

RYAN SCHILL, ANGELA SCHILL AND NOAH SCHILL

## Tech Latinas: Latin American Women for Technology<sup>1</sup>

*“We use coding to transform the future lives of thousands of the young women in Latin America.” (Flor Quispe, co-founder of Tech Latinas)*

Tech Latinas is a small social enterprise, founded in 2014 in Quito, Ecuador. After having achieved a fair amount of success, the founding partners of Tech Latinas had made a significant impact on the technology sector in Latin America. However, these partners realized that regardless of their past success, they needed new strategies to continue transforming Latin America’s technology sector. For context, geography, opportunities and challenges of the Latin American region refer to **(Exhibit 1)**.

Tech Latinas had previously been a branch of Web Latinas, a web development agency that sent programmers and coders to teach classes to women. Tech Latinas, as a social venture, soon outperformed (WEBx) in its vision and mission, which prompted a change in focus. It had only been three years since they started this social enterprise. Their mission had been to create a training program in web development for young Latin American women of scarce resources. The goal was to get them careers in the technology sector, while also diversifying the sector. In those three years of operation, they managed to train approximately 600 students, with a labor insertion rate of 75%, allowing their students to triple their monthly income. Flor and her husband, Felipe, had overseen the operations of both these companies and were extremely proud of what they had accomplished, but they wanted to do more. Motivated by a desire to “pay it forward,” they wanted to continue their efforts, this time directing their resources to benefit Flor’s home country and the surrounding regions.

While their next steps were more ambitious, they were also vaguer. The directors of Tech Latinas considered that their greatest challenge was scalability. They wanted to expand in Latin America and to have Tech Latinas become the main source of women technology talent in the region. They wanted their graduates to transform the sector.

Another goal was to have fifteen training centers established in the main cities across Latin America by 2021; thus producing 10,000 competent women web developer graduates who would be ready to enter the sector. However, expansion was costly. Another potential option was to develop a franchise model, but then they would lose quality control. Whatever their direction, they needed funding as well as a solid strategy to facilitate expansion.

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## **Flor's Background: The Path to Social Entrepreneurship**

Flor Quispe grew up in a privileged situation; she lived in stability, security, and had access to a good education, despite the complications that Ecuador experienced during the 80s and 90s. This instilled in her the desire and commitment to serve within her community and give back; however, she was not sure what to do or how to do it.

She began her undergraduate studies at one of the most prestigious universities in Ecuador but decided at age eighteen to complete her degree internationally in Europe. That decision allowed her to gain a global vision and grow in a diverse environment. Flor developed empathy towards and an interest in other cultures as she met different groups of foreign students, with whom she forged strong ties. Flor enjoyed and valued the experience of living abroad. When she finished college, she sought opportunities to work in international organizations. Ready to start from scratch once again in a new country, she accepted an internship with the (United Nations) that later became a full-time job. She worked on a project to increase access to civil registry in Latin America. She moved to New York where her duties involved working with colleagues from different places and traveling to different countries in Latin America. While living in New York, she met her husband Felipe.

After four years of working for the UN, she decided her next professional step was to earn a master's degree. In order to learn about the social context around the academic sector, and complement her recent work experience at the UN, she opted to pursue a master's degree in Public Administration at Georgetown University. She and Felipe moved to Washington DC. The firm Felipe worked for allowed him to continue his job as a programmer, designing, writing, debugging and maintaining the source code for computer programs. The Georgetown master's degree program supported Flor in developing her skills in the public, private, and non-profit sectors, which in turn, helped her strengthen her network and make valuable friendships with those who shared an interest in social development.

In the last months of her master's degree, Flor and Felipe deliberated the possibility of either looking for a new job opportunity in Washington DC or returning to Latin America. A new job in the United States would require at least a four-year commitment, and they had both spent almost ten years living abroad. In the end, the decision to establish themselves in Ecuador was influenced by the overarching desire they both had to do something good for Flor's country. This decision proved quite difficult for Felipe who enjoyed working in Washington DC and was not sure he could find a good equivalent job. Even more difficult was the risk of disappointing his family who had worked tirelessly to move their family from their homeland in Peru to settle in the United States.

Driven by their new vision, Flor and Felipe made the move to Ecuador in spite of their misgivings. They would go on to develop a business idea in the technology arena to leverage Felipe's experiences and knowledge. Flor started looking for job opportunities in Quito to get a fixed monthly income during the early steps of the entrepreneurship. Some initial ideas they entertained included creating a social network based on sharing news stories and a job search portal – both of which were unsuccessful. In Washington DC, Felipe had done independent consulting work in Web Development, and he proposed to replicate this kind of web development consulting in Peru. Offering these kinds of independent services would increase opportunities to get more involved in the Ecuadorian tech market.

Fortuitously, one of Flor's closest colleagues, Sebastian, moved to Quito when his wife accepted a job offer there in Ecuador. Flor and Felipe welcomed Sebastian's arrival as they had been overwhelmed with planning the business, and they were hopeful he would join them and be a

valuable addition to their team. He accepted their offer and at the end of 2013, the three co-founded a digital agency, which they called WEBx.

### **The Initial Entrepreneurship**

The founders rented a space where independent professionals, entrepreneurs and SMEs could share the same workspace and share common services to independently develop professional projects while also promoting joint projects. One week into the project, they had already obtained a client and quickly began making a name for themselves in the Ecuadorian tech scene.

To establish a steady income during this nascent stage in their company, Flor began working for an American Non-Government Agency with regional operations and headquarters in Quito. The organization focused on creating projects with farmers and microentrepreneurs to give them access to better value chains. While her job gave her flexibility to work on their own business, Flor was dissatisfied with her work with the NGO, as it required her to work remotely, and she was lonely. Moreover, she felt she was not making the sizeable impact in her country she had hoped to make.

### **Discovering the Needs of the Industry and a New Opportunity**

In 2017, WEBx quickly attracted clients and developed various projects in different industries. This early and fast growth demanded access to more resources, but the team struggled to find qualified candidates. Other emerging companies also struggled to find qualified talent. Academic training was not a prerequisite for prospective web developers. Employees highly valued the work ethic and drive of self-taught candidates. Of those developers that Felipe finally hired for his WEBx team, the majority of them were men. Felipe made diversity within his teams a priority, but it still took over a year to find and hire the first women developer.

In this context, Flor gained a quick reading of the needs of the sector. Two conferences she attended earlier also inspired her idea. She had participated in a conference in New York, during her time at Georgetown, where she heard the founder of “Black Girls Code” speak. Black Girls Code was a project that involved Black girls becoming proficient in the technology sector, empowering them by giving them access to that field of work. At a TEDx conference in 2013 in Ecuador, she had listened to a speaker describe her own business venture in which she helped young Ecuadorians to succeed through dance. These examples of identifying needs and providing solutions to those needs inspired Flor as she saw Ecuador’s need for more women to be involved in the tech industry.

With the opportunity identified and receiving inspiration from others, Flor developed her own idea of a pilot training program in web development for young women. She left her stable job to fully devote herself to this new entrepreneurial venture. She would follow the lean philosophy model of designing products, while simultaneously reducing unnecessary costs and risks. In just three months, Flor had met with a significant number of tech-savvy Ecuadorians already in the field, who offered their advice and solutions. From these ideas, she compiled the best of them, ultimately designing a business that would be a transformational space in the field of technology that catered specifically to women. ‘Tech Latinas’ would provide recruitment, education, personal development, and job placement for Ecuadorian women getting started as developers in the tech industry.

### **Tech Latinas Pilot**

Flor approached her old friend Mateo to help her develop the pilot for Tech Latinas. He joined the project as a professor and was also hired by WEBx as programmer. Flor and Felipe bought the building where

WEBx was housed to also utilize this physical space for Tech Latina's classes. The entrepreneurs then collected donated computers from relatives and friends. Once the classrooms for Tech Latinas was established, Flor contacted some of her friends who worked in an NGO to see if she could participate in their weekend activities to learn about their operations. Flor sought out NGOs that served Ecuadorian women and were interested in women's issues. She proposed that they set up young women beneficiaries from their programs who might be interested in the Tech Latinas' pilot. Flor was also hoping to recruit potential students who had already been exposed to NGO women's empowerment workshops in hopes that those young women students could possibly teach the principles they had learned to students in Tech Latinas' personal development workshops.

This request led to nine young women, some of them still in secondary school, who were interviewed for the pilot. Despite some of them being quite young, most of them were accepted into the pilot program. Flor assumed all of the costs associated with transport for the participants, providing an extra level of security and stability to these new students and their families. This financial support also lessened the risk of girls dropping out of the program prematurely. Flor was anxious to pilot Tech Latinas as a means of validation as well as improvement. Seventeen women participants began the Tech Latinas pilot in April 2014. The training program had three classes per week that would last until September of that year (five months), in which they would learn HTML and CSS. The program's participant enjoyed the experience and loved the program. Flor was thrilled to see the students' excitement when they began to grasp the concepts they were being taught. In only weeks, the students were practicing their skills and making web pages of their favorite singers. Flor became well-acquainted with the needs and challenges that accompanied working with young women with a very basic education.

