

# THE ENTREPRENEURIAL EXPERIENCE AT TECNOLÓGICO DE MONTERREY 2020

## Highlights: 2019- 2020

- Covid19: no other period in the last 100 years has been so dramatically affected by a global phenomenon. Tecnológico de Monterrey, as thousands of universities around the world, faced an immense challenge, suspending physical activities and secure academic continuity for the Spring semester. Tecnológico de Monterrey was the first higher education institution to suspend activities in Mexico in early March. Immediately, a plan and system to train faculty in online teaching and virtual education was developed, along with a substantial technology deployment:
  - More than 90,000 moved to online courses and activities.
  - More than 10,000 faculty members were trained and redesign their courses and curricula for online education. The model has been named “Flexible Digital”.
  - More than 55,000 sessions and other activities per week.
  - Some peak hours observed more than 1,400 simultaneous sessions.
  - 99% of sessions with no technical problems.
  - 88% of students were satisfied with the adaptation and development of academic programs for online format, but mostly with faculty preparation and behavior.
  - 34,727 students continued flawlessly with the Entrepreneurship courses.
  - Business develop support programs (incubation, Zona Ei) continued through virtual programs, reaching more than 9,800 entrepreneurs, broadcasting to 7 countries, including the US, Canada and Europe.

Tecnológico de Monterrey's experience of 30+ years in distance education enabled a quick adjustment to distance education schemes.

Additionally, Tecnológico de Monterrey health services, centers and hospitals assumed a leading position orchestrating and organizing the virus containing strategies in collaboration with other public hospitals, governed authorities in several Mexican States.

For additional Covid-19 information please go to [http://sar.itesm.mx/ranking\\_2020/Covid\\_Pandemic.pdf](http://sar.itesm.mx/ranking_2020/Covid_Pandemic.pdf).

- **Hult Prize 2019 winners!** President Bill Clinton's Foundation awarded the 1<sup>st</sup> place (\$1 million dollars) of this annual competition to RUTOPIA, a social entrepreneurship startup created by Tec de Monterrey students, who faced competed among more than 20,000 projects worldwide.
- In May 2019 Tecnológico de Monterrey completed successfully the first year of the new model 'Tec21'. 12,000 students and more than 3,000 faculty members experienced the new programs. The model has been presented in numerous international academic events as a pioneering and leading revolutionary model for higher education. It is substantially founded on 'competency-based education', semester-long challenges, intensive use of IT, mentorship-like teaching, permanent real-life experiences, and personalized curricula design. See more on [http://sar.itesm.mx/ranking\\_2020/Tec21.pdf](http://sar.itesm.mx/ranking_2020/Tec21.pdf).
- In December 2019 World Bank's International Finance Corporation published the Study Case "BREAKING PARADIGMS TO DEVELOP LEADERS FOR THE 21ST CENTURY - Tec de Monterrey: How a Top University in Mexico Radically Overhauled its Educational Model", drawing conclusions about the model as reference for the future of education; more about the study on [http://sar.itesm.mx/ranking\\_2020/WB\\_Tec21Study.pdf](http://sar.itesm.mx/ranking_2020/WB_Tec21Study.pdf).
- During the 2019-2020 academic year, **2,530** students from official entrepreneurship majors/minor developed a new business project. Additionally, **23,015** students from other majors developed an actionable business plan. Both groups total **48.5%** of total undergraduate student population in that period. The impact of Entrepreneurship education at Tecnológico de Monterrey is evident throughout the whole university.
- Although international exchange programs and all traveling have been rigorously suspended for the Spring semester (February- May) due to the Coronavirus pandemic, 2019 witnessed relevant international activity. Out of 63 the undergraduate programs, at least 40 are currently offered in English as "international degree", and the goal is to have all undergraduate programs in English during the next 5 years. In 2019, 5,416 international students from 70 countries took part in at least one academic program at Tecnológico de Monterrey, and 10,529 Tecnológico de Monterrey students studied abroad in 48 countries. 58% of graduate students have international exchange experience. 531 international faculty from all over the world taught at Tecnológico de Monterrey.
- In 2020, Tecnológico de Monterrey reached position 155 in the 2021 QS World University Rankings and 28 in the "**Global Private Universities**" category. Moreover, according to employers, the university reached QS Ranking According to Employers position **#56** globally, reaffirming its reputation as one of the most recognized universities in the world.

