Advisor Compensation	[10]	-	\$ -	\$ -	1	\$ 1,500	\$ 2,167	1	\$ 1,500	\$ 2,167	2	\$ 3,000	\$ 4,333	2	\$ 3,000	\$ 4,333
Incubator Expenses		\$ -	\$ -		\$ 18,285	\$ 30,137		\$ 33,285	\$ 55,137		\$ 66,570	\$ 110,273		\$ 66,570	\$ 110,273	
Housing Expenses	[11]	-	\$ -	\$ -	4	\$ 8,000	\$ 16,000	8	\$ 16,000	\$ 32,000	16	\$ 32,000	\$ 64,000	16	\$ 32,000	\$ 64,000

Hybrid Program Model
Detailed Budget

Description	Phase 1 (startup)			Phase 2 (first year)			Phase 3			Phase 4			Phase 5			
	April 2018 - January 2019			February 2019 - January 2020			February 2020 - January 2021			February 2021 - January 2022			February 2021 - January 2022			
	FTE/Units	Low	High	FTE/Units	Low	High	FTE/Units	Low	High	FTE/Units	Low	High	FTE/Units	Low	High	
Living Stipend	-	\$ -	\$ -	4	\$ 5,920	\$ 8,000	8	\$ 11,840	\$ 16,000	16	\$ 23,680	\$ 32,000	16	\$ 23,680	\$ 32,000	
Students in Incubator Program Expenses		\$ -	\$ -		\$ 13,920	\$ 24,000		\$ 27,840	\$ 48,000		\$ 55,680	\$ 96,000		\$ 55,680	\$ 96,000	
Research Investment		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	
Office of Student Affairs		\$ 11,250	\$ 37,500		\$ 19,125	\$ 63,750		\$ 25,000	\$ 45,000		\$ 25,000	\$ 45,000		\$ 25,000	\$ 45,000	
Admissions Office		\$ 28,125	\$ 56,250		\$ 47,813	\$ 71,720		\$ 50,000	\$ 70,000		\$ 50,000	\$ 70,000		\$ 50,000	\$ 70,000	
Financial Aid Office		\$ 28,125	\$ 56,250		\$ 47,813	\$ 71,720		\$ 50,000	\$ 70,000		\$ 50,000	\$ 70,000		\$ 50,000	\$ 70,000	
Library Support		\$ -	\$ -		\$ 25,500	\$ 38,250		\$ 30,000	\$ 50,000		\$ 30,000	\$ 50,000		\$ 30,000	\$ 50,000	
Health Services		\$ -	\$ -		\$ 51,000	\$ 76,500		\$ 55,000	\$ 75,000		\$ 55,000	\$ 75,000		\$ 55,000	\$ 75,000	
Student Counseling		\$ -	\$ -		\$ 31,875	\$ 47,813		\$ 35,000	\$ 55,000		\$ 35,000	\$ 55,000		\$ 35,000	\$ 55,000	
Academic Affairs		\$ 9,375	\$ 22,500		\$ 15,938	\$ 23,907		\$ 20,000	\$ 40,000		\$ 20,000	\$ 40,000		\$ 20,000	\$ 40,000	
Administrative Affairs		\$ 9,375	\$ 22,500		\$ 15,938	\$ 23,907		\$ 20,000	\$ 40,000		\$ 20,000	\$ 40,000		\$ 20,000	\$ 40,000	
Other Institutional Costs		\$ 18,750	\$ 37,500		\$ 47,813	\$ 71,720		\$ 50,000	\$ 70,000		\$ 50,000	\$ 70,000		\$ 50,000	\$ 70,000	
Educational Support Expenses		\$ 105,000	\$ 232,500		\$ 302,813	\$ 489,287		\$ 335,000	\$ 515,000		\$ 335,000	\$ 515,000		\$ 335,000	\$ 515,000	
Adjusted Educational Support Expenses (25%)		\$ 26,250	\$ 58,125		\$ 75,703	\$ 122,322		\$ 83,750	\$ 128,750		\$ 83,750	\$ 128,750		\$ 83,750	\$ 128,750	
Campus Facilities Lease/Management Fee	[12]	\$ -	\$ -		\$ 40,000	\$ 60,000		\$ 40,000	\$ 60,000		\$ 40,000	\$ 60,000		\$ 40,000	\$ 60,000	
Equipment Leases		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	
Scholarships	[13]	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -	\$ -	
Total Other Expenses		\$ -	\$ -		\$ 40,000	\$ 60,000		\$ 40,000	\$ 60,000		\$ 40,000	\$ 60,000		\$ 40,000	\$ 60,000	
Total Program Expenditures		\$ 2,674,850	\$ 3,719,805		\$ 3,683,093	\$ 4,851,986		\$ 4,117,160	\$ 5,538,494		\$ 4,956,245	\$ 6,607,531		\$ 5,466,005	\$ 7,173,011	
STUDENT EXPENDITURES																
Travel Expenses	[14]	-	\$ -	\$ -	50	\$ 112,500	\$ 225,000	75	\$ 168,750	\$ 337,500	100	\$ 225,000	\$ 450,000	150	\$ 337,500	\$ 675,000
Housing Expenses		-	\$ -	\$ -	100	\$ 54,000	\$ 162,000	150	\$ 81,000	\$ 243,000	200	\$ 108,000	\$ 324,000	300	\$ 162,000	\$ 486,000
Meal Expenses		-	\$ -	\$ -	100	\$ 72,000	\$ 145,800	150	\$ 108,000	\$ 218,700	200	\$ 144,000	\$ 291,600	300	\$ 216,000	\$ 437,400
In-residence Activity Expenses	[15]	-	\$ -	\$ -	100	\$ 60,000	\$ 150,000	150	\$ 90,000	\$ 225,000	200	\$ 120,000	\$ 300,000	300	\$ 180,000	\$ 450,000
Miscellaneous		-	\$ -	\$ -	100	\$ 75,000	\$ 225,000	150	\$ 112,500	\$ 337,500	200	\$ 150,000	\$ 450,000	300	\$ 225,000	\$ 675,000
Student Travel Expenses		\$ -	\$ -		\$ 373,500	\$ 907,800		\$ 560,250	\$ 1,361,700		\$ 747,000	\$ 1,815,600		\$ 1,120,500	\$ 2,723,400	
Total Expenditures		\$ 2,674,850	\$ 3,719,805		\$ 4,056,593	\$ 5,759,786		\$ 4,677,410	\$ 6,900,194		\$ 5,703,245	\$ 8,423,131		\$ 6,586,505	\$ 9,896,411	
Total Expenditures per Student		\$ -	\$ -		\$ 40,566	\$ 57,598		\$ 31,183	\$ 46,001		\$ 28,516	\$ 42,116		\$ 21,955	\$ 32,988	
Annual Net Profit/(Loss)		\$ (2,674,850)	\$ (3,719,805)		\$ (2,306,593)	\$ (3,509,786)		\$ (2,277,410)	\$ (3,825,194)		\$ (2,503,245)	\$ (4,323,131)		\$ (1,786,505)	\$ (3,746,411)	
Cumulative Net Profit/(Loss)		\$ (2,674,850)	\$ (3,719,805)		\$ (4,981,443)	\$ (7,229,591)		\$ (7,258,852)	\$ (11,054,786)		\$ (9,762,097)	\$ (15,377,911)		\$ (11,548,602)	\$ (19,124,323)	

Notes

- 1 Tuition and fees for the purposes of this financial model have been set at 15,000 – 20,000 for Uruguayan students and \$20,000 – 25,000 for students outside of Uruguay
- 2 University contributions are one of the ways which Universities can become partners for this program. For the purposes of this model these are not yet calculated
- 3 Uruguay and IDB contributions are the investment in the program to cover expenditures not covered by tuition and other revenue sources. For the purposes of this model these are not yet calculated.
- 4 There is the possibility for additional revenue from renting office space within the campus or buildings. For the purposes of this model these are not yet calculated.
- 5 Local faculty is calculated assuming that each technical course will also have a local professor to facilitate student learning and for capacity building purposes.
- 6 Teaching assistants will be needed at the rate of 1 local TA per 50 students per course per trimester.
- 7 Cost for Minerva platform, startup costs and delivery. Delivery costs based on number of teachers and students.
- 8 Product budget or seed investment is meant to be used for the project or startup itself and not for living or personal expenses
- 9 Travel expenses for faculty and advisors calculated as one visit (7-10 days) per month during the incubator stage.
- 10 Faculty/advisor compensation for incubator calculated at 1/3 of regular adjunct rate.
- 11 Housing expense and Living Stipend for Incubator is based on 4 months. Living stipend is meant to cover meals and other personal expenses not provided by the program.
- 12 Cost of campus facilities (either lease or purchase) is not calculated for this operational model as it is a capital investment. A portion of the cost of the campus/building could be offset by renting out space within the building.
- 13 Scholarships have not been calculated for the purposes of this model. Scholarship calculation would be dependent on tuition rates.
- 14 Travel expenses assume that 50% of all students are non-Uruguayan and will attend the three in-residence portions (travel periods)
- 15 Includes allowance for travel or activities within the in-residence portion/ travel periods (e.g. visits to local startups).

Assumptions

		<u>Low</u>	<u>High</u>							
Revenue										
University Contributions	\$	-	\$	-						
Faculty/TA Compensation										
Local Faculty Rate (per course)	\$	4,500	\$	6,500	Monthly Rate	72518 UYU	29.3 conversio	2475.017(USD/mon =	29700.20 annual salary	4950.03413
TA (per course) - remote rate (US based)	\$	1,800	\$	3,000						
TA (per course) - in-residence rate (local/ part-tir	\$	1,500	\$	2,500	48797 UYU	29.3 conversio	1665.426(USD/mon =	19985.11 annual salary	1665.426621	
Number of Local Faculty	Assuming 1 faculty per 1 technical course per period									
Phase 2	7.00	1 specialization								
Kick off	0.00									
Period 1	2.00									
Period 2	2.00									
Period 3	1.00									
Period 4	2.00									
Phase 3	7.00	1 specialization								
Kick off	0.00									
Period 1	2.00									
Period 2	2.00									
Period 3	1.00									
Period 4	2.00									
Phase 4	14.00	2 specializations								
Kick off	0.00									
Period 1	4.00									
Period 2	4.00									
Period 3	2.00									
Period 4	4.00									
Phase 5	28.00	2 specializations								
Kick off	0.00									
Period 1	8.00									
Period 2	8.00									
Period 3	4.00									
Period 4	8.00									
TA to Student Ratio	50.00	(assuming 1 local TA and 1 MIT TA will handle each course)								
# of Periods	4.00									
# of courses per student per period	2.00	(2 tech courses, other courses are self-paced)								
Travel Expenses (in-residence)										
Travel (per round trip per person) to/from US	\$	1,400	\$	2,000						
Travel (per round trip per person) within South A	\$	750	\$	1,500						
Student housing per night	\$	15	\$	30	asumes that students will be sharing appartments					
Faculty housing per night	\$	35	\$	70						
Meals (per person per day)	\$	20	\$	27						
Activity Expense (per trip)	\$	200	\$	500						
Miscellaneous (per trip)	\$	250	\$	750	includes any incidentals and/or unforeseen expenses (e.g., seasonal flight changes)					

Hybrid Tuition Rate

Uruguay Student-Faculty	\$	-	\$	-
Uruguay Student	\$	15,000	\$	20,000
Latin American Student	\$	20,000	\$	25,000
Outside of Latin America Student	\$	27,000	\$	33,000

Number of in-residence sessions per year 3

Total travel days	36	54
Period 1 (kickoff)	5	14
Period 2	0	0
Period 3 (4 week entrepreneurial)	28	35
Period 4	3	5

Incubator

Time Period (months) 4.00

Student Housing per student per month	\$	500	\$	1,000
Living Stipend per student per month	\$	370	\$	500
Seed Investment per team	\$	15,000	\$	25,000
Faculty/Advisor Compensation	\$	1,500	\$	2,167
Faculty/Advisor Trip Length		7.00		10.00

Recruitment and Advertising

Recruitment cost per student	\$	500	\$	1,000
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Minerva

Phase 1	\$	100,000	Startup costs
Phase 2	\$	150,000	\$249K for launch + \$249K for full course delivery
Phase 3	\$	200,000	\$64K (\$8K/teacher training/oversight x 8 teachers) + \$225K (\$1.5K/student x 150) = \$289K
Phase 4	\$	380,000	\$80K (\$8K/teacher training x 10 teachers) + \$300K (\$1.5K student x 200) = \$380K
Phase 5	\$	586,000	\$136K (\$8K/teacher training x 17 teachers) + \$450K (\$1.5K student x 300) = \$586K

11. Willingness to Pay Surveys: Round 1

Prepared by Santiago Ferrari and Samuel Moreno, Inter-American Development Bank

Uruguay Global (UG) – Assessment on the willingness to pay (WTP) for the program

Preliminary Report

Methodology

We performed our analysis based on surveys to 1,140 individuals from ConnectAmericas' data base. These surveys had two parts. In the first part of the exercise, we asked 10 demographic questions, such as country of residence, educational status, and experience with STEM disciplines. The goal was to identify the right target among all the respondents, in order to segment accurately the WTP analysis.

For the second part of the survey we ask questions following the Choice Based Conjoint (CBC) Methodology. This methodology falls into the indirect ways of asking people for their willingness to pay for a certain product or service. Firstly, we identified the relevant programs currently being designed by the Uruguay Global project, and all the existing competing alternatives. Secondly, we decomposed the programs into the following attributes:

- Type of program
- University teaching the program
- Course modality (on-line, on campus, etc.)
- Commitment (part-time, full-time, etc.)
- Duration
- Location
- Degree (Masters, Advanced degree, etc.)
- Cost of attendance (tuition plus cost of living)

Conjointly allows you to choose more than one level for a specific attribute of a certain program. For our study, we chose only one, because we were working with real options, and UG's programs were already defined. However, we did include different price levels for UG's alternatives. Specifically, we chose the following:

For the hybrid program:

- US\$15,000
- US\$25,000
- US\$35,000

For the In-residence program:

- US\$20,000
- US\$30,000
- US\$40,000

Then, using a specialized software called Conjoint.ly, we asked the question "Which of these graduate programs would you choose?" ("¿Cuál de estos programas de posgrado elegirías?") followed by sets of 4

of the previously identified programs and the option “None of the above”. Figure 1 shows an example of these sets:

Figure 1: Conjoint question example

Cuál de estos programas de posgrado elegirías?