At the end of the training program, two of the participants, Sofia and Ana, were hired as programmers. Sofia was hired by WEBx, and Ana by Tech Latinas. Two more graduates began working in programming independently. The other participants of the pilot were too young to look for a job and returned to their homes to finish secondary school. The success stories of Tech Latina's first graduates were successful enough to validate the company and gave a new impetus to the venture. The Tech Latinas' vision was a powerful one, and this initial success confirmed it.

## **Initializing the Business Model**

Now that they had proven the training model worked, they had to decide how much to grow their enterprise. One option was to maintain the company by financing it solely through WEBx, however, WEBx only had the financial capacity to sustain a class size of 20 students at a time. WEBx could potentially hire ten graduates at the end of the program, but the overall growth of Tech Latinas would be limited based on the financial restraints of WEBx. Another option was to be more entrepreneurially ambitious by rapidly expanding Tech Latinas. This plan would require a significant injection of funding to facilitate the redesign, including accommodating a larger number of students.

True to their entrepreneurial spirit, Flor and her team chose to explore the expansive option and began contacting investors. They were disappointed when this appeal for financial support was unsuccessful. Rather than abandon plans for scaling Tech Latinas, Flor determined three potential alternative sources of income: (1) the retroactive repayment of the young women once they had graduated from the program and obtained employment, (2) an alliance of technology companies in Ecuador who could invest in training the best talent and then hire the students after graduation; and (3) a subsidy model, where someone who could afford the program would pay tuition, while those who did not have the means to pay could still attend.

In October 2014, a friend of Flor's, invited her to participate in a social entrepreneurship contest. This was a media contest in Ecuador, backed by Price Waterhouse Coopers and private investors. Flor participated in the event and won \$10,000 as well as some strategic planning and efficient resource management advice from Price Waterhouse Coopers to help Tech Latinas strategize and maximize their growth. The exposure from this media contest also brought a large amount of awareness and excitement for Tech Latinas and their mission. It bolstered Flor and her team to continue their work.

The day following the contest, TEDx organizers contacted Flor and invited her to participate in another event scheduled in three weeks' time. Flor jumped at another opportunity to present Tech Latinas before an audience of 1,500 people. Among them would be the president of the National Council of Technology, who, after the presentation of Tech Latinas, approached Flor to congratulate her and invited her to discuss the possibility of national support of Tech Latinas. He also invited her to participate in another contest that turned out to be another victory. At the end of 2014, Tech Latinas won a grant for \$70,000 USD, and with the visibility that the project had achieved, they were also successful in raising an additional \$20,000 USD through a crowdfunding campaign.

## **Strengthening the Business Model**

Tech Latinas started in 2015 with a budget of close to \$100,000 USD to finance its operations and redesign for expansion. Flor, Sebastian, and Felipe restructured the entire program in a way that would strengthen Tech Latinas while also generating more value for both students and contracting companies (**Exhibit 2**). Until that moment, most of the resources for Tech Latinas were comprised of WEBx personnel who shared responsibilities between the two ventures. One of the first decisions in the restructuring was to designate full-time resources to Tech Latinas in order to focus on the following critical functions:

A rigorous talent search process. An alliance was created that consisted of a consultant that specialized in the personnel selection processes. They were responsible for selecting 80 applicants for the first class of 2015. After a rigorous selection process, which included logical reasoning and comprehension tests as well as personal interviews, 25 young women who had demonstrated high potential to learn web development were selected.

Modern approach to learning. Tech Latinas rejected many traditional teaching methods, opting for a bootcamp-style academic program designed by an American specialist they had hired. The curriculum was comprised of a full-time, six-month program.

Personal development and involvement of family members. Tech Latinas also included a personal leadership and development program led by hired psychologists to further assist students in removing any barriers to learning, while also strengthening the most important soft skills needed to be more successful in the work force. Parents and families were also involved in the program to ensure that they supported and understood the students during the demands of training and work.

Strengthening of the network. Tech Latinas developed a strong network of technology companies that provided high levels of access to better job opportunities for training program graduates.

Consolidation of a repayment model. To keep the program accessible to low-income youth, Tech Latinas established a repayment program where students would not have to pay for the program until they were employed in the technology sector.

This business model had been designed with specific incentives that would train and insert the best women developers into the Ecuadorian tech industry. The results of these efforts were evident in June of 2015, when these 25 young women graduated and began, what was for most of them, their first job. 65% of these graduates averaged a \$550 monthly salary. This outcome exceeded expectations, as this was 60% above minimum wage in Ecuador. WEBx had also been experiencing ongoing success and progress. They were involved in web development projects and providing digital solutions for prominent Ecuadorian companies from various sectors. WEBx had twenty people on the payroll, many of whom were programmers and shared their duties as part-time professors at Tech Latinas.

Despite growth and success in both companies, the rapid growth of WEBx and the constant customer demands for services began to infringe on the functionality of Tech Latinas as they shared their resources with WEBx. For the second *bootcamp* of the year, Tech Latinas decided to hire full-time teachers solely dedicated to teaching their program. Sebastian stepped away from WEBx completely so he could devote all of his attention to developing curriculum for Tech Latinas' academic program.

### **International Expansion and Integration**

In 2015, Adriana and Sara, Flor's friends from her master's degree program, visited her in Quito and were inspired by the vision of Tech Latinas. They wanted to introduce the Tech Latinas model to their own countries. Both of Flor's friends quit their jobs and requested that they be allowed to test this model in Peru and Guatemala. Flor determined this was risky as Tech Latinas was still refining its model to ensure successful replication of the program. Nevertheless, Flor had a lot of personal and professional confidence in Sara and Adriana and decided to try it out.

In Ecuador, the second Tech Latinas bootcamp in Quito was a success, which emboldened Flor, Sebastian, Felipe and the team in Quito to support new pilot programs in other areas, such as Guatemala and Peru. Felipe took the role of traveling from country to country to ensure programs were cohesive and well-coordinated. To secure additional funding, Tech Latinas began what would be a long negotiation 248 process with the Inter-American Development Bank's (IDB's) Multilateral Investment Fund for 249 approximately \$1.2 million USD. The process was demanding, and they were required to go through a strict consulting process. They were ambitious, thinking the money would help to more thoroughly carry out the vision of Tech Latinas. At the end of the year the financing would be in place, so Tech Latinas hired an Administrator and a team of fifteen people who worked full-time in Tech Latinas. An end-of-year meeting with the entire Tech Latinas team was also held in Quito to design next year's plan for 2016.

As the first international models drew to an end, the results were mixed. In Guatemala, twenty-five young women graduated and 70% of them were employed while Peru yielded less success. Only 10 women persisted through the entirety of the program to graduation, and only half of them were employed. The two branches in Peru and Guatemala followed the Tech Latinas model, but, at that point, they were each autonomous. Each of the three independent organizations had local partners, and the teams had a great sense of ownership of their respective organizations. They decided, however, that it would be more beneficial for every branch of Tech Latinas if they joined forces. Flor, Sebastian, and Felipe decided to formalize the terms of their working relationship with Adriana and Sara by formally inviting them to be partners. They also invited Eva, Sebastian's wife, to be an additional partner. Eva left her job at Colgate-Palmolive to complete the six-person partnership. Flor, Sebastian, and Felipe were co-founders while Sara, Adriana, and Eva were partners, - all determined to expand Tech Latinas' reach even farther.

## Shifting Focus and Restructuring the Organization

With the growth of WEBx and the opening of Tech Latinas offices in Guatemala and Peru, as well as a second headquarters in Ecuador, Flor, Felipe and Sebastian had a difficult decision to make. They liked the synergistic element between Tech Latinas and WEBx, as successful graduates from Tech Latinas could transition into a great resource as they were hired by WEBx. However, they struggled to manage two successful entrepreneurial ventures at the same time, and they knew it would be unsustainable in the long-term. The co-founders were forced to choose between two rapidly growing enterprises and prioritize one of them over the other.

The decision was not easy, but the co-founders eventually agreed that Latin America did not need another web development agency. The region needed to develop new educational and job opportunities for women. The mission of Tech Latinas seemed to be a stronger one, overall, and with its current success, they felt Tech Latinas had a lot of potential to keep growing. After receiving additional consultancy advice from IDB, the co-owners of Tech Latinas decided to focus on developing the academic program and closed the WEBx development agency for good. With that, Felipe dedicated himself to searching out new technologies and methodologies that would increase the value of the program for Tech Latina students as well as the recruiting companies who would hire their graduates. Felipe also focused on finding new sources for income to keep the program sustainable.

The decision to close WEBx had heavy consequences at the beginning. Out of twenty employees working at WEBx, only a few shifted over to working at Tech Latinas as consultants. However, the new consolidated team got to work, dividing their workforce into regional selection, training and recruitment committees. Each committee was led by a director in Quito but consisted of teams with personnel from all three countries, as all of the venues carried out the same functions. Everyone had a voice in the design of procedures, taking note of past experiences and successes, as they worked to improve company processes. This facilitated progress on all fronts. The additional physical space freed up by the dissolution of WEBx meant Tech Latinas had larger classrooms; they were able to begin growing by taking on more students.

