

The impact and future of A.I. in Brazil

Google for Startups



Box 1824
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Intelligent technology as an ally

When I started working with startups, most people did not know the meaning of the expression. Having a well-established innovation ecosystem seemed like a very distant dream. Years later, we have over 12 thousand startups in the country, according to Abstartups, 22 of which are unicorns, and we are ready to move to the next developmental stages. Artificial Intelligence (A.I.) is, definitely, one of them.

We are used to dealing with the expression in science fiction films and books, not always positively. Yet, the increasingly overwhelming progress of the Internet and technology has led A.I. to become part of our daily life. Virtual assistants on the smartphone, customized contents on social media, traffic apps to get to places faster, among many other applications. A better part of them developed by startups.

If the startups were essential to get us through the pandemic, A.I. was one of the most important tools. But we still have a long way to go. For that reason, we, from Google for Startups, have decided to prepare this material, supported by Abstartups and Box 1824, which proposes a radiograph of Artificial Intelligence in Brazil, and seeks to contribute to the development of the ecosystem by reflecting on what, ideally, the coming steps are – and their consequences.

What Artificial Intelligence can produce to society, both in the short and long term, depends on the choices that are being made now.

Letting a machine help you think does not mean allowing it to think for you. Being part of the A.I. movement is the only possible way to mold the future of the technology. To do so, it is not necessary to specifically develop or use A.I. tools,

but rather to keep up with the discussions, understand and analyze the principles and accountabilities already in place - mostly to help in the dissemination of correct information - and check the social impacts of the application of A.I., also discovering how it participates in your life and your community's routine, today.

Therefore, I invite you to explore the material that follows and to join us in the conversation about the importance and the future of Artificial Intelligence in our country.

Good read!



André Barrence

Head of Google for Startups, Latin America

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Chapter 1

Diagnosis

The challenges and the importance
of mapping the A.I. landscape in Brazil

“AI appears complex and opaque [...] In science fiction books and TV shows, people see depictions of robots that want to control or outsmart humans, and superintelligence turned evil. Media reports tend to focus on negative, outlying examples [...] AI, like most technologies, is inherently neither good nor evil. And, like most technologies, AI will eventually produce more positive than negative impacts on our society.”*

Kai-Fu Lee

Few of the current discussions will have such a profound impact on our lives as Artificial Intelligence (A.I.). A global survey by McKinsey estimates A.I. will create 13 trillion dollars in value in the world by 2030. In that same year, a 5% increase is expected in Latin America's Gross Domestic Product (GDP) due to A.I. Furthermore, it is expected the use of health-related applications including A.I. will increase by 38% in the region by 2027.

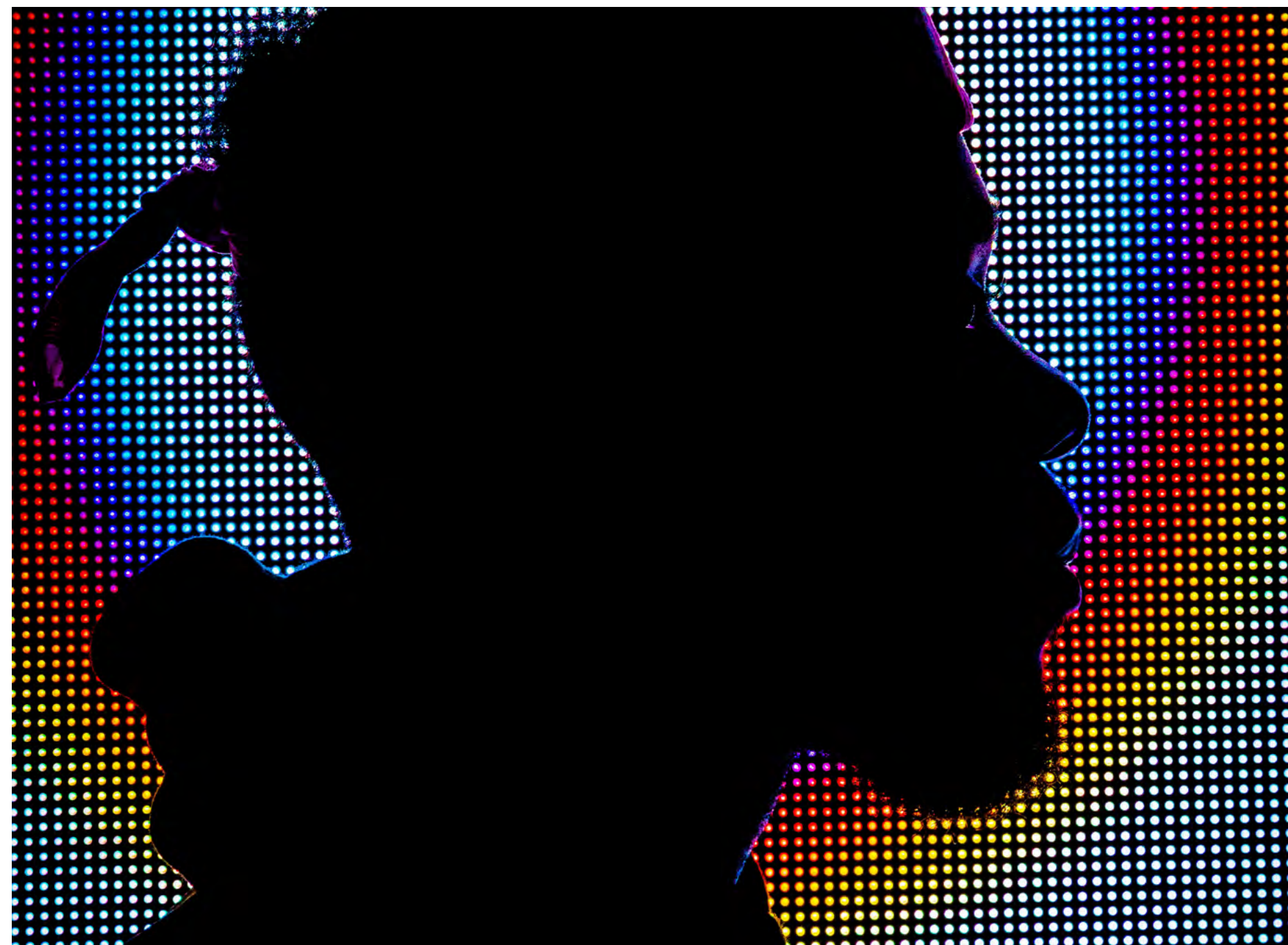
A real conversation about the future of A.I. and its impacts is in order. While there may be clear threats to society, it is also likely there will be opportunities yet to be imagined. For instance, 30% of all jobs in the world could be automated by the mid-2030s, according to studies by PwC, and other positions could be redesigned to become more analytical and creative.

"The human being is an odd species. When they get something into their head, they end up accomplishing things that seem rooted somewhere very deep in humankind. I think artificial intelligence is one of them. We have always had that thing of creating an image, creating some sort of intelligence".

Expert



The importance of this study in **Brazil**



Understanding A.I. in Brazil today means thinking about Brazilians' life and what is expected from the very country, moving forward. Approximately **2.4 billion dollars** invested in technology in Latin America were directed to Brazil in 2020. And **5.6%** of Brazil's GDP in 2020 came from tech startups. This is also one of the industries that has been stirring the M&A market the most, especially when we analyze the universe of startups and Venture Capital.

São Paulo, today, is home to 2,700 tech startups. The city's GDP is greater than the sum of the domestic products from Argentina, Chile, Paraguay, Uruguay, and Bolivia, according to a study conducted by the partnership between The Economist and Google to understand the South American A.I. landscape. That information surrounds the theme, but does not lead us to a more specific mapping. For such, the starting point of the work was to understand the present to project the future.

Starting with the following question: what is the situation of Artificial Intelligence in Brazil?

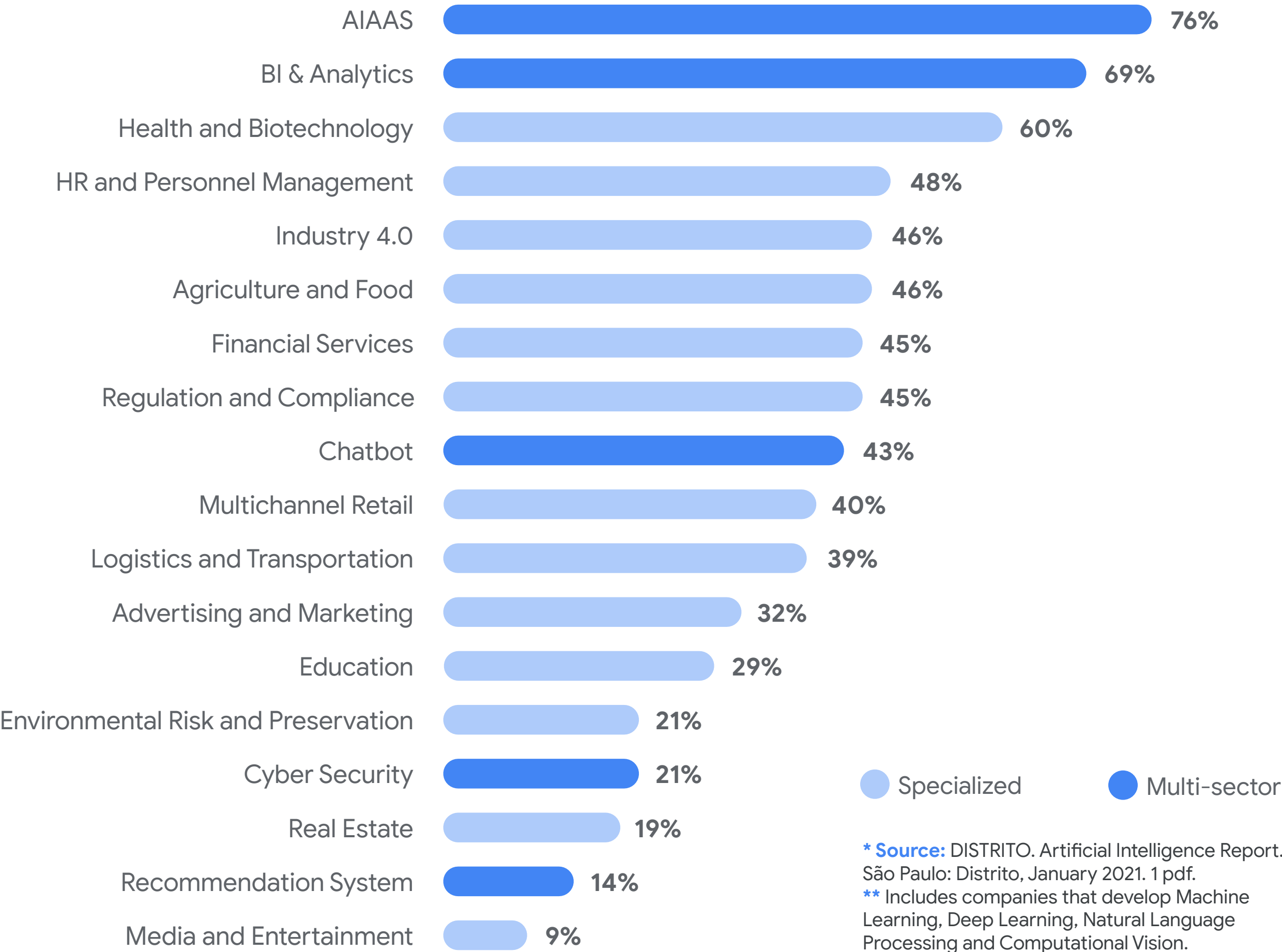
Chapter 1 → Diagnosis

X-Ray

For this study, we mapped **702 companies that work with and develop A.I. in Brazil.** They are split between those whose nature is multi-sector, i.e., which serve various verticals and categories, and those specialized in some vertical, such as agtechs, fintechs, healthtechs etc.

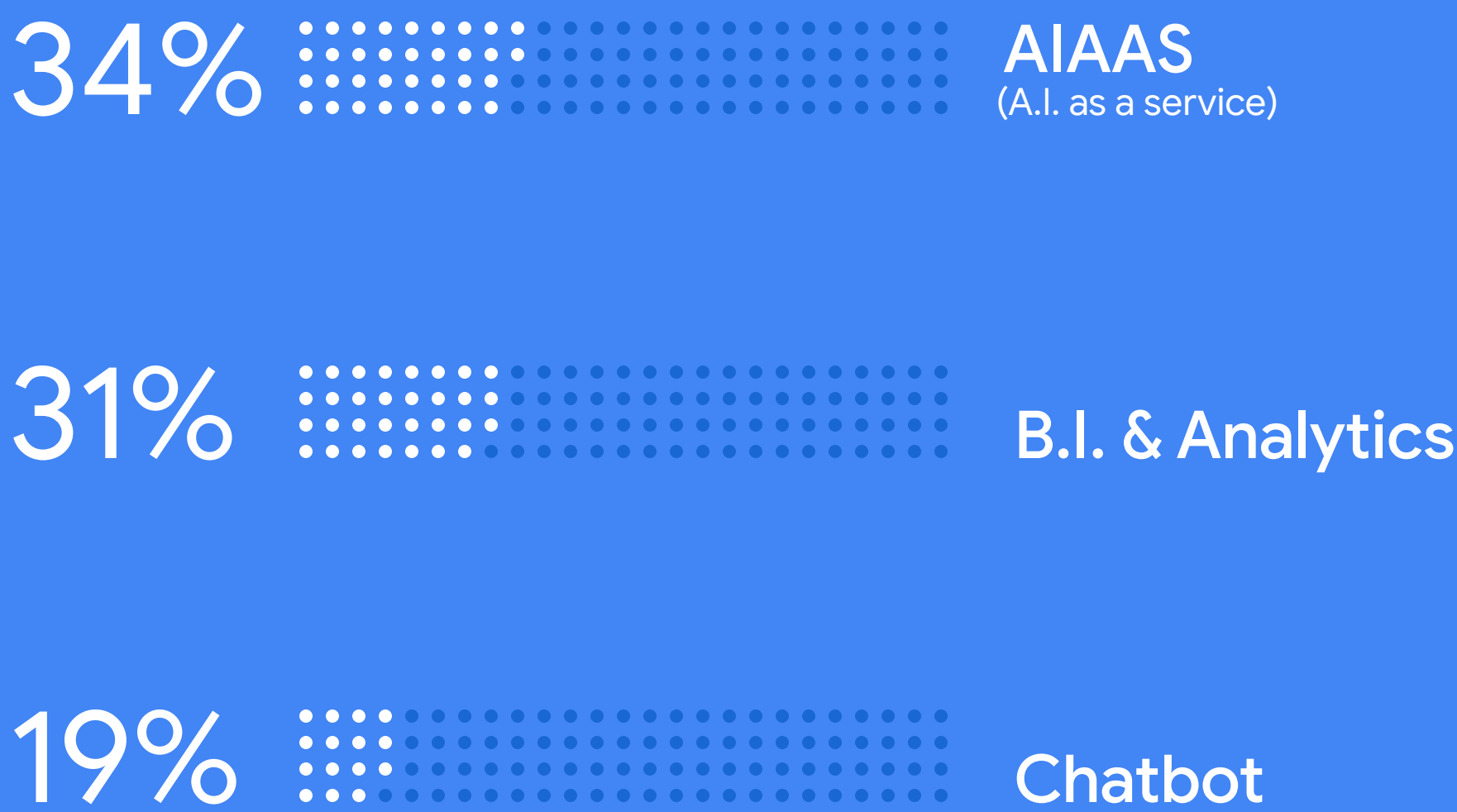
In addition to the companies mapped by third-party studies, this report brings insights drawn from a quantitative survey of 49 startups, as well as from several in-depth interviews with some of those startups and market specialists.

What the mapped companies do



223 Multi-sector companies*

Top 3



*Source: Distrito. Artificial Intelligence Report. São Paulo: Distrito, January 2021.

More dependent on the A.I. ecosystem, the mentality of the multi-sector companies under study is more connected to the tech world and they dream of creating an A.I. culture in the country. At the top 3, 34% offer A.I. as a service, 31% are in business intelligence and analyses, and 19% focus on chatbots.



“The big tech companies are able to make that investment to create and foster talents, both for themselves and for the market. I think it is key to foster communities of debate. Three years ago, Nubank came with a super revolution, organizing meetings to discuss A.I. and machine learning, which fanned the fire in the Brazilian market”.

In-depth interview
Startup not included in Google for Startups’ acceleration programs

“At the start, half of our decks were to explain A.I. Today, there is not one slide talking about it. The only thing they know is that we use A.I. to get to the result we present, but they don’t have the slightest idea of what goes on backstage. They are not interested in that and just want to know how their problem will be solved and what the result will be. That has been a nice learning experience.”

In-depth interview
Startup included in Google for Startups’ acceleration programs

479 Vertical companies*

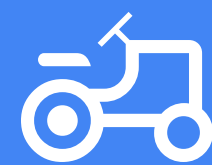
Top 3



12% Health & Biotechnology



10% H.r. & Personnel Management



9,5% Industry 4.0
Agriculture And Food

*Source: DISTRITO. Artificial Intelligence Report. São Paulo: Distrito, January 2021.



More dependent on the categories they are set in, vertical companies position themselves as great problem solvers for clients, even if the solution does not depend directly on the use of A.I. At the top 3, 12% work with biotechnology, 10% with human resources and personnel management, and 9.5% are geared to Industry 4.0, focused on agriculture and food.

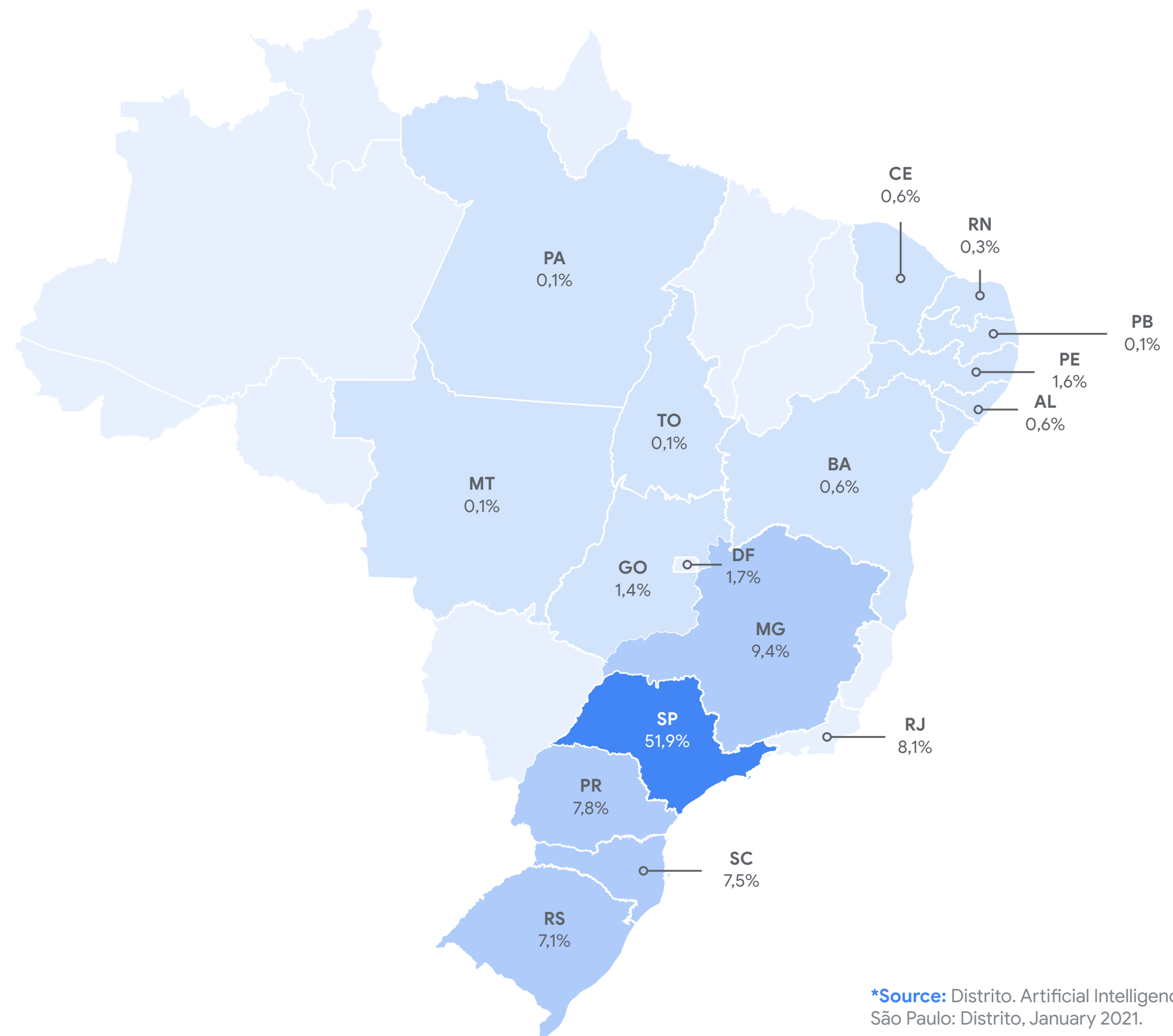
A very homogeneous market*

Despite being a country of continental dimensions, the vast majority of companies (**92.7%**) are concentrated in the South and Southeast of the country. Over half (**51.9%**) in the state of São Paulo alone. And that high concentration may deepen regional inequalities. In the Northern region, only two startups were mapped for the report, both in the state of Pará.

"For A.I., I will give you a concrete example: a guy from the Midwest should have delivered me the product, but he 'strang me along'. To string someone along is the same as not to deliver, just like 'to take someone for a ride', which is also a metaphor. A.I. must be ready to understand those regional variations."