Universidad que ofrece el programa	Universidad Tecnológica del Uruguay (UTEC) en sociedad con Harvard/MIT	Tecnológico de Monterrey (México) y Carnegie Mellon (USA)	MIT (U.S.A.)	MIT (USA)
Ubicación	Punta del Este, Uruguay	Punta del Este, Uruguay	Boston, USA	Online + 1 semestre en Boston, USA
Modalidad	Sesiones presenciales: la mayoría del contenido transmitido en vivo desde Harvard/MIT + algunas clases presenciales con docentes de Harvard/MIT	1,5 años de clases online + 0,5 años de clases presenciales en MIT	Clases presenciales en MIT	1,5 años de clases online + 0,5 años de clases presenciales en MIT
Dedicación	Tiempo completo	Tiempo parcial	Tiempo completo	Tiempo parcial (~1,5 años) + Tiempo Completo (0,5 años)
Duración	1 año	2,5 años	2 años	2 años
Título ofrecido	Diplomado Avanzado de Posgrado (con la opción de transferir los créditos a un Máster en UTEC)	Máster (Doble titulación)	Máster	Máster
Contenidos curriculares	Tecnología, Emprendimiento & Liderazgo	Administración & Informática	Tecnología & Liderazgo	Tecnología
Inversión total (incluye colegiatura, costo de vida y/o viajes)	US\$ 30.000	US\$ 36.000	US\$ 140.000	US\$ 58.000
	ELEGIR	ELEGIR	ELEGIR	ELEGIR

Atrás

NINGUNA DE LAS ANTERIORES

The relevant question CBC allows us to give an answer for is the following:

“For a certain segment, what would be the market share of our programs at these price points?”

Demographics

We sent the survey via email to 35,776 randomly selected registered users from ConnectAmericas. They were chosen among those whose profiles were in Portuguese, and Spanish, and for those whose profile was in English, we only selected people residing in a Latin-American or Caribbean country.

With only one push, and offering one chance to win one of two available tablets, we gathered 970 responses so far.

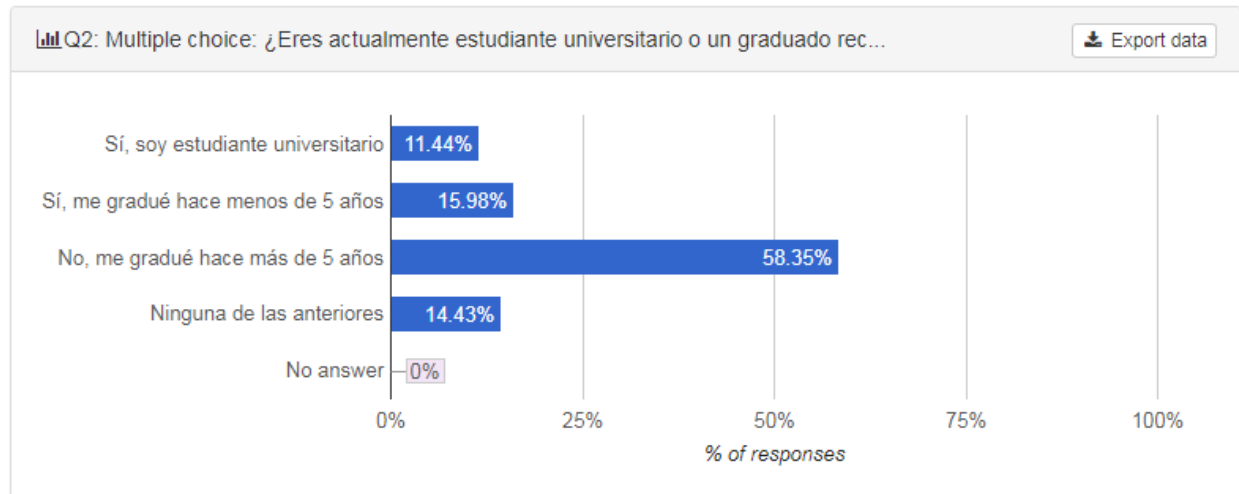
In terms of country of residence, most of the respondents were from Colombia (16.9%), Brazil (14.7%), and Mexico (10.7%), and Peru (9.8%), which altogether make for more than 50% of the respondents, as shown in Table 1.

Table 1: Respondents by country

Country	Responses	Share
Colombia	164	16.9%
Brazil	143	14.7%
Mexico	104	10.7%
Peru	95	9.8%
Ecuador	75	7.7%
Argentina	57	5.9%
Costa Rica	44	4.5%
Venezuela	43	4.4%
Chile	33	3.4%
Bolivia	31	3.2%
Guatemala	26	2.7%
Uruguay	26	2.7%
Panama	24	2.5%
El Salvador	21	2.2%
Paraguay	20	2.1%
Honduras	18	1.9%
Nicaragua	14	1.4%
España	12	1.2%
Dominican Republic	9	0.9%
Francia	3	0.3%
Cuba	2	0.2%
Korea	1	0.1%
Italia	1	0.1%
Jamaica	1	0.1%
Portugal	1	0.1%
USA	1	0.1%
Puerto Rico	1	0.1%

Regarding their educational level, according to Figure 2, most respondents are people who graduated more than 5 years ago (58.35%), whereas about 26.4% of the respondents are either recent graduates or current students

Figure 2: Respondents by educational level



In terms of working status, we found that entrepreneurial spirits are high, with over 50% of the respondents working on their own companies. In any case, most (83.1%) are full-time employees.

Figure 3: Respondents by working status.

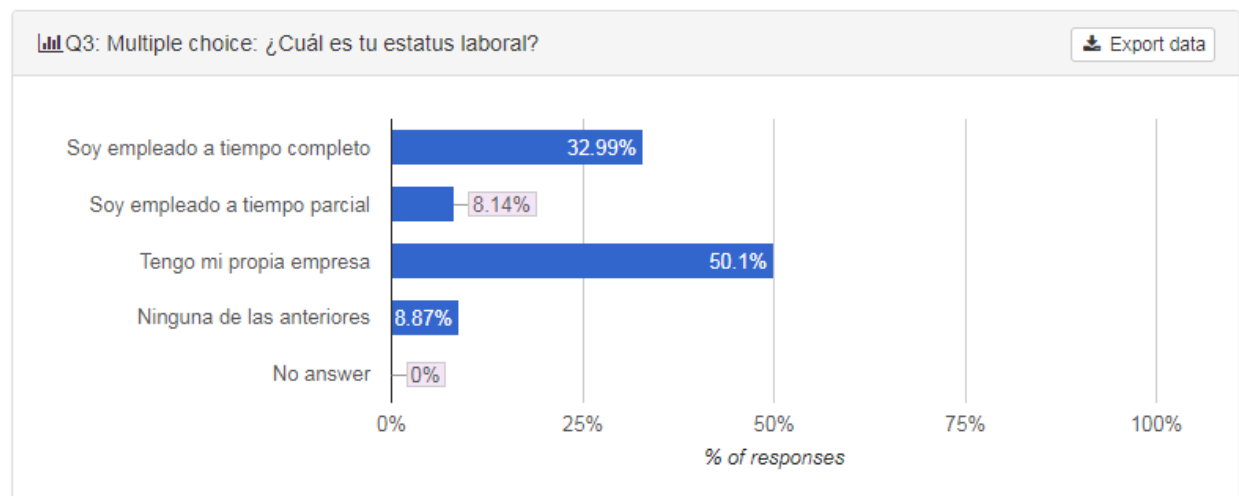
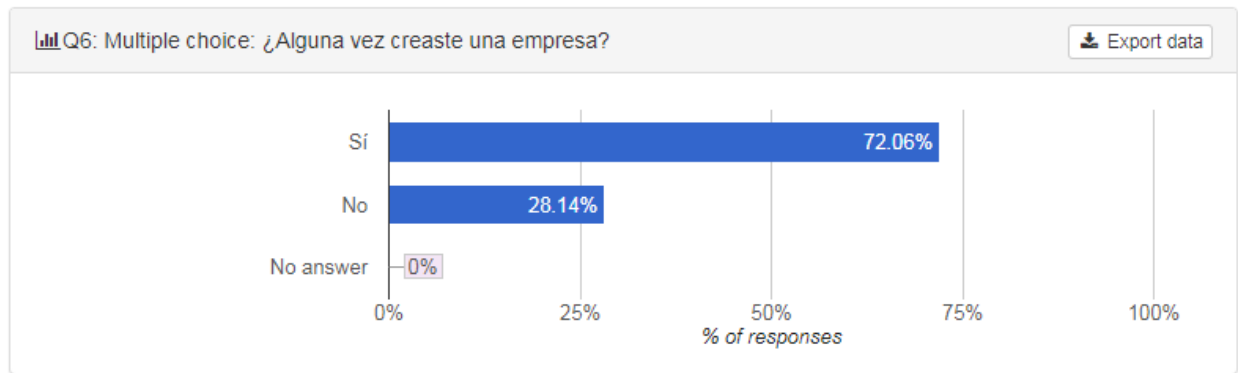


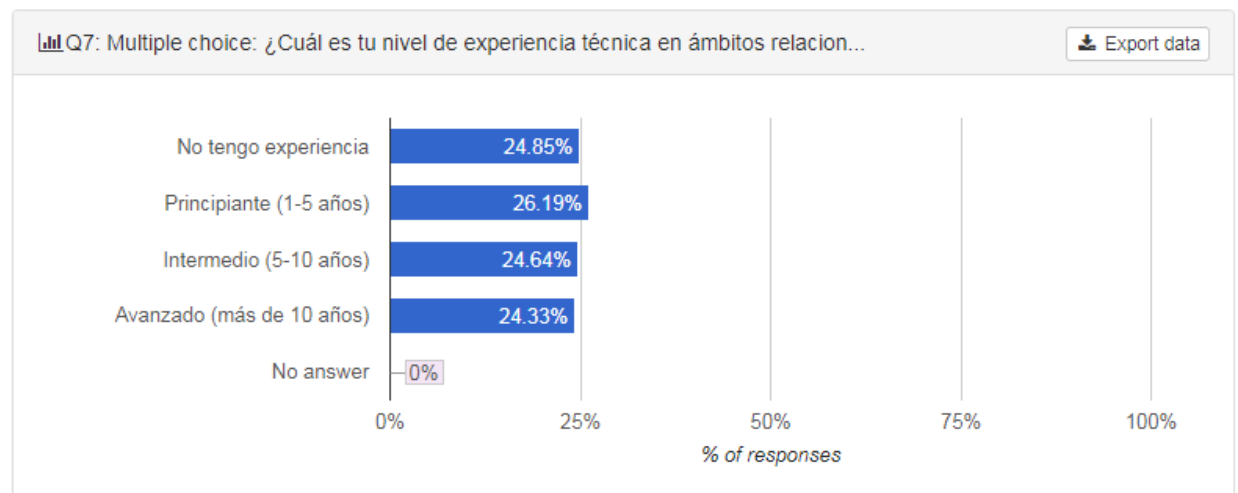
Figure 4 is consistent with the former in that even a greater share of the respondents reports having created a company at a certain time in their lives.

Figure 4: Respondents who have created a company.



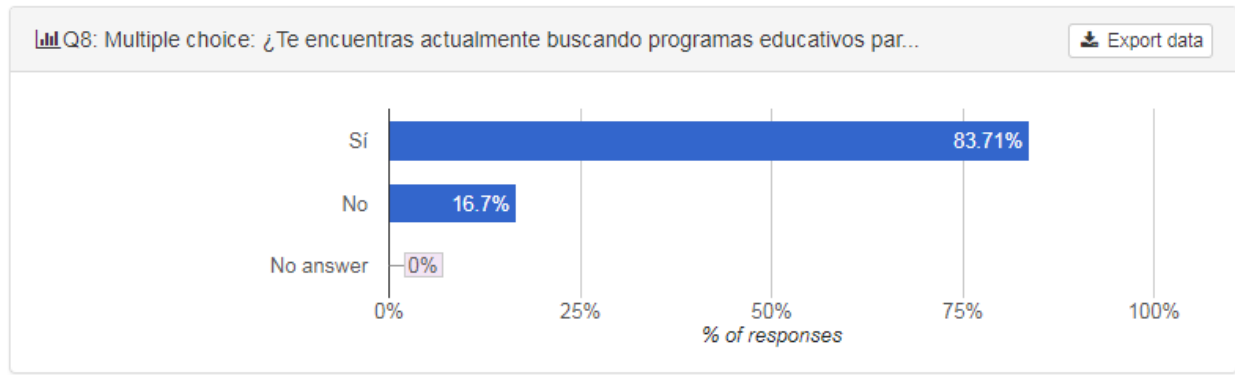
In regards to technical expertise with STEM-related disciplines, the respondents are pretty much evenly distributed among the categories we defined: No experience, Beginner (1-5 years), Intermediate (5-10 years), and Advanced (more than 10 years).

