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WHITEPAPER

Overview of the Software as a Service (SaaS) Entrepreneurship Ecosystem in Mexico

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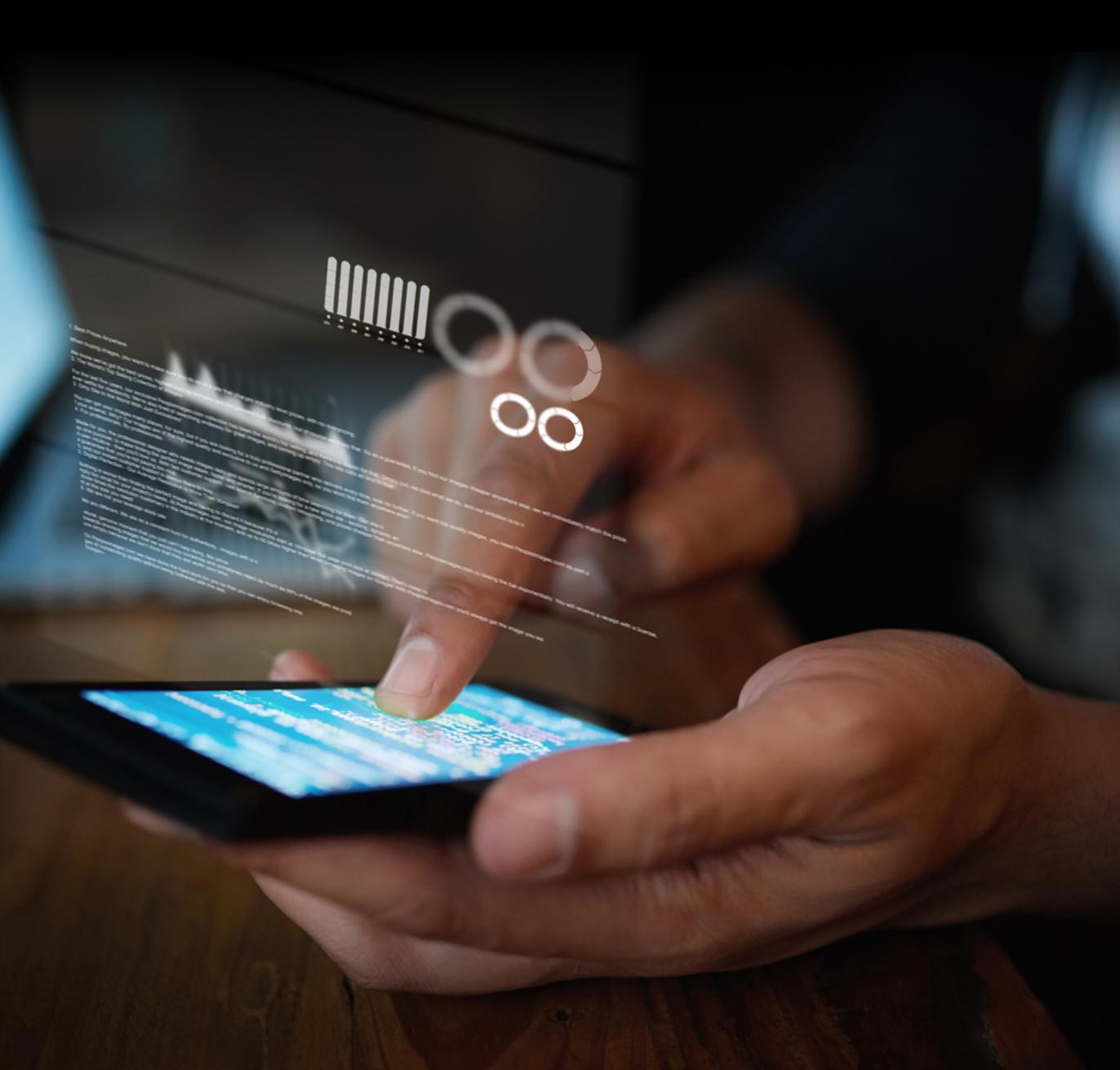


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After 50 years of being the technological ally of organizations around the world, at SAP we are seeing the rapid transformation of business models driven by the constant search to respond to the needs and particularities of different historical moments.

The COVID-19 pandemic has set a precedent in the modern era, requiring us to be more agile and resilient than ever, while consolidating more sustainable business models. Due to the nature of their creation, it is not surprising that startups possess the ability to quickly pivot and meet these demands, transforming them into a benchmark for flexibility, adaptation and, of course, new opportunities to address the challenges that society faces.

At SAP we believe in the importance of having a strengthened entrepreneurship model in the country to achieve sustainable development, and we know that this model can only be successful if innovation is at its core. It is precisely because of this conviction to constantly innovate and develop the most advanced solutions for sustainability that we have joined forces with Endeavor to enable more high-impact Software as a Service (SaaS) business models and guide them to be capable of tackling - with a new perspective - major global challenges.

The power of the entrepreneurial ecosystem is intrinsically related to technology, mainly with "the cloud", which establishes a democratizing agent of competitiveness, and which positions SaaS solutions as the key to the digital, economic, and social transformation of our country. That is why this report aims to understand the SaaS ecosystem in Mexico, aware of its obstacles, strengths, and areas in which it can contribute to the growth of the economy.

As a technological leader, our purpose is to help the world run better through our solutions, but also through sharing experiences, being actors of change to close gaps, and building bridges with allied organizations that share a common purpose, such as Endeavor. Because we recognize the value that small and medium-sized companies represent for the development of the country, we invite you to join us on this journey, not only as readers, but as the active agents of positive change that our country calls on us to be.

It will be a pleasant experience to continue collaborating with leading organizations in entrepreneurship, public sector, academia, civil society, and other sectors, in the next stages of this initiative.

Angela Gómez
President, SAP México

EXECUTIVE SUMMARY

The rapid advancements in cloud infrastructure over the past two decades, spearheaded by large companies, enabled a new wave of software firms to provide solutions to various problems via the internet.¹

This business model has been dubbed **Software as a Service (SaaS)**, and has gradually been adopted by startup companies looking to scale without huge investments in infrastructure and, at the same time, create a business model that generates recurring revenue, in contrast with on-premise software and hardware providers and incumbents. These startup companies have a significant cloud-based offering with one single goal: **develop a unique product that can be differentiated from existing offerings, adapted to local and particular problems, and which can eventually cross borders.**

According to a 2020 study by Endeavor on the tech sector in Mexico City, the tech community experienced a threefold increase in the past five years, up from 164 companies to more than 632. Most of the new companies are in the e-commerce, fintech, information technology, and SaaS solutions sectors. The latter accounted for 21% of startups achieving scale with 50 or more employees², creating a total of 1,300 jobs.

SaaS startups are more relevant now that the pandemic has propelled companies' digital acceleration, encouraging growth in a sector that had long been gaining momentum. According to various forecasts, SaaS is expected to grow 17% by 2022 globally.³

With this in mind, Endeavor and SAP conducted this study in order to gain a deeper understanding of the challenges and opportunities of the SaaS sector in Mexico and to promote efforts that may bolster the ecosystem and thus generate more economic growth.

For such purposes, a group of 320 SaaS startups was identified, 276 of which are currently in operation. Then, 65 cases were analyzed using in-depth interviews and an online survey to assess their main characteristics in terms of job creation, technology used, barriers to entrepreneurship efforts, and their main growth metrics, such as users, Customer Acquisition Cost (CAC), lifetime value (LTV) and churn rate. The resulting sample has relevant characteristics that impact the development of the entrepreneurship ecosystem:

THE SAAS COMMUNITY IN NUMBERS

- 53% of the companies are based in Mexico City, while the states of Nuevo León, Jalisco and Yucatán, other major tech clusters in the country, largely hold the rest.
- These startups directly employ 6,710 people, impacting the lives of 26,840 people.⁴
- 19% of these startups have reached scale, have 50 or more employees, and have created 70% of the total number of jobs.
- **A typical SaaS company generates revenue of 2.5 million pesos, offers 11 jobs, has 501 users, and was created in 2014.** Thus, the startup community is at the growth stage.
- 224 profiles of SaaS startup founders were identified, out of which only 13% are women.

SAAS ECOSYSTEM IN MEXICO

SaaS Entrepreneurship
320

Operating Startups
274 (86%)

Main operating states
Mexico City (53%), Nuevo Leon (12%), Jalisco (8%) y Yucatan (5%)

Median Year of creation
2014

Direct Jobs
6.7K

Impacted Lives
26.6K

Startups achieving scale
with 50 or more employees
20%

Startups with less than
10 years of operations
78%

MAIN FINDINGS

- **This ecosystem is mainly focused on data analysis, KYC, finance management and Human Resources solutions.** 85% of SaaS startups identified for this study are in the sectors of business technology platform, Customer Relationship Management (CRM), Enterprise Resource Planning (ERP), and Human Resources. In terms of innovation, the business technology platform vertical is one of the most relevant areas, incorporating new technologies such as machine learning, artificial intelligence, and blockchain, among others, to analyze company data.
- **This community has managed to build a network of more than 975,000 users, up by 176% compared to 2018.** The business technology platform and Human Resources verticals, as well as people engagement, are the segments with the most users, accounting for 90% of them.
- **Customers' lifetime value is 10x their acquisition costs.** In terms of profitability, startups have an effective customer approach strategy, offering innovative products. The lifetime value to customer acquisition cost ratio (LTV:CAC) ideally should be above 3x cost, and this group was found to have above-average profitability.
- **The Human Resources vertical has the most growth potential.** With over 420,000 users, revenue of 320 million pesos in 2020 and an **LTV:CAC ratio of 15x**, startups in this vertical have the best performance and profitability metrics.
- **The user renewal rate for 2021 is expected to be 90%.** The SaaS startup community is working on establishing long-term relationships with customers, by efficiently implementing technologies in their companies' processes.

- **The companies experience technology adoption problems.** For the 10% that cancelled the service, the main reasons detected were a lack of appropriate budget to incorporate SaaS solutions, the current economic crisis, and problems adopting the service.
- **Access to funding is the most relevant obstacle to scale for a SaaS startup.** Although the sector is growing, 51% of the sample noted that their own resources are one of their main sources of capital. Lack of access to support programs for startups, and the lack of digital adoption by companies are other relevant obstacles to scale in this industry.
- **Promoting business-focused programs at universities and work on getting more women in the sector are essential.** Lack of access to specialized technical talent is another obstacle to scale, and a challenge that stands out is that students lack the preparation needed in terms of skills required for the job. In addition, a deeper analysis of the characteristics of people with an entrepreneurial profile revealed that only 13% of SaaS startup founders are women.

The body of the research includes a detailed description of the main findings for the SaaS solutions community in Mexico, starting with a general outline of SaaS in Latin America and the world in order to achieve a better understanding of how this industry has evolved. This analysis identifies areas of opportunity in the ecosystem and gives recommendations for the various actors (corporations, universities, support organizations and capital funds) to grow this ecosystem more organically and take advantage of the current digitalization era.



INTRODUCTION



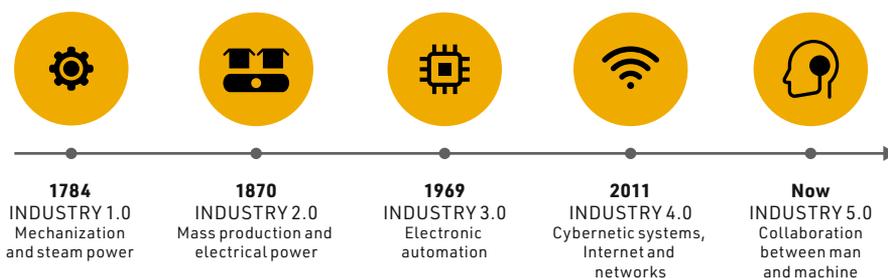
The health contingency highlighted the shortcomings of many companies in terms of digital culture and technology adoption⁵, but also made evident an opportunity for innovation in processes by adopting cloud-based solutions. As a result, 2020 became the year of digitalization.

Throughout the history of humankind, technological revolutions have provided examples of these advances. It is worth considering, for example, how people moved from steam power and mechanical production to electrical power and mass production. Now is the time of automation and Industry 5.0, with further restructuring of product development and production in ways that will redefine not only manufacturing processes but also the value a product provides to customers.⁶

The term Software as a Service was introduced in 1950. More than four decades after that, in 1993, Concur (currently SAP Concur) was founded with the purpose of selling diskettes and CD-ROMs containing software to manage travel costs, and its initial public offering (IPO) in 1998 was designed based on this sales model.⁷ After this, the company adopted a different model and from 2001 onwards has been focused exclusively on SaaS solutions, offering services through the Internet and leading to the consolidation of the market. This is why it is considered the first ever SaaS company.

The affluence of big tech companies has also been evident. In 2014, Concur was generating annual revenue of more than 600 million dollars and was purchased by SAP for 8.3 billion dollars, in the largest SaaS startup acquisition deal to date.⁸

EVOLUTION OF THE SAAS INDUSTRY



Source: Analysis by Endeavor Intelligence, 2021.

*Information corresponds to data collected from Future of Education and Skills 2030 by OECD. Visited on: 05/03/2021

In this century, data has become the new oil in the economy: a motor for growth and change. The flow of information makes possible the creation of businesses, policies, technologies and economies. Digital information follows a process similar to that of oil production: First, raw information is extracted from computing equipment and distilled, then data is cured and processed in order to produce valuable raw materials that can be sold, have an impact on countries and create a global connection.⁹

In recent years, technology has been integral to innovative progress in the startup community. In particular, tech has had a significant impact in the areas of research and development, innovation in products and processes, and innovation in business models.¹⁰ This is why the IT department has become increasingly relevant in the value chain of companies, particularly in 2020, given the fast growth of digitalization as a result of lockdown in response to the pandemic.

Julio Velázquez, head of Google Cloud in Mexico, discusses this acceleration and the digital transformation experienced by companies of all sizes and sectors worldwide in “De la revolución digital a la revolución de la nube”¹¹. Unexpected challenges forced companies to adopt new technologies and cloud-based solutions to keep their businesses running, growing and innovating.

The ever-increasing use of digital media generates a lot of information. 90% of the world’s data in 2016 was created between 2014 and 2015 alone, which shows that even just a few years ago, information was being created, analyzed and stored at a rapid pace.¹² As a result, the term big data has gained huge importance today, particularly because it helps companies make decisions based on accurate information.

Regarding this topic, Jorge González, Industry and Value Advisory Director at SAP México, said:

“Only 10 years ago, most companies focused on innovation in their products, services and mass marketing strategies to position themselves and have more income, in the most profitable way possible. However, in the past 3 years the volume of data started to grow enormously, which proved greatly relevant to customers, because it meant that variables based on data weighed more in the decision-making process.”



Jorge González

Industry and Value Advisory Director,
SAP México

Cross-checking and analyzing information has become increasingly important for companies. This has driven innovation in the field, leading to the implementation of cloud-based solutions. Deloitte, in its study “El futuro de los servicios Cloud: Software como Servicio”, points out that these solutions offer a wealth of advantages and are currently used in three main services: **SaaS**, **Platform as a Service (PaaS)** and **Infrastructure as a Service (IaaS)** solutions.¹³

Among these, SaaS in particular stands out for giving companies access to market solutions quickly and without incurring additional infrastructure costs. These services have proven useful as a business model, with software running on external servers specialized in the processing of data instead of customers’ local servers. Not only that, but by removing maintenance, licensing and hardware costs inherent to local servers, companies are able to run applications much more efficiently in computing terms.¹⁴

Certainly, the adoption of new technologies is key to growth irrespective of the organizational size. Ricardo Granja, CEO of Muventa, a technology company specializing in eCommerce platforms offering high performance and results-oriented technology to organizations seeking to enhance their competitive position through digital commercial processes, says this about the idea of introducing new solutions into businesses:

“Companies should invest in technology solutions giving them the ability to directly impact sales growth or operating costs to be more productive and build better customer relations. The emergence of cloud software has democratized access to these technologies which were previously only available to the big names. The more small and medium-sized enterprises (SMEs) use this technology, the more widespread the adoption and use of advanced software like artificial intelligence will be so that the automation of certain processes happens and decisions are made in a different way, ultimately resulting in enhanced business growth in the long run and a positive impact on our environment.”



Ricardo Granja
CEO, Muventa

BENEFITS OF IMPLEMENTING SAAS SOLUTIONS



EXECUTION TIME

The SaaS are located at the cloud. Minimizing common delays resulting from traditional software implementation, often prolonged.



SCALABILITY

Moving to a SaaS model brings the possibility, if necessary, of adding users without worrying about acquiring a new hardware or other infrastructure components.



COSTS REDUCTION

Even though the model implies regular tariff payment, the property cost is often lower because no infrastructure is needed, meaning that spaces should not be allocated for the accommodation of the infrastructure, which results in lower costs.

Source: Endeavor Intelligence Analysis with IBM information in "Top 5 Advantages of Software as a Service (SaaS)".
Consulted: 15/02/2021 at <https://www.ibm.com/cloud/blog/top-5-advantages-of-software-as-a-service>.

The versatile and multi-functional nature of SaaS products has steered the critical mission of technology adoption towards exploring platforms capable of offering data and access services, leaving the management of the most demanding tasks to cloud

services, and leading to the aforementioned benefits. According to an SAP Performance Benchmarking study, implementing a tool like this can reduce a company's maintenance costs by 8% to 10%.¹⁵

ADVANTAGES OF CLOUD-BASED TECHNOLOGIES: SAAS

OWN MANAGEMENT		PROVIDERS MANAGEMENT	
On site (Private Cloud)	Infrastructure (IaaS)	Platform (PaaS)	Software (SaaS)
Access & Data	Access & Data	Access & Data	Access & Data
Applications	Applications	Applications	Applications
Execution Time	Execution Time	Execution Time	Execution Time
Operative System	Operative System	Operative System	Operative System
Virtual Machine	Virtual Machine	Virtual Machine	Virtual Machine
Calculation	Calculation	Calculation	Calculation
Networks	Networks	Networks	Networks
Storage	Storage	Storage	Storage

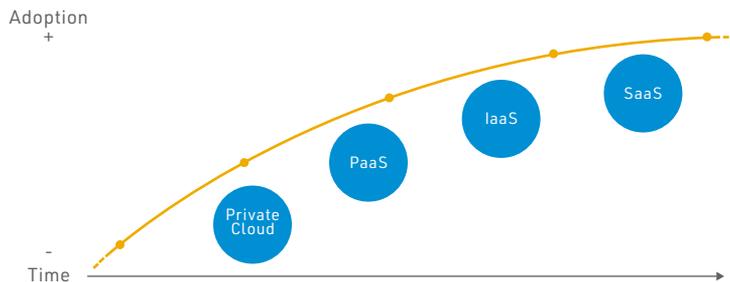
Source: Endeavor Intelligence Analysis, 2021

*The information corresponds to BMC collected data at "SaaS vs PaaS vs IaaS: What's The Difference & How To Choose"
 Consulted: March 2021. <https://www.bcm.com/blog/saas-vs-paas-iaas-whats-the-difference-and-how-to-choose/>

Organizations are adopting these solutions and migrating infrastructure to a cloud environment, relying on providers to host irreplaceable data more efficiently and faster. This creates a bigger area of opportunity in specific business applications addressing local problems, cloud services for servers and storage, as well as validation, development and analysis of data.

