



SemiCon-LAC

Executive Proceedings SemiCon-LAC 2026

Foreword

The global semiconductor industry is undergoing a profound transformation driven by artificial intelligence, advanced computing, digitalization, electrification, and the increasing need for resilient and diversified supply chains. In this context, Latin America and the Caribbean have a unique opportunity to strengthen their role in the global semiconductor ecosystem by leveraging their scientific capabilities, industrial potential, strategic resources, and growing pool of highly qualified professionals.

SEMICON LAC 2026 was conceived as a forum to foster dialogue among government representatives, industry leaders, researchers, entrepreneurs, and policymakers committed to advancing the semiconductor ecosystem throughout the region. Held in Porto Alegre, Brazil, the conference provided an important platform for exchanging experiences, discussing public policies, presenting international best practices, and identifying opportunities for regional cooperation.

The discussions held throughout the five thematic panels reflected the diversity of perspectives that characterize the semiconductor industry today. Topics ranged from industrial policy and global value chains to workforce development, technology transfer, advanced manufacturing, innovation ecosystems, and international collaboration. Despite the diversity of approaches, a common message emerged: sustainable growth in the semiconductor sector depends on long-term strategic vision, continuous investment in research and development, strong partnerships between academia and industry, and effective cooperation among nations.

This publication brings together the main contributions presented during the conference in a concise and structured format. Rather than serving as a verbatim record of the discussions, these panel reports synthesize the principal ideas, recommendations, and strategic insights shared by the speakers and moderators.

By making these discussions available to a broader international audience, this volume seeks to contribute to the ongoing dialogue on semiconductor development in Latin America and the Caribbean and to encourage new partnerships capable of strengthening the region's participation in global semiconductor value chains.

We hope that the discussions documented here will serve as a valuable reference for policymakers, researchers, industry leaders, and all those working to build a more innovative, resilient, and internationally connected semiconductor ecosystem throughout the region.



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About SEMICON LAC 2026

SEMICON LAC 2026 brought together representatives from government, industry, academia, research institutions, and innovation organizations to discuss the future of the semiconductor industry in Latin America and the Caribbean. Held in Porto Alegre, Brazil, the conference served as a platform for international dialogue on industrial development, technological innovation, workforce development, and regional cooperation.

The event featured experts from Brazil, Argentina, Chile, Costa Rica, Mexico, the United States, Europe, China, and South Korea, providing participants with a comprehensive overview of global trends, public policies, business strategies, research initiatives, and emerging technologies shaping the semiconductor sector.

The conference was structured around five thematic panels covering the principal dimensions of the semiconductor ecosystem:

- **Panel 1** examined the strategic challenges and opportunities facing the Latin American and Caribbean semiconductor value chain in an evolving geopolitical and technological landscape.
- **Panel 2** explored industrial policies and business strategies designed to strengthen semiconductor ecosystems across the region.
- **Panel 3** promoted dialogue between semiconductor suppliers and industrial end users, highlighting opportunities for greater integration throughout the value chain.
- **Panel 4** presented international case studies from leading semiconductor ecosystems, including South Korea, the United States, the European Union, and China.
- **Panel 5** focused on research, workforce development, technology transfer, and innovation as the foundations of a sustainable semiconductor ecosystem.

Throughout the conference, participants emphasized several common priorities, including long-term industrial policies, investment in research and development, talent development, international cooperation, technology transfer, and stronger integration into global semiconductor value chains.

This publication summarizes the main discussions and strategic insights presented during the event. Rather than reproducing individual presentations, it provides an executive overview of the principal ideas that emerged from each panel, offering readers a comprehensive perspective on the opportunities and



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challenges facing the semiconductor industry in Latin America and the Caribbean.

Panel 1 Report

The SemiCon-LAC Value Chain in the Face of Local and Global Challenges

Rapporteur: Lucas Tedesco

Moderator

Simone Stülpe – Professor and researcher at the Pontifical Catholic University of Rio Grande do Sul (PUCRS), with extensive experience in science, technology, innovation, and international cooperation in advanced technologies.

Panelists

Edmundo Gutiérrez Domínguez – Researcher at National Institute for Astrophysics, Optics and Electronics (INAOE) and one of the coordinators of Mexico's semiconductor development initiatives.

Henrique Miguel – Secretary for Science and Technological Development at the Ministry of Science, Technology and Innovation (MCTI), responsible for national policies supporting semiconductor development and innovation.

Ricardo Monge – Professor at LEAD University and economist specializing in industrial development, innovation, productivity, and global value chains.

Silvio Colombo – Professor at National University of Avellaneda (UNDAV), with expertise in industrial policy, engineering, and technological development.

Juan José Negroni Vera – Professor at Universidad Santo Tomás, specializing in innovation, higher education, and regional cooperation in science and technology.

Introduction

Panel 1 opened SEMICON LAC 2026 by examining the strategic challenges and opportunities facing the semiconductor industry in Latin America and the Caribbean. Bringing together representatives from Brazil, Argentina, Chile, Costa Rica, and Mexico, the discussion explored how the region can strengthen its



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position within global semiconductor value chains amid geopolitical shifts, technological transformation, and increasing demand for resilient supply networks.

Despite presenting different national perspectives, the panelists shared a common view: developing a competitive semiconductor ecosystem requires long-term public policies, sustained investment in research and innovation, highly qualified human capital, and closer cooperation among governments, academia, and industry.

Building Competitive National Ecosystems

Henrique Miguel, representing Brazil's Ministry of Science, Technology and Innovation (MCTI), emphasized that Brazil has developed important capabilities in semiconductor research, engineering, and workforce development over the past two decades. However, he noted that the country's large trade deficit in semiconductor products highlights the need for renewed industrial policies capable of expanding domestic production and strengthening links between semiconductor manufacturers and downstream industries.

He also argued that recent geopolitical developments and supply chain disruptions have reinforced the strategic importance of semiconductor sovereignty, creating new opportunities for Latin American countries to attract investment and develop specialized capabilities.

