



Agtechs disrupt farming in Latin America

From pre-farm to post-farm, the future of agribusiness is digital. Get to know some of the most disrupting agtechs in Latin America – Agree, Agrofy, Bart Digital, BovControl, Demetria, Leaf, Pink Farms, Solinftec, and Space AG – as well as some of the main investment firms boosting these game-changing ideas.

INTERVIEW

Argentina's NXTP Ventures investments start to pay off as the ecosystem evolves.

TECHNOLOGY

The world in which the digital divide leaves millions of students out of the internet is the same one in which tweets are sold for millions of dollars as NFTs.

EDITORIAL

The future of farming in Latin America

More efficiency. More sustainability. More inclusion. Technology in agribusiness has the mission to drive a sector that is essential for human survival at the same time that ensures the preservation of natural resources – its very existence depends on it.

The connection between agriculture and innovation is not new, but it has taken a new level in recent years. It has become essential not only to increase productivity but to enhance sustainability and inclusion. It's the agtechs' era, in which innovation is no longer restricted to large agribusiness and food industry giants.

Startups are becoming providers of cheaper, more efficient, and accessible technologies for all stages of the long agribusiness chain (pre-farm, on-farm, and post-farm). This is especially true in post-pandemic times and in Latin America, one of the largest food-producing regions in the world.

In this *LABS Collections*, we have brought together a series of stories and analyses about how the field has become a fertile ground for technology, and how technology has also made the field a more fertile ground.

We talk to the people behind breakthrough ideas such as urban vertical farms, artificial intelligence in the selection of coffee beans, and livestock management combined with greenhouse gas reduction. Investors in the sector also shared their insights into how private capital drives the agribusiness revolution and what to expect next.

Enjoy your reading!

LABS TEAM



LABS is a trilingual (English, Brazilian Portuguese, and Spanish) news and analysis outlet dedicated to putting Latin America into the limelight, giving it visibility as a land of business opportunities and innovative ideas that solve real problems. LABS Collections is its quarterly digital magazine.

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Investments made by Argentina's NXTP Ventures, a pioneer in LatAm venture capital, start to pay off as the ecosystem evolves

With two funds, NXTP has exited over 20 companies, and it is experienced in a region where foreign investment firms SoftBank and Sequoia are placing their bets

BY ISABELA FLEISCHMANN

One of Latin America's venture capital industry pioneers, Argentina-based **NXTP Ventures** emerged in 2012—a decade after Latin America's big tech success stories such as **Decolar**, **Globant** and **Mercado Libre** began to take off. Coincidentally, all three of these businesses were founded in Argentina.

At the very beginning of NXTP, its founding partners decided to gather some of those successful entrepreneurs to create a platform for business investment advice. The first institutional fund rolled out in 2013, and the company raised its fund 2 in 2018. Between the two funds, NXTP has invested \$50 million and exited more than 20 of its portfolio companies.

Alex Busse, NXTP's partner, won't comment about a potential fund 3, but the truth is that the early-stage investor is now reaping what it sowed for years. NXTP invested in Argentina's SaaS startup **Auth0** in its Seed round, when it had roughly a \$15 million valuation. Earlier this year Auth0 was acquired for \$6.5 billion by the U.S.-based company **Okta**. NXTP also backs Argentina's newest unicorn **Mural**.

NXTP, which has been investing in the long-term venture capital-backed tech business for a decade, is now seeing returns on its investments materializing, and more international investors have started to pay attention to the region. The Japanese conglomerate SoftBank, for instance, landed in Latin America with its large fund in October 2019. So far, it has invested \$3.5 billion in 48 companies that now have a combined valuation of \$6.9 billion.

Silicon Valley's **Sequoia** took a little longer, but it is also a VC spreading its wings in the region. Its first deal in **Latin America** since the company's billionaire managing partner **Doug Leone** announced the firm **would now focus on LatAm** happened last month with **Pomelo**. Even though Sequoia has already invested in regional unicorns **Nubank** and **Rappi**, Leone stated that they will now invest from Seed stage to IPO.

Sequoia will now face some competition in **Latin America's** evolved VC ecosystem with **the region's largest investors** such as Argentina's **Kaszek**—contemporary of NXTP—and Brazil's **Canary**, **monashees**, **QED Investors**, and **Valor Capital Group**.

Also similar to **Kaszek**, the brand name NXTP was created by combining the abbreviated names of its founding partners: **Ariel Arrieta**, **Francisco Coronel**, **Gonzalo Costa**, **Marta Cruz**, and **Martin Hazan**.

LABS interviewed NXTP's **Alex Busse** about the VC firm's evolution alongside the region's ecosystem and NXTP's next steps:

LABS Looking back to when NXTP started, what changed?

ALEX BUSSE Initially, one of the things that we learned really early on was that for a business outside of Brazil to be successful, you kind of needed to be in Spanish-speaking Latin America. Because you needed several countries, especially in the early days when the markets were very small. For you to be successful you needed to be in Mexico, in Argentina, and then Colombia.

Initially, we have helped entrepreneurs to go regional so that's how we got to know a lot of the market, how we got to know Mexico, Colombia, and Uruguay, by helping entrepreneurs expand into those markets.

Fast-forward today, Brazil is a very clear leader in the ecosystem. One of the big advantages that Brazil has is its ability to create large standalone single geography businesses by having over 200 million consumers and a very robust economy.

And then I'd say Mexico is probably kind of not too far behind, largely dominated by the attractiveness of its very large consumer base.

Colombia is in third place, which is a combination of its operating environment, that until now has been conducive and open to technology and innovation. So those are really the three main markets that we see going forward.



"We are spending more and more time in the healthcare space, which we think is very interesting. But honestly, if you think about healthcare it's kind of a horizontal theme because there are SaaS businesses in healthcare, there are finance businesses in healthcare, there are marketplaces in healthcare."

ALEX BUSSE
NXPT'S PARTNER

Argentina, unfortunately, has fallen behind quite significantly from the early days, when a lot of those bright startups came from Argentina. Today it's a quite tough operating environment, so we don't see the same activities as we see in some of the other countries.

There is Chile and you kind of have a tier below them—smaller countries which is a bit of a challenge to build large businesses like Central America, Ecuador, Peru, probably the smaller countries.

LABS NXTP began investing in Seed rounds. Is the fund aiming for larger tickets now?

BUSSE No. The thing is, one trend we see is that some of the Seed-round tickets are becoming larger. Previously, I think Seed rounds used to be smaller. Also, it used to be very common, like two to three years ago, that companies would do a lot of pre-Seed rounds and 'friends and family' rounds, and then they would go to the Seed round. Now, what we are seeing in the market today is a lot of those two rounds kind of being combined into one.

That has to do with, a lot of the times, the founders of the businesses are either or second-time founders or they're operators that come out of large venture-backed, fast growing tech businesses that could be one of the 30 unicorns in Latin America today. So, someone who actually has experience in scaling businesses and starting businesses.

They are going straight to the Seed round rather than pre-Seed, so you see larger Seed rounds today.

But we do not plan on starting investing in late-stage businesses, we want to stick to the Seed, and obviously, we are going to do some selectively Series A, usually related to domains that we know pretty well within the SaaS and the cloud or within logistics, any type of businesses that we feel like we can add value to and that we understand the value proposition well, we might participate.

LABS So you're targeting companies from SaaS, cloud, and logistics?

BUSSE SaaS, logistics, B2B marketplaces, and data-driven businesses, that's our main focus. We are also spending more and more time in the healthcare space, which we think is very interesting. But honestly, if you think about healthcare, it's kind of a horizontal theme because there are SaaS businesses in healthcare, there are finance businesses in healthcare, and there are marketplaces in healthcare.

LABS NXTP is well-known for its LatAm investments in Spanish-speaking countries, but are you focusing on Brazil now too?

BUSSE We are a regional fund, we have our origins in Argentina but at this point, we're fully regional, we don't invest a lot in Argentina unfortunately, there are not a lot of opportunities.

From our fund-one portfolio, there are a lot of businesses operating in Brazil, so we have always been in Brazil. And our second fund expanded a lot to Brazil. Part of that has to do with the opportunity set that we see in the country as undeniable. Awhile back we made a decision that we were going to be fully regional, and that includes Brazil. This process of fully investing in Brazil started a couple of years ago, and our portfolio is about 50% Brazil in terms of revenue.

LABS Do you see NXTP building a SPAC?

BUSSE We don't have any SPAC ambitions at the moment. We spend most of our time in early-stage venture capital, that's what we are really good at. For now, our idea is to continue to focus on early-stage investments and usually SPACs are late-stage growth capital types of vehicles. I don't think that is an area in the near-term that we are going to focus on.

LABS When we look at NXTP portfolio companies, there are success stories like Auth0 and MURAL, but what are your thoughts about the ones that are failing?

BUSSE There are founders we have invested in whose startups have failed, and if they would go and launch a new business today, we would invest in them again. And some founders might have started the business and done well, and we might not invest in them again.

My point being, startup entrepreneurship has a very high failure rate. It really depends on how you fail. One of the types of mistakes people make is how they behave in difficult situations, which gives you a lot of information about who the person is, and who is really leading the business.

Some businesses have done poorly because the founders might have not shown the right leadership we would like to see or didn't show a lot of perseverance, or didn't handle the teams well, or behaved in ways that we thought were unstrategic. And then there are founders whose businesses might have failed, but we felt that they did everything they could; they ran very good operations and showed very good leadership. They were very careful and mindful about the strategy, but sometimes things just don't work out. Those are the founders that we are looking for and that we would love to invest in again.

LABS Talking about timing, how do you see the timing for LatAm VC, and what is your forecast for the next few years?

BUSSE Latin America's VC first stage was ten years ago, and then in 2010 to 2018 you can see the trend quite well in terms of the amount of dollars invested in venture capital. What happened from 2010 to the second stage in 2018? Well, a lot of founders for the first time went out, learned how to build businesses, started to create success stories, and became role models for other founders and for other entrepreneurs to look up to, especially in Brazil's talent pool.

"Startup entrepreneurship has a very high failure rate. It really depends on how you fail. One of the types of mistakes that people make is how they behave in difficult situations; which gives you a lot of information about who the person is, and who is really leading the business."

ALEX BUSSE
NXTP'S PARTNER

Brazil is a little further along from the rest of the ecosystem, but what you're starting to see today is similar to those businesses that started in 2014, 2015, 2016 that are very large businesses; they are unicorns. The first ten employees of those businesses had a front-row seat into what it means to scale venture-backed businesses and to become a unicorn. So, these guys are either going out and starting a new business for themselves or they became angel investors, or they're mentors for other entrepreneurs.

You start to see this effect. Whereas these businesses were successful, they attracted better talent into the tech space, and they become role models for other founders that see them and start businesses. Instead of going to Goldman Sachs or McKinsey, you might see guys starting businesses or going into a tech space today.

That level of talent starts to attract capital. And that capital makes the business grow and as the business grows, it attracts more talent into the business.

Now we have a complete ecosystem within the tech space. You have the angel investors which were former operators, you have large venture capital firms, you have great talent, you have success stories, you have access, and you have money flowing into the region. So, all the ingredients of a successful ecosystem are present today, which I think is why people are excited about the region, and we're going to see more and more interesting businesses, more and more talented people creating value in the ecosystem over the years to come.

You invest in the business today and you might only find out from seven years that it really was a successful business. What is exciting about the time that we're in today is that a lot of what was promised for a long time has started to become a reality. That is very exciting for venture capital funds that have made good investments and have been around for a while because their investors want to have their money back as well. That started to happen, they started to have their money back, so it's an inflection point where you feel like there is going to be a stable influx of talent, capital, and opportunities in the region for the years to come. We are very excited and well-positioned as a fund to take advantage of this moment. The work over the years started to pay off. ■



THE FUTURE OF FARMING

How Brazilian agtechs can multiply and change the sector for good

In one year, the Brazilian agribusiness saw the number of agritechs grow 40%, revealing a skyrocketing innovation ecosystem focused on the sector, which accounts for more than a quarter of the country's GDP. Despite the relevance, investments in agtechs have been fairly timid so far.

BY CAROLINA POMPEO

The number of Brazilian startups focused on agribusiness—the agtechs—grew 40% in 2020 compared to the previous pre-pandemic year, according to *Radar AgTech Brasil 2020/2021* report, a document prepared in partnership by **Brazilian Agricultural Research Corporation** (Embrapa, in the Portuguese acronym), the **Ministry of Agriculture, Livestock and Supply**, the venture capital manager **SP Ventures** and the consultancy **Homo Ludens**. Brazil already has 1,574 technology-based companies focused on creating solutions for the agricultural sector; in 2019, there were nearly 30% less with only 1,125 in existence.

The vast majority of Brazilian farm techs were founded in the state of São Paulo (747), followed by

Paraná (151) and Minas Gerais (143), but the Northeast region, for example, saw its agtech ecosystem almost double in size, going from 37 companies to 72. In addition, the mapping registered more than 20 agtech-innovation hubs throughout the country.

When looking at the stage of the production chain in which these startups operate, most of them develop post-farm solutions (718), including marketplaces and distribution logistics. The on-farm solutions total 657 and include all types of farm management systems and precision agriculture; and the pre-farm solutions total 199 and focus mainly on the demand for fertilizers and inoculants (*see the full map on page 19*).

These are the numbers. Beyond them, the digitization process in the farm gives us clues about the future of an activity that already accounts for 26.6% of the Brazilian GDP, according to the **Brazilian Confederation of Agriculture and Livestock**. In 2020, despite the adverse scenario due to the pandemic, agribusiness grew 24%, a record annual increase that suggests a vast number of business and investment opportunities.

In an article for the **Distrito AgTech Report 2021**, **Martiniano Lopes**, partner at agribusiness consultancy **KPMG**, reported the agricultural sector is experiencing a similar disruption to the mechanization of harvesting in the 1990s: "The transformation of the mental model will be critical, [...] entrepreneurship, propositional posture, digital first, and open mindedness will be watchwords. Also, concepts of experimentation (take risks and move fast) or experience (customer experience) will be part of this mental model. Technology will no longer be a necessity for productivity gain and will become a strategic lever."