In-depth interview

Startup not included in Google for Startups' acceleration programs



***Source:** Distrito. Artificial Intelligence Report. São Paulo: Distrito, January 2021.

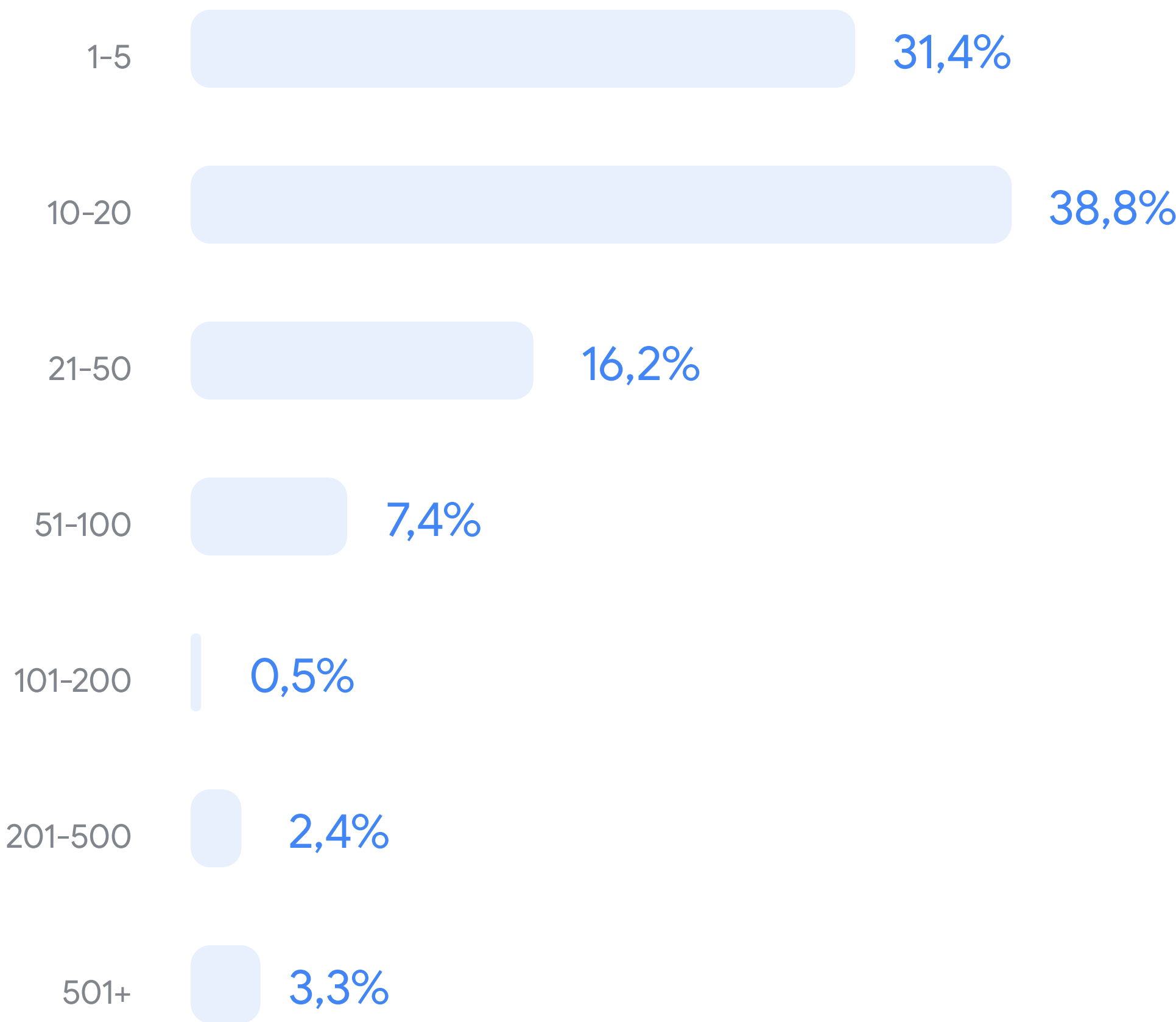
Small and new companies that search greater recognition and awareness

 **70,2%** of all companies have up to 20 employees

 **10** is the average number of employees in A.I. companies

 **58,8%** of all companies were founded in or after 2016

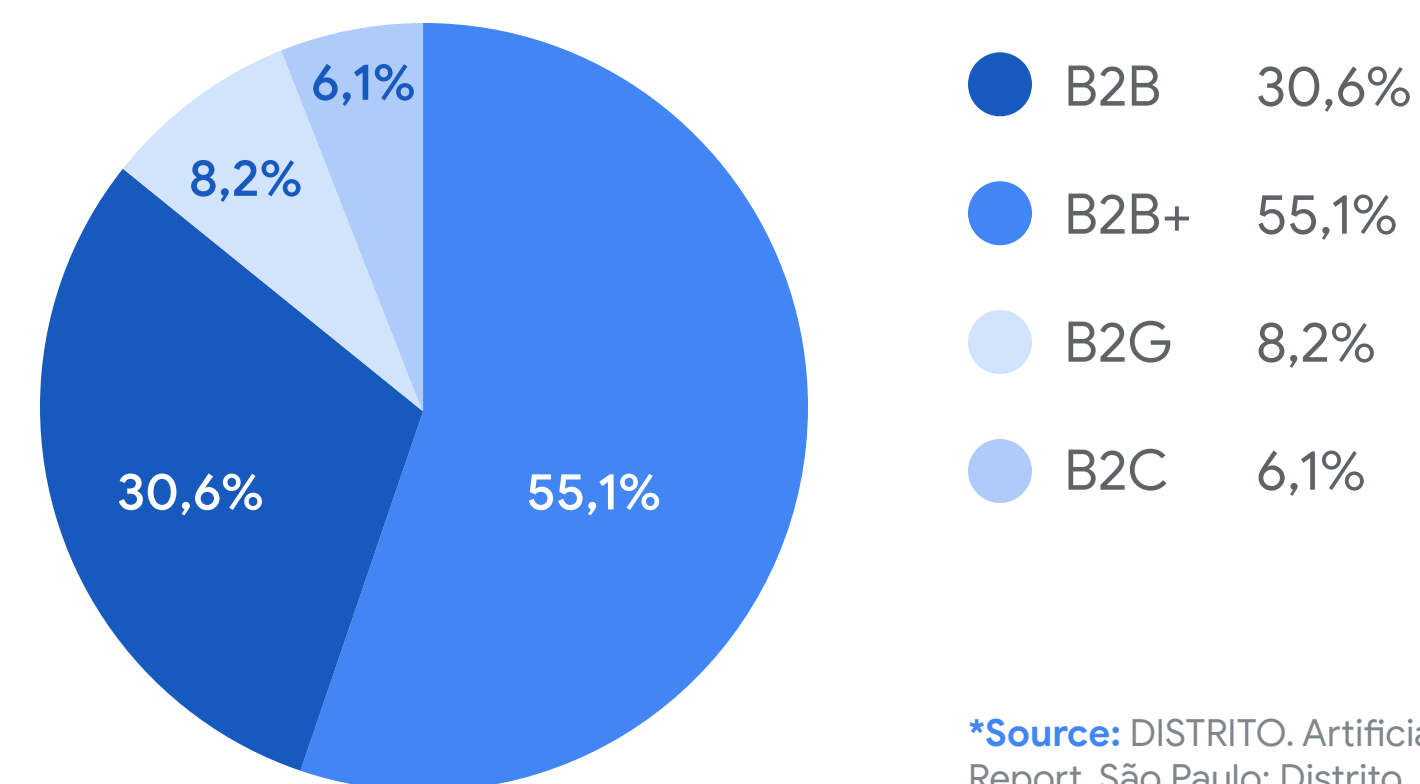
Number of employees in the mapped companies



*Source: DISTRITO. Artificial Intelligence Report. São Paulo: Distrito. January 2021.

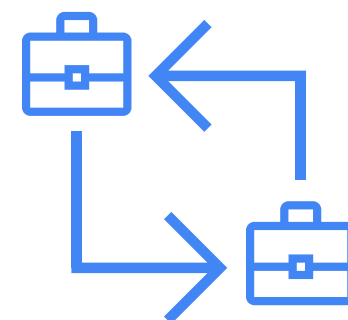
The fact there are few B2C solutions may hinder greater knowledge about A.I. in the country

The survey performed by Distrito in 2021 indicated the following categorization:



*Source: DISTRITO. Artificial Intelligence Report. São Paulo: Distrito. January 2021.

85,7%



of all companies interviewed in our sample dedicate to solutions geared to companies (B2B)

365



mm dollars were A.I. companies' revenues in 2020 alone*

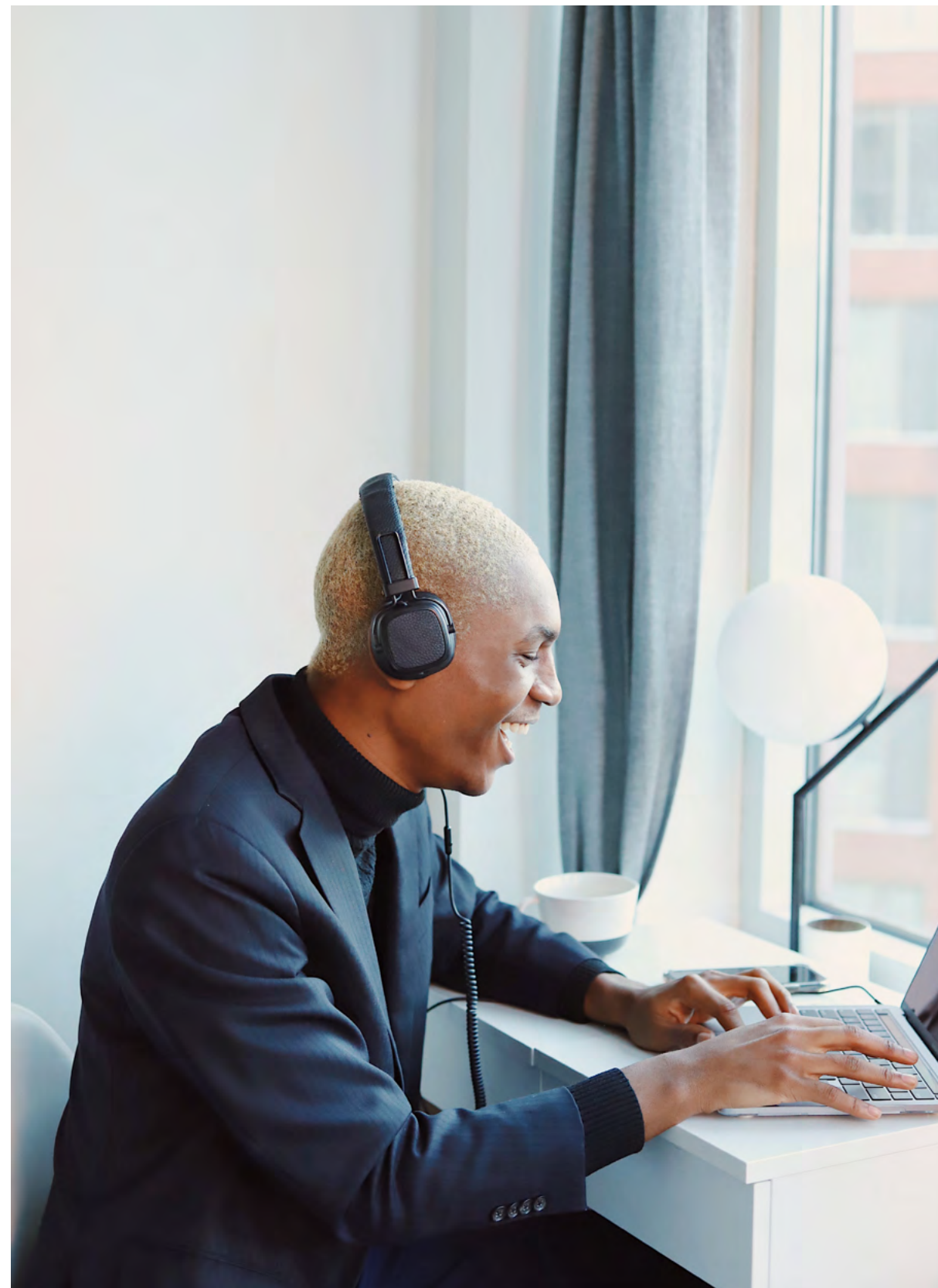
*Source: DISTRITO. Artificial Intelligence Report. São Paulo: Distrito. January 2021.



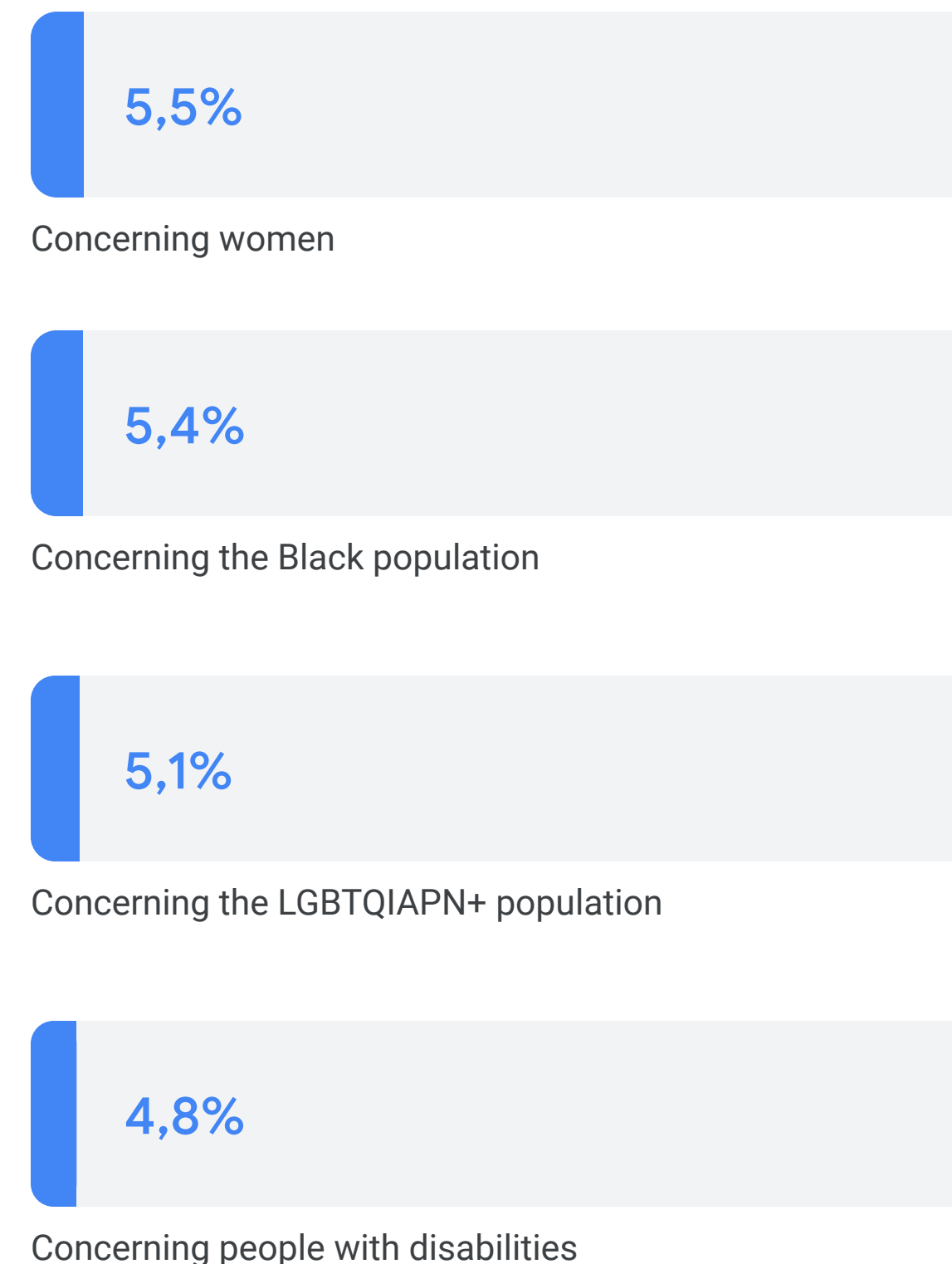
"The US is years ahead of us. It already has many experts. But that brings me to that chicken-and-egg dilemma: as we do not have people who know A.I., there are few A.I. companies So, what will come first, A.I. companies or people who know A.I.?"

In-depth interview
Startup included in Google for Startups' acceleration programs

Prevalence of very qualified founders, but little diversity



When it comes to the diversity of professionals in the current technology landscape, how plural is the Artificial Intelligence job market?



Total base: 49 startups
Out of the total: 40 male founders; 36 white

The environment is regarded as little diverse in terms of participation of politically-minoritized groups, and is formed mostly by entrepreneurs with similar backgrounds and socioeconomic conditions.

"I had the opportunity to take a master's degree in Germany [in 2010], thanks to a program by the college itself, and supported by the German government. I was admitted, moved there, took two years of mechatronic engineering, and there I had contact with Artificial Intelligence."

In-depth interview
Startup included in Google for Startups' acceleration programs

"I am from São Paulo, born and raised here, and I went to college in Stanford, which is relevant, because it was my initiation to the world of entrepreneurship, but also to technology."

In-depth interview
Startup not included in Google for Startups' acceleration programs

Fierce competition

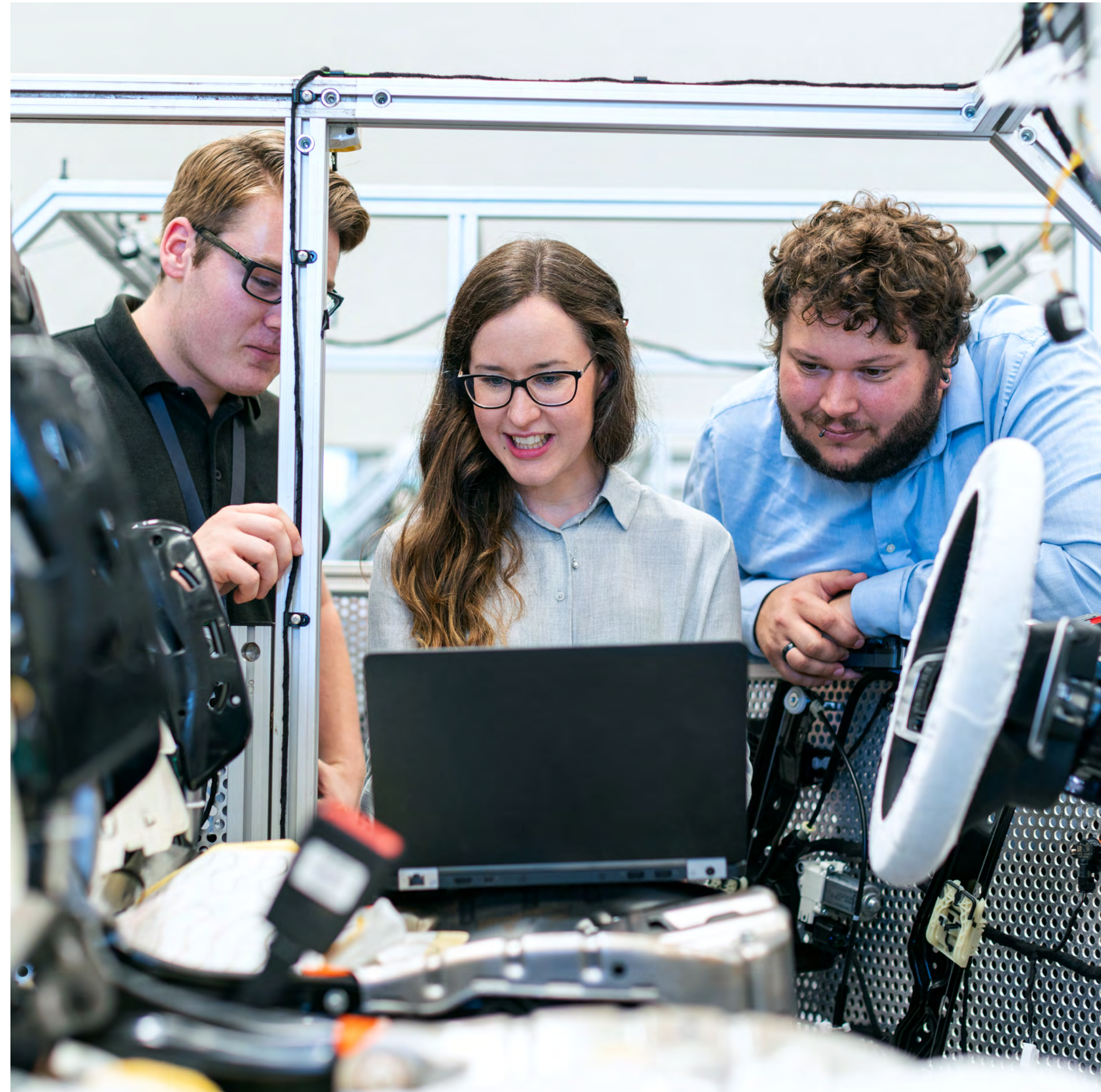
Companies with similar compositions and aspirations compete for a scarce space in search of recognition for themselves and for A.I. in itself. Although there still is not an expressive number of companies operating all over Brazil, all of them compete for an equally small space. There, clients and society still know little or have misconceptions of what A.I. actually means, and the benefits it may bring to different businesses and to users' life.

This situation is further intensified by the little diversity at the level of the founders who, with the same social standing, travel and know very similar circles.

"As a new company, we have many points of improvement and efficiency to observe. As we react quickly to issues concerning the market, regulations, client return, loss of professionals, [...] these are challenges that exist internally."

In-depth interview

Startup included in Google for Startups' acceleration programs



Chapter 1 → Diagnosis

Key pain points

The key pain points founders feel encompass three different broad spheres in society:

A major barrier companies pointed out is the lack of knowledge and innovation related to A.I. in the country.

"Estonia does a very nice data organization work, much more than A.I. I don't know how A.I. is used there, but I believe most companies are data companies, and they do that very well. The reliability is very good."

In-depth interview

Startup not included in Google for Startups' acceleration programs

"To be very honest, I do not follow up much closely how A.I. is regulated here. We looked at the legislation pretty much from our perspective. We have crawling technology: is that legal or not? Is it legally supported or not? It is? So fine, chill. [...] I don't know what the framework is like concerning Artificial Intelligence."

In-depth interview

Startup not included in Google for Startups' acceleration programs




Shortage of qualified labor


If there already is a gap of technology talents in Brazil, the situation for A.I. only intensifies. Today, A.I. is one of the cutting-edge fronts in technology studies, requiring greater need for learning, access, mastery of programs, language, and time to improve. If, as we have seen, we are losing the future; eventually, the situation with A.I. may push us even further to the decline of technological potential in the long run.


"The company that provides us with A.I. is Russian. My partner has worked with them in another startup for more than ten years. We do not see, across Brazilian companies and professionals, the same quality and development capability."

In-depth interview
Startup not included in Google for Startups' acceleration programs

Out of the startups interviewed:

- 

57% believe the shortage of qualified labor is the main hindrance to the development of A.I. in Brazil
- 

49% want their A.I. experts to graduate from courses better skilled to turn models into products
- 

41% expect their applicants to develop more creative and out-of-the-box thinking and models



"The number of data scientists trained in software engineering has improved compared to two years ago, I swear. But many people you find online, especially the younger, still do not know what a code review is, cannot use Github. If you cannot work on code review, Github, push code, then put into production, it becomes very difficult to work."

In-depth interview
Startup not included in Google for Startups' acceleration programs

There are insufficient qualified professionals in the world.
In Brazil, even basic qualifications are lacking.

World

There lack **40 million** qualified IT professionals*

Top 20 occupations with increased demand across all sectors**

Rising demand

- 1 Analysts and data scientists
- 2 Experts in A.I. and Machine Learning
- 3 Experts in Big Data

* **Source:** Bureau of Labor Statistics

** **Source:** Future of Jobs Survey 2020. World Economic Forum

Brazil

Offer:
53 thousand graduated professionals a year*

Demand:
800 thousand new talents between 2021 and 2025*

Deficit:
530 thousand professionals the coming 4 years

Source: Demanda de Talentos em TIC e Estratégia. Brasscom. 2021



Talent flight

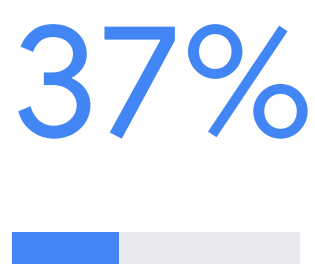
The risk of lapsing into a ‘technological periphery’ is imminent:

Currently, A.I. professionals are very vied over by all companies, and startups tend to be the weakest link in the chain. With a scarce and competitive market at its peak, the little offer of those professionals leads to unfair proposals practically no small startup can match due to a financial limitation.

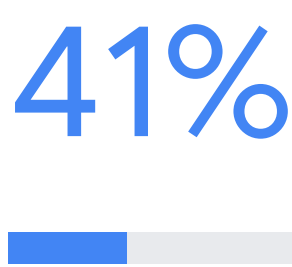
"Startup internal data: out of the technical competencies we have, A.I. professionals have the lowest turnover rate. I don't know whether it is the profile of the professionals or our challenge that motivates them, but they are more patient, understand the results are medium- to long-term. They are different professionals".

