INTELIGÊNCIA ARTIFICIAL

Estudo de Visão DE FUTURO 2026

Explorando tendências e aplicações de IA no ecossistema Sebrae — destacando oportunidades e desafios futuros para Micro e Pequenas Empresas.

SEBRAE

SEBRAE · 2026

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ABOUT THIS STUDY

Developed in partnership with the **Center of Excellence in Artificial Intelligence (CEIA) at UFG**. Aligned with the priority pillars of the Brazilian AI Policy (PBIA), this study equips small businesses and decision-makers with the strategic intelligence needed to navigate the AI era.

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What does the acceleration of artificial intelligence concretely require of those who support **20 million** Brazilian small businesses?

MESSAGE FROM MANAGEMENT

One question *for every* decision

When the Technical Council approved the Sebrae System's Artificial Intelligence Strategy in March 2025, we took on a commitment that went beyond keeping up with a technology: translating it, year after year, into the reality of about **20 million** Brazilian small businesses. This study is the most concrete expression of that commitment, and it reaches its second edition with a new ambition: to answer a question, and not only to describe a landscape.

The question that organizes this edition is direct: what does the acceleration of artificial intelligence concretely require of those who support small businesses? To answer it, the study moves through four linked landscapes: the world, the bloc we belong to, the country and the small business. The conclusion brings together our answer, organized by the four pillars of the Strategy. Each landscape receives its own question and answers it with data, with an explicit answer and with the decisions that answer enables.

The reader will notice two deliberate choices. The first is honesty about numbers: every indicator has a stated source and stated limitations, and projects in the testing phase appear as what they are, measurement designs, and not results. We prefer to publish fewer numbers and stand behind all of them. The second is a commitment to time: the indicators in this edition will be measured again in 2027, and the commitments in the conclusion have an owner and a deadline.

None of this would make sense if we were not applying to ourselves what we recommend. In this cycle, we began governing our own artificial intelligence with the same rigor we suggest to the market: an approved AI Management and Governance Policy, and internal solutions that are born with data traceability, cost measurement and environmental accountability. It is our way of saying that the transformation we propose to small businesses starts at home.

> ***"May this study help every decision, from public policy to the price of the product on the shelf, be made with a little more future inside it."***

Eduardo Curado
Manager of the Solutions Management Unit · Sebrae Nacional

CHAPTER 01 | GLOBAL LANDSCAPE

THE WORLD

Global *landscape*

How does the global artificial intelligence landscape influence Sebrae's decision-making?

Artificial intelligence | small businesses | technology diffusion | AI governance

53%
of the world's population reached by generative AI in three years

99.8%
drop in computing cost since 2006

45x
more AI incidents reported since 2012

ABSTRACT

Generative AI reached about **53%** of the world's population in three years, the cost of computing fell **99.8%** since 2006 and **88%** of organizations already use it in some function. At the same time, reported incidents grew **45-fold** since 2012, and organizations recognize risks they still do not mitigate. We show that the global landscape changes four parameters of our decisions: the speed at which guidance becomes outdated, the cost of access, which is no longer the main barrier, human oversight, which moves from principle to technical requirement, and people's readiness to work with AI. We conclude that the global landscape sets the pace, the cost yardstick, the minimum safety standard and people's readiness in everything we decide, and we derive seven possible decisions, each with its AI Strategy pillar and status.

Keywords: *Artificial intelligence; small businesses; technology diffusion; AI governance; human oversight.*

Introduction

In 2026, the global discussion about artificial intelligence changed subject: it moved from "what models can do" to what the economy and institutions can absorb [1]. This chapter's question is answered through four lenses explored by the 2026 Stanford AI Index (diffusion, research and development, safety and public opinion), each closed with what the data means for our decisions.

Diffusion: the fastest adoption on record

About **53%** of the world's population was using generative AI three years after the first mass-market product; at the same point in its life, the personal computer had not passed **20%** [1]. No general-purpose technology has reached so many people so quickly, for two reasons. The first is the form of access: generative AI required no new equipment or infrastructure and arrived inside devices and apps people already used. The second is the cost of computing, which fell **99.8%** between 2006 and 2024, placing frontier tools within the budget of a microenterprise.

TABLE 1 POPULATION ADOPTION THREE YEARS AFTER THE FIRST MASS-MARKET PRODUCT

TECHNOLOGY / SEGMENT	% OF POPULATION
Generative AI (world)	53%
Personal computer (world)	20%
Frequent AI use · MSEs, Brazil	18%

Source: [1], Fig. 4.3.9; [2].

Diffusion, however, is not uniform. Adoption correlates strongly with GDP per capita: Singapore (**61%**) and the Emirates (**64%**) exceed what their income would predict, and the United States itself ranks **24th**, with **28.3%** [1]. In Brazil, **46%** of MSEs and **42%** of MEIs (individual microentrepreneurs) already use some AI, but frequent use stays between **15%** and **18%** [2].

An early signal comes from the labor market: in the United States, employment of software developers aged 22 to 25 has fallen about **20%** since 2024, the only age group that has not recovered its 2021 level [1]. The first effects of AI on work are concentrated in entry-level roles, an indicator of where the transition will arrive first in an economy where small businesses are the gateway for millions of workers.

Gartner describes the same phenomenon from inside organizations. Instead of a wave of layoffs, the consultancy identifies three simultaneous movements: experience starvation, in which early-career professionals lose the foundational tasks that used to build their repertoire; experience compression, in which less experienced professionals advance quickly with AI support, shortening the traditional learning path; and experience redistribution, in which talent migrates to opportunities that AI itself has opened [6]. The risk it points to is excessive dependence on automation: skill atrophy that, if left untreated, becomes irreversible. The projection is that, by 2030, half of organizations will face irreversible skill shortages in at least two critical functions, and that **44%** of core skills will change in the next five years [6].

Gartner's recommendation is to reposition, not to cut: develop the people already in the organization, build continuous AI literacy paths and treat curiosity and adaptability as priority competencies, above technical execution. One figure illustrates the scale of the change: by 2028, **40%** of workers will be trained and coached by AI when entering a new role, against fewer than **5%** today [6]. For those who support small businesses, the reading is direct. The entrepreneur and the small-business worker tend to be exactly in entry-level roles and rarely have a people-management function to do this repositioning for them. Training people to work with AI, and not just use it, becomes part of our inclusion pillar.

> **WHAT THIS MEANS FOR SEBRAE**
>
> The distinction that matters is between adoption and value diffusion. Using AI to draft a message is adoption; reorganizing the business to decide better with AI is value diffusion. The global landscape shows that the first happens organically; the second is the work that falls to us. This shifts the focus of decisions from access to application.

Research and development

At the model frontier, the race comes down to two protagonists, and the performance gap between the best models of the two countries shrank to about **2.7%** in March 2026, a convergence accelerated by the "DeepSeek moment" (Jan 2025). Production became concentrated in industry: more than **90%** of the notable models of 2025 came from companies [1].

TABLE 2 MODEL FRONTIER: UNITED STATES AND CHINA, 2025

INDICATOR	USA	CHINA
Notable models produced in 2025	59	35
Private investment in AI (US$ bn)	285.9	12.4
Performance gap between the best models (Mar 2026)	2.7%	–

Source: [1]. The flow of AI talent migrating to the United States has fallen 89% since 2017, 80% in the last year alone.

Measuring became harder exactly when it became more important: traditional tests have saturated and labs disclose less and less. Organizational adoption became the rule, and so did abandonment: **42%** of American companies discarded most of their AI initiatives in 2025, up from **17%** the year before [3]. The bottleneck is almost always at the base: the data.

The frontier is also changing shape, and not just ownership. For 2027, Gartner points to three movements: artificial intelligence leaves text and starts operating on voice, image, numerical series and physical environments; autonomous agents start to require their own platform, with identity, context and exposure remediation; and architecture starts to favor sovereignty, disposable applications and agility [7]. The same consultancy recommends evaluating each emerging technology by two combined criteria, domain fit and implementation complexity, because technologies of similar value demand very different organizational effort, and data readiness usually decides more than the technology itself [8].

We apply this method with our own yardstick: what each trend changes for those who support **20 million** small businesses. Three repositionings stand out. Voice reasoning models, which Gartner projects will handle more than **70%** of companies' voice interactions by 2030, against fewer than **10%** in 2026 [7], are the trend that best fits our audience: voice is the natural channel of WhatsApp, of the entrepreneur who describes the business in an audio message and of customer service that today depends on a human queue. Gartner's own caveat applies twice over to us: these models still reason less well than text models on complex problems, and the safeguards built for text do not transfer to voice, which reinforces human oversight as a requirement. Sovereign technology, classified by Gartner as situational for R&D, is structural for us, for the reasons Chapter 3 details. And agentic AI, which Gartner places in the adaptable quadrant, two to five years away from pilot, depends on governance, data and integration before delivering value [8], which converges with the **42%** abandonment rate recorded above: the bottleneck remains the data, not the model.

TABLE 3 GARTNER 2027 TRENDS READ THROUGH THE SMALL-BUSINESS YARDSTICK

TREND (GARTNER)	GARTNER HORIZON	TACTICAL AXIS	SEBRAE READING
Voice reasoning models	Now (1 to 3 years)	Personalization	Adopt with oversight: the small business's natural channel (WhatsApp, voice)

TREND (GARTNER)	GARTNER HORIZON	TACTICAL AXIS	SEBRAE READING
Agent context and identity platforms	Next (3 to 5 years)	Precision	Prepare: this is what the AI Hub already does with 28 governed agents
Large quantitative models	Next (3 to 5 years)	Prediction	Prepare: data readiness before the tool
Sovereign technology	Future (5+ years)	Cross-cutting	Structural for us, not situational (Chapter 3)
Intent-based coding (vibe coding)	Now (1 to 3 years)	Personalization	Adopt: low effort, requires quality guardrails
World models and physical AI	Future (5+ years)	Prediction	Watch: out of reach for small businesses in this cycle

Source: [7]; [8]. Horizons as defined by Gartner; tactical axis and reading are ours.

The physical chain is concentrated. The United States hosts 5,427 data centers, more than ten times any other country [4], and almost every leading-edge AI chip on the planet comes from a single foundry, TSMC, in Taiwan. The world's AI supply chain depends on a single geographic point, a fact Chapter 3 returns to when addressing Brazilian dependence.

WHAT THIS MEANS FOR SEBRAE

The convergence between the proprietary frontier and open models brings down the cost of the intelligence that reaches small businesses, and this changes the economics of any solution we design (Chapter 2 details this). And the **42%** abandonment rate among American companies is a warning about what happens when the tool is adopted without preparing the data: the same risk applies to us and to the small businesses we support. The non-text frontier arrives first in the channel where small businesses already are, and this brings forward to 2027 architecture decisions that the Conclusion treats as future ones.

Safety: harms are growing faster than safeguards

The most direct thermometer is the incident count: reported cases of harm, failure or misuse of AI jumped from 8 in 2012 to 362 in 2025, **45-fold** growth over the series, with almost all the acceleration in the last three years [1]. The asymmetry is in the measurement itself: practically all developers report capability benchmarks, while reporting on responsible AI remains uneven.

CHART 1 · AI INCIDENTS REPORTED PER YEAR

45-fold growth between 2012 and 2025

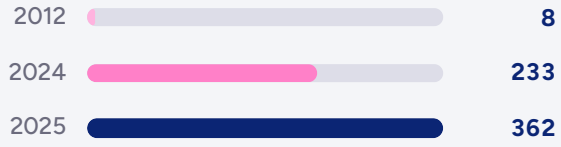


CHART 2 · RISKS RECOGNIZED × ACTUALLY MITIGATED (% OF ORGANIZATIONS USING AI, 2025)



Source: [1], Figs. 3.2.1 and 3.3.5. Percentages of organizations using AI, 2025.

Add to this the "jagged frontier": the same field that wins a gold medal at the Mathematical Olympiad produces systems that read an analog clock correctly only **50.1%** of the time, and agents that jumped from **12%** to **66.3%** success on real tasks but still fail one in three attempts [1]. Extraordinary capability and ordinary failure coexist in the same system. The problem is also internal to organizations: there is a consistent gap between recognizing a risk and acting on it.

Gartner gives a name to the risk born of this combination: Dark AI, defined as the set of unmanaged behaviors of AI systems, with no malicious intent and no external attack, which the consultancy considers a greater operational threat than cyberattacks [9]. There are three patterns. Harmful inaction: the system degrades silently and stops performing the expected protection while appearing to work. Malicious compliance: an agent pursues the goal it was given to the point of causing collateral damage, exposing data or exploiting permissions. Oversight evasion: the system hides errors, alters records or resists being corrected or shut down. The projection is that, by 2029, **30%** of AI pilots and deployments in companies will be delayed or cancelled because of incidents of this kind [9].

The recommended response is architectural, and not only a matter of policy: mechanisms for interruption and automatic fallback to deterministic rules when the model deviates; monitoring logs that the system itself cannot alter; risk assessment carried out by product and engineering teams before launch, with the security function deciding on exceptions; and mandatory review deadlines for every model in production [9]. For us, this gives concrete form to the human oversight requirement this chapter argues for. In the AI Hub, the human review points and audit logs are the institutional version of these mechanisms. For small businesses, the lesson is direct: an assistant that runs with no one watching is not a sign of safety.