Yet the changes made to Tech Latinas' academic model were much more drastic. Sebastian led the training committee, and he was convinced that Tech Latinas students needed to know "agile culture". Embracing this culture would prepare their students to be effective innovators and more likely to be hired by sophisticated development teams in the software that operated within this mindset.

Sebastian led an experiment in Tech Latina's curriculum that combined elements of practicality and fun within an agile culture framework. The main objective was for students to live this culture within the classroom. The outcome was a positive one in that students were motivated and participated in the culture successfully. This outcome prompted the team to integrate the values and principles of "agile culture" into the entire teaching model, creating a self-learning classroom that focused on teamwork, frequent reflections and work-oriented knowledge.

A key principle of teaching with an agile culture in mind was to work in short segments of time called "sprints." Over the course of two or three weeks, students would work in "squads" with six to eight members to focus on one specific learning goal, which would then be followed up with immediate feedback. This quick turnaround taught the students how to quickly adapt and respond to change within the curriculum. At the end of each sprint, the students reflected on individual, peer, and group levels to evaluate their performance, document lessons learned and identify areas for improvement. Each sprint was designed to have learning objectives at the individual and squad level, encouraging students to build

social networks as well as technical ones. The students were concerned about their classmates' learning as well as their own, thus the design of the program design provided students with multiple layers of professional and personal growth (**Exhibits 3 and 4**).

Each squad had a designated trainer, who was called a "Jedi Master." Their main objectives were to identify and eliminate learning barriers that the team may have, get know the students closely, and accelerate their learning in a personalized way. The learning squads were also independent and autonomous; that is, team members for each team defined how they were organized and how they planned and monitored progress. Team members needed to all be aligned as to the goals of the squad. Tech Latinas co-founders discovered that putting students in control of their own learning was the best way for them to develop communication and collaboration skills.

At the end of each sprint, new squads were formed with different members to further encourage adaptability and maintain an overall team spirit among the entire class. To increase engagement, Tech Latinas opted to "gamify" the grading system via the implementation of mechanics and strategies through learning games. They applied techniques, elements and dynamics from the gaming world to enhance student motivation. This technique also helped to reinforce problem-solving behaviors as well as to improve productivity. In place of a traditional evaluation system, a points and rewards system was developed that considered three components: effort, performance, and behavior (**Exhibit 5**).

The degree of impact from these innovative implementations in curriculum was exponential. Turning the classroom into an "agile room" proved to be effective. After graduation, the students were being hired by leading transnational companies in digital transformation. Students from Tech Latinas were competing for jobs with traditional university graduates who had five years of training, and they were being hired at the same salary rates. Three Tech Latina graduates were recruited for internships in Washington DC at the Inter-American Development Bank (IDB). Such opportunities indicated that graduates of the program had the ability to compete not only at the local and regional levels, but also globally.

Halfway through 2016, Flor was invited to the seventh edition of the Global Entrepreneurs Summit, held at Stanford University, California. Flor was asked to speak about the development and progress of Tech Latinas as a panelist. The conversation was moderated by the President of the United States and other high-profile individuals in the tech industry. One global tech giant CEO expressed his admiration for Tech Latina's achievements, stating, "Tech Latinas is looking for talent where nobody else is doing it." This globally covered event gave a great amount of exposure to Tech Latina. This global visibility immediately provided them with opportunities and access to new strategic partners who were anxious to contribute to Tech Latina's cause via donations and investments. Microsoft, alone, donated \$700,000 USD to the organization.

## **Scaling and Organizational Redesign**

While the original committees that ran Tech Latinas had been successful in 2016, the need to continue scaling meant that Tech Latina would next need to focus within the company. The co-founders realized they were going to need to speed up decision-making in terms of company growth and direction. They also wanted to avoid role duplication. In order to achieve this, Tech Latinas restructured the organization management into the following three areas (**Exhibit 6**):

**Services** This group was responsible for a department that consisted of individuals performing administrative functions within the organization, such as strategy, talent management, finance,



fundraising, brand, among others. The main location for the services department was centralized in Quito with some remote employees stationed in Guatemala and Peru.

**Product** This group was responsible for the personnel in charge of developing improving and releasing Tech Latina's academic offerings. This area of focus was organized according to critical processes and programs offered: selection, training, employment, and continuing education. Each team was independent and autonomous. They were in charge of creating value for the organization through innovation and the inclusion of new technologies, not only in terms of academic offerings, but also in terms of simplifying Tech Latinas' operational mainly in Quito, with some managers being located in Guatemala and Peru.

**Operations** This group was responsible for executing the ideas from the production team members. The operations team would receive the released information, execute the actual application of these materials and then collect lessons learned and provide feedback to each of the Tech Latina's four locations: Quito and Guayaquil (Ecuador), Guatemala City (Guatemala), and Lima (Peru).

The co-founders implemented this new organizational design in 2017, with the aim of creating an ecosystem within Tech Latina that could best benefit from these specific areas of expertise. They hoped this would lay the groundwork for a more scalable model that would both accelerate growth and achieve greater impact. During this restructuring, the founders also redesigned human resource procedures as well as the cultural fundamental elements of Tech Latinas. They redefined bases of recruitment, performance evaluation, career lines, salary scales, work climate, principles and values of the organization. All of these redesigns proved transformational, as the training centers yielded success in growing and operating more efficiently.

Tech Latinas was implementing, advancing and innovating more quickly than ever (**Exhibit 7**). In academia, they were working closely with Silicon Valley companies to integrate the most demanded curriculum in the market. Additionally, they were able to expand the program from six months to two years. They also integrated a Continuing Education program, in which bootcamp graduates could continue their training process if they wanted to specialize in more software development and design tools. All of these adjustments provided ways for Tech Latinas to increase their overall enrollment and to offer additional career development to their students.

Tech Latinas also developed a more sophisticated student selection process. They began by taking socio-emotional elements and life skill elements into account in their criteria. Through psychometric, perseverance, logic and reading comprehension, they were able to have a more complete understanding of a candidate's potential for success. Tech Latinas then selected students through an algorithm in which each required element had a specific scale to determine which students had reached a level of proficiency or suitability to move on. Those who passed the initial tests would move on to personal interviews and other face-to-face interactions to determine an applicant's fitness for the program. During a pre-admission week, applicants' potential was assessed in technology classes as well as group interactions to see how each applicant operated in this environment. This process also provided applicants with the opportunity to decide if they actually enjoyed the training program and would like to continue.

The objective of this phase was to become better acquainted with the applicant in some depth before program admission. This helped to also reduce Tech Latinas' dropout rates. Placement opportunities for Tech Latinas' graduates had grown significantly, as well. Tech Latina's employer network now consisted of more than 200 companies. Tech Latinas also held a job fair and networking event. It was an innovative recruitment space that assisted companies in actively recruiting graduates without the challenges

associated with a more traditional selection process. The amount of time that normally accompanied recruitment was drastically reduced by 50% these innovative job fairs.

The participating companies who would come to the events could choose only two employees (one from HR and one from IT). The companies would then pose a digital challenge to Tech Latina's graduates. The candidates would solve this group challenge in a maximum period of 36 hours, under the direct supervision of recruitment teams from the hiring companies. Within this relatively short period of time, companies would be able to hire a candidate, and with greater confidence in their decision. Tech Latinas charged a fixed fee of \$1,500 to companies participating in the event as well as a variable equivalent to half the salary of each contracted programmer for the first year. The participating companies were happy to invest in this way, as they were able to perceive the overall gained value at the end of the process; they hired talent aligned with the needs of their organization in a short period of time. Tech Latinas continued to develop new programs as they worked to maintain financial sustainability. They created "Tech Latinas for Business," in which Tech Latinas trained companies on a number of topics. "Tech Latinas for Business" taught organizations how to best complete digital transformations while also consolidating their teams, culture, and technology.

They shared best practices of a lean start-up, as well as the methodology to follow for design and business expansion with the main goal of reducing cost and unnecessary risks. They also taught design thinking tools that encourage innovating in effective ways. The digital age was still new in Latin America, so Tech Latinas not only had to produce talent, but it also had to position itself as a strategic ally in the industry by evangelizing digital philosophy and developing the necessary expertise to guide companies on the best ways to identify talent, implement effective digital methodologies, and educate about the best ways to take advantage of digital change. This program was an important channel of income as it was mainly marketed to corporations, in which they would train hundreds of employees, thus simultaneously creating new employment opportunities for the graduates of the program.

To summarize, three important sources of income were created:

Graduate tuition repayments made over a two-year period, beginning when they had obtained work in the technology industry. The monthly repayment amount included a fixed fee and a variable amount based on salary scale. This repayment also qualified them to continue studying in the Continuing Education program.

Income from companies who had contracted to hire Tech Latina graduates, whether through the job and networking fair or through other avenues. Companies could contract to have access to student profiles from which to choose potential hires upon graduation. Differentiated pricing strategies were created, charging premiums for access to the student talent bank beforehand.