In-depth interview
Startup not included in Google for Startups' acceleration programs

Out of the startups interviewed:

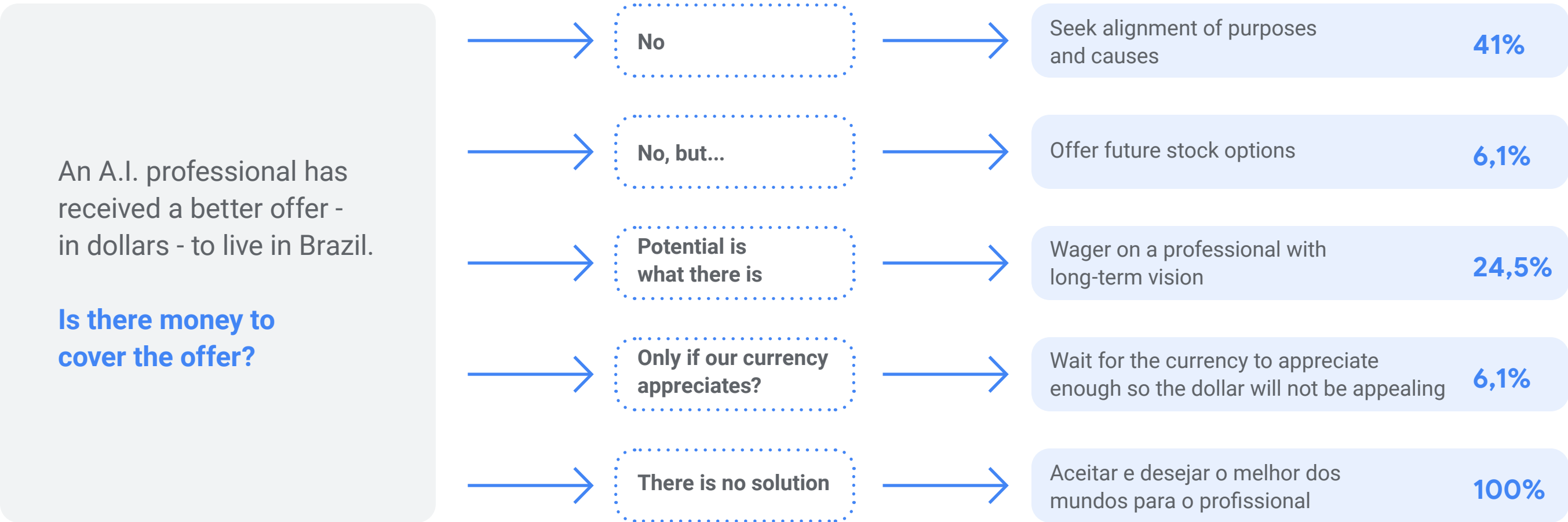


believe the flight of human capital is the main hindrance to the growth of A.I. in the country



try to retain talents through the greater purpose of the product they work on

When the offer in A.I. cannot be matched, there still are a few alternatives



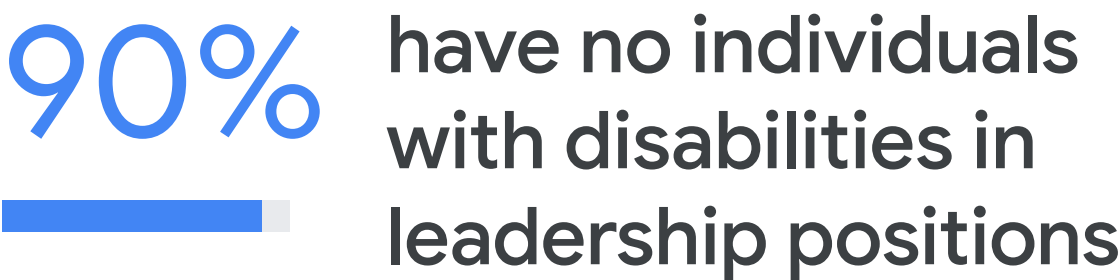
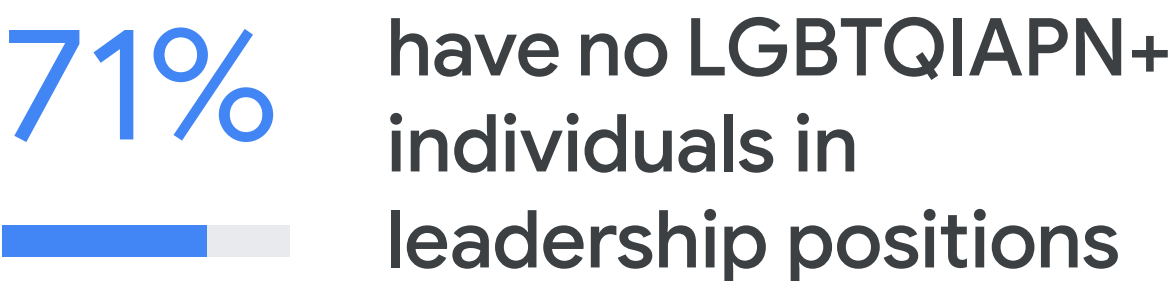
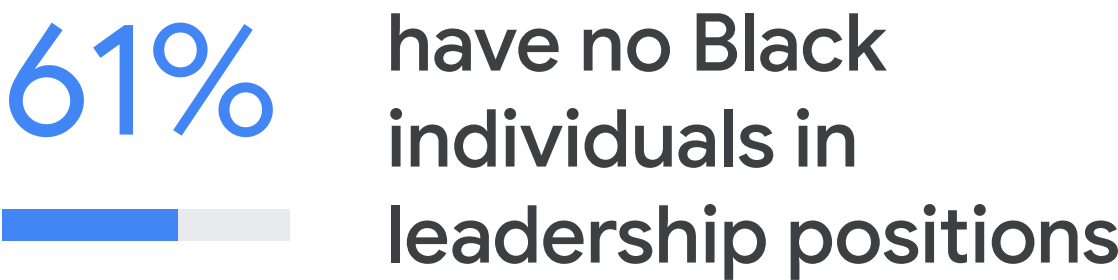
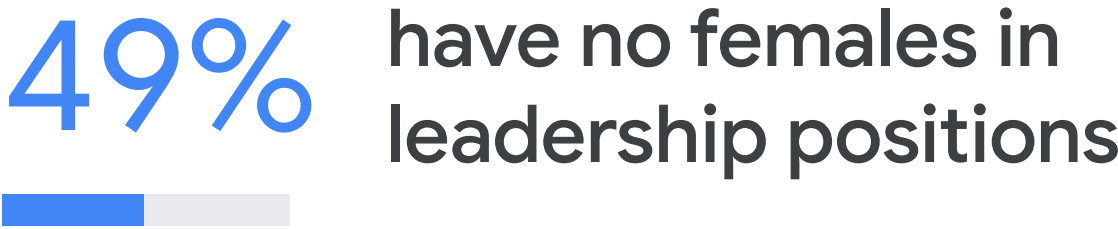
Biases

A.I. companies lack diversity

Today, centuries-old structural prejudices, such as racism, machismo and homophobia, persist in Brazil. The change, which is still timid, is increasingly more necessary and urgent, also because diversity sparks innovation. Nonetheless, concern about these issues only features in the discourse of individuals who represent minority groups, emphasizing the separation of the country as a whole from the concern about a more egalitarian future. In this case, there is care and an attempt for reparation through hiring policies and the creation of A.I. models that already start from a fair architecture. Yet, to many, A.I. is neutral in itself: a pragmatic tool, made to solve clients' problems and optimize the world.

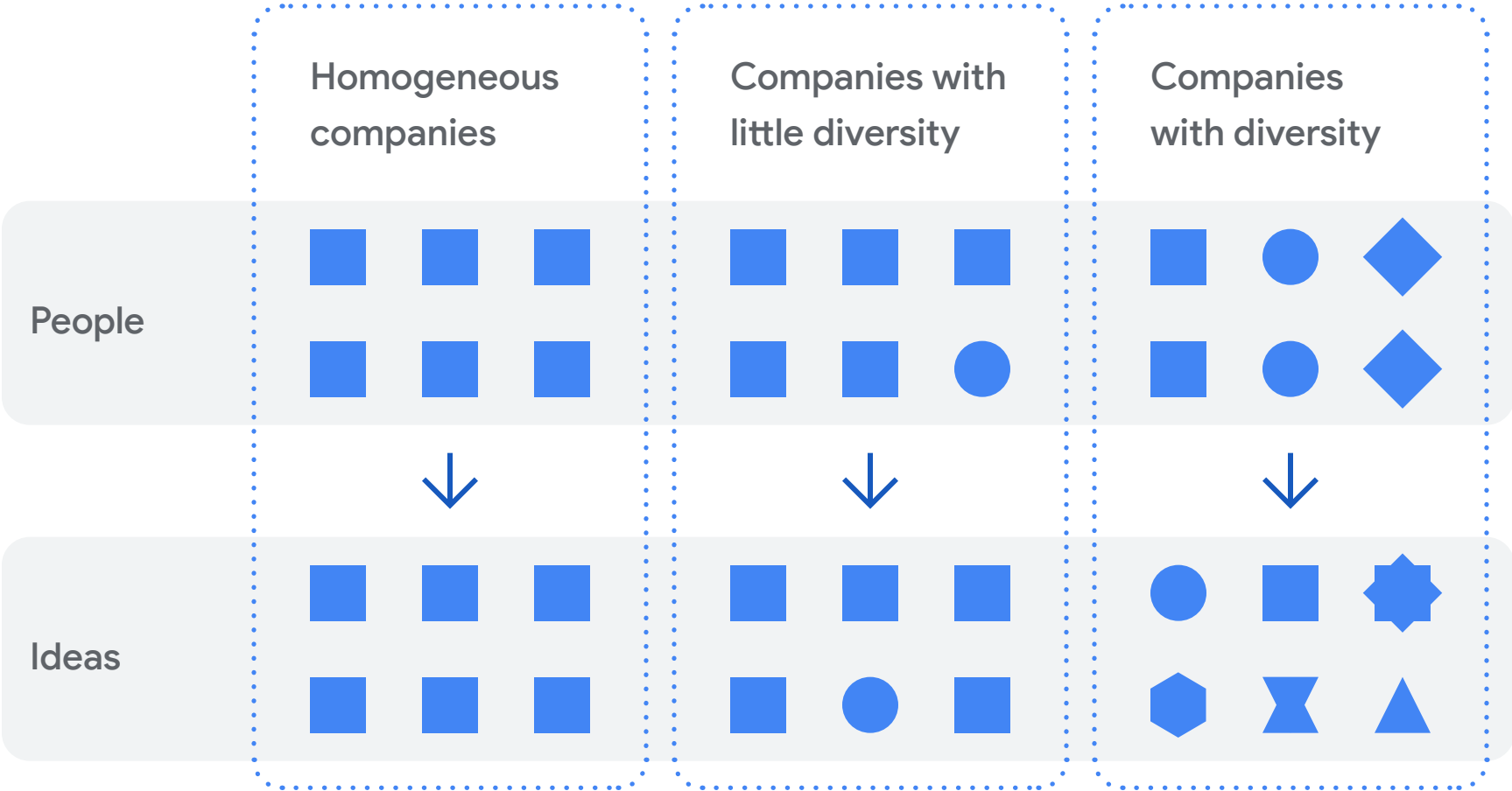
The greater the diversity in a company (if effectively put into practice), the more creative the solutions obtained will be.

Profile of the startups interviewed:



"We have an essential bias that is, for the context of the country, inequality. A Harvard professor, after decades watching companies making decisions based solely on quantitative data and correlations, started understanding we were taking everything to the wrong side. Why? Because it lacks context. That is the first bias. As there is social inequality, no matter if everyone owns a smartphone, not everyone has the same shopping profile, not everyone interacts the same way online, nor does everyone have the same information. Well, in itself, that is a question to be considered. There is no information if there is no context."

In-depth interview
Startup not included in Google for Startups' acceleration programs



Dirty data

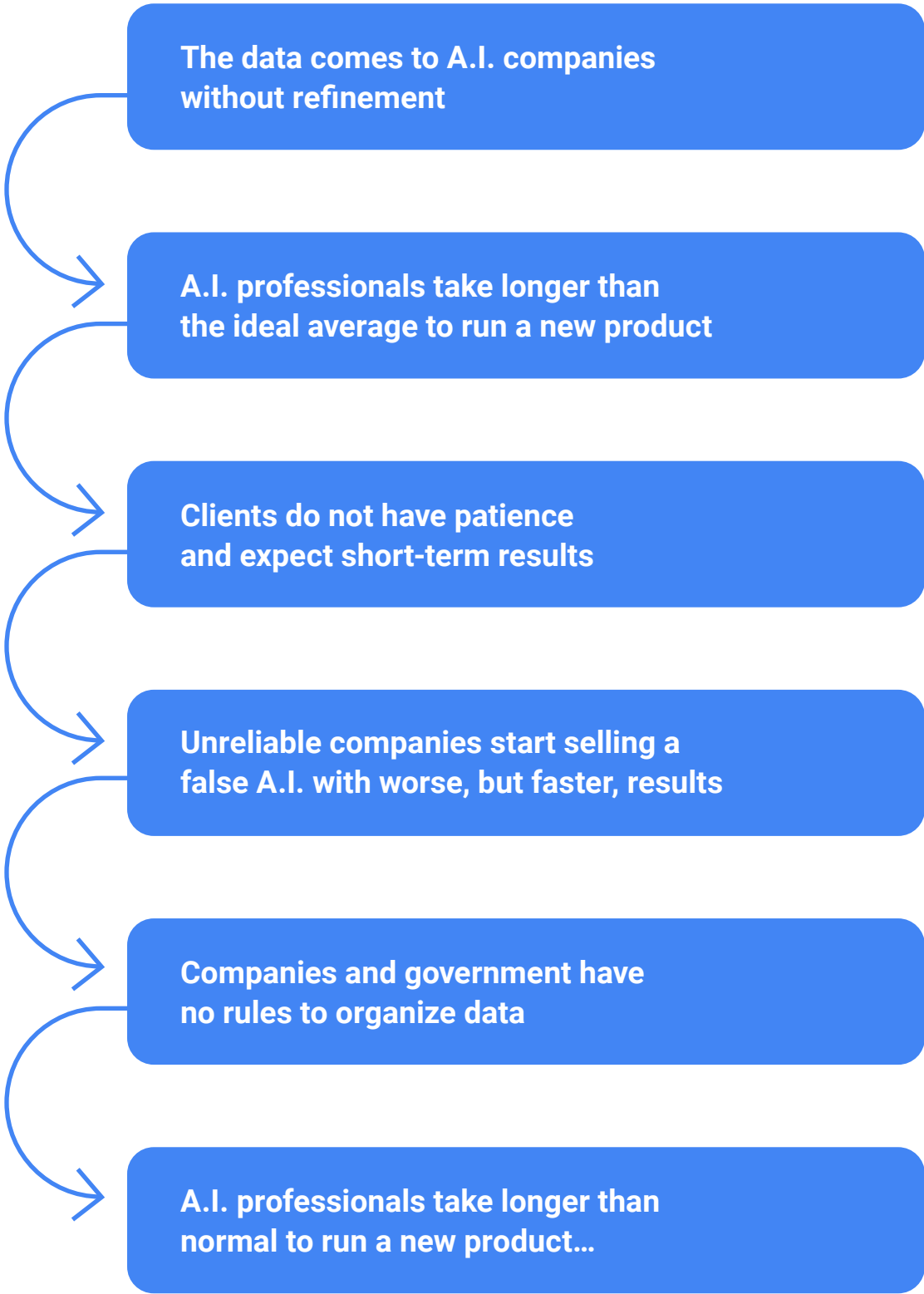
The data organization culture is terrible in Brazil. In our survey, 33% of all startups interviewed believe the inexistence of a culture of clean and organized data in Brazil is the greatest hindrance to the growth of A.I. in the country.

"Brazilians are very bad with data protection. We share our TIN number with anyone, or any other information that is requested. We do not care about using any site and that affects the data health negatively. I will not pay someone who cannot work with data and that will cause me a delay in the update, to do a job that, in theory, we can do. I only trust the data we collect".

In-depth interview

Startup not included in Google for Startups' acceleration programs

A systemic problem stemming from bad data



A universe of dirty data gets to A.I. companies

If, today, data is the new oil, then, we are lagging behind in the race. Brazilians in general make bad use of data. Besides the lack of knowledge about data usage and security, disorganization is rampant and the impact on A.I. professionals' daily work is significant.



Incipient regulatory environment

Regulation is fundamental, but there still lacks understanding of the real value of engaging.

Startups still have little regulatory knowledge. Throughout the world, guidelines are being created and, in Brazil, they seem to emerge without help from startups - that barely know anything about the regulation subject, which can be bad for all. The founders interviewed think Brazil's General Data Protection Law (LGPD) meets today's greatest challenges and all respondents want regulation, but are afraid of an excessively preventive proposal and the eventual dominance of foreign players in the market, to the detriment of local businesses.

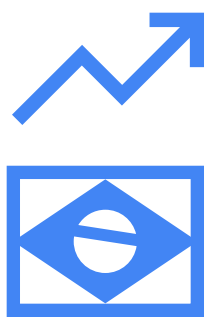
Out of the 49 startups interviewed:



Only **4%** say they know PL 21/20 well



16% admit they know nothing or nearly nothing about PL 21/20



43% believe an A.I. regulation from PL 21/20 is very or extremely important for the development of the category in Brazil

"I think the future of that regulation will need to align traditional regulation pathways, which is what happens in the current draft bill. It will be a discussion in which the State will have more active participation, inspection data, governance mechanisms - not just the role of coregulation, where there is, in a way, a partnership between the private and state sectors. There must be certain caution so that it is not a type of empty regulation [...] it is important there is a debate with all sectors involved".

In-depth interview
Expert

Know more about PL 21/20

Draft Bill (Projeto de Lei - PL) 21/20 creates the legal framework for the development and use of Artificial Intelligence (A.I.) by the public power, companies, various entities and natural persons. The copy, undergoing approval at the House of Representatives (Câmara dos Deputados), sets out principles, rights, duties and governance instruments to A.I. Among other points, the proposal provides the foundation of the use of A.I. will be the respect to human rights and democratic values, equality, non-discrimination, plurality, free enterprise and data privacy. Furthermore, a principle of A.I. will be the assurance of transparency about its use and operation.

Regulation by principle or by precept? What startups want is to join in the discussion.

Ideas suggested during the in-depth interviews:

- Coregulation, with participation of private sectors with the government;
- Creation of a union or company association to join in the discussions on the Draft Bill;
- Definition of quality stamps with companies that develop A.I. responsibly;
- Educate current and future A.I. professionals to be ethical in the architecture of what they do;
- The regulation must also be developed and fed with or by an A.I.

Stained reputation of expression “A.I.”

The vulgarization of the expression produces misunderstandings and ill reputation:

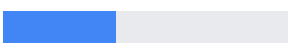
All the success and buzz around A.I. do not come without a price. Many companies are willing to ride the wave and call themselves A.I. developers, delivering sub-par solutions and staining the reputation of serious companies. In the opinion of many founders, it is important to think about creating mechanisms that legitimize companies that develop A.I. credibly and ethically.

To go through this moment of success and popularity, it is necessary to bring to the masses the real conversation about the influence of A.I. on people’s lives.

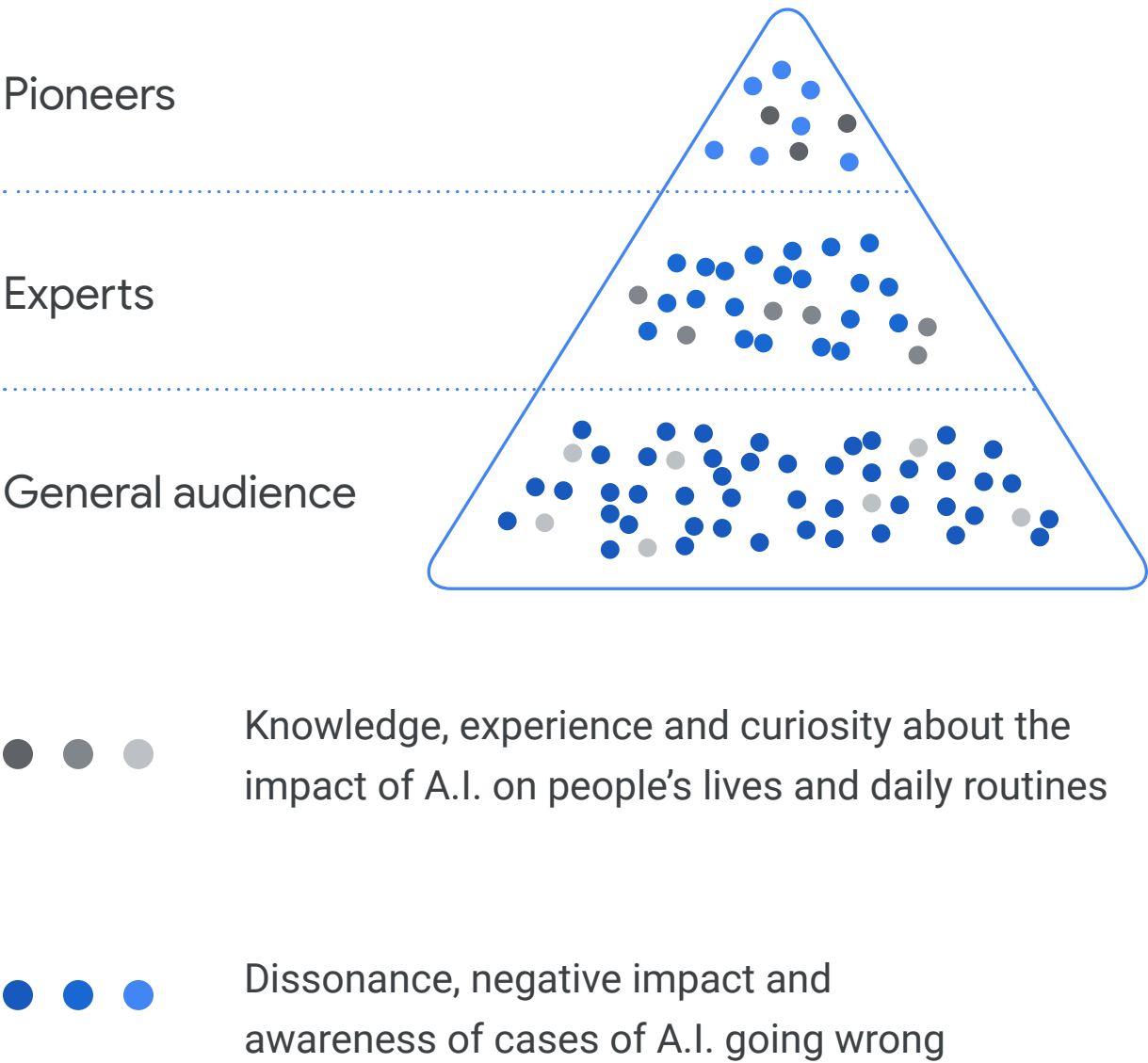


Out of the startups interviewed:

39%



believe the misunderstanding and misuse of the expression is the greatest hindrance to the development of A.I. in Brazil



“Nowadays, everybody wants to do that. It is just like facial harmonization, you know? Every company now wants to do A.I. It took us three years flirting with A.I. internally to understand what it means to us. What operational efficiency is and what A.I. can do. It is very confusing, I think, in people’s mind, what is the true value of A.I.? You turn on the TV, you see an influencer all pseudo-manager saying A.I. will replace all jobs. So I see many people developing A.I. that will actually not add any value to the chain”.

In-depth interview
Startup included in Google for Startups’ acceleration programs

Lack of commercial compatibility


From the client side: they lack knowledge and patience to truly wager on the exponential growth of solutions that bring A.I.

From the A.I. professional side: there is a shortage of professionals with soft skills and the capacity to turn models into products.


The country's economic instability, coupled with a culture of wanting results as quickly as possible, have created an environment that is hard to work in for many companies. Many clients are more conservative and excessively attached to a shorter term than an innovative and disruptive technology will usually require - such as what happens with Artificial Intelligence.

That only intensifies the need to focus on developing A.I. professionals' interpersonal skills, who have more difficulty selling and explaining their products to laypersons and also turning their models into commercially successful products.

Out of the startups interviewed:

41%


believe educating and raising the market's awareness of A.I. is what matters most for the future of the technology in the country

27%


realize clients do not appreciate A.I. products or services

In respondents' opinion, clients in Brazil have little patience to see A.I.'s actual results

"We did not come through the door saying 'buy my technology because it will bring return'. We would say 'we have a solution to solve your problem. Let us test it together?'. In a few weeks, we would show them how much money they had earned in such short time, in an area smaller than their area. But that was already enough to close a deal. Clients started bringing us positive feedback."