## ENTREPRENEURSHIP AT TECNOLÓGICO DE MONTERREY

Some experts have arguably deemed Entrepreneurship as the most potent economic force the world has ever experienced during the last three decades. Some universities have embraced this phenomenon repositioning themselves from simple witnesses to key players. Pioneering this approach, the Tecnológico de Monterrey has been recognized as the leading university for entrepreneurship teaching and practice in Latin America.

Celebrating 77 years in 2020, the Tecnológico ('Tec') de Monterrey divulges a mission that embodies the superlative significance of entrepreneurship as the core and guiding principle of the institution: *'to form people with entrepreneurial spirit, humanist values, and internationally competitive'*. Below is the underlying framework and rationale behind these principles.

Tecnológico de Monterrey is *one* university operating throughout 26 campuses. Student admission and development, academic programs, faculty management and overall administrative tasks are the same for all physical locations. One central government body and five schools (Business, Engineering, Social Sciences, Medicine and Architecture) lead the university strategy. Entrepreneurship –both, academically and as business development activity– is transversal to all schools and programs, considering its role as *the* core foundation of the institution.

**Foundations** Tecnológico de Monterrey was founded 77 years ago by successful and exemplary entrepreneurs whose vision of wealth creation and regional transformation through leadership, education, courage and new venture creation still resonates in the country. Entrepreneurship is in the 'DNA' of the institution since its inception.

**Four-decades of entrepreneurial experience transforming people** Tecnológico de Monterrey has been offering entrepreneurship academic programs -such as courses and classes designed to trigger an entrepreneurial spirit in students- for almost 30 years. At the end of the seventies, the institution considered that the students needed an *entrepreneurial attitude* rather than simply aiming to hold a position in existing firms. In 1978 launched the Entrepreneurship Program, which stresses the preparation of entrepreneurs, achieved by accompanying traditional professional studies with real-life experiences, where students learn to generate and exploit their entrepreneurial ideas. This experience has multiplied and evolved into a wide range of courses, seminars, "minor" degrees and a full undergrad program specialized on entrepreneurship.

## The emergence of an integral entrepreneurship ecosystem

What was born as an educational/learning experience –and as a response to the natural novel needs ingrained in the students thought the academic programs- quickly grew into a bundle of services and infrastructure specialized in new venture creation and entrepreneurial spirit development, appropriately named the “entrepreneurial ecosystem”. The initial foundation of more than 26 business incubators (more than 14 years ago), was later followed by the setting up of a network of 8 business accelerators and the development 11 university-based innovation/entrepreneurial parks. These efforts have been enhanced with liaison programs to regional clusters, the formalization of several seasoned experts’ networks (mostly Tecnológico de Monterrey alumni) and access to venture capital resources. We turn our campuses into laboratories of real-life business environments. It has been acknowledged as the leading and unparalleled university entrepreneurship ecosystem in Latin America.

## Remarkable Global Impact of the Entrepreneurship Education

In 2018 Tecnológico de Monterrey celebrated 75 years, widely acknowledged as one of the best universities in Latin America and a major reference for entrepreneurship education. An independent study developed by universities ranking expert QS, extracted data an experiences from more than 260,000 alumni community: 41% have started for-profit businesses (compared to 15% in Mexico and 25% in MIT), 65% are still in operation, and 2.8 million jobs were created, approximately equivalent to four years of all jobs created by the Mexican economy. See more on [http://sar.itesm.mx/ranking\\_2020/75\\_years\\_impact.pdf](http://sar.itesm.mx/ranking_2020/75_years_impact.pdf) .

## First year of the new ‘Tec21’ educational model

In December 2019 World Bank’s International Finance Corporation published the Study Case “BREAKING PARADIGMS TO DEVELOP LEADERS FOR THE 21ST CENTURY - Tec de Monterrey: How a Top University in Mexico Radically Overhauled its Educational Model”, drawing conclusions about the model as reference for the future of education; more about the study on [http://sar.itesm.mx/ranking\\_2020/WB\\_Tec21Study.pdf](http://sar.itesm.mx/ranking_2020/WB_Tec21Study.pdf) .