From Argentina, Silvio Colombo stressed that successful semiconductor industries are built through long-term State policies rather than short political cycles. He highlighted Argentina's experience in engineering, IC design, and scientific research, emphasizing that sustainable technological development depends on continuous investment in education, research institutions, and collaboration between universities, industry, and government.

Regional Integration as a Strategic Opportunity

Juan José Negroni Vera argued that no Latin American country can compete alone with the world's leading semiconductor hubs. Instead, he advocated for a coordinated regional strategy that leverages each country's comparative strengths while promoting greater academic mobility, technological cooperation, and knowledge exchange.

According to the Chilean perspective, Latin America possesses significant strategic assets—including renewable energy, critical minerals, scientific expertise, and growing engineering capacity—that could support a more competitive regional semiconductor ecosystem if combined through collaborative initiatives.



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Ricardo Monge presented Costa Rica as an example of successful integration into global high-technology value chains. He explained how sustained investment in education, openness to international markets, and the attraction of multinational companies transformed Costa Rica into one of the region's leading technology hubs.

The arrival of Intel in the 1990s was identified as a turning point that accelerated the country's transition toward a knowledge-based economy, attracting hundreds of additional technology companies and significantly increasing the sophistication of its export profile.

International Partnerships and Strategic Positioning

Although participating remotely, Edmundo Gutiérrez Domínguez introduced Mexico's Kutsari Initiative, launched to strengthen national capabilities in integrated circuit design, semiconductor manufacturing, and assembly, packaging, and testing (APT). The initiative reflects Mexico's strategy of leveraging its industrial base, skilled workforce, and proximity to the United States to expand its participation in global semiconductor supply chains.

Across all presentations, speakers emphasized that international cooperation will be essential for the region's future competitiveness. Rather than attempting to replicate existing global leaders, Latin American countries should identify strategic niches where they can develop internationally recognized expertise while building stronger regional partnerships.

Conclusions

Panel 1 established the strategic framework for the discussions that followed throughout SEMICON LAC 2026. While each country presented distinct experiences and priorities, the debate revealed broad consensus on several key issues.

The panel concluded that Latin America and the Caribbean possess many of the fundamental assets required to strengthen their participation in the global semiconductor industry, including qualified human capital, research institutions, industrial capabilities, and strategic natural resources. However, realizing this potential will require long-term industrial policies, sustained investment in innovation, stronger collaboration between academia and industry, and greater regional integration.

The discussions also highlighted that the ongoing reconfiguration of global semiconductor supply chains offers a unique opportunity for the region to expand its international role. Success, however, will depend on the ability of



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governments, research institutions, and private industry to work together in building competitive and resilient semiconductor ecosystems.

Subpanel – Strategic Objectives of SemiCon-LAC 2026 in the Regional and Global Landscape

Speaker: Prof. Adão Villaverde – Coordinator of SemiCon-LAC 2026 and Semiconductor Consultant at Tecnopuc

Following the first panel, Prof. Adão Villaverde presented the strategic objectives of SemiCon-LAC 2026, placing the symposium within the broader international semiconductor landscape and highlighting the opportunities emerging for Latin America and the Caribbean amid the ongoing transformation of global semiconductor supply chains.

The speaker noted that the industry is undergoing a profound restructuring driven by the decentralization of production, efforts to enhance supply chain resilience, and the expansion of strategic international partnerships. According to him, this changing environment creates a unique opportunity for Latin America and the Caribbean to strengthen their role in the global semiconductor ecosystem by building upon the region's longstanding capabilities in science, technology, innovation, and human capital development.

Within this context, he highlighted Rio Grande do Sul's ambition to become one of Latin America's leading semiconductor hubs by leveraging its scientific excellence, industrial capabilities, and technological infrastructure. He emphasized that semiconductors have become strategic assets for the global economy and gained even greater importance following the disruptions caused by the COVID-19 pandemic, which exposed the vulnerability of global supply chains and reinforced the importance of technological sovereignty.

Prof. Villaverde stressed that developing a competitive semiconductor industry requires sustained long-term investment, the continuous training of highly qualified professionals, and strong national and international partnerships. He also emphasized that global demand for semiconductors continues to expand rapidly, driven by advances in consumer electronics, artificial intelligence, the Internet of Things (IoT), machine learning, and other emerging digital technologies.

Addressing Brazil's position within this evolving landscape, he pointed out that the country has already established significant capabilities across several



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segments of the semiconductor value chain, with internationally recognized expertise in integrated circuit design and backend operations, including packaging and testing. He also highlighted Brazil's front-end manufacturing capabilities, citing CEITEC as a strategic national asset supporting the development of advanced technologies such as silicon carbide-based semiconductor devices.

Prof. Villaverde explained that SemiCon-LAC was conceived as a platform to reinforce the role of Latin America and the Caribbean within the global semiconductor ecosystem by bringing together representatives from government, industry, academia, and research institutions in an environment designed to foster cooperation, innovation, and business development. One of the symposium's central objectives, he noted, is to strengthen connections between technology developers, industrial users, investors, and policymakers, thereby encouraging new partnerships, investment opportunities, and collaborative projects.

He then presented the symposium's agenda, which comprised six technical and strategic panels over two days, followed by technical visits to leading companies and research institutions on the third day. He also highlighted the participation of approximately 170 on-site attendees, complemented by a significant online audience from several countries.

According to the coordinator, the discussions throughout the symposium would address key topics for strengthening the regional semiconductor ecosystem, including public policies, industrial development, collaboration between technology providers and end users, international innovation ecosystems, research, workforce development, and technology transfer. He also introduced the technical visits scheduled to CEITEC, Tecnosinos, and other companies operating in the sector, providing participants with firsthand exposure to Rio Grande do Sul's technological capabilities.

Discussing the concept of technological sovereignty, Prof. Villaverde proposed a broader perspective, arguing that sovereignty should not be understood solely as the domestic production of every technology. Rather, it should encompass the development of strategic competencies, scientific knowledge, critical technological capabilities, and trusted international partnerships that enable countries to participate competitively in global value chains.