In-depth interview
Startup included in Google for Startups' acceleration programs

Some methods deployed to bring faster return and win over the client

Ideas suggested during the in-depth interviews:

Free test for a short period of time;

Client education courses and processes;

Commercial team that knows how to speak while thinking from a client's perspective

Develop a customized pilot project.



Insufficient technology literacy

Go beyond only having access to A.I. information and start becoming a knowledge producer, responsible for helping disseminate qualified content about Artificial Intelligence.

The lack of knowledge about A.I. is the tip of the iceberg of the problem of insufficient technological insertion and knowledge for all Brazilians. Access to technology alone is not enough. In the country, there are more than 240 million smartphones in use, according to FGV, and today it is necessary to address how to use that technology, how to turn it into knowledge, and how to do that inclusively.

"People are very used to using technology, but just to using it, and not to contributing [to it]. There lacks medium- and long-term thinking. If they cannot have that vision, they cannot draw what good that technology may bring. In Brazil, education does not focus on mathematics much. You do not have those mathematical and logical concepts very well defined. It is a flawed concept to create scenarios outside what is already common".

[In-depth interview](#)
[Expert](#)

Out of the startups interviewed:



39% believe there still is little knowledge of the subject



33% see an evolution is necessary in elementary education to develop Brazilians' logical thinking



47% think said evolution is the hardest thing to achieve in the country



Brazil is still crawling when it comes to technology literacy

Gaps along life that lead to talent flight

Gap in teaching logical thinking in Brazilian schools **89%**

Distance of Brazilians youths from technology knowledge basis **78%**

Insufficient access to quality computers for the population since before the professional age **77%**

Little condition to study technology **55%**

71% of all startups interviewed agree there are extremely few examples at schools of professionals who succeed in technology

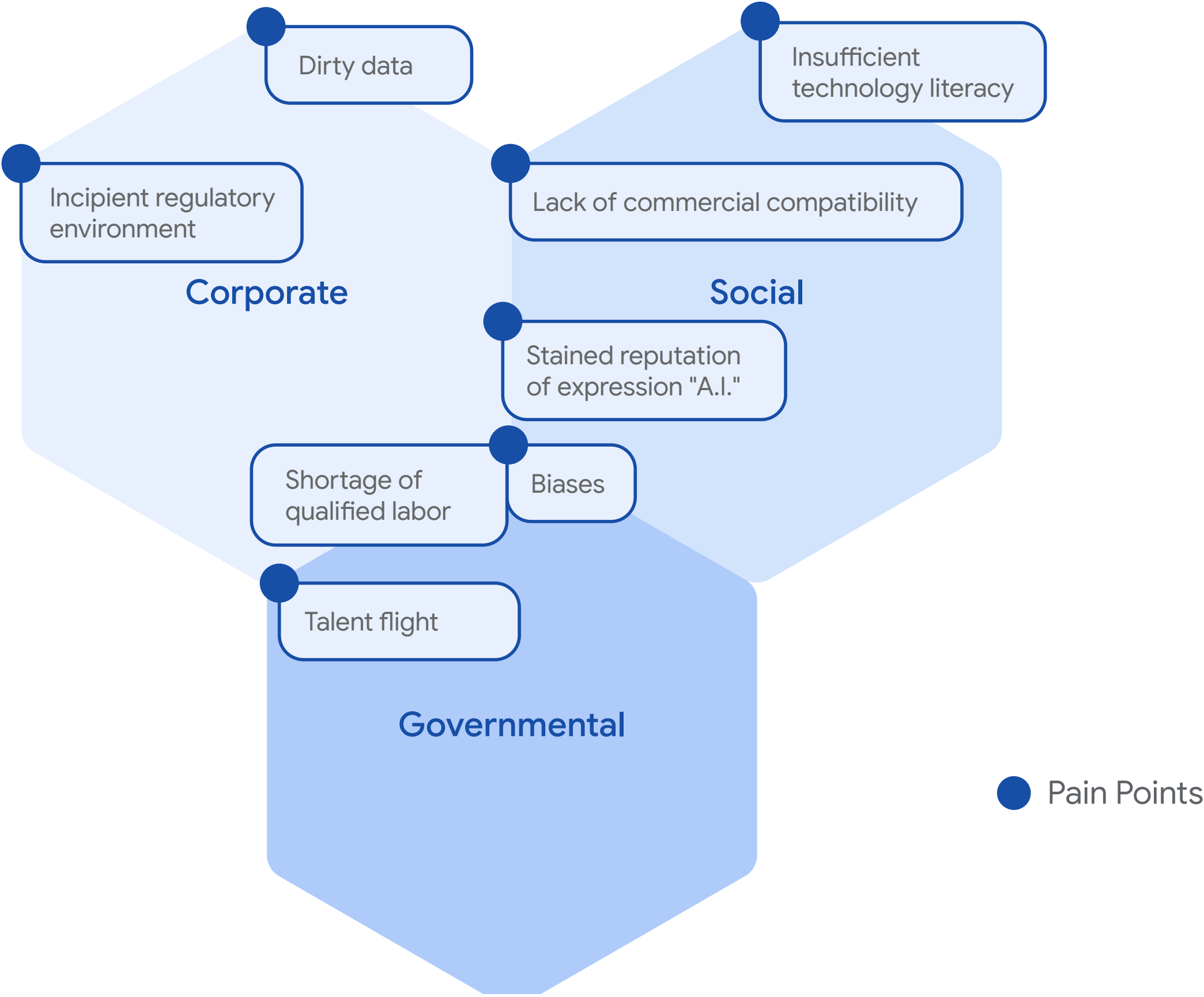
According to Instituto Nacional de Estudos e Pesquisas (Inep), Brazil ranks among **the 10 bottom** performances in the world in mathematics - and its results in reading are low, among 79 countries, according to tests by Pisa (Programme for International Student Assessment). Furthermore, **68%** of all students do not have basic knowledge of mathematics.

A systemic problem

What comes from outside hinders more what is working inside. Today, the macroeconomic environment is full of externalities that may have negative consequences to A.I. companies. From the exchange rate to inflation, including the talent flight, the moment of the market and dirty data, companies in this sector are far more reactive than it would take for the technology to flourish in Brazil.

Companies find themselves in an environment full of externalities that render them more reactive, which makes them spend more time on other functions than developing and innovating in A.I. models

Map of pain points



Chapter 1 → Diagnosis

Key solutions

A ‘green and yellow’
field of possibilities:

Brazil is an open
field and very
conducive to
fostering an A.I.
that is **unique in
the world.**

Brazil musters the conditions to establish
itself as a powerhouse in A.I., even if it’s still
little tapped into, thank a very large market
and an innovation ecosystem still under
development.



*“From a more technical viewpoint,
I hope we manage, through A.I., to have
a more efficient and more agile country.
Brazilian professionals are very good
and may stand out globally for solutions,
technology. As I see it, there is a great
opportunity we still do not tap into.”*

In-depth interview
Startup included in Google for Startups’
acceleration programs

*“The Brazilian market is so incipient that
it is possible to invest in and improve all
areas. There are many projects to get
off the drawing board. There are many
people looking at the same thing, many
competitors for the same sectors, but
I think there are many things; it is very
incipient and has a lot to solve”.*

In-depth interview
Startup not included in Google for
Startups’ acceleration programs

*“Any A.I. I bring from abroad, when
applied to Brazil, will not be as good as
if it had been created in Brazil. There is
room for technology that interprets in
Portuguese and for us to become leaders
in our language”.*

In-depth interview
Startup not included in Google for
Startups’ acceleration programs

Brazilians' inherent talent and creativity are a trump card few countries may boast

Reminder:

37%

of the sample sees the flight of human capital as one of the greatest problems for the development of A.I. in the country

Brazilian entrepreneurs' talent, creativity and resilience are a powerful trump card to foster an A.I. culture in the country, but the environment that looms is more favorable for people to take flight and innovate elsewhere - rather than take a risk and lose everything here.

"Brazil has that thing of following trends and a disbelief it is possible to create here, whether the technology or the business itself. So, we have immense difficulty retaining talent in Brazil, creating talent for Brazil. Incredible talents are born here. You go abroad, shake a tree, there falls off some Brazilian running an amazing business at Apple, Google etc."

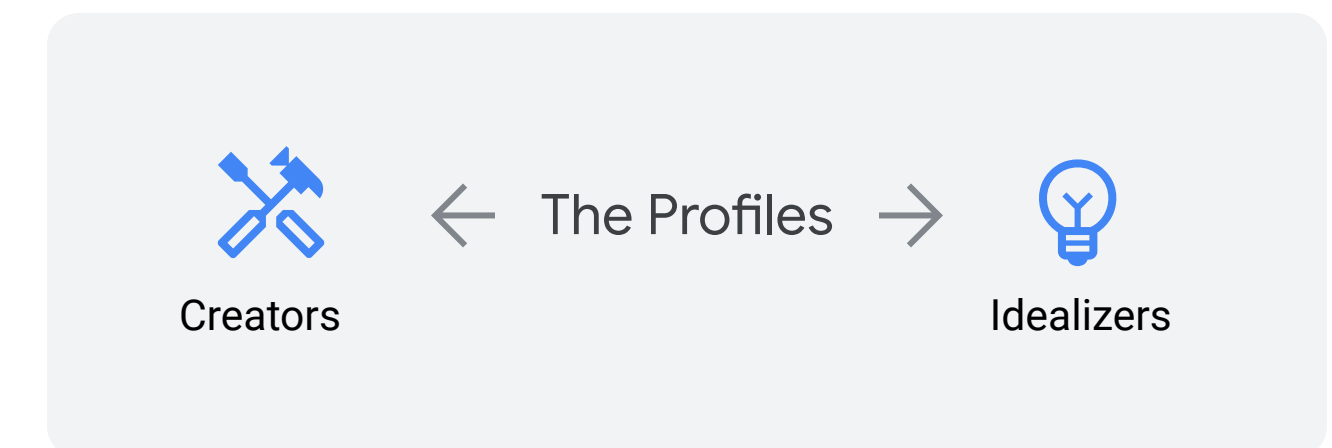
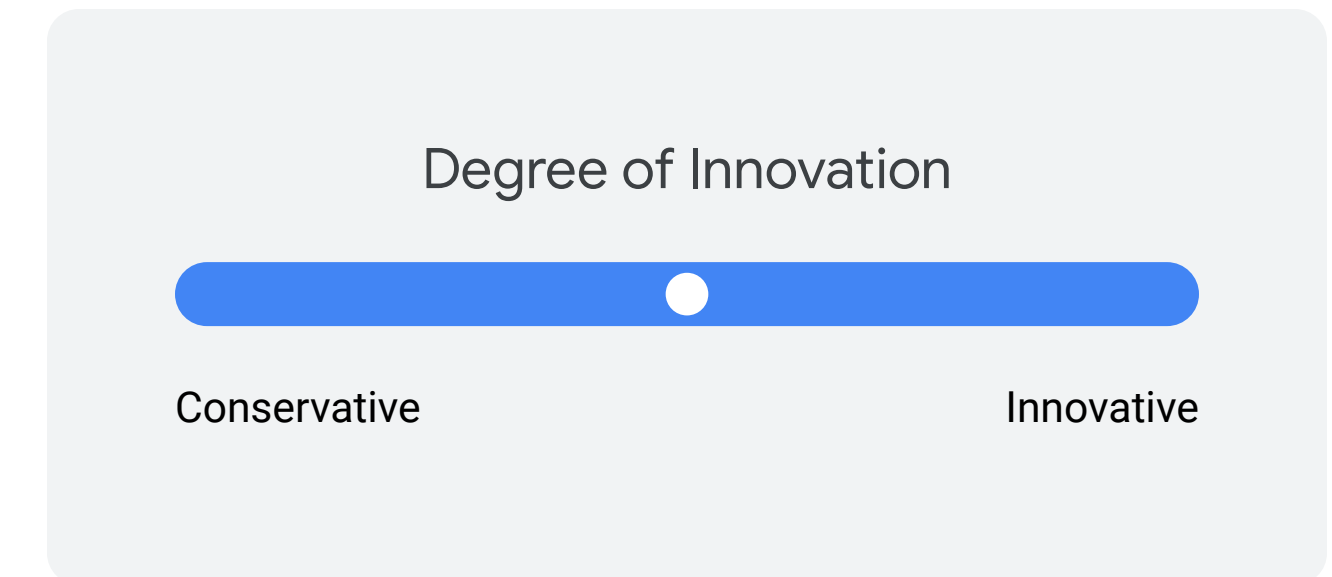
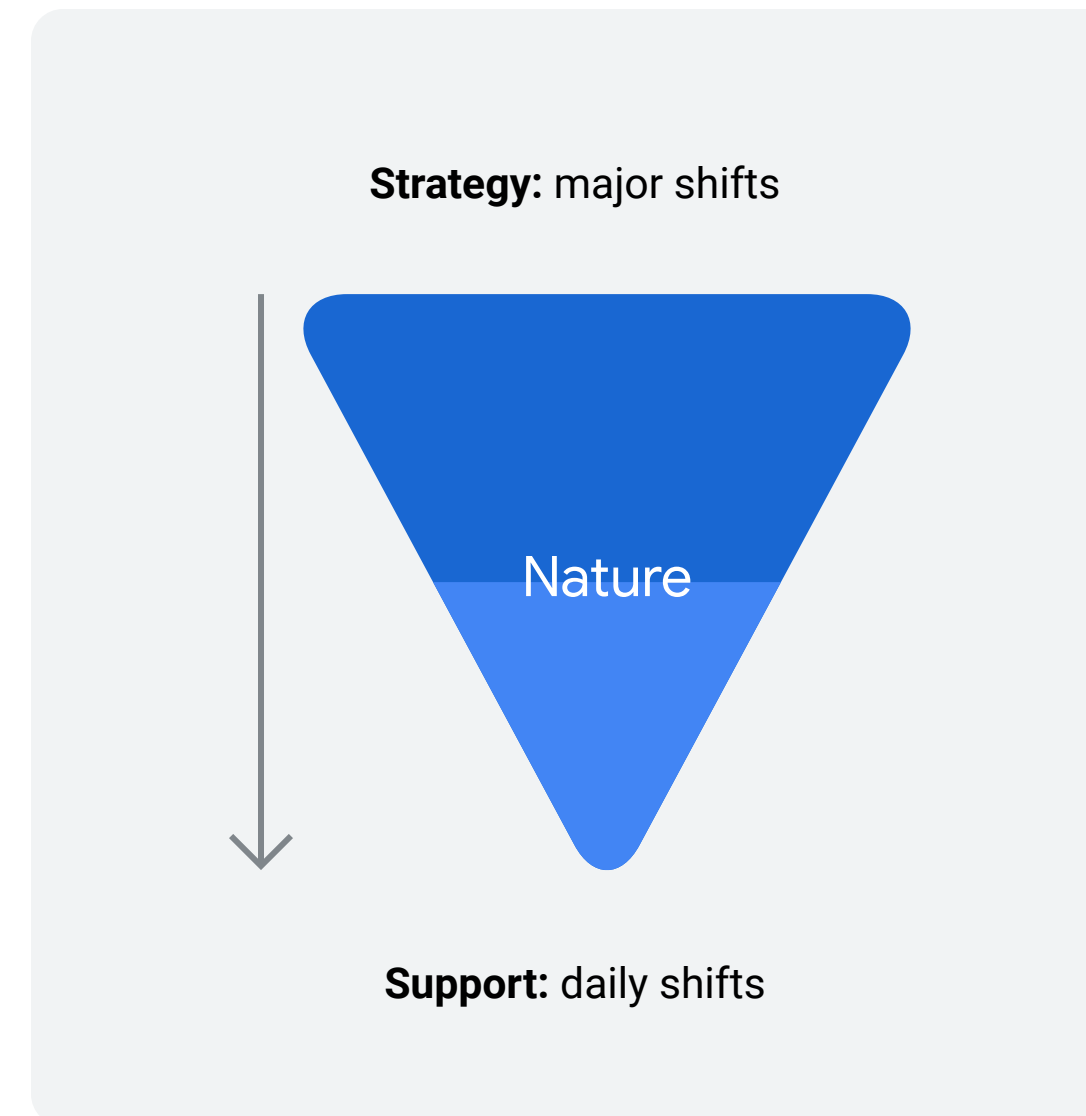
[In-depth interview](#)
Expert

"Our greatest strength are the Brazilians. In my opinion, the best entrepreneurs in the world are Brazilian, no modesty here. We solved many problems the hard way".

[In-depth interview](#)
Startup included in Google for Startups' acceleration programs



The fertile Brazilian soil allows for many **opportunities**. Next, we have split them according to the nature and degree of boldness of the proposed idea:



"There is a book titled 'Code 2.0', by Lawrence Lessig, a professor at Harvard Law. He says anything is subject to four regulatory forces: the law, the norms that are social constructs, the market, and the architecture. All four must act together".

In-depth interview

Startup included in Google for Startups' acceleration programs

"We use a robust web service, pay very dearly for a solution that must be very stable. We understand our platform cannot be out of service and that we must pay a high price for that. What we spent on web service a month would be enough to put up a few servers. In other words, we ended up becoming dependent on the service."

In-depth interview

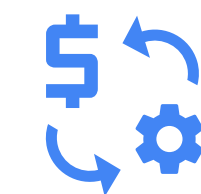
Startup not included in Google for Startups' acceleration programs

Structuring and/or supporting

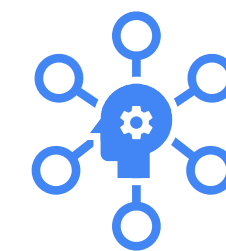
During the interviews with startups, it was possible to notice they expect different forms of assistance from large companies to come to a common and coveted result: become the “Google” in their category.

As we have seen, most startups in an early stage are always seeking support to develop and thrive. Their demands are more practical and are directly related to growing pains and the need to generate revenues, with better prices for servers or mentorship to make the business grow.

On the other hand, companies at a growth stage or in a scale-up process that have already identified and defined their business model expect more structural and strategic support, defending clearer interests or joining in more philosophical discussions, involving ethics, for instance.



29% say greater private investment on A.I. companies is key for the development of the technology in the country



37% believe it is necessary to increase the market knowledge about A.I.



Only **14%** of the sample sees the large technology companies are driving the growth of A.I. in Brazil

Onus and bonus of the two types of assistance

Support



- Use the company’s immense technical apparatus
- Develop a more commercial relationship with the A.I. ecosystem
- Become a tool for the evolution of others



- Become purely assistance-based
- Stay away from the great future questions about the subject

Strategy



- Take on a leading role
- Have a more intrinsic relationship with the A.I. ecosystem
- Create an A.I. culture aligned with its values
- Be an inspiration for the evolution of others



- Take on an extremely central role

“My dream is to be the Google of IoT”.

In-depth interview
Startup not included in Google for Startups’ acceleration programs

“I really wanted to be the Google of cyber security”.

In-depth interview
Startup not included in Google for Startups’ acceleration programs

“My dream is to be the Google of agro”.

In-depth interview
Startup included in Google for Startups’ acceleration programs

More conservative and/or more daring

As it still is a very new field, A.I. allows for greater experimentation and tests in the sciences and the arts to earn space and relevance in people’s lives.

During the interviews carried out, the perspective obtained is that A.I., mostly in Brazil, is still an underexplored subject and that has not been popularized, giving an opportunity to the several developers and companies that already are involved with the area to create and draw original and unique plans.

Under a different lens, it is not just because the ideas have not been thought that they may be realized without contemplating their implications. For a better part of the respondents, the power of A.I. and its founders lies in the opposite rationale that had been in vogue over the past few years, of “moving fast and breaking things”. It is necessary to always be aware of the accountability for and the consequences of our choices, but that does not mean those ideas cannot be used.

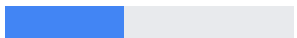
Out of the startups interviewed:

51%



want ways to be created to encourage projects with clients more open to experimentation

41%



would like courses that graduated more A.I. talents capable of thinking out of the box

40%



feel there is a lack of improvement of interpersonal skills (soft skills)

“If you do not have a favorable cultural environment, you won’t have the best minds in that place. There will be no diversity, euphoria, that nice thing of going out there and living an amazing experience. There is a technical side of financial and economic support, a side of discussion. But there is another side of giving greater credibility to the Brazilian talent, to the capacity it has for doing things, for creating a more prosperous, more disruptive, transforming environment. That is much needed.”

In-depth interview
Expert

“Move slow and fix things”: a daring motto in itself, for challenging the status quo

Ideas suggested during the in-depth interviews:

Conservative

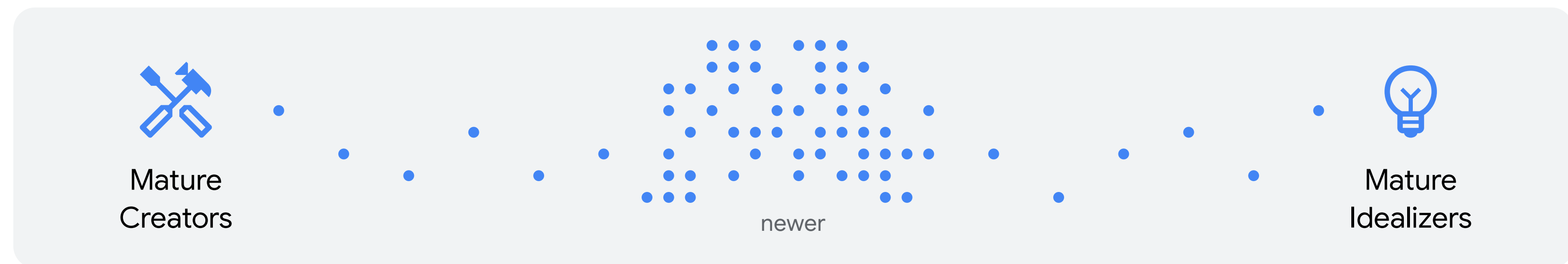
- Offer more appealing and competitive prices for the purchase of servers;
- Create professionalizing courses to develop A.I. personnel’s soft skills;
- Develop a certification stamp for companies that use A.I. correctly;
- Build a pervasive A.I. culture to popularize it as previous technological concepts, such as, for instance, gamification;

Innovative

- Organize culture and technology festivals to foster a creative community.

Creators and Idealizers polarize depending on their maturity and vision of the future for A.I.

The more mature the startup, the more its visions of the world and demands become solid. Newer companies tend to want everything at once.



Pragmatism and case-by-case resolution

Creators

Creators stand out for the more technocratic vision of A.I. For them, it is a tool of scalability and efficiency as never seen before, capable of correcting countless structural problems much faster and better than other methods.

Those possibilities and a more instrumental way of seeing A.I. lead to this profile's more pragmatic point of view, in which the business and the solution of the client's problem come first. For that reason, it is important to create a free environment to test and try, with the best regulation and the best professionals to do so.