The fact that SaaS solutions are updated constantly makes it possible for them to adapt to changes and to the needs of each company at lower costs. This has also created synergies between big tech companies and SaaS startups through partnerships formed to respond to new market needs and deliver more innovation to customers. In this context, we will assess the global landscape faced by SaaS startups and then dive into the regional context of Latin America, focusing on Argentina, Brazil, Colombia, and Mexico.

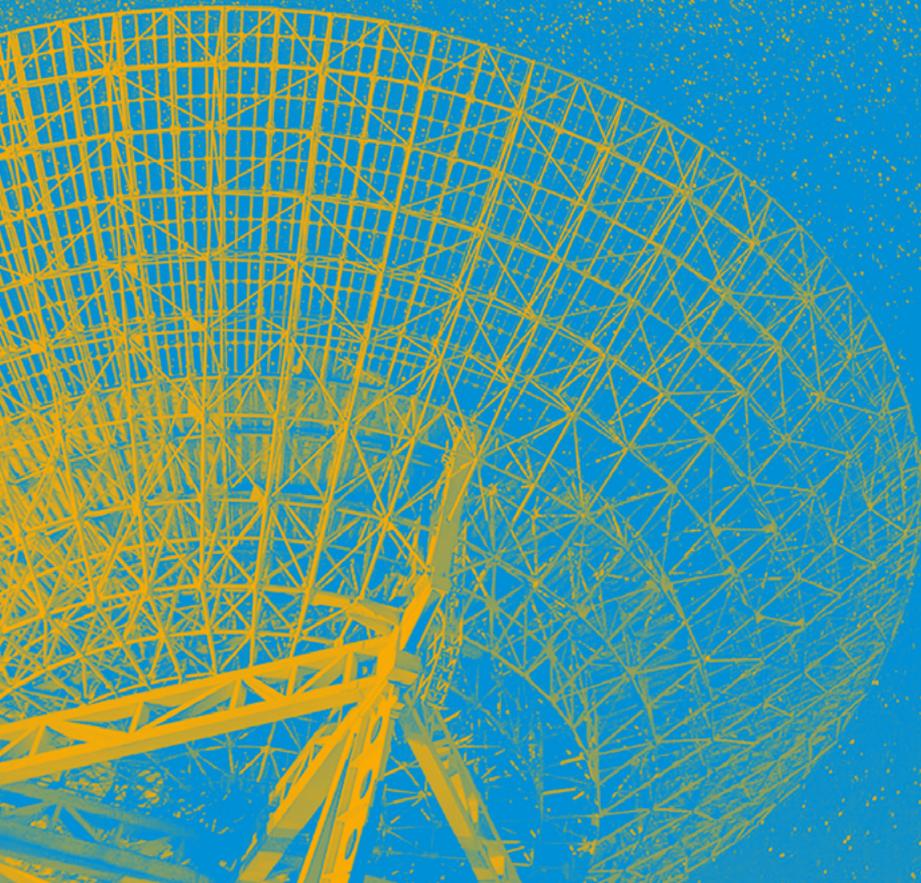
LEVEL OF ADOPTION THROUGHOUT TIME: SOFTWARE AS A SERVICE



Source: Endeavor Intelligence Analysis, 2021

*The information corresponds to Deloitte collected data at "The Future of Cloud Services: Software as a Service", 2014

GLOBAL LANDSCAPE



In 2016, The Economist Intelligence Unit conducted a study that captured the breadth of the software industry in the United States and the sweeping economic impact it was making,¹⁶ directly generating:

- US\$475.3 billion.
- 2.5 million jobs.
- US\$52 billion in R&D investment.

On the other hand, the study *Intelligent Enterprise for the Professional Services Industry* projected trends on a technology-driven automated industry that faces market disruptions and new trends for 2025¹⁷.

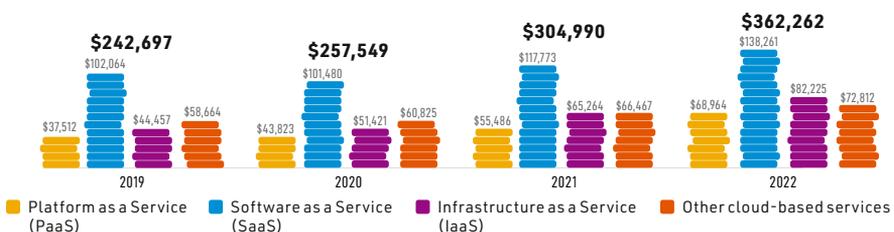
- 60% of companies' revenue will come from digital services.
- Automation will transform millions of jobs, leading to the emergence of new positions that will require certain skills.

Institutions with expertise in the market agree that the future of the SaaS industry is relevant. In a 2020¹⁸ publication, Gartner, a research and advisory company, forecasted that worldwide public cloud end-user spending would grow 6% that year, reaching a total of US\$257.55 billion, up from US\$242.70 billion in 2019.

Sid Nag, Vice President of Cloud Services & Technologies at Gartner, said that when the pandemic hit, there were a few initial hiccups but cloud ultimately delivered exactly what it was supposed to.¹⁹

In their November report, Gartner highlighted that the SaaS industry remains the largest cloud technologies market segment and is forecast to grow to US\$117.77 billion in 2021, with a 16% year-on-year compound annual growth rate (CAGR).

WORLDWIDE PUBLIC CLOUD END-USER SPENDING FORECAST (IN MILLION DOLLARS)



Source: Endeavor Intelligence Analysis, 2021

*The information corresponds to Gartner collected data at "Gartner Forecasts

Worldwide Public Cloud End-User Spending to Grow 18% in 2021". November 2020.

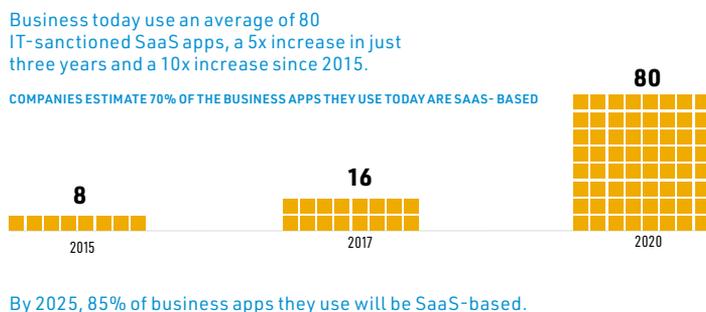
According to this forecast, worldwide public cloud end-user spending in these three verticals (PaaS, SaaS and IaaS) will grow 21% in 2021, reaching US\$238.52 billion, up from US\$196.72 billion in 2020. Now more than ever is it true that tech brings economic advantages and benefits to companies as a result of the flexibility and speed made possible by computing systems.

A 2014 report by Deloitte reflects opinions collected through a survey answered by IT heads in 26 countries.²⁰ Their results show that 58% of surveyed experts had already implemented some kind of solution based on this cloud service model, while the remaining 42% did not have any such application.

This proportion changed as a result of the digital transformation driven by the health crisis of 2020: 70% of organizations currently use cloud services and are planning to increase their spending in response to lockdowns.²¹

These figures signal rising opportunity in an increasingly appealing *Business-to-Business* (B2B) model because of the preference for scalability and integration solutions. Organizations currently use an average of 80 SaaS applications. This is a 5x increase in just three years and a 10x increase since 2015.²²

AVERAGE SaaS APPLICATIONS COMPANIES USE



Source: Endeavor Intelligence Analysis, 2021

*The information corresponds to data collected by BetterCloud at "The State of SaaS Ops Report", 2020.

As enterprises increase investments in collaboration and remote working infrastructure, growth in public cloud will be sustained through 2024, according to Gartner. The rising trend of cloud service providers partnering with potential prospects to extend their reach and support a hybrid workforce may also lead to further market growth.²³

Finally, these trends not only have a positive impact, they tackle and address existing challenges in the industry. As organizations expand their SaaS technology environment to manage more applications for more users, challenges are increasingly harder to deal with. These include: lack of control and visibility,

sluggish onboarding and training, and data security risks, on top of business continuity and operation.²⁴

Despite the uncertain situation of the current global landscape, these technologies are growing exponentially. Nevertheless, socioeconomic factors prevail in some regions that have become barriers to the consolidation of cloud services, such as access to advanced technologies and innovation capacity, among others.²⁵ These barriers are familiar to companies in Latin America and thus, we will analyze in more depth the characteristics of the most noteworthy countries in the region.

SOFTWARE AS A SERVICE IN LATIN AMERICA



Latin America is formed by countries with varying economic conditions—different unemployment rates, gross domestic product (GDP), and Consumer Price Index (CPI), among other indicators—political landscapes (including foreign affairs), and sociocultural contexts, guided by the Sustainable Development Goals described in the 2030 Agenda of the United Nations (UN) General Assembly.

In addition, an important factor to be considered is the region's demographic profile. The median age is 27 years, and in most of the region's countries around 50% of the population is under 30.²⁶ This is relevant in the case of Mexico, where according to data collected by the National Statistics and Geography Institute (INEGI, for its Spanish acronym) through the Telephone Survey of Occupation and Employment (ETOE), 61% of employed persons receive a monthly salary of between one and two minimum wages, equivalent to 7,300 Mexican pesos.²⁷ Compared to the cost of the basic basket of goods (1,600 Mexican pesos per month) and taking into account that the average size of a family is four, this salary is not enough to make ends meet.²⁸

This situation is not exclusive to Mexico, it challenges the entire region. This is why startups are a crucial player; their goal is not only to disrupt the ecosystem with innovative ideas, but to address an urgent need in the region to generate more economic stability.

In terms of the adoption of technology, although it is expected to increase in the following years, as mentioned in the previous chapter, some factors within economies may affect an organization's cloud adoption.²⁹

- 1. The challenge of migrating physical servers to a new cloud environment.** Although innovation has been a constant in technology—especially during the past year—the challenge remains to find talented people with skills to manage and migrate workloads to the cloud, as well as the infrastructure required for its implementation.³⁰
- 2. Bandwidth availability, internet access and high-speed connectivity.** In recent years, we have seen an increase in bandwidth access across Latin America. However, cloud applications face some infrastructure and performance challenges given that in the region the average broadband speed is 26.78 megabits per second (Mbps), which is low compared to the global average broadband speed of 42.70 Mbps.³¹

Increased digitization throughout the region represents an opportunity for growth in the SaaS sector. In Latin America, the number of people with access to the internet is rising, in turn prompting the creation of more SMEs. It is worth mentioning that this **region is the fourth largest market of Internet users, with 446 million people in 2020.**³² This makes it one of the most attractive regions for the SaaS sector, driving attention from both public and private players.

Luisa Arévalo, Head of Operations at Hero Guest, a corporate training platform devoted to improving customer service and management, noted with regard to the support of the private sector:

“The private sector keeps tabs on the support available to startups and this factor is completely changing the game. In addition to government initiatives, the private sector is funding many companies ready to grow today to make an impact not only in Mexico, but also in other countries around the world.”

Luisa Arévalo

Head of Operations, Hero Guest



Even with the economic crisis caused by the pandemic, big institutional investors continued to bet for a long-term vision and for the huge opportunities within the region’s growing market, investing a record US\$4.9 billion of venture capital in 567 companies, **16% more than in 2019.**³³ Of this invested capital, 30% went to the software vertical, signaling the higher market penetration of this sector, which allowed Latin American companies to grow and venture into the world economy.

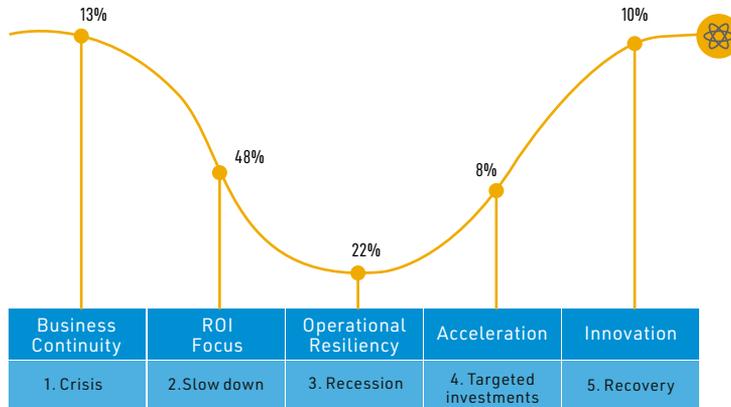
Notwithstanding this, there is still a long way to go in the private equity industry in Latin America. Of the world’s 761 unicorns – companies valued over US\$1 billion – only 32 are in Latin America (4%) and just one only 32 are in Latin America (4%) and just one is related to the SaaS industry.^{34,35}

This is the case of Mural, an argentinian company founded in 2011, which provides a visual collaboration platform that allows teams to work remotely and efficiently, which to date has more than five hundred employees, has raised more of \$190 million dollars in capital and is valued at more than \$2 billion dollars.

To reinforce this success story in the region, in the last year the company tripled its annual recurring revenue (ARR) due to the accelerated growth that the Latin American region has presented. In addition to this, and as mentioned previously, the inclusion of a SaaS brings multiple benefits in terms of execution times, scalability, and cost reduction

In addition to the change in investment appeal, tech solutions experienced varied phases throughout the pandemic. According to information collected by the International Data Corporation (IDC), in September 2020, 48% of companies said that they were in their second impact phase, focusing on efficiently handling their return on investment (ROI). 22% saw themselves in the operational resilience stage, and 10% were already innovating to adapt to the new normal. This outlook makes evident that companies can adapt in the face of a huge crisis like the one we are currently going through.³⁶

IMPACT OF THE HEALTH CRISIS ON INFORMATION TECHNOLOGIES IN LATIN AMERICA 2020



Source: Endeavor Intelligence, 2021.

*The information corresponds to data collected from the Covid-19 Impact on IT Spending Survey IDC, September 2020. Accessed: 15/02/2021.

**N = 791 answers around the world (100 from the USA, 151 from LatAm, 329 from the Asia Pacific region (APAC) y 211 from Europe, Middle East, and Africa (EMEA).

Returning to the case of Mural, the company collaborated with IBM in recent years to scale design thinking in the global organization, allowing and achieving an ROI of 495% with a payback period of less than six months. Being this a reflection of the adaptation to the change that the industries are going through at present.³⁷

The current health crisis has positively impacted SaaS technology adoption, accelerating its growth. In fact, this industry is forecast to grow 28% in Latin America between 2020 and 2026³⁸, and by 2021, the region is expected to grow 27% in infrastructure: 29% in IaaS, 37% in PaaS and 20% in SaaS.³⁹ This makes evident the need for companies to modernize their services and innovate in response to global changes.

Javier Allard, General Director of the Mexican Association of the Information Technology Industry (AMITI, for its Spanish acronym), an organization seeking to consolidate the power of the industry, maximize digital transformation opportunities, and provide a forum for its members to conduct activities, create synergies and present proposals and projects for the benefit of the industry and the country, made the following remark:

"In a country like ours, like everywhere else in Latin America where most companies are SMEs, SaaS startups are an ideal solution enabling easy access to applications and digital tools, to replace physical servers and security infrastructure."



Javier Allard

General Director, Mexican Association of the Information Technology Industry (AMITI)

The number of startups has increased recently as a result of a cultural change in which people are being more encouraged to venture into entrepreneurship. Investors and entrepreneurs gravitate towards countries offering advantages in cost and efficiency as well as access to fundamental assets for their companies, both of which, are characteristics of emerging economies.

Miguel Medina, Co-Founder of Plerk, a platform created to accelerate business performance by managing plans offering flexible benefits and incentives to talented people from local and remote teams, agrees that Latin America is creating global opportunities:

"The reality is that Latin America is a field that offers a wealth of opportunities, and international players are already noticing it. We Latin Americans should take advantage of this and also become players."



Miguel Medina
Co-Founder, Plerk

The Latin American public cloud market is expected to generate US\$7.4 billion by 2022, at an annual compound rate of 31.9% driven by the internet of things (IoT), big data and artificial intelligence⁴⁰. Research studies have pointed to Brazil, Argentina, Mexico and Colombia as driving forces of digitalization due to a higher growth in digital assets, and an increasing number of internet users.⁴¹

BRAZIL, ARGENTINA, MEXICO AND COLOMBIA: THE LATIN AMERICAN POWERHOUSES

MEXICO

Internet users:
89 million online users
The SME represent the **52%** GDP and creates **72%** of formal jobs
Growth in Digital Assets during 2020:
37%
Invested Capital:
1518.13 million dollars
Total unicorns:
3



COLOMBIA

Internet users:
35 million online users
The SME represent the **35%** of GDP and creates **80%** of employment
Growth in Digital Assets during 2020:
63%
Invested Capital:
514.53 million dollars
Total unicorns:
2



BRAZIL

Internet users:
150.4 million online users
Startups: +13,000, where **5,570 are SaaS**
The SME represent the **30%** of GDP and creates **55%** of national jobs
Growth in Digital Assets during 2020:
45%
Invested Capital:
1827.26 million dollars
Total unicorns:
18



ARGENTINA

Internet users:
35 million online users
The SME are the **99.5%** of total companies, represents the **25%** of GDP and creates **60%** of formal jobs
Growth in Digital Assets during 2020:
78%
Invested Capital:
69.62 million dollars
Total unicorns:
6



Source: Endeavor Intelligence Analysis, 2021

*The information corresponds to Beyond Borders, EBANX, National Statistics Administration Department, CB Insights & Pitchbook collected data.

Consulted: 06/04/2021

According to our observations, what the four countries analyzed here have in common is that they are emerging economies and, even with the challenges mentioned above, whether political, cultural or geographical, the SaaS sector is growing at an accelerated pace there, especially in Brazil.