In closing, he acknowledged the contributions of the organizing institutions, sponsors, and national and international partners whose support made the symposium possible. He emphasized the role played by public agencies, funding organizations, universities, technology parks, research institutions, and private-sector organizations in building a collaborative regional ecosystem. Finally, he reaffirmed that SemiCon-LAC 2026 seeks to strengthen regional integration,



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expand access to advanced technologies and global markets, foster strategic partnerships, and contribute to building a future grounded in innovation, technological sovereignty, international cooperation, and sustainable economic development across Latin America and the Caribbean.

Panel 2 Report

Policies for the Development of the SemiCon-LAC Ecosystem

Rapporteur: Diogo Bruschi

Moderator

Rafael Prikladnicki – President of InvestRS and professor with extensive experience in innovation ecosystems, technology policy, and international investment promotion.

Panelists

Edmundo Gutiérrez Domínguez – Researcher at National Institute for Astrophysics, Optics and Electronics (INAOE).

Rogério Nunes – President of ABISEMI, representing Brazil's semiconductor industry and its institutional development initiatives.

Ricardo Monge – Professor at LEAD University and specialist in industrial competitiveness and global value chains.

José Tamborenea – Representative of CADIEEL, with extensive experience in Argentina's electronics and industrial sectors.

Juan José Negroni Vera – Professor at Universidad Santo Tomás, focusing on innovation policy and regional cooperation.

Introduction

Panel 2 focused on the industrial policies, business strategies, and institutional frameworks required to strengthen the semiconductor ecosystem across Latin America and the Caribbean. Bringing together representatives from Brazil, Costa Rica, Argentina, Chile, and Mexico, the discussion examined how governments



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and industry can work together to improve competitiveness, attract investment, and promote technological development throughout the region.

A recurring theme throughout the session was that successful semiconductor industries are built upon long-term strategies rather than isolated initiatives. Speakers emphasized that sustainable growth depends on coordinated public policies, predictable regulatory environments, highly qualified talent, and close collaboration among industry, academia, and government.

Brazil: Strengthening Industrial Competitiveness

Representing ABISEMI, Rogério Nunes presented an overview of Brazil's semiconductor industry and the association's role in supporting industrial development. He highlighted the sector's recent growth, increasing private investment, and expanding R&D activities while emphasizing Brazil's competitive advantages, including a diversified industrial base, internationally recognized research institutions, a skilled workforce, and a predominantly renewable energy matrix.

According to Nunes, Brazil must continue improving its regulatory framework and industrial incentives to compete more effectively in the global semiconductor market. He underscored the importance of initiatives such as PADIS, stronger support for domestic manufacturing, and continued investment in strategic technologies, including power semiconductors and advanced semiconductor materials.

He also stressed that expanding Brazil's participation in global value chains will require greater export capacity, stronger industrial partnerships, and continued investment in research and innovation.

Costa Rica: From Foreign Investment to Knowledge Transfer

Ricardo Monge presented Costa Rica's experience as one of Latin America's most successful examples of integration into global semiconductor value chains. He argued that attracting multinational companies should not be viewed as an end in itself, but rather as a mechanism for transferring knowledge, developing local suppliers, and increasing national productivity.

Using Intel's long-standing presence in Costa Rica as a case study, Monge explained how the country's strategy gradually evolved from assembly operations toward research, engineering, and corporate services with higher added value. This transformation strengthened domestic capabilities while creating new opportunities for local companies to participate in international supply chains.



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He emphasized that effective industrial policy must include supplier development programs, workforce training, innovation support, and stronger collaboration between universities and industry. Monge also highlighted gender diversity as an important competitive advantage, arguing that expanding women's participation in STEM fields is essential to addressing the industry's growing demand for highly qualified professionals.

Argentina: The Need for Long-Term Industrial Strategy

José Tamborenea offered a critical assessment of Argentina's industrial policy, arguing that the country has often struggled with policy discontinuity and economic instability. While recognizing Argentina's industrial and engineering capabilities, he stressed that sustainable development requires long-term strategic planning rather than short-term policy cycles.

He distinguished economic growth from industrial development, noting that large investments alone do not necessarily create domestic technological capabilities. Instead, successful industrial policies should encourage innovation, strengthen local suppliers, generate qualified employment, and increase technological complexity throughout the economy.

Tamborenea also emphasized the importance of reducing structural barriers to competitiveness, including excessive taxation, regulatory complexity, and logistical constraints that limit industrial expansion and export performance.

Regional Cooperation as a Competitive Advantage

Juan José Negroni Vera reinforced the idea that Latin America must pursue a coordinated regional strategy rather than fragmented national approaches. Given the complexity of the semiconductor industry, no single country can independently master every stage of the value chain.

He argued that greater cooperation among governments, universities, research institutions, and private companies would allow countries to build complementary capabilities while strengthening the region's overall competitiveness. International events such as SEMICON LAC were highlighted as valuable platforms for promoting dialogue, identifying shared priorities, and fostering new collaborative initiatives.

The discussion also emphasized that technological development should ultimately contribute to broader economic and social progress, improving productivity while creating opportunities for innovation, education, and sustainable growth.



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Conclusions

Panel 2 reinforced that Latin America and the Caribbean possess significant opportunities to expand their role within the global semiconductor industry. However, achieving this objective will require coherent industrial policies, stable regulatory environments, continued investment in research and development, and stronger collaboration among governments, industry, and academia.

The panelists agreed that attracting investment alone is insufficient. Lasting competitiveness depends on developing domestic capabilities, strengthening local suppliers, fostering innovation, and investing in highly skilled human capital.

Above all, the discussion highlighted that regional cooperation should be viewed as a strategic asset. By combining complementary strengths and pursuing coordinated long-term policies, Latin American countries can build a more resilient, innovative, and internationally competitive semiconductor ecosystem.

Panel 3 Report

Semiconductor Supply Chain: Demand and Supplier Roundtable

Rapporteur: Lucas Tedesco

Moderator

Rosana Casais – Executive Director of ABISEMI, with extensive experience in semiconductor industry development and institutional coordination.

Demand Representatives

Peter Elbling – Executive at Digicon.