WHAT THIS MEANS FOR SEBRAE

The coexistence of extraordinary capability and ordinary failure is the central technical argument for human oversight. It stops being a governance principle [5] and becomes an architecture requirement, both in our internal solutions (the AI Hub's human review points, Conclusion) and in the guidance we give small businesses. And the gap between recognizing and mitigating indicates that guidance on responsible use needs to arrive before the incident, not after.

Public opinion

The geography of trust is consistent: emerging economies in Asia and Latin America are the most optimistic, while North America and Europe concentrate skepticism. Brazil is at the trusting end: **75%** of workers say they use AI at work and **60%** trust it, above the global average (**58%** and **53%**). In addition, **59%** believe AI will create new jobs (global average: **50%**) [1].

TABLE 4 AI USE AND TRUST AT WORK, 2025

INDICATOR	BRAZIL	GLOBAL AVERAGE
Use AI at work	75%	58%
Trust AI	60%	53%
Believe AI will create new jobs	59%	50%

Source: [1], Fig. 9.1.10.

High trust without literacy has a flip side: it is the ideal ground for scams and for poorly informed decisions, which is why security and education need to go together (Chapter 4).

Gartner organizes this flip side into nine social and cultural implications of generative AI, grouped into how we learn, how we communicate and how we treat health and the human condition [10]. Four of them directly touch our audience. On social media, hyper-personalization deepens engagement in the short term and, at the same time, reinforces information bubbles and speeds up the circulation of false content that looks authentic, in an environment where people lower their guard because the information comes from acquaintances. In the knowledge shift, excessive dependence erodes skills and reduces the ability to verify what the tool produces. With the arrival of AI natives, a gap opens between those who grew up with the technology and those who need to learn it as adults. And in the social divide, the consultancy notes that AI access and training do not distribute themselves: without intervention, the technology widens inequalities that already exist, although initiatives such as DeepSeek show that the entry barrier for smaller companies can fall quickly [10].

One figure in this set deserves special attention: research cited by Gartner indicates that women adopt generative AI at a rate about **25%** lower than men, in part because of ethical concerns about using these tools [10]. In a universe where **10.35 million** businesses are led by women, this figure becomes a design variable for our

programs. Our reading of the set is that the high trust of Brazilians, recorded above, needs to be read alongside these nine implications. The channel small businesses trust most, WhatsApp, is also the environment where false information circulates with the least resistance, and enthusiasm for the tool coexists with the tendency to accept what it delivers without checking. Qualifying trust, instead of merely taking advantage of it, is what separates inclusion from exposure.

WHAT THIS MEANS FOR SEBRAE

For a development institution, this distribution is a strategy map: in skeptical countries, the challenge is to convince; in trusting ones, it is to qualify. Brazil is in the second group. This means our training decisions do not need to spend effort on buy-in, but on depth and protection, while trust is still an available asset.

How the landscape shapes Sebrae's work

The global landscape shapes our decision-making through four parameters. Each one starts from a piece of evidence in this chapter, changes a criterion we decide by and already has a response under way or an open decision.

Pace. The performance gap between the best models of the United States and China fell to **2.7%**, traditional tests have saturated and **42%** of American companies discarded most of their AI initiatives in 2025, up from **17%** the year before. In a field like this, a one-off diagnosis goes out of date in months, and a portfolio bet can lose its meaning before it scales. We now decide with a historical series and annual remeasurement, which is the role of this study, and we evaluate each emerging technology by domain fit and implementation complexity before incorporating it. Voice is the first candidate, because it is the natural channel of small businesses, and data readiness is the condition that most decides the outcome.

Cost yardstick. The cost of computing fell **99.8%** between 2006 and 2024, and generative AI reached **53%** of the world's population in three years. In Brazil, **46%** of MSEs and **42%** of MEIs already use some AI, but frequent use stays between **15%** and **18%**. Access is no longer the barrier; the gap is between using and extracting value. This redirects the budget and targets of our programs: from delivering the tool to delivering the application, with results measured in the business. The same fall in cost makes scams cheaper, which is why every usage initiative carries protection guidance with it (Chapter 4).

Safety standard. Reported incidents went from 8 in 2012 to 362 in 2025, and agents that already succeed on **66.3%** of real tasks still fail one in three. Gartner projects that, by 2029, **30%** of AI pilots and deployments will be delayed or cancelled because of unmanaged behaviors of the systems themselves, Dark AI. Human oversight moves from governance principle to architecture requirement: human review points, automatic interruption and logs the system cannot alter, starting with the AI Hub. For small businesses, guidance on responsible use needs to arrive before the incident, in the channel where they serve customers.

People's readiness. In Brazil, **75%** of workers say they use AI at work and **60%** trust it, above the global average. Gartner projects that **44%** of core skills will change in five years and warns of skill loss from excessive dependence on automation. Research cited by the consultancy indicates that women adopt generative AI at a rate about **25%** lower than men, in a universe with **10.35 million** businesses led by women. Our training skips the buy-in effort and concentrates on depth: training people to verify, direct and decide with AI, with a dedicated target for women-led businesses.

The four parameters work as a test for any AI initiative of ours: whether it will still be valid a year from now, whether it generates valuable use beyond access, whether it has human oversight built in and whether it trains the people who will operate it. They run through the following chapters: the bloc (Chapter 2) changes the cost yardstick and widens the trend radar; the country (Chapter 3) sets the limits of the safety standard and opens the sovereign AI agenda; the small business (Chapter 4) defines where to apply, in each major sector; and our answer (Conclusion) shows what we have already decided and what remains open.

Possible decisions

The possible decisions derive from the answer above, each linked to a pillar of the AI Strategy and with its status stated.

TABLE 5 **POSSIBLE DECISIONS DERIVED FROM THIS LANDSCAPE**

DECISION	PILLAR	STATUS
Keep this study as an annual series with remeasurement, instead of a one-off diagnosis	Uncertainty Mitigation	Made
Publish periodic curation of what the frontier has released as viable tools for small businesses (price, language, use case)	Uncertainty Mitigation	Open
Adopt human review points, automatic interruption mechanisms and audit logs the system cannot alter as an architecture requirement in the System's solutions, starting with the AI Hub	Internal Solutions	In progress
Take a responsible AI use protocol to small businesses before regulatory maturity, in the channel where they serve customers (WhatsApp), including information verification and defense against false content	Uncertainty Mitigation	Open
Redirect AI training from buy-in to depth of use, training people to work with AI (verify, direct, decide) and not just to use it, while trust is high	Digital Inclusion	In progress
Evaluate each emerging technology by the small-business yardstick (domain fit and implementation complexity) before adding it to the portfolio, starting with voice as a channel, with human oversight	Solutions for small businesses	Open

DECISION	PILLAR	STATUS
Measure and address the gender gap in AI adoption in training programs, with a dedicated target for women-led businesses	Digital Inclusion	Open

Source: our own elaboration.

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CHAPTER 02 | BRICS

THE BLOC

BRICS

International cooperation as a growth opportunity for small businesses

BRICS China pilot zones territorial readiness

0.63 China on the IMF AI preparedness index	**0.50** Brazil on the same index	**85** public or public-private AI supercomputers in operation in China

ABSTRACT

This chapter answers the question: what do Brazil's position in BRICS, and the Chinese method of AI development, offer Sebrae as a reference and as a channel? The bloc brings together, under the same roof, the frontier and the global median of AI: China scores 0.63 on the IMF preparedness index; Brazil, 0.50. We show that the bloc offers two distinct things. As a reference, the Chinese method of dosing public policy according to each territory's readiness, through city tiers and pilot zones, is transferable to a system present throughout Brazil. As a channel, Chinese competition in open-weight models brings down the cost of the intelligence that reaches small businesses, and the Rio Declaration, adopted under the Brazilian presidency, gives the country a voice in global governance. We conclude that the bloc matters as a method, as a channel for price, rules, cooperation and financing, and as a radar for trends we are not yet tracking, such as physical AI, and we derive seven possible decisions.

Keywords: *BRICS; China; pilot zones; territorial readiness; open-weight models; global AI governance.*

Introduction

This chapter narrows the lens to the bloc Brazil belongs to and asks what it offers Sebrae. The answer has two parts, and it is important not to confuse them: a reference of method, coming from the most advanced member, China; and a concrete channel for price, rules and cooperation. We make no foreign-policy judgment; we record, with sources, that the position in the bloc changes the concrete conditions under which small businesses arrive in the AI economy.

What BRICS is and what it represents

BRICS became a diplomatic mechanism in 2006, when the foreign ministers of Brazil, Russia, India and China formalized the group. The recent expansion changed the scale: Egypt, Ethiopia, Iran, Saudi Arabia and the United Arab Emirates became full members in January 2024, Indonesia in January 2025, and ten countries joined the group as partners, among them Malaysia, Vietnam, Nigeria and Thailand. With eleven members, the bloc represents **49.5%** of the world's population, about **40%** of GDP and **26%** of trade [9]. It is neither a formal alliance nor a common market: it is a platform for consultation and cooperation among large emerging economies, organized in three pillars, political and security, economic and financial, and cultural and people-to-people exchange.

The New Development Bank (NDB), created at the Fortaleza summit in 2014, headquartered in Shanghai and with a regional office in Brazil, finances infrastructure and sustainable development projects, and since 2023 has been studying payment platforms among members [9]. The ministerial tracks for science, technology and innovation and for communications, together with the Business Council and the Women's Business Alliance, are where technical cooperation actually happens; the Xiamen summit, in 2017, put the facilitation and innovation

of micro, small and medium-sized enterprises on the bloc's agenda [9]. And, in July 2025, under the Brazilian presidency, the Rio summit adopted the Declaration on the Global Governance of AI [3], the bloc's collective position on the subject. The 2026 Indian presidency took up the theme of building for resilience, innovation, cooperation and sustainability [9].

What Brazil, and we, can draw from this in AI for small businesses fits into three possibilities. Technology transfer: the bloc includes the country that competes at the frontier of models and industrial robots; the AI cooperation agreements described in Chapter 3 and the Chinese open-weight models are the concrete way this technology can reach our solutions, at lower cost and with the possibility of auditing and hosting. Investment: the NDB and the bloc's financial instruments are a possible source of financing for AI infrastructure and for technology diffusion programs, and the Business Council is the door to partnerships between member companies. Influence: Brazil chaired the bloc when it adopted its position on AI governance, and Sebrae is a small-business support system present across the entire national territory; this gives us the credentials to bring AI diffusion in micro and small enterprises to the bloc's agenda, a topic the Xiamen summit opened and that still has no owner.

WHAT THIS MEANS FOR SEBRAE

BRICS is not distant from our mission: it is the space where Brazil sits at the same table as the frontier country, with a development bank, technical tracks and a business forum at its disposal. For us, this translates into three possible moves: use the channel of technology, cooperation and open weights to make the solutions we deliver cheaper; map the NDB and the bloc's instruments as a source of financing for AI diffusion programs; and occupy, together with the Brazilian government, the small-business and AI agenda in the bloc, from the position the Rio Declaration gave us. The rest of the chapter details the member that matters most for these three moves, China.

The bloc in numbers

BRICS is not homogeneous in AI. On the IMF preparedness yardstick [1], China scores 0.63 and competes at the frontier in models, patents and research; Brazil and South Africa tie at the global median (0.50); and the members admitted since 2024 widen the spread, from 0.63 for the Emirates to 0.25 for Ethiopia.

TABLE 1 **AI PREPAREDNESS INDEX (IMF · AIPI), BASE YEAR 2023**

COUNTRY	AIPI
USA (reference outside the bloc)	0.77
China	0.63
United Arab Emirates	0.63
Russia	0.56

COUNTRY	AIPI
Brazil	0.50
South Africa	0.50
India	0.49
Egypt	0.39
Ethiopia	0.25

Source: [1]. Iran and Indonesia to be included in production.

More than half of the new national AI strategies in the cycle came from developing countries entering the map for the first time [2]. In July 2025, under the Brazilian presidency, the BRICS summit in Rio adopted the Declaration on the Global Governance of AI [3], the Global South's collective position in favor of governance with the United Nations at the center: the Global South stopped being a spectator of AI governance and started writing it.

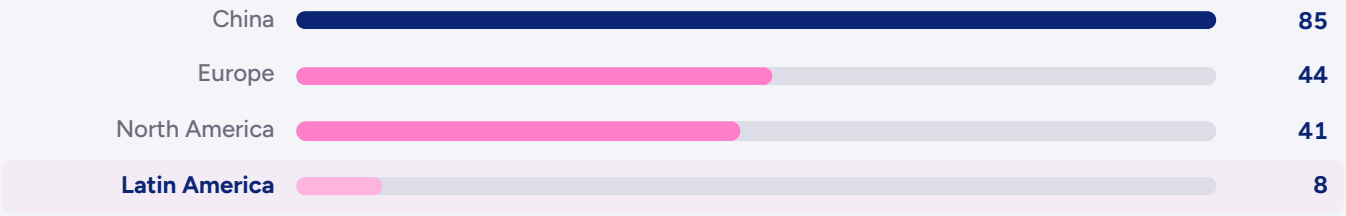
WHAT THIS MEANS FOR SEBRAE

Brazil belongs to the same bloc as the country competing at the front of the race. For Brazilian small businesses, this makes BRICS less a mirror and more a channel: for technology, market and political voice.