Tec21 design and planning began in 2015 as an entire new educational model, revolutionary in many ways since it reinvents the way undergraduate education is provided. Along with changes in course, semester and curricula structure, the model is

substantially founded on 'competency-based education', semester-long challenges, intensive use of IT, mentorship-like teaching, permanent real-life experiences, and personalized curricula design. Along with all undergraduate programs, entrepreneurship has gone through major changes. See more on [http://sar.itesm.mx/ranking\\_2020/Tec21.pdf](http://sar.itesm.mx/ranking_2020/Tec21.pdf).

### A unique competencies-based entrepreneurship education model

In addition to the more traditional professional competencies learned at higher education (teamwork, creativity, etc.) the educational model at Tecnológico de Monterrey is designed to cultivate **four key unique entrepreneurial competencies** in **every undergraduate student**: opportunity identification, resourcefulness, resilience, and overcoming fear of failure. Tecnológico de Monterrey currently offers several undergraduate entrepreneurship programs, reaching more than 30,000 students every year and ensuring that every student, regardless of major or career choice, had at least two main entrepreneurial experiences.

The main programs are:

- 1) Two full bachelor's degree in entrepreneurship.
- 2) Three minors in entrepreneurship.
- 3) A fundamental 'entrepreneurship core course' (ECC), compulsory for all students.

### Educational model has been organized around entrepreneurship

Our educational model demands that 100 percent of the undergraduate students shall develop entrepreneurship competences, whether aimed to the creation of business or to any other human endeavor (charity, government, corporate intrapreneurship, etc.). Students get exposure to entrepreneurial education in every course, not only the 'entrepreneurship' as discipline classes. All students are required to experience diverse entrepreneurship programs (accredited to their major degrees and formally required for graduation), like the ECC (entrepreneurship core course') during 3rd, 4th or 5th year

The undergraduate educational model (for all majors) comprehends three progressive phases over 9 semesters, to emphasize a different element of the entrepreneurial development in each phase:

1st phase (Semesters 1-3): *Entrepreneurship emotions and mindset*. Activities to promote the desirability of being an entrepreneur.

2nd phase (Semesters 4-6): *The rationale of entrepreneurship and tools*. Knowledge and techniques related to the latest trends in new venture development.

3rd phase (Semesters 7-8): *Execution*. Solving real life challenges through starting up a business or entrepreneurial project.

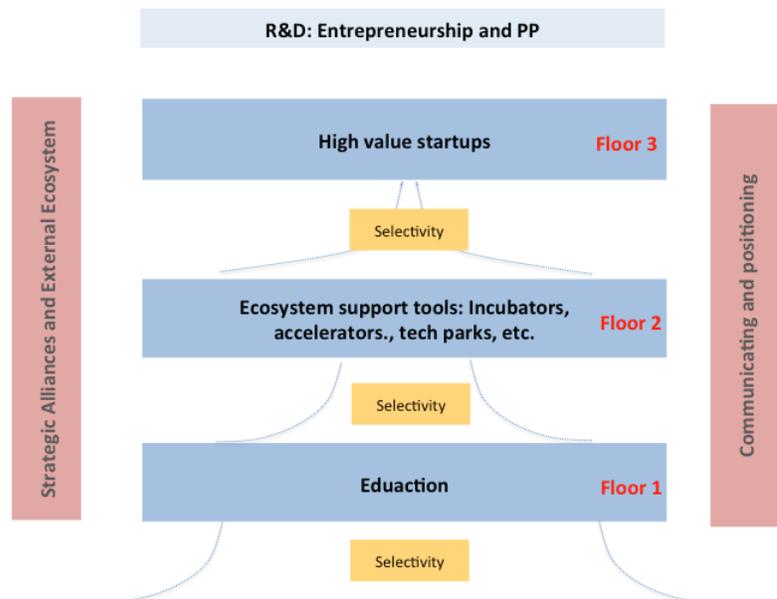
### New venture development through a 'Three Floors Model'

This 'aspirational approach' pursues to identify students with evident *outstanding* entrepreneurial traits and move them quickly to activities where they can engage in new venture development with enough flexibility from the academic program (please see figure below).

1st Floor. Exceptional entrepreneurial education for every undergraduate student.