Marcos Dillenburg – Executive at Novus.

Oscar Kronmeyer – Representative of ABINEE-RS.

Supplier Representatives

Willyan Rasenkamp – Executive at HT Micron.

Celso Peter – Researcher at ITT Chip – Unisinos.

Augusto Cesar Gadelha – President of CEITEC.



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Edelweis Ritt – Business Director at CEITEC.

Samir Pires – Executive at Zilia Technologies.

Felipe Masseli – Executive at ADATA.

Marcos Dossa – Executive at Impinj.

Júlio Leão – Executive at EnSilica.

Ronaldo Aloise Jr. – Executive at Tellescom.

Introduction

Panel 3 brought together representatives from both the demand and supply sides of Brazil's semiconductor ecosystem, creating a unique forum to discuss the industry's current challenges, emerging opportunities, and future priorities. The session featured industrial end users, semiconductor design companies, packaging and testing providers, research institutions, and manufacturers, offering a comprehensive view of the semiconductor value chain.

The discussions underscored the strategic importance of semiconductors for industrial competitiveness, technological sovereignty, and economic development. Participants agreed that strengthening Brazil's position in global semiconductor value chains requires greater integration among industry, government, and research institutions, supported by long-term industrial policies and continuous investment in innovation.

Understanding Industrial Demand

Representatives from Digicon, Novus, and ABINEE-RS described the growing dependence of modern industries on reliable semiconductor supply. They emphasized that sectors such as industrial automation, banking systems, mobility, and smart manufacturing increasingly rely on sophisticated electronic components with long life cycles and high reliability standards.

One of the principal concerns raised was the rapid obsolescence of electronic components, which forces companies to redesign products more frequently and increases dependence on global suppliers. The speakers also stressed the importance of expanding Brazil's capacity to supply competitive semiconductor solutions capable of meeting domestic industrial demand.

The discussion highlighted the need to identify strategic market niches where Brazilian companies can build internationally competitive capabilities rather than attempting to compete across every segment of the semiconductor industry.



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Design, Engineering, and Human Capital

Representatives from Impinj and EnSilica emphasized Brazil's internationally recognized expertise in integrated circuit design. Both companies highlighted the country's highly qualified engineering workforce and noted that many experienced professionals have been trained within the ecosystem originally developed around CEITEC.

The panel demonstrated that Brazil has established competitive capabilities in IC design, embedded systems, RFID technologies, and application-specific integrated circuits for sectors such as automotive, telecommunications, healthcare, and industrial automation.

Speakers agreed that maintaining this competitive advantage will depend on continued investment in workforce development, university-industry collaboration, and advanced engineering education capable of supporting increasingly complex semiconductor technologies.

CEITEC and the Next Phase of the Brazilian Ecosystem

A central topic of the panel was the strategic repositioning of CEITEC. President Augusto Cesar Gadelha presented the company's new direction, focusing on silicon carbide (SiC) power semiconductors for applications including electric vehicles, renewable energy systems, industrial automation, and artificial intelligence infrastructure.

According to Gadelha, this strategy aligns Brazil with one of the fastest-growing segments of the global semiconductor market while requiring comparatively lower capital investment than leading-edge digital fabrication.

Dr. Edelweis Ritt complemented this perspective by highlighting CEITEC's ongoing discussions with international partners interested in collaborative projects. She noted that the company's new strategy has received positive international attention and may create new opportunities for Brazil to participate in high-value global semiconductor supply chains.

Expanding Manufacturing and Backend Capabilities

Representatives from HT Micron, Zilia Technologies, ADATA, and Tellescom focused on manufacturing, packaging, testing, and industrial expansion.

A recurring message was that Brazil's greatest challenge is no longer technical competence but industrial scale. The country possesses qualified professionals, successful technology companies, and internationally competitive engineering



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expertise, yet expanding production capacity remains essential for improving competitiveness.

The announcement of Tellescom's planned semiconductor packaging and testing facility in Rio Grande do Sul illustrated growing confidence in Brazil's industrial potential. The project reflects increasing market demand driven by artificial intelligence, connected devices, automotive electronics, and digital transformation across multiple industries.

Panelists also emphasized that advanced packaging and backend manufacturing are becoming increasingly strategic as semiconductor architectures grow more complex and heterogeneous.

Research, Innovation, and International Integration

Closing the panel, representatives from ITT Chip highlighted the importance of applied research, workforce development, and international collaboration. They argued that no country dominates every segment of the semiconductor value chain and that competitiveness increasingly depends on specialization and global integration.

Brazil was identified as having strong capabilities in areas such as IC design, packaging, testing, sensors, and applied engineering. Building upon these strengths through continued investment in research institutions, talent development, and international partnerships was presented as the most promising strategy for expanding the country's global presence.

Conclusions

Panel 3 demonstrated that Brazil already possesses many of the essential elements required for a competitive semiconductor ecosystem, including qualified professionals, established technology companies, research institutions, and growing industrial capabilities.

The discussions highlighted several priorities for future development: expanding manufacturing scale, strengthening integration across the value chain, investing in advanced packaging and specialized technologies, supporting research and workforce development, and maintaining long-term industrial policies.

The panel concluded that Brazil is well positioned to strengthen its role within global semiconductor value chains, provided it continues building on its existing strengths while fostering closer collaboration among industry, academia, and government.



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Panel 4 Report

Global Ecosystem Models for the Semiconductor Industry

Rapporteur: Lucas Tedesco

Moderator

Adão Villaverde – Professor at Pontifical Catholic University of Rio Grande do Sul (PUCRS) and Director of Tecnopuc.

Panelists

Han Lee – Executive at Samsung Electronics.

Krishna Muralidharan – Professor at University of Arizona and Executive Director of the Arizona Tech Park.

Moshe Zalcberg – Executive at Silicon Catalyst.

Zhao Xueyi – Representative of the China Semiconductor Industry Association (CSIA).

Introduction

Panel 4 examined how leading semiconductor ecosystems have evolved through coordinated industrial policies, sustained investment in innovation, workforce development, and strong collaboration between government, academia, and industry. Drawing on experiences from South Korea, the United States, the European Union, and China, the discussion provided valuable insights into the strategies that have enabled these regions to become global leaders in semiconductor technology.