Income from "Tech Latinas for Business" in which companies paid to be trained by Tech Latinas in skill development for the digital transformation process.

Through these sources of income in addition to 120 graduating students per semester, each training center was able to be self-sustaining by the 29th month of operation. From that point, the operational centers would be able to generate profitability for Tech Latinas. Tech Latinas were committed to improving and maturing their processes and increasing their revenue (**Exhibit 8**).

## Conclusion and the Strategic Challenge: How to guide the future of Tech Latina and what are the specific options to consider?

The directors of Tech Latinas were happy with what they had created and the impact their company had made in Ecuador, Peru and Guatemala. Now that they had seen their vision come to fruition in ways that were astounding to them. They wanted to take the next steps in growing their business so Tech Latinas mission could spread beyond its current bounds. Before working out the logistics, the Tech Latina team expanded their vision. They wanted to scale Tech Latinas throughout Latin America. They hoped to find the best talent among the 37 million young women in these countries who were currently either unemployed or informally employed. They estimated that 1.2 million web developers in Latin America would be required that by 2025.

Tech Latinas aspired to become the main source of women technology talent in the region. They wanted to see their graduates conquer and transform that sector. Their goal for 2021 was to establish fifteen training centers in some of the main cities in Latin America, while subsequently injecting 10,000 web developers into the sector. Is this goal reasonable or would there be a model for even greater growth and impact? Their currently goal would require 6.4 million dollars to do this (**Exhibit 9**).

With these objectives in mind, they had some decisions to make. How could they scale Tech Latinas successfully and minimize risks? Should they operate within the existing Tech Latinas organization or should they begin a social franchise model? Although social cause a competitive edge, will the marketplace continue to reward based on gender or solely women developers? Alternatively, they could make all of Tech Latinas' materials available to other like-minded organizations interested in operating under a similar business model maybe open to both genders.

If Tech Latinas chose to scale via the first two methods of growth mentioned, they would need to raise funds. The co-founders and partners also needed to determine whether they would remain a nonprofit company, with access only to philanthropic capital, or whether they should consider becoming a for-profit company with access to the capital market. How could Tech Latinas possibly maintain their social impact vision if they established themselves as a for-profit company? Could profit and nonprofit models coexist, or could there be a hybrid model?

There were other considerations the team also had to face. Developing new training centers in Latin America meant they had to consider the heavy operational costs of maintaining venues. What would those costs be and how would they fluctuate from country to country? In what ways could they alter the current model to decrease overall costs? Tech Latinas charged a fixed fee of \$1,500 to companies participating in the event as well as a variable equivalent to half the salary of each contracted programmer for the first year. Would this model be sustainable for companies to continue to pay or is Tech Latinas leaving money on the table and could charge more? Are there currently or could there be other competitors regionally or globally to Tech Latinas who also develop these skilled workers needed in the marketplace who compete at a lower price and higher value? How could Tech Latina's compete adding higher value in the region or even globally? What would a strategic marketing plan look like for Tech Latinas to achieve their goals?

While Tech Latinas had experienced much success in previous years, it would take more redesigning and on a larger scale to accomplish the new goals they had set for themselves.

Flor Quispe had the following on a note pad to analyze with her partners:

- 1) What is the main value we provide at Tech Latinas?
- 2) Are we loosing focus?
- 3) What are the limitations in creating potential scaling opportunities? Is this good growth?
- 4) What were the most important factors that influenced all of us in the creation of the Tech Latinas?  
Have we drifted from this core reason?
- 5) What are the limitations we have faced in launching in new countries in just its second year of operation?
- 6) How are we going to keep Tech Latinas sustainable? Or is that an impossible task?
- 7) What do we think about the avenues Tech Latinas took to raise funds?
- 8) What future challenges and/or successes for Tech Latinas?
- 9) Should Tech Latinas change their status to a for-profit organization? How could they maintain their social impact goals if they transitioned to a for-profit organization?
- 10) Are our goals too aggressive to be attainable?
- 11) Should we franchise our model? What are the pros and cons of this decision?

## Biographies



Professor Schill earned his Ph.D. in Business, Behavioral Economics, and his MPhil in Innovation, Strategy & Organization, both from Cambridge University. Schill has taught at several prestigious universities, including Harvard Business School, Stanford University, Middlebury College, INCAE Business School, and the Yale School of Management, among others. He served as the Morales Carazo endowed Professor of Entrepreneurship and as the Director of the Latin American Center for Entrepreneurs at INCAE Business School in Costa Rica & Nicaragua. He has built leading entrepreneurship centers around the world, including Latin America, Europe, the Middle East, and the Pacific Islands. Schill has also established the world's largest scholarship for Latin American Women Entrepreneurs and was elected President of a Latin American University.



Angela Schill is an assistant professor in Organizational Leadership at Utah Valley University. In Central America, she was head of research for the Latin American Center for Entrepreneurs, encouraging Latin American policymakers to support women's entrepreneurship. Angela was a research analyst for McKinsey and Company and a professional editor for the Faculty of Economics and Judge Business School at the University of Cambridge. She is currently finishing her PhD and also graduated with an M.Ed. in Curriculum and Instruction from Penn State and an MBA from Babson College. Angela's teaching and research focus is in Organizational Leadership with a specific interest in Women, Disabilities, and Minorities.



Noah Schill is a student of computer science at Brigham Young University. He is working as an undergraduate researcher developing methods of using machine learning to study human behavior within social networks.

## Exhibit 1: Geography and Technology Sector of Latin America

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Tech Latina is currently working in the following countries Peru, Ecuador and Guatemala and Latin America as a whole region always presents some tough challenges. For starters, Latin America is composed of several countries with different economic, political and cultural conditions. Moreover, information in most Latin American countries is not always easy to find and might even be tainted or incorrect. However, there is at least one characteristic that seems to abound in all Latin American countries: talent.

The entrepreneurial tech wave has hit Latin America hard, and it appears to be gaining momentum. A new generation of millennials and post-millennials, led by a group of early entrepreneurs in their late 30s to early 50s, believes that it can improve lives by creating new and better solutions to everyday problems.

Latin America appears to be at a pivotal stage. Let's begin with the demographics: The median age in Latin America is 27, and in most countries over 50 percent (or very close to it) of the population is under the age of 30. This stands in stark contrast to more developed countries with far fewer youth. However, demographic advantage is not going to last forever. It is estimated that by the year 2050, the median age in the region will rise to 41.

Education in Latin America is another crucial factor to consider. Higher education enrollment in the region has risen from 21 percent of the population to over 45 percent in the last 15 years. Even the poorest 50 percent of the population is getting a higher education, with enrollment rising from 16 percent to 25 percent between 2000 and 2013. This means that not only is there a large youth population, but that many of these working-age youths are well-educated.

Another key factor is the number of hours Latin Americans are used to working. According to the latest OECD statistics, Mexico, Costa Rica and Colombia are the top three countries they monitor with more annual working hours, followed closely by Peru, Argentina and Chile. This also means efficiency is a problem, of course, but it is an educational opportunity as well—anyone would much rather teach someone to be efficient than to work more hours. And salaries are very low, which means you can get top talent for less in the region. In fact, out of all countries that the OECD monitors, the bottom eight in terms of salary are Latin American, headed by Venezuela with the lowest average annual salary and followed closely by Peru, Cuba, Colombia, Brazil, Mexico, Argentina and Costa Rica. Finally, this would put creativity as one of the main reasons why innovation in Latin America should be easier to achieve. People in the region have long had to solve their problems independently because their public institutions are not trustworthy. This as one of if not the biggest educational opportunities in the region.

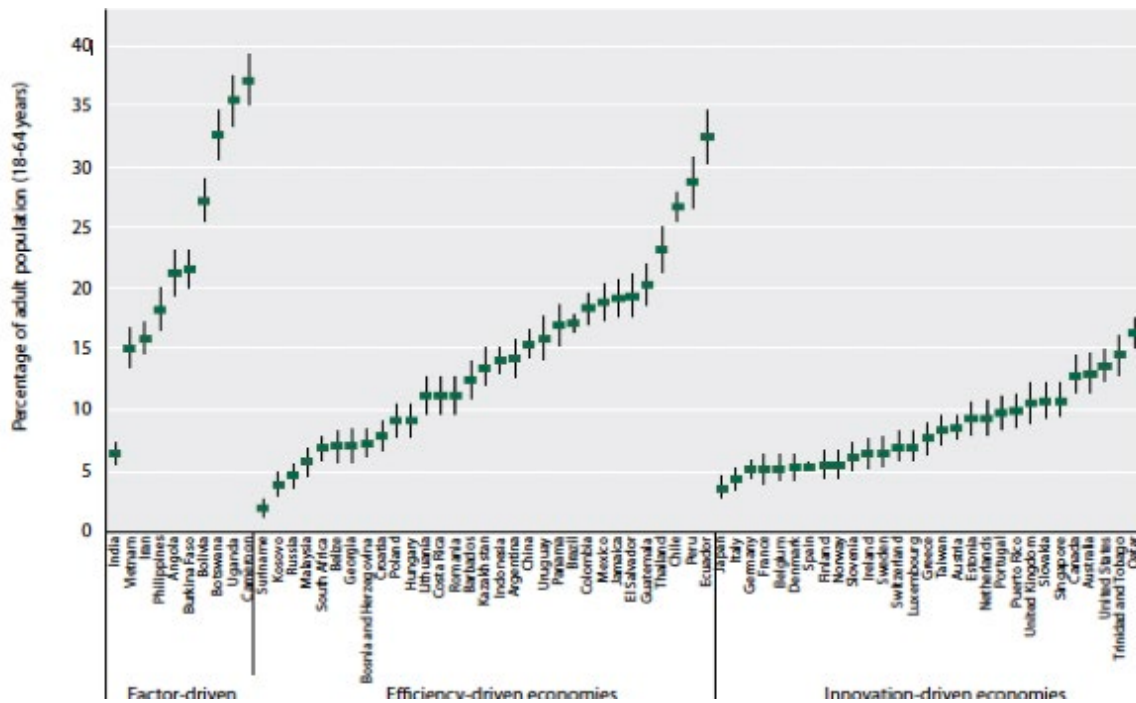
Moreover, Latin American youth ranks the highest in the world in both necessity-driven entrepreneurship and entrepreneurial perception and intention. Society has changed, as have the students graduating from university. Twenty years ago, most students aimed to join large companies and move slowly up in the ranks. Now, at least half (if not more) are willing to create companies and risk failing, a cultural change that needs to be nourished.