The agtechs boom lies at the intersection of a global shift in perception about how the production chain and consumption impact the preservation of natural resources and of the need to optimize processes and operational costs to achieve more efficiency, but in a sustainable way. In other words, in an increasingly populated world with an ever-growing demand for food, the agricultural sector's digitization is not only strategic for business but urgent from a social and environmental perspective.

Adriana Regina Martin, executive director of innovation and technology at Embrapa.

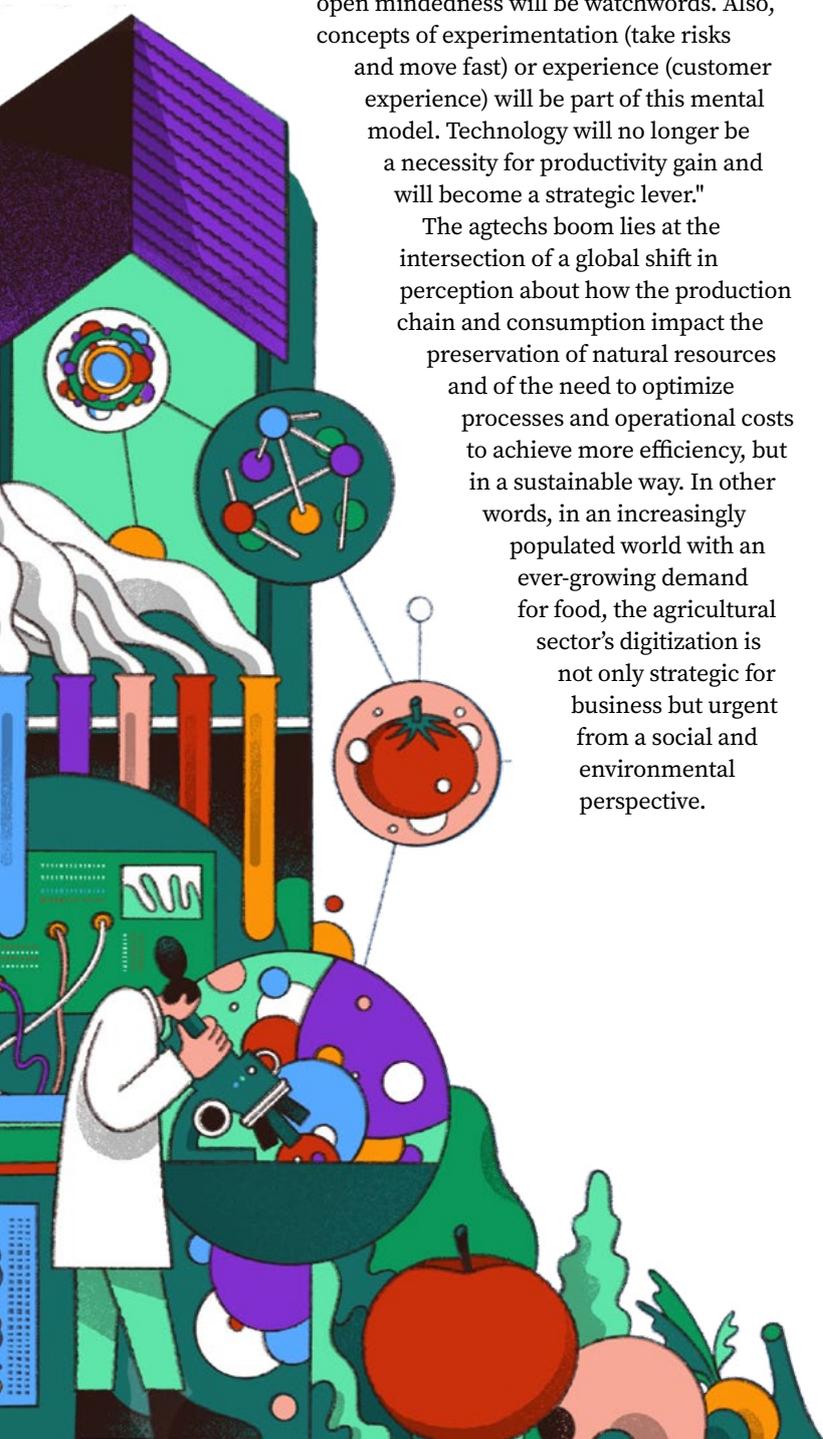


Agtech investments

Despite the relevance of Brazilian agribusiness for the country and the world, investment in agtechs are not being made the same proportion. According to **AgFunder's 2021** report, Brazil is not even on the list of the top-15 countries that invest the most in agtech. The list is topped by the United States, China, India, and Great Britain, all with investments that exceeded \$1 billion by 2020. The only Latin American country that appears among the world's top-15 is Colombia, in eighth place, with investments of \$359 million. The sector raised \$70 million last year in Brazil.

A historical series made by **Distrito AgTech Report 2021** shows how the venture investment in farmtechs is volatile; between 2012 and 2014 there was growth, and during 2015 and 2016, a sharp decline. The investments grew again in 2017 (to \$15.5 million) and reached a record in 2020 (\$67.3 million). *Note: there is a small difference between the figures indicated by the District and by AgFunder due to the methodology adopted.*

Moreover, when looking at investments by business stage, Distrito's survey shows an over-concentration in the early-stage phase, typical of young but growing ecosystems. Considering the performance categories, the most heavily invested-in Brazilian agtech sectors are precision farming (\$85.6 million), marketplaces (\$27.6 million), and automation and robotics (\$22.2 million).



"Embrapa plays an important role in encouraging this ecosystem as a public company and the main developer of agribusiness technology in the country."

ADRIANA REGINA MARTIN
EXECUTIVE DIRECTOR
OF INNOVATION AND
TECHNOLOGY AT EMBRAPA

Technology transference

While the development of the ecosystem inevitably goes through more financial investment, there are other key incentives. The researchers of the Radar AgTech Brasil report, when mapping the investments in Brazilian farmtechs, considered the participation of startups in investment rounds, in addition to those in incubation and acceleration programs. It listed a total of 337 investment events involving 223 startups.

In Brazil, **Embrapa** plays an important role in encouraging this ecosystem as a state-owned company and the main developer of agribusiness technology in the country, explains **Adriana Regina Martin**, executive director of innovation and technology.

The company operates through a technology-transfer model, in which startups develop products for the market, based on technology transferred by Embrapa. "As a public company, we

cannot accelerate startups or put a product on the market. We develop technologies and transfer this technology, this knowledge, to startups that take the product to the market, reverting in value to the rural producer and the society," explains Adriana.

Among the agtechs that develop technologies transferred by Embrapa are the agri fintech **GIRA**, **Blue Agro** and **Agribela**, a biological inputs producer, **Bem Agro** and **AdroitRobotics**, focused on automation, and **Amazonica Mundi**, focused on creating animal-protein substitutes.

In many cases, investors provide resources to startups for them to develop the technology transferred to them by Embrapa. In addition, the company offers mentoring with experts, and opportunities for startups to pitch their ideas to the ecosystem, such as the *Pontes para Inovação* (Bridges to Innovation) program, which connects agtechs to investors and partners.

Why invest in agribusiness?

BY CAROLINA POMPEO

In Brazil, the venture capital manager **SP Ventures** is dedicated exclusively to investing in technological solutions for agriculture throughout Latin America and usually brings to its portfolio early-stage startups, which already include more than 30 agtechs. The manager's third venture capital fund, AG Ventures II, brought together major investors such as **Syngenta Venture Capital**, **Basf Venture Capital**, **FoF Capria**, and the **International Finance Corporation (IFC)**, the World Bank's private sector arm, among others. AG Ventures II has already raised BRL 210 million and the goal is to close at BRL 300 million. The manager expects to invest in 20 startups with the funds. SP Ventures has about BRL 460 million under management today.

In a talk with **LABS**, **Francisco Jardim**, CEO of SP Ventures, explained that the manager was started in 2007 as a generalist venture capital firm, but soon realized the huge potential of agribusiness in Brazil and Latin America.

"After about 20 pitches from agribusiness entrepreneurs, I thought: 'The only sector that gives me confidence that we are going to create a powerful, global, transformative ecosystem is agribusiness. The Brazilian agribusiness has a brilliant entrepreneurial history,'" he said.

Here are the interview's highlights:

Defensive investment

"Agriculture is a defensive sector. When we say that from a portfolio-allocation perspective, it means that it is an investment strategy that is supposed to do well even when the economy goes bad. One characteristic of defensive investments is that they are usually conservative, they don't grow much, but they guarantee a good performance. Agro is an ultra-defensive investment because of the irrefutable prospect of increasing global food demand, because it is denominated in dollars, and because it is embedded in the global supply chain, so Brazilian agro is not dependent on the domestic market."

"Agro is an ultra-defensive investment because of the irrefutable prospect of increasing global food demand, because it is denominated in dollars, and because it is embedded in the global supply chain."

FRANCISCO JARDIM
CEO OF SP VENTURES

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FRANCISCO JARDIM
CEO OF SP VENTURES



A technological revolution in agro

"The main variable in agriculture is climate. At the time we started investing, there were already many studies on the impact of climate change on agro. And it was already very clear that the only way to make a leap in production under increasingly adverse conditions would be through the massive adoption of technology. Here we are talking about adaptation, about resilient agriculture.

When we talk about mitigation and the impact of agriculture on the environment, greenhouse-gas emissions, forest conservation, soil management, among others, the need for greener agriculture becomes clear.

So, on the one hand, we have the need for greener agriculture, and on the other hand, we need agriculture that can survive and feed the planet under these conditions. In other words, we need much more technology in agriculture."

Investment Thesis

"Today we see some great theses in our investments: e-commerce and marketplaces for agribusiness, fintechs for agribusiness, and management tools for agribusiness. We believe we are building a new distribution structure for

agricultural services and products, a high-tech financial services industry for agro, and a new bioproducts industry for agro. As an investor, our portfolio is very diversified. We have a farm-management company, SaaS for agro, predictive solutions, digital barter, biological solutions, soil analysis..."

Access to technology

"The big business for startups is to sell at scale. In agro, it's no different. In general, I would say that the main target audience for agtechs is the medium-sized producers who need management software, predictive solutions, soil monitoring, etc. However, the technology power is very democratizing. Technology will become cheaper and more accessible. Agri fintechs are going to play a key role in expanding rural credit, which will enable small farmers to access technology and good products."

Regrets

There are two kinds of investments you can regret: the very wrong one you made, and the very right one you didn't make. The investment you made that you lost money on, that's okay, it's part of the business. What hurts is that investment that went right that you missed, one in which you didn't see the potential."

Solinftec, Brazilian funding champion, is already present in 11 countries with SaaS agribusiness solutions

BY CAROLINA POMPEO

The national champion of funding is **Solinftec**—from the \$67.3 million raised in the agritech sector last year, \$40 million went to the Series B raised by the company in a round led by **Unbox Capital**—, a world reference in precision agriculture. Its SaaS (Software as a Service) solutions enable the monitoring of agricultural processes in real time and, according to the company, generate savings of more than 30% and an increase in machinery efficiency by up to 50%.

Solinftec's starter solution is equipment monitoring to support rural producers in decision-making. The company's products are modular, meaning that customers can

choose the ones that best meet their needs. In addition, the agtech company developed ALICE, an AI platform that brings together all these solutions; making the connection and integration of applications simple and fast. Every day, 35,000 pieces of farm equipment are connected to ALICE 120,000 users interact with its AI.

Founded in 2007 by a group of seven Cuban automation engineers who came to Brazil for a technological exchange program, today the agritech monitors nine million hectares in 11 countries in Latin America and North America and has offices in Brazil, Colombia, and the United States.

The company started when the group led by **Britaldo Hernandez**, current CEO, realized that there was very little control in sugarcane farming, predominant in the Araçatuba city region, where they were based. That is how the first solution developed by Solinftec came about, to standardize cane cutting without human intervention. The agtech currently monitors 86% of the country's sugarcane farming area.

Around 2015, the demand for connectivity began to grow and the company expanded its portfolio with solutions for grain monitoring. **Thiago Rodrigues**, COO of Solinftec for Brazil and Latin America, explained that the adoption of technology by agribusiness in Brazil varies according to the culture and size of the company. The strength of agtech is to respond quickly to newly identified problems.

"Each market has a specific pain. Solinftec is recognized as a developer of solutions in partnership with its customers to meet their specific pains. This is one of the main factors of success because, until we emerged, the solutions available in the market were more reactive."

"Each market has a specific pain. Solinftec is recognized as a developer of solutions in partnership with its customers to meet their specific pains. This is one of the main factors of success because, until then, the solutions available in the market were more reactive. The agriculture of the future goes through digitization."

THIAGO RODRIGUES
COO AT SOLINFTEC



For every pain, a solution

Rodrigues explained that in grain crops the key point is the harvest "window"—the search for the perfect time to start a new planting depending on the climate and water conditions. Because it's a short production cycle, operational efficiency is crucial. Efficiency demands data that allows the producer to plan the operation and mitigate the risks related to external factors. Solinftec's platform offers all this information and variable forecasting.

"When we started to monitor grains, we realized that the machines worked for a short time, due to climactic, administrative and operational variables, and we understood that it would be necessary to unify all this data, in real time, and create parameters, to guide the producer in making proactive decisions, and to avoid operational errors."

In perennial crops such as oranges and coffee—products with high-production costs per hectare and a high added value—it is necessary to have a very efficient cost-control, and one of the most relevant issues is spraying for pests control, which can jeopardize an entire crop. "For perennial crops, we have traceability solutions, in order to create a certification of origin and a quality seal, which add value to export products." ■

Thiago Rodrigues,
COO at Solinftec.