↕ Greater prevalence of verticalized startups

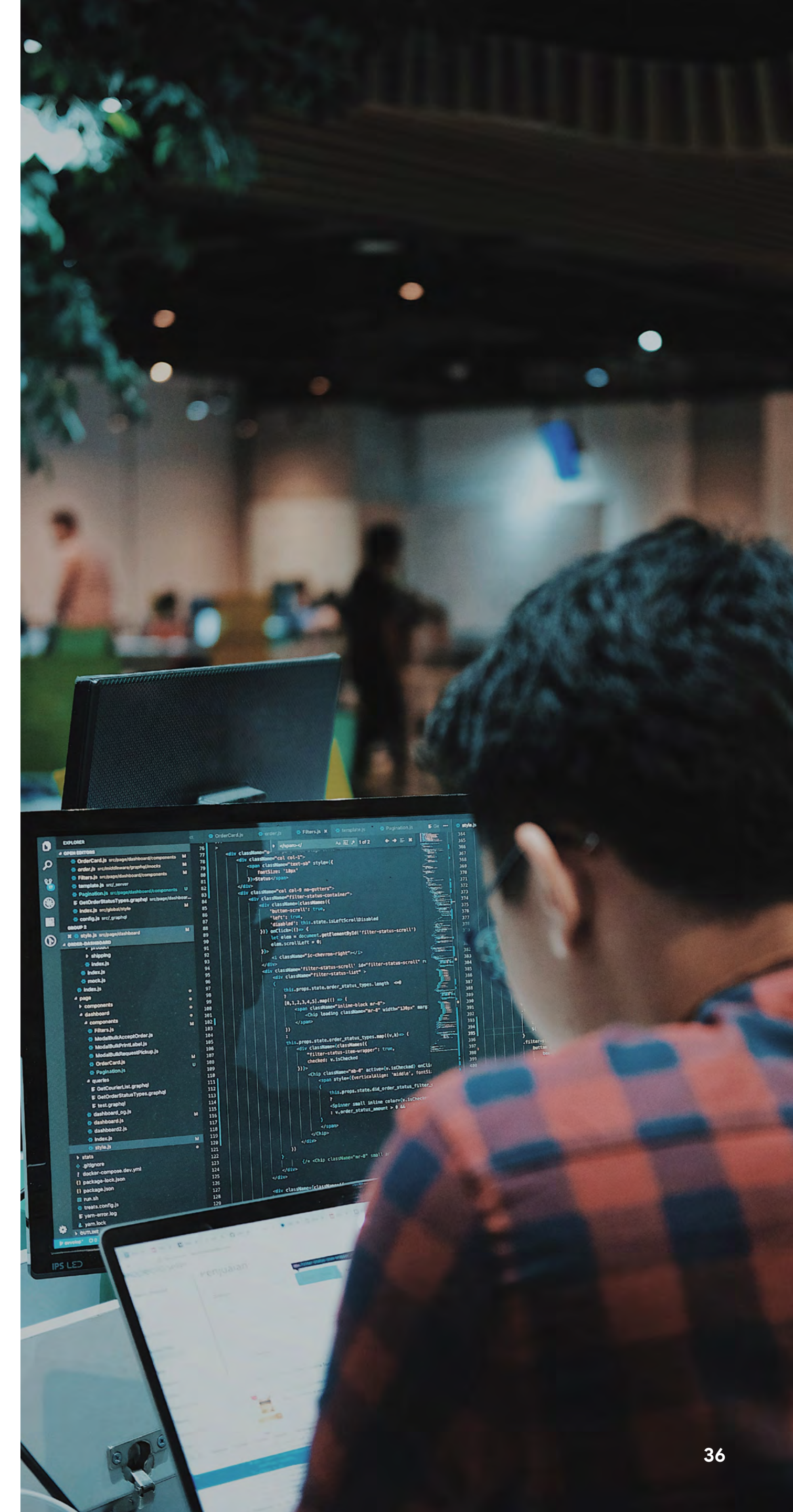
Challenges:

- Talent flight;
- Dirty data in Brazil;
- Currency (BRL) depreciation;
- Shortage of professionals with business knowledge;
- Misuse of expression 'A.I.'.

"[About the pandemic] All it takes is a crisis to instigate Brazilians' creativity. We asked ourselves 'what has not closed down? Hospitals have not closed down. Let's understand: what is there at a hospital we can help with?'. And then we went to talk to hospital owners."

In-depth interview

Startup included in Google for Startups' acceleration programs



Long-term impact
and thinking

Idealizers

With a more philosophical posture in the face of the future, for idealizers, A.I. also solves the many existing different structural problems. Nonetheless, if premises to a more ethical relationship are not created, free from biases in its architecture, norms, laws and relationship with the market, it is a tool that might trigger several problems in addition to those we experience today.

It is a profile with more mature and academic companies, which have already found a certain degree of financial sustainability and today may start thinking about the impact of what they do.

- ✕ ✕ Greater prevalence of multi-sector startups

Pain Points:

- Talent flight;
- Dirty data in Brazil;
- Short-term mentality;
- Little academic encouragement;
- Excessive biases;
- Few clients open to experimentation;
- Little creative professionals.

"How can I build a system that preserves human autonomy? The human capacity for decision is a critical factor for an ethical A.I. Very little is thought about it, but when we talk about building an A.I. for people first, we contemplate much more than just trying to do something without biases."

In-depth interview

Startup included in Google for Startups' acceleration programs

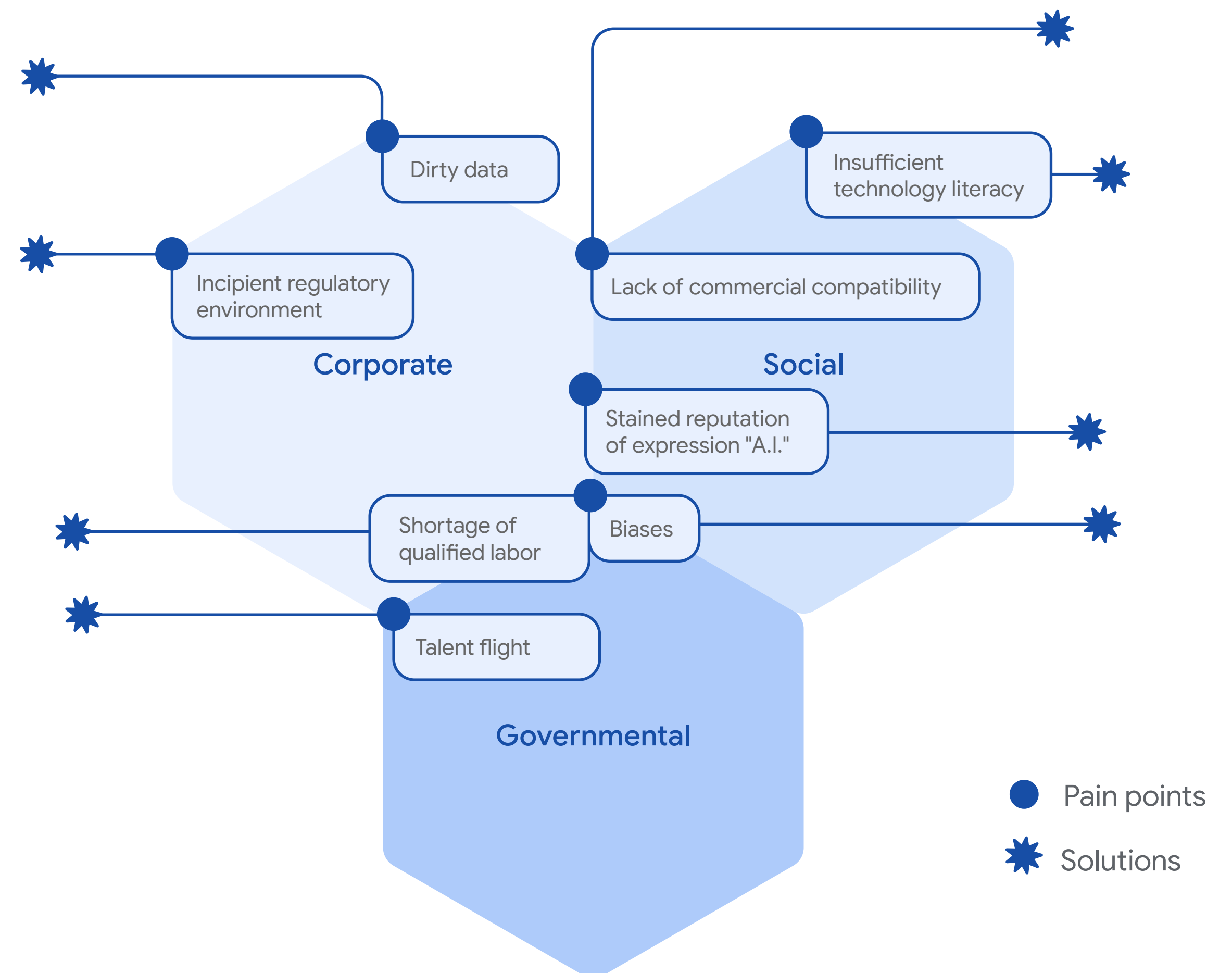


The half-full glass

For each pain point mapped out,
it is possible to
design a solution

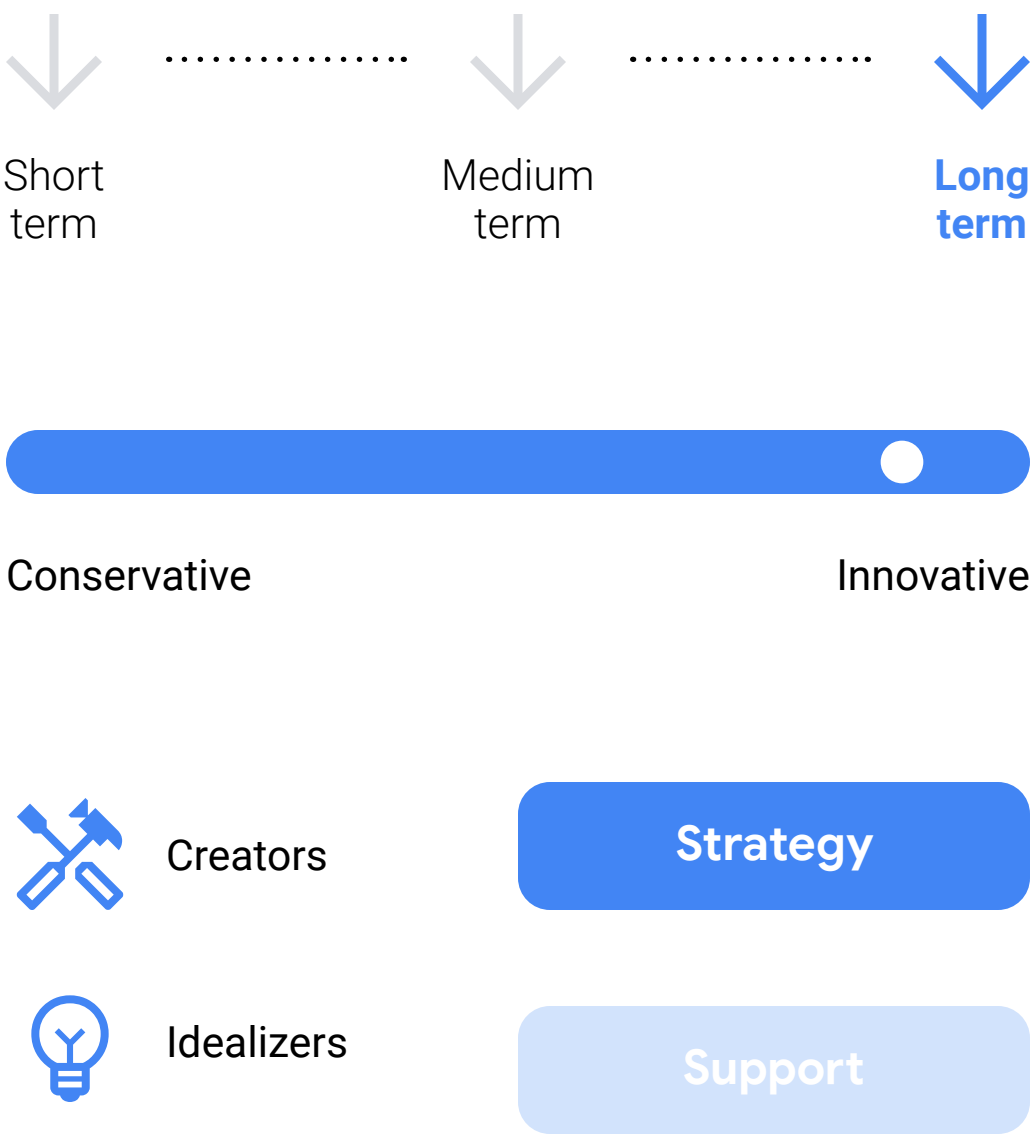
They show how this is possible by bringing different players together, starting a process of qualification and evolution of A.I. in Brazil toward a quantum leap.

How do we interpret those pain points?



Expand the base of the talent funnel

Pain point: shortage of qualified labor



How to bring more people to the world of technology?

The most practical answer would be to include the technology and appreciate it in different aspects of a person’s life, such as in culture, school, training, networking, and work.

Steps to turn the game around:

- 1 Simplify entry to the job market;
- 2 Facilitate access to knowledge and devices;
- 3 Emphasize the transforming potential of the work;
- 4 Include knowledge of A.I. in schools and universities;
- 5 Create strong aspirational points in the collective imagery.

Market Radar



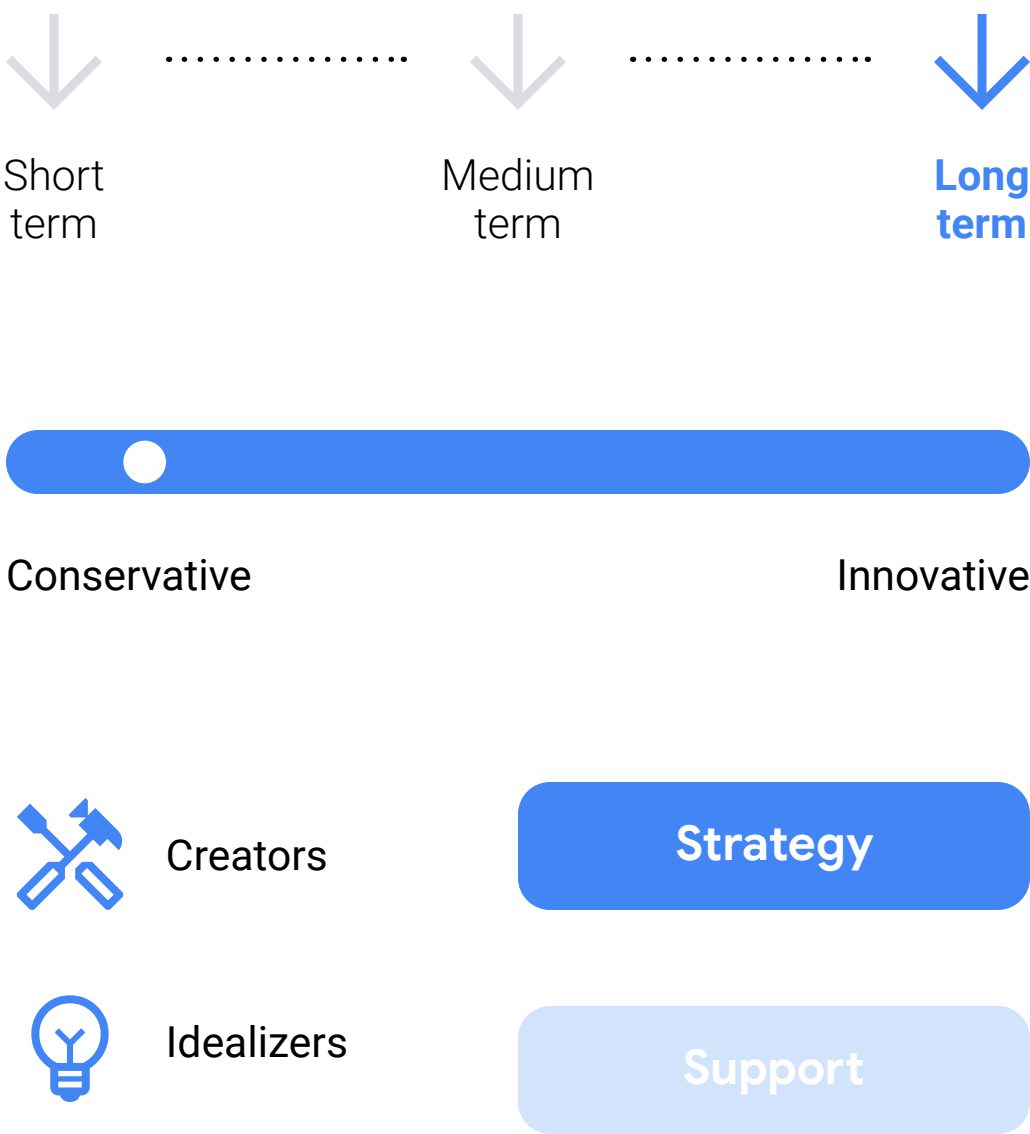
Google offers, throughout the world, several professional training initiatives, such as Grow with Google, Professional Certificates, and the Google Cloud Capacita+ program, focused on cloud technology, in the form of training sessions and workshops, to improve the qualification of Brazilian professionals.

Ideas from the interviews:

- Invest in the base:** create job openings for young apprentices still in middle school.
- Emphasize the impact:** attract talents through the challenges proposed, and through the potential transforming impact the Brazilian market has, from the solution of more structural problems and the potential for transformation produced.
- Prepare the market:** create modules focused on A.I. to be added to courses, such as data engineering, modeling, A.I. for beginners etc.

Bring more technical and intellectual access to Brazil

Pain point: talent flight



What can be done to help retain talents in the country?

Beyond the necessary public policies, it is necessary to create an appealing culture of technology and A.I., easy and rich in exchanges and development for professionals.

Steps to turn the game around:

- 1 Foster the inclusion of new professionals with more competitive job offers and salaries;
- 2 Create mechanisms that grant bonuses to companies losing their professionals to other countries;
- 3 Create and sponsor scholarships for A.I. professionals, partnering with universities;
- 4 Invest in research and development for A.I. professionals;
- 5 Develop a cultural industry that appreciates and is rich in science exchanges.

Market Radar



REPUBLIC OF ESTONIA
E-RESIDENCY

Estonia has become a technological hub and has the highest number of unicorns per capita in Europe thank its “E-Residency” program created in 2014, which provides entrepreneurs a digital residency, without physical borders.

Ideas from the interviews:

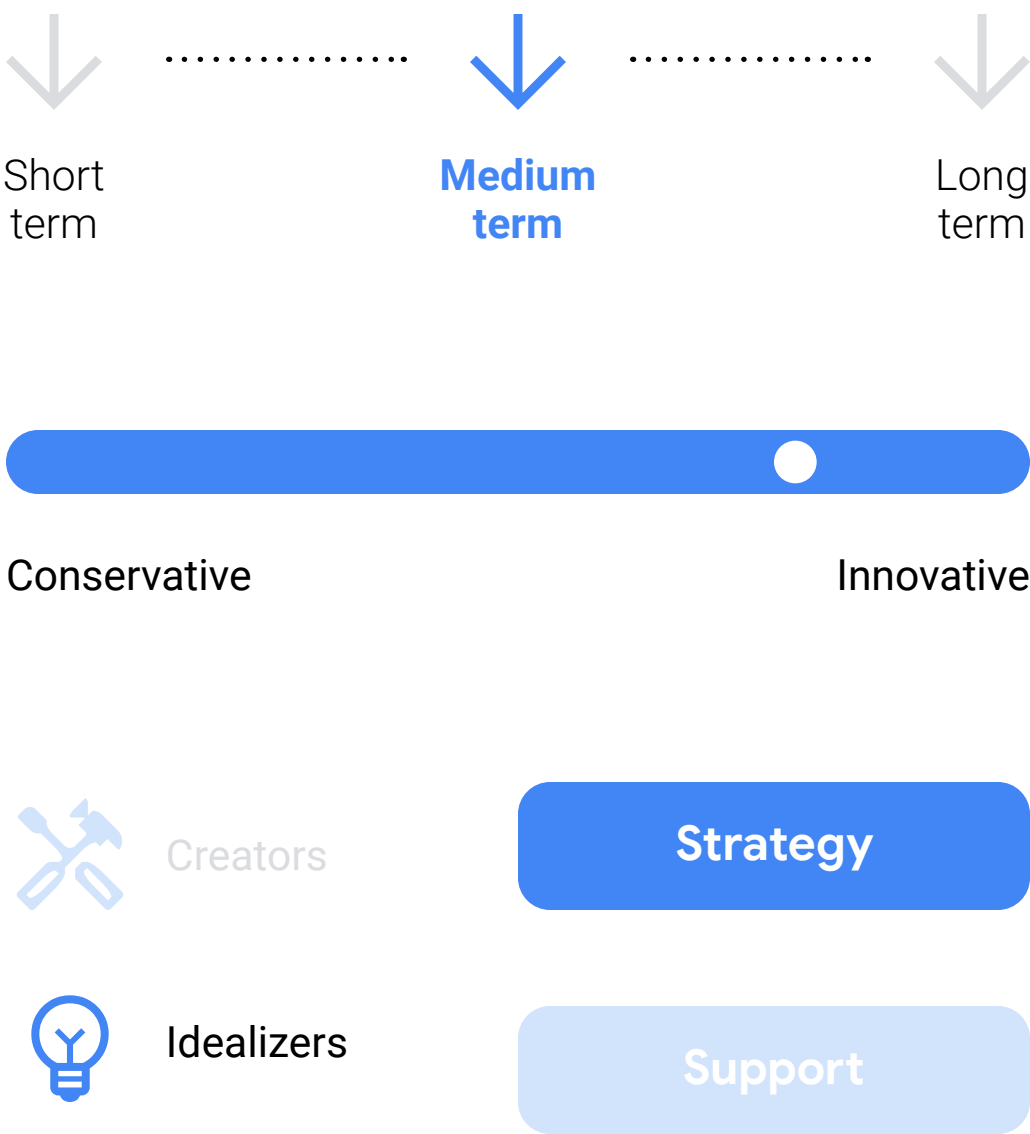
Recover experts: significant financial support to scientists and experts so that they stay in Brazil doing research in high-technology industries or fields that are on the forefront of the scientific knowledge.

Festivals: organize music and culture festivals in cities outside the Rio de Janeiro-São Paulo axis to turn them into poles of innovative and contracultural thinking.

Stock options: long-term incentive program, in which combinations of shares and salary are offered to employees.

The culture of inclusion and diversity in the A.I. universe

Pain point: biases



How to turn A.I. companies into a true portrait of the existing diversity in Brazil?

The most practical answer would be to: by inverting the pyramid of opportunities in technology, inserting politically-minoritized groups in the market, and making the work environment a welcoming place to those individuals.

Steps to turn the game around:

- 1 Provide marginalized populations in city outskirts with access to hardware;
- 2 Expand the presence of technology and A.I. subjects in public schools and regions outside the Rio de Janeiro-São Paulo axis;
- 3 Promote college scholarship programs for Black and vulnerable students;
- 4 Develop student-worker and trainee programs focused on diversity and inclusion;
- 5 Create models to build work environments that are welcoming to politically-minoritized groups.

Market Radar



Diversity AI is an organization whose goal is to prevent racial, gender, age and disability discrimination and other possible human prejudices that may affect the development of A.I. with stereotyped biases.

