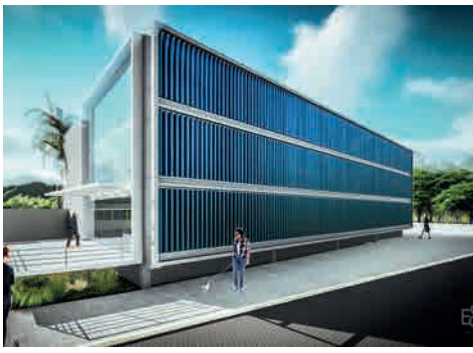


certi®

Annual Report **2017**

Presentation

To our board members, employees, clients, partners and society,

The year 2017 was marked by CERTI Foundation activities strongly dedicated to the fulfillment of its organizational guidelines, which are focused on operational sustainability, growth in revenue and the continuing implantation and improvement of the strategic plan in the medium and long term. Special priority was given to integrated action among the CERTI units, the establishment of solid partnerships, entrance to markets with large potential and the realization of increasingly more important projects.

The 2017 Annual Report presents CERTI's main results in the year, which reveal that the institution's performance was characterized by stable operational sustainability throughout the period, revenue growth sparked by a diversification of the markets in which CERTI operates, an increase in average project values, a deepening in the degree of responsibility assumed with clients and in the strategic value provided to them.

In addition, the institution dedicated considerable attention to guiding and accompanying its reference centers, in an effort to organize integrated projects characterized by a complementarity of competencies and solutions, to expand the institution's distinction in strategic markets. In the same direction, strategic institutional, technological and commercial partnerships were intensified and operationalized that are essential to the institution because they allow working in new markets, effectively contributing to the solution of critical problems faced by industry and improving costs and investments by sharing infrastructure and the joint work of staffs.

Finally, in keeping with its proposal "to be important to important clients with important projects", CERTI expanded the number and complexity of its innovation projects, presenting effective results to its clients and society, as can be observed in this report. Overcoming the daily challenges to maintaining operating capacity and the creative potential of an institution of the nature of the CERTI Foundation is only achieved due to a set of factors. These include infrastructure, methods, technologies and strategies and mainly people, including those in the institution's leadership, among the dedicated and creative staff in our technical and support departments and at our clients and partners.

The CERTI Foundation confirms its commitment to the development of Brazil through innovation and presents its annual report to Brazilian society.

José Eduardo Azevedo Fiates
SUPERINTENDENTE GERAL

Günther Pfeiffer
SUPERINTENDENTE DE OPERAÇÃO & FINANÇAS E ADMINISTRAÇÃO

Laercio Aniceto Silva
SUPERINTENDENTE DE NEGÓCIOS & CIÊNCIA, TECNOLOGIA E INOVAÇÃO


CERTI | UFSC

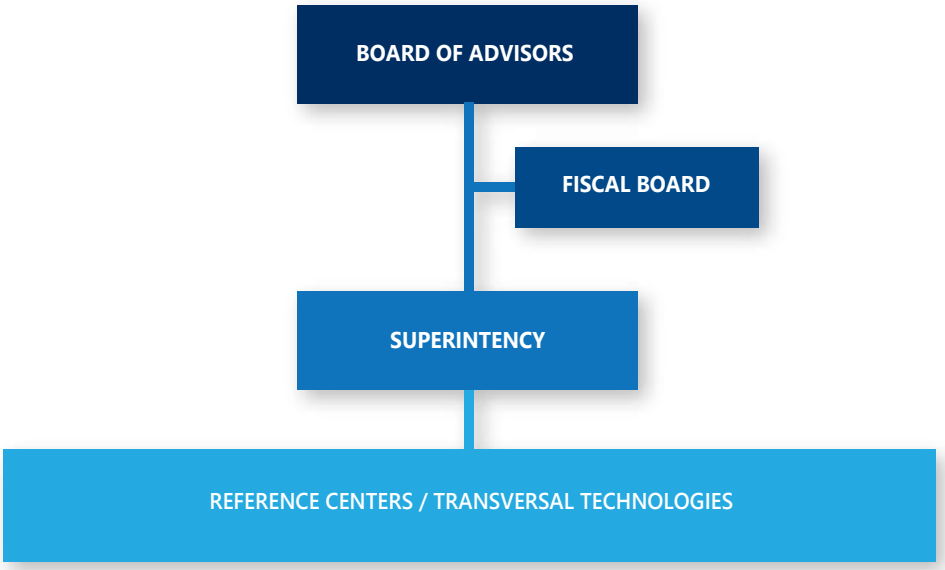

CELTA - ParqTec Alfa


LABelectron - Estreito

The CERTI Foundation is a Science, Technology and Innovation organization monitored by the Public Ministry of Santa Catarina.