AGTECH ECOSYSTEM

Agribusiness is fertile ground for startups to grow

With an extensive production chain that includes pre-farm, on-farm, and post-farm steps, the billion-dollar agribusiness market has attracted more startups interested in creating technological solutions with great potential for scalability

BY GUSTAVO RIBEIRO

Aiming to both increase productivity and lower costs, Latin America's agribusiness sector has turned its attention to startups. Although agriculture is considered to be a more traditional business, the truth is it has always made use of technology. The difference now is that the agrifood tech-startup ecosystem in LatAm offers a wider range of solutions for the various stages of the entire production chain; broadening access to valuable data insights for farmers and agribusiness companies.

"From the perspective of gross product value, a technology that effectively meets the pains and needs of this market has a very large potential for scalability," says **Cleidson Dias**, an analyst at **Embrapa's** innovation and business secretariat and one of the creators of *Radar AgTech Brasil 2020/2021*, a document that maps agribusiness startups in Brazil.

Moreover, any positive financial impact is significant, because agribusiness in Latin America is a billion-dollar market and even a minimal reduction in loss can represent a savings of millions. However, so far, agtechs have not yet managed to reach their full market potential.

"It's a sector that still lacks technologies, with many traditional practices that have been replicated for many years. There are new technologies that bring significant effectiveness to production, but they are not yet known by everyone," continues Dias.

In other words, there are still many opportunities for agtechs to expand, not only because this is a huge market, but also because there is a vast range of areas in which they can operate. Usually grouped into three major areas—pre-farm, on-farm and post-farm—the solutions developed by agtechs are subdivided into smaller segments.

According to the *Radar AgTech Brasil 2020/2021* report, pre-farm solutions encompass seven other categories, including startups working on fertilizer, seed, credit, and input marketplace. For on-farm there are another 13 categories, including property-management systems, drones, machinery and equipment, systems and data platforms. Finally, for post-farm, there are another 13 categories including innovative foods, marketplaces and platforms for trading and selling products, storage, infrastructure and logistics (see the full map on page 19).



"Agriculture and agribusiness tend to be very fragmented. There is a lot of diversity according to the farmer profile, from small to medium-sized, or large agribusinesses. The challenge for agtechs is to segment correctly, define what kind of farmer to serve and what kind of help they need, and then do it responsibly."

GONZALO PÉREZ-TAIMAN
FOUNDER AND PARTNER AT ARPEGIO

The report shows that out of the 1,574 farmtechs mapped, 718 operate in the post-farm category, followed by companies that operate on-farm, with 657 and, finally, those that create pre-farm: 199. Considering the type of solution, most agtechs are in the fertilizers, inoculants and plant nutrition category, there are 293 of them in Brazil. On-farm, 154 focus on farm-management systems; and in pre-farm, there's nearly a tie between those that develop fertilizers, inoculants, and nutrients (46) and those that work with credit solutions, barter, insurance, carbon credits, and fiduciary analysis (42).

"Agriculture and agribusiness tend to be very fragmented. There is a lot of diversity according to the farmer profile, from small to medium-sized, or large agribusinesses. The challenge for agtechs is to segment correctly, define what kind of farmer to serve and what kind of help they need, and then do it responsibly," says **Gonzalo Pérez-Taiman**, founder and partner at **Arpegio**, a Chile-based venture capital fund that invests in agrifood startups.

Arpegio, together with the U.S. venture capital fund **AgFunder**, has published the LatAm's *Agrifoodtech Market Map*. The mapping shows how this market can still grow a lot. It depends, according to Pérez-Taiman, on technology and investment. "As a region, Latin America today leads food exports to the rest of the world. And there are technological advances in other regions that threaten Latin America's leadership. It is important to invest not only in local startups but to bring in technology from outside to maintain competitiveness and continue as a leader and at the same pace of evolution as the rest of the world," said Pérez-Taiman.

Pre-farm: Bart Capital

One of the most bureaucratic and complex operations in agribusiness is the barter, a kind of negotiation between rural producers and input companies. Digitizing this process that occurs at pre-farm was the challenge of **Bart Digital**, an agtech startup founded in 2016 in **Brazil**.

With an initial investment of BRL 2.2 million from venture capital firm **SP Ventures**, the startup developed the Ativus platform, launched in February 2020. The timing was just right. "In March came the pandemic and the company had a huge growth leap. We didn't know that the pandemic would boost the digitization of agribusiness so much, especially the financing itself," admitted Bart Digital's CEO, **Mariana Bonora**.

In 2020 alone, Brazilian agtech handled more than BRL 3 billion in receivables. Now the startup expects to reach BRL 7 billion this year since Bart Digital quadrupled its customer base.

"Until 2020, we had a lot of big clients, industries, and big groups. When we decreased the complexity and increased the roster of profiles we serve, we quickly scaled our user base. We have clients ranging from startups to trading companies, mills, and industries," celebrated Mariana, who added that Bart Digital is in the fundraising process to expand the Ativus platform.

Mariana Bonora,
Chief Executive
Officer at
Bart Digital.





"There was a whole process of educating the farmer, who is very used to touching the land and saying that water is missing. Today, it is possible to tell which zones are well irrigated or below some parameters with a satellite image or a drone with a thermal camera. Before, this concept was very abstract for the farmer."

CESAR URRUTIA
CO-FOUNDER AND CEO OF SPACE AG

On-farm: Space AG

There is not much value in a satellite image or a photo captured by drones if there is no interpretation of what it means to the rural producer. It is from this concept that **Space AG** emerged in 2017. Previously a drone company named Spacedat, Space AG evolved to develop and supply a range of tools to increase crop productivity.

These are tools that detect irrigation deficiency and other anomalies, identify and quantify dead plants, project crop yields, and determine and pinpoint productive or non-productive areas. All visible to the farmer in a smartphone or computer app.

"There was a whole process of educating the farmer, who is very used to touching the land and saying that water is missing. Today, it is possible to tell which zones are well irrigated or below some parameters with a satellite image or a drone with a thermal camera. Before, this concept was very abstract for the farmer," said **Cesar Ó**, co-founder and CEO of Space AG.

Headquartered in **Peru**, where it provides services to the world's leading agri-exporters of blueberries, avocados, citrus and grapes, Space AG has already expanded into other Latin American countries such as **Chile, Colombia, Mexico, Costa Rica**, and the **Dominican Republic**. Today, the startup is worth \$4.8 million and will participate in a Series A funding round soon. It previously raised \$1 million in a Seed round.

Post-farm: Agree

Blockchain is definitely not a widespread term in agribusiness, but it is paramount for Agree, an Argentinian agtech startup founded in 2017. The startup's business focus on buying, trading, and selling grains and their by-products, all within a blockchain. Today there are more than 500 active clients on the platform, through which more than 1.5 million tons of products have been traded.

"In this first phase, we included blockchain to ensure more transparency, traceability and security. The main objective is data veracity. But we are already looking at other more elaborate blockchain features, focused mainly on financing," explained **Nicolás Mayer-Wolf**, co-founder and CEO of Agree.

A \$2 million investment from **Sancor Seguros** in a Series A round in April will enable this evolution, including expansion to other countries beyond **Argentina, Paraguay** and **Uruguay**, where the agtech is already operating.

"In addition to a presence in the main Latin American markets, we want to consolidate our products with new features and even new products. We have a very clear product roadmap to continue growing," projected Mayer-Wolf. ■



"In this first phase, we included blockchain to ensure more transparency, traceability and security. The main objective is data veracity. But we are already looking at other more elaborate blockchain features, focused mainly on financing."

NICOLÁS MAYER-WOLF
CO-FOUNDER AND CEO OF AGREE



AGTECH ECOSYSTEM

Which startup will be the first LatAm agtech unicorn?

Still lagging behind fintechs in terms of valuations and funding, agtech startups such as **Agrofy** and **Leaf** are disrupting one of the main drivers of the region's economy

BY ISABELA FLEISCHMANN

Amidst a fast-growing tech-innovation ecosystem, VC money has been flowing into the veins of startups in LatAm, which has nearly 30 unicorns. Yet, none of those startup ventures valued at \$1 billion or more is an agtech company, although there are already 663 agtech companies in the region, according to **Crunchbase's** data, and the agriculture industry is a big deal for the region. According to the **World Bank**, agriculture accounts for 5-18 percent of GDP in 20 countries in Latin America and the Caribbean, "and an even larger share when broader contributions across food systems are considered per its latest data."

Data from **LAVCA** (the Association for Private Capital Investment in Latin America) shows there was \$35.4 million in venture capital invested in agtechs across 15 disclosed rounds last year, and the largest disclosed one went to Colombia-based **Frubana**, a \$25 million Series A round in early 2020, led by **monashees** and **GGV. SP**

Ventures and **The Yield Lab** were among the other more active agtech investors last year.

For the first half of 2021, investment in Latin America's agtechs is up significantly compared to last year, according to LAVCA. Just the top three rounds in the first six months of 2021 (**Frubana**, **ProducePay** and **Phage Technologies**) add up to \$138 million in announced investments. So what does it take for LatAm to have its first agtech unicorn?

Susana Garcia-Robles, a senior partner at **Capria Ventures**, and executive advisor to **LAVCA** (Association for Private Capital Investment in Latin America), has been investing in agtech startups in Latin America like the U.S./Brazilian **Leaf**, which provides an API (application programming interface) for agro, Argentine **Agrofy**—the **Mercado Libre** of agriculture—and the California-based **Andes**, with a Chilean co-founder and CEO, that provides seeds with integrated microbial technology. "Brazil and Argentina will push agtechs in the Andean region," said Garcia-Robles.



"We believe in the power of connecting the dots between the innovation hubs in LatAm, Africa and India. We don't vote on SP Ventures' investor committees, but we can say what we have seen in agtech in India models that can be transferable [to LatAm]."

SUSANA GARCIA-ROBLES
SENIOR PARTNER AT CAPRIA
VENTURES

According to her, tech innovation for agriculture marked a "before and after" in Latin America. The region already had a critical mass of consumers and workers in this traditional industry. Alongside mining, agro has been one of the main drivers for LatAm's economy for many years. That's why Capria started to invest in Brazil's fund agtech outfit **SP Ventures**.

"We believe in the power of connecting the dots between the innovation hubs in LatAm, Africa and India. We don't vote on SP Ventures' investor committees, but we can say what we have seen in agtech in India models that can be transferable [to LatAm]," she said.

A Brazilian agtech success story, led by a U.S. founder

Leaf's founder and CEO, **Bailey Stockdale**, grew up in California but founded his agtech company in Brazil during 2018. He was living in the state of Mato Grosso, where he led an aerial-imagery company for growers. A software developer, he realized that farmers needed to have multiple pieces of data to actually make that imagery information useful.

"We had the image to know where the problem was, but we were trying to identify how it started. Is it malfunctioning with the machine, disease, or something else?" he recalled.

Stockdale reached out to nearly 100 different agtech companies worldwide, saying he needed to bring in data (like weather data, machines, financial information) from different sources. So he asked if he could connect to their data and migrate it over to build value on top of it.

"From what we found out from whom we spoke with, everyone kind of said the same thing: yes, we can work together, you can use our data, but we're looking at this integration with **John Deere**, that's going to take us like two years. So the story started with this frustration of being a software developer focused on improving the ecosystem via agtech and saying how can I possibly build anything here if I can't connect with anyone. People wanted to share their data, but I didn't have easy access to it."

Stockdale complained to venture capitalists about that and ended up teaming up with SP Ventures; joining the team as a resident entrepreneur. He spent about six months learning. Last year, Leaf emerged from stealth and raised a \$2 million round from SP Ventures and will probably search for fundraising opportunities again this year as it reaches its initial milestones.

Today, Leaf is building an API that helps software developers connect with all of their different data providers in a single unified way—something like what **EBANX**, **Plaid**, **Stripe** and **Twilio** do, but with payments.

These companies all connect with bank accounts and provide a single API that helps other companies integrate with their systems immediately instead of having to connect with every single one individually.

"That's the exact same thing that we're doing in agriculture. So now we are giving developers' companies the ability to build with all their partners with a single easy-to-use service rather than going to 100 individual connections."

"Made in LatAm" secret-sauce

Latin America still has a young population compared to Europe and North America, and its millennials and Gen Zs are familiar and adept with technology. Added to that, the region's entrepreneurs are tech innovators. During the **Animal AgTech South America Summit**, **Francisco Jardim**, founder at **SP Ventures**, noted that the region has such significant local problems and it's a place where entrepreneurs see opportunities.

"The fintech place is an obvious [path], but there are many other gaps in the supply chain where the solutions really need to be built and developed locally. It's why I think native entrepreneurs have such a huge competitive advantage over entrepreneurs of foreign geography because it's not just about technological innovation to be successful in Latin America; you need to innovate in the last mile on how you deliver the product and service, and how you charge for the product and service. Attempts to replicate go-to-market strategies from North America and Europe in Latin America have been disastrous strategies, so I think the last-mile innovation is very crucial, and it's where most of the opportunity is based," he said.

Money is going to companies that can address the pain suffered by millions, and they address the lack of coordination or alignment in all the value chain in the case of agtech, added Garcia-Robles. "I'm not just investing in the so-called impact investors; I'm investing in people who want to make money but understand that you can both make money and solve huge problems. That's why we are seeing an acceleration of unicorns because they are solving real problems and real pain points," said Garcia-Robles.

Agrofy says it wants to be the first one to reach unicorn status. It raised \$1 million from Capria in 2020 and a Series B of \$23 million in 2019 from **Fall Line Endurance Fund, Acre Venture Partners II, Agventures II Investment.**

Co-founders **Maximiliano Landrein (CEO)** and **Alejandro Larosa** know each other from **Bolsa de Comercio Rosario**, a non-profit trade association in Argentina. In 1999, they started talking about helping farmers in the country by trading grains and co-founded what is today one of the biggest grain traders in Argentina: **Futuros y Opciones.**

Even though Landrein and Larosa imagined a landing page where the farmer could get a marketplace, in 1999, they didn't feel that the internet timing was right. Yet, in a garage not so far away, **Hernan Kazah, Stello Tolda, and Marcos Galperin** were creating Mercado Libre, LatAm's leading e-commerce giant.