Figure 5: Respondents by level of expertise with STEM



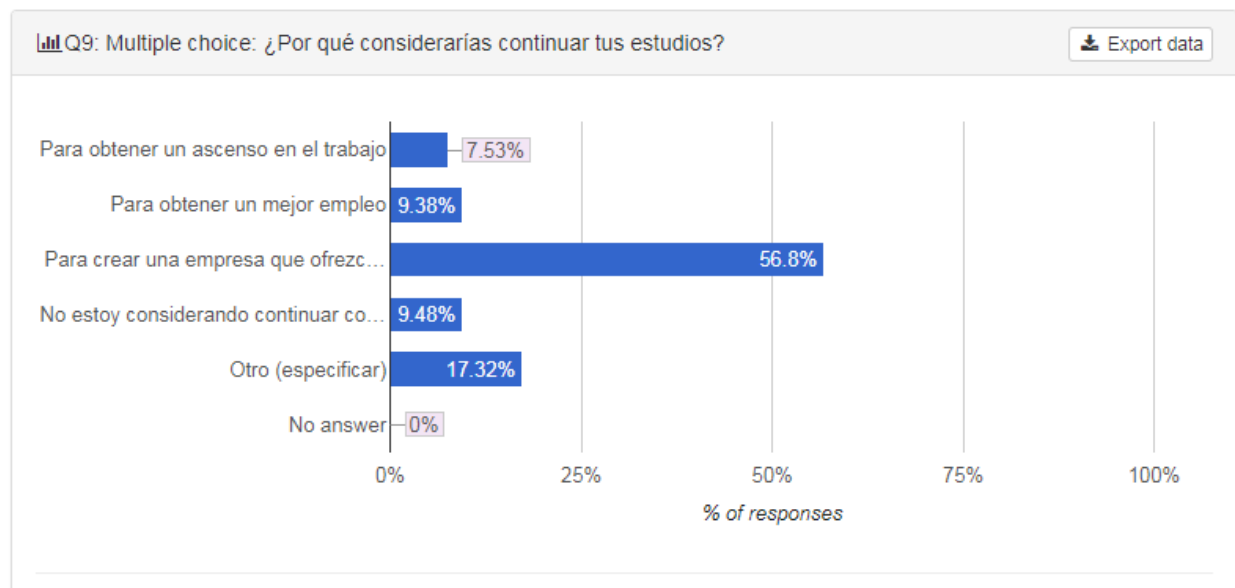
According to Figure 6, most of the respondents (83.71%) are currently looking for educational programs.

Figure 6: Respondents currently looking for educational programs



Lastly, among those who want to continue with their studies, a significant share (56.8%) wants to do it in order to be better qualified to create a company that offers new products or services.

Figure 7: Goal of pursuing an educational program.



Results

The relevant segment

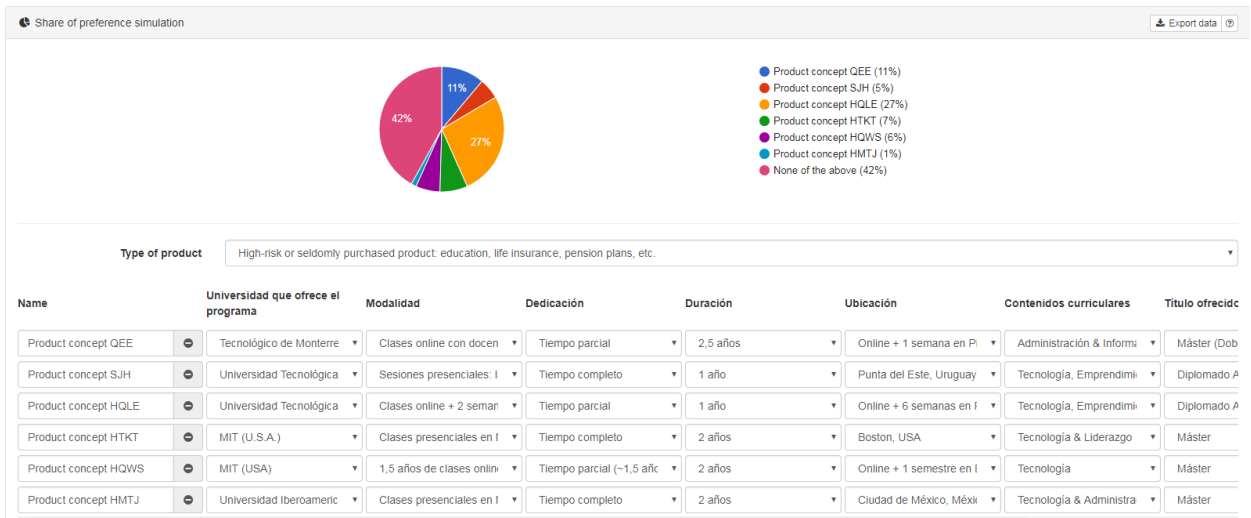
We include the estimates for the following segment, which is one that we consider as potentially relevant for the program, according to the conversations we have been sustaining with different stakeholders. The number of responses for the resulting segment is 224.

We included respondents who:

- Have started or created a company; and
- Want to continue studies to launch a program; and
- Have 5 or more years of STEM experience

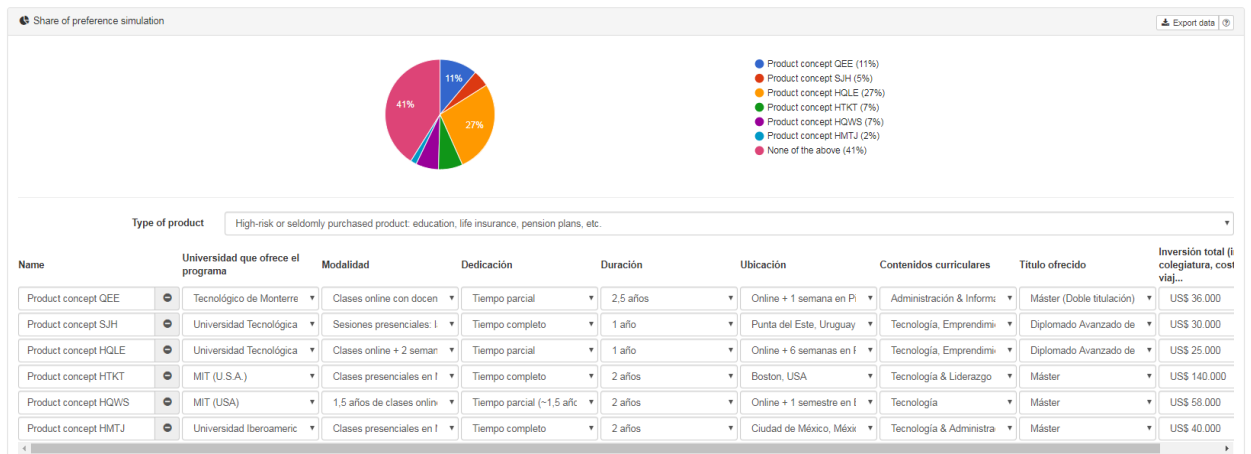
Using the reports from Conjoint.ly, we can model different scenarios to answer the relevant question defined above. In this case, we included all the competing options, and varied the prices for UG’s options to see variations in their market share:

Option 1: US\$15,000 for the hybrid and US\$20,000 for the in-residence



In this case, aggregate market share for both programs is 32%of which 27% correspond to the Hybrid program, and 5% to the in-residence.

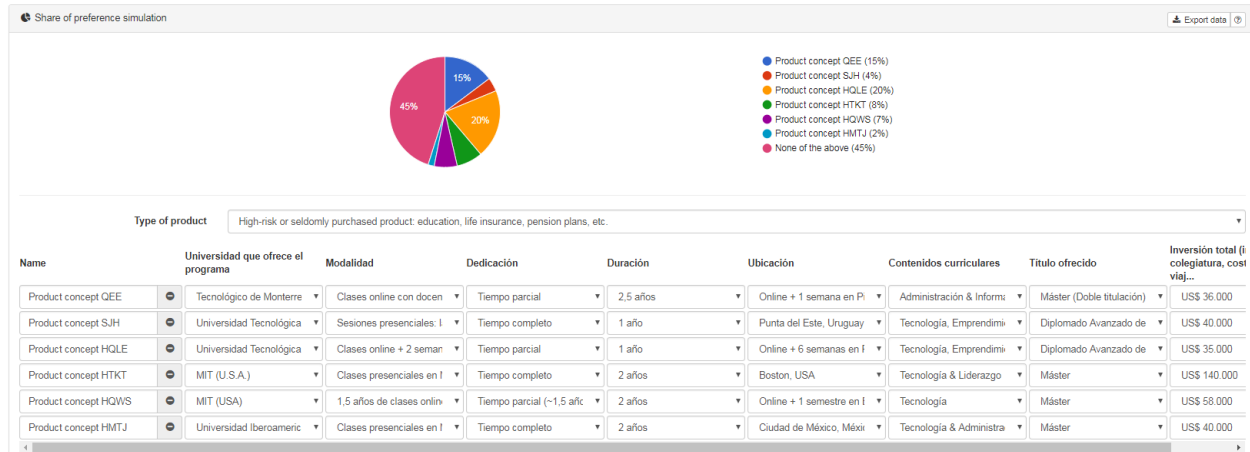
Option 2: US\$25,000 for the hybrid and US\$30,000 for the in-residence



For this option, market share does not change, both for the aggregate and for each of the programs individually.

Option 3: US\$35,000 for the Hybrid and US\$40,000 for the In-residence

When we increase prices to this point, however, market share drops to 24% in the aggregate: 20% for the Hybrid program, and 4% for the In-residence.



Aggregate elasticity

Taking both programs together, we can assess the price-elasticity for the two price-bands assessed. Demand for UG programs in this segment is virtually inelastic for the price band US\$15k-US\$25k/US\$20k-US\$30k. However, in the second price-band (US\$25k-US\$35k/US\$30k-US\$40k), price elasticity is around -0.7 (when we increase prices by one percent, demand drops by approximately 0.7%). If we could supply all the demand for our product, this would imply that it is profitable to increase the prices to US\$30k/US\$40k.

Recommendations

- Define the relevant segment: given that market share estimates vary depending on the segment chosen, we recommend defining that segment to get more accurate estimates.
- Analyze other scenarios: we could analyze scenarios when we just launch either the Hybrid or the In-residence. This might be useful in the case that we would be willing to test one of the alternatives for the first year, for example.
- One-to-one interviews: these interviews can help to give a broader sense of the needs, motivations, pain-points, and challenges faced by potential students, and hence help trimming the program, create a persona, and design a marketing strategy for it. We ask the respondents to leave their emails, so we can reach out to them and invite them to an interview.

12. Willingness to Pay Surveys: Round 2

Prepared by Santiago Ferrari and Samuel Moreno, Inter-American Development Bank



Willingness to Pay (WTP) Assessment for *Uruguay Global*

**Program of Promotion of Exports of High Value-Added Services based on
Technology (UR-L1150)**

April 2018

Preliminary Report

This report was elaborated by a technical team within the **Inter-American Development Bank's** Trade and Investment Division (**INT/TIN**) using data from *ConnectAmericas* registered users

Contents

1. Methodology and survey design	3
2. Overall Sample	7
2.1 Demographics	7
2.2 Results	12
3. The relevant segment	15
3.1 Demographics	15
3.2 Results	19
4. Recommendations	21
5. Appendix	22

1. Methodology and survey design

We performed our analysis based on a survey to 2,829 individuals from ConnectAmericas' database. This survey had two parts. In the first part of the exercise, we asked 10 demographic questions, such as country of residence, educational status, and experience with STEM disciplines. We wanted to identify the right target among all the respondents, to perform the WTP analysis using the right segment. The demographic questions were the following:

- Country of residence
 - Open
- Educational status
 - Currently doing my undergraduate studies
 - Graduated less than 5 years ago
 - Graduated more than 5 years ago
 - None of the above
- Working status
 - Full-time employee
 - Part-time employee
 - I have my own company
 - None of the above
- Sector in which the respondent works
 - Open
- Role or position in the company
 - Analyst
 - Manager
 - Director
 - Owner
 - Other
- Entrepreneurial experience
 - I have founded a company
 - I have not founded a company
- Experience in STEM and knowledge of programming languages
 - I do not have any experience in STEM
 - I have between 1 and 5 years of experience in STEM disciplines
 - I have more than 5 years of experience in STEM disciplines
 - I know at least one programming language
 - I do not know any programming language
- English level
 - Basic
 - Intermediate
 - Advanced

- Bilingual/Native
- No knowledge
- Interest in pursuing a graduate degree
 - Not interested at all
 - Slightly interested
 - Interested
 - Very interested
- Actively seeking educational programs to continue studying
 - Yes
 - No
- Reason for continuing studying
 - Get a promotion in my company
 - Obtain better employment
 - Create a company that offers a new product or service
 - I do not want to continue studying
 - Other

In the second part of the survey, we asked questions following the Choice Based Conjoint (CBC) Methodology. This methodology falls into the indirect ways of asking people for their willingness to pay for a certain product or service. Its goal is to assess a respondent's willingness by exposing him/her to a competitive setting, where he/she can see each of the relevant options, each with the relevant attributes needed to make an informed decision. In this case, the respondent can always choose the "None of the above" option, given that it is a product that is not required.

Hence, firstly, according to the opinion of the experts we consulted¹, we identified all the relevant existing competing alternatives to the Uruguay Global (UG) program:

- [Maestría en Administración de Tecnologías de Información](#) – TEC Monterrey (México) and Carnegie Mellon (USA)
- [Maestría en Gestión de la Innovación Tecnológica](#) - Universidad Iberoamericana (México)
- Master of Technology – MIT (USA)
- Master of Technology and Leadership – MIT (USA)

Secondly, we decomposed those programs into the following attributes:

- Type of program
- University teaching the program
- Course Location (on-line, on campus, etc.)
- Commitment (part-time, full-time, etc.)
- Duration

¹ For the design and analysis of this survey we worked closely with Lisa Lee and Lorena Bustamante, both Ed.M from Harvard Graduate School of Education, and educational consultants.