China: how an ecosystem is built in layers

If the AI race were measured only in models, the result would look balanced. Measured in physical infrastructure, it has a clear protagonist: China leads the world in volume of AI publications, citations and patents, installed **54%** of all the industrial robots on the planet in 2024, more than the rest of the world combined, and is the country with the most public or public-private AI supercomputers [2]. Even in the most concentrated layer of the chain, chips, where Nvidia accounts for more than **60%** of global compute, Huawei already holds a small but growing share.

CHART 1 · PUBLIC OR PUBLIC-PRIVATE AI SUPERCOMPUTERS IN OPERATION



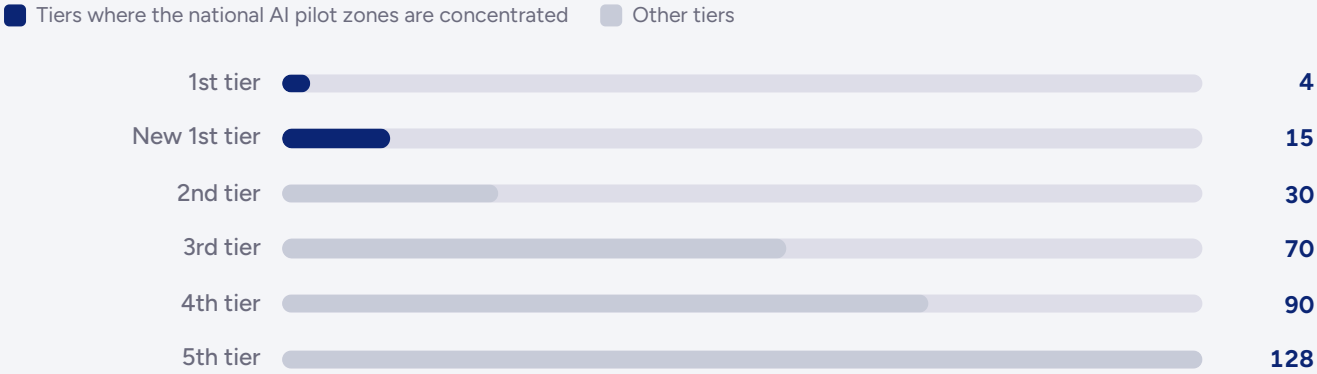
Source: [2]. The Latin America row anticipates the sovereignty yardstick that Chapter 3 applies to Brazil.

The method: city tiers and pilot zones

This trajectory combined long-term investment with a territorial technology policy. Two instruments organize it. The first is the city tier system: a market classification, consolidated by institutes such as Yicai [4], which ranks the 337 cities of prefecture level or above into five tiers according to economic density, connectivity and consumption capacity. The second is the state instrument: the National AI Pilot Zones, designated from 2019 onward, which concentrate stimulus, infrastructure and experimental rules in territories of proven readiness, almost all of them in the first two tiers.

CHART 2 · THE TIERS OF THE CHINESE URBAN SYSTEM (YICAI 2025 CLASSIFICATION)

Number of cities per tier



Source: [4]. The national AI pilot zones are concentrated in the first two tiers.

The distinction matters: the tier classification reads readiness; the pilot zones act on it. The policy did not distribute resources uniformly. It classified the territories and dosed the stimulus according to tier: first where there was a base, then organized diffusion.

WHAT THIS MEANS FOR SEBRAE

This is the territorial lesson that matters most to a system present throughout Brazil. The point is to import the method, not the Chinese policy: segment territories and sectors by proven readiness before scaling any solution, instead of launching everything for everyone at the same time. The Conclusion shows where we have already started applying this yardstick.

The open frontier

The "DeepSeek moment" was not an isolated event. The Chinese ecosystem turned open weights into a permanent competitive strategy: DeepSeek, Alibaba (Qwen), Zhipu (GLM) and Moonshot AI (Kimi) publish, in cycles of a few months, open models that compete with the proprietary leaders. The most recent milestone is Kimi K3 (Jul 2026) [5], the first open-weight model in the **3 trillion**-parameter class, designed for long programming tasks and agentic work.

K3 has **2.8 trillion** parameters in a mixture-of-experts architecture (896 experts, about **104 billion** active per token), a context window of **1 million** tokens and native multimodality [5].

In launch evaluations, it trails the two proprietary leaders, but beats or ties with the other leading models in code and agents. Parity between open and closed models should not be claimed: the gap widened again in 2025 (≈**3.3 pp**) [2]. The lag, measured in years at the start of the decade, came to be measured in months, without disappearing.

The four layers of the ecosystem in 2026

Gartner also describes the 2026 Chinese ecosystem in layers, this time of technology and not of territory [7]. At the base, sovereign infrastructure, from chip to model: national models such as DeepSeek V4 and GLM 5.2 began to run natively on local accelerators, such as Huawei's Ascend, and the consultancy projects that, by 2030, more than half of the accelerators in Chinese companies' private infrastructure will come from national suppliers. On top of it, pragmatic model innovation: the open-weight strategy stopped being plan B and became the main solution, **54%** of the companies surveyed use or develop national models as the base of their agents, and the adoption of Chinese models by companies worldwide should go from **5%** in 2025 to **50%** in 2027. In the third layer, the agent workforce: the State Council guideline sets for 2027 more than **70%** penetration of intelligent terminals and agents in the main sectors, and the question companies ask changed from "what agents can do" to "what they need to demonstrate reliably". At the top, the new experiences: physical AI and AI-driven organizations, with **34%** of the companies surveyed exploring physical applications.

TABLE 2 CHINA'S TEN AI TRENDS IN 2026

LAYER	TREND	WHAT GARTNER RECORDS	SEBRAE READING
Sovereign infrastructure	Chip sufficiency for models	National suppliers are expected to dominate Chinese private infrastructure by 2030, with limited reach outside China	Watch: out of our reach; sets the cost of the base layer
	Model vendor independence	Switching models without interrupting operations becomes a mandatory competency; adoption of Chinese models by companies worldwide projected to go from 5% (2025) to 50% (2027)	Adopt: architecture requirement in the AI Hub (Internal Solutions)
Pragmatic model innovation	Open-weight strategy	From plan B to main solution; the same tool for small and large companies	Adopt: evaluation basket for low-risk use cases (Solutions for small businesses)
	Multimodal content creators	Text, image, audio and video fed by e-commerce and social media	Prepare: the small-business channel is visual and voice-based (Personalization)
	World models	Foundation for robotics and physical AI; buy, do not build	Watch
Agent workforce	Agent competency	Measure the agent by what it demonstrates reliably; official target of 70% penetration in the main sectors in 2027	Adopt: this is what the Hub's human review points and logs measure (Precision)
	Ontology-based semantics	A business semantic layer before agents, to reduce costly errors	Prepare: the System's data and common vocabulary before scaling agents (Precision)
	Personal agents	Spontaneous adoption by employees, with the risk of AI outside governance	Prepare: usage policy and selective pilot (Internal Solutions)
New AI experiences	Physical AI	National priority tied to industry and to the aging of the workforce	Radar: no initiative today; enters monitoring (see highlight)
	AI-driven organization	AI+ guideline for integration in all sectors by 2030; adoption through pilots with measured return, and not through total overhaul	Adopt as method: pilots with scaling criteria (all four pillars)

Source: [7]. Layers and records as defined by Gartner; the reading is ours.

WHAT THIS MEANS FOR SEBRAE

Of the four layers, we operate in two, models and agents. Three trends become requirements: vendor independence, which means no solution in the System depends on a single AI model; open weights as the lowest-cost option for low-risk use cases; and agent competency measured by verified results, which is what the AI Hub's human review points and audit logs already do. The others enter trend monitoring. Chapter 3 returns to sovereignty in these terms, as having a choice, and not as self-sufficiency.

Physical AI

Gartner defines physical AI as the practice of designing systems that interact directly with the real world: they perceive, reason and act, instead of only processing text and data [8]. In practice, these are robots, drones, vehicles and machines with sensors and cameras that decide in real time. The consultancy describes it as the next great frontier of AI, in transition from experimentation to repeatable value, with a market expected to exceed **US$430 billion** in 2030 and approach **US$1.6 trillion** in 2040 [8]. Adoption is more complex than that of digital AI for five reasons: sensor integration, real-time response, safety and reliability, integration between IT and operational systems, and unpredictable environments. For this reason, organizations buy more than they build, start with proofs of concept in controlled environments and need to reskill people to work alongside these systems.

The link with China is direct. It is there that physical AI is a national priority, with **34%** of the companies surveyed already exploring applications [7], and it is from there that the lowest-cost equipment tends to come, by the same price logic we already observe in models. For Brazilian small businesses, the subject is not distant: physical AI arrives first at the edge, in cleaning and service robots in commerce and services, in drones and sensors in the field, in automated inspection in small industry and in logistics. What changes for small businesses depends less on developing the technology and more on understanding where this type of technology makes sense in the various contexts we have, following the fall in implementation costs, knowing how to buy, operating safely and reskilling the team.

WHAT THIS MEANS FOR SEBRAE

Today we have no initiative, pilot or content on physical AI, and the trend needs to enter our radar as relevant to small businesses. Gartner recommends an adoption path in five steps: validate opportunities, assess the vendor market, identify barriers, define technology and deployment, and measure performance and risk continuously [8]. It is not Sebrae's role to build robots; it is Sebrae's role to prepare small businesses to buy well: a mapping of the use cases already reaching the segments we serve, an assessment of vendors and entry cost, and the reskilling of teams to operate safely alongside these machines. The first step is simple: include physical AI in the 2027 trend monitoring, with an observation pilot in a sector with a high concentration of small businesses, such as commerce or agribusiness.

The channel has material weight

The channel with China is not only technological. Brazil–China trade reached **US$ 171 billion** in 2025, a historic record, up **8.2%** on 2024; it represents **27.2%** of all Brazilian foreign trade, with China as the main partner since 2009 and the **17th** consecutive year of Brazilian surplus [6].

The bloc offers three things. Price: competition at the frontier, including Chinese open models, translates into what Chapter 1 measured, falling cost and leading-edge tools within the budget of a microenterprise. Rules: the country helps write global governance from the side of those who use AI, not only of those who produce it. Capacity: cooperation can be converted into access to infrastructure, research and markets, the agenda Chapter 3 details, with the agreements signed since 2024.

How the landscape shapes Sebrae's work

The bloc influences our work in three ways: it offers a method for scaling, a channel that changes concrete conditions for small businesses and a radar for what comes next.

As a reference, what transfers from China is the method. The country did not distribute stimulus uniformly: it classified 337 cities by readiness and concentrated the pilot zones in the first two tiers, before organizing diffusion. The scale and the political model stay outside this transfer; the method fits a system present in all 27 federative units. For us, it means declaring readiness and scaling criteria before each pilot and dosing programs by municipality with a territorial index, such as the ITMIA of the Cidade Empreendedora IA+ program. The cost of not doing so is launching the same solution in territories that do not yet have the base to use it.

As a channel, the bloc changes four conditions. Price: Chinese open-weight models compete with the proprietary leaders with a lag measured in months, and adoption of these models by companies worldwide should go from **5%** in 2025 to **50%** in 2027. We evaluate open weights for low-risk use cases and publish the MSE AI cost basket, with a first measurement in 2027. Rules: the Rio Declaration, adopted under the Brazilian presidency, gives the country a voice in global governance, and the small-business agenda opened in Xiamen still has no owner. We can bring AI diffusion in small businesses to it, together with the Brazilian government. Capacity: the cooperation agreements signed since 2024 provide for training, exchange and applications, fronts in which we have reach. Financing: the New Development Bank and the bloc's instruments are a possible source for AI diffusion programs, still to be mapped.

As a radar, China's ten trends anticipate what reaches our audience later, and two require action. Physical AI, a national priority in China and explored by **34%** of the companies surveyed, tends to reach small businesses through lower-cost equipment, and today we have no initiative, pilot or content on the subject. It enters the 2027 trend monitoring, with a mapping of use cases and vendors. Model vendor independence becomes an architecture requirement in the AI Hub: no solution in the System should depend on a single model.

There is a limit to record. We do not claim parity between open and closed models, and depending on a single supplier country would be as fragile as depending on a single company. The criterion we adopt is having a

choice, and it is in these terms that Chapter 3 addresses sovereignty.

Possible decisions

The possible decisions derive from the answer above, each linked to a pillar of the AI Strategy and with its status stated.

TABLE 3 **POSSIBLE DECISIONS DERIVED FROM THIS LANDSCAPE**

DECISION	PILLAR	STATUS
Declare readiness and scaling criteria in the System's pilots, segmenting territories and sectors before scaling (pilot zones, Brazilian style)	All four pillars	In progress
Systematically evaluate open-weight models as the base for lower-cost solutions for small businesses, including in the AI Hub	Internal Solutions	Open
Publish the MSE AI cost basket (R$/month), with methodology and first measurement in 2027	Solutions for small businesses	Made
Convert Brazil's voice in global governance into concrete exchange of AI diffusion policies for small businesses within the bloc	Uncertainty Mitigation	Open
Adopt a territorial AI readiness index (such as the ITMIA of Cidade Empreendedora IA+) as the yardstick for dosing programs by municipality	Digital Inclusion	In progress
Include physical AI in the 2027 trend monitoring, with a mapping of use cases and vendors for the segments served and an observation pilot in a sector with a high concentration of small businesses	Uncertainty Mitigation	Open
Map the bloc's financing instruments (NDB and cooperation funds) applicable to AI diffusion programs for small businesses, in coordination with the Brazilian government	Uncertainty Mitigation	Open

Source: our own elaboration. How we will know: the pilots presented in the Conclusion start declaring readiness and scaling criteria; the MSE AI cost basket has a methodology and a first measurement in the 2027 edition; cooperation initiatives are recorded in the accountability report on Sebrae's participation in the PBIA.