### **Where Are the Opportunities?**

If you follow the trends, the main opportunities will end up being in specific problem areas that technological advances can address quickly, helping to bridge the digital divide between the developed world and the region's countries. These include:

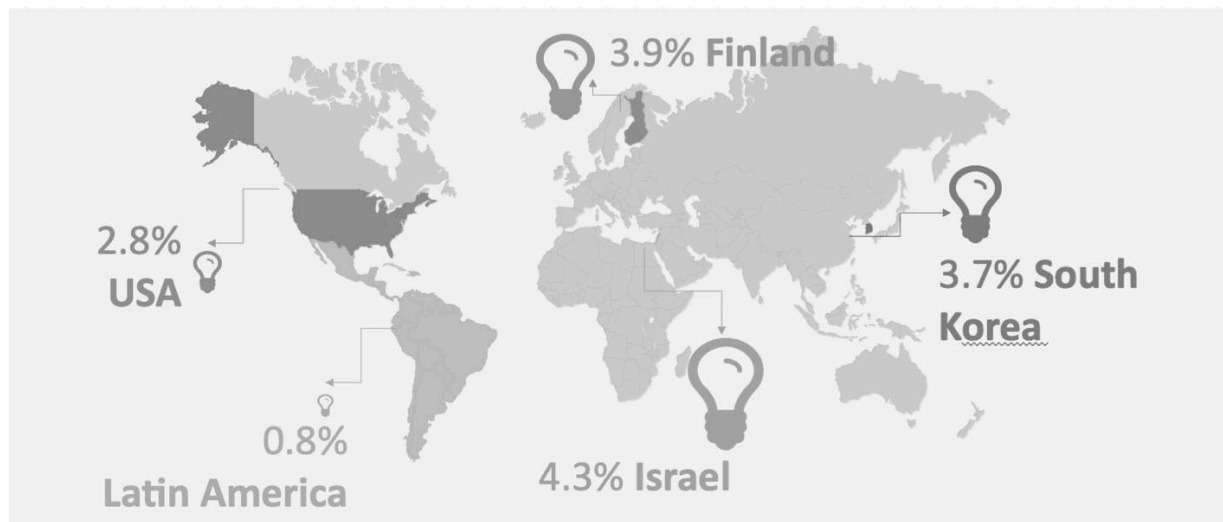
- **Fintech:** Helping bank the unbanked, increasing access to capital to a larger piece of society.
- **Blockchain:** Decentralizing institutional monopolies in contracts, remittances, property, and voting, among others.
- **Automation and robotics:** Automating industry and increasing access to higher paid and value-added employment.
- **Internet of Things and big data:** Making data accessible to all.
- **Mobile applications:** In response to a majority of Latin Americans accessing Internet through their mobile devices.
- **Cleantech and mobility:** Solving pollution and traffic issues that have saturated major cities.
- **Social impact:** Attempting to bridge the inequity between socioeconomic classes; renewing education.

Below ranks the selected global countries and their entrepreneurial activity. The percentage of the population on the vertical axis are those who believe that starting a new company is a good career choice with an age range from 18-64 years old. Many Latin American countries lead in the Efficiency-Driven Economies. In all types of economic groups such as Factor-driven or Innovation-driven many issues influence these high or low percentages such as the scarcity of available jobs in their economies. Sometimes high rates of entrepreneurial activity are driven out of necessity rather than opportunity driven factors. The extremes are usually found in highly Factor-driven economies as necessity and Innovation-driven more opportunity focused entrepreneurial behaviors. Many Latin Americans find themselves in a Efficiency-driven economy which has a blend of necessity and opportunity driven entrepreneurial activities.



Below show the percentage of GDP invested in innovation per country.





**Main Challenges** Despite these advantages and opportunities, there are also great obstacles to make it all happen. Some cultural and some systemic. Culturally, Latin Americans are very averse to risk, and most only invest in “secure” ventures such as real estate. The lack of financial education is a key factor that does not allow potential entrepreneurs to thrive. On the systemic side, corruption, lack of institutional trust and impunity are probably the biggest hurdles to surpass in the next few years. Companies need to think globally and compete against global competitors; they cannot cheat or take shortcuts.

To attract foreign investment, governments will need to create a new system that is more meritocratic and accessible to all. Currently, the regulatory environment suffers from lack of trust. Although the legal framework appears to exist, the lack of transparency and the unequal application of the law make it very hard for companies to compete on fair ground. Another big hurdle is the lack of success stories in the region. With some exceptions, Latin American startups do not seem to have the growth expectancy of their counterparts in Asia, the U.S. or Europe. Doing IPOs in Latin America is almost impossible, mainly due to the fact that stock exchanges are monopolized in these countries and act more like gatekeepers than promoters, regulating the admittance to the IPO club rather than encouraging companies to achieve a final stage of growth by becoming public.

The M&A activity for startups in the region is low according to the Global Entrepreneurship Monitor. This is mainly due to the relative youth of the region’s startup ecosystems. Companies simply have not reached a large enough commercial stage to become interesting acquisition targets. Exit strategies are the key to continue encouraging investment in startups, and success stories are the fuel to continue to generate entrepreneurs. Also, elections in many Latin American countries poses challenges. Such as Venezuela re-election of former President Hugo Chavez’s chosen successor, Nicolás Maduro. In Colombia, a runoff election recently decided the winner of the presidential race. Left-wing populism appears to be the new normal in the region, and that may challenge any sustained focus on innovation and entrepreneurship.

Whoever ascends to power in these Latin American behemoths must understand the importance of entrepreneurship and innovation as sources of competitiveness, job creation and economic growth. They should continue to foster them accordingly, taking advantage of the historical economic opportunity that

presents itself today. Whoever ascends to power in Latin America must understand the importance of entrepreneurship as a source of competitiveness, job creation and economic growth.

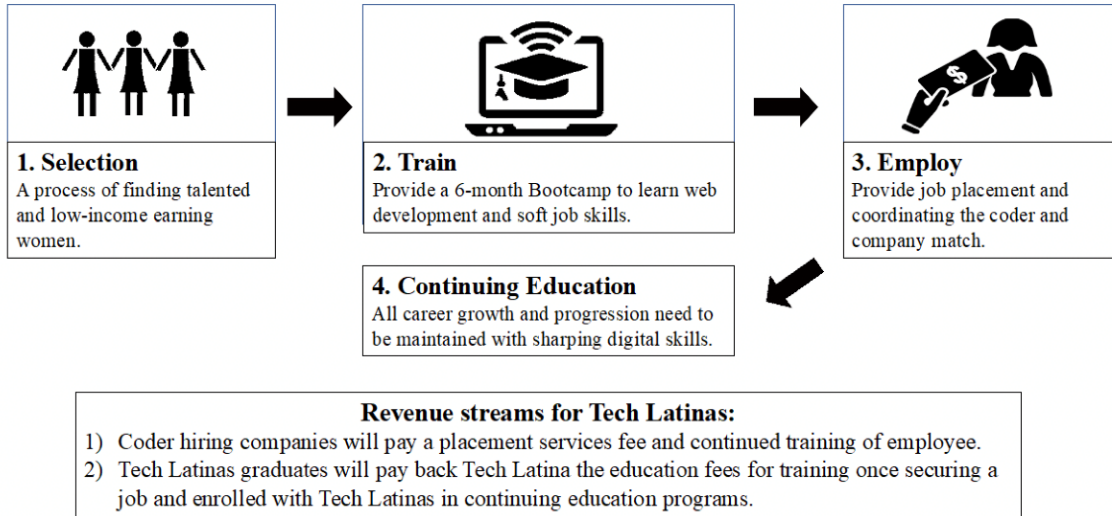
Sources:

Technology and the Latin American opportunity. New thinking on corporate risk and resilience in the global economy Brink The Edge of Risk <https://www.brinknews.com/the-latin-american-investment-opportunity/>

2016 Global Entrepreneurship Monitor <https://www.gemconsortium.org/>

## Exhibit 2: Tech Latinas Business Model and Value Proposition

Tech Latinas is a new approach in Latin America for technical education with a focus on a holistic method with job acquisition and accountability at the core



### The value proposition Tech Latinas

#### For the Tech Latina Bootcamp Students

**Transformational Career Path:** Join top companies & triple income.

**Accountable Education:** Pay only if securing employment.

**Long-life learning & Coaching:** 18 months of part-time, blended education post placement.

**Tech Latina's Network:** Female developers conquering Latin American IT sector.

#### For the companies hiring the students

**Top Young and Diverse Talent:** 240 women developers per city yearly with diversified specializations.

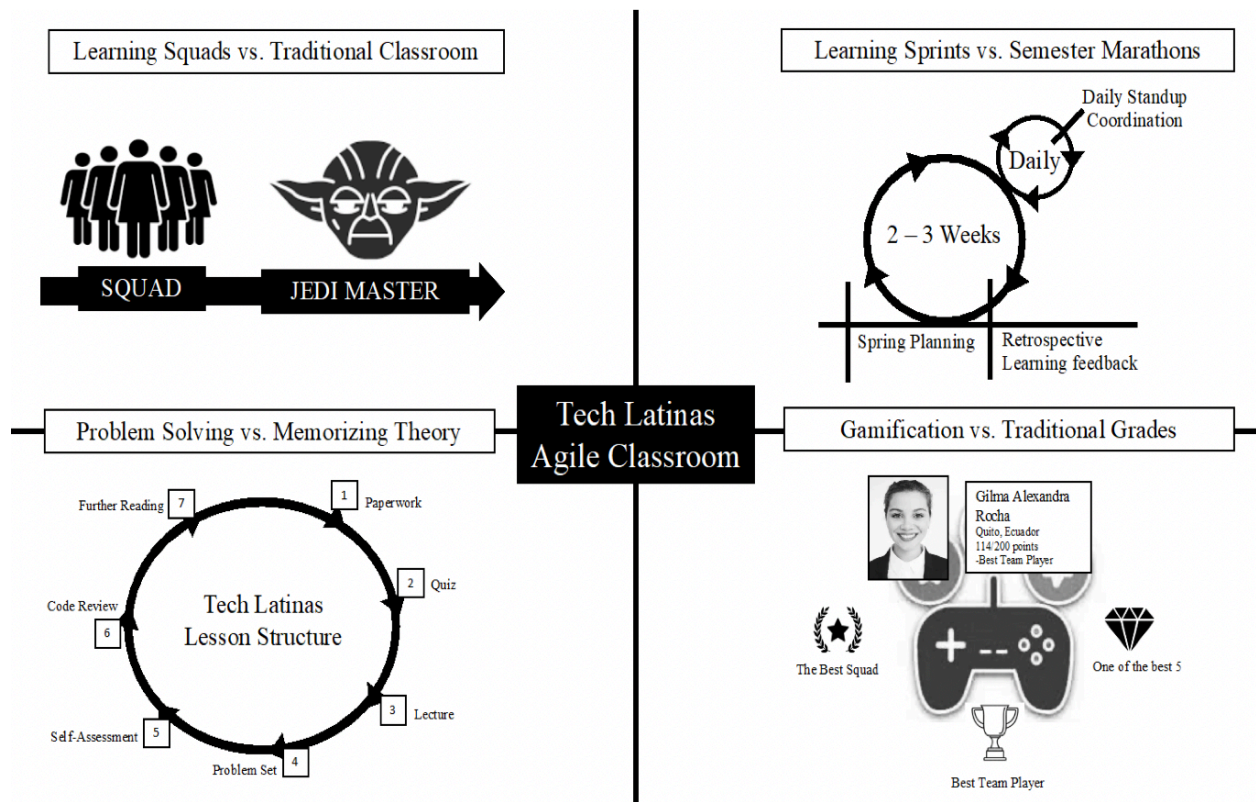
**Empowered Employees:** Graduates trained to work effectively in software development teams.

**Company Training:** Tech Latinas offers potential hiring companies training on how to build their IT teams.

**Impact:** Social impact marketing and being part of the solution and changing the Latin American IT sector.

Source: Tech Latinas

### Exhibit 3: Tech Latinas Training Model



Source: Tech Latinas

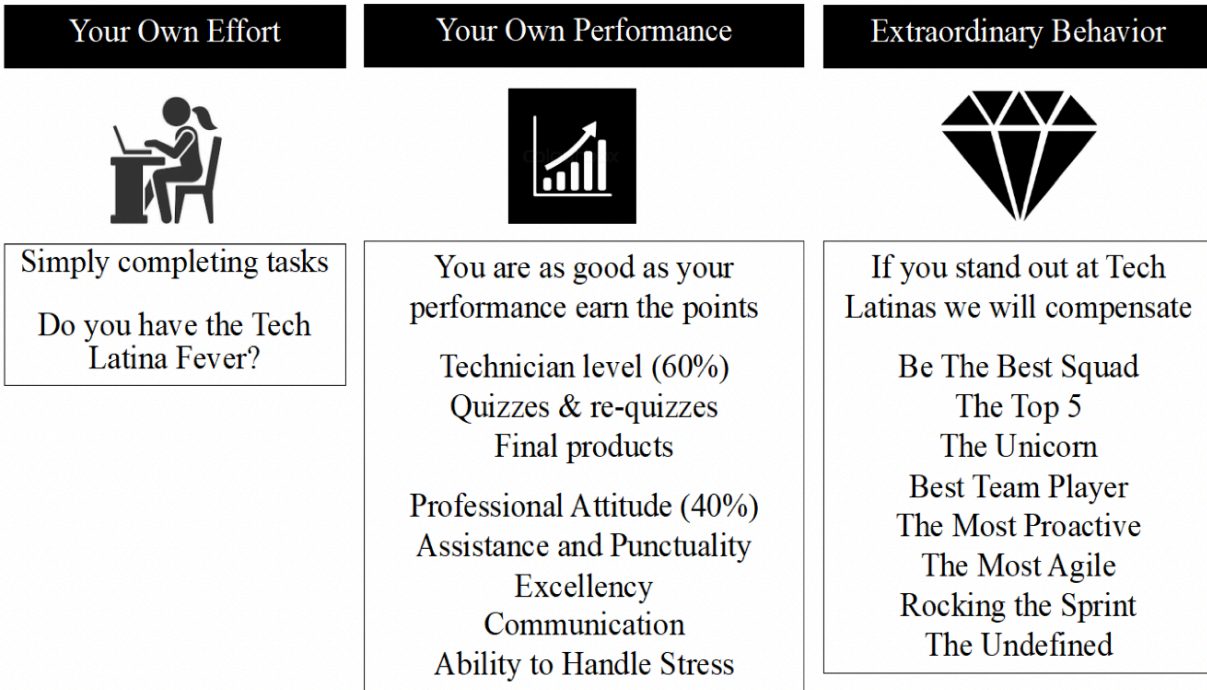
## Exhibit 4: Structure and Flow of Sprints

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1. **Opening:** All the lessons start with the objective and why we are going to teach you the subject. We will also give you a guide of questions and key concepts to see during the unit, and they act as a guide for your learning.
2. **Self-learning:** There are several lessons, which may consist of readings, exercises, and videos that you should review on your own to facilitate your learning. We do this so that you develop your capacity for self-learning.
3. **Quiz:** It is the first moment to prove how much you have learned on your own. To get good results, strive for self-learning and also work with your squad.
4. **Lecture:** In this block, a teacher will explain the topic. Take the opportunity to ask and clarify all the questions you have.
5. **Me First:** To continue with self-learning, you will have the opportunity to do introductory exercises on your own. Try it!
6. **Workshop:** There are exercises you can do with the teacher as a guide. They will help you practice and solve the difficulties that may have arisen during the first block.
7. **Problem Sets:** With all the guidance and previous practice you have had, you will be ready to solve more complex challenges. Always seek excellence and do more than what is asked of you.
8. **Solution Problem Set:** The teachers and the class will review the solution for the challenges together. Remember that there is not one correct answer, because in coding, there is a lot of space for creativity. Share your questions and contributions with your colleagues.
9. **Re-quiz:** With this little test, we want to check if the class learned and improved their knowledge. Did you know that evaluating the same concept in different ways improves learning?
10. **Self-assessment:** We want to know how you have felt in the learning process. This mini survey is like a thermometer.
11. **Closing:** It serves to review what has been learned, return to the questions of the beginning and answer them one-by-one, and at this point, we hope you have mastered this material.
12. **Final Products:** It is time to shine and put into practice everything you have learned to create and increasingly complete produce work that is great value for the world!