Rather than presenting a single model for success, the panel demonstrated that competitive ecosystems share common foundations: long-term vision,



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investment in research and development, robust innovation environments, access to capital, and the ability to continuously develop highly skilled talent.

Artificial Intelligence and the Next Technology Cycle

Opening the session, Han Lee, from Samsung Electronics, described how artificial intelligence is reshaping the global semiconductor industry. Unlike previous market cycles driven primarily by consumer electronics, today's expansion is being fueled by generative AI, cloud computing, high-performance computing, and data center infrastructure.

This transformation is creating unprecedented demand for advanced memory technologies, high-performance processors, and increasingly sophisticated semiconductor architectures. According to Lee, the industry's current growth reflects a structural technological shift that is expected to continue over the coming years.

Building Collaborative Innovation Ecosystems

Krishna Muralidharan presented Arizona's experience as one of the fastest-growing semiconductor hubs in the United States. He attributed its success to the close collaboration between universities, technology companies, research institutions, and government agencies.

He emphasized that workforce development begins long before graduates enter the labor market. Students should engage with real industrial challenges through internships, applied research, and collaborative innovation projects, creating a continuous pipeline of talent capable of supporting the industry's rapid evolution.

Muralidharan also identified several emerging technologies—including integrated photonics, co-packaged optics, and glass substrates—as key areas shaping the next generation of artificial intelligence infrastructure. He noted that Brazil's expertise in materials science could create valuable opportunities for international research partnerships.

Innovation Financing and the European Perspective

Representing Silicon Catalyst, Moshe Zalcborg discussed the objectives of the European Chips Act and the broader challenges facing Europe's semiconductor ecosystem.

While acknowledging the importance of public investment in manufacturing capacity, he argued that long-term competitiveness also depends on strong venture capital ecosystems capable of transforming scientific research into innovative companies. Without sufficient access to investment, many promising



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technology startups struggle to scale or relocate to markets offering greater financial support.

Zalcborg also highlighted one of the industry's emerging challenges: the rapidly increasing energy consumption associated with artificial intelligence. Future competitiveness, he argued, will depend not only on greater computational performance but also on advances in energy efficiency, memory technologies, new materials, and semiconductor architectures.

China's Integrated Industrial Strategy

Zhao Xueyi presented the Chinese semiconductor ecosystem as an example of large-scale industrial coordination. Representing the China Semiconductor Industry Association (CSIA), he described an ecosystem that integrates design, manufacturing, packaging, testing, equipment, materials, and specialized software across a highly interconnected industrial base.

China's large domestic market was identified as one of its greatest competitive advantages, providing sustained demand that supports continuous investment, technological development, and industrial expansion. Zhao also emphasized the importance of cooperation between industry associations, government institutions, and private companies in coordinating long-term development strategies.

Opportunities for Emerging Ecosystems

Throughout the discussion, panelists agreed that emerging semiconductor ecosystems should not attempt to replicate the development paths of established global leaders. Instead, countries should identify technological niches where they can develop internationally competitive expertise while integrating into global value chains.

Advanced packaging, photonics, specialized materials, energy-efficient computing, and collaborative research were repeatedly identified as promising opportunities for countries seeking to strengthen their semiconductor industries.

The discussion also reinforced that future competitiveness will depend increasingly on international cooperation, interdisciplinary research, and the ability to translate scientific knowledge into industrial innovation.

Conclusions

Panel 4 demonstrated that successful semiconductor ecosystems are built through long-term commitment rather than short-term initiatives. Although the experiences of South Korea, the United States, Europe, and China differ



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significantly, they all share common characteristics: strategic public policies, sustained investment in research and innovation, strong collaboration between academia and industry, and continuous development of highly qualified talent.

For Latin America and the Caribbean, the panel highlighted that future competitiveness will depend on identifying strategic technological niches, strengthening international partnerships, and building innovation ecosystems capable of transforming scientific excellence into industrial growth.

The discussions concluded that the global semiconductor industry will continue to evolve rapidly as artificial intelligence, advanced computing, and digital transformation reshape demand. Countries that successfully combine innovation, collaboration, and long-term strategic vision will be best positioned to participate in the next generation of semiconductor technologies.

Panel 5 Report

Research, Workforce Development, Technology Transfer and Innovation

Rapporteur: Lucas Tedesco

Moderator

Marcelo Fávaro – Director of the UFRGS Science and Technology Park (Zenit/UFRGS), specializing in innovation ecosystems and technology-based entrepreneurship.

Panelists

Fernanda Kastensmidt – Professor at Federal University of Rio Grande do Sul (UFRGS) and researcher in integrated circuits and microelectronics.

Fernando Moraes – Professor at Pontifical Catholic University of Rio Grande do Sul (PUCRS), specializing in computer engineering and integrated circuit design.

Sérgio Bampi – Professor at Federal University of Rio Grande do Sul (UFRGS) and one of Brazil's leading researchers in microelectronics.

Celso Peter – Researcher at ITT Chip – Unisinos.

Alessandro Girardi – Professor at Federal University of Pampa (Unipampa).



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João Batista Martins – Professor at Federal University of Santa Maria (UFSM).

João Martino – Professor at University of São Paulo (USP) and representative of the Brazilian Microelectronics Society (SBMicro).

Jacobus Swart – Professor at State University of Campinas (Unicamp).

Manuel Steidle – Researcher at Fraunhofer Society.

José Bertuzzo – Executive and researcher at Instituto Eldorado.

Introduction

Panel 5 addressed one of the most critical pillars of a competitive semiconductor ecosystem: the ability to generate knowledge, develop highly qualified talent, transfer technology, and transform research into industrial innovation. Bringing together representatives from universities, research institutes, technology centers, and innovation organizations, the discussion emphasized the importance of connecting education, applied research, entrepreneurship, and industry.

A central message emerged throughout the session: while infrastructure and industrial investment are essential, people remain the semiconductor industry's most valuable asset. Sustainable competitiveness depends on continuous investment in education, scientific excellence, and effective collaboration between academia and the private sector.