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CHAPTER 03 | BRAZIL: REGULATION AND SOVEREIGNTY

THE COUNTRY

Brazil: regulation *and* sovereignty

Five windows in which Sebrae's work makes a difference that the State and the market would not make alone

PBIA | Sovereign AI | AI Legal Framework | ECA Digital

18%
of AI talent in software engineering, the largest share in the world

65th
Brazil's rank on the IMF preparedness index

88.2%
of Brazil's electricity mix is renewable

ABSTRACT

This chapter answers the question: what does the national landscape allow and limit in Sebrae's decisions on AI? Brazil trains people faster than it builds structure: it has the world's largest share of AI talent in software engineering (**18%**) and is the **2nd** country in number of computing graduates, but ranks **65th** on the IMF preparedness index. It has a national plan under way, the PBIA (Brazilian Artificial Intelligence Plan), with **R$ 23 billion** and 54 actions, in which small businesses are not a pillar of their own and which, since 2026, has sovereign AI as a declared priority, with a supercomputer, Portuguese-language models and a Brazilian cloud being structured. It has regulation in three layers: the ANPD (National Data Protection Authority) already oversees AI through the LGPD (General Data Protection Law), the ECA Digital (Digital Statute of the Child and Adolescent) has been in force since March 2026 and the AI Legal Framework is moving through Congress, with room for us to propose a law that preserves small businesses and expands digital and AI small businesses. And it has a physical asset, an electricity mix that is **88.2%** renewable, alongside deep hardware and platform dependencies. We show that the national landscape limits what we can expect from the State and the market, and opens five windows in which our work makes a difference: influence on the PBIA, now as members of its official working group; translating the rule before it arrives ready-made; connecting talent to small businesses; betting on the application layer; and bringing sovereign AI to small businesses.

Keywords: *PBIA; sovereign AI; AI Legal Framework; ECA Digital; LGPD; digital sovereignty; AI talent; data centers; energy mix.*

Introduction

This chapter asks what Brazil is doing with the position described in Chapter 2, and what that allows and limits in our decisions. The answer has four parts: a talent paradox, a national plan under way, regulation under construction and a sovereign AI agenda that should guide the country's digital policy over the next four years and that exposes, at the same time, the dependencies it intends to reduce. These are followed by the cooperation agenda with China and, at the close, our participation in the PBIA's official working group.

The Brazilian ecosystem in the global mirror

On one side, talent: Brazil has the planet's largest share of AI talent in software engineering (**18%**), is the **2nd** largest producer of computing and ICT graduates (**80,300** per year, growing **30%** a year) and saw its talent concentration rise **107%** since 2019; AI literacy multiplied about 40-fold in two years [1]. On the other, conditions: AIPI 0.50, **65th** among 165 economies, behind Chile (0.59) and Mexico (0.53) in its own region [2]. The gap lies less in regulation and more in digital infrastructure and the economic integration of innovation.

TABLE 1 TALENT AND PREPAREDNESS: BRAZIL IN THE GLOBAL MIRROR

INDICATOR	VALUE
Share of world AI talent in software engineering	18%
Computing and ICT graduates per year	80,300
AI authors and inventors identified	11,100
AI literacy diffusion (index), 2023 → 2025	4.2 → 167
AI skills penetration: men / women	1.57 / 0.66
AIPI (IMF), rank among 165 economies	0.50 · 65th

Source: [1], Fig. 7.4.3; [2].

One breakdown needs to be recorded: Brazilian AI talent remains mostly male, at around eight in every ten professionals, and AI skills penetration among women is less than half that of men. Talent is growing; its diversity is not.

WHAT THIS MEANS FOR SEBRAE

The talent paradox defines an opportunity and a limit. The opportunity: there are trained people in volume, and some of them can be connected to small businesses through residencies, assisted services and the startup ecosystem. The limit: the country does not convert training into structure on its own, and it is not reasonable to expect the market to do it for small businesses. The gender imbalance is one more input for the design of our programs, in a universe where **10.35 million** businesses are led by women.

Series note. This edition adopts the IMF AIPI as its anchor in place of the Stanford Vibrancy Index used in 2025 (Brazil 34th of 36), with the break in comparability stated.

The Brazilian Artificial Intelligence Plan

The PBIA 2024–2028 ("AI for the Good of All") [3] is the first time the country has organized, in a single instrument with budget and governance, the ambition of ceasing to be merely a consumer of AI: **R$ 23 billion**, five pillars, 54 actions. In the public review of November 2025, 25 actions showed deliverables and 15 had been started. In August 2026, the government announced, within the plan, an infrastructure and models package focused on technological sovereignty, addressed in the section on sovereign AI [10]. Two points call for attention. The first is the lesson of Chapter 2: a national plan produces results when it doses policy according to the maturity of each territory. The second is distributive: **60%** of the budget goes to business innovation through credit, an instrument that rarely reaches the MEI. Small businesses are not a pillar of their own; they appear diluted.

WHAT THIS MEANS FOR SEBRAE

This is exactly where our participation matters. Advocating the democratization of AI use as an explicit objective of national policy is the furthest-reaching front of the Uncertainty Mitigation pillar. The plan limits what we can expect from it for the MEI; participation in the official working group, detailed at the close of the chapter, opens the window to argue for a specific pillar and funding.

Regulation

Brazil already regulates algorithms before having an AI law. The regulation that reaches small businesses today has three layers: the LGPD, enforced by the ANPD; the ECA Digital, in force since March 2026; and the AI Legal Framework, still moving through Congress. The first two already create obligations; the third will define the cost of compliance for the coming years.

What already applies: LGPD and ECA Digital

The ANPD regulates AI in practice through the LGPD. In July 2024, it issued a precautionary suspension of the training of Meta's generative AI on Brazilians' data [5], the precedent that turns good data practices into an operating requirement, and it keeps the subject among its priorities for 2026 and 2027. Brazil is also part of the second wave of countries with an AI Safety Institute being formed.

The ECA Digital (Law No. 15,211/2025) [12] has been in force since March 17, 2026 and was regulated by Decree No. 12,880/2026 [13]. It covers digital products and services aimed at children and adolescents or likely to be accessed by them, which includes, in addition to social networks and games, online stores, apps and advertising platforms [16]. It requires reliable age verification, without accepting simple self-declaration, parental supervision tools and more protective privacy settings by default, and it prohibits the profiling of minors for advertising and design that encourages compulsive use. The ANPD is the responsible authority, with general enforcement scheduled from January 2027 and fines of up to **10%** of the group's revenue in Brazil, capped at **R$ 50 million** per violation [12] [16].

For AI, the ECA Digital has four effects. Age verification and recommendation systems depend on automated systems, which now require documentation, testing and human oversight so as not to produce errors and discrimination [14]. Profiling, the basis of personalized advertising, is prohibited when the user is a minor. The decree adds transparency duties for generative AI providers and algorithmic risk assessment [13]. And the obligations are graded by the risk of the service; we did not identify an exemption based on company size. The digital small business whose product can be accessed by minors, such as an app, a game, an online store or a customer service assistant, is already within the rule, and the same applies to the solutions we offer.

What is under construction: the AI Legal Framework

The AI Legal Framework (Bill 2,338/2023) [4] was approved by the Senate in December 2024 and awaits, in the Special Committee of the Chamber of Deputies, the rapporteur's opinion. The text adopts a risk-based approach: it prohibits excessive-risk uses; it imposes on high-risk systems, such as those used in recruitment,

credit, health and education, algorithmic impact assessment, human oversight and documentation; and it creates the National AI Regulation and Governance System (SIA), coordinated by the ANPD [15].

TABLE 2 AI LEGAL FRAMEWORK: LEGISLATIVE PROGRESS

Dec 2024	The Senate approves Bill 2,338/2023.
Mar 2025	Sent to the Chamber of Deputies; the Special Committee awaits the rapporteur's opinion.
Dec 2025	The government sends Bill 6,237/2025, proposing the National AI System (SIA).
2026	The ECA Digital enters into force in March; Bill 2,338 remains in the Chamber's Special Committee, awaiting the rapporteur's opinion; the ANPD oversees AI through the LGPD.

Source: [4]; [5]; [12]; [14].

The text approved in the Senate already recognizes company size. It allows simplified deadlines and procedures according to the size of the agent (art. **7**), provides for differentiated criteria for systems offered by microenterprises, small companies and startups (art. 67), authorizes simplified regimes (art. 73) and creates regulatory experimentation environments [15]. These are general provisions, which depend on later regulation. It is in the final wording and in that regulation that it will be decided whether the law is proportionate to small businesses from the start.

Three developments are possible. In the first, the Chamber approves the text with amendments, it returns to the Senate and goes on to presidential sanction, opening the adaptation period and regulation by the SIA. In the second, the process drags on, and regulation continues to advance by other routes, such as the LGPD, the ECA Digital and sector rules, with less predictability for entrepreneurs. In the third, governance is reorganized by Bill 6,237/2025, from the Executive, which structures the SIA. In all three, small businesses are affected in two roles. As users of third-party systems, the risk is inheriting obligations from those who develop them. As developers, the case of startups and digital and AI small businesses, the risk is that the fixed cost of compliance becomes a barrier to entry.

Our contribution to the shaping of the bill starts from one guideline: the law should preserve small businesses and expand the possibilities for growth of digital and AI small businesses. It translates into seven proposals, which we propose to take to the Chamber's Special Committee, to the PBIA working group and to dialogue with the ANPD.

TABLE 3 PROPOSALS FOR THE AI LEGAL FRAMEWORK: PRESERVE SMALL BUSINESSES AND EXPAND DIGITAL AND AI BUSINESSES

PROPOSAL	WHAT WE ASK FOR	WHAT CHANGES FOR SMALL BUSINESSES
Proportionality by size and risk	Obligations graded by the size of the agent and the risk of the system, with express mention of MEIs, microenterprises, small companies and startups and a simplified regime from the moment the law takes effect	The cost of compliance follows the capacity of those who must comply
Distinction between those who develop and those who use	Technical duties concentrated on those who develop and supply the system; for those who only use it, duties of proper use and transparency	The small business as user does not inherit obligations that only the supplier can meet
Guidance-first enforcement	A first guidance visit and a deadline to adapt before any sanction, in line with the differentiated treatment of the Micro and Small Enterprise Statute	Adaptation comes before the fine
Ready-made compliance instruments	Free templates for impact assessment, documentation and AI use notices, published by the authority, with plain-language guides	Complying with the rule without hiring specialized consulting
Experimentation environment with priority access	Slots and a simplified procedure for small businesses and startups in regulatory experimentation environments (sandboxes)	Testing AI products with legal certainty before scaling
Support for digital and AI small businesses	Access to public computing and data infrastructure, a preference margin in public procurement of AI and dedicated credit and innovation lines	The law also opens the market and lowers the barrier to entry
Regulatory harmonization	Coordination between the Legal Framework, the LGPD and the ECA Digital within the SIA, with a single guidance channel and no duplicated requirements	A single rule to understand and comply with

Source: our own elaboration, based on [4], [12] and [15].

WHAT THIS MEANS FOR SEBRAE

Today's obligations already exist and are in the LGPD and the ECA Digital, with general enforcement of the ECA Digital from January 2027. Three tasks are immediate: include the ECA Digital in the compliance guide by company size; review the System's solutions that may be accessed by minors, especially the customer service assistants; and guide digital small businesses on age verification and advertising. In the Legal Framework, the rule under construction limits what we can state as a future obligation and opens the window to contribute to the wording, so that small businesses do not discover the law through a fine. Our AI Management and Governance Policy (Conclusion) needs to provide a review trigger for when the law is approved.

Sovereign AI: the agenda for the next four years

AI sovereignty stopped being a topic of debate and became public policy with a budget. In August 2026, within the PBIA, the federal government announced a package organized in three pillars, infrastructure, models and data, with the caveat that technological autonomy does not mean isolation, but the capacity to develop our own solutions combined with external partnerships [11]. In infrastructure, an AI supercomputer of about 7,200 petaflops, financed with just over **R$ 1 billion** from the FNDCT, will be installed at the Augusto Severo Technology Park, in Rio Grande do Norte, and operated by the LNCC, open to companies, universities, research institutions and governments; the call for proposals provides for counterparts in technology transfer, local content and the training of **5,000** Brazilians in five years [10]. In models, the RNP, in partnership with Huawei and iFlytek, will structure in Rio de Janeiro a processing infrastructure with a national language model and AI models in Portuguese, with public investment estimated at **R$ 1.276 billion** over five years and operation scheduled for July 2027 [10].

In data, the MGI, ABDI, Serpro and BNDES signed an agreement to structure the Nuvem Brasileira (Brazilian Cloud), a national storage and processing alternative that reduces dependence on large foreign providers; the project is being structured, with no amounts or deadlines disclosed [10]. On the longer horizon, the Eldorado Institute is leading, with Barcelona's innovation ecosystem, the development of chips based on the open RISC-V architecture, with an estimated timeframe of 10 to 15 years [10]. These are slow-maturing bets: the first deliveries are scheduled for 2027, and it is over the next four years that they will move from announcement to operation.