Landrein and Larosa decided to start the online endeavor with a news outlet, **Agrofy News**, which today is one of the biggest media websites in Argentina. In 2018, the company began to build its agro-focused marketplace with less than 40 people and raised a \$6 million Series A round from SP Ventures, **Syngenta Ventures, Bunge Ventures, and Endeavor Catalyst.**

Currently, Agrofy has 280 employees spread across Argentina, where it has its headquarters in Rosario, Brazil (São Paulo), Uruguay (Montevideo), and Colombia (Bogota). In the long term, Agrofy wants to expand to Mexico.

Added to the marketplace, which has 50,000 merchants on board and the news website, it launched **Agrofy Pay**, an e-wallet

for farmers, last year. "Agrofy is an ecosystem that offers products, services, and real-time information for agribusiness companies and farmers who aim to take advantage of the exponential growth of the internet. With a true focus on agri-community development, we are business and technology partners with agricultural DNA. We bring the chain together", said **Viviana Lauschus**, branding and communications manager at Agrofy. It means that the distributor is within Agrofy's ecosystem, and for the farmer in Argentina, it is bold because the farmer buys directly from the distributor.

Typically, agtech companies build growth slightly slower than other fintech companies because the distribution market for agriculture is challenging. That could be the reason why LatAm doesn't have an agtech unicorn yet. Also, agriculture is a highly competitive industry. Because of that, agtech companies get acquired really early on in their growth lifecycles.

They are usually acquired for hundreds of millions, but not billions of dollars because huge companies like **Bayer**, for instance, move quickly to acquire a startup, when in other industries, these companies get more mature and have a much longer valuation, as they stay private longer, according to Leaf's Stockdale.

"It's a growing market, absolutely, but we're starting to see these companies now. To be a unicorn, it takes a bit longer, and very often companies are acquired for lower valuations," Leaf said.

"When we look at unicorns, fintech is way ahead of agtech, but we are beginning to see the consolidation of those two pillars, and more and more especially marketplaces in agriculture are beginning to incorporate fintech verticals," added Garcia-Robles. Agrofy is that case. The startup is aiming to raise a Series B extension. Thus, the letters ESG (Environmental, Social and Governance) have been buzzing on the team's minds, as investors and stockholders are looking pretty close to these corporate practices.



Maximiliano Landrein,
co-founder and
CEO at Agrofy.

LatAm's ESG trend is fertile ground for carbon offsetting

The COVID-19 pandemic shined a light on investors with a dry powder to wisely use their money to have a much broader impact than just gaining financial returns. ESG guidelines have been followed by private equity and venture capital funds because investors want to see that.

"Nobody wants to see their money go into something that damages the planet or has social concerns or lacks governance. And this is tough when you're talking about startups, and is tougher in agtech than fintech, because fintech is even more technology-based. On the other hand, in agtech, you're still in the value chain of people, and people who were accustomed for a long time to be very informal and do not have guidelines to abide by," said Garcia-Robles.

In the U.S., carbon marketplaces and businesses that work with carbon traceability have been developing really quickly. In Latin America, this carbon market is developing more slowly.

"It's not a bad thing; there are still so many questions. Does carbon-capture work? How long does it work for? Are credits from carbon valid long-term?" asked

"Attempts to replicate go-to-market strategies from North America and Europe in Latin America have been disastrous strategies, so I think the last-mile innovation is very crucial, and it's where most of the opportunity is based."

BAILEY STOCKDALE
FOUNDER AND CEO AT LEAF

Stockdale. Software developers use Leaf's API to build and scale a wide range of products, including carbon-removal marketplaces.

"We are bringing them management data, and they are using the information to create models and generate carbon credit from that," he said. "In Brazil, I think it's a massive opportunity; it's going to be a very large piece of agriculture in the next ten years. Companies are working with similar things in Brazil, but usually, it's more related to another financial product. There's still a lot to learn about carbon marketplaces and how they work; certainly, there will be even more questions when Brazil adopts them. It will happen, but it's been less accurate in Brazil than in the U.S. so far."

In the end, Capria, a company that strictly enforces ESG guidelines, would get more funding because it's more professional and will provide more returns. Besides social impact, diversity, and environmental policies, the G stands for governance, which the fund values a lot.

Garcia-Robles recently left the Inter-American Development Bank, where she was Chief Investment Officer and Gender Initiatives Coordinator at the IDB Lab. She recalled that in the first years of IDB, she worked with green funds managed by NGOs.

"They were saving trees but didn't understand a thing about financial returns or governance. What happened in the end? All those companies that were supposed to save the planet didn't save the planet, didn't save jobs, and made us lose money. One lesson that I learned early in my career: becoming more professional is tough for a startup when switching to audited financial statements, but you have to make the point that this is growing up."

Meanwhile, Latin America has seen innovation like never before in all agtech ecosystems, which also holds for foodtech startups. Before there were no regional innovators who could match the plant-based **Impossible Burger** developed in California, but now LatAm companies like **Fazenda Futuro** and the new Chilean unicorn **NotCo** are proving that they can do that and many other things.

"Talent to develop the solutions is everywhere, not only in Silicon Valley. The access to resources so that talent can be used is what is scarce. We are living in a moment in LatAm in which the world has taken notice, and they are seeing innovation in fintech, agtech and foodtech. As our challenges are greater, our innovation capacity to solve them is also greater." ■



Agtechs startup ecosystem

The range of opportunities for agtechs is enormous. This is a market map that covers the entire value chain, from farm inputs to innovative foods.

Pre-farm

This covers research and development, production and distribution of equipment and inputs, and financial services.

- Fertilizers, inoculants, and nutrients
- Laboratory analysis
- Seeds, seedlings and plant genomics
- Animal genomics and breeding
- Credit, barter, insurance, carbon credits, and fiduciary analysis
- Animal nutrition and health
- Agribusiness input marketplace

On-farm

Encompasses everything that happens from planting to harvesting, as well as activities related to livestock.

- Farm management system
- Drones, machinery and equipment
- Content, education, social media
- Telemetry and automation
- Biological control and integrated pest management
- Connectivity and telecommunication
- Integrated platform of systems, solutions, and data
- Remote sensing, diagnostics, and monitoring through images
- IOT: detection of pests, soil, climate, irrigation
- Meteorology and irrigation and water management
- Agricultural waste management
- Sharing economy
- Beekeeping and pollination

Post-farm

From production logistics to sales and distribution to the final consumer.

- Innovative foods and new food trends
- Storage, infrastructure and logistics
- Online restaurants and meal kits
- Biodiversity and sustainability
- Packaging, environmental, and recycling systems
- Urban planting: plant factory and new ways of planting
- Marketplaces and platforms for negotiation and sale of agricultural products
- Online grocery
- Stand-alone management system for stores and food services
- Food industry and processing 4.0
- Bioenergy and renewable energy
- Food safety and traceability
- Kitchen in the cloud and ghost kitchen

Source: Cetic



E-commerce and payments in Latin America after COVID-19

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SUSTAINABILITY ON THE FARM

BovControl grabs the climate-change bull by the horns

BovControl started as a data platform to give cattle farmers a simple way to manage their herds and land. Today, it's on the brink of becoming a major force in fighting climate change and turning livestock farmers into net-zero heroes.

BY LAUREN SIMONDS

Without farms, there is no food. But finding a sustainable way to feed a world populated with **nearly eight billion people** is one of the most vexing challenges of our lifetimes. Dairy farmers and cattle ranchers, in particular, feel the heat of climate change since meat and dairy production exacts a hefty environmental toll on the planet.

Even as demands to act on climate change grow—UN Secretary General **António Guterres** called 2021 a "**make-or-break moment**"—**global meat and dairy production** shows no sign of slowing down. Instead, they're both increasing. The world produces nearly 800 million tons of milk annually—more than twice the amount compared to 50 years ago. Meat production has tripled during the same 50-year timeframe to more than 340 million tons.

Brazil alone accounted for **214.7 million head of bovines** at the end of 2019. In 2020, the U.S. had **94.4 million head of cattle**, and the overall **global cattle population** hit close to one billion head. That's one giant load of fertilizer and a whole lot of greenhouse gas.

In fact, data released last year found the meat and dairy industries create **7.1 gigatons of greenhouse gases** annually—that represents 14.5% of total man-made emissions.

But, what if farmers could raise dairy cows and beef cattle in a way that is not only sustainable, but that also removes more carbon from the environment than the massive livestock industry emits globally—and get paid for providing an incredibly important environmental service?

LABS spoke with BovControl's CEO and Co-founder **Daniilo Leao** to learn more about the company, co-headquartered in Brazil and California, that's helping to tackle the urgent climate-change challenge while providing a new source of revenue for its farmers.

LABS What is BovControl and how does it help dairy and cattle ranchers manage their livestock?

DANILO LEAO BovControl provides farmers with easy-to-use tools to collect animal data in the field using hardware that communicates with smartphones or computers, despite poor internet connectivity. That data includes everything from the weight of the animal, where it comes from, genetic information, the feed, and all daily activities associated with animal management.

Farmers can use whatever tracking methods they have. We integrate with all kinds of weight scales, barcode readers, RFID readers, ear tags, Bluetooth collars, and different types of implanted chips. Nowadays, that's called the Internet of Things (IoT), but we nicknamed it IoC: the "Internet of Cows."

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"Farmers can use whatever tracking methods they have. We integrate with all kinds of weight scales, barcode readers, RFID readers, ear tags, Bluetooth collars, and different types of implanted chips. Nowadays, that's called the Internet of Things (IoT), but we nicknamed it IoC: the "Internet of Cows!"

DANILO LEAO
CEO AND CO-FOUNDER AT BOVCONTROL



We collect data about the land, grass, productivity per hectare (about 2.5 acres of land) and grazing patterns. For example, if farmers graze animals in several areas of the farm, we help them monitor that to increase the grass productivity per hectare.

BovControl's second phase began when corporations realized that we have a valuable database that grows exponentially. Currently, our database doubles in size every quarter. Our datasets help companies understand their product sources, quality aspects, prices, volume, and supply predictability.

LABS You've created the largest livestock database in the world. Are there other databases like BovControl that track various types of data for farmers?

DL We have 80,000 farmers in more than 50 countries across six continents who actively use our BovControl platform. Governments — the largest being the U.S. and Brazil — are closest to us in their traceability systems, but they have less than 10% of our data volume.

Associations, like the [Brazilian Association of Zebu Breeders](#) (ABCZ) and the [American Angus Association](#) in the U.S., are not really competitors, but they have important sets of relevant data. ABCZ has close to 20,000 active farmers, and the Angus Association has 18,000 farmers, but they're not active every year.

LABS What are some of the top insights customers can glean using this massive database?

DL Let's look at farmers and food companies that use milk as a raw material as one example. These customers deal with complex value chains, and our BovDairy tool provides quality traceability, ways to monitor production, price changes, and it adds a layer of predictive analysis about market behavior.

Nestle, for example, has almost 2,000 farmers supplying milk for them every day. The company needs to monitor logistics

like the volume of milk they take from each small producer in different regions.

They collect milk samples to make quality tests — like the fat per volume and bacteria count — in the field.

Our tools give them the visibility to track all quality aspects of the milk.

LABS Nestle manages its entire milk supply chain with Leitera, a tool you developed. How does Leitera work and do other milk producers use it today?

DL Leitera is a white label of our BovDairy tool. We created a customized version for Nestle that sits on top of our platform, but we have many suppliers and processors that use BovDairy. The application helps our customers understand the daily volume of milk they collect.

Milk volume fluctuates in any given local market and that affects the price. Processors need to price properly to keep buying milk from their suppliers. BovDairy's predictive analysis reduces their exposure to fluctuations in market-price volatility — in the actual moment and in the future — because our data provides more precise forecasts than any other company.

LABS How does BovControl help ranchers make better decisions?

DL A family taking care of their animals is not prepared to deal with complex datasets. Our easy-to-use tools let them collect data in the field and compare prices of other local, national, or even global suppliers.

Our platform lets farmers interact with the processors to understand what quality aspects their clients need. Farmers can negotiate a better price for delivering a specific quality. In essence, BovControl de-commoditizes commodities.

Let's say you use grass-fed cows to produce milk and your neighbor deals with feedlots. That one factor alone produces a difference in quality, and buyers need to understand the specific quality you provide, especially if it's used for a certain product. Your milk quality

may, or may not, be better for a specific type of cheese, yogurt, or chocolate.

Farmers can also use our calculator to decide whether it's worth investing in a specific management protocol. The system crunches the numbers to calculate how much more per gallon they stand to gain.

De-commoditizing the value chain is a new way of doing this business. It's fair for the farmers who deliver unique quality, and it's fair for the processors who pay a bit more for a better product.

LABS Why do ranchers, supply-chain handlers, and retail customers supplying beef to consumers care about tracking beef from its origin to where it's sold?

DL Traceability is an important, but very stressful, subject because many government-led initiatives are very frustrating for farmers. Traceability is bad for farmers when governments push their methods without understanding the reality on the farm.

Dealing with traceability — collecting data, tagging animals, and otherwise interacting with animals in large volume — is not easy. A big farm can be the size of a city. The government protocols were created by people who are not very familiar with that world.

Breeder associations with specific demands sat in governmental space discussing protocols with packers and retailers, and each group created barriers to push the protocols to serve their own interests.

When you deal with food, you need systems that are scalable, and you need a significant volume of users inside the same system. These 'protocols-by-committee' are not scalable, and the farmer became the villain of traceability.

In a voluntary-traceability system, I can guarantee the quality of the evidence BovControl provides. The tools our farmers use to collect data in the field deliver a much higher quality of traceability, without the pressures of protocols that can't scale.

LABS How can BovControl's livestock database increase sustainability and reduce climate change?

DL We started working on climate change and sustainability three years ago. The [United Nations Food and Agriculture Organization](#) (FAO) hired us to help them build a digital calculator that would let livestock ranchers understand how cow emissions affect their carbon footprint.

We worked with Embrapa, a governmental institution that revolutionized agri-business in Brazil, on another project and learned about carbon sequestration: the scientific term for carbon removal from the environment.