Developing the Next Generation of Talent

The discussion highlighted workforce development as the foundation of long-term industrial growth. Speakers emphasized that semiconductor innovation requires professionals with expertise across multiple disciplines, including integrated circuit design, materials science, electronics, computer engineering, packaging, testing, and advanced manufacturing.

Programs such as **CI Inovador** and **CI Expert**, supported by Brazil's Ministry of Science, Technology and Innovation (MCTI), were presented as successful examples of initiatives combining technical education with entrepreneurship, project management, and practical industrial experience. Participants stressed that future educational programs should increasingly expose students to real industrial challenges through partnerships with technology companies.



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The panel also reinforced the importance of expanding postgraduate education and encouraging closer interaction between doctoral research and industrial innovation.

Strengthening Applied Research and Technology Transfer

Several speakers argued that Brazil already produces high-quality scientific research in microelectronics but still faces challenges in converting academic knowledge into commercial technologies.

Technology transfer was identified as one of the weakest links in the national innovation ecosystem. While universities consistently generate scientific publications and advanced research, greater efforts are needed to transform these results into patents, prototypes, startups, and industrial applications.

Participants emphasized that stronger institutional mechanisms, dedicated funding, and closer collaboration between universities, research institutes, and private companies will be essential for accelerating innovation and increasing the economic impact of academic research.

Universities as Innovation Ecosystems

The panel showcased successful initiatives developed by Brazilian universities and technology institutes, demonstrating their growing contribution to semiconductor research and innovation.

Examples included collaborative research projects involving advanced chip design, RISC-V architectures, artificial intelligence accelerators, sensors, advanced packaging, and applications for agriculture, healthcare, and industrial automation.

Several speakers highlighted that innovation ecosystems extend beyond large metropolitan centers. Universities located in smaller cities have also demonstrated their ability to create successful research groups, generate technology-based startups, and contribute to regional economic development.

The discussion reinforced that universities should be viewed not only as educational institutions but also as strategic partners in industrial innovation and technology commercialization.

Building a Sustainable Innovation Ecosystem

Another recurring theme was the importance of maintaining long-term public policies capable of supporting research infrastructure, technology institutes, startup development, and industrial collaboration.



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Participants emphasized that countries with successful semiconductor industries consistently invest in research over decades, maintaining stable policies that encourage innovation, entrepreneurship, and workforce development regardless of political cycles.

The role of technology institutes was also highlighted as essential for bridging the gap between academic research and industrial production. Institutions specializing in prototyping, packaging, testing, and applied engineering help reduce technological risks and accelerate the commercialization of new technologies.

Conclusions

Panel 5 concluded that research, workforce development, technology transfer, and innovation are inseparable components of a competitive semiconductor ecosystem.

Brazil has established a strong scientific foundation, internationally recognized research groups, experienced technology institutes, and a growing number of successful collaborative initiatives. However, expanding these achievements will require stronger integration between academia and industry, more effective technology transfer mechanisms, sustained investment in talent development, and long-term institutional commitment.

The panel also reinforced that Latin America possesses significant opportunities to strengthen its role in the global semiconductor industry by building upon its scientific capabilities, encouraging entrepreneurship, supporting innovation ecosystems, and developing highly qualified professionals.

Ultimately, the discussions demonstrated that technological leadership depends not only on infrastructure and investment, but on the ability to continuously transform knowledge into innovation, innovation into industry, and industry into sustainable economic development.

PANEL REPORT – PANEL 6

Rio Grande do Sul – The Heart of Latin America's Semiconductor Ecosystem

Rapporteur: Guilherme Camboim

RS Semiconductors Program: Guilherme Camboim (SICT).



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National Semiconductor Policy and Rio Grande do Sul: Luiz Antonio Elias (FINEP).

Talent Development: Fernanda Kastensmidt (UFRGS) and Sandro Binsfeld (UNISINOS – iTT Chip).

Applied Research and Technology Transfer: Carlos Eduardo Pereira (UFRGS / Center of Competence in Digital Agriculture – CEDRA) and Ismael Fraga (Instituto Silicium).

Entrepreneurship and Innovation: Lissandro Dalla Nora (REGINP), Moshe Zalberg (Silicon Catalyst), and Rodrigo Mazzilli (Senseworks).

Investment Attraction, Logistics and Infrastructure: Caroline Bucker (Invest RS), Leandro Evaldt (SEDEC), Ronaldo Aloise (Tellescom), Júlio Leão (EnSilica), Fernanda Stiebler (FINEP), Robson Diego Ferreira (Badesul), Leonardo Busatto (BRDE), and Marcus Coester (Grupo Coester/CITEC).

1. Introduction

Panel 6 brought together representatives from government, universities, research centers, companies, and development institutions to present Rio Grande do Sul's strategy to establish itself as Latin America's leading semiconductor ecosystem. Organized around six thematic pillars, the panel demonstrated how public policies, talent development, applied research, entrepreneurship, and financing mechanisms are being coordinated to strengthen every stage of the semiconductor value chain.

2. RS Semiconductors Program

Opening the panel, Guilherme Camboim presented the **RS Semiconductors Program**, an initiative coordinated by the State Secretariat for Innovation, Science and Technology (SICT) that defines the strategic roadmap for positioning Rio Grande do Sul as a leading semiconductor hub in Latin America by 2030. According to Camboim, the state benefits from a unique combination of strategic assets built over several decades, including internationally recognized universities, specialized research centers, companies operating across multiple segments of the semiconductor value chain, and a technological infrastructure capable of supporting sustained industrial growth.



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The state strategy is structured around five main pillars: talent development, strengthening applied research, fostering technology-based entrepreneurship, attracting investment, and establishing an integrated governance model involving government, academia, industry, and funding institutions. Camboim emphasized that the objective extends beyond attracting new companies to the state; it seeks to create a robust ecosystem capable of continuously generating technology, skilled professionals, and innovation.