In the particular case of Mexico, the region has a significant advantage due to its geographic position: a corridor connecting the United States and the rest of Latin America. Not only that, but the United States-Mexico-Canada Agreement (USMCA), which entered into force on July 1st, 2020, has opened up opportunities for the software market because it includes provisions sanctioning services abroad and eliminates customs duties in connection with products transmitted electronically.⁴²

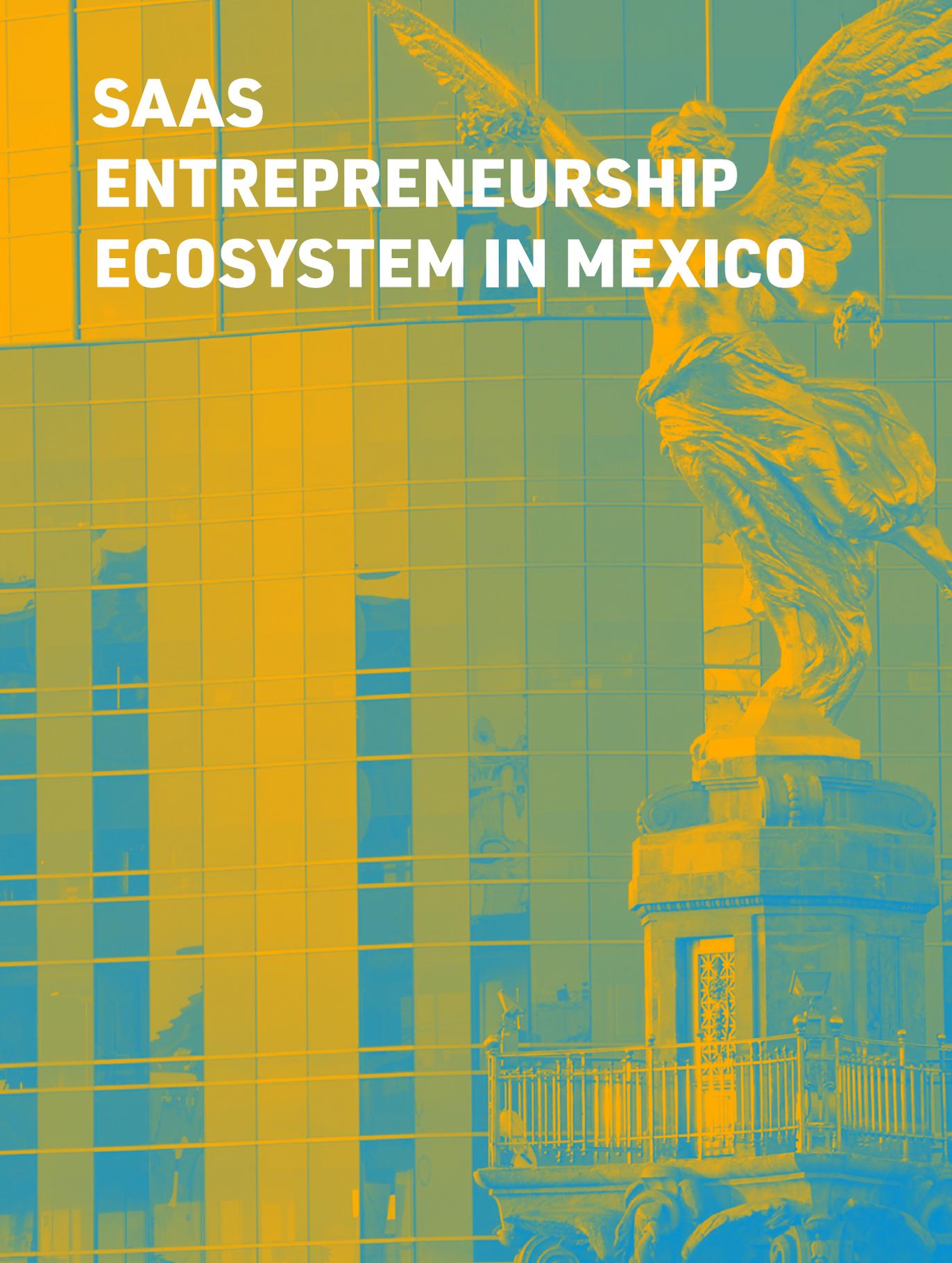
On the other hand, Mexico is the second largest data center market in Latin America, with its main hubs in Mexico City, the State of Mexico, Queretaro, Nuevo Leon, Jalisco and Aguascalientes,⁴³ making it an ideal market to attract foreign investment.

A recent Endeavor Review lists Mexico's strategic location among the top reasons for entrepreneurs to migrate there, highlighting its role as an entrepreneurial hub. Moreover, Mexico City has had impressive success in attracting foreign capital. In 2020, investments totaled US\$972 million, of which US\$448 million, which represented 46% of the total amount, was foreign-founded.⁴⁴

These characteristics make Mexico an ideal country in which to scale startups and boost the economy. Industry 5.0 is present globally, therefore it is important to analyze startups in the SaaS vertical to identify areas of opportunity and generate conditions for its development in the long run.



SAAS ENTREPRENEURSHIP ECOSYSTEM IN MEXICO



As first mentioned in this document, to analyze the impact made by this sector as it pertains to startups, a group of 276 SaaS companies operating in Mexico was identified and analyzed, of which 65 were further examined in an online survey, the results of which are presented in this chapter.

“The SaaS ecosystem in Mexico is approaching a stage of maturity and is experiencing material growth. This has specifically helped technology process startups to have an interesting opportunity to grow in the country.”



José Alberto Díaz

Head of Product and Strategy, *Konfront*

First, regarding the main states of the country where these startups are operating, it was found that **79% of them are concentrated in Mexico City, Nuevo Leon, Jalisco and Yucatán**. There is no denying that Mexico has become an innovation hub favoring the development of tech startups, in part because of the tech-savvy people found there, as it is home to three of the top Latin American universities offering computer science-related courses: Universidad Nacional Autónoma de México (UNAM, the National Autonomous University of Mexico), Instituto Tecnológico de Estudios Superiores Monterrey (ITESM, Tecnológico de Monterrey) and Instituto Politécnico (IPN, the National National Polytechnic Institute).⁴⁵

As to Mexico City, it recorded a significant increase in the number of tech startups between 2014 and 2019, with a nearly fourfold increase from 164 to 632,⁴⁶ wherein SaaS is one of the most representative verticals. The capital city is not only the main hub of startups in the country, but also offers unrivaled access to infrastructure and a talented tech workforce.

Monterrey is home to a number of startup support organizations as well as ITESM, a consistent source of new talent that focuses on e-commerce, SaaS solutions and information technologies.⁴⁷

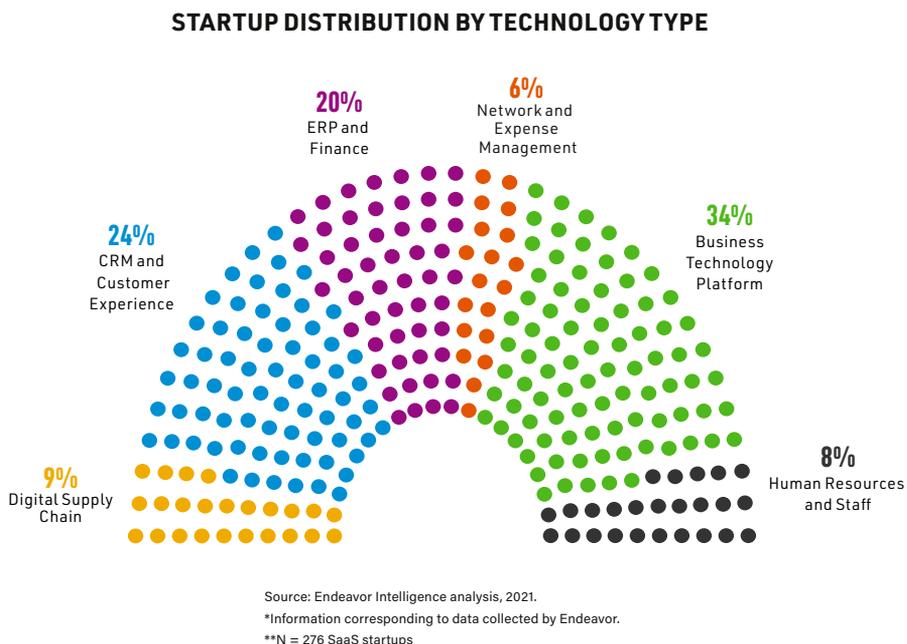
Jalisco has been dubbed the “Mexican Silicon Valley,” recognized for the development of its software industry fueled by the arrival of foreign companies interested in talented Mexican people with tech skills, leading to the creation of jobs which drives the region’s development.⁴⁸

Finally, Yucatan is positioned as one of the country's tech hubs and stands out for its quality of life - it is one of the states with the lowest crime rates - as well as for its talented tech workforce and infrastructure.⁴⁹ These characteristics have helped the state position itself as an attractive hub for investment that favors startup creation, especially in the information technology industry.

The current geographic distribution of SaaS startups comes as no surprise because, as said in previous research, states can leverage local advantages such as quality of life, consistent sources of talent and proper infrastructure to grow startups and spur a multiplier effect in each economy.⁵⁰ These benefits support the pattern of tech startups concentrating in specific regions.

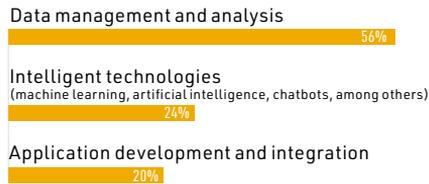
As a second step in the analysis, startups were divided into six groups according to the type of technology used by survey respondents.⁵¹

The findings show that startups are mainly concentrated in the following verticals: **Business Technology Platform (34%)**, particularly around data management and analysis through the incorporation of disruptive technologies such as machine learning and artificial intelligence, among others; **CRM and Customer Experience (24%)**, with a focus in the areas of sales, customer information and consumer experience solutions; and **ERP and Finance (20%)**, one of the most traditional services in the SaaS segment and increasingly essential in solutions for small and medium-sized enterprises in the management of accounts receivable, invoicing and revenue, as well as analysis and financial planning.



CATEGORIZATION OF STARTUPS BY TECHNOLOGY

Business Technology Platform



CRM and Customer Experience



Human Resources and People Engagement



Source: Endeavor Intelligence analysis, 2021.

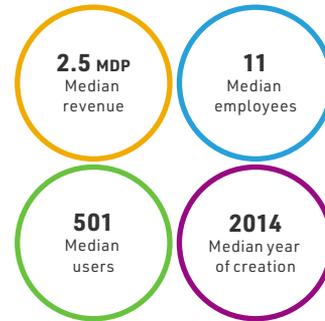
*Information corresponding to data collected by Endeavor.

**N = 65 SaaS startups.

Together, these startups represent more than \$1.9 billion pesos in revenue, 22% of the market value of SaaS in Mexico for 2019,⁵² and have directly created more than 6,685 jobs, 3.6x more than in 2018, impacting the lives of 26,740 people and providing services to over 975,000 users.

A **typical SaaS company generates annual revenue of \$2.5 million pesos, has 11 employees and 501 users, and was founded in 2014.**⁵³ In general, startups in this sector are at a stage of growth, with potential for economic development as a result of job creation.

TYPICAL SAAS COMPANY



Source: Endeavor Intelligence analysis, 2021.

* Information corresponding to data collected by Endeavor.

**N = 276 SaaS startups.

A DYNAMIC COMMUNITY: IMPACT ON JOB CREATION

The results shown above are not alien to the startup community, as 66% of the surveyed sample self-identified as a company in the growth and expansion stage, underscoring that 79% have been in operation for less than 10 years, and the Human Resources and people engagement vertical was the segment with younger startups, which have been operating for only four years.

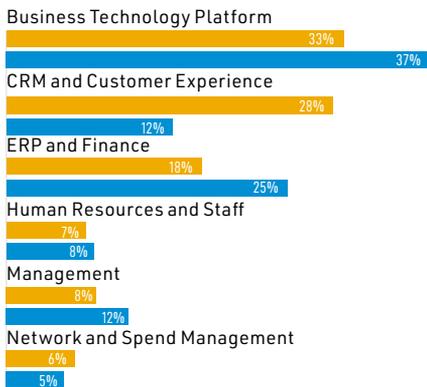
In order to understand the level of growth and impact of recently established startups, the dynamism of a community shall be understood as a community like those companies that have been in operation for less than 10 years which have managed to scale, i.e., they generate 50 or more direct jobs.

Companies launched prior to 2011 (21%) have a median of 17 years in operation, with 3,300 jobs created. The main verticals under which these startups fall are: Business technology platform (36%), ERP and finance (24%), and CRM and customer experience (16%).

Similarly, startups between one and ten years old are mostly concentrated in the verticals of Business technology platform (30%), CRM and customer experience (28%), and ERP and finance (17%), with a median of six years in operation and more than 3,000 jobs created.

Access to solutions like ERP and CRM for SMEs is one of the advantages that technologies have to offer today, not only allowing companies to innovate within their business model, but also making access to technology more democratic. Because of this, use of these solutions has expanded, and SaaS startups have taken advantage of it.

CATEGORIZATION OF STARTUPS BY TECHNOLOGY



STARTUPS WITH 1-10 YEARS OF OPERATIONS

217 Startups (79% of the total)
2015 Median year of creation
3.2 K Jobs created
10% +50 employees

STARTUPS WITH +10 YEARS OF OPERATIONS

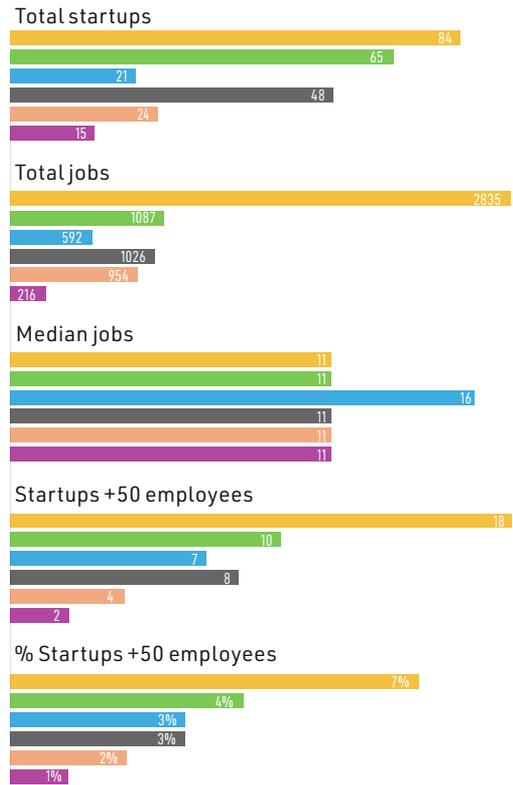
59 Startups (21% of the total)
2004 Median year of creation
3.3K Jobs created
53% +50 employees

Source: Endeavor Intelligence analysis, 2021.
 * Information corresponding to data collected by Endeavor.
 **N = 276 SaaS startups.

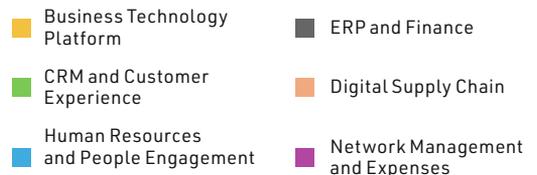
This has helped SaaS tech startups grow. The analysis of jobs created in the selected sample revealed that 57% of companies with more than 10 years of operations have reached scale, contributing 92% of the total jobs in this group. On the other hand, of

the startups with less than 10 years of operations, only 10% have reached scale, accounting for 90% of total jobs, meaning that this segment's productivity is concentrated in a small group of startups with innovative models that favor job creation.

CATEGORIZATION OF STARTUPS BY TECHNOLOGY



STARTUPS ACHIEVING SCALE



Source: Endeavor Intelligence analysis, 2021.
 * Information corresponding to data collected by Endeavor.
 **N = 257 SaaS startups (55 companies with more than 10 years of operations and 202 with 1-10 years of operations).

INNOVATION: TECHNOLOGY DEVELOPMENT AS A KEY DIFFERENTIATOR

It has been noted before that migrating to digital is important because of the health crisis, which has increased the perceived value of cloud solutions. Startups have taken advantage of this opportunity by tailoring their services to various industries, making business transition easier. Our survey results show that **74% of them provide services to other companies (B2B model), mainly small and medium-sized enterprises (77%)**, particularly in the commerce and retail industries. They are also venturing into other sectors that have recently required more digitalization due to the pandemic, such as the education and health sectors.

In this respect, Everardo J. Barojas, Director of Prescripto, an application for medical doctors that generates, prints, sends and monitors electronic prescriptions, talks about the new business model they have implemented:

“Business models in the health sector are usually elaborate and intricate. In the future, the biggest opportunity lies in topics around business model innovation. Here, SaaS applications are implemented in a similar way to architecture: the subscription model changed to the subscription model paid by each doctor, and then paid by someone within the ecosystem who had more appropriate incentives.”

Everardo J. Barojas

Director, Prescripto

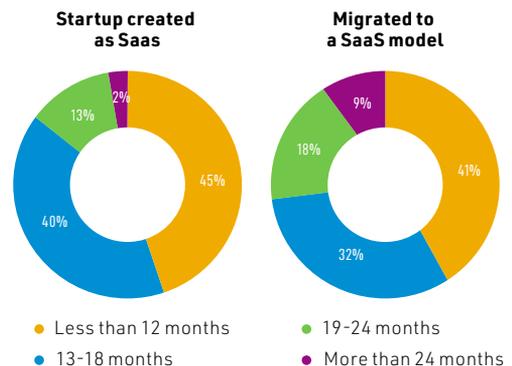


As previously stated, the main pillar of innovation is technology development. It is worth mentioning that **83% of the companies in the sample develop their own technology**, while the remaining 17% use third-party technologies such as SAP, Microsoft, Amazon Web Services (AWS) and IBM, to mention but a few.

Although this latter group represents a low percentage, it reinforces the premise that synergies between tech companies and startups represent a benefit, because of the innovative products offered to customers.

On the other hand, it is worth clarifying that only 63% of the companies in the sample were founded as SaaS startups, and 45% of them developed their first product in less than a year. In contrast, out of the 37% that migrated to this business model, 59% took more than one year to develop their first product, which means that startups initially specializing in a SaaS solution have a slight advantage in terms of time for development. However, this does not prevent traditional startups from migrating to this business model.

TIME OF DEVELOP THEIR FIRST SAAS PRODUCT



Source: Endeavor Intelligence Analysis, 2021

*The information corresponds to Endeavor collected data.

**N= 65 SaaS startups.

To illustrate this, a good case is that of **DocSolutions**, a company co-founded by Gabriel Oropeza which provides companies and institutions a secure platform through which to manage sensitive documents and information.

New technologies have evolved from simple programs with limited user access to platforms that not only process huge amounts of data, but also make the work of companies more efficient by providing specialized solutions in response to a need to reinvent themselves.

This is a good example because DocSolutions was first created as a document storage platform and eventually transformed into a SaaS model developing its own technology, offering services ranging from process and data flow design, database construction and entry, and digitalization, to the physical and electronic safeguarding of documents. This results in an added value from information, something made possible by digital onboarding and a monthly and annual subscription model. This has allowed startups to experience significant growth, offering services to more than 5,000 users.

PRICING MODELS AND PROFITABILITY

Developing disruptive technology is not the only factor at play when it comes to attracting new customers. Companies need to ensure that they deliver the best customer experience, based on customers' expectations and needs. In this sense, the business model plays a fundamental role in the selection and adoption of services.

Our research showed that **on average, startups offer at least two pricing options to their customers, with recurring monthly subscription being the most common (68%)**. Additionally, the main marketing method for services are sales channels, investing on average 15% of total revenue.

In view of this, Paola Becerra, VP SAP Customer Experience, SAP Latin America, highlights the importance of diversifying the business model of SaaS technologies.

"To provide a SaaS solution, an on-demand business model is required where startups pay as they grow, which means that payments are in arrears, based on customer's usage, and without long-term commitments. Under this model, customer retention is vital for the future sustainability of business, and this is why a differentiated experience plays a fundamental role, because it not only attracts more customers, but also secures the loyalty of existing customers."