Ideas from the interviews:

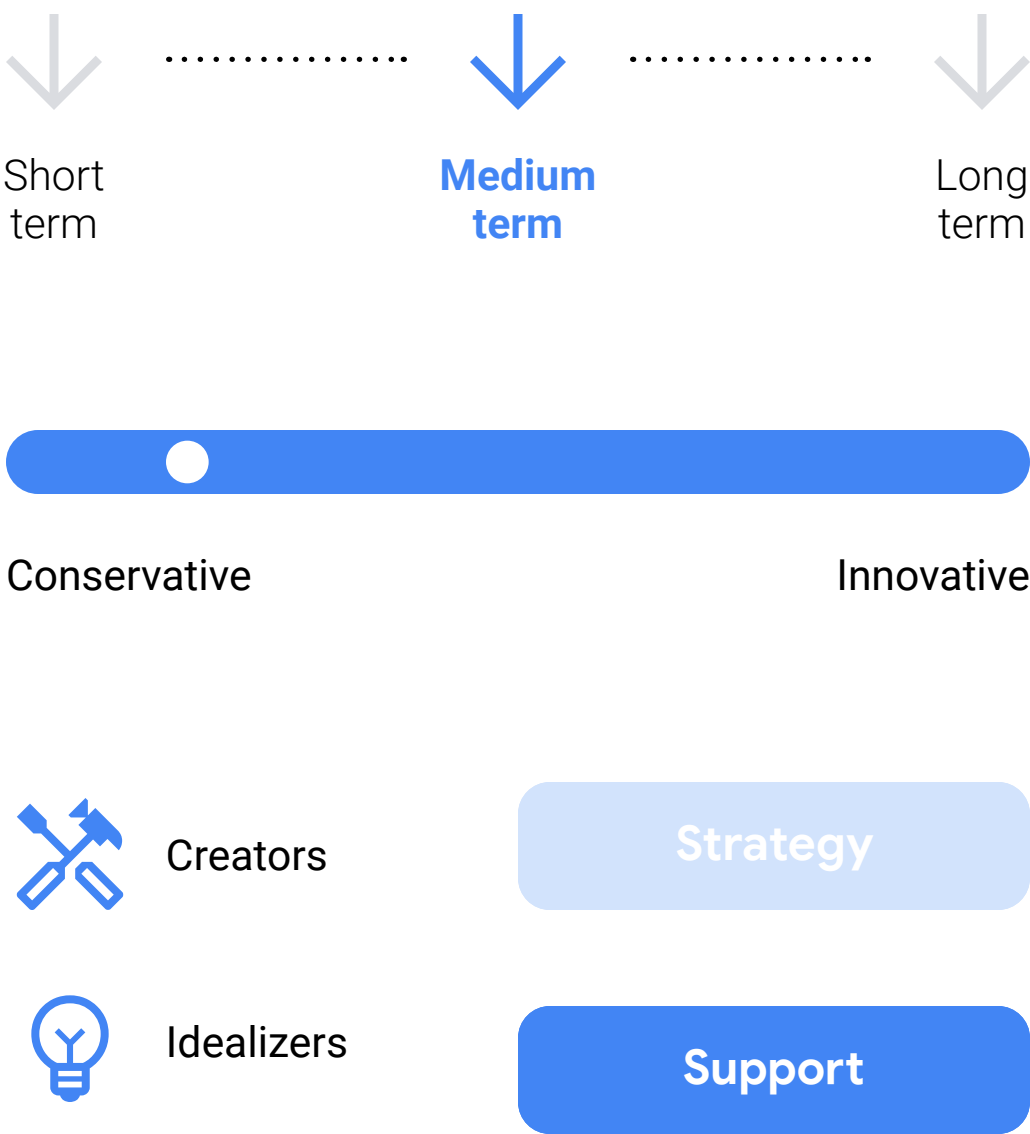
Support centers: develop support centers where individuals belonging to politically-minoritized groups can care for their mental health at work environments that still are not adherent to diversity and inclusion initiatives.

Avoid one-track discussions: stop including and inviting people from politically-minoritized groups to discuss technology and the future of A.I. only when the subject concerns diversity. Include them in all conversations.

Bias moderators: create teams of people who act as moderators of codes and machine learning to check for the existence of biases.

Standardize databases in Brazil

Pain point: dirty data



How to make the work of A.I. professionals more efficient in the country?

The most practical answer is by being a catalyst agent of the organization and provider of the best data for the whole category.

Steps to turn the game around:

- 1 Seek partnerships with specialized associations and entities;
- 2 Create a playbook for the data organization model;
- 3 Develop mechanisms for data education;
- 4 Strive to regulate a data organization model at the public sphere;
- 5 Create local datasets that expedite the work done by Brazilian professionals.

Market Radar



Produto Orgânico Brasil works as a stamp by the entity that currently promotes and qualifies organic production and producers throughout the country, facilitating access to the consumption of that type of product by the mainstream public.

Ideas from the interviews:

Partnership with entities: creation of projects concerning data norms and cataloging in Brazil, partnering with ABNT (Brazilian National Standards Organization) or similar associations.

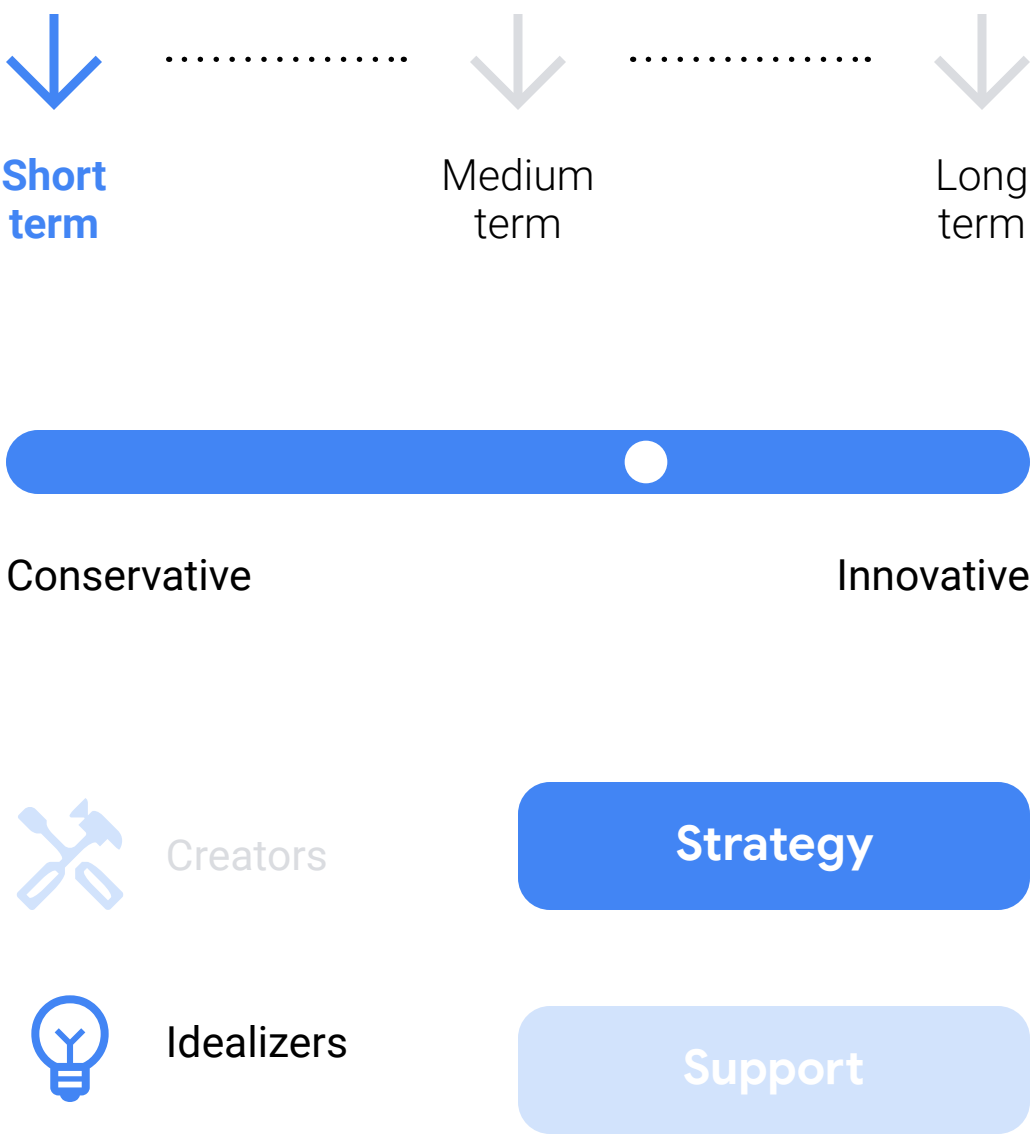
Creation of local datasets: develop local datasets with cleaner and more organized data to expedite the organization and machine learning process for Brazilian A.I. companies.

Training to professionals: technical training courses to train new data engineers.

Quality stamps: creation of quality stamps earned by companies that use A.I. responsibly and ethically.

Include startups in future discussions on regulation

Pain point: incipient regulatory environment



How to make the conversation about A.I. regulation more participative?

The most practical answer would be by including the whole A.I. ecosystem in the conversation, so they will feel included from start.

Steps to turn the game around:

- 1 Seek partnerships with specialized associations and entities;
- 2 Invite smaller startups to listen to their main wants and aspirations for the regulatory future;
- 3 Create co-participation mechanisms for smaller startups;
- 4 Test and validate hypotheses with small startups;
- 5 Put small startups face-to-face with parliament members involved with PL 21/20.

Market Radar



Movimento Inovação Digital (MID) gathers more than 140 digital economy platforms. The association fosters public and private initiatives that contribute with the development and growth of those technologies through articulation with other institutions.

Ideas from the interviews:

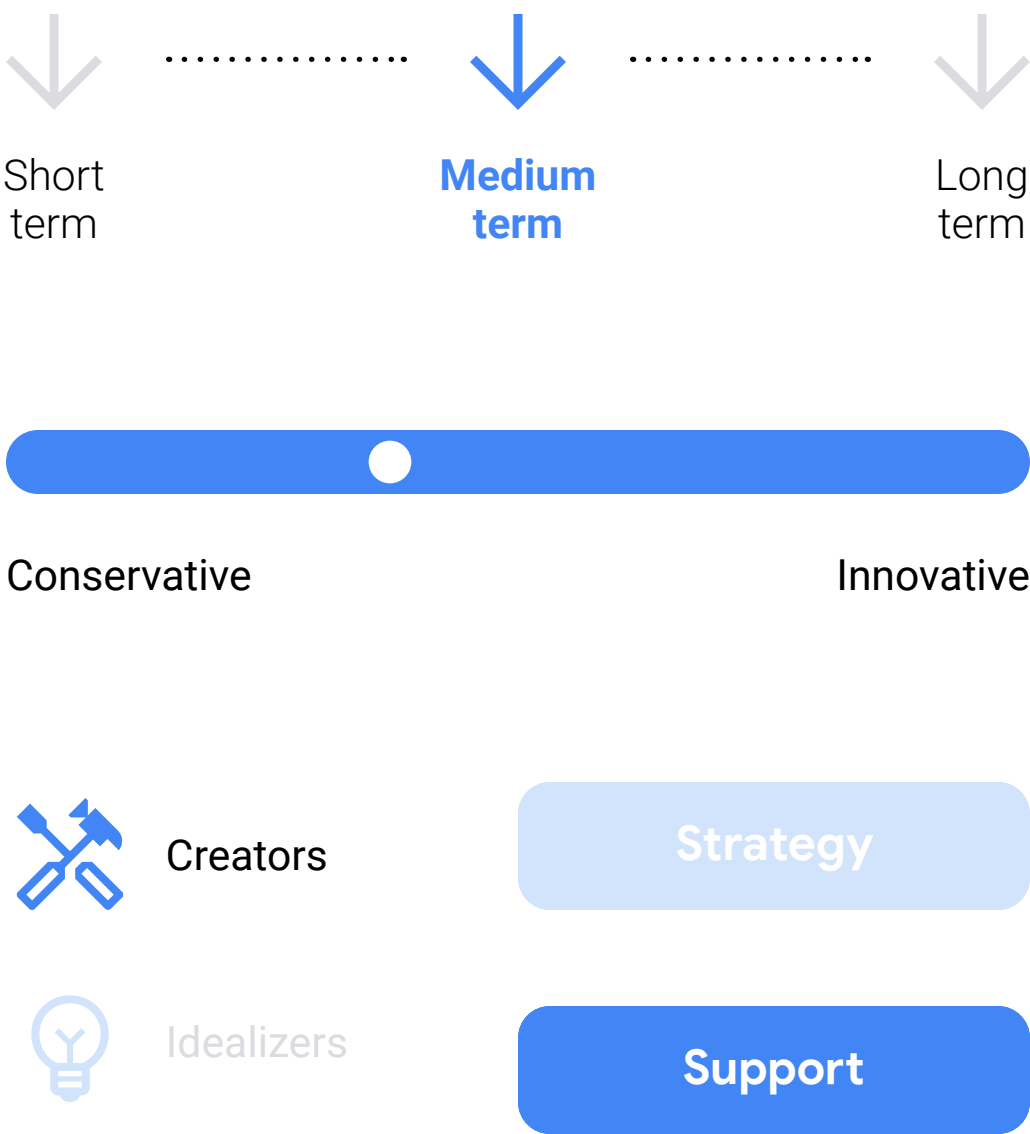
Creation of an association: define an exclusive A.I. association in the country to participate more effectively and assertively in the discussions on regulation.

Regulation ex machina: creation of a proprietary A.I. that defines and creates the regulation principles for its own future.

Self-regulation: involve different sectors related to the A.I. industry and appoint an entity that sets its own regulation for the category.

Include A.I. in the culture positively

Pain point: stained reputation of expression ‘A.I.’



How to dispel a prejudiced view against A.I.?

The answer lies in an action to counter the number of negative news items with positive impact and the transformation of the world for the good.

Steps to turn the game around:

- 1 Identify stories and individuals who are revolutionizing the country through good use of A.I.;
- 2 Train spokespersons at different spheres (social, public, corporate, media etc.) and regions of the country;
- 3 Produce positive facts about A.I.;
- 4 Make results and processes more transparent and accessible to the general audience;
- 5 Develop projects and partnerships with high media visibility about good uses of A.I.

Market Radar



The Age of A.I., YouTube Originals’ docuseries, presents the several advantages afforded by artificial intelligence, with the support of several experts in the area. Altogether, the eight episodes of the series have had more than four million views.

Ideas from the interviews:

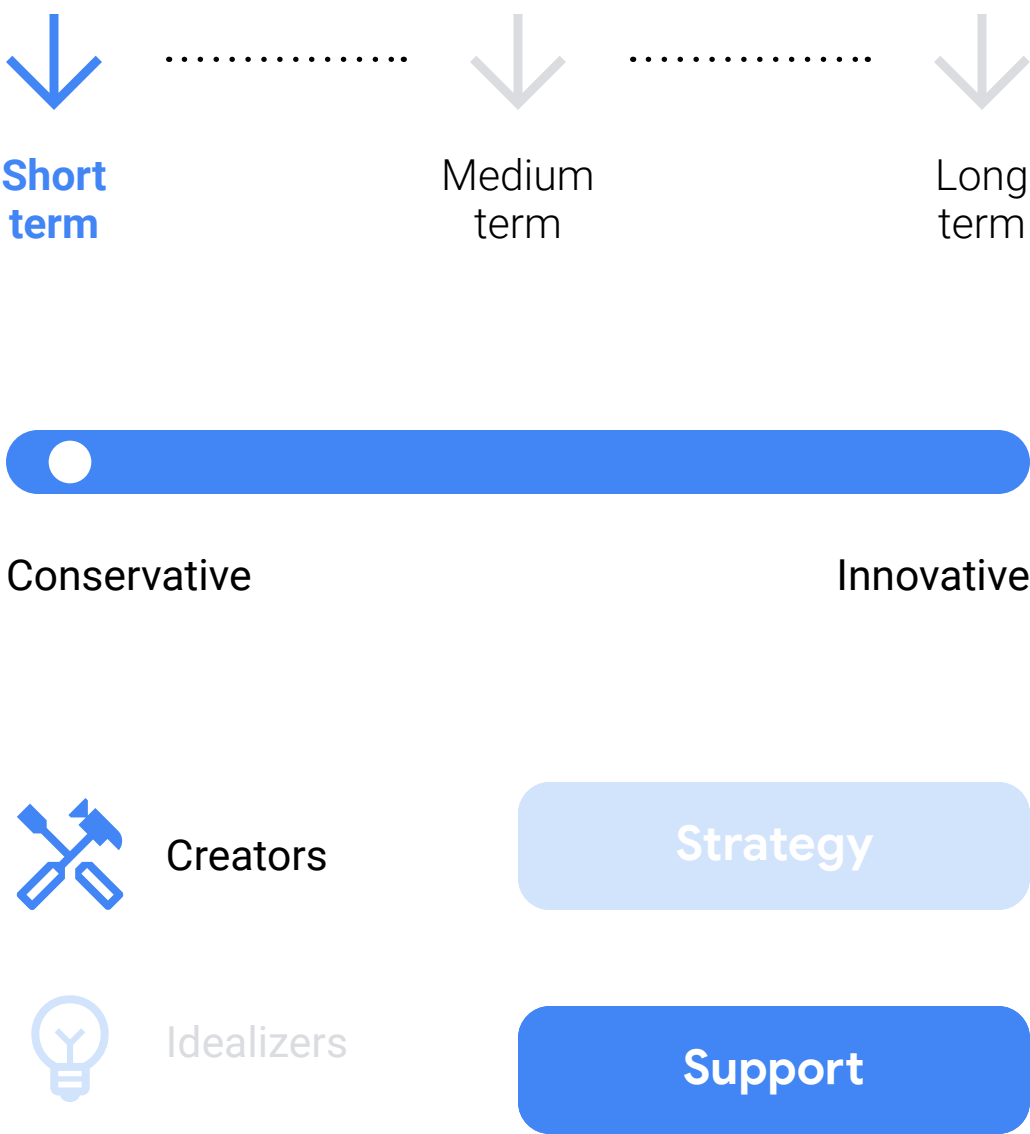
Content campaigns: create campaigns that contextualize and show the positive impacts of A.I. in Brazil and the world in an involving and engaging narrative.

Give visibility to prominent figures: promote large-scale competitions with prizes for individuals who develop high-impact solutions through the technology.

Work on influence and PR: include A.I. in the cultural agenda as to demystify the subject and educate the population using high-profile influencers from the world of technology and entertainment.

Educate and raise awareness of the market and professionals

Pain point: lack of commercial compatibility



How to lessen friction between clients who are less open to the A.I. model and professionals less prepared to serve customers?

By acting at both ends: developing professionals' soft skills, and educating clients on the subject.

Steps to turn the game around:

- 1 Seek partnerships with specialized associations and entities
- 2 Target messages and experts to each stakeholder's need and reality
- 3 Organize training courses to improve A.I. professionals' commercial skills
- 4 Organize meetings and fairs between A.I. and different market segments
- 5 Seek public incentive to facilitate access by companies that develop A.I. in the market

Market Radar



Zappos is notably a case of good customer service due to its strategy, which stems from two principles: 365-day return policy and free shipping, with possible return. These initiatives dispel consumers' concerns and make them more inclined to a faster purchase.

Ideas from the interviews:

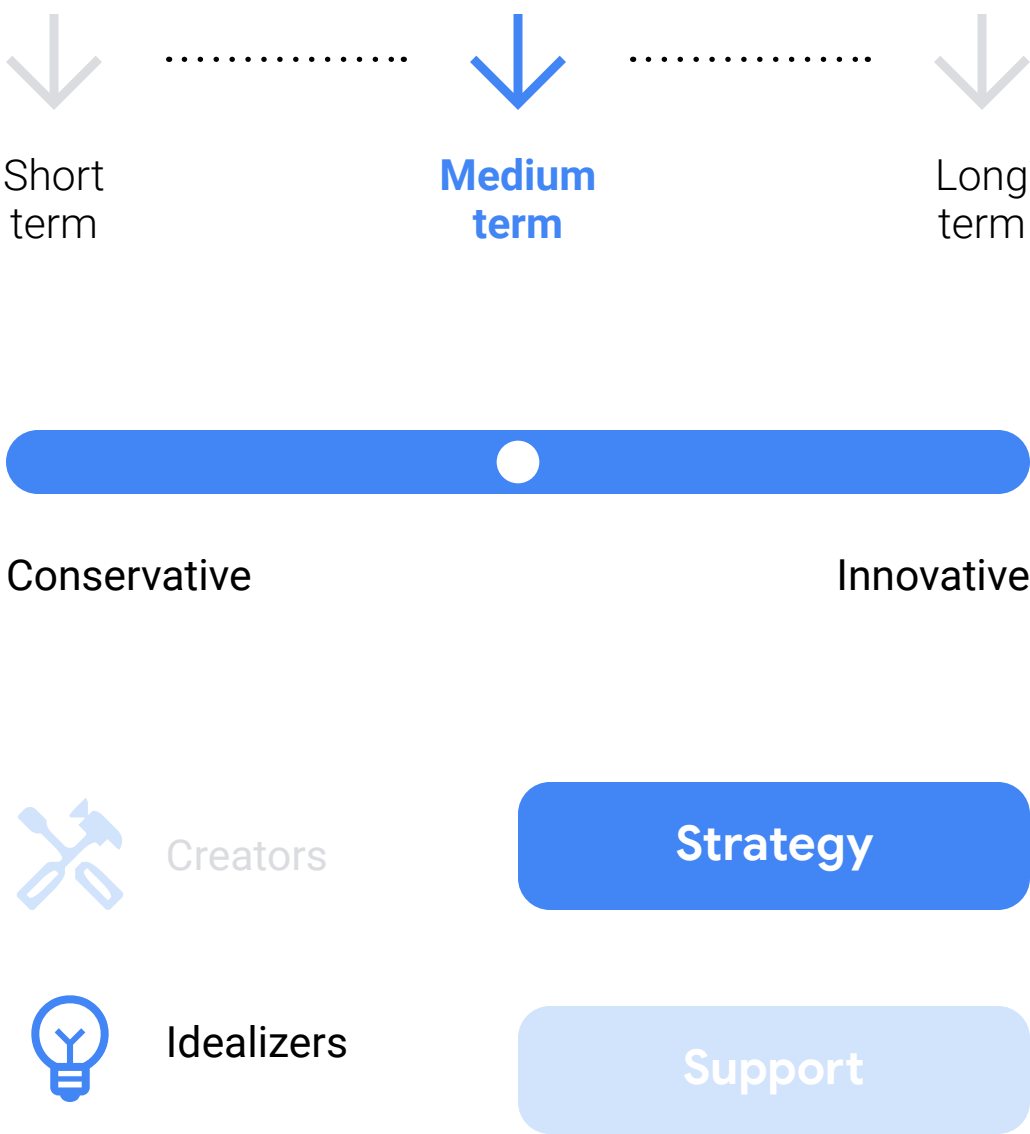
Commercial enhancement courses: creation of exclusive courses to improve A.I. professionals' soft skills and techniques to turn models into products.

Communicate business impacts triggered by A.I.: drun campaigns giving visibility to companies that use A.I. to talk about the leap in quality and productivity their businesses experienced.

Programs to earn bonuses and waive tariffs: public policies that award financial and tax incentives to companies that wager on and adopt A.I. developed by Brazilian companies.

Move from access-only to the production of technological knowledge

Pain point: insufficient technology literacy



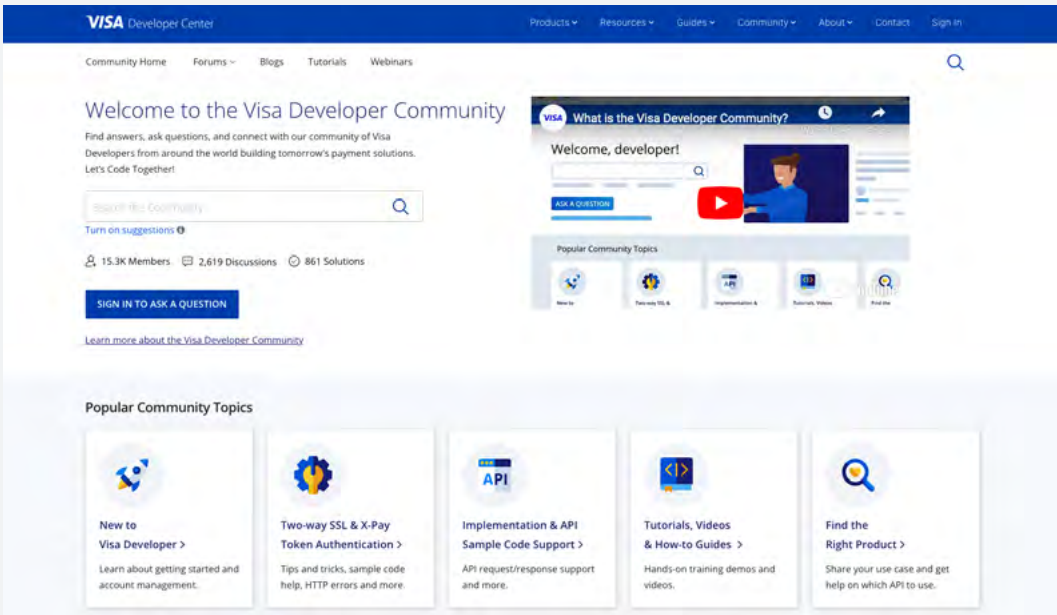
How to turn Brazilians’ high technology consumption into the production of knowledge on the subject?