Source: Tech Latinas

## Exhibit 5: Tech Latinas Integral Evaluation System



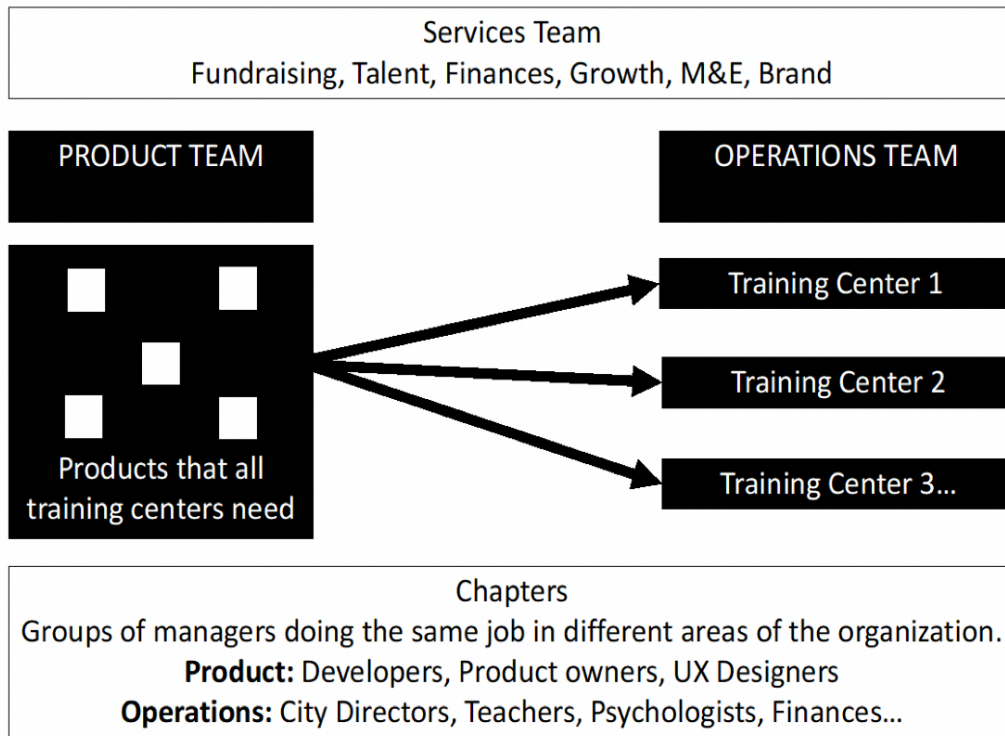
How to earn points for extraordinary behavior:

- **The Best squad:** the squad that accumulates the most points and has fulfilled the objective.
- **The Top 5:** the 5 students with the highest scores, both in technical level and in professional attitude.
- **The Unicorn:** the person with the best technical score.
- **Best Team Player:** the person who obtained the best score in teamwork.
- **The Most Proactive:** the person who surprised us by doing more than we ask.
- **The Most Agile:** the person who best represented the agile principles (HSE, Daily stand-ups, retrospective, etc.).
- **Rocking the Sprint:** the person who showed the greatest progress from one sprint to another
- **The Undefined:** the person who a behavior worthy of recognition, and that is not listed above.

Source: Tech Latinas

## Exhibit 6: Tech Latinas' Organizational Redesign

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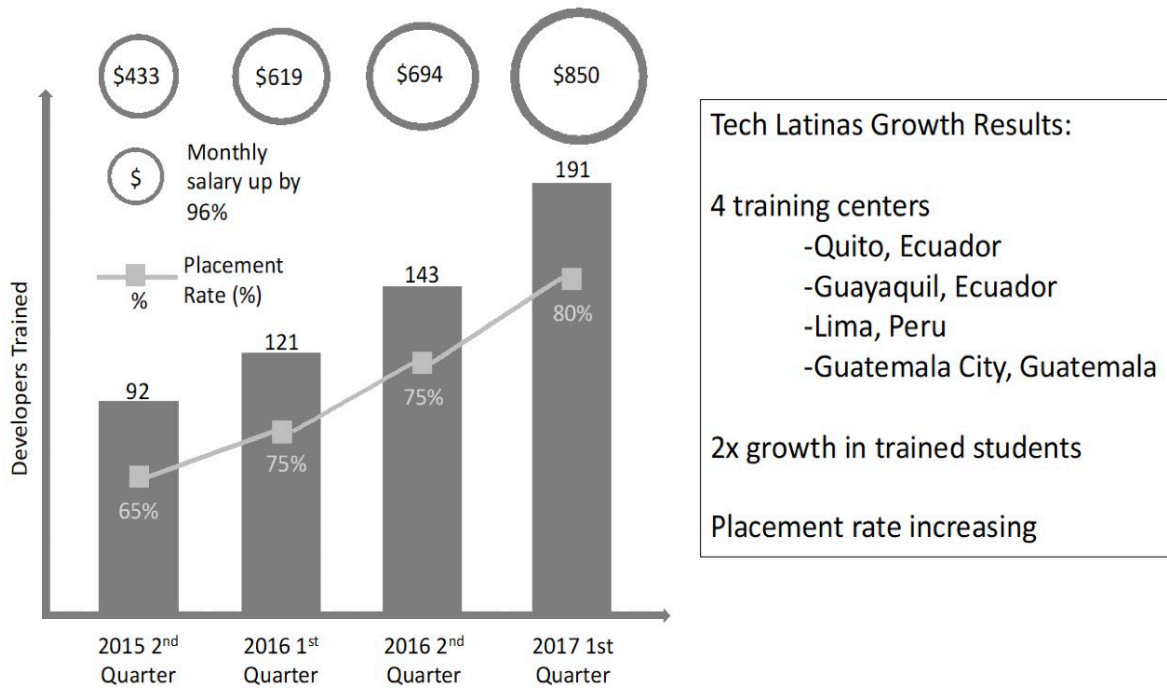