Paola Becerra

Commercial Director,
VP SAP Customer Experience,
SAP Latin America

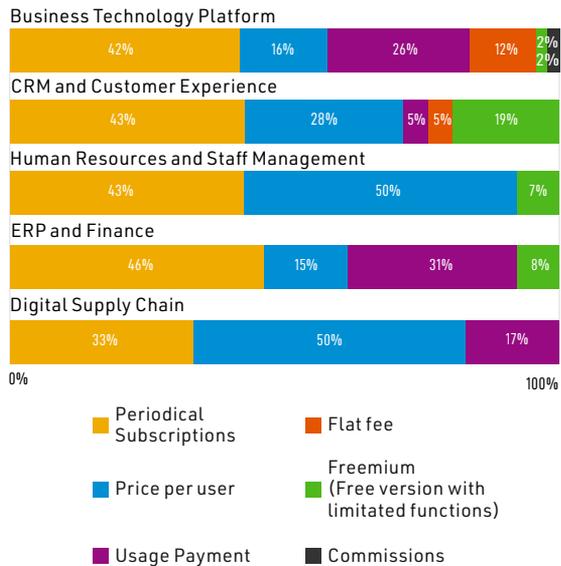
The analysis of the business model by type of technology revealed that:

- 1. Business Technology Platform:** Recurring subscriptions are the main pricing model (42%) of which 65% are paid monthly, followed by pay-per-use. On average, this vertical invests 15% of total revenue on sales channels.
- 2. CRM and Customer Experience:** The main business model is recurring subscriptions (43%), of which 75% are paid in monthly intervals. Per user pricing (32%) is the second most widely used business model, with an investment of 10% in sales channels.
- 3. Human Resources and People Engagement:** Unlike the previous verticals, for Human Resources and people engagement the main pricing model is per user pricing (50%), followed by periodic subscriptions (43%). On average, this segment invests 10% of total revenue in the marketing of this service though domestic sales.



4. Digital Supply Chain: This segment centers its business model around per user pricing (50%), followed by recurring subscriptions (33%). This vertical represents the largest investment in service marketing: the average investment is 30% of total revenue and it adopts a hybrid sales model.

SAAS STARTUPS PRICING MODEL



Source: Endeavor Intelligence analysis, 2021.

* Information corresponding to data collected by Endeavor.

**N = 65 SaaS startups.

Disruptive technologies and business models favor innovation in processes that are inefficient for companies. That is the case of **Higo.io**, a smart alternative to the outsourcing of payment processing to suppliers. Higo.io provides a centralized platform to manage invoices that automates the approval and payment process between companies.

Higo.io is a Mexican company founded by Rodolfo Corcuera in early 2020 with the goal of simplifying the complexity in processes involved in payments to suppliers, shortening wait times and offering a B2B monthly subscription business model, depending on the number of transactions completed.

Rodolfo created Higo.io to provide companies with an efficient and inexpensive platform to fulfill such tasks. This company not only penetrated an existing market that required a service, but sought to offer an alternative to traditional ERP and generate clear differentiation by adding value to companies through supplier and customer management, with the goal of automating tasks using cloud-based technology.

In addition to this, Karla Rosas, Energy and Natural Resources Director at SAP México, reflected on how business models go beyond technology, reinforcing other fundamental aspects:

“Entrepreneurs need financial clarity. In Mexico and in the rest of Latin America, knowledge in this area must be reinforced. Strengthening your skills in this area allows you to know your business model from head to toe, increasing your profitability and achieving better results.”



Karla Rosas

Energy and Natural Resources
Director, SAP México

This means that SaaS startups should have two goals: 1) Acquire new customers by offering innovative solutions, and 2) Keep current customers by ensuring they maximize their value.⁵⁴ But the reality among surveyed startups is that there is an area of opportunity to enhance the services, as only **11% of the sample has in place some form of customer loyalty program.**

Despite this, the startup community has shown significant growth in recent years. This research includes various metrics that can be used to track development through different parameters, such as total sales, user growth, new customer acquisition costs, and the ability of entrepreneurs to keep current users.

In assessing the level of annual revenue generated by this community, we found that the Human Resources and people engagement vertical grew more than any other in the past three years, with a rise in revenue of 45%. In second place was ERP and finance, with 19%.

Solutions focused on talent management have grown in response to the rise of remote work caused by the health crisis and the maintain communication between teams. According to recent research by Endeavor on the economic impact of the pandemic, 78% of the surveyed sample reported that working remotely had caused productivity to remain at the same level, or even improve. This led 52% of survey respondents to implement the use of disruptive technologies to adapt to this new reality.⁵⁵

RISE IN SALES BY TECHNOLOGY



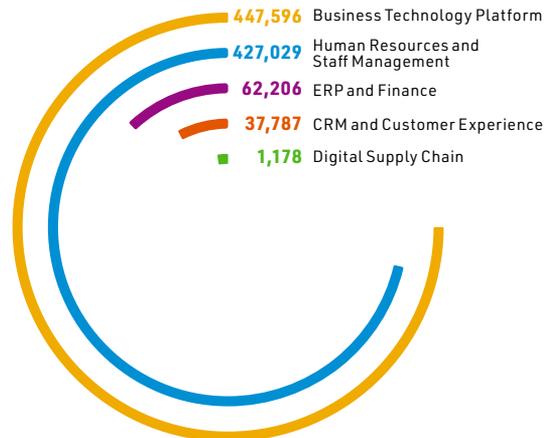
Source: Endeavor Intelligence Analysis, 2021.

*The information corresponds to Endeavor collected data.

**N= 65 SaaS startups.

To gain a more robust understanding, we looked at the number of users these startups attracted with their sales strategies. Over the past three years, companies in the sample experienced a **growth of 176%, resulting in 975,796 users**. The business technology platform vertical was the area with the highest number (447,596), followed by Human Resources and people engagement (427,029) reinforcing the sector's impact in the ecosystem.

TOTAL USERS BY TYPE OF TECHNOLOGY



Source: Endeavor Intelligence Analysis, 2021.

*The information corresponds to Endeavor collected data.

**N= 65 SaaS startups.

This reflects the notable growth experienced by these startups in response to current market trends because, as noted earlier in this section, Human Resources and people engagement is one of the newest verticals. With only four years of operations, this vertical accounts for 44% of total users and has achieved the most growth in revenue within the sample. This is also the case of the business technology platforms vertical, on average having five years of operations, which increasingly uses disruptive technologies such as artificial intelligence and machine learning.

Of these users, startups expect that 90% will keep using their services in the next year. An observation of the type of technology makes evident that the Human Resources and people engagement vertical was the category with the highest percentage, with a median of 95%. In turn, digital supply chain startups expect to keep 80% of their current users. This would mean that the community is able to establish long-lasting relationships with their customers by implementing technologies efficiently in the processes of those companies.

PERCENTAGE OF CURRENT USERS EXPECTED TO CONTINUE IN 2021



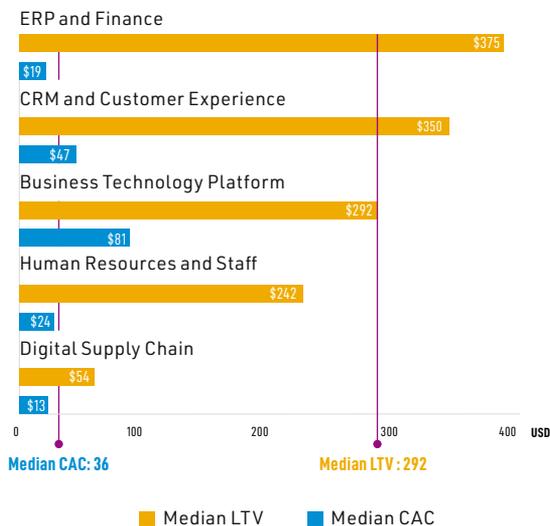
Source: Endeavor Intelligence Analysis, 2021.

*The information corresponds to Endeavor collected data

**N= 65 SaaS startups.

However, the question remains: Are these startups profitable? When answering this question, one of the most important indicators to be considered is the lifetime value (LTV) to customer acquisition cost (CAC) ratio, which expresses the value of a customer with respect to the cost involved in acquiring that customer. Ideally, the LTV:CAC ratio should be 3:1; that is, the value of a customer should be three times the cost of acquiring that customer.⁵⁶

LTV AND CAC IN USD BY VERTICAL



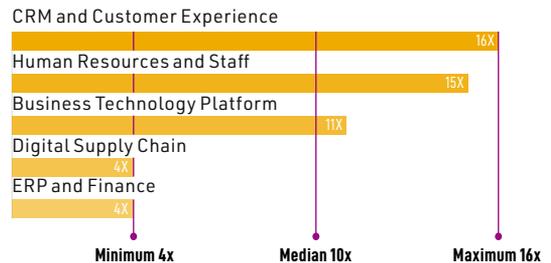
Source: Endeavor Intelligence Analysis, 2021.

*The information corresponds to Endeavor collected data.

**N= 65 SaaS startups.

For this sample, the **LTV:CAC ratio in 2020 was 10:1, which means that the value of their customers is 10 times their acquisition cost.** A breakdown of this indicator by vertical shows that CRM and customer experience is the most profitable (16:1), followed by Human Resources and people engagement (15:1). In contrast, startups categorized under digital supply chain and ERP and Finance have a lower ratio, at 4:1, which nevertheless is above the minimum expected.

LTV: CAC RATIO BY VERTICAL



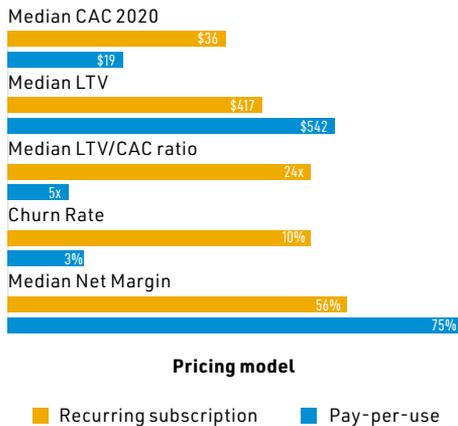
Source: Endeavor Intelligence Analysis, 2021.

*The information corresponds to Endeavor collected data.

**N= 65 SaaS startups.

As to pricing models, the recurring subscription option is the most profitable (24:1) compared to the cost of acquiring customers. However, the pay-per-use model has above-average profitability (5:1). In addition, the latter reports the highest net profit margin. At present, SaaS startups worldwide prefer models based on use, as it means that customers can start using the service at a low cost, setting the standard for a better interaction with the service and enabling SaaS startups to monetize as they grow. However, this is not an easy task, as companies usually create their models based on recurring subscriptions.⁵⁷

LTV RATIO BY PRICING MODEL



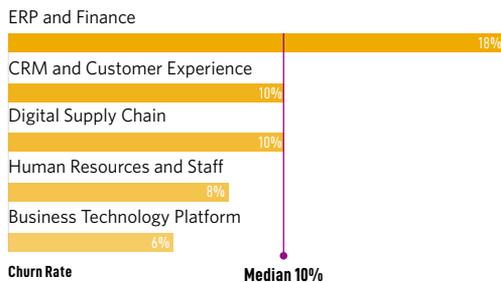
Source: Endeavor Intelligence analysis, 2021.

* Information corresponding to data collected by Endeavor.

**N = 52 SaaS startups (33 recurring subscriptions, 19 pay-per-use.)

Until now, emphasis has been placed on the importance and benefits of customer retention and, above all, on the fact that this community of entrepreneurs is achieving significant profitability with the current strategy, as **67% of the sample managed to keep their customers for more than 25 months**. With respect to customers that do not renew the service, the churn rate median is 10%, and ERP and finance is the vertical with the highest percentage of cancelled services in 2020.

USER CHURN RATE BY VERTICAL



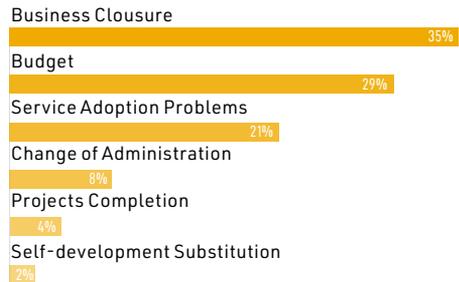
Source: Endeavor Intelligence Analysis, 2021.

*The information corresponds to Endeavor collected data.

**N = 65 SaaS startups.

The reasons given to cancel the service are: 1) Business closure due to the pandemic (35%), 2) Lack of budget to adopt this form of technology (29%), and 3) Challenges surrounding the adoption of this service (21%). The latter shows that customers are failing to adapt to the new technologies with their current business models.

REASONS USERS GIVE TO CANCEL THEIR SERVICE OF SAAS SOLUTIONS



Source: Endeavor Intelligence Analysis, 2021.

*The information corresponds to Endeavor collected data.

**N = 65 SaaS startups.

Courtney McColgan, Founder and CEO of Runa HR, a payroll and human resources management solution in Latin America, spoke about her experience regarding the percentage of users who discontinued their service after the pandemic hit, and a key move to lessen the impact:

"The entire industry experienced high churn rates during March and April 2020 because of the pandemic. We at Runa HR made our case that payroll is not an optional task. On the contrary, it is fundamental for any company. This is why having a product capable of adding value to customers' value chains and becoming a necessary element is key to scale your business in the future."



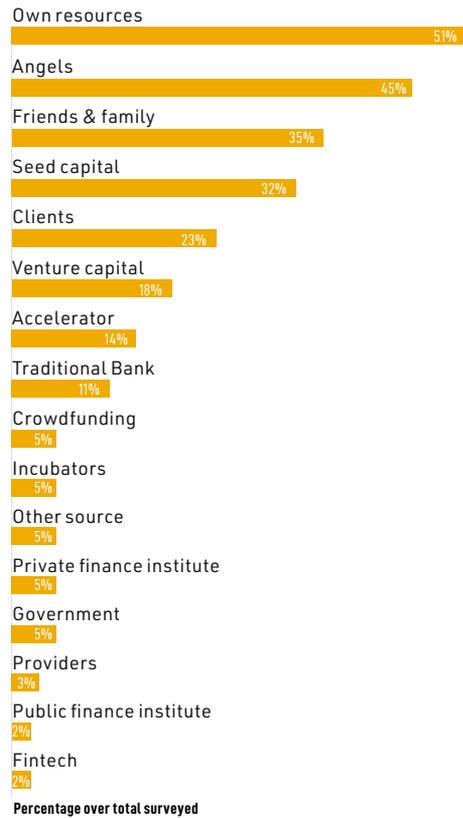
Courtney McColgan

Founder and CEO, Runa HR

CAPITAL RAISED BY THE SAAS STARTUP COMMUNITY IN MEXICO

A relevant factor contributing to the ecosystem's development is institutional funding, because it shows that investors support and recognize the value of disruptive models. This allows startups to scale to other regions beyond Mexico. Surveyed startups have raised on average US\$105 million, but 51% of the sample said that they came mainly from their own funds. However, the startups that have managed to receive capital from institutions are mainly from the business technology platform and CRM and customer experience verticals. The former, because of the growing trend for startups to use artificial intelligence and machine learning technologies, and the latter because CRM represents a trend in SaaS technology adoption to build stronger relationships with customers.

TYPE OF FUNDING



Source: Endeavor Intelligence Analysis, 2021.
 *The information corresponds to Endeavor collected data.
 **N= 65 SaaS startups.



From the perspective of the main players in this ecosystem, particularly investment funds, we spoke with Kaszek Ventures, at an event organized by Endeavor and SAP México, in an effort to identify the challenges facing the SaaS entrepreneurship ecosystem and to better understand what international investors are looking for in startups operating in this vertical.

Nicolas Berman, a partner at Kaszek Ventures, talked about the elements that his fund is looking for in startups:

“The fund basically wants to see three things: First, and most importantly, extraordinary teams with a clear vision, purpose, and a relentless level of performance. Second, companies targeting really large markets in order to scale and cause huge disruption in certain industries or create new ones. And lastly, companies with a clear differentiator compared with their competitor, so that they can offer services with an added value.”

Nicolas Berman

Partner, Kaszek Ventures



These characteristics are not exclusive to the SaaS startups sector, which means that funds like Kaszek are willing to support startups that display qualities of added value, such as unique teams and a cutting-edge vision, irrespective of their sector.

BARRIERS TO THE SECTOR

In addition to the challenge posed by access to capital, our survey results show that there are various barriers that have prevented startups from achieving scale or consolidating a market despite all their efforts. Mainly, it is due to external factors preventing accelerated growth, among which the most relevant are a lack of access to funding (62%), the current economic crisis (53%), a scarcity of entrepreneurship support programs (36%), insufficient technology adoption (33%), access to customers (31%), and a shortage of talented people with technical skills (27%).

BIGGEST BARRIERS FOR STARTUPS IN THE SAAS ECOSYSTEM



Source: Endeavor Intelligence Analysis, 2021.

*The information corresponds to Endeavor collected data.

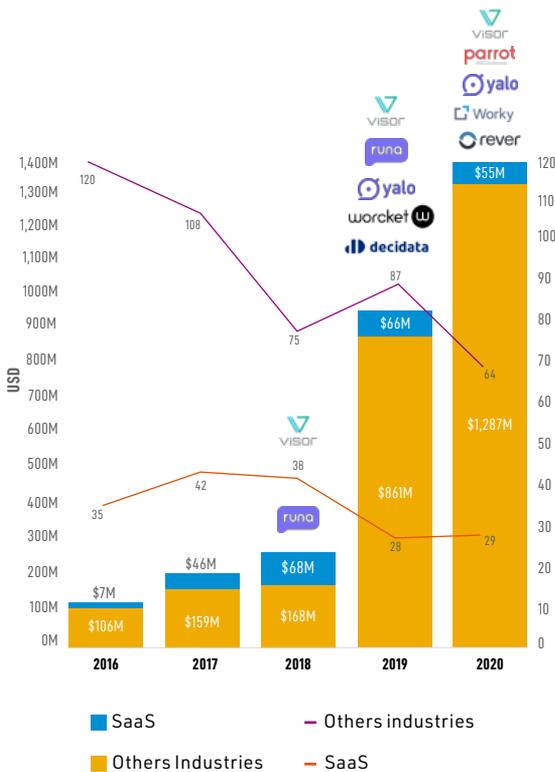
**N= 65 SaaS startups.

ACCESS TO FUNDING: INSTITUTIONAL PRIVATE EQUITY

Capital investment grew sixfold between 2017 and 2019, up from US\$156 to US\$929 million, owing to two factors in particular: the ballooning of fintech and American investment in startups. While several venture capital firms who were pioneers in Latin American capital investment no operate in Mexico, such as Kaszek Ventures (2011), Angel Ventures (2012) and Jaguar Ventures (2013), growing investment from global companies, particularly from the United States, stands out in comparison to other countries in the region.⁵⁸

The SaaS sector has not been an exception in terms of growth, although it did not grow as exponentially: it grew 1.4x between 2017 and 2019, with 14 fewer rounds. In 2019 alone, US\$66 million were invested through 28 transactions, equivalent to 7% of the total capital invested, and to 24% of funding rounds. In 2020, US\$59 million were invested through 29 transactions, equivalent to 4% of total capital invested and 31% of funding rounds, an impressive feat given the health crisis.⁵⁹

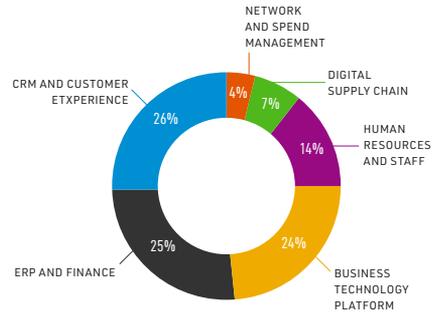
FUNDING ROUNDS IN MEXICO



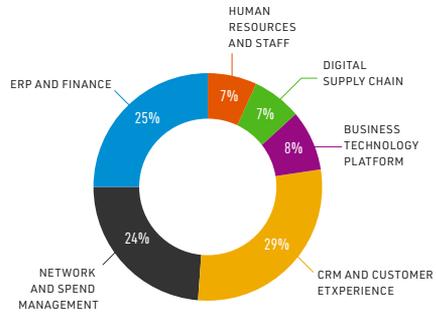
Source: Endeavor Intelligence analysis, 2021.
 *Information corresponding to data collected by Endeavor.
 **N = 536 funding rounds (140 in SaaS startup funding rounds and 396 in other industries).