We joined forces with [Embrapa](#) to measure carbon, and we've been working with them, and Nestle, to measure the livestock system as a whole. Not just the farm's cows, but its grass, water, trees, and forest. We crunched the numbers and here's what we found.

The average BovControl farm has 150 cows, 200 hectares, and one truck. Every year, this average farm puts 115 tons of carbon into the environment and every year it removes 500 tons. This farm is not only net positive, but it also

"The average BovControl farm has 150 cows, 200 hectares, and one truck. Every year, this average farm puts 115 tons of carbon into the environment and every year it removes 500 tons. This farm is not only net positive, but it also produces a 75% sequestration surplus. Grasses and forests are carbon sinks."

DANILO LEAO
CEO AND CO-FOUNDER
AT BOVCONTROL

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The average BovControl farm has 150 cows, 200 hectares, and one truck. Every year, this average farm puts 115 tons of carbon into the environment and every year it removes 500 tons. This farm is not only net positive, but it also produces a 75% sequestration surplus. Grasses and forests are carbon sinks.

Consider this: Livestock ranchers, especially in Latin America, have local laws that require a certain percentage of their farm to contain forests. The percentages vary by region. In the Amazon region, you can work with livestock on only 20% of your farm. The other 80% of your farm must be forest. The minimum in Brazil is 15% forest.

A farm's forests, bushes, grass, and trees pull carbon out of the environment. And, depending on the species of vegetation, the sequestration of carbon is different. We use Embrapa's data sets to calculate cow emissions and carbon sequestration from these different vegetation species. We monitor the species on our farms and collect data using seven different satellite sources.

LABS Is proof of sustainable milk and meat something your customers and end-consumers value?

DL Yes, and this relates to your previous question on sustainability and climate change. We can now provide evidence that our farmers remove more carbon than they emit, and we're creating tokens of carbon removal that allow farmers to get paid for the environmental service they provide to the world.

We are placing that data, the type and volume of sequestration, in a blockchain so the world can see and verify it. Companies like Google, Amazon, Apple — and others committed to be carbon-neutral by [2030](#), 2040 and 2050 — can buy these tokens as carbon credits to offset their carbon emissions. It's a huge market. A recent [Financial Times article](#) noted the investment industry has \$43 trillion in funds committed to net zero.

Our farmers get a token for every ton of carbon they remove, which gives them an additional revenue stream. The price for removing a ton of carbon varies by market. Right now, I think it ranges between USD \$19 to \$25 per ton.

LABS How has the pandemic affected your business?

DL It seems crass to talk about our success at a time when so many people were ill or lost loved ones. But we grew 60% in 2020 — mainly because commodity prices increased drastically. It gave customers an extra push to have data and predictive analysis on market behavior. The crisis accelerated the need for tools that could predict and help reduce the impact of price volatility.

LABS You started BovControl in Brazil, and you now have offices in Silicon Valley and Fresno, California. How has demand grown and what percentage of your customers comes from the U.S.?

DL Currently, Latin America represents 40% of our customer base, while 15% of our clients are in the U.S. But with the contracts that we have in our U.S. pipeline, that will change quickly. By the end of 2021, we'll hit 25%.

LABS Can you share any major milestones or new offerings in the works?

DL Two weeks ago, we signed a very important contract with one of the major big-tech companies. We can't say which one yet, because it's still confidential.

What we can say is that it's a fund, and that we'll announce this new partnership in November at [COP26](#), the [United Nations Climate Change Conference](#) in Glasgow. This partner is validating the carbon-removal mechanism we discussed earlier.

It's important to understand the difference between carbon mitigation and carbon removal. Tesla, an icon of sustainability, mitigates, e.g., reduces nearly 400,000 tons of carbon per year compared to cars using fossil fuels.

BovControl farmers don't reduce carbon — instead, they remove it from the environment. In 2020 alone, they removed 25 million tons of carbon. That's 70 times Tesla's mitigation. The partner we'll announce in November recognizes our platform as the largest framework of carbon removal in the world.

We're very confident this partnership will accelerate adoption and growth because it gives our clients an extra source of revenue. Farmers and cows are no longer climate-change villains. They're becoming the real stewards of the environment. ■



HIGH-TECH COFFEE BEANS

Tasting coffee beans through AI: the bold move from Colombian-Israeli Demetria

Using an artificial-intelligence platform to determine the taste and quality of green coffee beans before roasting, Demetria wants to shake up the traditional coffee industry

BY ISABELA FLEISCHMANN

Colombian entrepreneur **Felipe Ayerbe** wants to turn the everyday morning cup of coffee upside down. With a civil engineering degree from **Universidad de Los Andes** in Bogotá, the former consultant at **Accenture** and **McKinsey** is also experienced in investment banks and asset-management firms including **Corficolombiana**, **Credit Suisse**, and **Sanford Management**. But last year he decided to start a company to work with tropical agriculture and co-founded **Demetria** with the current executive chairman **Eduardo Shoval**, CTO **Yori Nelken**, and exec **Salomon Kassin**.

Demetria is an agri tech that developed an artificial-intelligence platform to determine the taste and quality of green coffee beans. "Like a lot of good ideas, Demetria arose through luck, but because we were looking for luck. The whole idea started when we went on a trip to Israel to try finding technology that would be applicable to tropical crops. We thought there was a vacuum, a lack of services of technology, and Israel evidently is one of the best innovating

countries in producing technology for the agricultural space, but it's typically done for the non-tropical crops," Ayerbe, the CEO, told **LABS** in an interview.

Ayerbe knew about the 40-year-old hardware sensors' technology early on in his career as an engineer, but at that time, machines were so big that they couldn't fit in a room. Yet, visiting Israel, he reached out to a company that produced handheld sensors and thought about applying them to the \$450 billion technology-less coffee industry.

"The coffee industry has pretty much had the same thing going on for 200 years," he said.

Demetria uses the sensor to read what it calls "the spectrum fingerprint" of the bean, which is a proxy for the whole chemical composition. The problem is that it is not in a language that people can understand; instead, it's a spectrum language.

Historically, the industry has translated that spectrum fingerprint into chemical composition, using this technology to determine the amount of sugar in sugar cane or how much fat protein there is in milk, for instance.

"Forty years ago, you would ask for coffee and you would get it for free with a very low quality. It was just a method to deliver caffeine. Fast-forward today when you go to a fancy restaurant and you ask for coffee you get a menu. You have different choices, different price points, different preparations, that's what we call the winefication of coffee."

FELIPE AYERBE
CEO AT DEMETRIA

But Demetria's "eureka moment" was when it correlated the spectrum fingerprint to taste, rather than to chemistry. "At the end of the day, the taste is a representation of chemistry, but it's the representation that we have as human," said Ayerbe.

With that, Demetria could replace the time-consuming manual process of cupping coffee by automating the analysis of the green coffee beans at any pint during the process. How? By using these sensors and its software, i.e., the AI platform to better understand how the coffee will taste for consumers. Before this, coffee farmers, traders, and roasters only knew about the taste by the artisanal cupping, usually far down the supply-chain journey.

"We were able to prove we can measure taste in green beans before roasting. This is something that when we started the process a lot of people in the industry thought we were crazy, but last November we were able to prove not only that it could be done, but it could be done with a very high degree of certainty. We are under 90% accurate, which is comparable to what an individual cupper is," he said.

Cuppers are people who taste coffee. As people, they have different tastes, allergies, and all those human kinds of things. But, even though Demetria can replicate cuppers with its technology, Ayerbe says his objective is not to replace human workers, but to add technology to the process.

"The problem with the industry is that because cupping is so difficult to do, is it's so exclusive, it's not good enough. So the most important variable in the industry, which is quality and taste, is not measured enough, and that's why the vast majority of farmers in the world have never tasted their coffee; they don't

know what they're producing. Consequently, they don't know what they need to do in the field to produce better-quality coffee, because what you don't measure, you don't manage."

By automating the process, Demetria's technology increases the reproduction of high-value coffee seedlings to provide high-quality coffee plants, pushing efficiency and transparency throughout the commodity's value chain for the 12.5 million small coffee farmers. Yet, Demetria is not only targeting the small ones.

The newcomer has already caught the attention of one of the world's top roasters **Nespresso**, besides agricultural commodities merchant **Volcafe/ED&F Man** and the **Colombian Coffee Growers Federation**.

Making specialty coffee, well, special

In an industry where taste is king, Demetria is already generating revenues. Nespresso develops coffee varieties through the grafting of coffee-tree seedlings, a horticultural technique used to join two plants so they grow as a single plant. To date, Nespresso relied on the experience of a few trained experts to manually examine the seedling to detect if the grafting process was successful and the plant was viable.

Now, Demetria's SaaS platform reads the coffee bean using near-infra-red sensor technology and AI-driven data intelligence to enable Nespresso's operational teams to measure and classify grafted stems of specific coffee tree seedlings.

Before the commercial agreement, Nespresso underwent a pilot with Demetria's app to classify more than 240,000 seedlings in a three-month period that have since been supplied to Nespresso's select network of farmers in Colombia.

Nespresso's deal is important because Demetria's main performance indicator is contracted value. As with everything in a tech-related business, it's all about the data. Because once the firm engages with a customer, the signed contract gives Demetria the data to codify their coping quality experience and deliver applications.

Ayerbe believes that by the end of this year the company will have about \$4 million in total contract value. "Revenues are going to happen a little bit with a lag because first we get the data and then we deliver the applications. This year it will be a little less than \$1 million [in revenues]," he explained.

Felipe Ayerbe,
CEO and co-founder
at Demetria.





Demetria's sensor measuring coffee taste.

"Our concentration is to work with the largest players in the world. The reason being is because the coffee market has millions of farmers but relatively few traders and roasters that manage a big percentage of the coffee flow. So by concentrating on those, we are able to codify the data that we can take worldwide," stated the CEO.

"Once we do that, we are going to go to the farmers because this is a top-down perspective. If you want to create a new standard, you start with the people who value quality today, which are the coffee buyers. The farmers do now know the quality. So once we do that, we go to the farmers, and then deploy the application for the farmers, and we can have the whole value chain connected."

Ayerbe said the coffee industry is going through a "winefication" process, and Demetria is enabling the digitalization of that. Meaning that the farmer can see through the cloud the type of buyer looking for gourmet coffee.

"Forty years ago, you would ask for coffee and you would get it for free with a very low quality. It was just a method to deliver caffeine. Fast-forward to today when you go to a fancy restaurant and you ask for coffee when you get a menu. You have different choices, different price points, different preparations, and that's what we call the winefication of coffee," he said.

The winery is a sophisticated and profitable business. But coffee's money has so far been concentrated in commodities. For a farmer, the value difference between the mainstream commodity coffee and the high-value specialty coffee can be 30 times, and even reach 90 times, according to Ayerbe. "If a farmer can manage his quality and measure and understand the quality, having transparency to understand who is going to be able to buy that cup of coffee at the best price possible can be a difference of 30% and 40% in the value of revenues for that farmer. Whenever you place transparency in the business, the industry grows," he said.

Not a LatAm agtech, but a worldwide company

Although the startup is a very young company, it already has a relatively global footprint. Demetria's development team is based in Israel, and its "on-the-ground" team started in Colombia. The startup opened up an operation in Brazil about three months ago, setting up a lab in Varginha, the hub of the coffee region in Brazil. It also has a commercial presence in Europe.

Born amid the pandemic, the 35 employees team was never tightened down to physician constraints. "We feel that we are going to be able to keep on growing with that global footprint, and hiring the best talent no matter where they are. Yet, the commercial side and the management side have to be where the coffee is, so that's why we are in Colombia and Brazil, and probably soon in Vietnam."

Those three countries produce about 60% of the world's coffee. So with a relatively "small" presence, Demetria can cover the biggest amount of coffee production in the world. Demetria's technology works with high value, specialty coffee as well the mainstream ones. Colombia has been distinguished for mostly producing high-value coffees, and Brazil has a little bit of both, robust high-value coffees and more generic commodity coffees.

Demetria has already raised a \$3 million funding round led by LatAm-Israeli investor **Celeritas** and a group of private investors including **Mercantil Colpatría**, the investment branch of **Grupo Colpatría**, a leading player in the Colombian financial sector, and it's on its way to raising a Series A round to ramp up the IA and the delivery-service team.

The early-stage firm plans to launch a suite of SaaS-based solutions to deliver taste assessment and profiling of green coffee beans as well as swift, accurate quality measurement and traceability throughout the supply chain.

Traceability is a big issue, not only in the coffee industry but for food in general. Demetria found that the spectrum fingerprint of a particular batch of coffee is unique, like a human fingerprint. It can identify that the batch of coffee from a farm in Brazil is the same one received at another port somewhere around the globe.

"People want to have a connection to their food and they want to understand where it is coming from, not only from a fraud prevention perspective but also from the brand story. In most of the solutions in traceability, you can trace the packaging, the transactions. But here we're literally tracing the physical bean."

While the money flows in traditional innovation hubs like Israel and Europe there is still a market to expand and innovate for the third-world's tropical crops.

"Our Latin American countries are still very dependent on agriculture. The impact we believe we can bring with agtech is much more important here than in other areas, so I believe that this is something that hopefully more people like us can solve." ■

VERTICAL FARM

Pink Farms grows to new heights

This Brazilian farmtech has developed a vertical growing system in a highly controlled environment that produces 130 times more food output than in the field

BY CAROLINA POMPEO



Photo: Dan Magallon/Courtesy

O Imagine a farm that is seven meters high. That's right. A seven-meter-high urban vertical farm. This is **Pink Farms**, a farm tech located in Vila Leopoldina, a neighborhood in downtown São Paulo. Inside, towers of up to ten floors, lit by red and blue lamps, which simulate sunlight and result in a pink atmosphere that is an optimal environment to grow different types of vegetables, leafy greens, mushrooms, and some fruits.

Vertical farms are a model of intensive farming: a lot of food production in a small area. They are a new model for urban farms based entirely on technology and automation, since they provide a highly controlled environment to grow plants. The premise is to increase the efficiency of cultivation and the quality of the final product at a reduced operating cost and at a location that is nearby a majority of consumers.