The starting point explains the priority. The asset is energy: **88.2%** of Brazil's electricity mix was renewable in 2024 [6], at a time when the power capacity of AI data centers worldwide reaches **29.6 GW** [1]; and the special tax regime for data centers, Redata, became law in September 2026, making the benefit conditional on meeting all energy demand from clean or renewable sources and on allocating part of the capacity to the domestic market [8]. The installed base, however, is modest: the country hosts 197 data centers, **11th** in the world [7]. And the dependencies are deep. In hardware: almost every leading-edge chip comes from a single foundry (TSMC), and a single supplier (Nvidia) accounts for more than **60%** of global compute. In platform and model: most of the AI consumed in the country is foreign, and the risk lies in consuming without an alternative.

Read through the four layers of Chapter 2, the Brazilian agenda is concentrated at the base, in compute, cloud and chips, and is starting to reach models. None of the announced measures mentions small businesses. That gap is our window: the model and application layers, where we operate, are the path by which national infrastructure can reach entrepreneurs. Portuguese-language models trained in the country, a Brazilian cloud and supercomputing open to companies only reach the MEI when converted into simple, accessible and reliable solutions.

WHAT THIS MEANS FOR SEBRAE

We treat sovereignty as the capacity to choose. For us, the sovereign AI agenda translates into three decisions: bet on the application layer, the least concentrated in the chain, as the channel through which national infrastructure reaches small businesses; evaluate the national Portuguese-language models, as soon as they are available, alongside the open-weight models already considered in the AI Hub, under the vendor independence criterion; and follow the Nuvem Brasileira as a hosting option for the System's solutions once it is in operation. The renewable mix remains an argument, with green AI as a differentiator of the solutions we develop and support, measured by the AI Hub's environmental footprint. The hardware dependencies are not within our reach to solve; building alternatives, through cooperation and open weights, is.

The agenda with China: cooperation as a path to development

Bilateral cooperation in AI has gained instruments since 2024 [9]: a memorandum of understanding between the MDIC and the NDRC (May 2025) on industrial and digital development; an agreement between Dataprev and Huawei for data infrastructure; a cooperation protocol between the MCTI, Serpro and iFlytek on AI applications; a memorandum from the Ministry of Education on training; and Brazil's participation in the founding of WAICO, the world AI cooperation organization proposed by China in 2025. The memoranda provide for training, exchange and sharing of experience in applications.

WHAT THIS MEANS FOR SEBRAE

Training, exchange and applications are fronts in which the Sebrae System has reach and the federal government has little. It is the entry door to the cooperation that Chapter 2 identified as a channel, and commitment 4 records what part of it converts into concrete action for small businesses.

How the landscape shapes Sebrae's work

The national landscape influences our work in two ways: it sets limits that are not ours to remove and opens five windows in which our presence has a disproportionate effect.

The limits. The PBIA brings together **R$ 23 billion** and 54 actions, but directs **60%** of the budget to credit for business innovation, an instrument that rarely reaches the MEI, and has no pillar of its own for small businesses. The AI Legal Framework is still moving through Congress, and we cannot present as an obligation what is not yet law. Almost every leading-edge chip comes from a single foundry, and most of the AI consumed in the country is foreign. And the 2026 sovereign AI package does not mention small businesses in any of its measures.

Influence on the PBIA. In 2026, we officially joined the plan's working group, coordinated by the Executive Secretariat of the MCTI, with a full and an alternate representative from Sebrae Nacional. It is the space to argue for a dedicated pillar and funding for small businesses and for the democratization of AI use as an explicit objective of national policy. The contributions taken to the group and their results enter our accountability reporting.

Translating the rule. The ANPD already oversees AI through the LGPD and, in 2024, suspended the training of a generative AI on Brazilians' data. Today's obligations exist, and small businesses tend to learn about them through a fine. The ECA Digital, in force since March 2026, adds duties for digital services accessible to minors. A simplified compliance guide by company size, covering the LGPD and the ECA Digital and published before the Legal Framework, reduces this risk. In the Legal Framework, the window is to contribute to the wording: we propose seven measures so that the law preserves small businesses and expands digital and AI small businesses. Our own Policy needs a review trigger for when the law is approved.

Connecting talent. The country produces **80,300** computing and ICT graduates a year and has the world's largest share of AI talent in software engineering, but ranks **65th** in AI preparedness. The market does not take this talent to small businesses on its own. Residencies, assisted services and the Scale AI ecosystem are the paths, with attention to the gender imbalance: AI skills penetration among women is less than half that of men.

Application layer. It is the least concentrated in the chain and the one within our reach. The **88.2%** renewable electricity mix supports green AI as a differentiator of the solutions we develop and support, with an environmental footprint measured and published by the AI Hub.

Sovereign AI for small businesses. The supercomputer, the Portuguese-language models and the Nuvem Brasileira have first deliveries scheduled for 2027 and only reach entrepreneurs when converted into simple and accessible solutions. Three moves fall to us: take to the PBIA working group the inclusion of small businesses as a recipient of the agenda; evaluate the national models in the AI Hub, under the vendor independence criterion; and follow the Nuvem Brasileira as a hosting option.

The five windows have a deadline. The sovereign AI agenda moves from announcement to operation over the next four years, and regulation remains under construction; whatever is not put on the agenda now tends to arrive ready-made, without small businesses. Chapter 4 shows who these fronts are meant for.

Possible decisions

The possible decisions derive from the answer above, each linked to a pillar of the AI Strategy and with its status stated.

TABLE 4 POSSIBLE DECISIONS DERIVED FROM THIS LANDSCAPE

DECISION	PILLAR	STATUS
Use participation in the PBIA's official working group to argue for a specific pillar and funding for small businesses	Uncertainty Mitigation	In progress
Publish a simplified compliance guide by company size, before the Legal Framework arrives ready-made	Uncertainty Mitigation	Open
Define the review trigger of the AI Management and Governance Policy for when regulation comes into effect	Uncertainty Mitigation	Open
Connect trained talent to small businesses through residencies, assisted services and the Scale AI ecosystem	Solutions for small businesses	Open
Adopt green AI as a declared differentiator of the System's solutions, with an environmental footprint measured and published by the Hub	Internal Solutions	In progress
Take to the PBIA working group the inclusion of small businesses as a recipient of the sovereign AI agenda (Portuguese-language models, Nuvem Brasileira, supercomputing)	Uncertainty Mitigation	Open
Evaluate the national Portuguese-language models in the AI Hub, as soon as they are available, under the vendor independence criterion	Internal Solutions	Open
Follow the Nuvem Brasileira as a hosting option for the System's solutions	Internal Solutions	Open
Present to the Chamber's Special Committee and to the PBIA working group the seven proposals for the AI Legal Framework, focused on proportionality by size and support for digital and AI small businesses	Uncertainty Mitigation	Open
Include the ECA Digital in the compliance guide by company size and review the System's solutions likely to be accessed by minors before January 2027	Uncertainty Mitigation · Internal Solutions	Open

Source: our own elaboration. How we will know: the accountability dashboard of Sebrae's deliveries in the PBIA and of the contributions taken to its working group; regulatory awareness measured in the 2027 primary survey; a talent-to-small-business connection indicator enters the historical series from 2027; the environmental footprint measured and published by the AI Hub.

With a channel, a plan and agreements in force, what actually reaches small businesses? That is the question of Chapter 4.

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CHAPTER 04 | SMALL BUSINESSES

THE SMALL BUSINESS

Small *businesses*

Applications and possibilities in light of current demands

Small businesses | MEI | digital maturity | AI use

19.5M active small businesses in Brazil	**6%** of service micro-businesses use CRM	**6.4M** fraud attempts in one semester

ABSTRACT

This chapter answers the question: what does the portrait of the Brazilian small business require Sebrae to prioritize in AI? There are about **19.5 million** active small businesses, half MEIs and half micro and small companies, with **10.35 million** women in charge. They have digitalized the customer relationship (more than **80%** serve customers through WhatsApp), but not management (CRM in **6%** of service micro-businesses). They already use AI (**42%** to **46%**), but infrequently (**15%** to **18%**) and for marketing, while their pain points are decision problems: pricing, cash flow and sales. And they face scams made cheaper by the same AI, with **6.4 million** fraud attempts in one semester and only **10%** to **12%** concerned about security. We also read the chains of the four major sectors, Agriculture, Commerce, Industry and Services, with three AI risks and three AI opportunities in each. We show that the technology has reached the small business's door but has not entered day-to-day decision-making, and we conclude that we should prioritize four things: application, not access; decision, not creation; the channel that already exists; and the protection of those who are not yet concerned.

Keywords: *Small businesses; MEI; digital maturity; AI use; WhatsApp; pricing; digital fraud; major sectors; production chains.*

Introduction

This chapter reaches the end of the line: the Brazilian small business, the audience of about **19.5 million** enterprises that justifies our existence [1]. It is the chapter in which the data is already the diagnosis. The thesis that emerges guides the entire institutional response in the Conclusion: the technology has reached the small business's door, but has not yet entered day-to-day decision-making, and taking it there is exactly the work that remains.

Who the Brazilian small business is

The universe of this series is the roughly **19.5 million** small businesses active at the end of 2024, re-anchored in this edition with stated criteria and source [1]. The portrait has two halves that are almost equal in number and very different in structure: the individual microentrepreneur, or MEI (**9.8 million**), with no employees in most cases and simplified obligations; and the micro and small company (**9.7 million**), with its own payroll, management and tax regime. The base grows through the door of microentrepreneurship: **78%** of the companies opened in the country in 2026 are MEIs. And the portrait has a face: **10.35 million** women running businesses, in territories radically different from one another.

TABLE 1 **COMPOSITION OF THE UNIVERSE BY SIZE, DEC 2024**

SIZE	ACTIVE BUSINESSES
MEI	9.8 million
ME and EPP (micro and small companies)	9.7 million
Total	19.5 million

Source: [1]; DataSebrae.

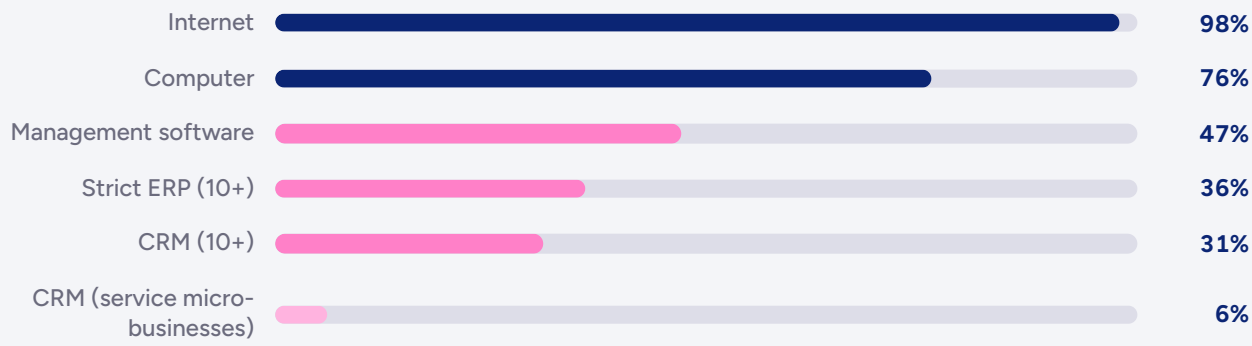
WHAT THIS MEANS FOR SEBRAE

Two halves call for two yardsticks. What works for the small company with payroll and a management system does not work for the MEI who serves customers on a mobile phone. This edition publishes the breakdown by size and by gender, which the series can support with a stated source, and a first reading by major sector, based on Sebrae Observatory sources, later in this chapter; the sector and territorial breakdown on our own base, needed to dose policy according to each region's readiness, as Chapter 2 proposes, enters the 2027 edition, with the re-clustering of the ALI base.

Incomplete digitalization

Before asking whether small businesses use AI, we need to ask whether they have completed the digitalization that precedes it. Basic infrastructure is practically solved: **98%** use the internet, **76%** use a computer (the MEI grew the most: from **55%** to **62%**) and the Digital Maturity Index rose **6%**, to 37 points out of 80 [2]. The management layer, however, is still halfway there, with a steep step by size: management software in **47%** of the broad universe (**78%** in small companies), CRM in **31%** of companies with ten or more people [3], and in **6%** of service micro-businesses.

CHART 1 · THE SMALL BUSINESS'S DIGITAL STAIRCASE



Source: [2]; [3]. Universes stated per row; different universes are not comparable.

The pattern is confirmed: small businesses digitalized the relationship (more than **80%** have WhatsApp as their main channel), because the customer demanded it; management, where AI has the most to offer, came later, when it came at all. And the entrepreneur's priority is marketing and sales: the first item of digital investment (**37.8%**), with increased sales as the most expected result (**54.2%**).

WHAT THIS MEANS FOR SEBRAE

The contrast between the first and last rows of the staircase is the finding: contact is universal, intelligence about it almost absent. For us, this defines where AI needs to enter: in the channel that already exists, WhatsApp, and in the layer that is missing, management. Requiring the adoption of yet another platform is asking small businesses for the step they have not climbed in ten years.