To date, the SaaS venture capital industry in Mexico has reached US\$246 million, invested mainly in ERP and finance, CRM and customer experience, and business technology platform, sectors that have piqued investors' interest because of their innovation and business models.

INVESTED CAPITAL PER INDUSTRY



ROUNDS BY TECHNOLOGY TYPE



Despite the growth seen in this sector, 63% of respondents said access to institutional funding is the most significant barrier to achieving scale. These numbers show that for the main players in this ecosystem there is still plenty to do to help SaaS startups access funding. This industry is not yet a focus of attention for Mexican funds because in the past years, eCommerce and fintech industries have received most investments.⁶⁰

TECHNOLOGY ADOPTION

Another important challenge in this ecosystem is insufficient technology adoption, accounting for 33% of the sample. Specifically in Mexico, these processes are negatively affected by the challenges in implementing a new tool. However, there are multiple benefits, which have been highlighted in this report.

A strong example is the case of Grupo Bimbo. The group adopted technology developed by **Rever**, a digitized continuous improvement system for global industrial companies that identifies opportunities to resolve supply chain issues and improve frontline operations using artificial intelligence and machine learning. The company's unique and differentiated proposition optimizes operations in more than 170 plants around the world, directly impacting the value chain.⁶¹

This is how startups are contributing to the development of big corporations and it explains why organizations are increasingly using these solutions. In turn, they have leveraged technological advances available today, so that they can provide better services. Because of this, Diego Bañuelos, Founder and Product Director of SalesUp!, thinks the following about adopting digital solutions in this sector:

"Before, one-off payments gave us access to software, but that did not necessarily guarantee that we would achieve the best functionality in the long term, simply because of imminent technological obsolescence. Nowadays, the SaaS industry represents a benefit to customers, because by integrating recurring payments we get services at a fraction of the cost, and updates are included. This translates into continued value for all actors."

Diego Bañuelos

Founder and Director, SalesUp!



This has favored the emergence of value-adding solutions in traditional industries. One example is the human resources sector. Innovation has occurred through process optimization in various ways, including form automation, payroll, or the implementation of new company standards, with the purpose of integrating them into one single platform .

This is the case of **Runa HR**, a company founded in 2017 by Courtney McColgan, which offers a payroll management solution for SMEs using cloud-based software and whose pricing model is based on the number of staff members.

As pointed out in the study "*El fenómeno de la migración de emprendimiento a México*" conducted by Endeavor, foreign entrepreneurs are coming to Mexico to launch their companies⁶². Courtney is an American entrepreneur who settled in Mexico in 2017 because she could see the opportunities Mexico offered: market size and high-tech penetration in the long run, in comparison to the rest of Latin America. Her goal was to offer to the human resources industry a solution to a need that had not been tackled until then. Thanks to the combination of experience and knowledge of its founder, Runa HR raised capital in the United States from prominent investors such as Susa Ventures⁶³, and was consolidated in one of the largest SaaS series in Latin America with Ribbit Capital.

Today, the company manages more than 100,000 SMEs employees in the region, adding services to the platform including payroll loans and staff insurance. Thus, thousands of employees are given more time to focus on growing their business⁶⁴. This makes evident that implementing efficient models at an essential stage of the value chain like human resources management leads to better technology adoption.

ACCESS TO CUSTOMERS

Luis Villanueva, VP Consumer and Retail at SAP México at SAP México, shared his thoughts on Information Technology (IT) startups and the importance of having the right commercial strategy, giving priority to new customers but without placing at risk the company's sustainability in the medium term.

"IT startups have always been around and have really struggled to survive. Some entrepreneurs in this sector are very professional and have big innovation projects that they have not managed to share with customers. This is because of a lack of structure and experience in their commercial strategy, to find the right balance between the acquisition of new customers and financial health."

Luis Villanueva

VP Consumer and Retail, SAP México



Accounting for 31% of the survey responses, the acquisition of new customers is determined by the maturity of Mexican companies to incorporate technology into their processes, as in some cases it is not possible for them to do it because they do not clearly understand the benefits this brings to their organization. In some cases, it may also be because there is a lack of talented people specialized in this field which prevents better integration of solutions.

2020 was a year of huge changes in the industry for companies adopting these services. As already mentioned, the main reason companies said they stopped their service was due to business closures (35%), which drove the churn rate up and made it more difficult to acquire new customers during the first few months of the health crisis.



New emerging needs caused certain inference as a result of news around a re-opening of possible prospects with business models to optimize the value chain.

Nicolás Correnti, Co-Founder of Pefai, a platform that can help financial and insurance companies digitize the sale and operation of their products and services, has seen major changes in this new stage of digitalization.:

"The market is much more open, provided that a value proposition meets consumer needs is implemented. I have been speaking with new customers, and they agree that not getting this technology before the pandemic was a mistake, because they have seen it lower operating costs and improve customers' experience."



Nicolás Correnti

Co-Founder, Pefai

STANDARDS

Standards issued by different states are designed to protect social, economic, political, and technical aspects of public well-being. Using standards can help companies fine-tune their performance as a result of promoting a culture of continuous improvement. Not only that, standards can save companies money by identifying risks and minimizing them. Companies can also become more sustainable because standards help them use energies and resources more efficiently, saving money, and improving their public image by benefiting the environment. In a global economy of rapidly emerging new technologies and markets, standards help set limits and establish frameworks, making it easier for entrepreneurs to innovate.⁶⁵

Despite the benefits of standards, 22% of startups identify them as barriers. Standards are reported to have negatively affected operations capabilities to bring appropriate control and prevent prioritizing benefit without due care in handling third-party information.

Groups like BSA and The Software Alliance,⁶⁶ are particularly concerned with the absence of a regulatory framework designed to ensure that information stored in tech platforms is safe and secure.⁶⁷

Mexico is ranked 13 in the Global Cloud Computing Scorecard 2018, an annual assessment of the legal and regulatory framework of 24 countries to determine their level of preparedness to use cloud computing technology. Between 2016 and 2018, Mexico went up two places in this list, because of changes in privacy and cybersecurity criteria.⁶⁸

74% of surveyed SaaS startups are governed primarily by the Federal Third-Party Personal Data Protection Law (*Ley Federal de Protección de Datos Personales en Posesión de los Particulares*),⁶⁹ which provides that a company must vow to offer the highest level of discretion and security, and data must be protected under contract.

Accordingly, in terms of cybersecurity, companies in this sector must protect data, particularly in light of the recent increase in incidents of cyberattacks. New laws must be prepared to tackle the cyber security challenge in Latin America in general. As the digital economy grows, it becomes more and more necessary for countries to have updated policies and take essential technical steps to safeguard privacy⁷⁰.

Gabriel Oropeza, of DocSolutions, posits that the more cloud platforms we have, the more regulations will be approved that benefit startups.

“The topic of regulation is increasingly discussed. The National Banking and Securities Commission (CNBV, for its Spanish acronym) is ready to create mechanisms to favor scale and protect both companies and their data. The more SaaS startups we have, those same platforms in the industry will help us demand compliance with rules and regulations such as new standards to support the ecosystem.”



Gabriel Oropeza

Co-Founder, DocSolutions

Like big tech companies such as SAP, Microsoft and Google, which comply not only with data protection laws applicable in Mexico, but also with international regulations such as the General Data Protection Regulation (GDPR)⁷¹ issued by the European Union, which are multinational organizations, some startups also adopt the same regulation, and that allows them to have more secure and efficient operations.

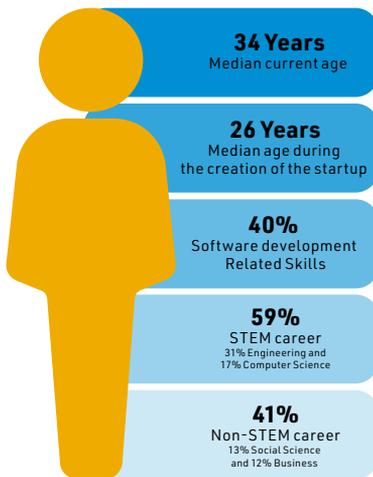
Regulations and standards are not a hindrance, because companies should have compliance and ethical behavior as a priority. As a recommendation, companies should adopt better practices irrespective of laws, rules and regulations applicable in each state or country, because startups should seek to abide by global practices to ease their integration into or expansion to other countries, while working on their public image.

ACCESS TO TALENT

Access to technical talent was identified as the next significant barrier in this sector. It accounted for 27% of the surveyed sample and it was because of the lack of qualitative skills of graduates in areas such as science, technology, engineering and mathematics (STEM) in Mexico.

In order to identify which skills are required by companies to hire employees, we analyzed the profiles of SaaS founders and their teams. We had 224 profiles to work with, and our goal was to identify their main characteristics, including age, field of study and experience leading them to enter the entrepreneurship ecosystem.

PROFILE OF SAAS ENTREPRENEURS



Source: Endeavor Intelligence Analysis, 2021.

*The information corresponds to Endeavor collected data.

**N= 224 SaaS entrepreneurs.

GENDER OF ENTREPRENEURS IN SAAS



Source: Endeavor Intelligence Analysis, 2021.

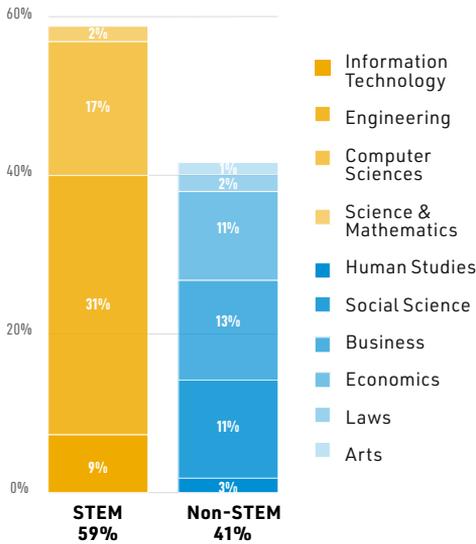
*The information corresponds to Endeavor collected data.

**N= 224 SaaS entrepreneurs.

On average, entrepreneurs in this group created their startups at 26, which is evidence of the young talent found in this industry. Interestingly, only 13% of the entrepreneurs analyzed were women, which reflects the low number of female students in STEM courses at the university level. According to a study by Laboratoria, in the tech sector only 10% of programming and 14% of IT graduates are women. This suggests that women still face significant barriers to enter this sector and benefit from expanding industries such as technology and SaaS specifically in connection with startups.

With respect to the university programs attended by the entrepreneurs in our surveyed overall, 59% completed a degree in a STEM subject, mainly in engineering, computer science, IT and mathematics. Those who studied Non-STEM subjects are grouped into areas such as social sciences, business and economy. It is worth mentioning that 12% have completed postgraduate studies; of these, 63% correspond to Non-STEM subjects and the main field of study is business and social sciences. This emphasizes the importance of studying STEM courses, as many of the skills necessary to successfully launch new businesses are those learned in STEM fields: a willingness to experiment, a reliance on logic and evidence, and a focus on creative approaches to problem-solving⁷².

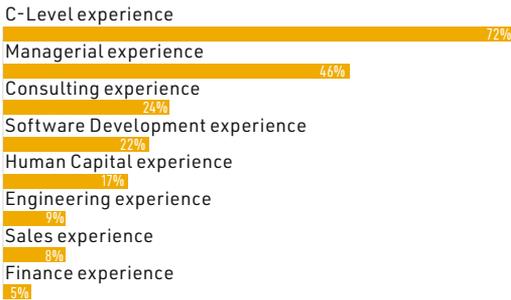
FIELDS IN HIGHER DEGREES



Source: Endeavor Intelligence Analysis, 2021.
 *The information corresponds to Endeavor collected data.
 **N= 224 SaaS entrepreneurs.

On average, SaaS entrepreneurs had three jobs, each one approximately for three years, before launching their company. An analysis of the companies they worked for revealed that 40% were in fields related to software and IT, indicating that they had a had firm knowledge of the sector before they launched their startup.

AREAS OF EXPERTISE OF SAAS ENTREPRENEURS



Source: Endeavor Intelligence Analysis, 2021.
 *The information corresponds to Endeavor collected data.
 **N= 224 SaaS startups.

As to their areas of expertise, more than 70% of surveyed entrepreneurs have held positions in the executive and management levels. Approximately 22% had experience in software development and 9% in engineering.

Regarding skills, 65% have software development, cloud computing and programming skills in languages such as Javascript, C+ and HTML, among others.

SKILLS OF SAAS ENTREPRENEURS



Source: Endeavor Intelligence Analysis, 2021.
 *The information corresponds to Endeavor collected data.
 **N= 224 SaaS entrepreneurs.

Entrepreneurs generally have some form of a background in software development, but this isn't the sole skill needed to run a startup. Holding various titles not exclusively in the fields of technology helps them develop skills such as strategic planning and project management.

Having as a reference the cases presented here, below you will find the profiles of these companies' founders, highlighting their main features:

Doc Solutions



Mission: Platform devoted to digitizing intensive processes in documents to accelerate the digital transformation of organizations and help them maximize the value of their information.

Founded: *2007*
Employees: *1600*
Sector: *Information Technology*



Co-founder and Business Development
Director at **DocSolutions**
Gabriel Oropeza

Gabriel Oropeza is an entrepreneur and completed his Management degree at ITAM. Throughout his career, he has been involved in the development of businesses and markets for international companies such as The Coca-Cola Co. and Johnson & Johnson. With 19 years of operations under its belt and over 500 loyal customers, DocSolutions has enabled companies to achieve digital transformation goals, offering document management services, products and solutions tailored to each company's needs.

EXPERIENCE:

Previous jobs:

- Market Development at The Coca-Cola Co.
- Business Development at Johnson & Johnson

Education

- MBA (University of Notre Dame)
- Management and Finance (ITAM)

Higo.io



Mission: Smart alternative for B2B payments.

Centralize the reception of invoices, automate approval processes and simplify payment processing.

Founded: *2020*
Employees: *6*
Sector: *Information Technology*
Founder: *Rodolfo Corcuera*



Founder and CEO of **Higo.io**
Rodolfo Corcuera

Rodolfo Corcuera completed his Bachelor's degree in Law at ITAM and co-founded Higo.io, his third company after launching Aliada (professional home cleaning services) and Tandem (professional supply management and office services). He wants to revolutionize the suppliers' payments and management industry with a new cloud solution.

EXPERIENCE

Previous jobs:

- M&A at White & Case LLP

Other startups

- Co-founder at Tandem
- Co-founder at Aliada

Education

- Law (ITAM)

Runa



Misión: Payroll and human resources software designed for SMEs in Latin America.

Founded: 2017
Employees: 113
Sector: *HR Tech*
Founder: *Courtney McColgan*



Founder and CEO of Runa HR
Courtney McColgan

Courtney has been an entrepreneur all her life. She is passionate about opening new pathways and creating new things, and this took her to Latin America, where she joined the team that established Cabify in the region. In that company, she identified a huge problem in payroll payments to staff. She then noticed that an entire market had similar needs that were not addressed. These concrete and real-life problems led her to create Runa HR.

EXPERIENCE**+Previous jobs::**

- Chief Marketing Officer (CMO) at Cabify
- Entrepreneur in Residence at Morgenthalerr
- Investment Analyst at Draper Fisher Jurvetson
- Investment Banking Analyst at Morgan Stanley

Other startups:

- B2B loan platform in China
- Yellowsmith (jewelry)

Education

- MBA (Stanford University Graduate School of Business)
- Economy (Berkeley)

Territorium



Mission: Territorium seeks to unleash the power of learning by focusing on the outcomes of helping millions of users understand their skills gap in pursuing a specific goal, so that they can reduce that gap and successfully achieve their goal

Founded: 2012
Employees: 84
Sector: *Education*
Founder: *Carlos Guillermo Elizondo and Gerardo Sáenz*



Founder and CTO of Territorium
Gerardo Sáenz

Gerardo is an entrepreneur who early on in his life discovered a passion for technology and education. So much so that, together with Carlos Guillermo Elizondo, he embarked on his first SaaS business focused on education when he was in high school. Today, Gerardo and Guillermo head Territorium, a leader in edtech, with a presence in more than 15 countries.

EXPERIENCE**Education**

- Electronic Engineering (ITESM)

These four cases show that, even though not all entrepreneurs have a STEM degree, their skills – specifically in the field of business – and, above all, their vision to form well-structured technology teams, enabled them to develop a tech startup.

Karla Berman, Vice President of Sales at Yalochat, a company that builds and manages customer relations through instant messaging applications using AI and integrated Application Programming Interface (API), reflected on the ways in which these entrepreneurs have helped develop the ecosystem.

“Nowadays, doors open everywhere to a person specialized in software development in Mexico, making the talent market competitive and projecting job creation in the tech area. We are living in a privileged time for Mexican entrepreneurs who are really able to generate value.”

Karla Berman

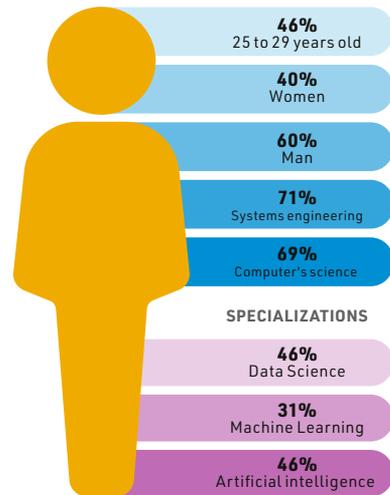
Sales Vice President, Yalochat



On the other hand, in order to pinpoint the characteristics of teams within the SaaS startups surveyed, we analyzed several aspects, such as age, field of study and experience, to provide some context around the talent required to develop and run cutting-edge technology.



PROFILE OF SAAS TEAMS



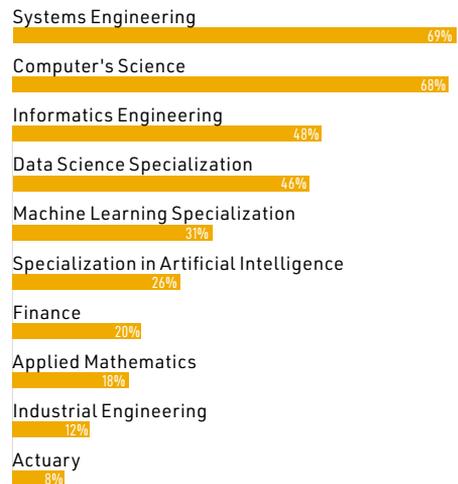
Source: Endeavor Intelligence Analysis, 2021.

*The information corresponds to Endeavor collected data.

**N= 65 SaaS entrepreneurs.

Our research suggests that there is a huge concentration of STEM subject skills. 71% studied computer systems engineering, 69% computer science, 46% specialized in data science and computing science, and 31% specialized in machine learning.

PROFILE OF THE WORK TEAM



Source: Endeavor Intelligence Analysis, 2021.