In an interview with LABS, **Geraldo Maia**, one of the co-founders of Pink Farms alongside brothers **Mateus** and **Rafael Delalibera**, explained that the farmtech was born from the trio's desire to create a technology business focused on the real-economy market, that would add technology to some product or process to impact the production chain in a disruptive way.

"We looked for everyday problems and discovered the low variety and quality in growing vegetables and fruits. We realized that vertical farms solve several problems in this production chain: the scarcity of food, the use of native land, the low quality of food, and the intensive use of pesticides."

Technology indoors

Pink Farms' vertical production system was entirely developed by the startup. It all starts with a "recipe" that's customized for each plant. This is where the startup's multidisciplinary team studies the genetics of a particular plant and defines "what people want" from it: what flavor, how much crispness, how big, etc. Then, the ideal production conditions are evaluated, that is, what is the germination rate, what is the harvest variation, what is the productivity level per square meter per month, among others. Finally, the variables applied to that crop are defined, such as the combination of hydroponic systems, lights and climate settings.

The next step is up to the engineering team, which works on how to automate that specific crop at scale in a controlled environment.

One of Pink Farms' vertical farms.

"The crop is not subject to the weather hazards, such as seasonal droughts or excessive rainfall, too much sun or frost, risk of contamination by pests, and other conditions that stress the plants. The solution ensures constancy in production, and very little variation in the production process."

GERALDO MAIA
CO-FOUNDER OF PINK FARMS



The specifics of the model, said Maia, encouraged the development of the in-house technology. "There is no market solution that meets our model. So we developed 100% of the technology."

The result is a sealed growing system, where there is no air exchange between the growing environment and the outside environment. The technology ensures 100% control of the plant's variables: from temperature to humidity and CO2 levels, the lighting, which is entirely artificial, to the nutrient solution the plants receive.

"The crop is not subject to the weather hazards, such as seasonal droughts or excessive rainfall, too much sun or frost, risk of contamination by pests, and other conditions that stress the plants. The solution ensures constancy in production, and very little variation in the production process," said Maia.

Business evolution

Pink Farms' R&D is in its fourth stage, according to Maia. The whole story began in 2016, with the technological-validation phase, when the three co-founders developed and submitted the vertical farming system to a series of tests to verify that it was indeed efficient.

Then came the phases of economic validation, with a pilot model of the farm, verification of processes and calculating costs per kilo produced, tests with suppliers and experimentation with more than 40 types of plants, until reaching the ideal portfolio; followed by commercial validation, in which the startup aimed to make adjustments to land on the best logistics and sales model.

This whole process lasted about three years and answered the group's initial question: yes, the system is efficient. The Pink Farms' vertical farm produces about three tons per month and up to 130 times more food per square meter of soil. According to Maia, it generates savings of

95% of water and 60% of fertilizers per kilo produced. Bonus: the food is pesticide-free.

From the company's vertical farm, it distributes products to the center, west and south zones of São Paulo and its produce is already present in more than 75 points of sale in the city, including supermarkets, grocery stores, and restaurants. The startup handles all of its own distribution logistics.

The startup is currently focused on expansion. In September, Pink Farms will be moving and opening a new vertical farm that is larger and more automated, with towers of up to 24 floors for cultivation. The startup estimates that the production will jump from three tons per month to up to 120 tons, at a cost that is up to 35% cheaper than its current operation.

Maia said that the new vertical farm will be the first flagship location for Pink Farms and the plan is to scale up that operation and then replicate the model in other regions of Brazil. Pink Farms has no intention of selling the technology to other companies.

The Future

In the six years since it was founded, Pink Farms has already had three rounds of investment, with a total of BRL 8.8 million in funding. Among its investors are **SP Ventures**, **Grão Venture Capital** and **Capital Lab Ventures**. The startup's most recent funding round, concluded in March, happened **via crowdfunding and raised BRL 4.8 million**, 20% more than expected.

Besides the launch of the new vertical farm and the plans to replicate the model, Maia said that Pink Farms has plans for a Series A round, possibly even this year, and, in the long run, to build a strong brand throughout Latin America. For the entrepreneur, **agro is still a little explored area of technology-based business opportunities** and Pink Farms wants to ride this wave.

"There are still huge opportunities in agro, which is a market that still relies heavily on big companies to bring innovation. Agro is still going to be revolutionized by startups; there is still a lot of value to be added to the production chain," he said. ■



BUSINESS

Latin American startups look North to IPO

LABS spoke with Nasdaq and two leading venture capitalists about the evolving IPO ecosystem in Latin America, and why the U.S. remains a top choice for tech companies going public

BY BONNY RENNER

When it comes to exiting startup mode, making an initial public offering (IPO) is just one potential path a successful business can take to raise a large amount of capital for global expansion. But if you're a Latin American startup with dreams of going public one day, the future looks brighter than ever. 2021 is shaping up to be a record-breaking year for IPOs across the U.S. and LatAm.

U.S. markets have seen a recent explosion of IPO activity, with **Nasdaq** reporting **410 new IPOs** in the first half of 2021 alone. The Wall Street Journal reports that U.S.-listed IPOs could raise **upwards of \$40 billion** from June through August of this year, smashing the previous record of \$32 billion set just last year. That staggering figure doesn't include **money raised by special-purpose acquisition companies (SPACs) either**.

Despite all the market volatility created by the global pandemic, **Brazil's stock market (B3)** is experiencing a surge of IPOs as well. According to the *Financial Times*, 41 companies have announced their intention to debut on the B3 exchange in 2021, and B3 saw 28 IPOs last year — the

highest number since 2007's all-time record of 64 IPOs in a single year.

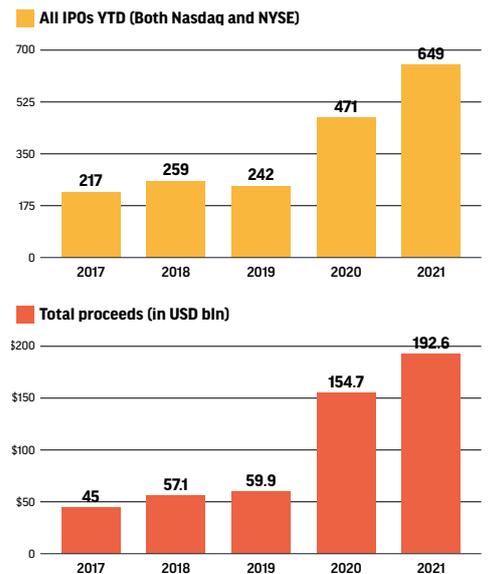
For Latin American startups hoping to go public—especially emerging technology companies—one of the biggest strategic questions has become: should your company do an IPO in the U.S. or locally with B3?

If you're a well-known brand with operations in Brazil, going public on the local B3 stock exchange where consumers and potential investors are already familiar with your products and services makes a lot of sense said **Nicolás Szekasy**, co-founder and managing partner of **Kaszek**, LatAm's largest venture capital firm. For emerging technology companies, however, the decision is more complex.

Prior to launching Kaszek, Szekasy was part of the founding team at **Mercado Libre**, where he served as CFO and was responsible for taking the company public on Nasdaq in 2007, making it the first Latin American company to join the Nasdaq 100.

Historical IPO trends

U.S. markets have seen a recent explosion of IPO activity



Source: Nasdaq



"Today, B3 is a fantastic option, and the decision of where to IPO is now up to the teams more than anything else. Still, there are more benchmarks trading [in the U.S.], and there's a bit more infrastructure in terms of research and liquidity. Some companies will continue to go to the U.S. for that reason, but it's very viable to do an initial public offering with B3."

NICOLÁS SZEKASY
CO-FOUNDER AND
MANAGING PARTNER OF KASZEK

B3, Nasdaq, and NYSE: Which stock market is better for Brazilian and Latin American tech companies?

While the volume of IPO activity has grown significantly in **Latin America**, B3 still has a ways to go to catch up to other global markets. **B3 earned eight of Brazil's 13 IPOs from 2018 to 2020, but the U.S. market remains a much more attractive option for high-growth tech players.**

Examples include **PagSeguro's** \$2.61 billion debut in January of 2018 on the **NYSE**, followed by **StoneCo's** \$1.5 billion launch on Nasdaq in 2018, and **XP's** \$2.25 billion IPO on Nasdaq in 2019.

One big challenge for B3 is the chicken-and-egg problem of not having enough comparable companies trading on the B3 exchange to provide a fair market valuation for many tech startups, explained **Anderson Thees**, managing partner of **Redpoint eventures**, the first Silicon Valley fund on the ground in Brazil.

"We don't have critical mass to [determine] whether there is a liquidity premium reflected in the valuation of companies. For example, if you are a SaaS company listed on Nasdaq, you're going to be compared to **SaaS** companies operating in China and India, as well as in the U.S. But if you compare the multiples for a specific industry size as an example, the size multiples in those markets are still significantly higher than what we see in private transactions in Brazil," said Thees.

B3's stiffer regulatory requirements also make it hard for tech companies to list locally, according to Thees. "The requirements are very high in terms of revenue profitability, beyond what the regulators or B3 itself requires. The analysts here didn't have a good understanding of companies that were high growth and not profitable, but that is something that's shifting."

Ownership and governance options are yet another critical difference between B3 and Nasdaq, and this can be a dealbreaker for some startups. "In the U.S., you have the possibility of one class with multiple votes, which is what allows

"The requirements are very high in terms of revenue profitability, beyond what the regulators or B3 itself requires. The analysts here didn't have a good understanding of companies that were high growth and not profitable, but that is something that's shifting"

ANDERSON THEES,
MANAGING PARTNER OF
REDPOINT EVENTURES

"Back then it would have been very hard to go public with a company like [ours] in Brazil. The markets in Latin America simply weren't ready for our story. At that time, there was very little precedent for technology companies going public. The market in the U.S. was deeper and more liquid, and there were [investors] in the U.S. that were less focused on short-term profitability, and more focused on long-term value creation," said Szekasy.

A lot has changed since then. With each subsequent local IPO, the ability of LatAm companies to scale and grow globally has been proven, boosting local awareness and confidence in emerging-tech offerings, and attracting more international investment to the region as the local ecosystem has matured.

"During 2020, 83% of transactions in the region included a local investor compared to more than a third (39%) that included an international investor. International investors are increasingly betting on the maturity of the local ecosystem, and this will potentially enable public markets to see increased liquidity events locally in the coming years," said **Carlos Ramos de la Vega**, LAVCA's manager of venture capital.

According to Szekasy, "Today, B3 is a fantastic option, and the decision of where to IPO is now up to the teams more than anything else. Still, there are more benchmarks trading [in the U.S.], and there's a bit more infrastructure in terms of research and liquidity. Some companies will continue to go to the U.S. for that reason, but it's very viable to do an initial public offering with B3."

companies like Facebook and Mark Zuckerberg to have less than 50 percent of the equity and still control the company. Founders can retain control and be public in the U.S. and they are doing that. In Brazil, it's harder and a smaller number of founders will be willing to give up that control. These things still need to be adjusted on [B3's] regulatory framework," said Thees.

Until more of this evolution takes place at B3, Nasdaq's global visibility, higher transaction volume, market liquidity, and more extensive analyst coverage puts it at a clear advantage.

Nasdaq has been capitalizing on this by actively meeting with successful LatAm startups for the past few years, said **Ivana Ferreira**, Nasdaq's managing director of listings and capital markets for Latin America. "[Until the pandemic] I was traveling very often, talking to entrepreneurs, and talking to investors of the portfolio companies to help demystify the process of listing here," said Ferreira.

Going public on Nasdaq begins with introductory calls six to eight months prior to the desired IPO date. Companies must file an application with Nasdaq which takes four to five weeks, then they must step through the process of both confidential and public filings with related

comment periods to meet various SEC requirements. Nasdaq wants a commitment from founders at least six weeks before the IPO to provide enough runway to develop supporting PR and marketing messages for the big day and following weeks.

"At Nasdaq, we don't view an IPO as just one transaction. We set out to build long-term relationships with issuers and support them throughout the journey toward their IPO and beyond as public listed companies. We [have] teams, tools, and assets to support those listed companies throughout their entire life cycle, which is very comforting for entrepreneurs. Mercado Libre exemplifies what it means to be a Nasdaq-listed company, and we've been with them through all stages of their growth," said Ferreira.

One thing is certain: successful LatAm startups are in the driver's seat when it comes to their IPO options.

"10 years ago, companies got to a certain scale and at some point, they would most likely be acquired by a larger global company. Now, I would say nearly 100% of companies that are building and evolving towards an IPO will do so one day, and when the time comes, tactically they will have the choice of whether they should do this locally, on some international exchange, or perhaps even list their company on both," said Szekasy.

Thees agrees: "I believe you're going to see more and more companies listing locally, but that won't preclude some of them from listing in the U.S., as well. We already have institutional investors participating in pre-roadshow, pre-IPO roadshows, and so on, which is great. And you have more international players like the London stock exchange and Canada bringing value propositions to companies and encouraging them to IPO earlier. This is all a part of the natural evolution of the market. As we start to have more and more Latin American companies reaching critical mass, this fight for where to list is becoming more and more frequent. And it's very healthy for everyone, I think," said Thees. ■



"We [have] teams, tools, and assets to support those listed companies throughout their entire life cycle, which is very comforting for entrepreneurs. Mercado Libre exemplifies what it means to be a Nasdaq-listed company, and we've been with them through all stages of their growth."

IVANA FERREIRA
NASDAQ'S MANAGING DIRECTOR
OF LISTINGS AND CAPITAL
MARKETS FOR LATIN AMERICA



Anderson Thees, Managing Partner of Redpoint Ventures.



TECHNOLOGY

New emergency funding promises much-needed internet access to millions of Brazilian students and teachers

Brazil's education system faces a politically induced crisis, the pandemic, and totally inadequate internet access. LABS examines this intersection, the state of remote internet access for education, and how bringing connectivity to those who need it most plays out on the ground.