Source: Tech Latina

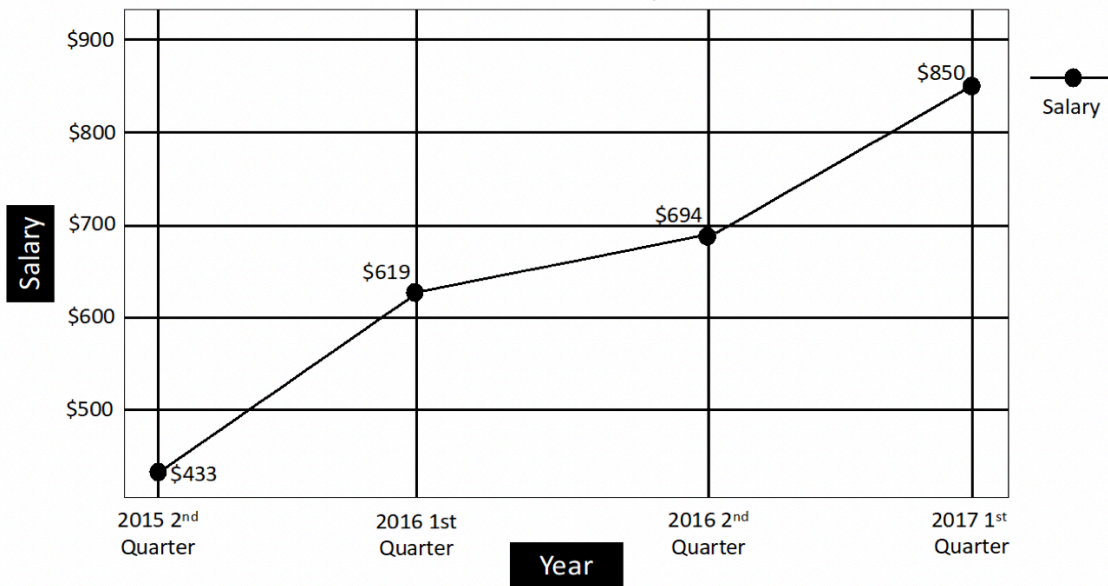




**Exhibit 7: Operating Results of Tech Latinas to 2017**

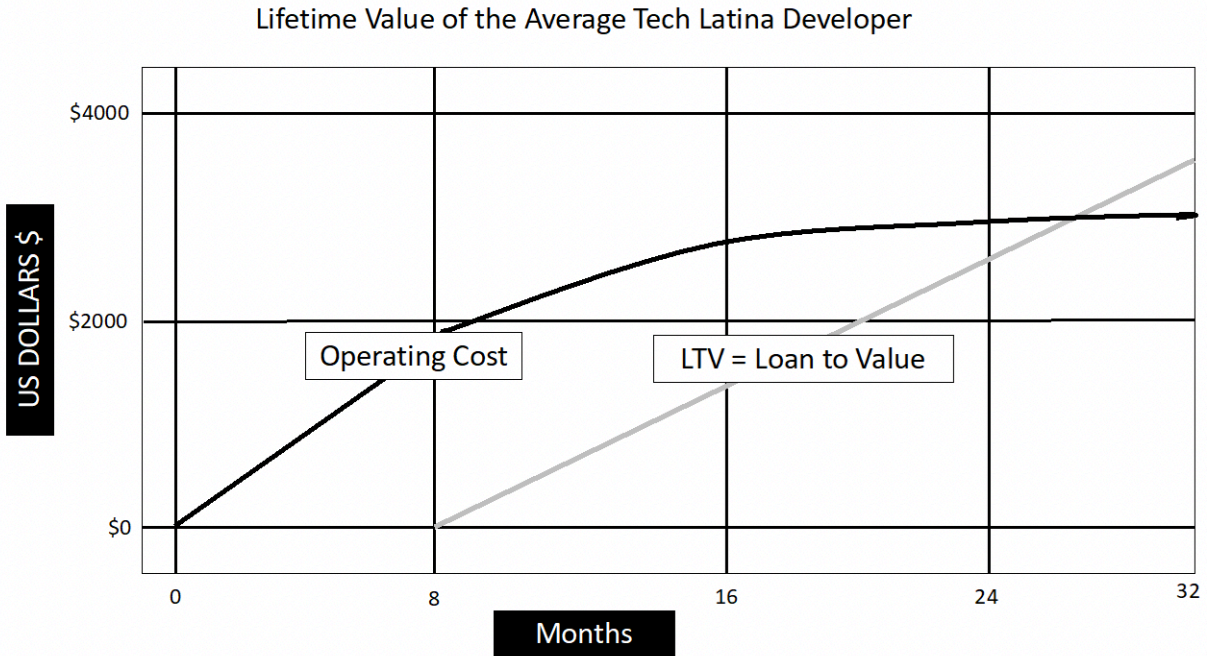


4 training centers monthly salary: Quito, Guayaquil, Lima, Guatemala City



Source: Tech Latinas

**Exhibit 8: Self-Sustainability of Training Centers**



With 120 graduates per semester, training centers will be able to cover 100% of operating costs through self-generated revenue by month 29. In their following years in operation, with more graduates and improvements in placement and salary indicators, they will be able to generate profit and contribute to Tech Latinas central costs.

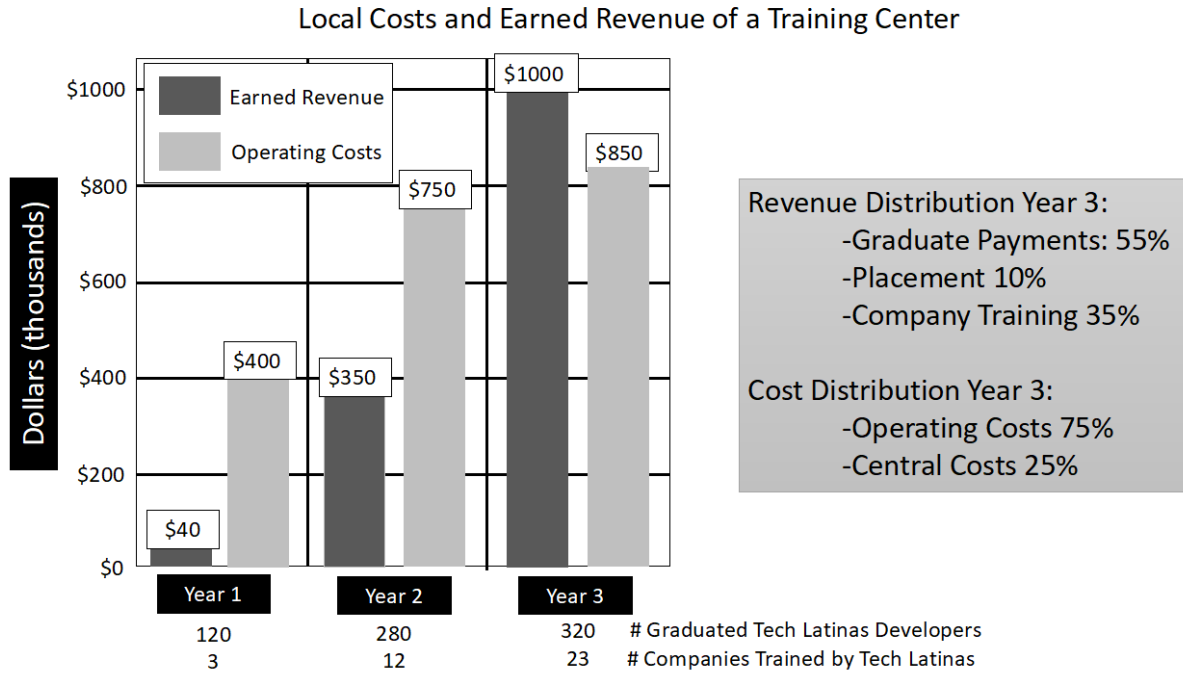
Summary per Tech Latina Developer:

- Total LTV: \$3600
- Operating Cost: \$3600
- Central Costs: \$1400

Assumptions:

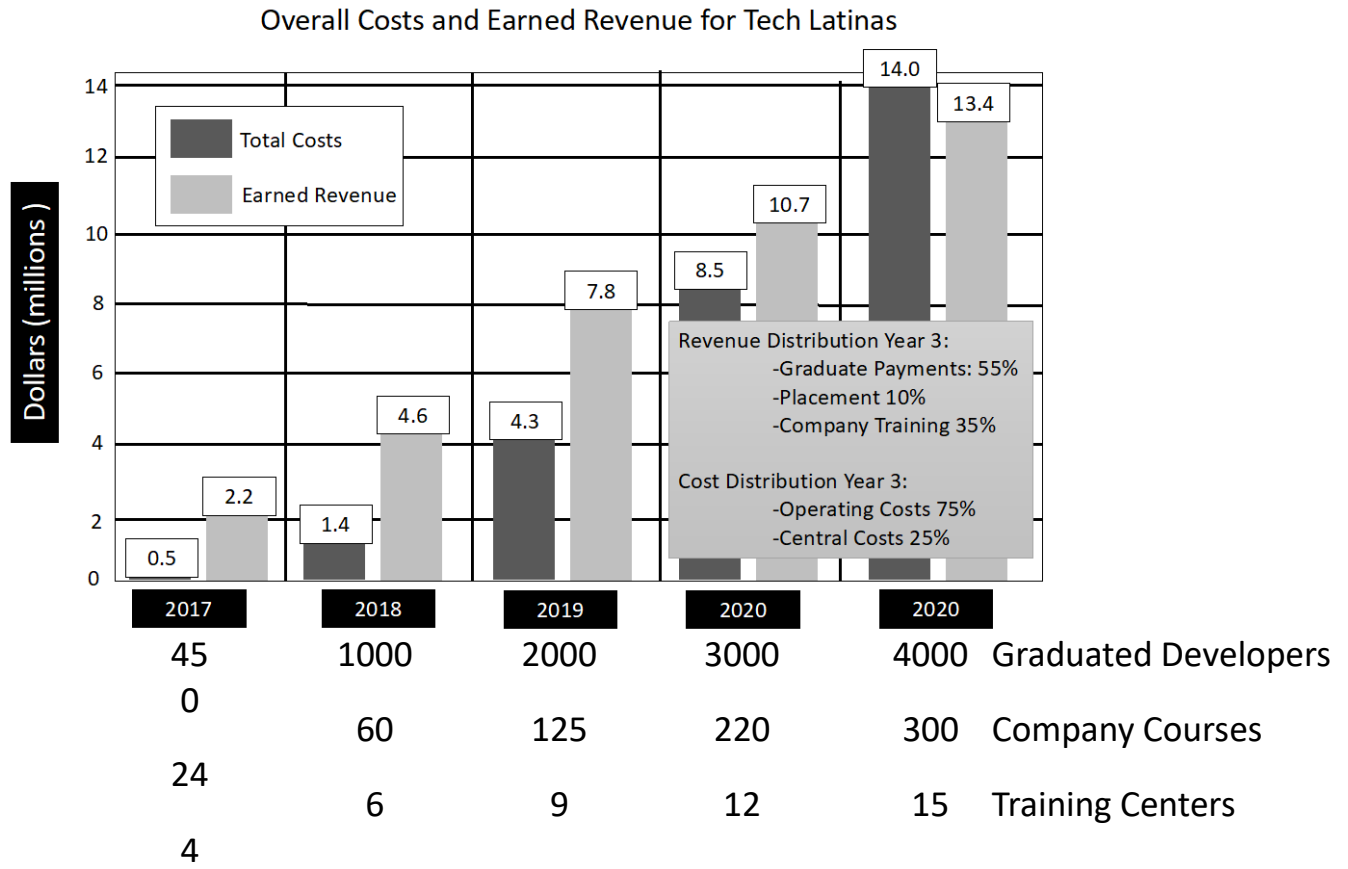
- Cohort size = 120 coders
- Salary = \$750/month
- Delinquency – 14%
- Placement rate = 78%
- Average graduate monthly payment = \$150

Source: Tech Latinas



Source: Tech Latinas

## Exhibit 9: Expansion Strategy to 2021 and Funding Needed for Collection



Fundraising: Grant Revenue

Considering the grants already secured and those in the pipeline are likely, the amount of funding Tech Latinas needs to raise in grants over the next 3 years is US\$6.4 Million. This funding will support our growth and our consolidations as a financially sustainable organization.