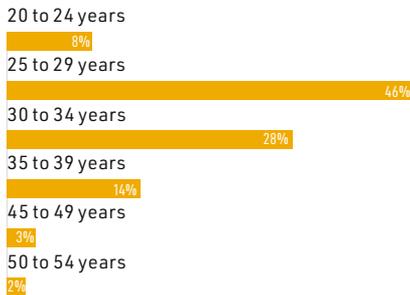
*The information corresponds to Endeavor collected data.

**N= 65 SaaS entrepreneurs.

Moreover, we found that most of the team members in these startups are between 25 and 29 years old, that is, these specialized teams are relatively young.

Although there is a small proportion of businesswomen in this sector, inclusion is a priority for their different teams. All surveyed startups said that, on average, 40% of their teams are women, which shows that startups are doing their part to close the gender gap in tech.

AVERAGE AGE OF THE FOUNDING TEAM



Source: Endeavor Intelligence Analysis, 2021.

*The information corresponds to Endeavor collected data.

**N= 65 SaaS entrepreneurs.

This finding gives a perspective of companies in this sector who are increasingly hiring younger people, offering more opportunities and jobs to emerging talent.

Despite existing opportunities, respondents pointed out that universities should participate more objectively. Arturo Jain, co-founder of NUBIX, a company that stores and remotely interprets specialization studies that connect specialists with clinics, hospitals, laboratories and public and private centers, insurers and patients using cloud-based software, thinks higher education still lacks the necessary competencies to prepare students for their entry into a tech-focused job market.

“Finding talent with the necessary skills to launch a professional career in technical areas has been problematic. Students do not have the necessary skills because universities teach tools that are no longer used in the market. This translates into more time and funds that companies have to invest in training. The industry has to work closely with universities so that the workforce is truly skillful.”



Arturo Jain

Co-Founder, NUBIX

To tackle this problem of training, some models integrate tools for students to receive academic training that can be applied to their career.

Territorium Life is a next-generation platform for schools, universities and corporations, which promotes innovative learning methods allowing users to identify their personal competencies. The company's vision is to transform the life of anyone willing to learn.

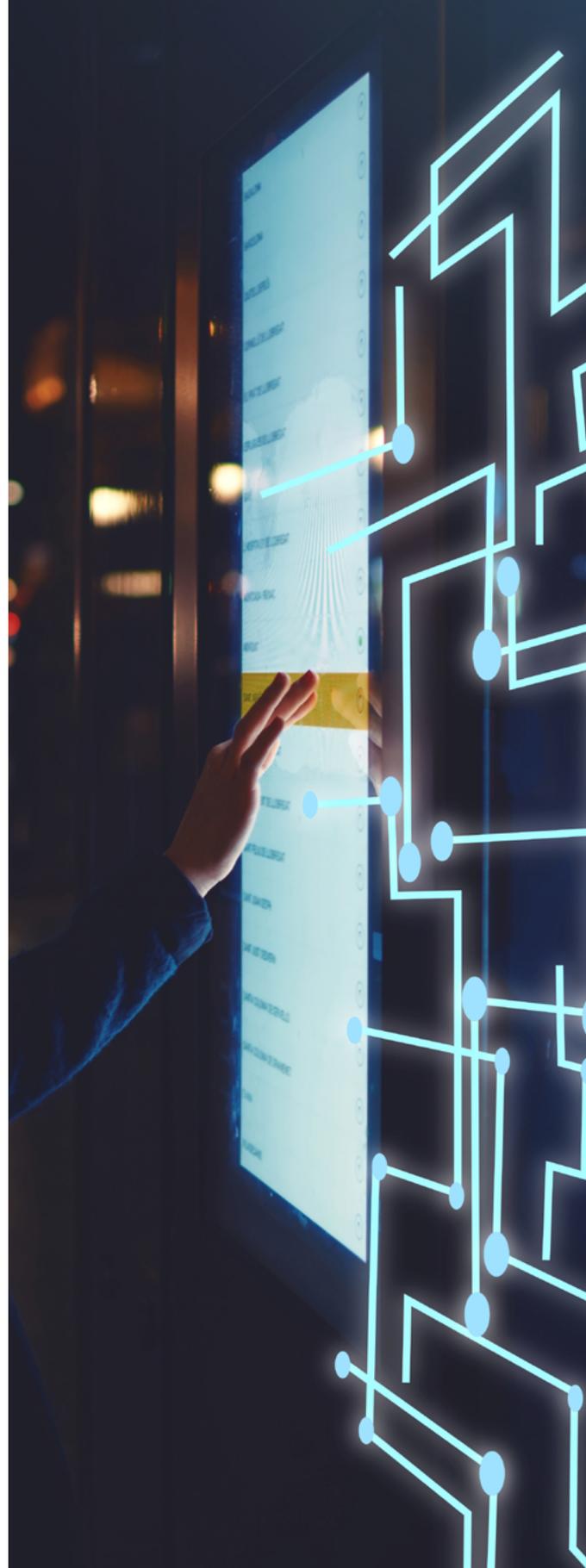
It was founded by Carlos Elizondo, who studied computer science engineering, and Gerardo Sáenz, who completed a degree in Electrical and Electronics Engineering at Instituto Tecnológico de Estudios Superiores de Monterrey (ITESM). Together, they created their first software prototype in their third year at university in 2012. This prototype was a B2B business model for partners where pricing was adjusted depending on the number of users to a monthly subscription.

In 2013 they signed their first client, ITESM, and later developed a new product for companies. Building on that, they later closed their first corporate client Oxxo, a major convenience store chain.

In 2014 they crossed the 100,000-user threshold, and in 2016 secured a key deal with Dell LatAm, which significantly increased Territorium's sales. That same year, they managed to penetrate the government market with their first customer as a result of a public tender: Colegio Nacional de Educación Profesional Técnica (CONALEP), a high school level institution with 199 business centers, expressing their commitment to promoting entrepreneurship in Mexico.⁷³

In 2018, Microsoft came onboard, choosing to train employees using a SaaS platform and implement services for Brazil and the Caribbean. This partnership confirms the value big corporations place in adopting solutions developed by startups to improve their value chain and drive forward the ecosystem.

In 2019 they launched operations at the National Learning Service (*Servicio Nacional de Aprendizaje*, SENA), a body that the government, entrepreneurs and workers run in partnership, to drive progress in Colombia by increasing productivity aligned with social inclusion and a "more jobs and less poverty" policy that benefits more than 4 million Colombian citizens each year.⁷⁴



THE ROLE THAT SUPPORT ORGANIZATIONS PLAY IN BOOSTING THE SAAS ECOSYSTEM



Various programs to support entrepreneurship have been developed in Mexico and have renowned in their own areas of opportunity within the sector. Universities, investment vehicles and the Mexican government alike are constantly making efforts so that this ecosystem can be better prepared to face its particular obstacles.

UNIVERSITIES

Universities have been increasingly focusing on developing an entrepreneurial ecosystem, supporting research as well as the development and acceleration of projects submitted by students and graduates, through various entrepreneurship programs.

Gerardo Sáenz, CTO and Co-Founder of Territorium Life, talked about the change that is necessary in education, noting that students can no longer be thinking about pursuing a degree only, but should focus on gaining competencies that can positively impact people's lives.

“Our main motivation is thinking about how we can help the next billion people develop the competencies that really add value, and orient the purpose of each one of them.”



Gerardo Sáenz
CTO and Co-Founder, *Territorium Life*

Educational institutions, both public and private, have faced the challenge of improving and bringing their curricula up to date to respond to current work demands in the digital economy. To better understand this challenge and the initiatives to tackle it, we analyzed the cases of the top universities in Mexico.⁷⁵

INSTITUTO PANAMERICANO DE ALTA DIRECCIÓN (IPADE)

IPADE is the business postgraduate school of Universidad Panamericana, with campuses in Mexico City, Monterrey and Guadalajara. This university has various research centers committed to supporting students to develop their projects⁷⁶:

- **Women in High Management Research Center (CIMAD, for its Spanish acronym).** For over a decade, this center has fought for the inclusion and representation of female executives and entrepreneurs. It analyzes the main challenges faced by current organizations to promote and ensure the long-lasting presence of female talent in companies.
- **Innovation and Learning Direction (DIA, for its Spanish acronym).** This program elevates a high impact position in an environment of emerging trends and promotes entrepreneurship through innovation.

These initiatives promote the development of managerial skills according to the challenges posed by each situation. In addition, these programs foster a problem-solving spirit using innovative and efficient solutions.

INSTITUTO POLITÉCNICO NACIONAL (IPN, FOR ITS SPANISH ACRONYM)

IPN is a public institution offering higher education, postgraduate studies and non-degree research courses and has a number of campuses across seven states in Mexico.

IPN offers the institutional program Poli Emprende, aimed at enhancing the professional profile of students, faculty and alumni, promoting an entrepreneurial culture that may lead them to put forward innovative and competitive business projects to drive economic development.⁷⁷

With the purpose of consolidating the creation of highly competitive spaces to foster innovative creativity and share ideas, a philosophy designated Design Thinking was implemented, seeking to promote high impact entrepreneurship in upper secondary and higher education, and 55 faculty members were trained to implement it.⁷⁸

This new strategy will be a vehicle of support for startups, micro and SMEs, with the expectation that these companies will spur further innovation and competitiveness within education environments.⁷⁹

INSTITUTO TECNOLÓGICO DE ESTUDIOS SUPERIORES MONTERREY (ITESM, FOR ITS SPANISH ACRONYM)

ITESM, better known as Tecnológico de Monterrey, is a private university with multiple campuses across the country, ranked among the top universities in the world for entrepreneurship by the *Princeton Review*.⁸⁰

This institution has in place three entrepreneurship programs for different stages, designed to provide funding so that initiatives can go ahead⁸¹:

Fondo para mipymes (Fund for micro and

- **SMEs).** Designed to fund programs and projects in connection with the creation, development, consolidation, viability, productivity, competitiveness and sustainability of micro and SMEs.

Seed Capital. Designed to help startups become

- more competitive.

Investors' Club. Formed by prominent

- entrepreneurs from all across Mexico in every campus of Tecnológico de Monterrey willing to invest funds in promising projects.

Since its creation, ITESM has seen 4,270 graduate companies delivered by its programs as well as 11 innovation and entrepreneurship parks, and it currently has 1,160 companies in the entrepreneurship ecosystem.⁸²

In addition to these programs, the university presented a proposition for a new education model called "challenge-based learning", designed to tackle different problems arising from various multi-disciplinary areas. This gives students an opportunity to face obstacles, both in the public and the private sector, to practice all kinds of competencies and team work, and to experience market demands, find solutions and increase the synergy of teams.⁸³

These tools build on the learning and innovation efforts of the institution through resources, mentorship and competencies to train students and graduates.

UNIVERSIDAD ANÁHUAC

Universidad Anáhuac is a private institution based in Mexico City and with nine campuses across the country. This institution has successfully supported students to develop an idea and turn it into a viable project through the following programs⁸⁴

- **Emprende Anáhuac.** This is an annual event in which groups of students enrolled in optional business and innovation, and research and development courses, come up with a project; there is even a business incubator to advance the initiatives.
- **Idearse Anáhuac.** A business accelerator offering advice, support in fund management and technology development. To date, this program has supported more than 150 businesses.
- **Innova Anáhuac.** A high-impact incubator contributing to the development of innovation and entrepreneurship projects with the purpose of growing tech businesses in telecommunications, microelectronics and biotechnology.
- **TecniA Mayab.** A tech park responsible for incubating more than 300 companies that have created around 800 jobs.

As a result of these programs, an impressive 30% of Red de Universidades Anáhuac graduates have established their own company.⁸⁵

UNIVERSIDAD NACIONAL AUTÓNOMA DE MÉXICO

UNAM is known as the top Mexican university and one of the most respected institutions in Latin America. This university stands out for its research work: approximately 5,000 faculty members have joined the National System of Researchers, responsible for at least 25% of the scientific papers published in 2020.

UNAM co-ordinates a network of 14 incubators across different schools, focused on entrepreneurship promotion technology in multi-disciplinary areas, with the purpose of supporting tech initiatives based on traditional products, intermediate and high technology.

The head of the business incubator Centro Nacional de Apoyo de la Pequeña y Mediana Empresa (CENAPYME) at the School of Accounting and Management, UNAM, Christian González, estimates that 80% of applicants display some degree of technological innovation and their main struggle is bringing research to successful implementation.

“Eight in ten entrepreneurs incorporate innovation at some technological level in computing disciplines. Intake in this percentage is 30% oriented to traditional products, 40% to intermediate technology, and the remaining 30% to high technology, where the hardest challenge is to implement research to create a business.”



Christian González

Head of business incubator *CENAPYME* at the School of Accounting and Management, *UNAM*

To generate disruption, during the 2019-2020 school year the incubator network came up with one software-specific initiative in which 430 students from 23 degrees have proposed solutions with these characteristics to respond to the challenges posed by the pandemic.

Although the university has initiatives, subjects related to innovation and entrepreneurship, as well as business classes and networking with corporates, Christian González points out that they keep working to implement activities favoring synergies between degrees, thus creating a multi-disciplinary space with the various competencies required by startups.

52% of respondents said that the lack of talented people with technical skills and senior management was an obstacle to growth. However, all initiatives implemented by universities now emphasize their strategies in helping university students gain skills in different areas.

In this respect, Agustín Paulín, Director of Faculty Development at Tecnológico de Monterrey, CEO of Gemini Mexico and Endeavor mentor, is convinced that Mexico's bet should be for talent development to grow this ecosystem:

“We must attract, develop and keep talent to face future challenges successfully. Talent transforms mistakes into learning, failures into success, and creates new opportunities to grow. Innovating means getting out of your comfort zone and challenging the status quo, experimenting, getting it wrong, learning, persevering and improving. This is why we should shake off the fear of making mistakes and learn to create opportunities out of uncertainty, betting for talent. Talent generates more talent.”

Agustín Paulín

Director of Faculty Development,
Tecnológico de Monterrey



FUNDS, ACCELERATORS AND SUPPORT ORGANIZATIONS

Investment funds, accelerators and support organizations play a very important role in startups' development, scalability and consolidation.⁸⁶

In view of the needs of the ecosystem, the Mexican Association of Private Equity (AMEXCAP, for its Spanish acronym), a not-for-profit organization created to enhance the growth of the private equity and venture capital industry in Mexico, works to strengthen this industry and promote collective efforts to benefit every member of the community. It represents more than 120 firms that are actively investing in Mexico⁸⁷.

Even with these positive trends, the reality is that this industry has not yet reached its maturity compared to that of United States or Israel. As pointed out before, the funding and support that organizations provide to the SaaS sector still isn't at the level of other industries.

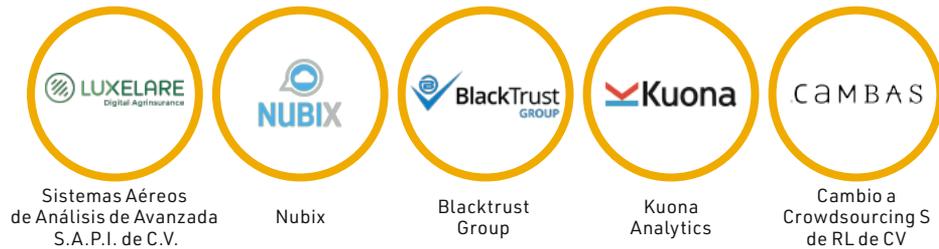
In his article *“Los secretos de Israel para convertirse en otro Silicon Valley”*, Agustín Paulín highlights that there are more than 500 accelerators and investment funds in Israel⁸⁸. For reference purposes, it should be noted that Israel is a country with 9 million inhabitants and a territory of similar size to the state of Baja California in Mexico. This context reflects a contrast between the investment instruments available in a developed country and those existing in other countries in which, despite the private equity industry reporting record figures year after year, there is still a long way to go. Certainly, the realities of those countries are very different, but understanding the similarities in terms of adaptation in the face of a crisis, in this case the pandemic, is crucial to generate true change in the long term.

On the other hand, support organizations should play a more relevant role in the industry, providing different advantages, such as access to talent and tailored mentorship, among others.

In 2018, Endeavor, working in collaboration with SAP, launched the program SaaS Selection, which set out to find the next promising startups in this vertical that were still in an early stage, with the purpose of helping them scale and impact the industry.

In response to that first call, 35 applications from companies in different sectors were received. The year of creation of these applicants ranged between 2007 and 2019, and most (77%) had been founded between 2014 and 2018. As part of the selection process, aspects such as innovation, scalability, impact, traction and leadership were assessed. Following this analysis, 15 startups were selected, and then five were declared winners, receiving mentorship and access to specialized workshops.

WINNERS OF THE SAAS SELECTION PROGRAM



Source: Endeavor Open Innovation, 2019.

These five startups have received a diagnosis from the Endeavor team identifying their main challenges and areas of opportunity. To overcome these barriers, they were paired up with a mentor from SAP to work together on those challenges in mentorship sessions for six months.

In addition to this support, the program included workshops on sales strategies and leadership. To conclude the program, a progress report was submitted, together with the goals achieved as a result of the program, supporting their development into maturity.

Just like Endeavor, which has supported High Impact Entrepreneurs since its creation, there are other instruments in Mexico that provide support to this ecosystem. For example, Startup GDL, a not-for-profit organization with Silicon Valley DNA devoted to generating startup-focused solutions by acquiring tech talent in Latin America, providing tailored mentorship and turning success stories to boost STEM courses at high levels of tech innovation.⁸⁹

Carlos Marina, Co-Founder of Worky, an integral cloud solution for SMEs to manage human capital quickly, underscores the perception of private equity and support organizations in Mexico, as well as future expectations and current needs:

“Success stories of software companies in Mexico are few and far between, and with little investment from venture capital funds (particularly at early stages). Once a product is validated with a clear product-market-fit and more growth predictability, it is easier to access funding. I think that funds will work more with these startups; it is evident that Mexican companies need modernizing and internal innovation. Moreover, the need to automate processes and be more profitable and efficient is increasingly becoming a business priority, so I am sure this industry will experience exponential growth in the next few years.”



Carlos Marina
Co-Founder, Worky

GOVERNMENT

Going back to the case of Israel, that country transformed its agricultural potential in the 60s from semi-arid landscapes through irrigation innovation to fertile land. In the 90s, with a similar focus and a bet for talent and entrepreneurship, Israel developed one of the most important innovation ecosystems of the world.⁹⁰

“Setting up a business is not a matter of re-engineering, processes or logistics. The challenge is more similar to an agricultural problem. Just like a seed, an enterprise flourishes naturally in the right conditions. Wherever there is a problem and a market, there is an opportunity for entrepreneurs, but for the enterprise to flourish, the right conditions for its development are necessary. According to this, the government did not create companies; its focus was on creating the necessary conditions to favor entrepreneurship, to build an ecosystem - a fertile land - where startups would be able to flourish and thrive naturally.”⁹¹

Agustín Paulín

Director of Faculty Development,
Tecnológico de Monterrey



The main task of the government is to introduce legislation that ensures stability, and proper allocation of duties and resources, so that services can be innovated and risks can be taken.⁹²

Mexico once had a government body tasked with implementing, fulfilling and coordinating national policies for the inclusive support of startups and micro and SMEs, called Instituto Nacional del Emprendedor (INADEM)-⁹³

Between 2013 and 2018, that institute funded 108,000 productive projects, 500,000 businesses, and 181 high-impact projects, supporting a total of 4.4 million micro and SMEs and entrepreneurs, which created approximately 4 million new jobs.⁹⁴

INADEM worked to get startups more present in the policy agenda. This instrument worked through a startup support network with goals to provide advice on legal and regulation issues favoring the development of micro and SMEs, training in management and managerial skills, access to funding and private equity, and the development of productive, technological and innovation capacities⁹⁵.