By waging on public policies that promote and encourage youths to have better tools, become more interested in the subject, and appreciate the technology market.

Steps to turn the game around:

- 1 Facilitate access to materials and technology tools with greater potential for programming
- 2 Partner with schools and technical courses with affordable prices to offer programming classes
- 3 Provide teaching materials in Portuguese about programming with large reach and easy access via YouTube
- 4 Invest in training educators across all schooling levels, from elementary to higher education
- 5 Create multi-sector articulation fronts to pursue structural changes in the Brazilian educational system

Market Radar



Visa has created an online community to foster collaborative innovation: a portal on which external and internal developers are connected to share information freely.

Ideas from the interviews:

Purchasing power parity: distribute technology (both hardware and software) at prices that are affordable to Brazilians’ wallets.

Hackathons in the outskirts: espread a calendar of hackathons and technology competitions throughout Brazil, emphasizing cities’ outskirts.

Basic education: support and develop articulation fronts that foster structural changes in the Brazilian educational system (focus on public education) to provide a boost in logical, mathematical and technological knowledge.

A.I.'s quantum leap is **right there**

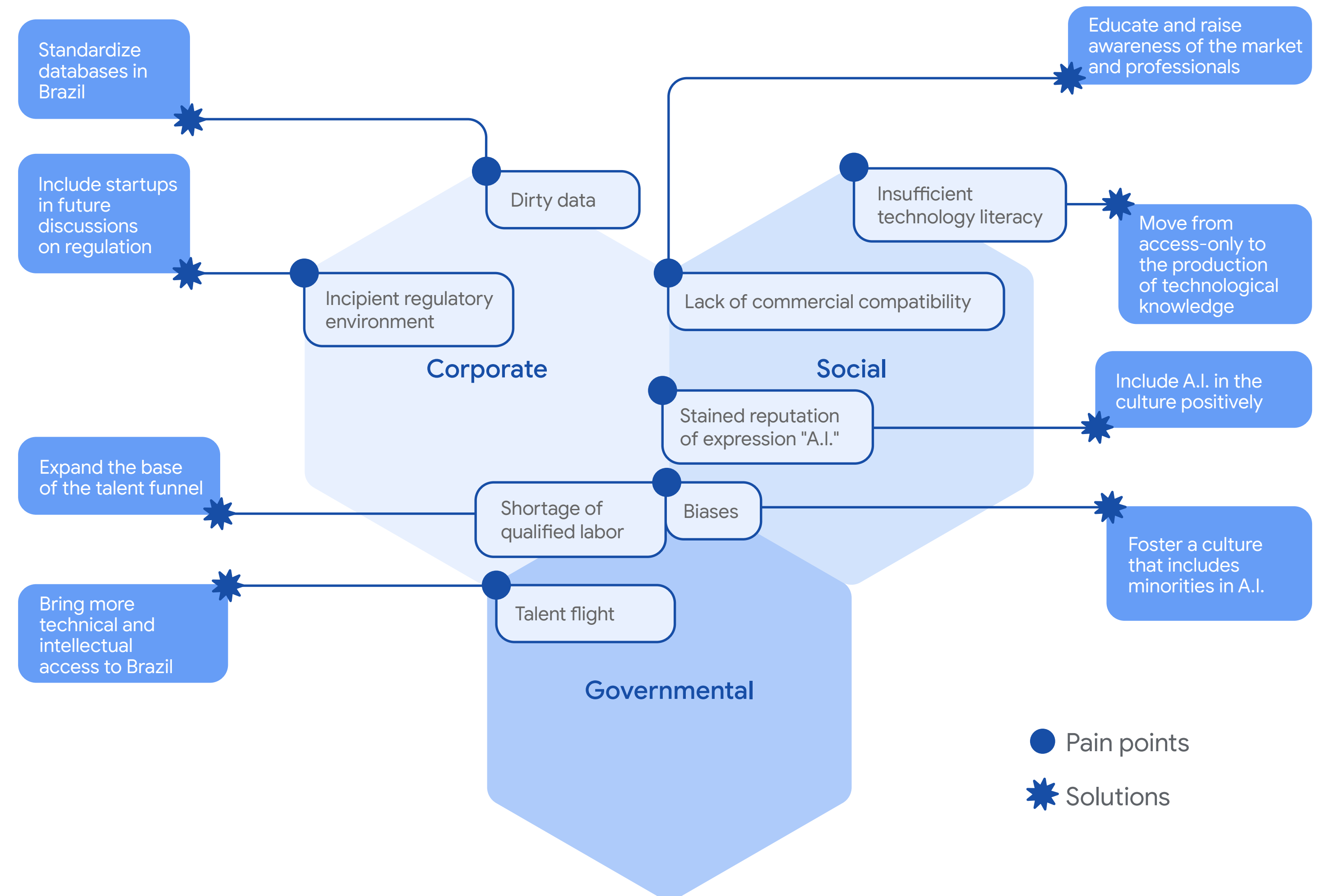
With A.I., it is possible to correct historic structural delays and deficiencies, but the opposite is also true: if we take too long, it might be too late.

"If we have a productivity problem in the country, A.I. is a good means to solve it. We have already conducted productivity projects for the port sector, and it is amazing what an algorithm can do. Now, A.I. may lead to a leapfrog, and have Brazil skip several stages."

In-depth interview

Startup included in Google for Startups' acceleration programs

Map of pain points and solutions



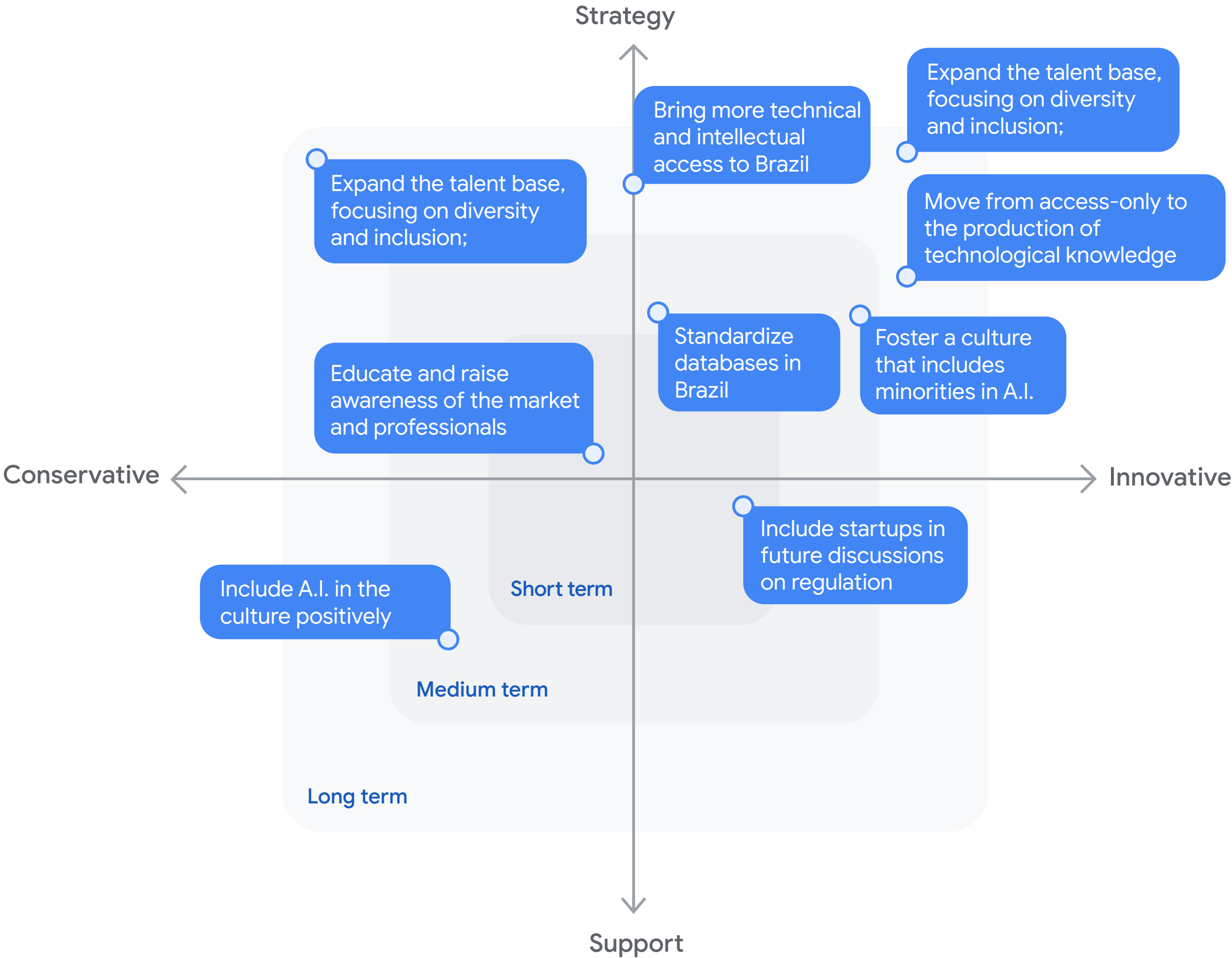
Brazil is few steps away from the leapfrog

Brazil is few steps away from a shift the market calls leapfrog. The few talents that exist are feeling left alone and unsupported. It is necessary to think up solutions and systemic changes so we will be able to evolve quickly to become a powerhouse.

"Every time the US identifies a new technology, they create a paper and turn that paper into a corporate tax number. It must be the same here. As such, you distribute wealth, transform the person who created it, and foster an environment that learns to turn things into businesses in Brazil. That is my dream. In Brazil, we end up killing that exploratory, diverse side in the daily routine. You do not want to run risks, so you do not explore as much. We need to create an ecosystem that appreciates high-tech companies."

In-depth interview
Expert

General map of the main opportunities



The starting point of the work was to understand the present to be able to project the future; for that reason we started with a simple question:

What is the current state of artificial intelligence in Brazil?

General X-Ray

Companies with similar compositions and aspirations compete for a scarce space in search of recognition for themselves and for A.I. in itself.

Key pain points

Companies find themselves in an environment full of externalities that render them more reactive and make them spend more time on other functions than developing and innovating in A.I. models.

Key solutions

Brazil is few steps away from a leapfrog. Talents exist, but they feel left alone and unsupported. It is necessary to think up solutions and systemic changes so we will become a powerhouse.

Chapter 2

Recommendations

We cannot waste any more time. The future of the country in A.I. depends on our identifying points in common across all stakeholders involved. **The good news is such points exist.**



1
Brazil's ambition to become a benchmark in A.I. thinking and actions in the world.

"One thing that we did from the start was to develop a strategic plan and have focus. One of the concepts that goes with us is to make the vision and mission of things be a national benchmark in Artificial Intelligence".

In-depth interview
Startup not included in Google for Startups' acceleration programs

2
The hope there will be an A.I. in Brazil thought out for the needs of Brazilian entrepreneurs.

"Good competition multiplies knowledge. It is concerned about the client and not just about them, them, them. When you have a regulation, you are able to put everybody at the same level".

In-depth interview
Startup not included in Google for Startups' acceleration programs

3
Believe in a multi-factor, multi-sector joint action to solve the problems.

"I like the line of collaboration across the community better. Bringing together a group of companies, a group of individuals, and discussing the matter, the effects of each question we decide to put into practice for both sides. Collaboration with accountability".

In-depth interview
Startup included in Google for Startups' acceleration programs

4
There is a white space for someone to check, care for, and connect the whole ecosystem toward a change.

"Having a country looking carefully into the challenges we face and directing companies on behalf of the country - I think it would be noble if we looked at that principle to solve a problem".

In-depth interview
Startup included in Google for Startups' acceleration programs

We are still missing the initial push

The roadmaps already exist, but it is necessary to start the conversation and share the tasks. Companies share similar goals, as well as needs and visions of what to do with A.I. in the country.

Today, it is fundamental to turn barren land into fertile soil, starting by meeting companies' most basic growth demands, without stopping to look into more daring and longer-lasting actions, to be prepared for storms and cultural changes.

"I would be very happy if we could truly bring together what we have today with a scenario of increasingly more qualified entrepreneurs, thus creating startups that generate a lot of value to Brazil. I believe they will be the great catalysts of knowledge on A.I. and of new A.I. - based solutions".

In-depth interview

Startup included in Google for Startups' acceleration programs



Chapter 2 → Recomendações

Steps to turn the game around

Act from the short term

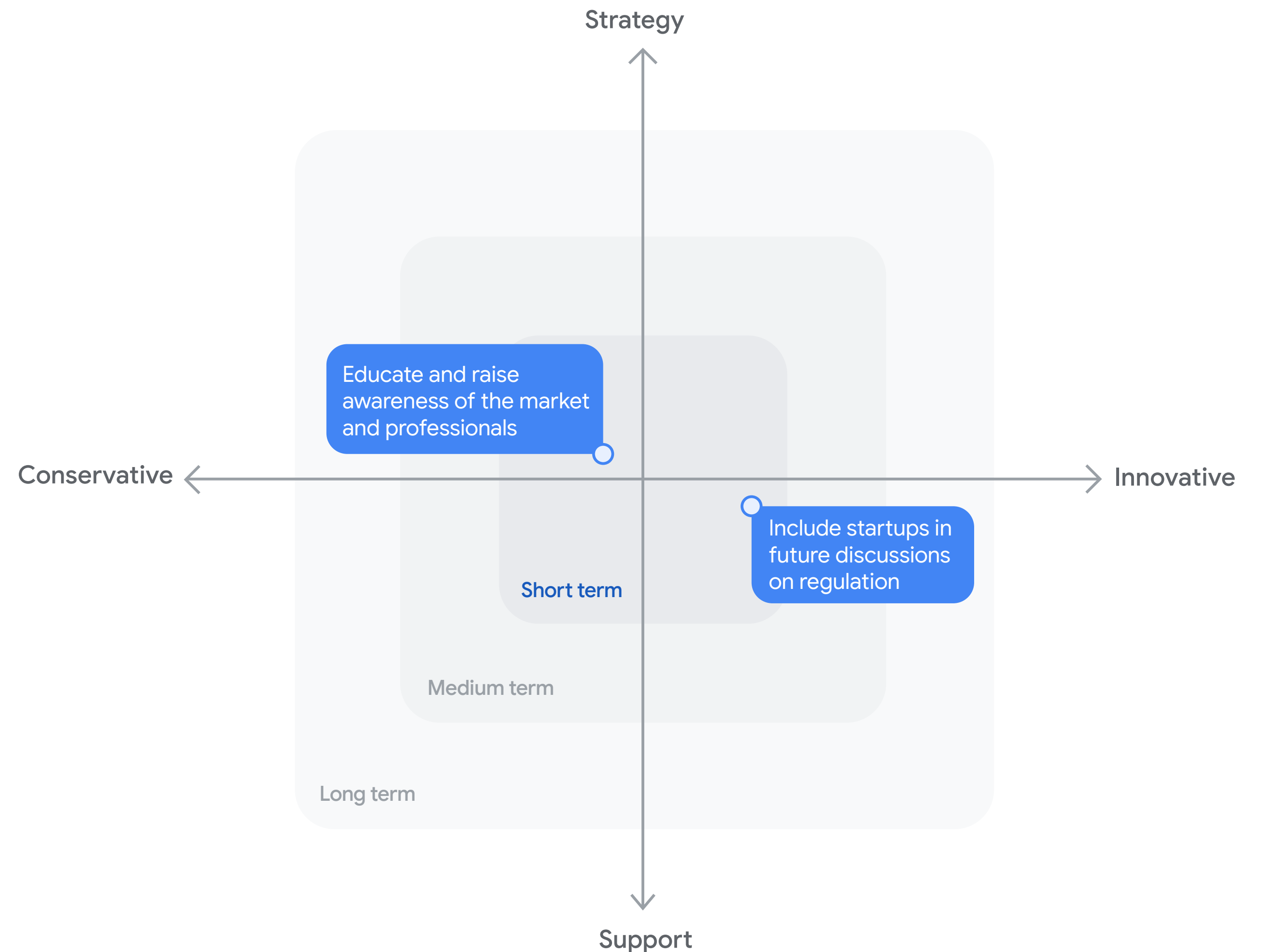
Raise the market's awareness and create bridges for engagement in the big discussions on A.I.:

Where to start the change in the short term?

It is very important to understand on what sphere we should act to better address the necessary changes.

As we are talking about multi-factor actions, with multi-stakeholder demands, we need to know the capacity for action each party may have, both to impact the whole, as well as to participate and collaborate.

General map of the main opportunities





For that reason, we have split the actions across three spheres:

- **Singular**
Influence sphere of organizations that impact little on the whole and, at best, change their micro-surrounding (partner, employees etc.).
- **Infrastructure**
Influence sphere that, as the name indicates, acts on the whole system, producing major changes.
- **Ecosystem**
Sphere that features organizations that are already able to make a change within their category or sector as a whole.

Raise the market's awareness and create bridges for engagement in the big discussions on A.I.:

Educate and raise awareness of the market and professionals

Steps to turn the game around:

- 1 Seek partnerships with specialized associations and entities;
- 2 Target messages and experts to each stakeholder's need and reality;
- 3 Organize training courses to improve A.I. professionals' commercial skills
- 4 Organize meetings and fairs between A.I. and different market segments;
- 5 Seek public incentive to facilitate access by companies that develop A.I. in the market

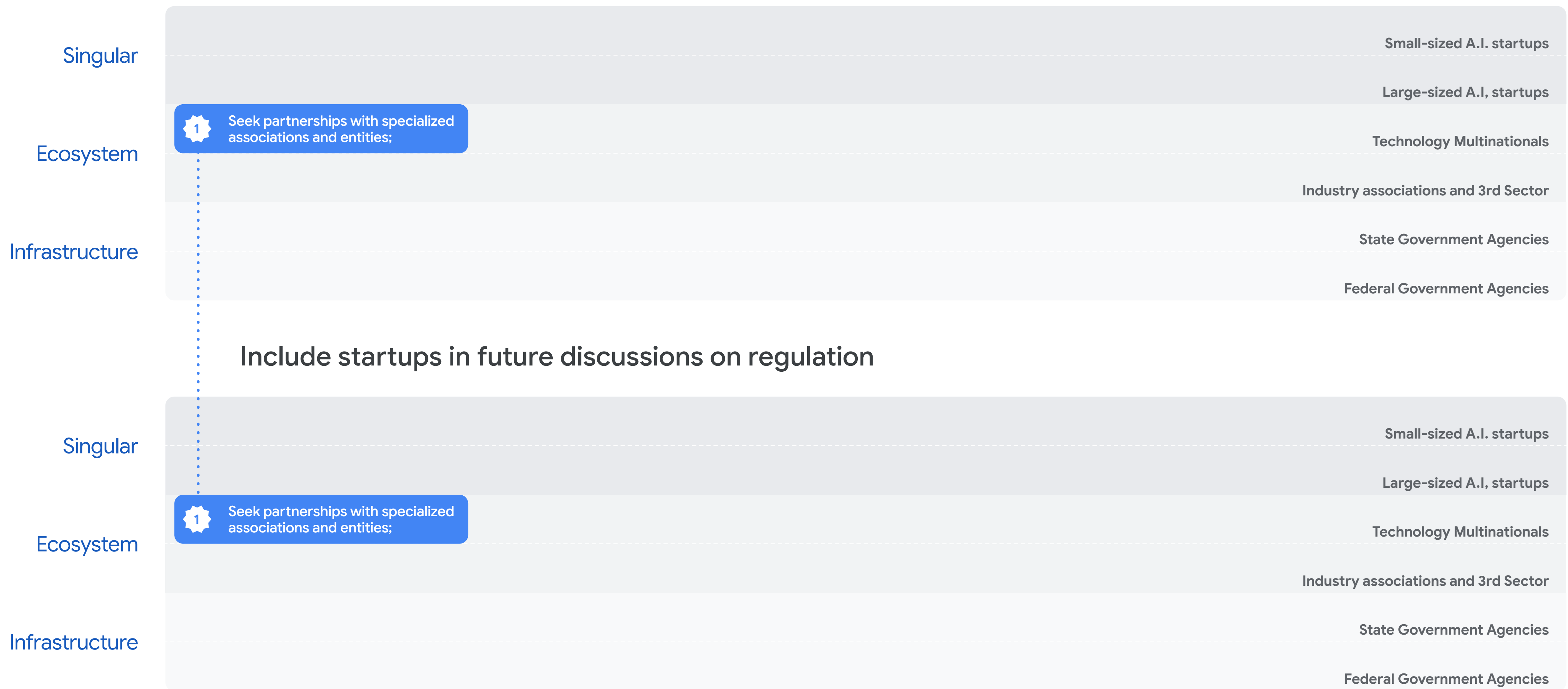
Include startups in future discussions on regulation

Steps to turn the game around:

- 1 Seek partnerships with specialized associations and entities;
- 2 Invite smaller startups to listen to their main needs and aspirations for the regulatory future;
- 3 Create co-participation mechanisms for smaller startups;
- 4 Test and validate hypotheses with small startups;
- 5 Put small startups face-to-face with parliament members involved with PL 21/20.