2nd Floor. Selection of top candidates to devote time for new venture development projects.

3rd Floor. Specialized support to advance startups with the support of our entrepreneurship and innovation ecosystem (incubators, coworking spaces, etc.)



## The new business incubation strategy: Ei Zone

Entrepreneurship has evolved around the world, demanding more dynamic and sophisticated new venture development models, the traditional business incubators and accelerators have become limited and less effective; there has been a clear need for alternatives aimed to new generations of innovation-based entrepreneurs.

Ei Zone has updated the incubator programs by using methodologies such as, Design Thinking and Lean Startup, in order to evolve from the traditional model of Pre-Incubation, Incubation, and Post-Incubation, into new three specific programs, which detonate the creation of Startups,; *TEC LEAN: Discovery. TEC LEAN Launch and TEC LEAN Growth*. The Ei Zone is the new strategy for incubation and acceleration, with short-term programs (6 months instead to the traditional 2-year incubation model), intense mentorship and aggressive approximation to the market. More about Ei Zone on [http://sar.itesm.mx/ranking\\_2020/ZonaEi.pdf](http://sar.itesm.mx/ranking_2020/ZonaEi.pdf) .

## Faculty and mentorship

Faculty are not only specialized and experienced in entrepreneurial activities, but in *teaching* entrepreneurship. All faculty members are trained to teach and encourage entrepreneurship competencies regardless of their disciplines. For the faculty of entrepreneurship as discipline, a distinctly challenging and compressive certification program has been developed. This is a 4-year certification program provided with experts from Babson College and, University of California Berkley, among other global leading institutions. The goal is to have all entrepreneurship faculty –regardless of their primary specialization field- trained with the right abilities to teach the hard and soft elements of our current model: lean startup approach, resilience, opportunity identification, effectual entrepreneurship, etc.

Regarding mentorship, thanks to liaison programs with successful alumni and community business leaders, more than 900 mentors form all over Mexico and some other countries (USA, Canada) reinforce the academic programs, working with faculty and advising students in their projects.

### Reach and regional customization

Benefited from a 26 multi-campus university system with presence in 20 Mexican states, Tecnológico de Monterrey has learned to adapt and transform all its entrepreneurship educative and support programs to the idiosyncratic needs, and characteristic of each region, developing unique transfer methodologies for each of the campus, and understanding that models need to be customized to every community in order to be effective and successful.

### Regional and world Influence

Currently, the Tecnológico de Monterrey entrepreneurship development model has been recognized nationally and globally as a benchmark for universities and regions, since the mentioned ecosystem scheme comprehends the cooperation among academia, government and firms. Several elements of the ecosystem have been transferred to different institutions in more than 10 countries.

### Hult Prize 2019 winners!

RUTOPIA won the prestigious Hult Prize, created as a collaboration of the UN and former President Bill Clinton's Foundation. RUTOPIA is a social new venture that connects travelers to a network of hosts in Mexico's rural



communities so they can discover cultural and natural treasures. Created by Tec de Monterrey students and graduates and under the slogan "Travel differently, connect with communities," RUTOPIA offers community-based ecotourism with authentic experiences that are off the beaten path. The new venture was selected from more than 20,000 projects worldwide. The \$1 million-dollar prize will help grow this company, which was supported from inception by Tec de Monterrey's Eugenio Garza Lagüera Institute for Entrepreneurship. More about this winners: <https://www.hult.edu/blog/10th-annual-hult-prize-finals-crowns-winner/>

## Global Partnerships

Tecnológico de Monterrey has established partnerships and alliances with the best entrepreneurship-oriented universities of the world: Babson College, Stanford University, Berkeley, Brigham Young University, University of Texas at Austin, Jönköping International Business School, and the Global Entrepreneurship Monitor (GEM), among others. Several programs for students and faculty have been developed in collaboration with these institutions.



In 2014 Tecnológico de Monterrey signed as one of the four sponsors for the Global Entrepreneurship Monitor (GEM) and in February 2015 hosted the GEM annual meeting at Campus Monterrey, gathering experts from more than 60 countries to discuss trends in Entrepreneurship research and education, and launching the 2014 global report. Tec de Monterrey has lead the GEM report for Mexico during the last 15 years and currently is part of the directory board.