In 2019, the Federal Gazette (DOF, for its Spanish acronym) published a reform to the law to promote the competitiveness of micro, small and medium-sized enterprises (Ley para el desarrollo de la competitividad de la micro, pequeña y mediana empresa), which was approved in 2002, providing that the duties fulfilled by INADEM would work in tandem with the Ministry of Economy⁹⁶. This decision was made by the lower house in April 2019, saying that support would go directly to startups, micro and SMEs⁹⁷.

While it is true that the disappearance of INADEM left a void in business development policy, both with respect to the startup community and to micro and SMEs, this government-led venture opened the door to private equity funds leading them to become huge supporters of startups.⁹⁸

The study *El fenómeno de la migración de emprendimiento a México*, conducted by Endeavor, describes in detail the development of catalyst programs to support startups. These programs may be able to fill the void left in this ecosystem after INADEM was closed down⁹⁹.

Some innovation cluster programs like in SaaS solutions that can be replicated in Mexico include:

- The Singapore Startup program: This fund invests US\$10 million on a matching contribution basis with seed funds investing in tech companies¹⁰⁰.
- Toronto’s Scientific Research and Experimental Development (SR&ED) program, which uses tax incentives as a boost for research and development (R&D) investment in Canada. This program annually gives more than US\$3 billion in tax incentives to over 20,000 beneficiaries¹⁰¹.

The disappearance of this institute did not translate into the elimination of support for entrepreneurship. As mentioned before, some solutions can be replicated to tackle this problem. In 2019, for example, 50 financial institutions which are members of the Mexican Banking Association invested \$500 billion pesos in different sectors nationwide. Of those, \$112.5 billion pesos supported micro and SMEs through Nacional Financiera (NAFIN) and the National Foreign Trade Bank (Bancomext, for its Spanish acronym)¹⁰².

In a more recent context, after the health crisis hit, the Confederation of Employers in Mexico (Coparmex, for its Spanish acronym) introduced a platform to fund local micro and SMEs so that they could face the health crisis and to protect businesses in the long term. Some of the steps taken include loans ranging from \$100,000 to \$5 million pesos to support entrepreneurs¹⁰³.

Undoubtedly, this is an opportunity to rethink the efforts to be made in terms of policy, even creating instruments specialized in different technologies and promoting innovation with resources and support such as SaaS solutions.

This case leads to reflection: Mexico needs new tax incentives, protection schemes, uncomplicated regulation to set up a company, active participation of a specialized instrument and, **above all, continuity in all processes**. The government is a key player if we

want to boost Mexico's growth. Carlos Castillo, Co-Founder and COO of Lytica, a platform that relies on image-recognition algorithms to automate on-site data collection and machine learning to analyze data, made the following remark:

A fundamental factor, if we are to develop and grow this ecosystem, is to have capital funds and programs devised by support organizations and even the government. Any program designed to incentivize the ecosystem is welcome. Then, startups will be responsible for finding the right initiative to navigate and mediate any circumstances that may arise."



Carlos Castillo

Co-Founder and COO, Lytica



SUPPORT PROGRAMS FOR STARTUPS BY LEADING TECH COMPANIES



Entrepreneurs believe that implementing a SaaS solution has more value and is becoming increasingly profitable. Tech companies and big corporations are finalizing strategic partnerships with entrepreneurs to maximize the options they are offering to the market.

That is the case of SAP, Microsoft and IBM, which have helped startups grow and position themselves as formidable players in a growing market. In turn, startups help them to implement new technologies because they are easily adaptable and, together, they have built a dynamic of mutual support so that both parties can make the most of the relationship and prompt thousands of companies to jump on the digital bandwagon.

SAP.iO

SAP, a leading corporate software company, has built a strong network with the purpose of connecting and supporting startups worldwide through SAP.iO, contributing to their growth through acceleration programs and risk studies.¹⁰⁴

SAP.iO fund was created for software-focused innovative startups with huge potential, with the aim of investing in them now and, in the future, getting back significant value from them for SAP and its customers. SAP.iO offers: support to build SAP solution integrations, collaboration with SAP customers in more than 25 industries, and access to the main events of SAP customers, among other things.¹⁰⁵

SAP.iO DATOS



Source: Endeavor Intelligence, 2021.

*Information from SAP.iO in Impact Insight Report 2020. Last visit: 01/03/2021.

To access the various support programs offered by big corporations, Ernesto Morales, Business Development Director at SAP México, talked at the event "Diálogos: SaaS como una herramienta para el crecimiento de las empresas" about SAP México and their goals with SAP.iO:

"We are looking for high impact and scalable startups. We do this through SAP.iO Foundries, a fund with an initial investment of US\$35 million to invest in software companies able to help expand SAP's ecosystem. This fund is the perfect companion: it not only provides funding, but also contacts with consulting firms, experts in technology, potential customers, and specialized mentorship."

Ernesto Morales

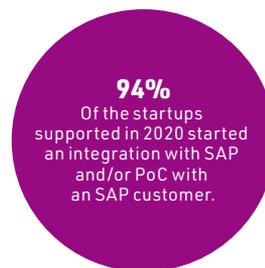
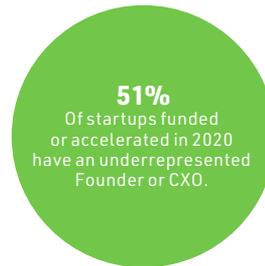
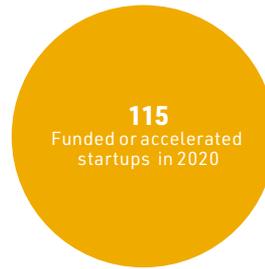
Business Development Director,
SAP México



SAP.iO supports and accelerates startup incubation. The goal for this fund is to invest in software startups to grow the SAP ecosystem, and it launched a global program called SAP.iO Foundry to incubate initiatives for early-stage companies with a focus on software application development, including those using cutting-edge technologies such as machine learning and blockchain.

During 2020, SAP.iO adopted virtual work formats in order to offer users more connectivity and assistance. As a result, 111 new companies joined the program (36% more than in 2019.)¹⁰⁶

SAP.iO INFORMATION 2020



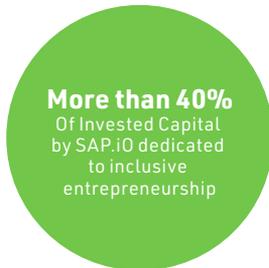
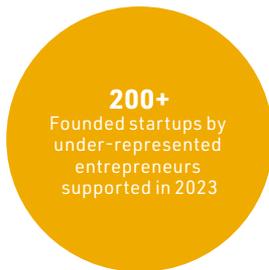
Source: Endeavor Intelligence Analysis, 2021.

*The information corresponds to Endeavor collected data.

**N= 224 SaaS entrepreneurs.

SAP.iO now is an important pillar and provides guidance for companies, garnering a substantial reputation that rests on its achievements advancing this sector. As recognition for its work, it received the Corporate Startup Accelerator award. Fully committed to backing the entrepreneurship ecosystem, this fund has set itself three goals ahead, seeking to build an inclusive tech ecosystem by 2023.

SAP.iO PERSPECTIVES 2023



Source: Endeavor Intelligence Analysis, 2021.

*The information corresponds to Endeavor collected data.

**N= 65 SaaS startups.

With these key developments in mind, Enrique Upton, COO of SAP México, talked about the importance of the entrepreneurship ecosystem to big tech.

"Entrepreneurs can detect problems in big corporations. As they are in innovation mode, synergies are there. On the one hand, startups secure a strategic partnership to enhance several aspects and, on the other hand, the big corporation identifies and can work on its particular areas of opportunity in infrastructure and operation."



Enrique Upton

COO, SAP México

SAP.iO has mainly supported startups from countries as the United States, Germany, Japan, among others, and aims to promote greater participation of entrepreneurs from Latin America.

Cuéntame is a B2B solution focused on providing companies with tools to support the mental health and well-being of its staff and their families. Regina Athié, together with other co-founders, helps organizations prevent psychological risks and promote a culture of well-being through one single application combining a well-being assessment, well-being self-service toolkits in different formats and covering topics from burnout prevention to personal development promotion, and a network of certified psychologists so that staff can work on being the best version of themselves. Currently, they are developing an algorithm to offer each individual the best tools based on their staff member profile.

Regina and the other co-founders heard about the SAP.iO initiative through a Tecnológico de Monterrey program, and later on they became the first Latin American startup to be supported by this fund.

The program runs approximately for four months during which applicants can integrate with SAP technology, so that they have an opportunity to access their customers. In the particular case of Cuéntame, integration with SAP SuccessFactors means that any company paying for this solution will be able to access services provided by Cuéntame, producing real-time metrics from one single platform.

According to Regina, the key to access startup support programs is resilience. She shared her experience:

“When submitting applications to accelerator programs, resilience is the key. There is a wide variety on offer, and perhaps not all of them will accept you. It is important to be well-informed all the time and understand the profile each program is looking for, prepare your application and surround yourself with mentors to help improve every aspect of your business model. Having partners like SAP is fundamental. Through this program, we had a chance to reach customers beyond Mexican borders.”

Regina Athié

Founder and CEO, *Cuéntame*



In addition to integration with SAP technologies, the program includes key sessions with industry experts to identify areas of opportunity to grow their business and, at the same time, build a community of entrepreneurs that share experiences and support each other to explode the ecosystem.

MICROSOFT

Microsoft knows that the most successful organizations are those that go beyond implementing existing technology. Those that develop their own tools and use data and other technologies, such as artificial intelligence, are better at facing day-to-day obstacles.¹⁰⁷ Microsoft seeks to have an impact in the startup sector by making available various startup programs: BizSpark, Imagine and Azure, among others.

Microsoft Azure is a platform with more than 200 products and services on the cloud designed to help bring to life new solutions that may tackle current problems and build the future. Microsoft Azure creates, runs and manages applications in several clouds, locally and in the perimeter, with tools and preference frameworks. Gerardo Rojas, program manager of

Microsoft Azure for SMEs, explains why Microsoft cares about and is helping startups:

“Part of our commitment with the startup community is to support their success with the help of technology, particularly through cloud solutions such as Azure, which gives them flexibility, scalability and a way to be profitable. These three aspects are key for any person willing to set up a business involving a SaaS solution on the cloud, to form a partnership with key tech players such as Microsoft.”



Gerardo Rojas

Program Manager, Microsoft Azure for SMEs

The partnership between Microsoft and Territorium Life is an example of how big techs can incorporate startup solutions into their value chain. According to Gerardo Saénz, co-founder of Territorium, this brings advantages both to the startup community and to the big corporations. With respect to the corporations, adopting these solutions allows them to be faster and incorporate technology quickly, and without any investment in additional infrastructure. As to the startups, the benefit is that they gain access to a bigger network of customers and can constantly improve their service, particularly with security, data privacy, and accessibility standards, ensuring customers have continued access to their service.

GOOGLE

Google for Startups Accelerator is a program focused on startups, at all stages of ideation or expansion. This project runs over two to three months, during which businesses receive help to grow globally, improve their products, and create connections through their global partner network, with the purpose of building entrepreneurial ecosystems and pushing companies towards success.

In this document we have analyzed changes implemented in response to the pandemic, among them how organizations work, and Google was no exception. In the case of Latin America, their target sector is relatively mature companies, with teams ranging from 15-20 people and up to 150-250 people. The program focuses on a closer connection with good practices in all verticals. Approximately 30% of the program is given support through workshops, better known as Labs, around digital marketing, user experience, machine learning, artificial intelligence and other state-of-the-art technologies. The other 70% are mentoring sessions. The goal is to improve practices and bring the teams' knowledge to the same level, and along with mentoring, have a tailored approach to analyze and respond to specific questions.

Francisco Solsona, a member of the Google Developers team, shared that in 2020 they ran 16 accelerator programs worldwide, each with a different focus, depending on the needs of each region:

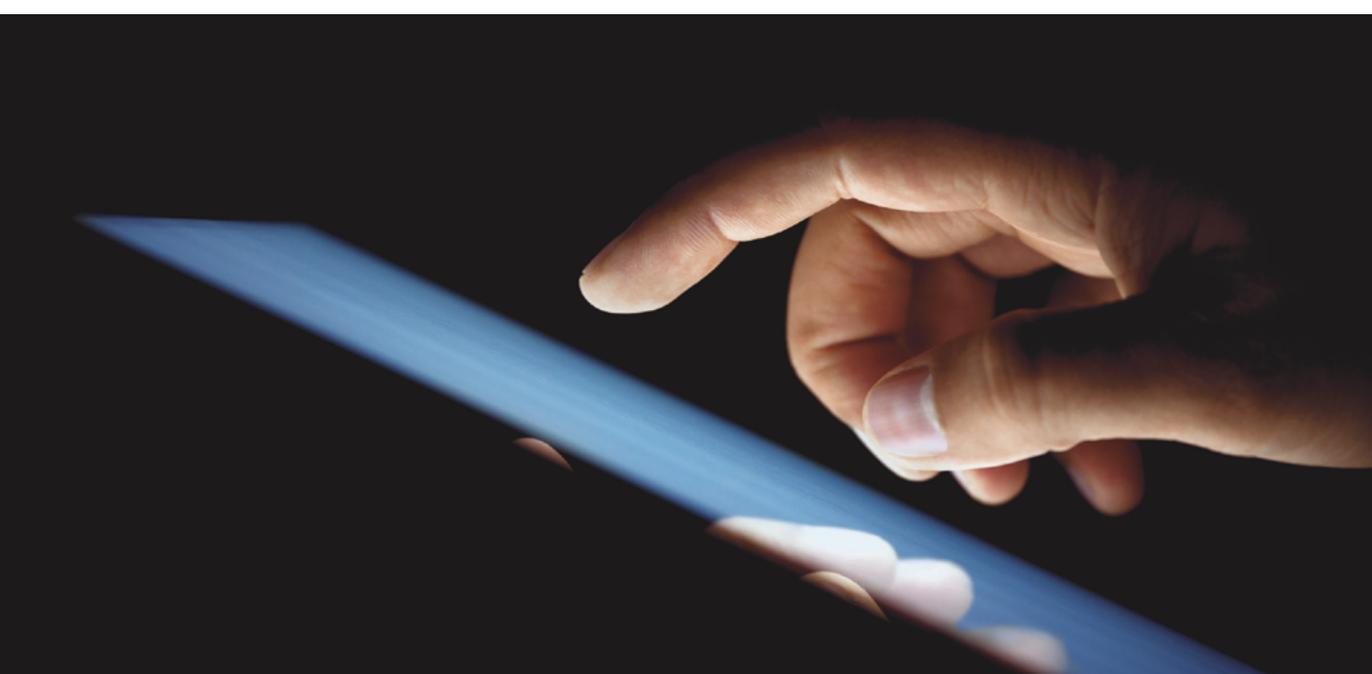
“Google for startups is an accelerator program focused on region-specific needs. In Spanish-speaking Latin America, the focus has been on technology, machine learning and culture. But this latter is one of the huge mistakes we see in many startups, because they fail to use it as an asset to attract or maintain talent. Collaborative work is one of Google's strengths, so we focus on building leading and high-performance teams.”



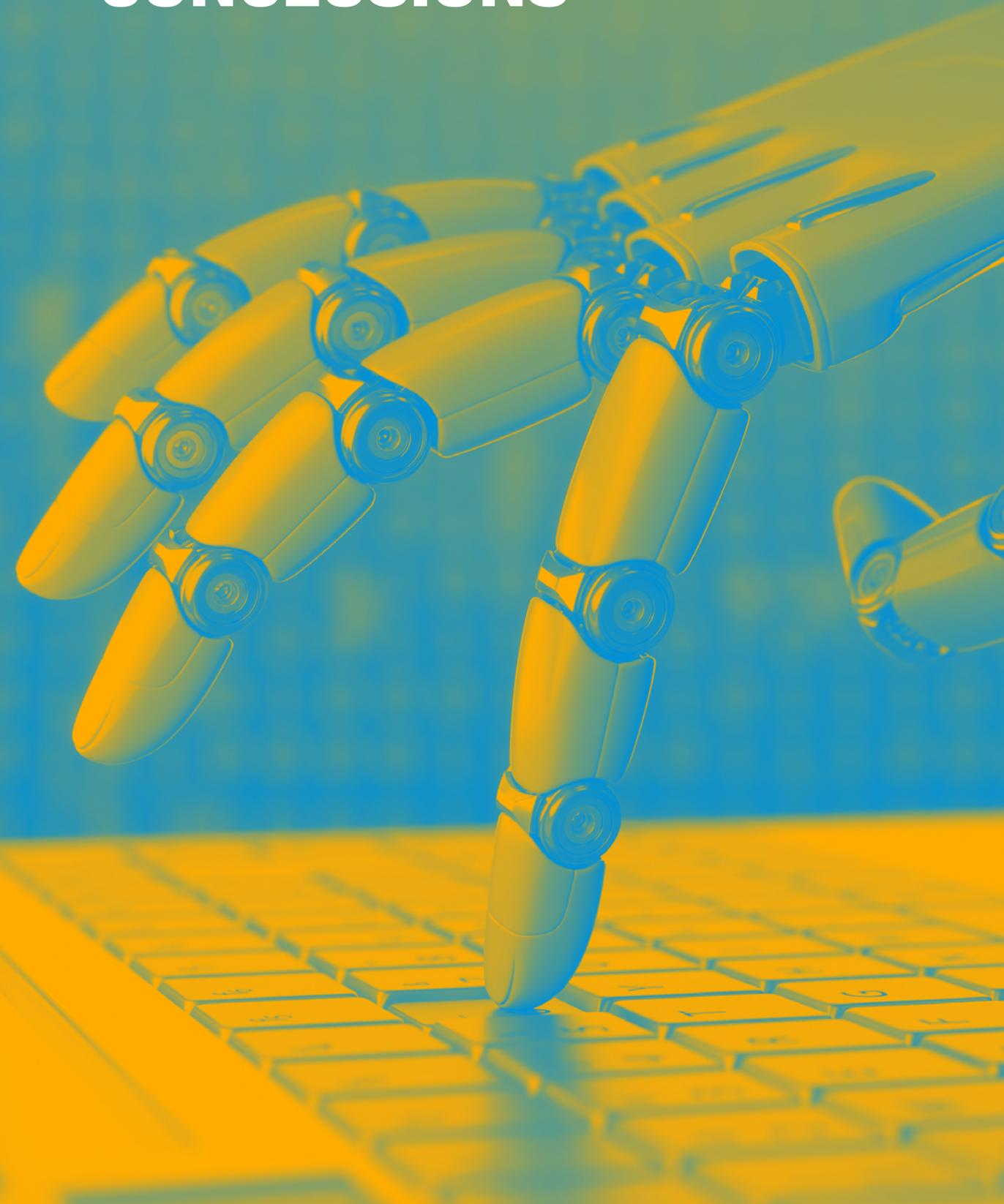
Francisco Solsona

Member of Google Developers,
Google Mexico

There is no doubt that leading tech corporations are key players for startups in any industry, because they can give a big boost and be a huge help setting up. Startup programs are a differentiator in this sector. The involvement of legacy companies, such as SAP, Microsoft and Google, not only drives startups forward, but also nurtures the ecosystem, creating more opportunities and strategic partnerships, which enable the integration of complementary technologies.