- Location
- Degree (Masters, Advanced degree, etc.)
- Cost of attendance (tuition plus cost of living)

Conjoint analysis allows you to choose more than one level for a specific attribute of a certain program. For our study, we chose only one for each attribute except for “location”, for which we included two options for the UG program. One option required students to travel to Montevideo once for 8 weeks, whereas the other one split those 8 weeks into 3 trips of 2, 4, and 2 weeks each. Moreover, we did include different price levels for UG’s alternatives. Specifically, we chose the following:

- US\$10,000
- US\$15,000
- US\$20,000
- US\$25,000

Lastly, for delivering the survey, we used a web-based software called [Conjointly](#). This is a specialized software for performing conjoint analysis. The question we asked was the following: “Which of these graduate programs would you choose?” (“¿Cuál de estos programas de posgrado elegirías?”) followed by sets of 5 of the previously identified programs and the option “None of the above”. Figure 1 shows an example of these sets:

Figure 1: Conjoint question example with 2 different Locations

Cuál de estos programas de posgrado elegirías?

Universidad que ofrece el programa	Universidad Iberoamericana (México)	MIT (U.S.A.)	Tecnológico de Monterrey (México) y Carnegie Mellon (USA)	MIT (USA)	Universidad Tecnológica del Uruguay (UTEC) en sociedad con Harvard/MIT
Modalidad	Clases presenciales en la Universidad Iberoamericana	Clases presenciales en MIT	Clases online con docentes del Tecnológico de Monterrey y Carnegie Mellon	1,5 años de clases online + 0,5 años de clases presenciales en MIT	Clases online + 8 semanas presenciales con docentes de Harvard y MIT
Dedicación	Tiempo completo (40 horas/semana, al menos)	Tiempo completo (40 horas/semana, al menos)	Tiempo parcial (20 horas/semana, al menos)	1,5 años a tiempo parcial (20 horas/semana, al menos) + 0,5 años a tiempo completo (40 horas/semana, al menos)	Tiempo parcial (20 horas/semana, al menos)
Duración	2 años	2 años	2,5 años	2 años	1 año
Título ofrecido	Máster	Máster	Máster (Doble titulación)	Máster	Diplomado Avanzado de Posgrado (con la opción de transferir los créditos a un Máster en UTEC)
Ubicación	Ciudad de México, México	Boston, USA	Online + 1 semana en Pittsburgh, USA & 1 semana en Monterrey, México	Online + 1 semestre en Boston, USA	Online + 8 semanas en Montevideo, Uruguay, entre junio y agosto
Contenidos curriculares	Tecnología & Administración	Tecnología & Liderazgo	Administración & Informática	Tecnología	Tecnología, Emprendimiento & Liderazgo
Inversión total (incluye colegiatura, costo de vida y/o viajes)	US\$ 40.000	US\$ 140.000	US\$ 36.000	US\$ 58.000	US\$ 15.000
	ELEGIR	ELEGIR	ELEGIR	ELEGIR	ELEGIR

Atrás

NINGUNA DE LAS ANTERIORES

Cuál de estos programas de posgrado elegirías?

Universidad que ofrece el programa	Universidad Tecnológica del Uruguay (UTEC) en sociedad con Harvard/MIT	MIT (U.S.A.)	MIT (USA)	Universidad Iberoamericana (México)	Tecnológico de Monterrey (México) y Carnegie Mellon (USA)
Ubicación	Online + 3 viajes a Montevideo, Uruguay de 2, 4 y 2 semanas cada uno	Boston, USA	Online + 1 semestre en Boston, USA	Ciudad de México, México	Online + 1 semana en Pittsburgh, USA & 1 semana en Monterrey, México
Dedicación	Tiempo parcial (20 horas/semana, al menos)	Tiempo completo (40 horas/semana, al menos)	1,5 años a tiempo parcial (20 horas/semana, al menos) + 0,5 años a tiempo completo (40 horas/semana, al menos)	Tiempo completo (40 horas/semana, al menos)	Tiempo parcial (20 horas/semana, al menos)
Modalidad	Clases online + 8 semanas presenciales con docentes de Harvard y MIT	Clases presenciales en MIT	1,5 años de clases online + 0,5 años de clases presenciales en MIT	Clases presenciales en la Universidad Iberoamericana	Clases online con docentes del Tecnológico de Monterrey y Carnegie Mellon
Duración	1 año	2 años	2 años	2 años	2,5 años
Contenidos curriculares	Tecnología, Emprendimiento & Liderazgo	Tecnología & Liderazgo	Tecnología	Tecnología & Administración	Administración & Informática
Título ofrecido	Diplomado Avanzado de Posgrado (con la opción de transferir los créditos a un Máster en UTEC)	Máster	Máster	Máster	Máster (Doble titulación)
Inversión total (incluye colegiatura, costo de vida y/o viajes)	US\$ 15.000	US\$ 140.000	US\$ 58.000	US\$ 40.000	US\$ 36.000
	ELEGIR	ELEGIR	ELEGIR	ELEGIR	ELEGIR

Atrás

NINGUNA DE LAS ANTERIORES

2. Overall Sample

2.1 Demographics

We initially sent the survey via email to 136,958 registered users from [ConnectAmericas.com](https://connectamericas.com). With a single push, and offering a chance to win one of two available tablets, we gathered 2,829 responses so far. Here are the demographics of all the respondents.

Country of residence

Not surprisingly, most of the respondents are currently living in a Latin American country. As seen in Table 1, Colombia is the most represented country with 18.9% of all responses, followed by Peru (13.6%), Mexico (8%), Brazil (7.9%), and Venezuela (7.7%). Altogether they add up to 56% of all responses.

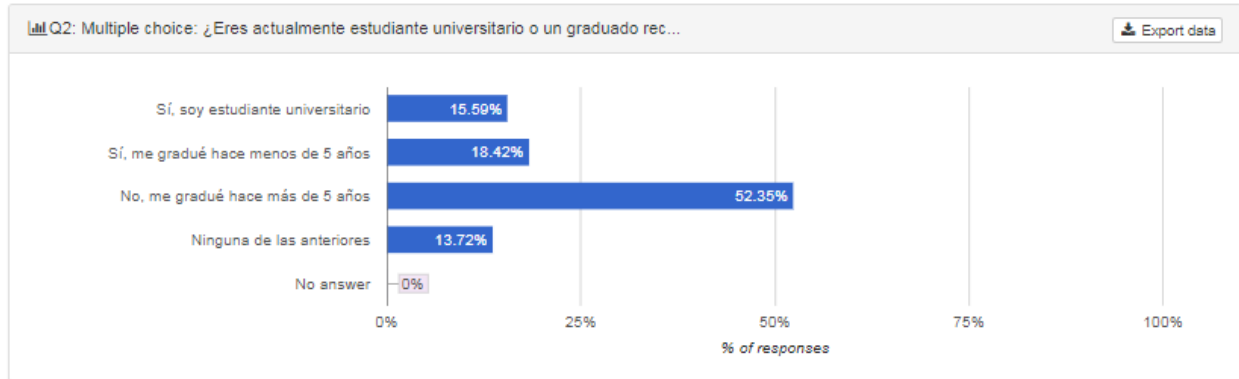
Table 1: All respondents by country of residence

Country	Count	Share
Colombia	536	18.9%
Peru	385	13.6%
Mexico	226	8.0%
Brazil	224	7.9%
Venezuela	217	7.7%
Argentina	208	7.4%
Ecuador	147	5.2%
Bolivia	122	4.3%
Chile	111	3.9%
Costa Rica	105	3.7%
Paraguay	80	2.8%
El Salvador	80	2.8%
Uruguay	72	2.5%
Guatemala	63	2.2%
Panama	54	1.9%
Honduras	42	1.5%
Dominican Republic	41	1.4%
USA	29	1.0%
Spain	26	0.9%
Nicaragua	15	0.5%
Trinidad and Tobago	13	0.5%
Other	33	1.2%
Total	2829	100%

Educational status

More than half of total respondents (52.35%) graduated more than 5 years ago, according to Figure 2. The surveyed sample, in any case, is highly educated, given that only 13.72% of them reported not being either completed or pursuing a degree.

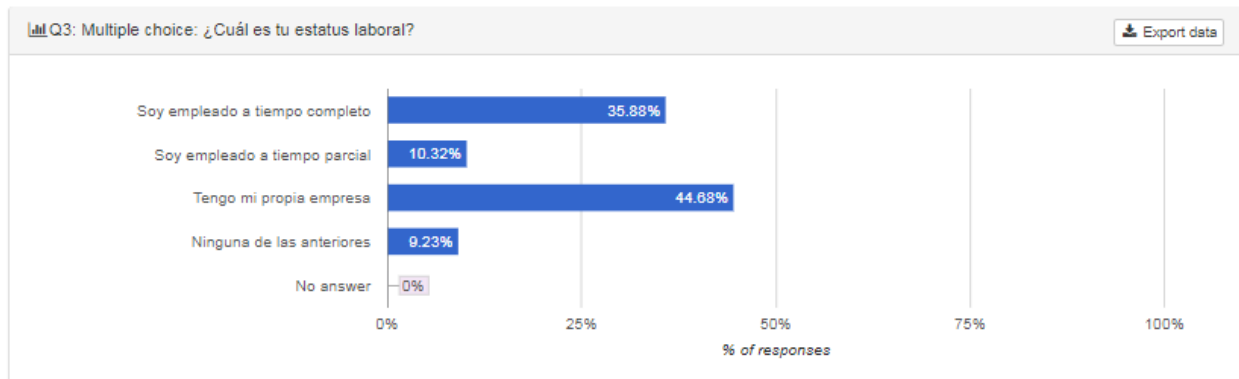
Figure 2: Educational status



Working status

Figure 3 shows that a vast majority of the respondents (80.6%) has a full-time job, either in their own company (44.7%) or as employees (35.9%).

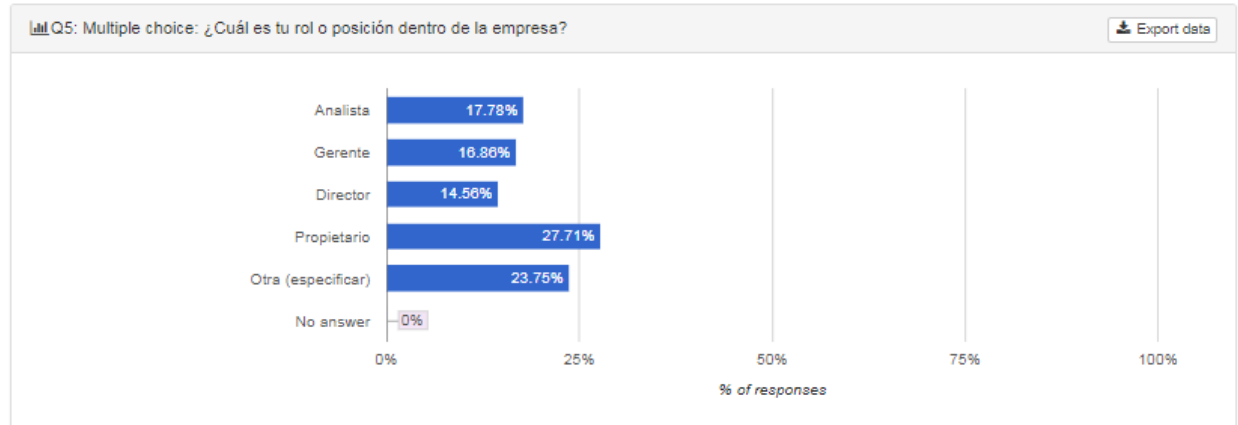
Figure 3: Working status



Position in the company

Regarding the role or position in the company, respondents hold, in general, a high responsibility level. As we can see in Figure 4, 16.9% are managers, 14.6% reported being directors, and 27.7% owners.

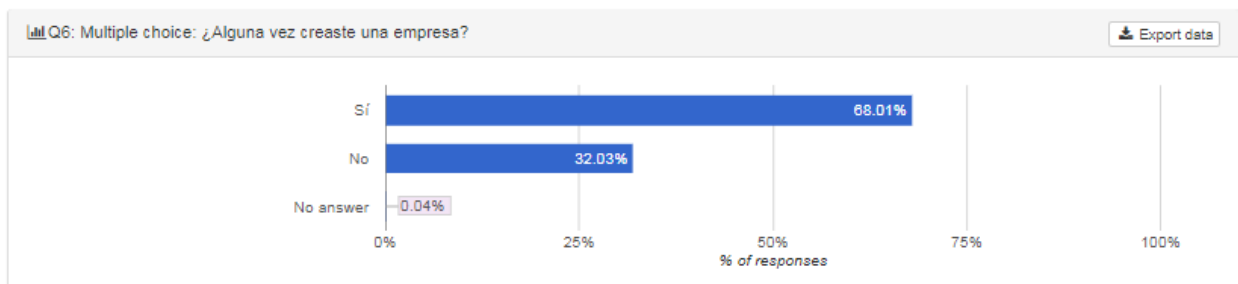
Figure 4: Position in the company



Entrepreneurial spirits

Respondents were also very entrepreneurial, if we consider that 68% of them, according to Figure 5, had founded a company at any point in their lives.

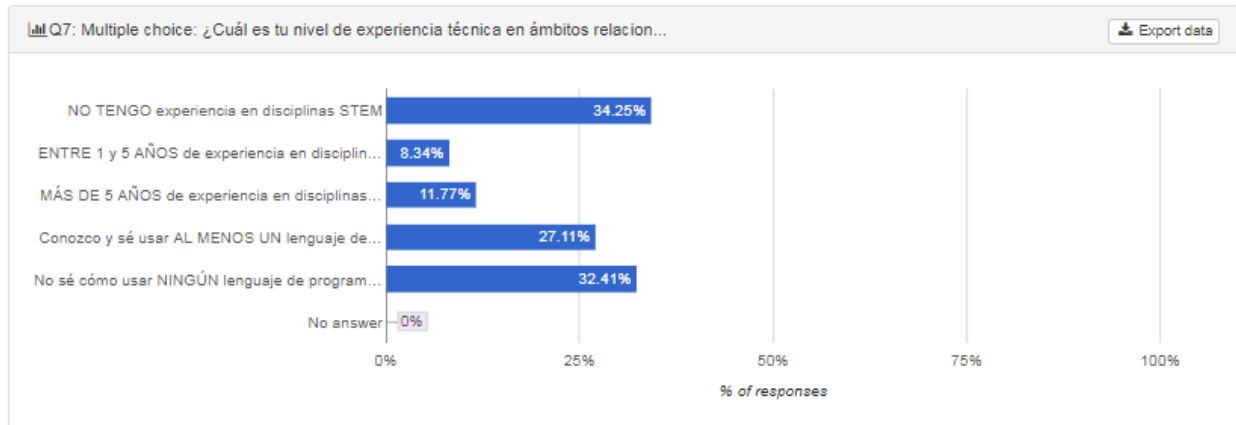
Figure 5: Entrepreneurial spirits



Expertise in STEM related disciplines and knowledge of programming languages

When looking at relevant expertise or knowledge for the UG program, we see that only 20.1% reported having experience in STEM, and 27.11% have practical knowledge of at least one programming language.