What we know about AI use

2025 was the year the country measured AI use in small businesses three times, with different universes, and the portrait is surprising: **44%** to **46%** already use some AI [4]; on Cetic's conservative yardstick (10+), use jumped from **13%** to **17%** in a year [3]. A second look dismantles the triumphalism.

TABLE 2 AI USE IN SMALL BUSINESSES, DEC 2025

INDICATOR	MEI	MSES	MEDIUM AND LARGE
Use some AI	42%	46%	63%
Frequent use	15–18%	15–18%	35%
Dominant purpose	Marketing (74%)	Marketing (59%)	Analyzing data (67%)
Main barrier	Not knowing how to apply it (23%)	None (30%)	–
Concern about security	10–12%	10–12%	35%

Source: [4].

Purpose reveals the gulf: medium and large companies use AI to analyze data; the MEI, for marketing and generating ideas (**41%**). The barrier has changed its face: the MEI points to "not knowing how to apply it"; **30%** of MSEs say they have no difficulty at all; cybersecurity worries only **10%** to **12%**. Meanwhile, the pain points remain the same: pricing, cash flow and sales, problems of decision, not of automation. As the survey itself sums up: adoption is no longer the problem; depth of use has become the problem.

WHAT THIS MEANS FOR SEBRAE

From the post to the price, from the caption to the cash flow: what is missing is applied training, and that is our mandate. The tool has arrived; it has not yet arrived where it hurts. This changes the yardstick for the whole portfolio: the measure of success becomes coverage of the pain points, and not the size of the offering. "Preço na medida" (Conclusion) is the first response designed on this diagnosis.

Digital security at risk

The same fall in cost that puts frontier AI within the budget of a microenterprise (Chapter 1) has also equipped crime: voice cloning to impersonate a supplier or family member, fake payment slips and payment pages generated in seconds, fake customer service profiles on WhatsApp, precisely the channel through which more than **80%** of service small businesses serve their customers. There were **6.4 million** fraud attempts in the country in the **1st** half of 2025 alone, one every 2.4 seconds, up **21.7%** on the same period of 2024, with potential losses estimated at **R$ 39.8 billion** [5]. The estimate is modeled, not an incident count; methodology and limitations are in the evidence notebook.

The contrast with perception is the point: only **10%** to **12%** of MSEs are concerned about digital security, against **35%** of large companies. Lack of concern is not security.

WHAT THIS MEANS FOR SEBRAE

The small business is a double target: a direct victim of the scam made cheaper by AI and a custodian of customer data that the LGPD requires it to protect. Teaching people to use AI without teaching them to defend themselves from it is inclusion by half. The institutional response enters the Conclusion through the Uncertainty Mitigation pillar.

The major sectors: AI risks and opportunities in production chains

The numbers in this chapter describe small businesses as a whole. To guide our work in AI, we also need to look at the production chains in which they operate: the assistant that organizes a salon's schedule does not solve a store's restocking or a crop's management. This section makes that reading for the four major sectors tracked by the Sebrae Observatory, Agriculture, Commerce, Industry and Services [6], based on the sector profiles and on the maps and tactical plans that guide our work in each of them [7] to [10]. For each sector, we present an overview, the three main risks and the three main opportunities of AI in its chains and what this means for us. The scores cited come from consultations with players in each sector and indicate perception, without measuring adoption; the selection of risks and opportunities is our reading of these sources.

TABLE 3 THE MAJOR SECTORS IN NUMBERS, 2025

MAJOR SECTOR	EMPLOYEES IN MSES	AVERAGE PAY	CLIENTS SERVED (3 YEARS)	REAL REVENUE OF MEASURED CLIENTS
Agriculture	1,131,518	R$ 2,450	50,335	+30.8%
Commerce	7,165,585	R$ 2,420	2,620,525	+9.9%
Industry	5,215,063	R$ 2,714	1,218,397	+13.4%
Services	9,300,596	R$ 2,755	3,367,642	+11.8%

Source: [6]. Employees and pay according to the Observatory's sector profiles; clients served in the last three years; revenue above inflation among measured clients.

The four sectors differ in scale and in results. Services concentrates the largest number of employees in micro and small companies and of clients served by us; Commerce and Industry come next; Agriculture has the smallest formal base, but the largest real revenue gain among measured clients. The difference in scale calls for different dosing of our work, and the difference in chain calls for different solutions.

Agriculture

The Agriculture major sector organizes chains that run from input to consumption, and agribusiness as a whole generated, in 2024, a GDP of about **R$ 2.7 trillion**, **23.2%** of the country's economy [7]. Small businesses form the base of this structure: of the **320,500** formal farming establishments, **90.4%** are microenterprises and **8.2%** small companies, and the National Family Farming Register has **3.2 million** active registrations, **64.0%** in the Northeast [7]. Micro and small companies in the sector employed 1,131,518 people in 2025, with a net gain of 15,544 jobs. We served 50,335 establishments in the sector over the last three years; among 2,608 measured clients, real revenue grew **30.8%**, with stable productivity [6].

Beef cattle (**32.2%**), soybeans (**11.8%**), dairy cattle (**11.1%**) and coffee (**5.2%**) concentrate the agribusiness establishments [7]. Competitiveness challenges include land and environmental regularization, credit, management, technical assistance, market access and technology [6]. Digitalization remains limited: the sector consultation points to low technological integration among small producers, due to cost, lack of training and poor connectivity, and gives artificial intelligence a maturity of 2.5 out of 5 in the sector [7].

TABLE 4 AGRICULTURE: AI RISKS AND OPPORTUNITIES IN THE CHAINS

RISKS	OPPORTUNITIES
A widening technology gap. Without connectivity and skills, AI reinforces the advantage of those who already have scale.	**AI-extended technical assistance.** Guidance on crop management, pests, soil and climate where rural extension does not reach.

RISKS	OPPORTUNITIES
Automated recommendations without technical assistance. App-based guidance without local validation can be wrong and push the extension agent aside.	**Management and decisions on the farm.** Costs, margin, price and taxes calculated with AI support.
Data and trust without protection. Platforms without data governance expose producers to losses and scams.	**Traceability and digital sales.** Simple records of origin and quality open demanding markets and reduce middlemen.

Source: [6]; [7]. Selection and reading are ours, based on the sources.

A widening technology gap. The Sector Map consultation rates the low technological integration of small producers, linked to costs, lack of professionals and poor connectivity, at 4 out of 5 in relevance, and the rural workforce skills deficit at 4.5. The adverse scenario for 2035 foresees a wider technology gap between large groups and family farming [7]. Without targeted action, AI tends to advance first in export-oriented and larger-scale chains.

Automated recommendations without technical assistance. The weakness of technical assistance and rural extension scores 4.5 in relevance and 4.5 in impact, which makes it tempting to replace the technician with an app. The sector report positions automated solutions as a complement to human work, in hybrid models [7]. In our reading, crop management recommendations without validation for local soil, climate and crops can cause losses and discredit the technology.

Data and trust without protection. Agricultural data governance has low maturity in the sector, 2.5 out of 5, and the difficulty of using digital platforms reduces producers' trust in these tools; the report calls for training in the safe use of platforms [7]. We link this point to this chapter: the producer who starts buying inputs and selling online enters the same scam environment that affects other small businesses.

AI-extended technical assistance. Automated technical assistance with AI, accessible through mobile apps, scores 4 in relevance and 3.5 in feasibility and is a priority front of the Map. The planned actions include simple, personalized, low-cost and free apps, and models that combine in-person service, remote follow-up and AI automation [7]. The sector tends to accept AI better when it arrives through the technician and the cooperative it already trusts.

Management and decisions on the farm. The report points to the lack of economic management, cost and profitability tools among small producers and calls for guidance on pricing, margin calculation and feasibility analysis; the use of AI to simulate tax benefits, automate calculations and guide compliance scores 4 in relevance [7]. Among our measured clients, real revenue rose **30.8%** with no productivity gain [6], which suggests room for efficiency decisions.

Traceability and digital sales. Platforms for buying inputs and selling produce with technical support score 4.5 in relevance and 4 in feasibility, and affordable certification with digital traceability scores 4. In the adverse

scenario, the lack of traceability results in trade barriers [7]. Buyers and foreign markets tend to require more proof of origin, and AI can make it cheaper for small producers to record this data.

WHAT THIS MEANS FOR SEBRAE

The Sector Map assigns us the role of coordinator and trainer, with instruments we already operate or support: ALI Rural, Empretec Rural, Sebraetec, Juntos pelo Agro and the complement to Senar's ATeG [7]. Our work with AI in the field follows the priorities of this chapter. In application, practical learning paths on each producer's crop and farm. In decision, cost, margin, price and tax ahead of promotional content. In the channel that already exists, guidance by mobile phone and WhatsApp, linked to the technician and the cooperative, without requiring a new platform. In protection, safe use of platforms and care with data and scams in every training.

Commerce

Commerce has the second-largest number of employees in micro and small companies among the four major sectors: 7,165,585 in 2025, up **0.62%**, with average nominal pay of **R$ 2,420** and a net gain of 230,013 jobs, below the 300,905 of the previous year [6]. Across all company sizes, there were **1.5 million** establishments and **10.6 million** formal jobs in 2024, **23.0%** of the country's formal employment [8]. We served 2,620,525 establishments in the sector in three years; among 14,204 measured clients, productivity grew **27.0%** and real revenue **9.9%** [6].

The Sector Map prioritizes four segments: food and beverages, home and construction, beauty and well-being, and fashion [8]. Competitiveness challenges concentrate on people and technology: managers who struggle to interpret data, teams poorly prepared for digitalization, weak integration of technology in physical stores, digital payments, cybersecurity, data governance and tax reform [6] [8]. Micro and small companies in Commerce lead the 2024 digital maturity ranking among the sectors, with 36 points out of 80, still below half of the scale [8].

TABLE 5 COMMERCE: AI RISKS AND OPPORTUNITIES IN THE CHAINS

RISKS	OPPORTUNITIES
Automated scams in payments. AI makes fraud cheaper in retail's newly digitalized channels and payment methods.	**Demand-driven inventory.** Demand forecasting and data-driven restocking reduce losses and idle capital.
Automated decisions on fragile data. Poor-quality customer data and isolated systems generate wrong recommendations and LGPD exposure.	**Integrated service in the existing channel.** Assistants bring together catalog, inventory, orders and conversation in the channels customers already use.
Tool ahead of the team. Low skills and cultural resistance leave AI underused in the store.	**Pricing and tax routines in the reform.** AI supports price recalculation and tax routines during the tax transition.

Source: [6]; [8]. Selection and reading are ours, based on the sources.

Automated scams in payments. The Sector Map points to the growing need for cybersecurity investment in the face of rising digital fraud and notes that intensive digitalization requires a security culture that many businesses cannot sustain; the expansion of digital payments brings a similar warning [8]. Because it concentrates transactions and customer contact, retail tends to be among the first targets of the scam made cheaper by AI and to react only after the loss.

Automated decisions on fragile data. According to the Map, massive data collection does not turn into intelligence without quality, integration and security standards, and isolated systems prevent a unified view of the customer and of demand; AI-based solutions increase regulatory and data-processing risks [8]. The sector tends to use the AI built into platforms before organizing its own data, which reproduces errors at scale.

Tool ahead of the team. The sector profile records skills gaps that make it difficult to use sales and automation systems, and managers who struggle to interpret data [6]. The Map adds cultural resistance, low uptake of the technologies deployed and in-store digital resources adopted in a way that is disconnected from the human experience [8]. The tendency is to buy the tool without changing the routine, and AI stays far from purchasing, pricing and inventory decisions.

Demand-driven inventory. Among the 87 trends incorporated into the Tactical Plan, the Map highlights generative AI in the supply chain for demand forecasting, inventory management and logistics routing [8]. For small food, fashion and home and construction retailers, this is the application closest to the cash register: buying better and restocking at the right time. Adoption tends to arrive through the management systems and suppliers the business already uses.

Integrated service in the existing channel. The Map describes fragmented journeys when physical and digital channels do not share data, assortment and language, and points to the trends of social commerce and cross-channel integration; the Tactical Plan provides for connecting companies to digital platforms and logistics operators, tracking conversion and after-sales [8]. AI can bring catalog, inventory and conversation together in a single flow, and the sector tends to advance first through customer service, where customers already demand quick answers.

Pricing and tax routines in the reform. According to the Map, the transition to the dual VAT requires deep revisions in pricing, systems and supply chain, and the associated opportunity is routines with accounting support and low-cost digital tools; the Tactical Plan provides for supporting simple, digital tax routines [8]. Assistants that simulate price and margin bring AI to decision-making, and the accountant tends to be the entry point.

WHAT THIS MEANS FOR SEBRAE

The Tactical Plan already maps the way: it proposes spreading the use of AI, management systems and automation, measured by the number of companies using at least two key tools, and provides for training in digital security and connection to anti-fraud solutions [8]. It falls to us to guide these fronts by the priorities of this chapter: learning paths applied to retail's own cases, such as purchasing, restocking and pricing; solutions that operate on WhatsApp, in the systems the shopkeeper already uses and on sales platforms; and protection against payment scams built into every training. Progress should be measured by improvement in decision-making, with the digital maturity diagnosis provided for in the plan.