## Beyond the campus INCmty 2019

Additional to the vast ecosystem orchestrated by Tecnológico de Monterrey, a major event has been created five years ago to boost the entrepreneurial culture in Latin America: the **INCmty** entrepreneurship festival. Inspired in the legendary South by South West festival in Austin, TX, in 2019 **INCmty** has congregated:



- More than 24,000 participants (8,000 in person, 15,000 online)
- 530 speakers
- 240 organizations
- 550 events
- Twitter trending topic during the festival three days.

For a more comprehensive information on **INCmty** please go to:

<https://www.youtube.com/watch?v=yPyhztC8foo>

<https://www.youtube.com/watch?v=Gfiagn4I3IE>

## Presence in top technology hubs: Silicon Valley, China

While Tecnológico de Monterrey has 18 international liaison offices operating in the US, Europe and Latin America, in 2015 was established the Silicon Valley International Office, specifically created to help students and faculty to engage in the Silicon Valley ecosystem, working with local top universities and business accelerators. During 2018 alone more than 80 students benefited from immersion programs in the local entrepreneurial business culture.

In May 2019, the 'Innovation Hub Tec-China' initiated operations of in the neighborhood of Jiangnan, Hangzhou, China; a 10,700 sq. ft. global coworking center. The goal is to link Tec's R&D and entrepreneurship initiatives within the Chinese market and context, and move around 500 students and faculty every year for explore opportunities in biomedicine, mechanical engineering and food engineering.

## Tecnológico de Monterrey at 'South by South West'



In early March, SXSW 2020 was canceled due to the Coronavirus contingency. Just like previous years, Tecnológico de Monterrey planned an important participation, gathering more than 50 startups from entrepreneurs, students and faculty, in more than 60 activities (events, pitching sessions, meetings). Once again, no other Latin-American country or university has a proactive participation in this important festival.

## Outcomes and results

Despite a remarkably historic and grievous period, more than 30,000 students benefited from entrepreneurship education and support during the 2018. 23,000 students enrolled in academic programs and 7,000 in extracurricular activities. More than 600 new firms surfaced from the entrepreneurship ecosystem support programs each year. Approximately 23% of alumni become entrepreneurs after 3 months of graduation and 60% of alumni after 25 years of graduation, and the leadership of these individuals has permeated in the economic and social development of Mexico and Latin America. Some of the accomplishments are summarized as follows:

|  |                             |
|--|-----------------------------|
| <i>Students enrolled in entrepreneurship academic programs/entrepreneurship related courses every year</i> | <b>More than<br/>30,000</b> |
| <i>Faculty teaching entrepreneurship courses</i>   | <b>At least 250</b>         |
| <i>Experts advisors and mentors</i>  | <b>At least<br/>1,000</b>   |
| <i>Firms graduated from the incubator network since 2002</i>   | <b>More than<br/>4,500</b>  |
| <i>Start-ups and projects in incubation (2019)</i>   | <b>More than<br/>1,200</b>  |
| <i>Incubators (traditional and high-tech)</i>  | <b>21</b>                   |
| <i>Technology Parks</i>  | <b>11</b>                   |
| <i>Jobs created since 2001</i>   | <b>More than<br/>34,500</b> |

## ENTREPRENEURSHIP AT TEC DE MONTERREY IN BRIEF

- Tecnológico de Monterrey incorporated entrepreneurship programs within its academic model and community-reach activities more than 30 years ago, becoming the pioneer and leading university in Latin America on this subject.
- Subsequent to this booming initiative, and over the following years, the institution formed and implemented a network of business incubators, business accelerators, technology parks, venture capital support activities, and mentoring, taking advantage of the unique national presence through 26 campuses in Mexico.

- The business incubators distributed throughout the country currently serve more than 1,300 projects; in the last 15 years, the incubator network has graduated more than 4,500 companies.
- Students generate 35% of the companies participating in the incubation models; Tecnológico de Monterrey alumni generate 20%; and the remaining 45% by other entrepreneurs from the community
- The Technology Parks Network currently includes 11 Technology Parks in operation. These parks host more than 250 firms and have created and supported more than 3,600 high value jobs.
- More than 1,000 mentors, most of them successful alumni, interact and support projects and firms of the Tec entrepreneurship ecosystem.