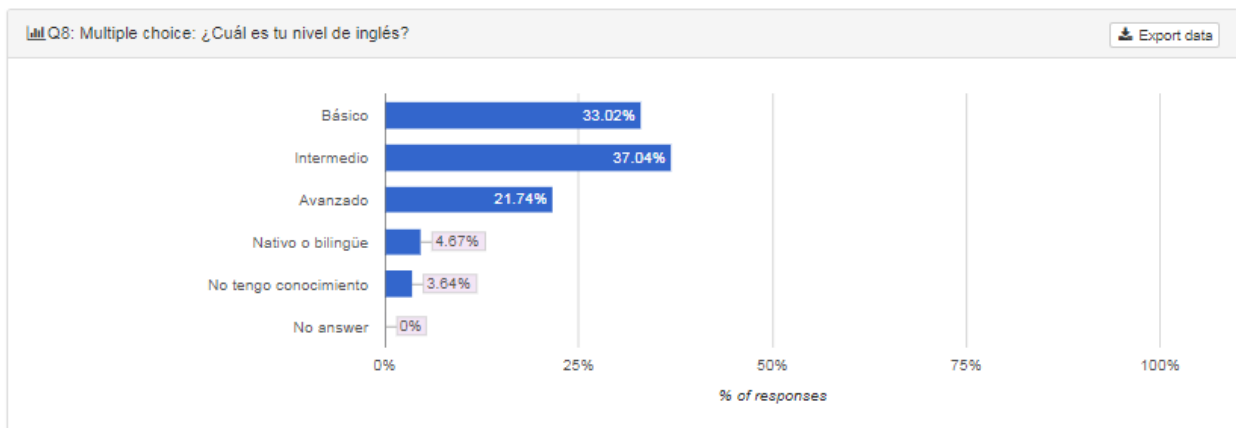
Figure 6: Experience with STEM and knowledge of programming languages



English level

In this area, following Figure 7, respondents showed some knowledge: only 3.6% did not have any knowledge of this language. However, English level is not very high, given that only 21.7% are advanced speakers and only 4.7% consider themselves native or bilingual.

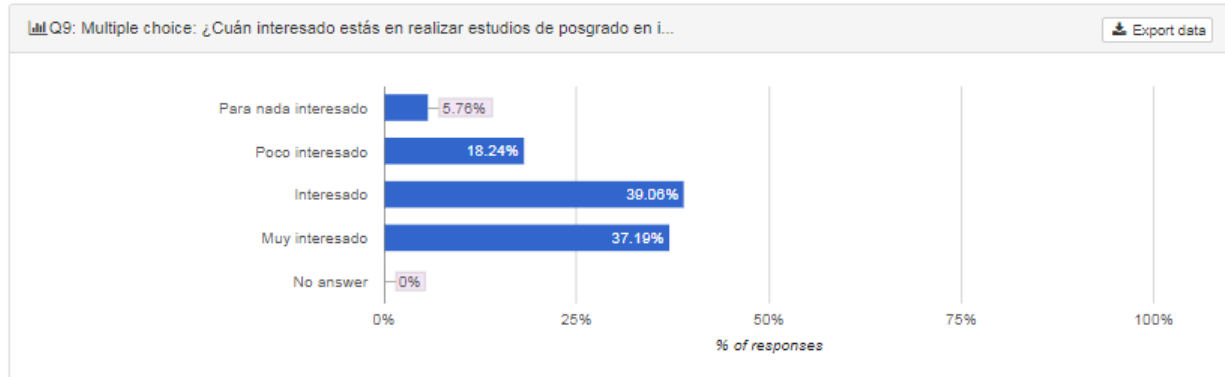
Figure 7: English level



Interest in a graduate degree

Respondents were very eager to continue studying after getting an undergraduate degree. Figure 8 shows that 76.25% of the respondents are either interested or very interested in graduate studies.

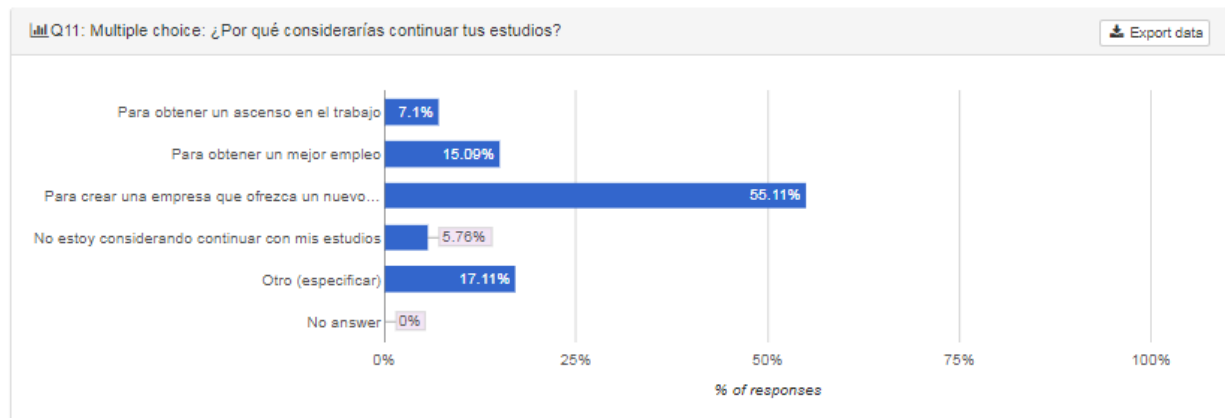
Figure 8: Interest in graduate degree



Reason for continuing with their studies

In this area, most of the respondents (55.1%) want to pursue a graduate degree to create a company that offers new products or services.

Figure 9: Reason for continuing studying

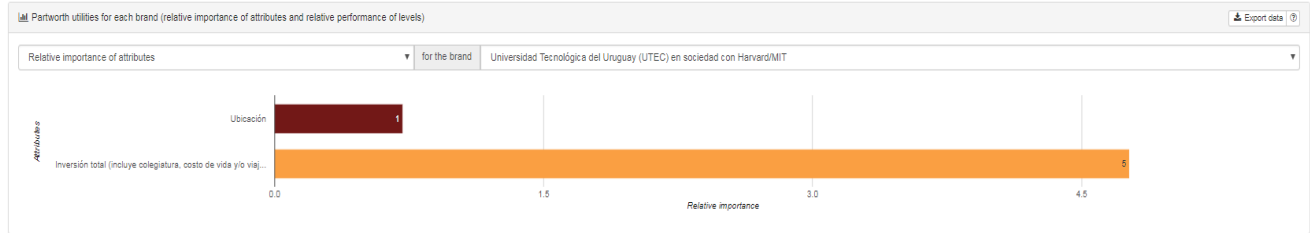


2.2 Results

Relative importance of key attributes and relative performance of levels

Figure 10 depicts the relative importance of the key attributes for the aggregate responses. It shows only Price (Inversión total) and Location (Ubicación), because those are the only attributes for which we included more than one level. According to it, Price affects customer's choices more strongly than it does Location. This depends, of course, on customer's preferences, but also on how extreme the levels are for a specific level. In other words, the more different the levels are for a specific attribute, the more important that attribute is likely to be.

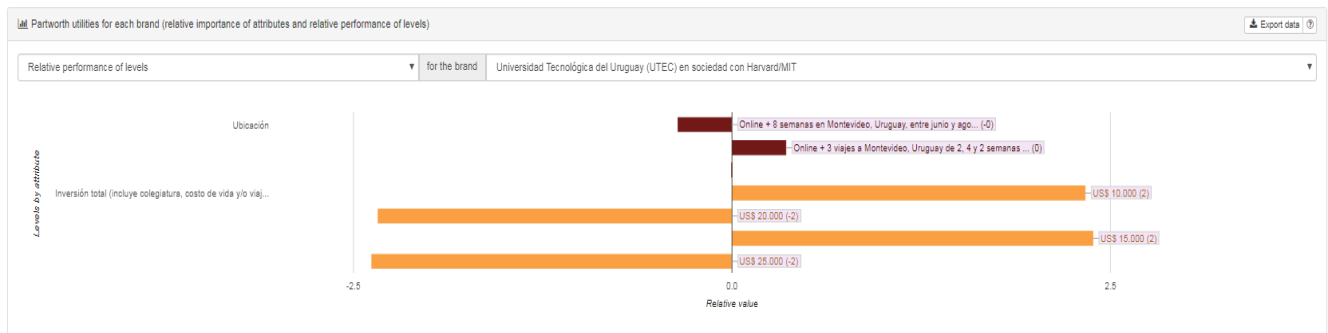
Figure 10: Relative importance of attributes



Diving deeper into each of these attributes, we can assess the relative performance of each level for each attribute, as showed in Figure 11. There we can see that, regarding Location, there is a strong preference for splitting the 8 weeks in Uruguay into 3 smaller trips of 2, 4, and 2 weeks each, over doing it in just one segment. This means that, according to the survey, potential customers would rather choose a program with 3 short trips of 2, 4, and 2 weeks each to Uruguay, to one with one 8-week long trip.

Furthermore, not surprisingly, people prefer cheap to expensive. However, respondents preferred a program priced at US\$15,000 to one at US\$10,000. A possible explanation for this is that price might be a means to position the program. Hence, below a certain point, a decrease in price also decreases the attractiveness of the program.

Figure 11: Relative performance of levels



Market share

Conjoint analysis also allows to perform an estimate of the potential market share that we can expect after launching the program, under the assumption that the competing environment remains unchanged. Here are the estimates for each of the 8 different combinations of Location and Price:

Table 2: Market share for the whole population

Price	Location	
	8 weeks	2-4-2 weeks
US\$25K	33%	33%
US\$20K	32%	32%
US\$15K	35%	36%
US\$10K	35%	35%

Demand tends to go up when price goes down for both levels of Location and does not change much with price. Between the most preferred option -2-4-2 weeks at US\$15K- and the least preferred one -both Locations at US\$20K- there is only a 4-percentage point difference in market share. For the 8 weeks option, demand remains flat when prices drop from US\$15K to US\$10K, and for the 2-4-2 weeks option, demand even goes up. This is consistent with the data shown in the analysis of relative performance of levels. Demand also decreases with price when it goes from US\$25K to US\$20. This is not consistent with the analysis which we just mentioned.

Price elasticity

Table 3 summarizes the arc elasticity for each of the different price segments. In general, whenever the elasticity is greater than -1, it is profitable to increase prices because it will more than compensate a decrease in demand. This assumes that we can satisfy any demand that requires the product. In any case, the most profitable option will be to price the program at US\$25K, no matter if it is the 2-4-2 or the 8 weeks one.

Table 3: Price elasticity for the whole sample

Price	Location			
	8 weeks		2-4-2 weeks	
	Market share	Elasticity	Market share	Elasticity
US\$25K	33%	0.04	33%	0
US\$20K	32%	-0.09	32%	-0.12
US\$15K	35%	0	36%	0.02
US\$10K	35%		35%	

This data just confirms that demand curve for this program seems to be relatively flat. In no case is price elasticity lower than -1 and in some cases it is positive. This implies that, from a profitability point of view, it would be best to price the program at US\$25K.

3. The relevant segment

Then we focused on the following segment and conducted a similar analysis to the one we performed for the whole sample:

- Experience in STEM and knowledge of programming languages
 - More than 5 years of experience in STEM disciplines; AND/OR
 - Knowledge in at least one programming language
- English level
 - Intermediate; OR
 - Advanced; OR
 - Bilingual/Native
- Interest in pursuing a graduate degree
 - Interested; OR
 - Very interested

We got 538 responses from people fulfilling those conditions.

3.1 Demographics

Country of residence

In terms of country of residence, most of the respondents were from Colombia (16.5%), Peru (14.3%), Mexico (9.1%), Venezuela (8.2%), and Brazil (7.2%), which altogether make for more than 55% of the respondents, as shown in Table 4.