BY LAUREN SIMONDS AND CAROLINA POMPEO

Millions of students and teachers across Brazil received much-needed good news in early June. **The National Congress of Brazil passed a measure** (law [14.172/2021](#)) to provide BRL 3.5 billion (\$690 million) in emergency funds for public schools to help ensure internet access for remote learning during the pandemic. More than 18 million students and 1.5 million teachers in Brazil's public school system will benefit as a result. President **Jair Bolsonaro vetoed the same measure** just four months earlier.

The monies will be used primarily for mobile internet, or for fixed broadband if it's less expensive or for locations where mobile connectivity is not an option. Groups receiving the highest priority include those already enrolled in social

programs, rural populations and indigenous communities, *quilombolas* (communities created by the descendants of African slaves), and *ribeirinhos* (communities that live near and make their living on rivers).

Overtuning the veto and the sudden availability of much-needed money during an unrelenting pandemic might seem like a major victory. However, BRL 3.5 billion is really just a Band-Aid attempting to address a gaping hole in Brazil's education budget.

According to **Andressa Pellanda**, general coordinator of the Brazilian campaign for the Right to Education (RTE), the country has been living in what she calls a "crisis within a crisis" since the pandemic began. Brazil's political and socioeconomic crisis — including major budget setbacks in education — began long before anyone ever heard of COVID-19.

"We were already facing severe setbacks to quality basic education, especially making internet access available in all schools. Then, the pandemic closed the schools, and the students need internet, computers, tablets, and training to access the online class activities from home – and we don't have money and resources to provide that."

ANDRESSA PELLANDA
GENERAL COORDINATOR OF THE BRAZILIAN
CAMPAIGN FOR THE RIGHT TO EDUCATION



In 2016, the **National Congress** passed **Amendment 95** as a way to severely curb public spending. This constitutional amendment stipulates the government cannot spend more than it did the previous year, with inflation being the only allowable correction. Passing the amendment, which does not expire until 2036, essentially enshrined austerity measures into Brazil's Constitution for 20 years. Bolsonaro based his recent veto of the emergency internet funds on Amendment 95.

Consider this **pre-pandemic statistic** from 2019: Although the internet reached 88.1% of Brazil's students, 4.1 million public schools did not have internet access.

"We were already facing severe setbacks to quality basic education, especially making internet access available in all schools. Then, the pandemic closed the schools, and the students need internet, computers, tablets, and training to access the online class activities from home – and we don't have money and resources to provide that," said Pellanda.

According to a recent **Human Rights Watch** article, *Brazil: Failure to Respond to Education Emergency*, the **Education Ministry**, under Bolsonaro's administration, did not just cap future education spending. It held back funds that had already been allocated for public education.

The overall budget for education in 2020 **provided BRL 48.2 billion** specifically for primary education. Of that amount, the Education Ministry spent about two-thirds of that, or BRL 32.5 billion, which is a 10-year low in terms of overall annual spending on Brazil's education system.

In addition, the Education Ministry **cut back support** for its **Connected Education Program**, a project designed to make universal high-speed internet access part of basic education in Brazil. For 2020, the ministry earmarked only BRL 100.3 million, which equates to less than half of the 2019 budget item.

On top of this, Brazil's education budget outlook for this year is even worse. Pellanda's organization calculated the current education budget needs an

additional BRL 36.8 billion to help address remote learning and to reopen the schools in Brazil safely. RTE based its calculations on **CAQ**, an index that establishes a minimum cost-per-student required to guarantee quality education.

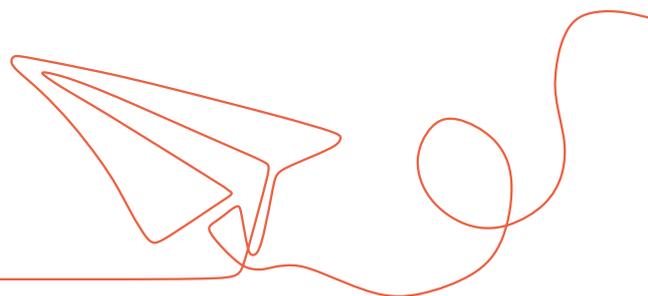
"Not only did they not add the BRL 36.8 billion, but the education budget they approved is **27% less than last year**," said Pellanda. "And then, Bolsonaro blocked an additional BRL 2.7 billion of the 2021 budget."

When the dust finally settled, Brazil's federal government allocated a total of BRL 74.56 billion for education in 2021 – a far cry from the BRL 102.27 billion allocation the previous year for 2020, and more than a 25% budget cut year-over-year.

Unlocking access to another BRL 3.5 billion in emergency funding comes at a crucial time, while Brazil still struggles to get the pandemic under control.

"This law gives states and municipalities resources to provide millions of students and teachers with internet access, computers, devices, and the training required for remote education," said Pellanda. "It gives us more time to fight for schools to provide vaccinations for all the teachers and education workers so they can return to class safely."

It's one thing to talk policy and, as in many countries, education is a political hot potato in Brazil. But, it's another to understand the many negative effects those policies have on the ground.



"In Brazil, public school is the only place where many students have access to food, teaching materials, government and NGO programs, in addition to protection from child labor, drug trafficking, or domestic violence," said de Almeida Santos. "Closing the schools exposes and exacerbates the social problems that existed before COVID-19."

CATARINA DE ALMEIDA SANTOS
COORDINATOR OF THE COMMITTEE
IN THE FEDERAL DISTRICT OF
THE NATIONAL CAMPAIGN FOR
THE RIGHT TO EDUCATION

off regions in the Southeast (10.3%); Central-West (8.5%), and South (5.1%).

In a study statement, **Florence Bauer**, a UNICEF representative in Brazil, said: "The country is at risk of regressing two decades in improving access of girls and boys to education; back to the numbers of the 2000s."

Although not specific to Brazil, the **United Nations Educational, Scientific and Cultural Organization (UNESCO)** provides a long **list of adverse conditions** associated with COVID-19 school closings.

Another aspect to consider is that Brazil's public schools provide more than just education. They provide a lifeline to services many Brazilian families need. According to **Catarina de Almeida Santos**, coordinator of the Committee in the Federal District of the **National Campaign for the Right to Education**, schools provide students and their families with vital services they simply cannot get anywhere else.

"In Brazil, public school is the only place where many students have access to food, teaching materials, government and NGO programs, in addition to protection from child labor, drug trafficking, or domestic violence," said de Almeida Santos. "Closing the schools exposes and exacerbates the social problems that existed before COVID-19," explained Santos.

According to a study

conducted by **UNICEF**, in partnership with **Cenpec Education**, closing Brazil's schools in November 2020 left 5.1 million children between the ages of 6-17 without access to education. The study confirmed that the lack of access affects children in Black, brown, and indigenous communities at a higher rate. Of those 5.1 million children, 69.3% come from marginalized communities.

The UNICEF study broke out the numbers of children without access to education by region in Brazil: North (28.4%) and Northeast (18.3%) — the giant country's most economically marginalized regions, compared to more well-

Brazil's internet access by the numbers

The **Regional Center for Studies for the Development of the Information Society (Cetic)**, has been monitoring the adoption of information and communication technologies (ICT) across Brazil since 2005. Its current findings, published in May 2020, reflect data collected between October 2019 and March 2020.

Let's look at the numbers of **households with internet access** today: Only 71% have it and 28% do not. That works out to 20 million households without internet access in Brazil.

The digital divide is similar in urban areas where 75% of households have access and 25% do not. The three **main connection types** in urban households include fixed broadband (61%), TV cable/optical fiber (44%) and mobile 3G/4G (27%).

The digital divide widens in rural households where only 51% can access the internet while 48% cannot. Connectivity in rural households breaks down as follows: Fixed broadband (48%), TV cable/optical fiber (16%) and mobile 3G/4G (33%).

Cetic's **Covid-19 ICT Panel: Web survey on the use of Internet in Brazil during the new coronavirus pandemic**, noted **social-class** disparities among students aged 16 or over in terms of the devices students used to access remote learning activities.

In wealthier class AB, 70% used laptops and 46% relied on desktop PCs. The numbers for students in class C are 32% and 19% respectively, and the poorest students, in classes DE, came in at a much lower 12% of students using both devices.

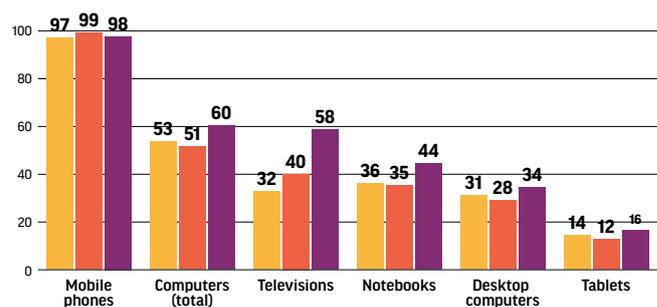
The same age group said they used mobile devices most frequently (37%) to access remote classes. The class ranking is as follows — AB: 22%; C: 43% and DE: 54%.

It's important to note these numbers provide only a partial picture, since they don't reflect students younger than 16. Nor do they reflect the number of students who cannot afford any type of device at all. What's more, RTE's Andressa Pellanda pointed

Devices used to access the internet

Internet users 16 years old or older (%)

■ ICT Households 2018*
■ ICT Households 2018*
■ ICT Panel COVID-19



* Reprocessed database with population cut-off sample.

out that simply accessing the internet doesn't guarantee a decent remote-education experience.

"Many students have internet access, but it's with only a cellphone," said Pellanda. "That's not an adequate device for accessing the education platforms."

"The Lay of the LAN"

What happens now that Brazil's federal government has unleashed this new BRL 3.5 billion emergency fund? Policy change meets implementation, on a national scale.

In the most general terms, the federal government will distribute funds to the state-level governments, and they will either identify local suppliers or transfer the funds to municipalities. They, in turn, will work with local ISPs to provide broader internet connectivity to teachers and students.

Here's where internet access in Brazil gets interesting:

According to **Diego Canabarro**, the **Internet Society's** regional policy manager for Latin America and the Caribbean, it is the small, local ISPs working with fixed, cable or fiber-optic broadband — not telcos and mobile broadband — that will connect the most challenging areas in the country.

"Unlike other Latin American countries, Brazil has a thriving market for fixed broadband," said Canabarro. "We have somewhere between 8,000 and 9,000 small ISPs, and they're expanding the reach of internet connectivity in the most remote areas of the country."

Local fixed broadband ISPs have deployed **more than 60% of the country's fiber-optic cable**, and Canabarro noted that the growth rate of ISPs delivering fixed broadband has far outpaced that of mobile connectivity providers.

"In 2014, 49% of Brazil's registered ISPs offered fixed broadband connectivity, and that number jumped to 78% by 2017," said Canabarro. "Providers of wireless technologies and mobile connectivity realized only a mere 1% increase in the same timeframe: moving up slightly from 84% in 2014 to 85% in 2017."

Here's another fun fact about internet access in Brazil: While about 98% of Brazil's population has internet coverage, that doesn't mean they have internet service. The spectrum auctions' system stipulates that, for example, telco provider X will cover a geographic region. But, telco provider X does not necessarily have to offer services to all the people living in that region.

Reasons for not deploying and maintaining the appropriate mobile broadband infrastructure may include geographic challenges, but Canabarro said the primary reason is due to the lack of revenue that telcos would receive from small

populations of people in remote areas.

"Mobile broadband has reached a plateau, because it already covers all the areas where big operators receive a good return on their investments. Fixed broadband connectivity is advancing precisely in those places where mobile operators don't operate," said Canabarro.

Expanding fixed broadband is an essential step in making internet access and services available to millions of students and teachers. And it's one of the reasons the recent bill contained a very important stipulation.

"It's no accident that this new law allows for subsidized fixed broadband connectivity," said Canabarro. "If there's no mobile connectivity available in the region, then local governments can buy fixed broadband from local ISPs."

The new law contains another provision that Canabarro calls a major landmark. It authorizes states and municipalities to buy fixed connectivity for communities.

Remember that 20 million households in Brazil are excluded from internet access today. According to Canabarro, digital inclusion is adversely affected by the traditional way that connectivity spreads geographically — through models that start at the internet backbone and move out to the periphery.

Reaching populations living at the margins through this internet-connectivity model requires government incentives to attract private businesses. However, no one said connectivity has to be a one-way street.

According to Canabarro, a municipal broadband model takes a different, nuanced approach. It connects the community at the margin and then moves in the reverse direction to the center of the backbone.

"A network using the municipal broadband model that's managed by local communities provides an option that doesn't have to depend on the government incentives or the profit margins of private businesses," said Canabarro.

Community networks already exist in some parts of Brazil, but Canabarro said they need help to connect, or improve the connection, to the internet. And the money from this new law has the potential to enact significant change.

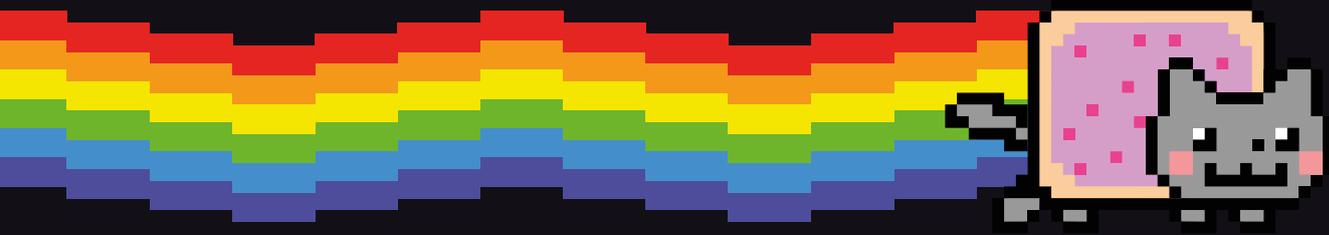
"This new law will absolutely serve students and teachers, and it can also help communities at large," said Canabarro. "That's the reach of what this law can accomplish in real terms." ■



Photo Courtesy

"Mobile broadband has reached a plateau, because it already covers all the areas where big operators receive a good return on their investments. Fixed broadband connectivity is advancing precisely in those places where mobile operators don't operate."