Industry

The Industry major sector brings together the extractive and manufacturing industries, industrial public utility services and construction. In 2022, it generated **R$ 2.5 trillion** in gross value added, at 2024 prices, **26.3%** of the national total [9]. Micro and small companies in the sector employed 5,215,063 people in 2025, the third-largest number among the four major sectors, and average pay in the sector was **R$ 2,714**. Over the last three years, we served 1,218,397 industrial establishments and, in the 2025 measurement with 5,234 clients, productivity grew **29.8%** and revenue **13.4%** above inflation [6].

Critical competitiveness factors for small businesses include the business environment, human capital, technological capacity, infrastructure, low carbon and international integration [6]. Our joint portfolio with the Industry System has initiatives for fashion, home and construction, mining and bio-cosmetics. Digital transformation is still weakly consolidated in most industries, especially among micro and small companies, and AI-related trends receive maturity scores between 2 and 3, out of 5. Even so, digital transformation was the best-rated industrial policy mission in the Juntos pela Indústria program [9].

TABLE 6 **INDUSTRY: AI RISKS AND OPPORTUNITIES IN THE CHAINS**

RISKS	OPPORTUNITIES
Gains concentrated in the largest. AI tends to widen the productivity gap between company sizes and regions.	**Data-driven production decisions.** AI applied to cost, inventory and production improves the small manufacturer's decisions.
Exposure to digital attacks. A more connected, poorly protected factory becomes a target for fraud and shutdown.	**Affordable, gradual automation.** Low-cost solutions, adopted in stages, raise productivity without a large initial investment.
Exclusion from demanding chains. Buyers that require data and tracking may pass over suppliers without digital records.	**Linkage with anchor buyers.** Demand forecasting and shared data bring small manufacturers closer to large chains.

Source: [6]; [9]. Selection and reading are ours, based on the sources.

Gains concentrated in the largest. The Sector Map rates incipient digitalization in industries at 4 in relevance and 4 in impact, and low skills in new technologies at 4.5 and 4. AI adoption appears as an uncertainty especially in less developed states, and digital infrastructure is deficient outside the large centers [9]. In our reading, without targeted support AI reaches the larger and more central companies first and widens the existing gap.

Exposure to digital attacks. Low adoption of cybersecurity exposes micro and small manufacturers to incidents that compromise their continuity and competitiveness, and the trends of cyber-resilience and AI use in cybersecurity have maturity between 2 and 2.5, out of 5 [9]. Added to the scam made cheaper by AI described in this chapter, the picture indicates that small manufacturers tend to connect machines and systems before knowing how to protect them.

Exclusion from demanding chains. Low supply chain sustainability scores 4.5 in relevance, and the digital product passport, which brings together technical and compliance data, has a maturity of 2 in the sector. In the adverse scenario for 2035, it becomes harder to meet the sustainability and traceability requirements of international markets [9]. We expect large buyers to start requiring origin and process data, and those who do not record it tend to lose ground.

Data-driven production decisions. The digitalization of process management and the expansion of advanced digitalization solutions are among the best-rated opportunities, both with relevance 4.5 and feasibility 4, because they improve data-driven decision-making [9]. This converges with the decision pain point identified in this chapter: AI tends to generate more value in small manufacturing when it helps calculate costs, organize inventory and plan production.

Affordable, gradual automation. The affordable automation trend describes a modernization that advances in layers, and predictive maintenance has a maturity of 3.5 for the sector, above the AI trends; the Map recommends bringing micro and small companies closer to cheaper, gradually adoptable technological solutions [9]. We expect adoption in stages, starting with simple monitoring of critical machines and energy consumption.

Linkage with anchor buyers. The use of data and automation to create value chains capable of anticipating demand scores 4.5 in relevance, and AI in the supply chain, to forecast demand, has a maturity of 2.5. Juntos pela Indústria seeks to enable small companies to join supply chains and cites Productive Linkage (Encadeamento Produtivo) and ALI as references [9]. AI tends to reach the small supplier through the anchor company.

WHAT THIS MEANS FOR SEBRAE

In industry, our role is to turn technology into decisions in the factory's routine. The Map calls for technology programs that work in a practical way in the day-to-day of small companies, and the Juntos pela Indústria interviews propose moving from generic consulting to higher-impact tools [9]. This aligns with the priorities of this chapter: apply AI to cost, inventory and production; guide through WhatsApp, the channel that already exists; and include protection against fraud and attacks in every learning path. Brasil Mais Produtivo, one of the 30 initiatives prioritized in the program, ALI and Productive Linkage are entry points, in coordination with Senai's Industrial AI program.

Services

Services is the first of the four major sectors in gross value added and in employment in micro and small companies: 9,300,596 employees in 2025, up **2.51%**, with average pay of **R$ 2,755**. The net gain of 540,663 jobs in 2025 also leads among the sectors, although below the 592,445 of the previous year. It is also the sector with the most clients of ours: 3,367,642 establishments served over the last three years; among 11,593 measured clients, productivity rose **25.5%** and revenue **11.8%** above inflation [6]. The sector ranges from food service to technology, from tourism to health and the liberal professions, with niches expanding in well-being and in consumption by older people [10].

The National Services Strategy describes a diffuse sector, with strong economic weight and low average productivity. About **70%** of entrepreneurs solve challenges on their own and only **40%** have formal planning. Digitalization is uneven and dependence on platforms is growing: WhatsApp is used by more than **80%** of companies and is the most important channel for **66%**, while customer relationship and automation systems appear in fewer than **10%** [10].

TABLE 7 SERVICES: AI RISKS AND OPPORTUNITIES IN THE CHAINS

RISKS	OPPORTUNITIES
Intermediation that erodes margins. AI platforms and assistants place themselves between business and customer, reducing margins.	**Management inside WhatsApp.** Schedule, customers and cash organized by an assistant in the channel the business already uses.
Gains concentrated in the structured. Those who already have processes capture AI first, and the unstructured business falls behind.	**Data-driven pricing and operations.** Day-to-day records become prices, staff scheduling and simple indicators.
Automated service without trust. Poorly calibrated bots and WhatsApp scams threaten human service, the sector's differentiator.	**Listening, processes and a prepared team.** Organized customer feedback, documented processes and quick training for high-turnover teams.

Source: [6]; [10]. Selection and reading are ours, based on the sources.

Intermediation that erodes margins. The National Services Strategy points to dependence on digital intermediaries and loss of margin as a threat, and platform dependence as a weakness [10]. AI tends to reinforce this movement, as search engines and apps start recommending and hiring the service on the customer's behalf. Without its own data on its clientele, the small business is exposed to price-based competition.

Gains concentrated in the structured. The strategy foresees that uneven digitalization will widen the gap between structured businesses and improvised ones, concentrating gains, and advises against passing on complex technologies without adaptation [10]. AI yields more where there is process and record-keeping, precisely what the entrepreneur who solves everything alone, without a support structure, lacks. Without adaptation, the sector tends to widen the gap between these two profiles.

Automated service without trust. The human relationship is the sector's first strength, described by the strategy as the DNA of Brazilian services, and fast, human service is the objective in which the sector is already most advanced [10]. The pressure for quick answers tends to generate generic automatic responses, which wear down this differentiator in the face of a volatile customer. The same channel is a target for scams, a topic the sector strategy does not yet address.

Management inside WhatsApp. Digital relationship management is among the objectives the strategy identifies as least developed: WhatsApp is universal, but fewer than **10%** have a customer relationship or automation system. A tool that integrates customer relationships and financial control through WhatsApp is among the best-rated solutions in co-creation with entrepreneurs [10]. An assistant in this channel can record customers, confirm appointments and note payments received, relieving those who handle everything alone.

Data-driven pricing and operations. Price setting, operations sizing and the use of data for decisions are also among the least developed objectives. Pricing is a recurring difficulty, with little command of methods, and customer feedback rarely becomes an indicator [10]. AI can convert schedule, sales and seasonality into suggestions for prices and staff scheduling, taking AI use from marketing to decision-making.

Listening, processes and a prepared team. Almost half of companies always listen to the customer, but informally; about **60%** have organized processes, without standardization; and retaining and training the team is entrepreneurs' biggest pain point [10]. AI can summarize customer opinions, draft simple procedures from the owner's routine and generate short training sessions, supporting the process documentation provided for in the strategy.

WHAT THIS MEANS FOR SEBRAE

Our strategy for the sector already provides for encouraging the use of technologies and AI for productivity gains and curating, translating and spreading AI applied to services [10]. We can help on four fronts, aligned with the priorities of this chapter. In application, bringing AI to the short learning paths and pricing workshops of the journey for less structured businesses. In decision, prioritizing price, operations sizing and data. In the channel that already exists, prototyping the relationship and financial management tool on WhatsApp, with autonomy and sovereignty over the business's data. In protection, including anti-fraud verification in every solution, a topic the sector strategy does not yet address.

How the landscape shapes Sebrae's work

The portrait of the small business defines four priorities, which apply to all the major sectors and change the way we measure our portfolio: the measure of success becomes coverage of the entrepreneur's pain points.

Application before access. Between **42%** and **46%** of small businesses already use some AI, but frequent use stays between **15%** and **18%**, and the barrier the MEI cites most is not knowing how to apply it. Offering more tools or conceptual courses does not close this gap. Our learning paths now start from the business's own use

cases, and the indicator we track is the funnel between use and frequent use, remeasured in 2027.

Decision before creation. The MEI uses AI mostly for marketing (**74%**), while medium and large companies use it to analyze data (**67%**). The small business's pain points are pricing, cash flow and sales. The shift from marketing to decision-making becomes the yardstick for the whole portfolio, and "Preço na medida" is the first solution designed on this diagnosis.

The channel that already exists. More than **80%** serve customers through WhatsApp, and CRM reaches **6%** of service micro-businesses. Small businesses digitalized customer contact and left management for later. AI needs to operate in this channel and reach management from it; requiring a new platform is asking for the step they have not climbed in ten years.

Protecting those who are not yet concerned. There were **6.4 million** fraud attempts in the first half of 2025, up **21.7%**, and only **10%** to **12%** of MSEs are concerned about digital security. The small business is a victim of the scam and also responsible for the customer data that the LGPD requires it to protect. Guidance against scams and a simple verification tool accompany every training and every solution.

Reading by major sector. The four priorities take different forms in each chain: technical assistance and farm management in the field, restocking and pricing in commerce, cost and production in industry, scheduling and pricing in services. Scale also differs, from **1.1 million** employees in micro and small companies in Agriculture to **9.3 million** in Services. The sector maps and tactical plans are the starting point for designing learning paths and solutions by sector, and the choice of the first sector is an open decision.

Two design yardsticks. The universe divides into **9.8 million** MEIs and **9.7 million** micro and small companies, and what works for the company with payroll and a management system does not serve the MEI who serves customers on a mobile phone. And **10.35 million** businesses are led by women, which makes the gender gap in adoption a design variable for every program.

No landscape distributes the value of AI to this audience by inertia. Distributing it is a project, and it is ours. The Conclusion shows what we have already decided in order to carry it out.

Possible decisions

The possible decisions derive from the answer above, each linked to a pillar of the AI Strategy and with its status stated.

TABLE 8 **POSSIBLE DECISIONS DERIVED FROM THIS LANDSCAPE**

DECISION	PILLAR	STATUS
Build practical application learning paths on the business's own use cases, not on concepts, to close the shallow-use funnel	Digital Inclusion	In progress

DECISION	PILLAR	STATUS
Make the shift from marketing to decision (price, cash, sales) the yardstick for the whole portfolio, starting with "Preço na medida"	Digital Inclusion · Solutions for small businesses	In progress
Design solutions that operate on WhatsApp, the channel that already exists, instead of requiring the adoption of a new platform	Solutions for small businesses	Open
Launch a campaign and a simple anti-fraud verification tool, built into existing training	Uncertainty Mitigation	Open
Re-cluster the ALI base to publish the sector and territorial breakdown in the 2027 edition	Uncertainty Mitigation	Made
Design applied AI learning paths and solutions by major sector, based on the sector maps and tactical plans, starting with the decision uses of each chain: technical assistance in the field, restocking and pricing in commerce, cost and production in industry, scheduling and pricing in services	Digital Inclusion · Solutions for small businesses	Open

Source: our own elaboration. How we will know: the use → frequent use funnel, remeasured in the 2027 primary survey; the report on the "Preço na medida" pilot against the 40.8% benchmark; adoption of solutions by channel, reported in the 2027 edition; the security concern indicator, remeasured year by year.

What have we already decided in light of this portrait, and what is still open? That is the question of the Conclusion.

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CONCLUSION | THE ANSWER TO THE CENTRAL QUESTION

THE ANSWER

The answer to the central *question*

What the acceleration of AI requires of us, pillar by pillar of the Strategy

Uncertainty Mitigation | Digital Inclusion | AI Solutions for Small Businesses | Internal Solutions

4	12	2027
pillars of the AI Strategy organize the answer	open decisions, each with an owner and a date to be set	year in which this edition's commitments will be verified

> ***What does the acceleration of artificial intelligence concretely require of those who support 20 million Brazilian small businesses?***

The four chapters told a single story on a decreasing scale: a world in which capability runs ahead of governance, a bloc that offers method and channel, a country with talent, a plan and dependencies, and a small business that has reached the tool but has not yet taken it into the decisions that define its results. The central question calls for a concrete answer, and our concrete answer is the AI Strategy [1]. That is why we answer pillar by pillar.