Among the initiatives currently underway are specialized training programs in chip design, packaging, and testing; investments in laboratories and cleanroom facilities; stronger collaboration between universities and industry; and the creation of a state hub dedicated to semiconductor deep-tech companies. Additional efforts focus on expanding the ecosystem's international presence, attracting new technology-based enterprises, and increasing Rio Grande do Sul's participation in global semiconductor value chains.

Particular emphasis was placed on the program's governance model, which integrates multiple state government departments, the Governor's Office, Invest RS, the State Council for Science and Technology, research institutions, and industry representatives. The establishment of a permanent coordination forum is intended to ensure policy continuity while aligning investments, workforce development, and technological innovation within a long-term strategic framework.

Concluding his presentation, Camboim stressed that the state's greatest competitive advantage lies in its ability to integrate scientific knowledge, public policy, and private-sector initiatives into a single development strategy, creating the conditions for Rio Grande do Sul to become Latin America's leading semiconductor hub.

3. National Semiconductor Policy and Rio Grande do Sul

Luiz Antonio Elias presented FINEP's perspective on Brazil's national semiconductor policy and its role within the country's broader technological development strategy. He observed that the global landscape has been increasingly shaped by stronger industrial policies and growing competition for technological sovereignty, making semiconductors a strategic asset for both economic competitiveness and national resilience.

Within this context, Elias highlighted the strengthening of the National Fund for Scientific and Technological Development (FNDCT), the implementation of the **New Industry Brazil (Nova Indústria Brasil)** initiative, and the expansion of FINEP's innovation support instruments, including scientific infrastructure



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programs, non-reimbursable grants, credit lines, startup support mechanisms, and financing for technology parks. According to him, these instruments enable risk-sharing while expanding investment capacity in knowledge-intensive sectors.

The FINEP President nevertheless emphasized that Brazil still faces the challenge of increasing private-sector investment in research and development. Addressing this issue requires closer cooperation among government, universities, and industry, creating a more favorable environment for innovation and for transforming scientific knowledge into high-value technological products.

Regarding Rio Grande do Sul, Elias underscored that the state combines academic excellence, technological infrastructure, and industrial capabilities that position it among Brazil's leading regions in semiconductor development. In his view, the close coordination among universities, research institutions, companies, and the state government constitutes an important model for strengthening Brazil's semiconductor industry.

He concluded by reaffirming that science, technology, and innovation must remain permanent pillars of the country's development strategy, requiring institutional continuity, long-term vision, and sustained cooperation among all actors within the innovation ecosystem.

4. Talent Development

The Talent Development session featured Fernanda Kastensmidt (UFRGS) and Sandro Binsfeld (Unisinos/iTT Chip), who presented initiatives aimed at preparing highly qualified professionals for the semiconductor industry. Both speakers emphasized that the shortage of skilled talent has become one of the industry's greatest challenges, not only in Brazil but worldwide.

Fernanda Kastensmidt presented the results of the **CI Inovador** program, developed with support from Brazil's Ministry of Science, Technology and Innovation to train professionals in integrated circuit design. The program combines advanced technical education, entrepreneurship, hands-on industry experience, and collaboration with both national and international institutions, achieving high employability rates among its participants. She also introduced **CI Expert**, an initiative designed to engage undergraduate students earlier in their academic careers, fostering interest in microelectronics from the outset.

Kastensmidt emphasized that sustainable industry growth depends not only on educating new professionals but also on creating conditions that encourage them to remain in Brazil, while attracting experienced Brazilian researchers currently working abroad.



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Sandro Binsfeld then presented the work of **iTT Chip**, one of Brazil's leading research, development, and education centers in microelectronics. He highlighted its specialized infrastructure, including advanced laboratories, cleanroom facilities, electronic design environments, and professional training programs developed in partnership with industry. The institute operates in areas such as advanced packaging, microfabrication, circuit modeling, and electronics manufacturing, combining applied research with workforce development.

Both speakers stressed the importance of strengthening collaboration among universities, technology institutes, and industry to better align academic training with market needs. Examples included specialized programs in Packaging and Digital Design, developed with strong industry participation, scholarships, practical training, entrepreneurship initiatives, and startup incubation activities.

The session concluded by emphasizing that talent development should be viewed as a continuous process beginning during undergraduate education and extending throughout a professional career. The integration of education, research, innovation, and industry was identified as an essential condition for expanding the availability of highly qualified professionals and supporting the long-term growth of Brazil's semiconductor industry.

5. Applied Research and Technology Transfer

The fourth subpanel explored the role of applied research as a catalyst for transforming scientific knowledge into technological innovation. Carlos Eduardo Pereira (UFRGS/Center of Competence in Digital Agriculture – CEDRA) and Ismael Fraga (Instituto Silicium) presented complementary perspectives demonstrating how collaboration among universities, research institutes, and industry is essential to accelerate the development of competitive semiconductor technologies.

Carlos Eduardo Pereira introduced the **Center of Competence in Digital Agriculture (CEDRA)** as a successful example of cooperation between academia and industry. Established in partnership with EMBRAPA and inspired by the U.S. **Engineering Research Centers** model, CEDRA integrates companies, universities, and research institutions to develop advanced technologies for digital agriculture, combining sensing technologies, connectivity, artificial intelligence, automation, and embedded systems.

The center conducts research in areas including traceability, soil monitoring, autonomous vehicles, drones, rural connectivity, and AI-driven agricultural solutions. One of the highlights presented was the **AgroEdge** concept, which aims to bring computing power and AI algorithms directly to field devices,



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reducing reliance on cloud processing while creating new opportunities for the development of Brazilian semiconductor technologies and embedded hardware.

Beyond technological innovation, Pereira emphasized CEDRA's contribution to workforce development, university-industry collaboration, and the creation of deep-tech startups, illustrating how coordinated investments in applied research can generate innovation while strengthening the competitiveness of Brazil's semiconductor industry.

Ismael Fraga then presented **Instituto Silicium**, an organization established to accelerate the transformation of scientific research into commercially viable technologies. Located at Sapiens Park in Florianópolis, the institute serves as a bridge between universities, industry, and the market, conducting projects involving **RISC-V architectures**, smart RFID systems, Internet of Things (IoT), edge computing, artificial intelligence applied to integrated circuit design, and Electronic Design Automation (EDA) tools.