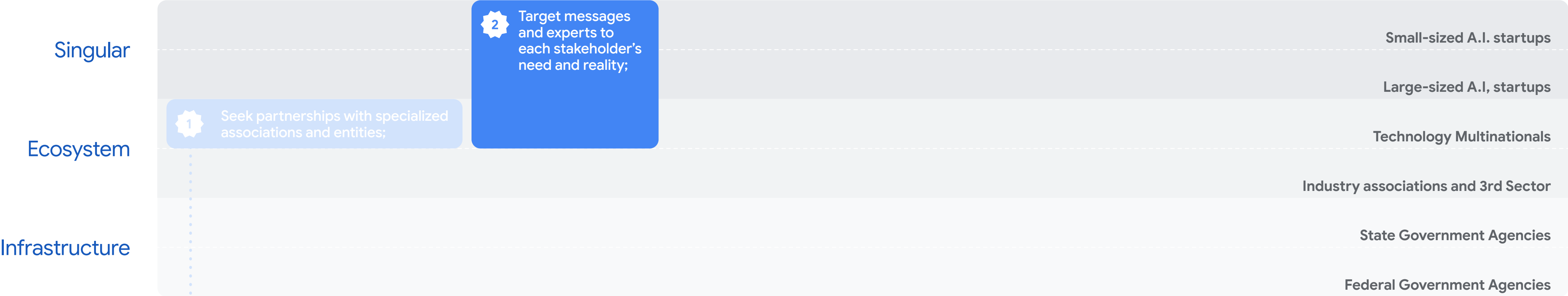
Short term

Educate and raise awareness of the market and professionals

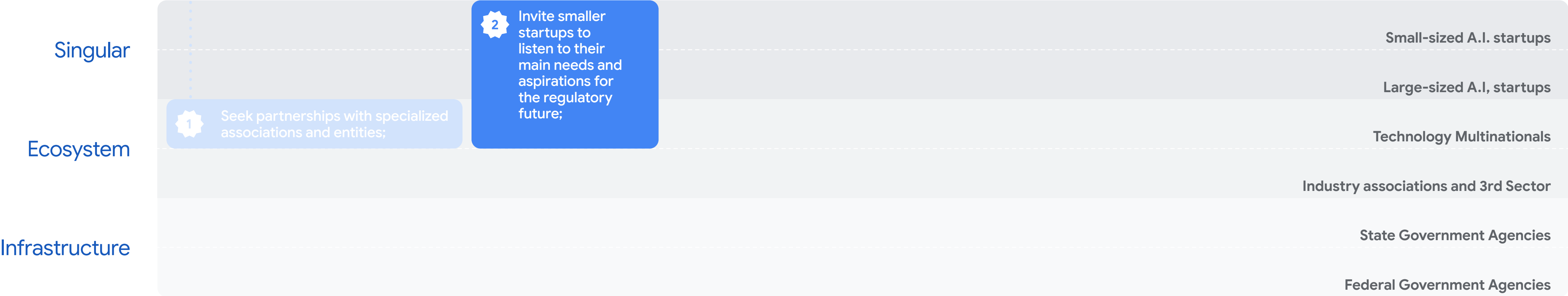


Short term

Educate and raise awareness of the market and professionals

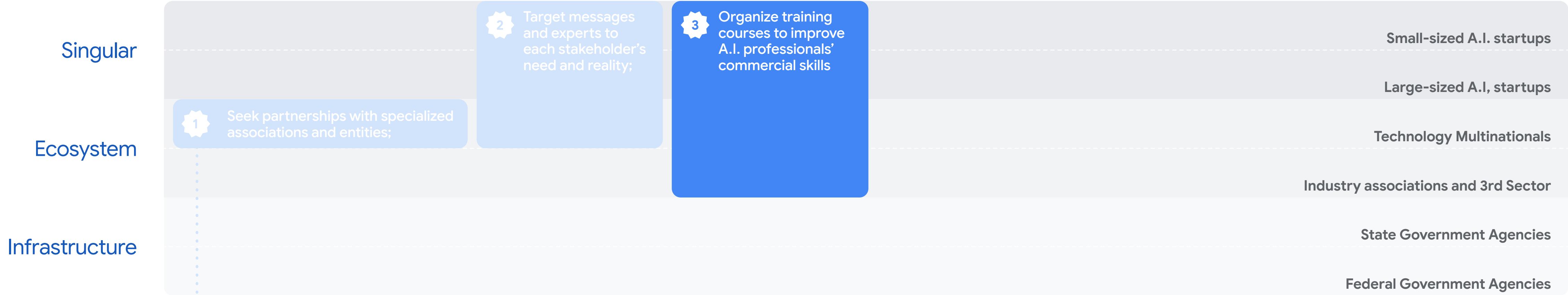


Include startups in future discussions on regulation

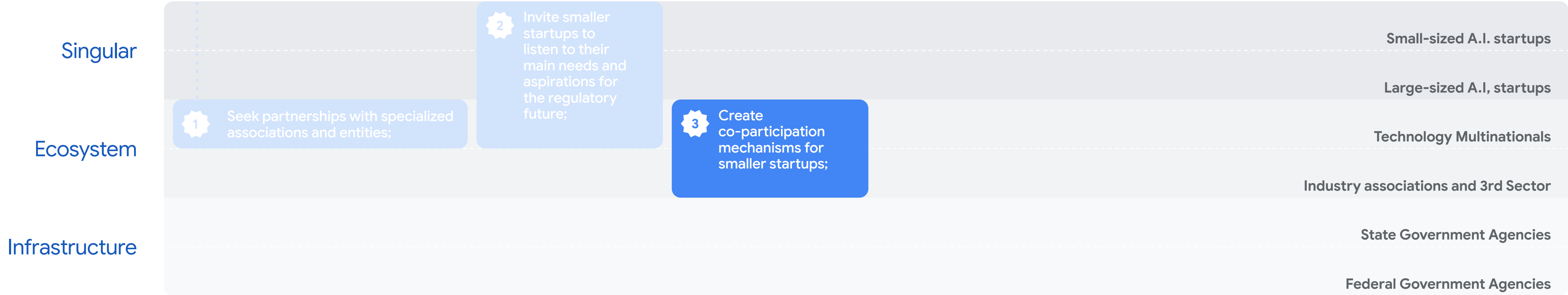


Short term

Educate and raise awareness of the market and professionals

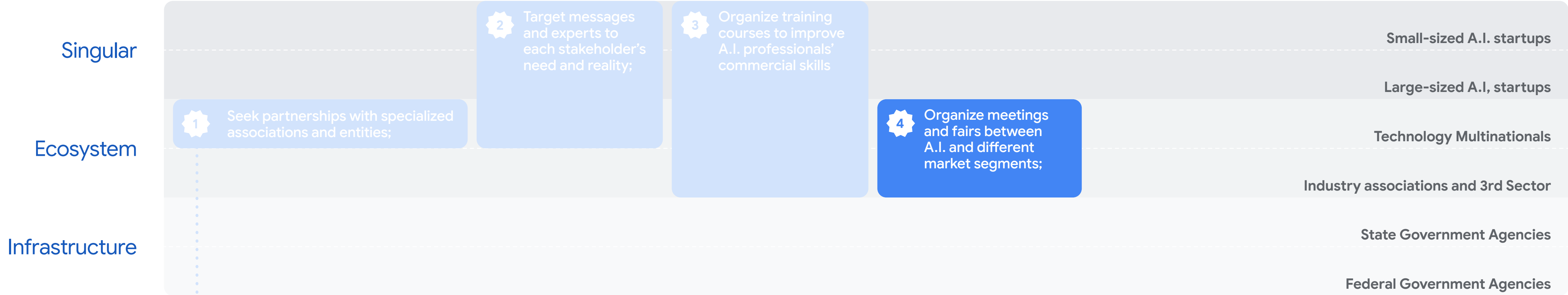


Include startups in future discussions on regulation

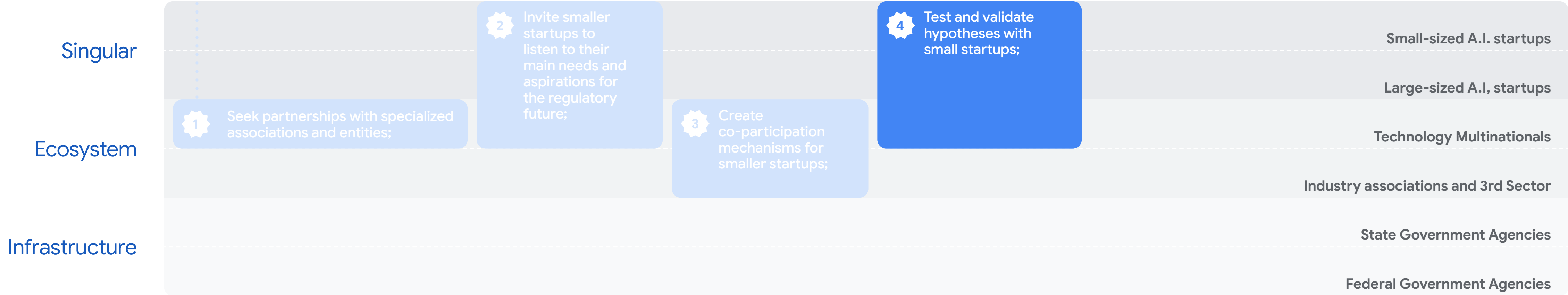


Short term

Educate and raise awareness of the market and professionals

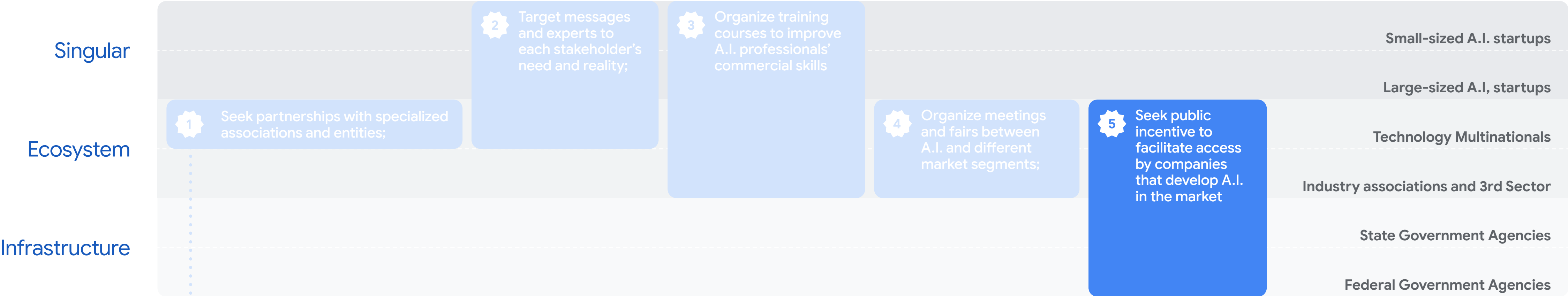


Include startups in future discussions on regulation

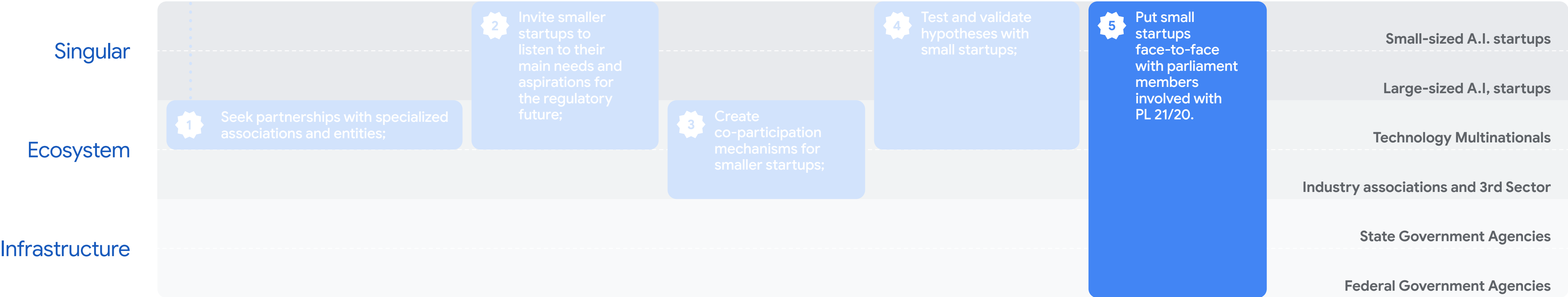


Short term

Educate and raise awareness of the market and professionals



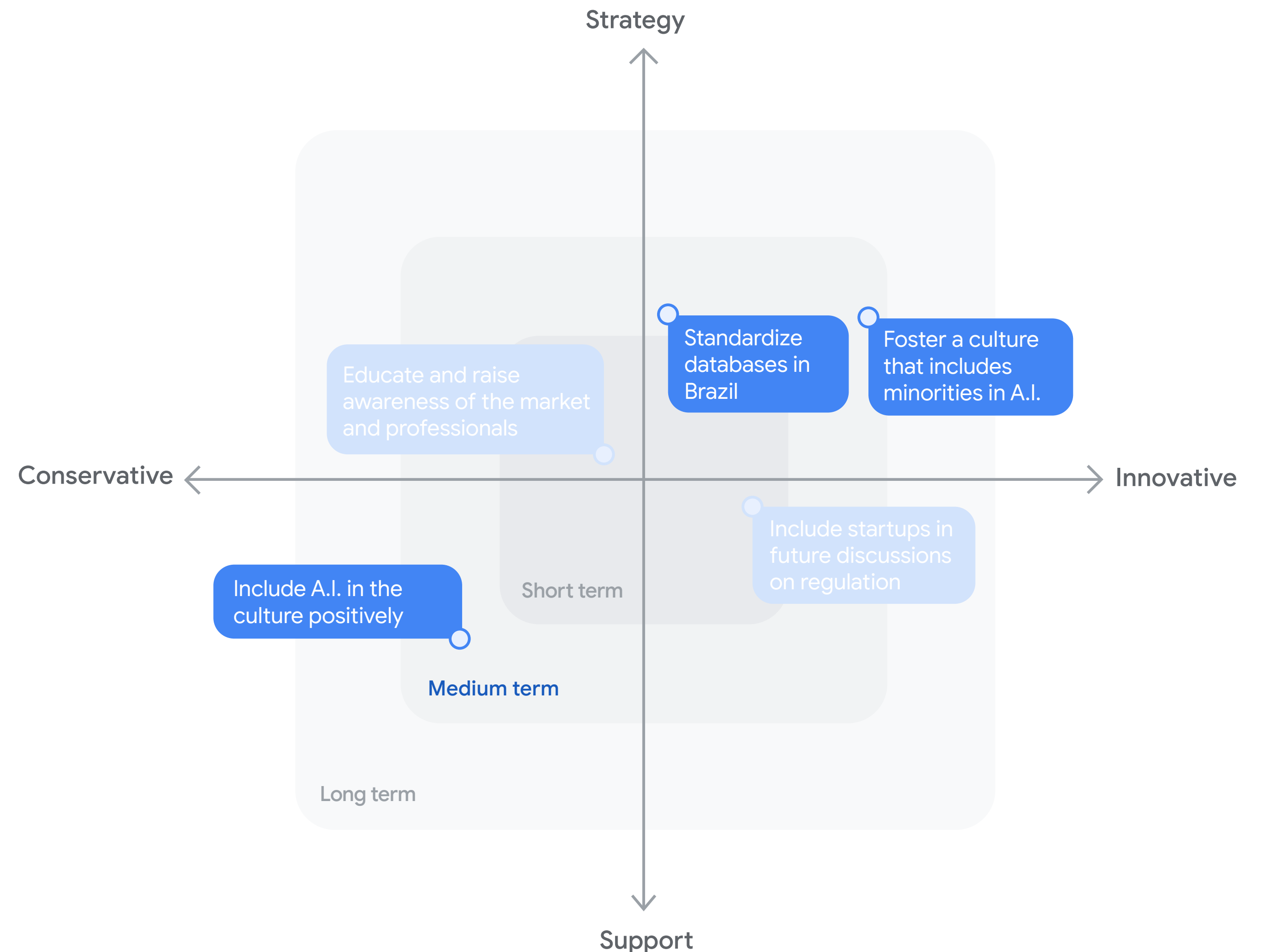
Include startups in future discussions on regulation



Share medium-term tasks

It is fundamental that, as a second step, after the foundation for companies' growth has been laid, a bolder plan is developed involving as many stakeholders as possible, as to make A.I., popular, inclusive and diverse in the country

General map of the main opportunities



Make A.I. popular, inclusive and diverse in the country

Include A.I. in the culture positively

Steps to turn the game around:

- 1 Identify stories and individuals who are revolutionizing the country through good use of A.I.
- 2 Train spokespersons at different spheres (social, public, corporate, media etc.) and regions of the country
- 3 Produce positive facts about A.I.
- 4 Make results and processes more transparent to the general audience
- 5 Develop projects and partnerships with high visibility in mainstream media about good uses of A.I.

Foster a culture that includes minorities in A.I.

Steps to turn the game around:

- 1 Provide marginalized populations in city outskirts with access to hardware;
- 2 Expand the presence of technology and A.I. subjects in public schools and regions outside the Rio de Janeiro-São Paulo axis;
- 3 Promote college scholarship programs for Black and vulnerable students;
- 4 Develop student-worker and trainee programs focused on diversity and inclusion;
- 5 Create models to build work environments that are welcoming to politically-minoritized groups.

Standardize databases in Brazil

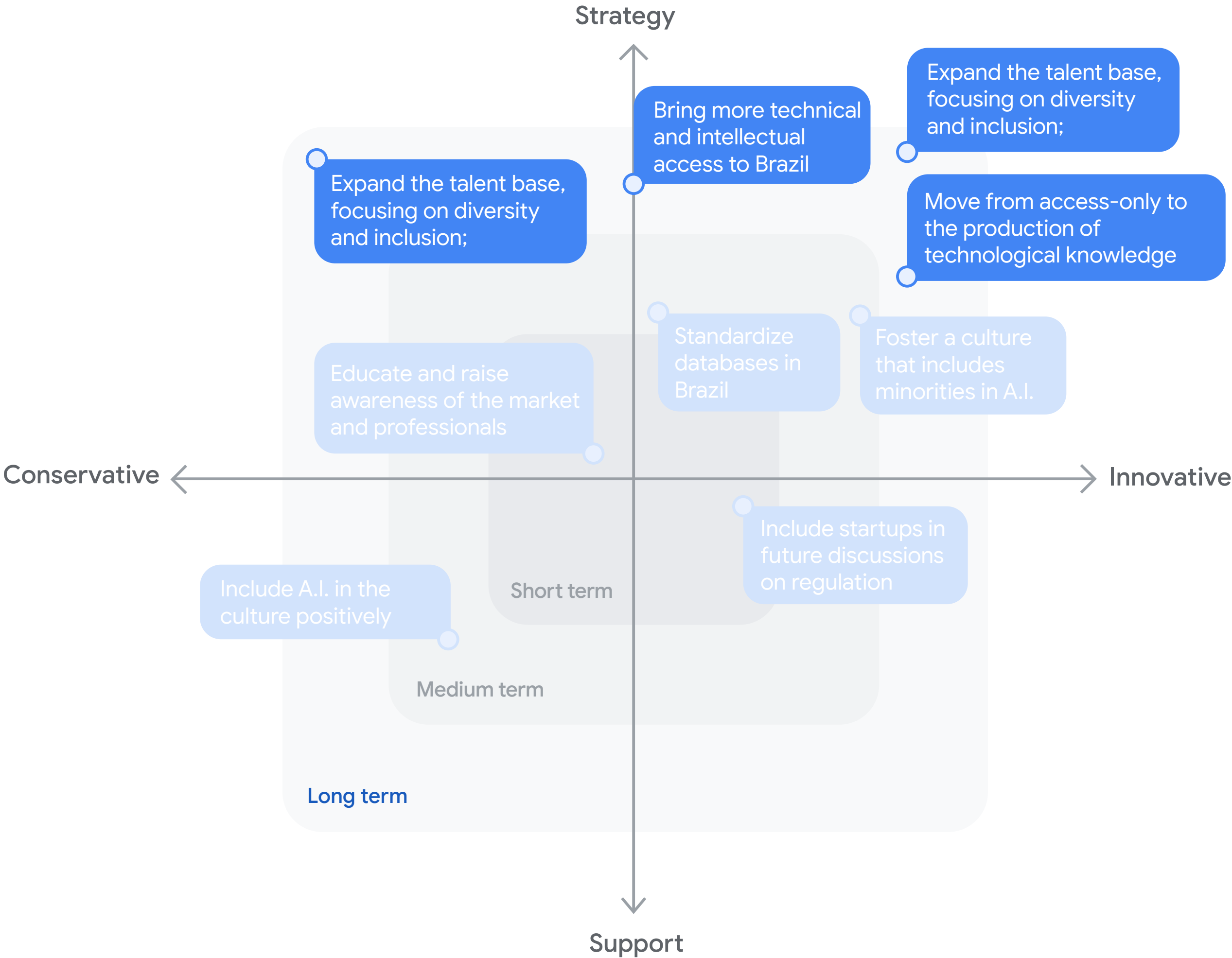
Steps to turn the game around:

- 1 Seek partnerships with specialized associations and entities;
- 2 Create a playbook for the data organization model;
- 3 Develop mechanisms for data education;
- 4 Strive to regulate a data organization model at the public sphere;
- 5 Create local datasets that expedite the work done by Brazilian professionals.

Plan for the long term

Lastly, actions that take longer to produce an impact cannot be put away, as they need to be envisioned and planned now. It is the moment to set the guidelines that will steer the future of the A.I. knowledge and practice.

General map of the main opportunities



Plan the expansion of the A.I. knowledge and practice

Bring more technical and intellectual access to Brazil

Steps to turn the game around:

- 1 Foster the inclusion of new professionals with more competitive job offers and salaries;
- 2 Create mechanisms that grant bonuses to companies losing their professionals to other countries;
- 3 Create and sponsor scholarships for A.I. professionals, partnering with universities;
- 4 Invest in research and development for A.I. professionals;
- 5 Develop a cultural industry that appreciates and is rich in science exchanges.

Move from access-only to the production of technological knowledge

Steps to turn the game around:

- 1 Facilitate access to materials and technology tools with greater potential for programming;
- 2 Partner with schools and technical courses with affordable prices to offer programming classes;
- 3 Provide teaching materials in Portuguese about programming with large reach and easy access via YouTube;
- 4 Invest in training educators across all schooling levels, from elementary to higher education;
- 5 Create multi-sector articulation fronts to pursue structural changes in the Brazilian educational system.

Expand the base of the talent funnel

Steps to turn the game around:

- 1 Simplify entry to the job market;
- 2 Facilitate access to knowledge and devices;
- 3 Emphasize the transforming potential of the work;
- 4 Include knowledge of A.I. in schools and universities;
- 5 Create strong aspirational points in the collective imagery.

Summary of the current situation

The present is not yet a given

It is possible to change the environment being built today. By successfully addressing each step to turn the game around, the game will turn around. Artificial Intelligence may bring that quantum leap not only for itself, but to help Brazil become a true powerhouse.

Instead of understanding the present to be able to project the future, the starting question changes. What is the present we will start building now for Artificial Intelligence in Brazil?



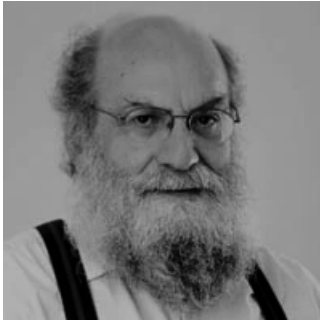
Methodology

To whom did we talk?

11 in-depth interviews

5 with founders of startups that have been part of Google for Startups’ acceleration programs focused on A.I..

6 with founders of startups that have not been part of Google for Startups’ acceleration programs focused on A.I..



Demi Getschko

An electrician engineer, considered one of the Internet pioneers in Brazil. Currently Chairman of Ponto BR’s Network Information Center



Alberto Colares

A Design graduate, Colares is CEO and founding partner of Kunumi, one of the pioneering companies in Brazil to think about A.I. and the technology’s ethical implications.



Pedro Markun

A self-appointed hacker, father of Tereza and Maria and the 56th council member in São Paulo City Council. Pedro Markun is a long-date activist-hacker; and he has been trying to debate the ethics, transparency and hacktivism in several ways.



Gabriela Buarque

Attorney and master’s degree candidate in Law from Universidade Federal de Alagoas (UFAL), Buarque currently is the coordinator of LAPIN’s Artificial Intelligence Center. Participated in Year 2020 Brazil Youth Program organized by CGI.br (Brazilian Internet Steering Committee).



André Filipe Batista

A PhD in Computer Engineering from Universidade de São Paulo (USP). Major and master’s degree in Computer Sciences with a minor in Artificial Intelligence. Over 10 years’ experience in the IT and high-performance computing market.



Carla Vieira

Holding a BS in Information Systems from USP, a master’s degree candidate in Artificial Intelligence from the same institution, and a degree in engineering. Vieira studies how unconscious bias has affected Artificial Intelligence, and how to make black box algorithms more transparent.

Quantitative stage
and secondary data

Four complementary studies

To map different aspects and explore in detail the whole A.I. environment in Brazil, we used a mix of quantitative surveys conducted by Box 1824 itself and other surveys on that universe.

1
Quantitative stage of the project about talent gap
Box 1824

Online questionnaire aimed at mapping and measuring the talent gap in the area of technology in Brazil, from Brazilian startups’ standpoint.

Total sample: 253 respondents

Field: May/22

Universe: ABS startup database and startups enrolled in Google for Startups’ acceleration programs

2
Quantitative stage of the project about A.I. in Brazil
Box 1824

Online questionnaire with companies developing or working with A.I. in Brazil, aimed at understanding the key pain points and market opportunities.

Total sample: 49 respondents

Field: May/22

Universe: ABS database of startups that develop A.I. and startups enrolled in Google for Startups’ acceleration programs

3
Artificial Intelligence report 2021
Distrito

Mapping of startups developing or working with A.I., based on Distrito’s proprietary database.

Total sample: 702 respondents

Field: January/21

Universe: Database of registered companies on Distrito.me’s data miner

4
Seizing the opportunity: The Future of AI in LATAM
The Economist + Google

Survey conducted by Economist Impact partnering with Google, to understand the current state of A.I. in Latin America as a whole.

Total sample: 12 in-depth interviews + desk research

Field: May/22

Universe: Founders of technology companies, government members, and academics working with A.I.

Thank you!

Google for Startups