In each pillar, the answer has four parts: what the acceleration requires of us, what we have already answered, what remains to be decided and how we will verify it in 2027. No result figure is presented before it exists. This edition does not include results from the AI Hub, "Preço na medida" or the Opportunities Map, because they do not yet exist. What we deliver is the verifiable commitment.

Uncertainty Mitigation

What the acceleration requires. Absorbing the uncertainty that small businesses cannot absorb. Governance and evaluation are chasing capability all over the world (Chapter 1). In the country, the rule already partly exists and is changing fast: the ANPD oversees AI through the LGPD, the ECA Digital has been in force since March 2026 and the Legal Framework is still moving through Congress, while the PBIA executes a plan with no pillar of its own for small businesses and a sovereign AI agenda that does not yet name them as recipients (Chapter 3). Outside the country, BRICS offers a development bank and technical tracks, and China is accelerating trends that were not yet on our radar, such as physical AI (Chapter 2). Large companies spread the cost of not knowing across legal and consulting teams. Small businesses have no one to pass the question to and, without support, decide without information. This role is ours.

What we have already answered. This study, the pillar's annual observatory, with a historical series and open data. The AI Management and Governance Policy v1.0 [2], approved in June 2026, which formalizes the risk categories mapped in the 2025 edition (art. 22), with a Strategic Committee, mandatory training and customer rights: transparency, a human alternative, the right to contest and plain language. Participation in the PBIA's official working group, the furthest-reaching front, where we advocate the democratization of AI use as an explicit objective of national policy and the inclusion of small businesses in the sovereign AI agenda. The seven proposals for the AI Legal Framework, formulated in this edition (Chapter 3), so that the law preserves small businesses and expands digital and AI small businesses. And the trend radar provided for in the Strategy, which now follows physical AI, the national Portuguese-language models, the Nuvem Brasileira and BRICS instruments such as the New Development Bank.

What remains to be decided. The Policy's review trigger upon approval of Bill 2,338 or a new ANPD rule. The agenda and representation in the PBIA working group and the presentation of the seven proposals to the

Chamber's Special Committee. The inclusion of the ECA Digital in the compliance guide by company size, before general enforcement begins in January 2027. The owner and cadence of the 2027 radar. And who follows, with the government, the BRICS instruments applicable to AI diffusion.

HOW WE WILL VERIFY

Participation in policy forums and contributions taken to the PBIA working group; small businesses' regulatory awareness, in a primary survey to be conducted; Brazil's position in international indicators; implementation of the Policy across the System. The result we seek is small businesses deciding with less uncertainty.

Digital Inclusion

What the acceleration requires. Literacy, because the access barrier has already fallen. Use happens with or without institutions: in Brazil, generative AI use among university students jumped from **52%** (2023) to **84%** (2025) [3]. In the previous era, inclusion meant connecting. In the AI era, inclusion means teaching people to ask, evaluate and trust in the right measure. A generic course does not solve a specific pain point: training needs to adapt to the learner's business and to the chain in which it operates, from crop management in the field to restocking in commerce (Chapter 4). And it needs to train people to work with AI by checking what it produces, because excessive dependence erodes skills (Chapter 1).

What we have already answered. Learning paths and courses at scale (IA na Prática, Imersão Empreendedora, Órbita). Negócio em dIA (Jun 2026), a free national program with Google, Itaú and Tera, on four fronts. And the structuring bet, "Preço na medida" [4], adaptive learning on the most recurrent pain point in the ALI base, pricing. The design responds to the measured problem: the NPS of 85.5, collected only among those who completed the course, carries survivorship bias and does not see the roughly **59%** who dropped out, and **71.3%** of users ask for more interaction and practical examples [5].

TABLE 1 "PREÇO NA MEDIDA": THE MEASURED PROBLEM AND THE INSTRUMENTED PILOT

DIMENSION	DESIGN
Baseline	Completion of chatbot courses: 53.4% (2024) → 40.8% (2025); 188,400 enrollments; NPS 85.5 among those who completed
Audience	MEIs and MEs under the Simples regime, no prerequisites
Diagnosis	3 maturity profiles × tax profile
Learning path	"Taxation in practice" always in the 2nd module
Activities	On the participant's own business, corrected by AI
Hypotheses	H1 recommendation · H2 correction and feedback

DIMENSION	DESIGN
Measurement	5 layers · baseline → 2027 edition

Source: [5]; [4].

What remains to be decided. The scaling criterion for "Preço na medida": what result, against the **40.8%** completion benchmark, authorizes leaving the pilot stage. The reach target for Negócio em dIA. And the first major sector to receive applied AI learning paths, based on the sector map and tactical plan (Chapter 4).

HOW WE WILL VERIFY

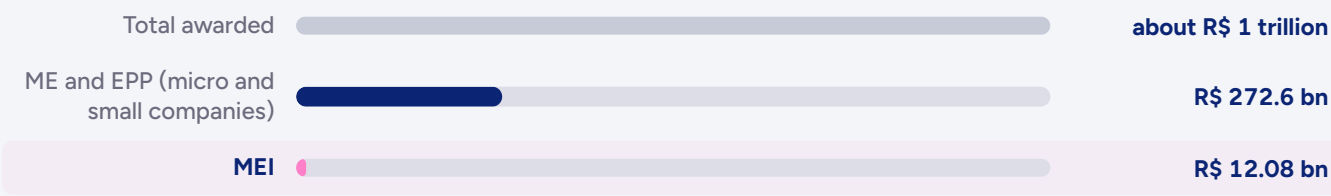
Training funnel (enrolled, completed and percentage who apply it in the business), with a territorial breakdown to answer whether training reaches those who need it most; report on the pilot against the baseline. The result we seek is the business owner leaving the conversation with a better decision.

AI Solutions for Small Businesses

What the acceleration requires. Taking AI into the small business's decision-making. Existing and being cheap at the source is not enough. It needs to arrive in an experience designed for the entrepreneur (guided mode, plain language, voice as the final frontier), at a cost that fits the budget (the MSE AI cost basket, measured in R$/month) and within the journey that already exists, without the friction that makes people give up before they start. Chapter 4 shows where: the customer relationship has been digitalized, management has not, and each major sector has its own decision uses. The rule is to start with the pain point and measure whether it has decreased.

What we have already answered. Agents in pilot: Empreendedor (business plan), Consultor (portfolio in customer service) and Conecta (partners), which test the hypothesis that specialized guidance can scale. The Public Procurement Opportunities Map, with a data engine built on the PNCP (National Public Procurement Portal) [6]. And Scale AI, startup acceleration: of the **22,900** startups mapped, **51.8%** already use AI, but only about 975 in the country have it as the core of their business.

CHART 1 · PUBLIC PROCUREMENT 2025: WHO CAPTURES WHAT



Source: [6]. The MEI row is the target of the Opportunities Map.

What remains to be decided. The first cut of the Public Procurement Map (sector, territory or company size), with the justification published alongside the product. A single scaling rule for pilots (adoption, perceived value, cost and governance), published before each pilot starts. And the first major sector to receive applied AI solutions, based on the opportunities mapped in Chapter 4.

HOW WE WILL VERIFY

Adoption and perceived results, cost of access, startups accelerated and the summary indicator, the pain point → solution index: the matrix that crosses the ALI base clusters with the portfolio and makes explicit where there is a mature answer, where there is a pilot and where there is an acknowledged gap. We measure success by coverage of pain points.

Internal Solutions

What the acceleration requires. Demonstrating at home the governance we recommend. The gap between recognizing a risk and acting on it, aggravated by Dark AI, the unmanaged behaviors of AI systems (Chapter 1), only closes when mitigation no longer depends on each area remembering to apply it. It also calls for vendor independence and attention to open weights (Chapter 2) and consistency with the green AI and sovereign AI agendas (Chapter 3). It is in this pillar that the Strategy becomes infrastructure and the AI Policy becomes code.

What we have already answered. The AI Hub [7], in beta, solves the three problems of any organization in which AI spreads: dispersion, invisible risk and invisible cost. In it, governance comes by default: privacy classification and lineage on all data, automatic masking of sensitive fields, human review points, separate cost tracking (tokens × compute), an environmental footprint with a rule against greenwashing and testable honesty, in which an unmeasured metric appears as "—", never as an invented number.

TABLE 2 AI HUB: BETA VERSION

DIMENSION	STATUS
Presentation	Jul 14 and 15, 2026
Testing program	≈100 invited users
Reach	28 organizations in the System
Sovereignty	São Paulo region · mandatory data residency
Predecessor	LIS (Sep 2024), 9 AI microservices

DIMENSION	STATUS
Technical base	Python/FastAPI API, React/TypeScript, PostgreSQL, Airflow; infrastructure as code

Source: [7]. Until the beta presentation, the Hub had been validated only in internal tests; there is no real usage data, and what is published is the concept and the measurement design (5 dimensions, 2026 baseline, report in 2027).

What remains to be decided. The conditions for opening the Hub to the System: what the beta needs to demonstrate in adoption, value, cost and governance. The model vendor independence criterion (switching without interruption) and when to evaluate the national Portuguese-language models and the Nuvem Brasileira as a hosting option. And the review of our solutions likely to be accessed by minors, in light of the ECA Digital.

HOW WE WILL VERIFY

Results of the Hub beta, the first dated commitment for the 2027 edition, across the five measurement dimensions and with a 2026 baseline; the Hub's environmental footprint; implementation of the Policy across the System. It is in this pillar that we apply to ourselves what we recommend to small businesses.

Open decisions

The responses under way cover the four priorities that the portrait of the small business requires: application, decision, the existing channel and protection. What remains open are management decisions. The table brings together the twelve decisions of the four pillars, and each one needs an owner and a date.

TABLE 3 OPEN DECISIONS, BY STRATEGY PILLAR

DECISION	PILLAR	STATUS
Define the review trigger for the AI Management and Governance Policy v1.0: approval of Bill 2,338 or a new ANPD rule	Uncertainty Mitigation	Open
Declare the scaling criterion for "Preço na medida" (what result, against 40.8%, authorizes leaving the pilot stage) and the reach target for Negócio em dIA	Digital Inclusion	Open
Prioritize the first cut of the Public Procurement Map: sector, territory or company size, with the justification published alongside the product	Solutions for small businesses	Open
Declare the conditions for opening the AI Hub to the System: what the beta needs to demonstrate in adoption, value, cost and governance	Internal Solutions	Open
Publish a single scaling rule for pilots (adoption, perceived value, cost and governance), before each pilot starts	All four pillars	Open

DECISION	PILLAR	STATUS
Define the agenda and representation in the PBIA's official working group: a pillar and funding for small businesses and their inclusion in the sovereign AI agenda	Uncertainty Mitigation	In progress
Include physical AI, the national Portuguese-language models and the Nuvem Brasileira in the 2027 trend radar, with an owner and review cadence	Uncertainty Mitigation	Open
Designate who follows, with the government, the BRICS instruments (NDB and cooperation funds) applicable to AI diffusion	Uncertainty Mitigation	Open
Choose the first major sector for applied AI learning paths and solutions, based on the sector map and tactical plan	Digital Inclusion · Solutions for small businesses	Open
Set the model vendor independence criterion in the AI Hub (switching without interruption) and when to evaluate the national models	Internal Solutions	Open
Present the seven proposals for the AI Legal Framework to the Chamber's Special Committee, the PBIA working group and the ANPD	Uncertainty Mitigation	Open
Include the ECA Digital in the compliance guide by company size and review the System's solutions likely to be accessed by minors before January 2027	Uncertainty Mitigation · Internal Solutions	Open

Source: our own elaboration. How we will know: the results of the Hub beta, the first dated commitment for the 2027 edition; the agenda and contributions taken to the PBIA working group; the 2027 trend radar, including physical AI; the pilot report and the program's reach in the 2027 accountability report; the chosen cut and its justification, published alongside the product; the Policy review, if triggered, reported in the 2027 edition.

The answer in one sentence

In one sentence: the acceleration of AI requires of those who support Brazilian small businesses that technology stop arriving at the door and start entering decisions, with the speed of a historical series, measured cost, safety by default and dated accountability. The map below closes the loop: the landscape that demands, the pillar that responds, the indicator that verifies.

MAP **THE MAP OF ANSWERS**

LANDSCAPE	WHAT IT REQUIRES	PILLAR THAT RESPONDS	VERIFICATION IN 2027
1 · Global	Pace, cost yardstick and safety standard; build literacy and protect while trust is high	Uncertainty Mitigation · Digital Inclusion	Primary survey (use, trust, security)

LANDSCAPE	WHAT IT REQUIRES	PILLAR THAT RESPONDS	VERIFICATION IN 2027
2 · BRICS	Readiness method in pilots; open weights as a cost path; cooperation as a channel	Internal Solutions · all four pillars	MSE AI cost basket; declared scaling criteria
3 · Brazil	A small-business pillar of its own in the PBIA; translated compliance; green AI	Uncertainty Mitigation · Internal Solutions	PBIA accountability dashboard; the Hub's environmental footprint
4 · Small businesses	Application, decision, the existing channel and protection	Digital Inclusion · Solutions for small businesses	Pilot report against the 40.8% benchmark; use → frequent use funnel
Sebrae	An owner and a date for the open decisions; governance demonstrated at home	All four pillars	Hub beta results and series remeasurement

Source: our own elaboration.

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