DANIEL CANABARRO
THE INTERNET SOCIETY'S REGIONAL
POLICY MANAGER FOR LATIN
AMERICA AND THE CARIBBEAN



TECHNOLOGY

The delirium of NFTs will lead us to the end of the world

If it is possible for anyone to obtain the Beeple's digital artwork with a `Ctrl + C`, `Ctrl + V`, why would anyone pay millions for a certificate of ownership that has no legal backing and can disappear at any time? Rodrigo Ghedin's analysis of NFTs for LABS

BY RODRIGO GHEDIN

If **Walter Benjamin** were alive, he would have a lot to think and write about the digitization of culture, services like streaming, and all the kinds of business that gravitate around the arts, such as NFTs. In the absence of the 20th-century German thinker, you will have to content yourself with me, a mere observer without Benjamin's talent or knowledge, to try to understand this last one, the **NFT (Non-fungible token)**, the great 2021's **market sensation or fraud**, depending on whom you ask.

At first, I should explain, or try to, what an NFT is. I will do this but avoiding the technical details that generally do not contribute so much. **Some people argue** that the supposed complexity of the thing is a prerequisite to sell it, but the NFT is, in its essence, much simpler than it seems. If the basic investment tip is **to know what you are investing in**, this purposeful difficulty in understanding NFTs turns on the red alerts.

In simple, or understandable, terms, NFT

is a record in a distributed database (the blockchain) that assigns ownership (and therefore intrinsic value) to a digital item.

NFT is a weird business because it reneges on the defining characteristic of digital even though it is itself digital: **the perfect reproducibility at negligible cost**. You can do a test yourself on your computer: open Windows Explorer, select a file, make a `Ctrl + C`, `Ctrl + V`. Congratulations, you have created a perfect copy of a digital item. There are even mechanisms to certify the perfection of the copy, to attest that the zeros and ones of the new file **are exactly the same as the "original"**. In digital, the perfect copy is so trivial that we are not even aware of it in everyday life.

The ownership of an NFT is recorded on a blockchain, another technology that is hard to explain and, so far, useless. (Note a pattern.) **The buyer receives a JSON file** with a brief description of the item and some URLs. These blockchains are created or borrowed by the startups trying to get

NFT **technology** off the ground, and there is nothing to guarantee that they will be around in ten years, on the opposite – it is statistically unlikely, given the high mortality rate of startups in general. If (or when) the startup that owns the blockchain where your NFT has registered breaks down, bye-bye to your NFT as well.

The registration of an NFT is intended to **certify that a certain digital file has an owner**. It can be a drawing, a song, a Twitter post. This text you are reading, for example, is actually an HTML file with some dependencies (other CSS and JavaScript files) stored on the LABS server and displayed as soon as requested by your web browser. For it to become an NFT, all it would take is for someone to register it on a blockchain. Yes, it is that simple. Another striking feature of digital is its versatility. Today, anything can be digitized, therefore **anything can become an NFT**.

There is no time to get into that tiresome discussion about what art is. And it doesn't even matter when it comes to NFTs. Actually, what matters least about NFTs is the object itself that is being traded.

The parallel with art used to defend the importance or necessity of NFTs is almost perfect... until the moment I do a `Ctrl + C`, `Ctrl + V` on that **Beeple** painting sold for millions of dollars, but in cryptocurrency. It is not as if I have the equivalent of a mug with the **Mona Lisa** painted on it. The more accurate comparison is that by doing this I have the **Da Vinci** painting itself, without spending a dime. The power of digital.

In the world of NFTs, the anonymous buyer and I have, in theory, the same file, but he can say he “owns” the art and whoever wants to believe it, believes it.

Not that traditional, analog art has anything godlike about it, nor has it ever been used to launder money and reputations, among other questionable uses. Far from it. It's just that in NFT **there is not even the concern to keep up appearances**, nor any valuation beyond the financial, nor any advancement or questioning of the objects it turns into merchandise.

When Benjamin, our German philosopher from the beginning of this column, focused on technical reproducibility and the loss of “aura” in art in his famous article in the 1930s, he addressed the new possibilities and challenges that cinema, recorded music and printing copies of the Mona Lisa opened up. Digital has brought a plethora of new possibilities in this regard. NFTs? Zero. It is an “evolution” of the market, it has nothing to do with art.

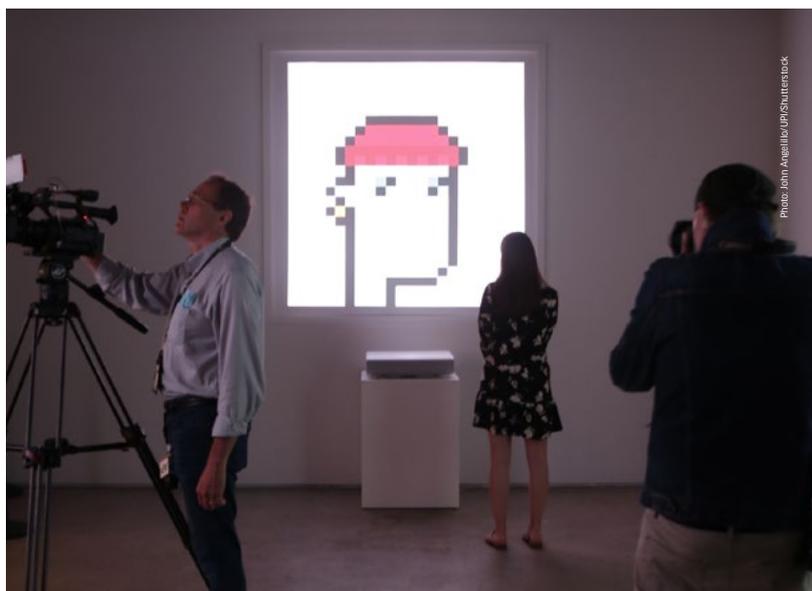


Photo: John Angelillo/IPS/Shutterstock

Cryptocurrencies, the basis of delusion

In his best-seller “Sapiens: A Brief History of Humanity,” **Yuval Noah Harari** argues that money and religion are the greatest fictions that human beings have ever created. Think about money. Those pieces of paper (banknotes) and numbers on the screen (in computerized systems) have value because of the unshakeable and universal belief that they have value. **NFTs**, and by extension **cryptocurrencies**, also rely on faith. They merely migrate the object of belief to an algorithm, because, they believe, the algorithm would be “neutral” and therefore fair.

If it is possible for anyone to obtain the Beeple's digital artwork with a `Ctrl + C`, `Ctrl + V`, why would anyone pay millions for a certificate of ownership that has no legal backing and can disappear at any time? The answer could involve noble purposes, like promoting art, or even selfish ones, like being able to brag yourself and say “it's mine”, and maybe there is some of that deep down inside, but let's face it, the real reason is the same that has led more and more people to “invest” in cryptocurrencies: **the belief (!) that the value of these digital assets will rise in the future**.

Another parallel could be drawn here, with the stock market, whose fluctuation and profitability are also based on the expectation of future appreciation. The difference is that **stocks have a ballast in reality**, the reality of companies, which every three months present results and share profits with their shareholders after manufacturing products or providing services. NFTs and cryptocurrencies don't go that far. They are imaginary “riches”.

(The other day I heard about people selling tokens of shares of listed companies, such as Tesla, Apple and Amazon, on cryptocurrency platforms. **They are “synthetic versions”**. Fascinating.)

Sotheby's
First Physical
Exhibition of
NFTs, New York,
Jun 2021.

I wouldn't go that far, so I was relieved when **Jemima Kelly**, columnist for the **Financial Times**, **made it crystal clear that**: "If such a system [of cryptocurrencies] reminds you of a Ponzi scheme, that's because it is." She acknowledges some differences between the two, such as the decentralization of cryptocurrencies, but both **crypto and Ponzi schemes** only fulfill their functions as long as there are new people, or new believers, joining the scheme. One day, naturally, people run out and then the scheme collapses.

In an interview with LABS, **Jorge Stolfi**, Ph.D., professor of Computer Science at Stanford University and tenured professor at Unicamp, classified NFTs as "the absurdity of cryptocurrencies squared". A staunch critic, **he had already equated cryptocurrencies to Ponzi schemes** before Jemima and, to illustrate such absurdity of NFTs, published a **post of a hilarious fictional conversation**, imagining how an art collector would show his collection of NFTs to a curious person.

"Owning a physical painting has meaning because **only one person can have it**. Only that one painting has a history. The atoms that are there are the same atoms that Rembrandt took from his palette and put on the canvas, whereas the electrons and photons that are in a digital image on your canvas are not the same ones that the artist put and, on the other hand, they [the copies] are all equally good, they have the same history," Jorge explains. "They are copies of the pattern of electrons that the guy put into memory when he was painting on the computer screen. Even when he painted on the canvas, the image was in memory. As soon as he saved the image on the disk, he made a copy from the memory to the disk. What is on the disk is not even original, it is already a copy."

Lest you say I've only listed staunch skeptics in this critique of crypto-actives, just the other day **Jackson Palmer**, co-founder of **Dogecoin**, a "shitcoin" embraced by Tesla's **Elon Musk**, himself a technocratic believer, **answered a question** that everyone often asks him, whether he would ever mess with cryptocurrencies again:



Jackson Palmer
@ummjackson

Replying to @ummjackson

After years of studying it, I believe that cryptocurrency is an inherently right-wing, hyper-capitalistic technology built primarily to amplify the wealth of its proponents through a combination of tax avoidance, diminished regulatory oversight and artificially enforced scarcity.

1:54 PM · Jul 14, 2021 · Twitter Web App

10.1K Retweets 2,890 Quote Tweets 39.1K Likes

A bright future, but for whom?

Fiat money, that fiction we all believe in, has its many problems but solves many others, particularly the exchange of goods between human beings. And it circulates, it instigates people – sometimes too much – to act. I can buy a loaf of bread and pay the rent with what I receive in exchange for my work.

With cryptocurrencies? There is no possibility of fruition or disposition. If I want to earn more money, I can work and/or undertake. Want to earn more with cryptocurrencies and/or NFTs? Sit tight, literally. At most, post on Twitter that buying cryptocurrencies is too good.

The huge values achieved by cryptocurrencies in the last few years and in 2021 in the NFT auctions have made people in the traditional market, from financial institutions to auction houses, take digital assets seriously, because today "money" is the defining argument of what should be taken seriously. The first cryptocurrency ETF from the Brazilian stock market B3 was launched the other day and is already one of the most popular in the country, and maybe I'm not exaggerating if I say that every two or three days I receive a press release from someone launching an NFT in Brazil.

"Do you know the Madoff story?", Jorge asked me. **Bernie Madoff** made his fortune on **Wall Street** in the second half of the 20th century with a fraudulent scheme that **lasted almost 30 years** but eventually collapsed. For the professor, cryptocurrencies revive that scenario, where a highly profitable scheme is presented and so many turn a blind eye, from institutional investors to governments, to the glaring loopholes. "I won't venture to predict the end of cryptocurrencies," he continued. "If it goes past that [the time that Madoff's scheme lasted], then I'm going to start thinking it's taking too long. It might be over in a month, I don't know. I'm not going to risk making a prediction."

Maybe it'll last longer, maybe cryptocurrencies and NFTs will live on and become perennial presences in investment portfolios and... well, only there, because within lawfulness, they're only good for speculating. That is, of course, until the world becomes a wasteland hostile to human life, not without the help of blockchains and their fabulous waste of energy, and we have to worry about more immediate issues, like fighting over drinking water and food and escaping from deadly heat waves or devastating floods. But, hey, by then **that NFT of yours will be worth a lot of money. Or not. ■**

On The Spotlight

From decades-old stories to recent events that rocked Latin America, here are our cultural recommendations for you. Go beyond business and enjoy it!



Lost and Found: Tim Maia's unreleased Spanish album

51 years after being recorded, a new album by Brazilian musician and songwriter Tim Maia has arrived on streaming platforms. Tim Maia's son found the Spanish recordings recently. The album "Yo Te Amo", with nine tracks by Tim Maia features classics such as "Azul color del mar", "Cristina" and "Yo Te Amo".

Yo Te Amo, 2021, [Spotify](#)



The Absent

The streaming platform HBO Max debuted in Latin America making a buzz. Among the exclusive programming is the series *The Absent*, the first Brazilian Max Original production. The series follows the routine of two detectives from an investigation agency that searches for missing people. There are ten 45-minute episodes starring the actors Maria Flor and Erom Cordeiro, with a script by Thiago Luciano.

The Absent, 2021, [HBO Max](#)



About Brazilian madness and tragedy

In *O Discurso sobre a Metástase*, Brazilian writer André Sant'Anna appeals to humor and a performative, somewhat caricatured writing, to report on Brazil's crumbling reality. The book brings a series of texts about everyday reality.

O Discurso sobre a Metástase, 2021, [Todavia](#)



Sounds like "Drama"

Brazilian musician Rodrigo Amarante, ex-Los Hermanos, has just released his second solo album, called *Drama*. The album features eleven songs in which the artist's innovative musical proposal is clear; each of the tracks offers very different sound experiences.

Drama, 2021, [Spotify](#)



Vinyl records mix from Uruguay

Uruguayan DJ Cosmo Sofi presents records from Uruguay on a vinyl mix at My Analog Journal YouTube's channel. London-based, she is also a radio host of Spectrums, her monthly show on Worldwide FM. Her June set mixes *Contraviento*, from *Desencanto Uruguay*, *Muy Lejos Te Vas* from *El Kinto*, and more.

Guest Mix: Records from Uruguay with Cosmo Sofi, 2021, [YouTube](#)



The unfolding world

In this book in Portuguese of essays featuring reflections and fiction, Brazil-based Chilean writer Carola Saavedra talks about the role of literature in a post-end world of climate change and pandemics.

O Mundo Desdobrável: Ensaio para Depois do Fim, 2021, [Relicário](#)

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