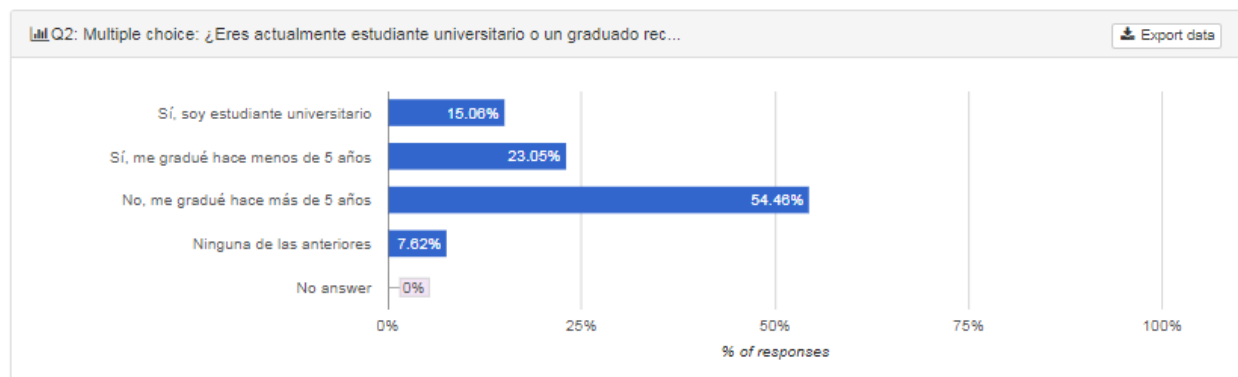
Table 4: Respondents by country

Country	Count	Share
Colombia	89	16.5%
Peru	77	14.3%
Mexico	49	9.1%
Venezuela	44	8.2%
Brazil	39	7.2%
Ecuador	33	6.1%
Argentina	31	5.8%
Chile	24	4.5%
Bolivia	24	4.5%
Costa Rica	19	3.5%
Panama	19	3.5%
Guatemala	17	3.2%
El Salvador	16	3.0%
Paraguay	12	2.2%
Honduras	10	1.9%
Dominican Republic	8	1.5%
Uruguay	6	1.1%
USA	6	1.1%
Spain	4	0.7%
Nicaragua	4	0.7%
Other	7	1.3%
Total	538	100%

Educational level

Regarding their educational level, according to Figure 12, most respondents are people who graduated more than 5 years ago (54.46%), whereas about 38% of the respondents are either recent graduates or current students.

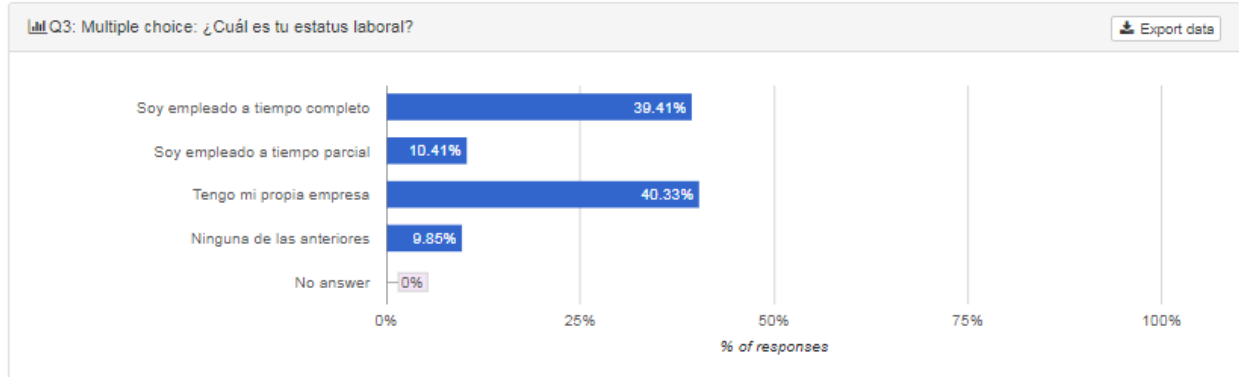
Figure 12: Respondents by educational level



Working status

In terms of working status, we found that most of them work full time, either in their own company (40.3%) or as employees (39.4%).

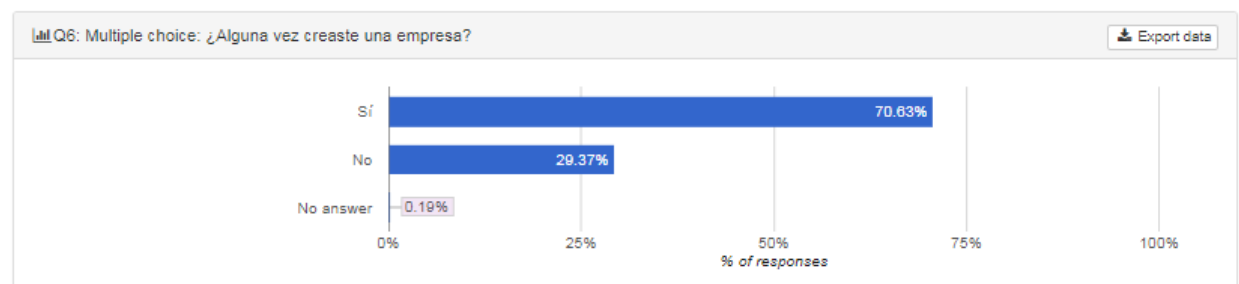
Figure 13: Respondents by working status.



Entrepreneurial spirits

Figure 14 is consistent with the former in that even a greater share of the respondents (70.63%) report having created a company at a certain time in their lives.

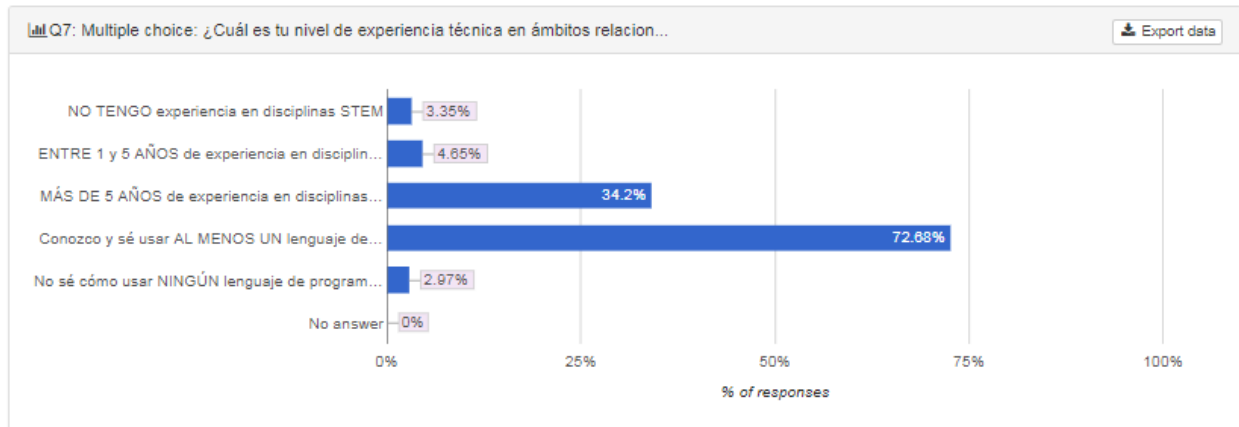
Figure 14: Respondents who have created a company.



Expertise in STEM and knowledge of programming languages

Regarding the technical expertise with STEM-related disciplines and knowledge of programming languages, according to Figure 15, there are far more people who have practical knowledge of any programming language (72.7%) than those who have more than 5 years of experience in STEM (34.2%). This implies that not everyone who knows a programming language has lots of experience with STEM.

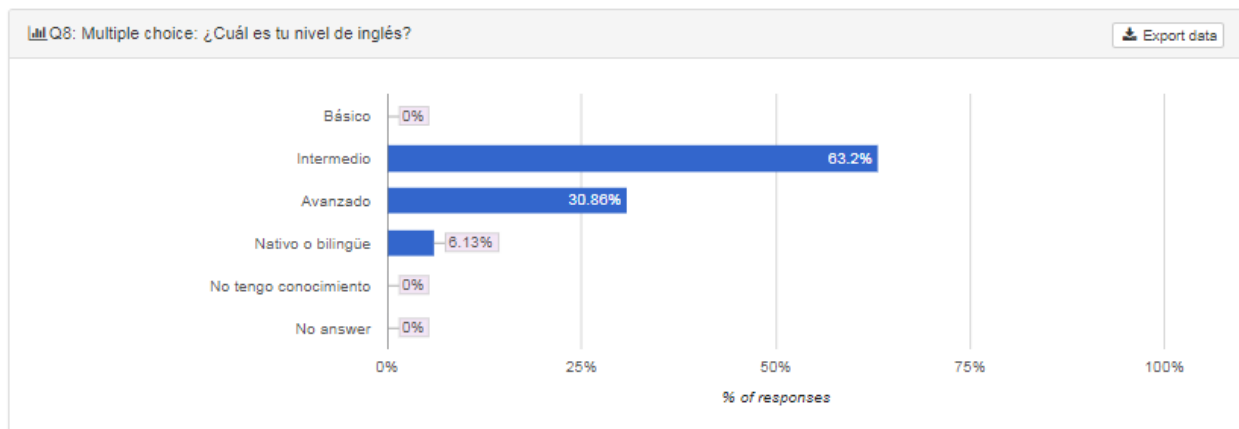
Figure 15: Respondents by level of expertise with STEM and knowledge of programming languages



English level

By construction, everyone in this group had at least intermediate level of English, as we can see in Figure 16.

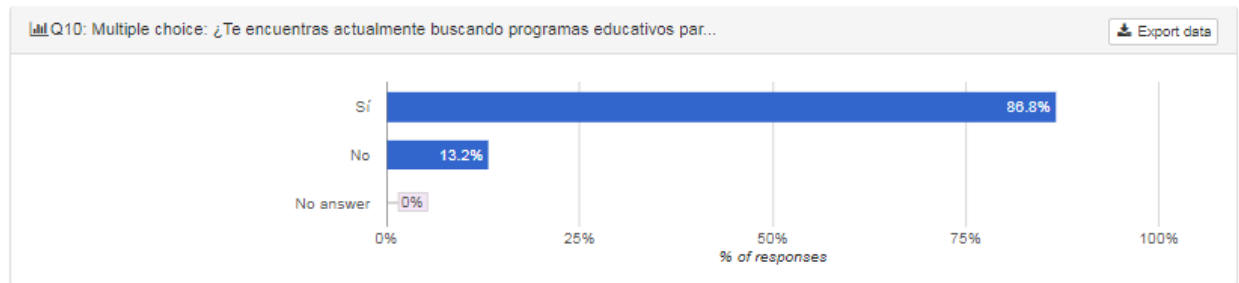
Figure 16: English level



Respondents actively looking for educational programs

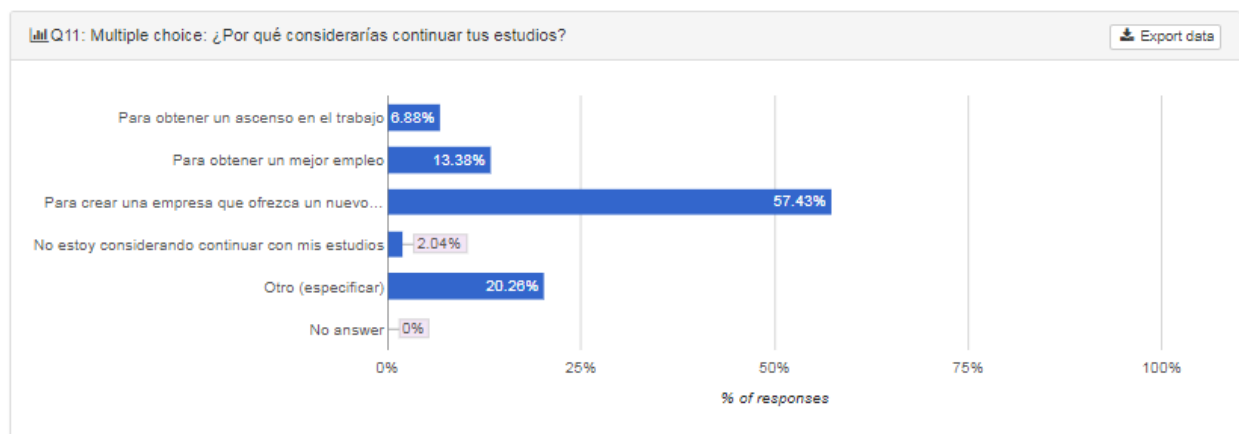
Just to support the relevance of this segment, according to Figure 17, 86.8% of the respondents in this segment are currently looking for educational programs.

Figure 17: Respondents currently looking for educational programs



Lastly, a significant share (57.43%) wants to do it to be better qualified to create a company that offers new products or services.

Figure 18: Goal of pursuing an educational program

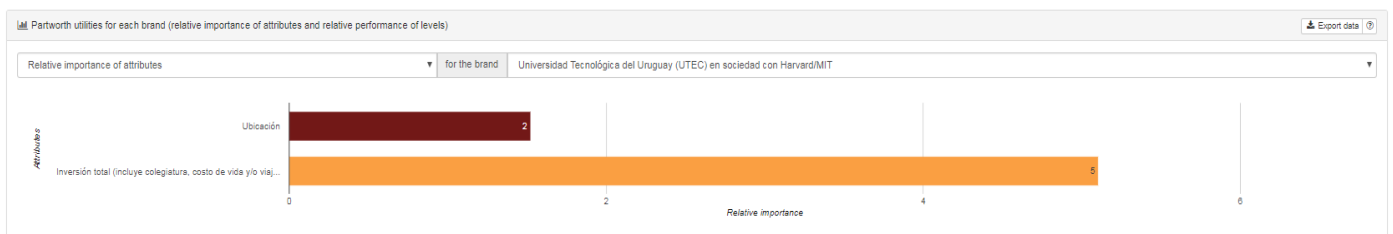


3.2 Results

Relative importance of attributes and relative performance of levels

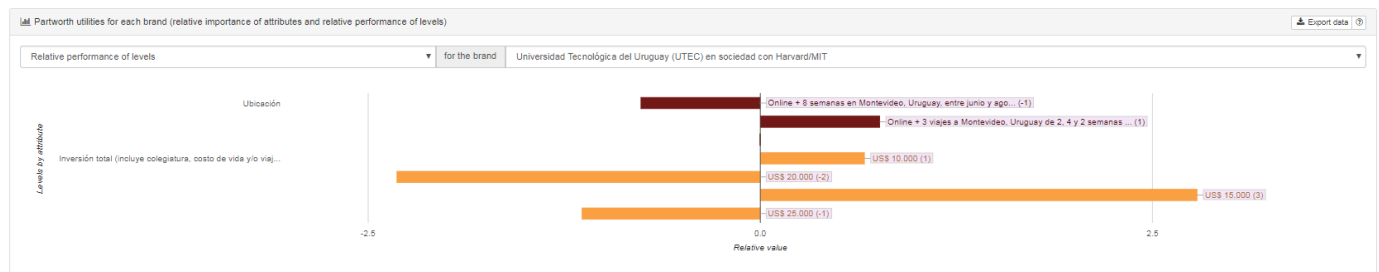
Similarly, as with did with the aggregate responses, in Figure 19 we can see which attribute weighted more on average to the respondents at the time of choosing a program. For this segment, Price was also more determinant than Location, but the relative difference was smaller.