CONCLUSIONS



As mentioned at the beginning of this research, we are currently living in one of the largest digitization periods in history. This means that having tools to ease internal processes and optimize execution times, is now essential. This is the value proposition of SaaS solutions. Throughout this document, we have tried to reflect and highlight how the startup community has evolved in Mexico, underscoring the opportunity that this represents for organizations, as well as the obstacles that are preventing its growth.

To ensure that all stakeholders (entrepreneurs, corporations, capital funds, incubators, accelerators, government and universities) can do their part in growing an interconnected ecosystem, this document invites reflection, seeks to generate debate around the development of this startup community and suggests a few actions to contribute to responsible growth:

CONNECT TALENT SUPPLY WITH DEMAND, AND ANALYZE THE SPEED AT WHICH TALENT IS DEVELOPED AND CAN REACH THE MARKET.

An issue highlighted in this document was the lack of access to specialized technical talent, which becomes an obstacle for startups to scale in the medium and long term. This is by no means a challenge exclusive to the SaaS sector or even to Mexico; the talent gap is a reality throughout Latin America and has been studied by Endeavor within multiple industries (artificial intelligence and cybersecurity, among others). In the SaaS startup community, a constant demand for STEM profiles (59%) was identified by entrepreneurs, both in their teams and amongst themselves, noting that broad technical knowledge is not enough. These profiles fine-tune their education completing business-, finance-, and business leadership-related postgraduate studies, resulting in well-rounded profiles that are hard to retain and replace.

Mexico is a talent seeder, we have a vast student community that can help develop this sector, not by initially becoming entrepreneurs, but by joining the talent pool demanded by the startup community, gaining experience in the sector. This study found, after analyzing more than 200 founder profiles, that the median age to launch a company is only 26 years, and the most successful entrepreneurs usually started at 31, once they have gained experience in the sector and identified a business problem with a potential market. This can be a reflection of the lack of talent and the difficulties to scale a company, because talent gets lost among the huge supply in this sector; from the analyzed sample of 257 companies, only 19% have managed to scale creating 50 or more jobs, and are responsible

for 70% of the total number of jobs. Thus, most startups have not been able to scale. Prior experience is a relevant factor to increase economic productivity in the sector and Endeavor has analyzed this in many communities, finding that it is strongly correlated with scaling a company, and particularly in this sector, with the development of a product adapted to a problem or need of the local market and the ability to cross geographic borders.

In addition, a rising demand of technical and management talent driven by big success stories within the ecosystem in sectors such as eCommerce and fintech, as well as big-techs, represent one of the biggest obstacles SaaS startups face in Mexico, and this is why some entrepreneurs have decided to generate their own talent through training or bootcamps, allowing them to produce professionals with the necessary skills to fill this void, at least in the short term.

All entrepreneurs taking part in this study agreed that universities play an important role in developing talent and invigorating the ecosystem with sought-out skills. It is equally crucial that universities find a way to generate this talent at the same pace that the tech sector grows in Mexico, since expansion is only sustainable if sufficient talent supports it. Both public and private universities are aware of this situation and, in response, are starting to develop various initiatives, with a priority focus not only on reinforcing plans of study, but also on the links between companies and startup programs to guide university curriculum in accordance with market demands. An added and huge challenge is that current needs will not be the same in three to five years, so the speed at which talent is nurtured and built is a vital factor in this equation.

STARTUP SUPPORT PROGRAMS AND INITIATIVES FOSTERING SYNERGIES BETWEEN THE STARTUP COMMUNITY AND BIG CORPORATIONS .

Through interviews, Endeavor assessed the perspectives of large corporations to understand their role, initiatives and links to the entrepreneurial ecosystem in the SaaS community. A highlight is

the widespread interest among corporations and entrepreneurs to create partnerships able to push innovation so that, together, they can bring solutions to the market by taking advantage of the strengths and weaknesses of each side. Endeavor has found in previous studies that whenever entrepreneurs and corporations work together, productivity can increase up to 2x, helping both entrepreneurs and corporations scale and adopt better practices and technologies. Therefore, promoting the alignment of interests of all the players in this ecosystem is an important task for the future development of this sector, and big corporations should play a fundamental role in transferring knowledge, experience and resources to the next generation of entrepreneurs.

Our research showed that 36% of entrepreneurs considered the insufficient number of initiatives and support programs a 'major' to 'severe' obstacle, ranked third behind 'access to funding and the economic situation' as a result of the pandemic. As they are relatively young and at an early stage of development, support organizations (incubators and accelerators), big corporations and even the government play a crucial role in promoting the development of entrepreneurs in different dimensions. Accordingly, from the standpoint of entrepreneurs, this is one of the tasks to complete in the sector, because current support is not enough or not adequately communicated.

By aligning all key players in this ecosystem, SaaS startups can receive a boost. Connections to corporations can play a fundamental role in two areas: through the transfer of knowledge and experience with their executives becoming mentors, and through partnerships (both commercial and the transfer of technology), which may broaden the range of products, translating into benefits for customers, even incorporating solutions created by these entrepreneurs into the value chain.

Further, it has been noted that the participation of support organizations, in collaboration with corporations and academia, nourish the ecosystem by contributing to the development of the entrepreneurs themselves. One example is the case of Endeavor and SAP working together in selection and accelerator programs, which made it possible to assess 31 startups and provide access to a network of mentors who

are industry experts. Moreover, partnerships with education providers such as UNAM, have established links between students and the community of entrepreneurs.

GROWTH IN THE TECH SECTOR AND THE MATURITY OF THE ENTREPRENEURIAL ECOSYSTEM IN GENERAL ALLOWS ENTREPRENEURS TO LOOK TOWARDS SUSTAINABILITY AND SET MORE INTEGRAL OBJECTIVES.

Around the world there is debate forcing people to question the possibility of including more integral strategies in every sector given the higher adoption of technology. To illustrate this, in May 2021, Elon Musk shook the cryptocurrency world when he eliminated bitcoin from the payment methods accepted by Tesla, explaining that the negative effects of mining (transaction processing and verification) on the environment were very significant^{t108}. This created a heated debate within the blockchain community worldwide and for the very first time it was highlighted that many bitcoin mining companies used renewable energies, and even had a net-neutral carbon footprint. The takeaway here is that, irrespective of how much cryptocurrencies have grown and how revolutionary this technology is, for the first time an integral goal was pursued, with a willingness to keep contributing to computing capabilities and transaction verifications, while ensuring that they are environmentally friendly.

Startup communities worldwide benefit from greater economic productivity, which is achieved when entrepreneurs can, to a greater extent, scale their businesses. Whenever in an ecosystem players align, and talent supply and technology development and adoption are available at all levels, entrepreneurs find favorable conditions for their development and growth. This development means that entrepreneurs generate wealth and cultural and social transformation by creating quality jobs and offering new methods, processes and services to improve or solve market needs or aches.

The effects of Industry 5.0 have led to the acceleration of processes, and this is why technology has been identified as the most competent to drive sustainable development. In view of the impact caused by the pandemic, existing gaps, including the digital gap, demand immediate solutions. Technology is still key to implementing initiatives which enable sustainability. Mexican SaaS startups are no exception, and so a few cases were identified as examples of how to look for contributions to sustainable development:



COMPANY	DESCRIPTION	SDGs TACKLED
	<p>Network of medical doctors that use real-time geolocation to offer house calls.</p>	
<p>B O L S A R O S A</p>	<p>Company with expertise in workplace trends and work flexibility. Bolsa Rosa links women, including professionals who are mothers, with jobs offering flexible working conditions, thus giving women the opportunity to work and close the gender gap in the professional sphere</p>	
	<p>This company is seeking to change traditional agriculture, transforming it into a low-risk, sustainable, information-based activity, assisted by technology and profitable for farmers.</p>	

Industry 5.0 is already generating momentum, and SaaS solutions are becoming the potential technology, solving multiple market aches and, at the same time, contributing to Sustainable Development Goals, whether directly or indirectly. These aspects will become increasingly important, with decisions to work with companies that have an integral agenda, so entrepreneurs must analyze and understand how they are going to contribute to this global agenda. The Mexican government has a commitment with the society and the environment, and has implemented various social action plans to have a positive impact not only in the country but at a global level. However, the path is long and it not only involves civil society, big companies, entrepreneurs or the government; we all play a part with our individual actions to leave our stamp and achieve the goals set in the 2030 agenda.

A global debate remains, and there is one question to be answered: What are the impact of energy-intensive physical servers that power the cloud? Whether energy demand grows will depend in large measure on how fast data use rises and, as first mentioned here, this market is expected to grow 17% by 2022. A more digital future will inevitably use more energy¹⁰⁹. What can organizations do to reduce the imminent impact of digitization without sacrificing economic growth?

■ Brazil

Brazil is an industrialized underdeveloped country, with the highest number of private companies.

There are over 13,000 startups, and the SaaS industry seems to be a favorite because, out of these, 5,570 offer software as a service.¹¹⁰ Startups involve low costs and huge opportunities to solve problems in this country and benefit the population, opening the doors for entrepreneurs to settle in the regional market.¹¹¹

Brazil has experienced huge growth as a result of its domestic energy production and natural resources. It stands out because it displays high levels of industrialization and has a diversified economy, both in the agricultural and mining sectors and in aeronautics, aerospace and technology, among others.

SMEs are a fundamental part of GDP in Brazil and account for over half of the jobs in that country.¹¹² Most of these companies use at least one SaaS solution, as they are typically tailored to the company and enable purchase of low-cost products, attracting considerably more customers. Preferred market sectors for SaaS startups are education and finance.¹¹³ By 2022, it is projected that the SaaS market will reach US\$143 billion, which means that this sector will continue to grow.

■ Argentina

With a population of more than 45 million people,¹¹⁴ aged 32 on average, Argentina has potential for entrepreneurial growth. Almost all companies are SMEs in this region, so they employ more than half the economically active population and account for 25% of regional GDP.

Rising digitization has allowed more than 35 million Argentinians to remain connected to the net, 2% more than in the previous year. At a rate of 78%, Argentina has the highest percentage of internet connections of all countries under analysis.¹¹⁵

■ Colombia

The economy in Colombia receives huge contributions from micro and SMEs, which account for most of the jobs in the country. This shows how important it is to encourage this sector to incentivize and scale throughout the country.

Colombia is ranked 4th in Latin America, behind Brazil, Mexico and Argentina, as a developer of computer programming languages, with growth figures for the past 10 years of 19% in software and 15% in information technology services.¹¹⁶ Further, since 2013 it has had an impressive 17% annual growth rate in the software and information technology industries.¹¹⁷ This can be explained by the main pillars identified by the current government: legality, entrepreneurship and equality, with transverse axes for infrastructure, environmental sustainability, and innovation.

Some challenges faced by Colombia are the focus of company projects to tackle the lack of infrastructure, because the country has limited transportation. It also has policies that make it difficult to regulate customs duties, intellectual property rights, limitations to some services provided by foreign companies and a rule affecting the internal organization of companies, representing an opportunity for new SaaS business models. Thus, startups have decided to focus their growth on the digital economy, and startups have caused an expansion of digital platforms, especially for electronic and mobile banking. This economy also stands out because of an increase in artificial intelligence, blockchain and big data, guaranteeing successful results in the next few years.¹¹⁸

■ Mexico

Mexico has more than 126 million inhabitants.¹¹⁹ Mexican entrepreneurs have chosen to start businesses because of various obstacles facing the country: lack of opportunities for workers, an unfair work environment, absence of infrastructure to permit development, and a lack of understanding of the digital economy.

Internet users represent 70.1% of the population. This figure reveals an increase of 4.3 percentage points with respect to that recorded in 2018 (65.8%), and of 12.7 percentage points compared to 2015 (57.4%), making evident an increase in the use of the internet and its importance for the country.

More than half of GDP in Mexico comes from micro, small and medium-sized enterprises, which generate over 70% of formal jobs. SMEs have started to move towards tech tools based on customer relationship management (CRM) and enterprise resource planning (ERP), with data management on the cloud as a significant booster of efficiency and security.¹²⁰ However, few businesses have chosen to invest in new technologies because there is not enough maturity and adoption in the Mexican market.

APPENDIX II. GLOSSARY

Support organizations: These are private organizations or entities with a social or humanitarian purpose, and their work can focus on different causes.

ROI: Return on Investment is a profitability metric used to evaluate the efficiency of an investment or to compare the efficiency of two different investments. ROI tries to directly measure the amount of return on a particular investment, relative to the investment's cost.¹²¹

$$\text{ROI} = \frac{\text{Current Value of Investment} - \text{Cost of Investment}}{\text{Cost of Investment}}$$

CAC: Customer Acquisition Cost (CAC) is the cost related to acquiring a new customer. CAC refers to the resources and costs incurred to acquire an additional customer. Customer acquisition cost is a key business metric that is commonly used alongside the customer lifetime value (LTV) metric to measure the value generated by a new customer.¹²²

$$\text{CAC} = \frac{\text{Sales and Marketing Expense}}{\text{Number of New Customers}}$$

LTV: The Lifetime Value (LTV) calculation is calculated by multiplying the value of the customer to the business by their average lifespan. It helps a company identify how much revenue they can expect to earn from a customer over the life of their relationship with the company.¹²³

$$\text{LTV} = \text{Average ticket} * \text{Customer retention period}$$

ARR: Annual Recurring Revenue (ARR) refers to revenue that a company expects to receive annually. ARR is fundamental to understanding general profitability and cash flow for businesses operating on a subscription-based model.¹²⁴

$$\text{ARR} = \text{Total number of active customers} * \text{Average ticket}$$

MRR: Monthly Recurring Revenue (MRR) is the amount of predictable revenue that a company can expect to receive monthly. MRR is fundamental to understand general profitability and cash flow for businesses operating on a subscription-based model.¹²⁵

$$\text{MRR} = \text{RR} / 12$$

ARPA: Average revenue per account (ARPA) is a profitability measure that assesses a company's revenue per customer account.¹²⁶

$$\text{ARPA} = \frac{\text{Total revenue}}{\text{No. of Account}}$$

Churn rate: Churn rate, also known as rate of attrition, measures the rate at which service subscribers who discontinue their subscriptions within a given time period.¹²⁷

$$\text{Churn rate} = \frac{\text{Users at the beginning of the period} - \text{Users at the end of the period}}{\text{Users at the beginning of the period}}$$

APPENDIX III. METHODOLOGY, BIAS AND LIMITATIONS (2021)

- Purpose of the project:** This work was developed by Endeavor México A.C. with the purpose of offering the entrepreneurial ecosystem stakeholders in Mexico – entrepreneurs, consumers, investors, business people, public opinion and government entities involved – an overview of the role, trends and challenges facing the SaaS ecosystem in Mexico.

- Limitations:** Part of the information in this document was obtained from various public and private sources. Also, estimations were made to understand which metrics affect the development of a SaaS startup. This document was prepared for information purposes only, and any decision-making will require consultation with qualified professionals.

- Selection bias:** The companies included in this study answered in full the survey sent to them. However, more than one company may have been left out if the survey was not answered in full.

- Information bias:** Categorization of companies in the study with respect to the technology they use and their pricing model was completed based on the most relevant category corresponding to the products or services they offer. However, it may be the case that one company falls under more than one category.

- Data collection:** Endeavor identified a sample of 320 startups in the SaaS sector in Mexico, of which 276 actively operating were included in the sample. For purposes of this research, “SaaS” refers to the delivery of applications through the Internet, with users accessing cloud applications based on a recurring subscription model. This definition excludes startups providing third-party services or licenses.

In addition, a survey specifically designed for these entrepreneurs was e-mailed to 65 entrepreneurs identified in Mexico; the survey was also promoted on social media. The number of respondents was determined by simple random sampling, with 90% confidence and 10% error. For further information on the methodology or research instrument, contact us at contacto@endeavor.org.mx.

SEGMENTATION BY TYPE OF TECHNOLOGY

The startup diagnosis by type of technology was determined based on SAP's industry segmentation.

- ERP and Finance.** Incorporates every solution for finance departments:

- ERP for small and midsize enterprises
- Financial Planning and Analysis Software
- Accounting and Financial Close Software
- Treasury Management
- Accounts Receivable, Billing and Revenue Management
- Governance, Risk, Compliance (GRC) and Cybersecurity

- CRM and Customer Experience.** Solutions for customer management and analysis to understand and interact with customers through tailored experiences:

- Customer Experience Solutions
- Customer Data
- Marketing
- Commerce
- Sales
- Service

- Network and Spend Management.** Solutions to optimize relations with suppliers using information, life cycle, profitability, and risk management:

- Supplier Management
- Strategic Sourcing
- Procurement
- Services Procurement and External Workforce
- Travel and Expense
- Selling and Fulfillment

- **Digital Supply Chain.** Solutions for provision, response and supply management, supply and inventory:

- Supply Chain Planning
- Supply Chain Logistics
- Manufacturing
- Asset Management
- Research and Development or Engineering

- **Human Resources and staff management.**

Solutions to create a more flexible and committed workforce through feedback, benefits and customized experiences:

- Employee Experience Management
- Payroll
- Recruitment
- Human Resources and Workforce planning

- **Business Technology Platform.** This refers to data analysis and integration through easily implemented multi-cloud processes:

- Data Management
- Application Development and Integration
- Data Analysis
- Intelligent Technologies (machine learning, artificial intelligence, blockchain, among others)

FOUNDER DEMOGRAPHICS ANALYSIS

Secondary research identified a sample of 163 female and male of tech entrepreneurs, and an analysis was conducted based on information in their LinkedIn profiles considering the following variables:

- Job experience:
 - Title
 - Time in that job (measured in years)
 - Company size
 - Company location
- Education:
 - Degree (Bachelor's, Master or postgraduate studies)
 - Discipline
 - Duration
 - Country of the university or college

Estimations of real age, age at which they created their startup, and years of experience are based on the premise that the entrepreneur was 18 when he or she started university.

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ENDEAVOR

Established in 1997, Endeavor is leading the global high-impact entrepreneurship movement to drive economic growth and job creation by selecting, mentoring, and accelerating the best high-impact entrepreneurs around the world. To date, Endeavor has evaluated more than 70,000 entrepreneurs and selected more than 2,089 high-impact entrepreneurs who lead more than 1,304 high-growth businesses.

With the support of the global network of Endeavor mentors, these High-Impact Entrepreneurs have created more than 4 million jobs, generated more than US\$24 billion in income in 2019, and inspire future generations to innovate and take risks. Headquartered in New York City, Endeavor operates in more than 38 markets around the world.

ABOUT ENDEAVOR INTELLIGENCE UNIT

EIU, Endeavor's business intelligence and research division, seeks to generate value for high-impact entrepreneurs and the greater entrepreneurial ecosystem. Endeavor provides reliable data and insights.

EIU is spearheading a series of regional initiatives to position Endeavor as a thought leader in entrepreneurship in Mexico. Such initiatives include open data, studies, reports, and the new project data lab which takes advantage of the organization's connections with the entrepreneurship ecosystem to map the main actors and create recommendations for responsible growth. Business Intelligence develops various models using data science to test hypotheses and find correlations between variables.

For more information on Endeavor's work visit https://www.endeavor.org.mx/data_lab.html with information of its studies.

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