He also highlighted initiatives focused on attracting researchers and promoting collaborative research environments involving universities and companies, reducing duplication of efforts while expanding Brazil's capacity to develop competitive technologies in strategic sectors.

The session concluded that strengthening applied research requires deeper cooperation among universities, technology institutes, industry, and funding agencies. Participants emphasized that bringing researchers closer to industrial environments is essential to accelerate technology maturation, transform scientific knowledge into innovative products, and strengthen Brazil's position within the global semiconductor value chain.

6. Entrepreneurship and Innovation

The Entrepreneurship and Innovation session examined the challenges of transforming scientific knowledge into globally competitive technology businesses. Lissandro Dalla Nora, Moshe Zalcborg, and Rodrigo Mazzilli emphasized that Brazil possesses internationally recognized universities, strong research institutions, and highly qualified professionals, yet still faces significant obstacles in converting this scientific capacity into scalable semiconductor companies.

Among the principal challenges identified were the limited availability of specialized venture capital, the long maturation cycle characteristic of semiconductor startups, the shortage of financial instruments specifically



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designed for deep-tech companies, and the ongoing difficulty of retaining highly skilled professionals, many of whom pursue careers abroad.

At the same time, the speakers highlighted Rio Grande do Sul as a particularly favorable environment for overcoming these barriers. The state benefits from a well-established network of universities, technology parks, incubators, innovation hubs, and public policies specifically designed to support technology entrepreneurship. Programs such as **TechFuturo Semiconductors**, **Doutor Empreendedor**, and **Tecnova** were presented as successful examples of initiatives that foster the creation and growth of technology-based enterprises.

Participants argued that strengthening the ecosystem requires the creation of local success stories capable of attracting investors, the consolidation of a dedicated semiconductor hub, stronger support for university spin-offs, and greater international engagement from the earliest stages of startup development. They also stressed the importance of closer collaboration among universities, entrepreneurs, investors, and established companies to reduce risks and accelerate the commercialization of research outcomes.

The discussion concluded that Rio Grande do Sul already possesses nearly all the assets required to build a globally competitive semiconductor innovation ecosystem. The next challenge is to expand access to private capital while strengthening mechanisms that enable technology startups to scale successfully.

7. Investment Attraction, Logistics and Infrastructure

The final session brought together representatives from **Invest RS**, **SEDEC**, **BRDE**, **Badesul**, **FINEP**, and leading semiconductor companies to discuss financing mechanisms, infrastructure, and investment attraction strategies aimed at strengthening Brazil's semiconductor industry.

Leonardo Busatto presented BRDE's role as a regional development bank, highlighting its support for innovation projects, technology parks, venture capital funds, and startup acceleration initiatives. He emphasized BRDE's strategic partnership with FINEP and its ability to mobilize both national and international resources for long-term investments, noting that increasing private-sector participation in high-risk technology investments remains one of the ecosystem's greatest challenges.

Robson Diego Ferreira then presented Badesul's initiatives to foster innovation throughout Rio Grande do Sul, including investments in technology companies, venture capital programs, and the institution's future headquarters at Tecnopuc.



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He also announced the development of a dedicated **Deep Tech** funding call designed to expand financial support for technology-intensive companies.

Representing FINEP, Fernanda Stiebler outlined the financing instruments currently available for the semiconductor sector, including public calls, non-reimbursable grants, credit lines, and new funding opportunities specifically focused on semiconductor design, manufacturing, packaging, and testing. She emphasized that the strengthening of the **National Fund for Scientific and Technological Development (FNDCT)** and the **New Industry Brazil** policy has created a favorable environment for expanding investments in research, development, and innovation.

From an industrial perspective, Ronaldo Aloise explained the factors that led **Tellescom** to establish operations in Rio Grande do Sul, emphasizing the state's highly qualified workforce, long-standing expertise in microelectronics, institutional coordination, and public policies supporting the semiconductor sector. He also presented updates on the company's new manufacturing facility in Canoas, together with planned investments in education, professional training, and technological development.

Júlio Leão shared **EnSilica's** experience in Brazil, noting that the exceptional quality of Brazilian engineers was the primary reason behind the company's expansion. He highlighted that Porto Alegre has become one of EnSilica's principal global design centers and defended the continued expansion of talent development programs, research support, and dedicated financing mechanisms for semiconductor companies.

Closing the discussion, Marcus Coester emphasized the importance of integrating traditional manufacturing industries with emerging technology sectors. He advocated for the continuity of innovation policies and stronger institutional collaboration to enhance the state's competitiveness within the global technology landscape.

In her closing remarks, Caroline Bucker emphasized that the discussions throughout the panel demonstrated the high level of maturity already achieved by Rio Grande do Sul's semiconductor ecosystem. She stressed that the next major challenge is to increase the international visibility of the state's technological capabilities, attract new investments, and position Rio Grande do Sul as a strategic destination for high-tech industries.

8. Conclusions



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Panel 6 demonstrated that Rio Grande do Sul possesses the unique conditions required to establish itself as Latin America's leading semiconductor ecosystem. The convergence of public policies, universities, research institutions, companies, financial organizations, and innovation environments reflects a high degree of institutional maturity while providing a solid foundation for the sustainable development of the semiconductor industry.

Throughout the six thematic sessions, it became clear that strengthening the semiconductor value chain requires coordinated action across multiple fronts, including talent development, applied research, entrepreneurship, innovation, infrastructure, financing, and investment attraction. The discussions also highlighted that the state already possesses significant strategic assets and is now well positioned to expand its participation in global value chains, strengthen the internationalization of its ecosystem, and transform scientific knowledge into innovative products, successful companies, and sustainable economic development.

The panel concluded by reinforcing the perception that Rio Grande do Sul not only has a long-standing tradition in microelectronics but also possesses the institutional, scientific, and industrial capabilities required to play a leading role in the future development of Brazil's and Latin America's semiconductor industry.

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