Figure 19: Relative importance of attributes



When we look at each of the attributes and analyze the relative performance of their levels, Figure 20 shows that, again, traveling 3 times (splitting the 8 weeks into 2, 4, and 2 weeks trip) is preferred over doing it all at once. When looking at Price, lower prices are preferred over higher ones -US\$10K and US\$15K are more attractive than US\$20K and US\$25K-, but surprisingly US\$15K is preferred over US\$10K, and US\$25K over US\$20K. This evidence suggests that for certain segments of price it might work as a positioning factor. In the higher end, making the program appear like a masters, and in the lower end, making it look like an online certification.

Figure 20: Relative performance of levels



Market share

Table 5 presents different market shares for UG program for each combination of Price and Location for this segment. Appendix 9 to 16 show the market share for each program for each combination.

Table 5: Market share for the target segment

Price	Location	
	8 weeks	2-4-2 weeks
US\$25K	34%	35%
US\$20K	33%	35%
US\$15K	36%	38%
US\$10K	37%	36%

The analysis of the relative performance of levels anticipated the results we see now. Even though market shares do vary across prices and Locations, the range is not very big: between the least preferred option –8 weeks at US\$20K- and the most preferred one -2-4-2 weeks at US\$15K- there are only a 5-percentage point difference in market share, which at this level (33% to 38%) means less than 15%.

Consistently with the previous analysis, for each price, the 2-4-2 weeks option gets a greater market share than the 8 weeks one. However, when comparing market shares across prices, we see that, whereas for the 2-4-2 weeks figures are pretty much consistent with the analysis of the relative performance of levels in that US\$15K gets a bigger share than US\$10K, and both are preferred over both US\$20K and US\$25K, for the 8 weeks option this is not true. In this case, the cheapest option is the most preferred.

When comparing these market shares with the ones we got for the aggregate responses, it is also evident that former ones are consistently higher than the latter.

Price elasticity

Finally, we can perform an analysis of the arc elasticity for the different price points we got for each Location. Table 6 shows all price elasticities.

Table 6: Price elasticities for the target segment

Price	Location			
	8 weeks		2-4-2 weeks	
	Market share	Elasticity	Market share	Elasticity
US\$25K	34%	0.04	35%	0
US\$20K	33%	-0.09	35%	-0.09
US\$15K	36%	-0.02	38%	0.04
US\$10K	37%		36%	

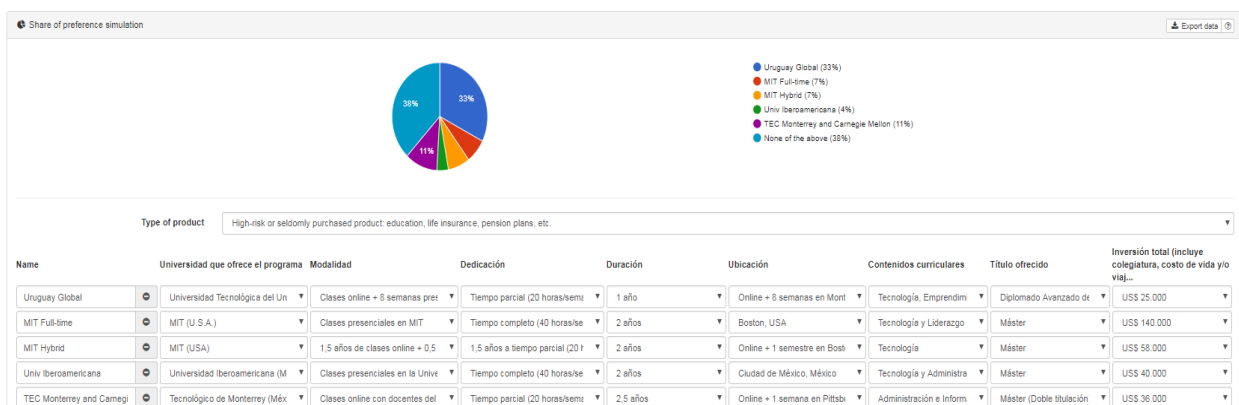
Both Locations have a very low -even positive- price elasticities for every price range. This implies that the demand curve for the program is inelastic for this segment at this price range. In this case, as it happened at the aggregate level, the most profitable option will be to price the program at US\$25K, no matter it is the 2-4-2 or the 8 weeks one.

4. Recommendations

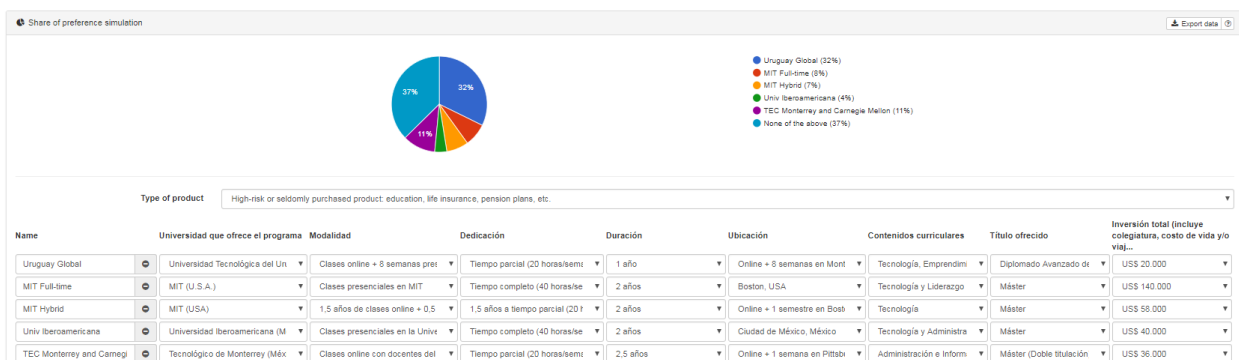
- Splitting the required 8 weeks into 3 trips of 2, 4, and 2 weeks each was the most preferred option across prices, both for the aggregate sample and for the relevant segment. However, market share does not change significantly. Hence, even though from the point of view of the demand it would make more sense to split the trip, there might be other considerations such as cost, availability of professors, etc., that might justify the other way around. We recommend analyzing all the variables holistically before taking a decision.
- With inelastic demand curves for both segments considered, the most profitable option would be charging US\$25,000. There are at least two qualifications. Firstly, this conclusion fails to consider the quality of that demand in the sense that a higher price might be driving out highly qualified students which would make sense to subsidize. Secondly, and on the other hand, if there is a cost restriction, it might be worth to explore higher price points
- One-to-one interviews: these interviews can help to give a broader sense of the needs, motivations, pain-points, and challenges faced by potential students, and hence help trimming the program, create a persona, and design a marketing strategy for it. We ask the respondents to leave their emails, so we can reach out to them and invite them to an interview.

5. Appendix

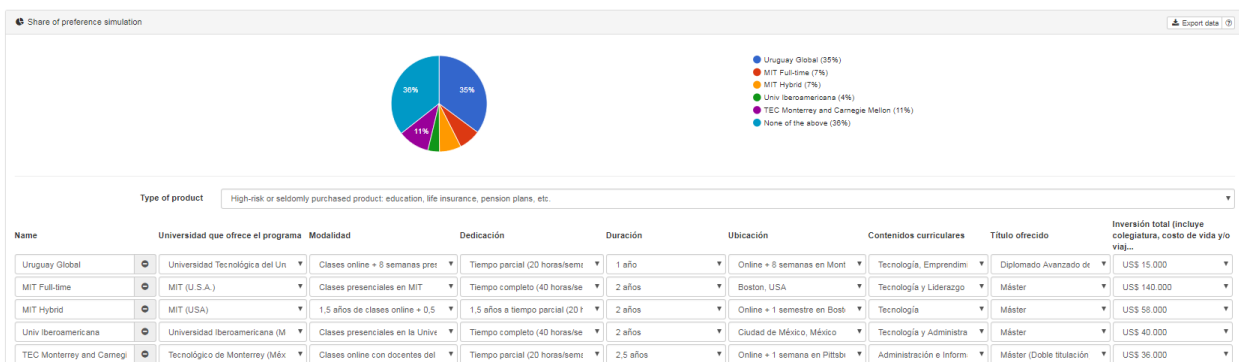
Appendix 1: UG market share – US\$25K and 8 weeks



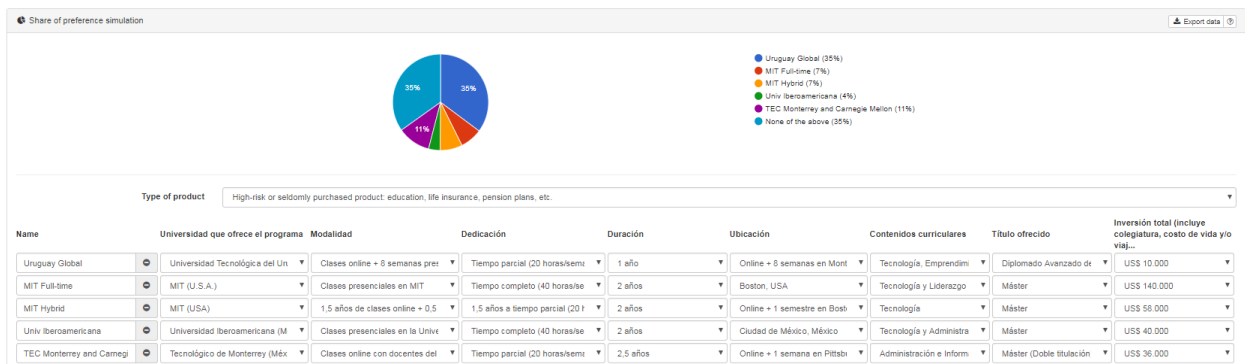
Appendix 2: UG market share – US\$20K and 8 weeks



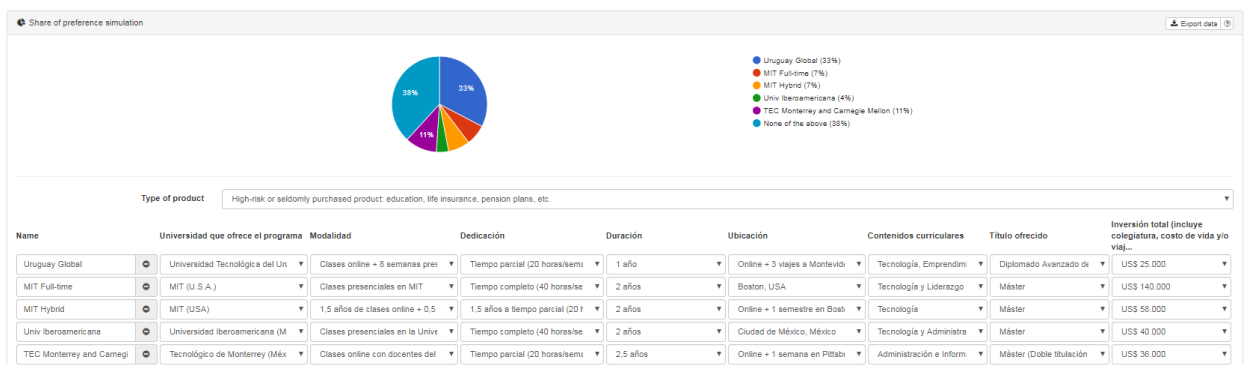
Appendix 3: UG market share – US\$15K and 8 weeks



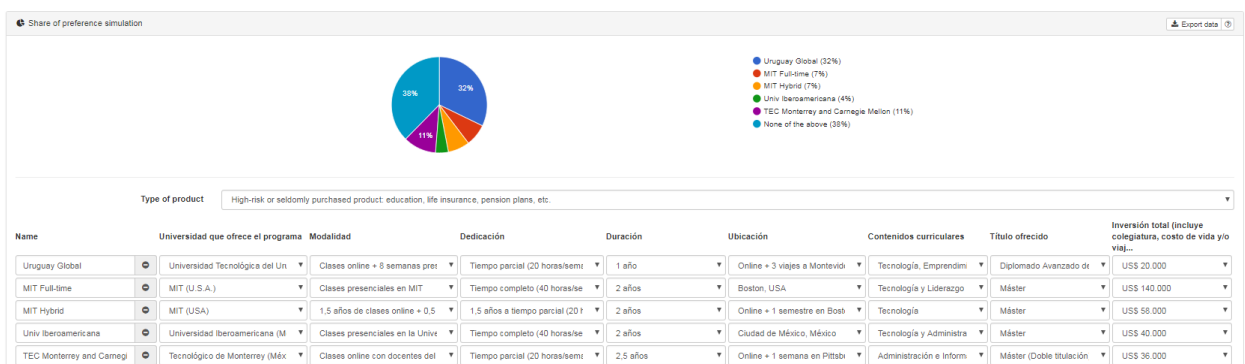
Appendix 4: UG market share – US\$10K and 8 weeks



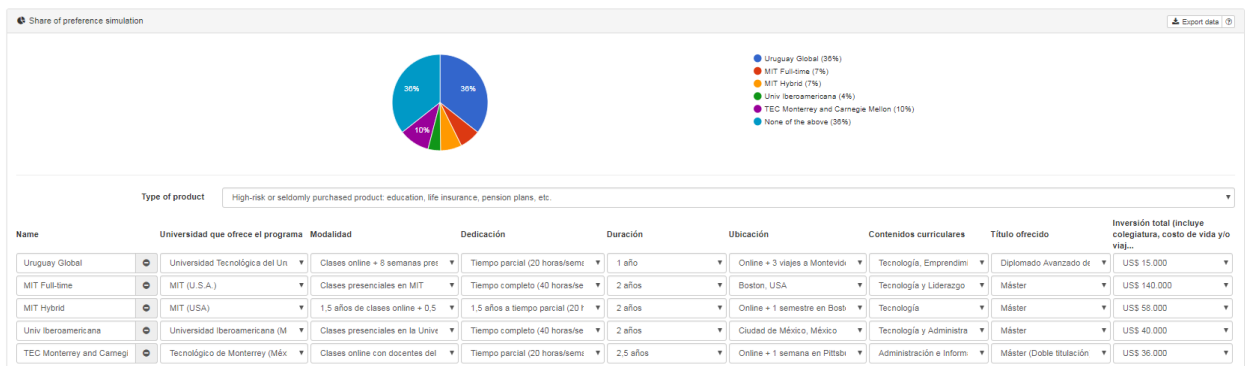
Appendix 5: UG market share – US\$25K and 2-4-2 weeks



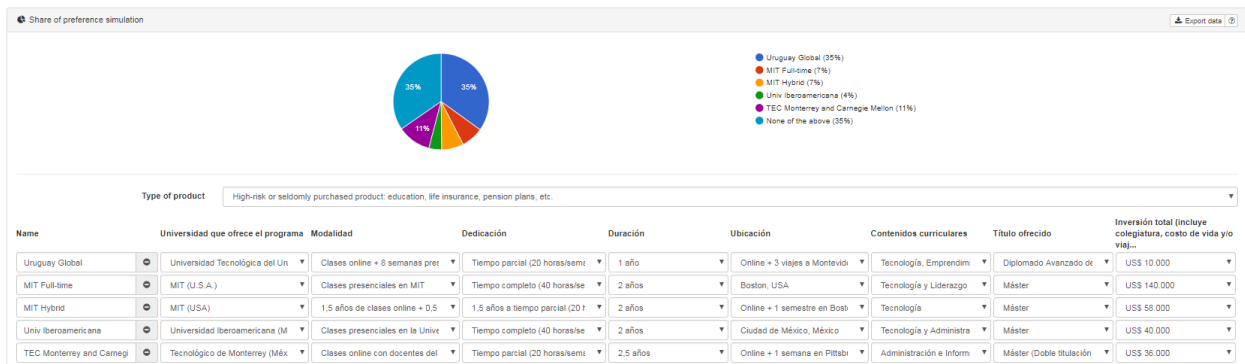
Appendix 6: UG market share – US\$20K and 2-4-2 weeks



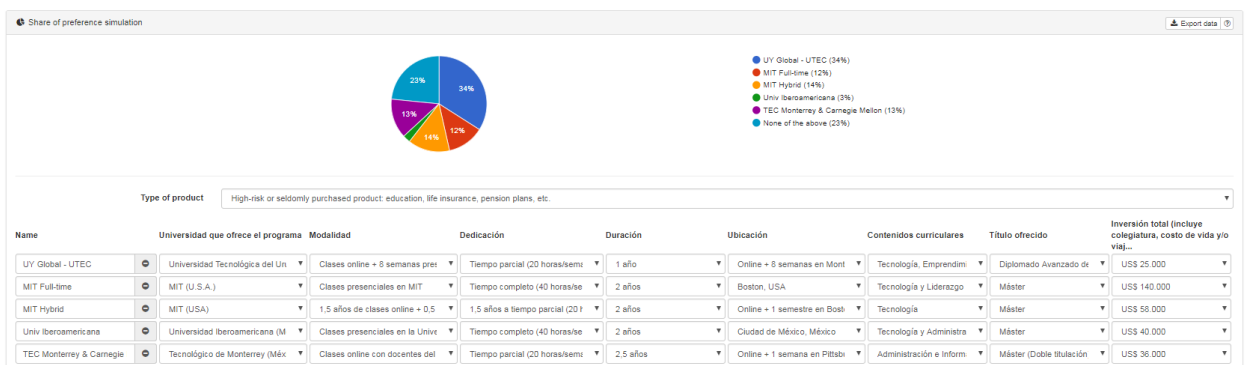
Appendix 7: UG market share – US\$15K and 2-4-2 weeks



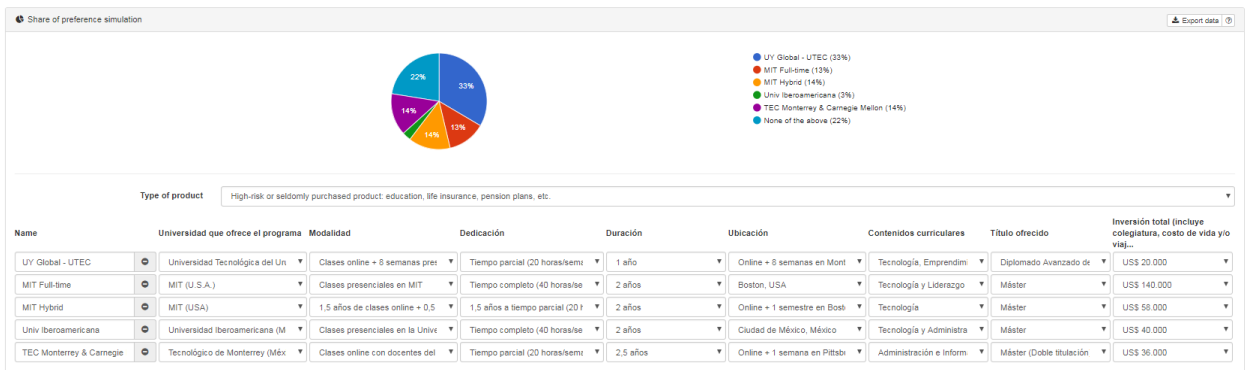
Appendix 8: UG market share – US\$10K and 2-4-2 weeks



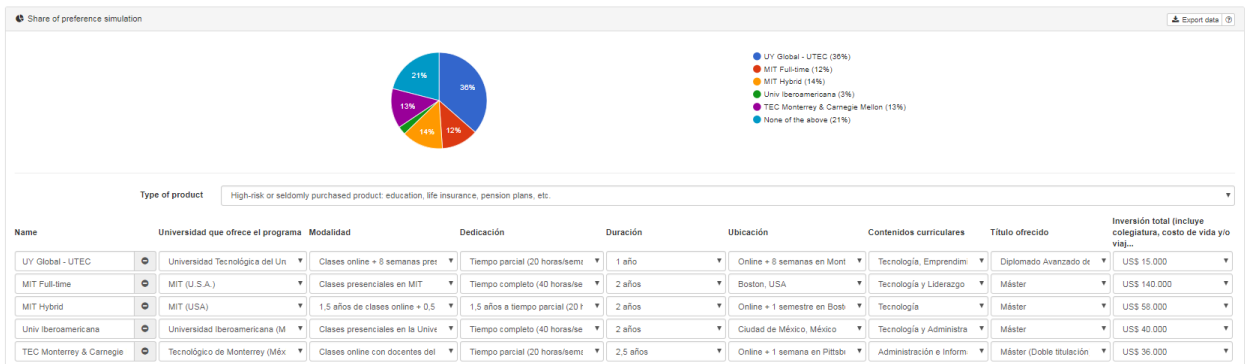
Appendix 9: UG market share – US\$25K and 8 weeks



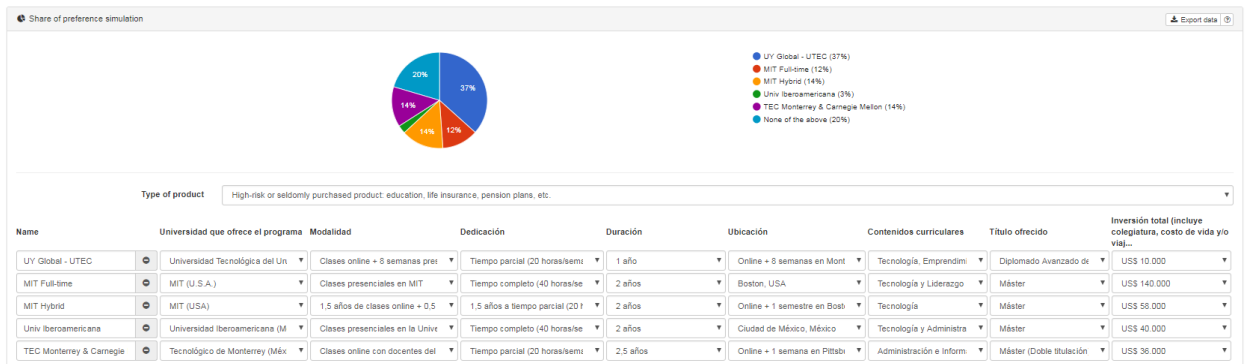
Appendix 10: UG market share for the Relevant Segment – US\$20K and 8 weeks



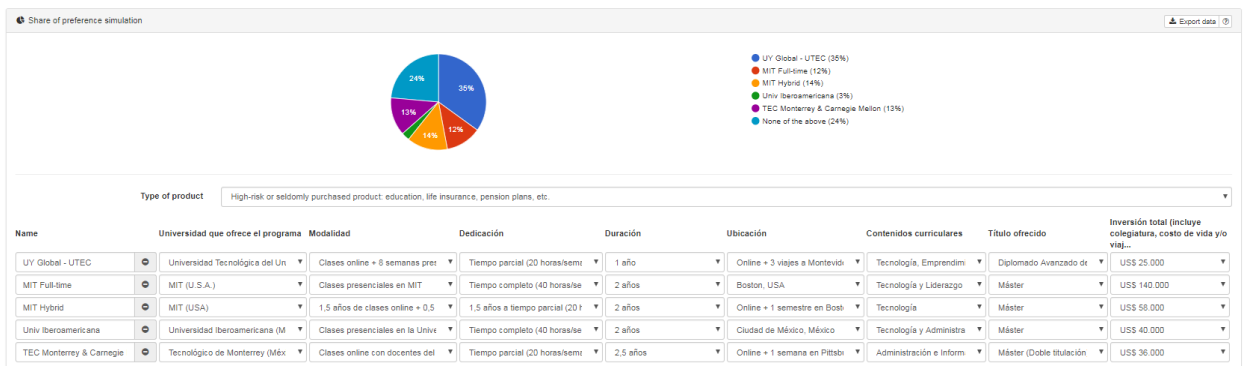
Appendix 11: UG market share for the Relevant Segment – US\$15K and 8 weeks



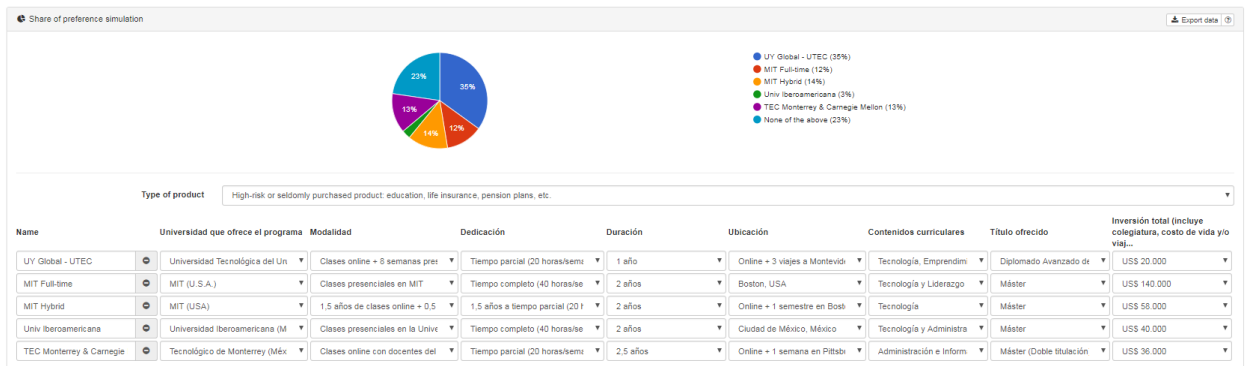
Appendix 12: UG market share for the Relevant Segment – US\$10K and 8 weeks



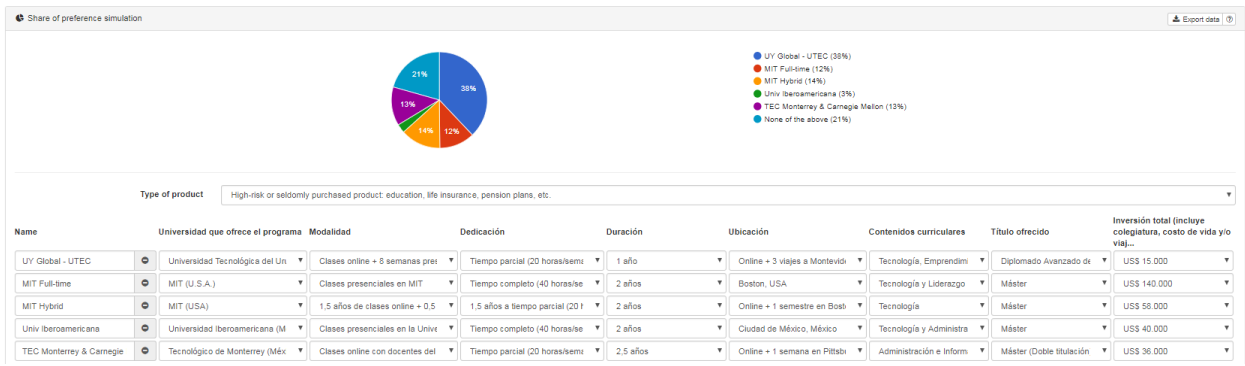
Appendix 13: UG market share for the Relevant Segment – US\$25K and 2-4-2 weeks



Appendix 14: UG market share for the Relevant Segment – US\$20K and 2-4-2 weeks



Appendix 15: UG market share for the Relevant Segment – US\$15K and 2-4-2 weeks



Appendix 16: UG market share for the Relevant Segment – US\$10K and 2-4-2 weeks