MPSC MINISTÉRIO PÚBLICO Santa Catarina

CERTI Administrators in 2017



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PRESIDENTE


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BUSINESS & SCIENCE, TECHNOLOGY AND INNOVATION

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Digital Convergence & Mecaoptoelectronics Center


Cesare Quinteiro Pica
Sustainable Energy Center


Carlos Alberto Fadul Alves
Cooperative Production Center


Gustavo Daniel Donatelli
Metrology and Instrumentation Center


Leandro Carioni
Innovative Entrepreneurship Center


Bruno Herrera
IoT e Big Data


Marcos Aurélio Da-Ré
Green Economy Center


Tony Chierighini
Business Center for Advanced Technologies


Manuel Steidle
Mecaoptoelectronics

CERTI in 2017 – Executive Summary

Employees 269

Annual Revenues in R$ millions 63,3

Annual Revenues in R$ millions 10%

Index of Economic Performance 1,02

Expansion of Fixed Assets 19%

Annual Revenue per employee (R$ thousands) 235

Institutional developments

In a context of resumed, although still timid growth of the national economy, the CERTI Foundation continued its own growth trajectory in 2017, expanding its portfolio of business and projects, strengthening its action in strategic sectors in a guided manner, intensifying work with global clients and expanding its exports of solutions. In 2017, the total value of CERTI's contracted projects grew 20%. Revenues increased 10%, contributing to an increase in positive operating results in relation to 2016, with an index of economic production performance of 1.02%.

Governance

In 2017, CERTI conducted a review of its Strategic Planning 2030, as it has done systematically since 2004. This process involves the Board of Advisors, the superintendencies and directories. Twenty organizational strategies, critical processes and strategic processes for the short and medium term and two guiding principles were established for the year 2017: maintaining economic and financial sustainability and intensifying technical and operational cooperation. Efforts were also made to review the tripartite relationship between technology, products and markets in the institution's operations. In keeping with its vision for the future, actions were undertaken related to corporate governance, strategic steering of business and organizational culture.

Technology

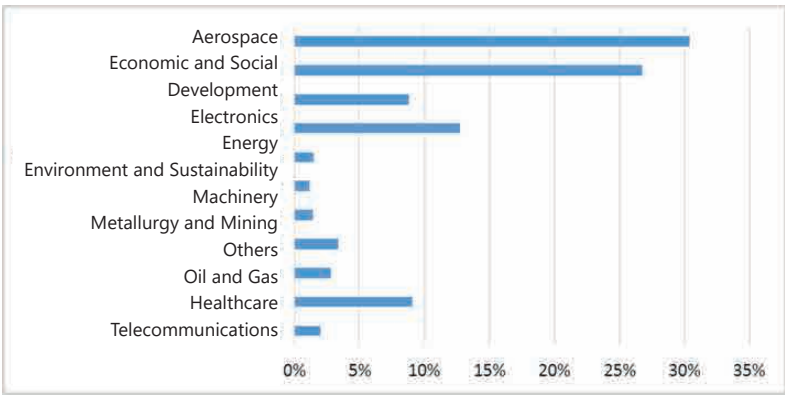
CERTI works with determination in the constant development of its technological competencies, a key factor for acting in projects that are relevant to its clients. With growing emphasis, it has been intensifying efforts to integrate the distinct technological and specialized competencies of its various centers of competence and technical partners, making viable differentiated, innovative solutions of high added value in important sectors, such as aerospace, healthcare, agribusiness, energy, fintech, oil & gas and economic, environmental and social development among others. In 2017, more than 15% of project revenues were generated from integrated actions of its centers of competence.

Products and Solutions

CERTI's solutions for its clients include projects for technological development, entrepreneurship and innovation, consultancies, long term training and highly specialized technological services. Actions in the form of projects represented 86% of operating revenue in 2017 and was generated through the realization of 91 projects. The number of projects above U$ 1,5 million grew 71% over the previous year, representing the development of increasingly complex solutions with greater impact and responsibility.

Staff

Considered the institution' s greatest asset, special attention was given to the staff in 2017, through a variety of mechanisms dedicated to their valorization and motivation. These are highlighted by the "CERTI Academy", which is an incentive program for the formation of leaders; the "Organizational Culture" program that emphasizes institutional communication, a dashboard management system, and a recognition for results system. More than 1/3 of the staff participated in the eight CERTI Academies held during the year and the dashboard system was implemented in all the units.



Market

CERTI has increased its dedication to identifying demands for important solutions for important clients. In 2017 it expanded its strategy for approaching the market with solutions in digital marketing, media and visits for prospecting and improving relations with clients. It is also strengthening its ability to identify and indicate to clients sources and mechanisms for incentives and funding. In 2017, the composition of sectors and markets for the institution's operations continued to be redesigned in relation to previous years, while aerospace; economic, social and environmental development; electronics and energy continued to be those with the highest demand.

Capital

In 2017 there was intensive management of the institution's tangible and intangible assets, which are important to the model of sustainability and the robustness of the institution, especially in private not-for-profit Science, Technology and Inovation Institutions (ST&I) that are self-sustaining, such as the CERTI Foundation. It has successfully worked on converting company assets into real estate property, which has resulted in a 19% expansion in its fixed assets. It has sought to capture resources for investments and working capital, following the institution's guidelines for sustainability and competitiveness.

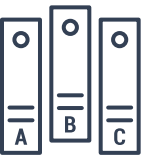
Infrastructure

With the expansion of activities, staff and revenue, the need has grown for available physical infrastructure and laboratories that are suitable and sufficient, which have been sought through technological cooperation projects and partnerships and investments in infrastructure, in particular from government sources. Thus, highlighted by FAPESC – the Foundation for Support to Scientific and Technological Research of Santa Catarina state, the expansion of the laboratory base for the development of aeronautic systems was made possible. Resources from the Priority HardwareBR Program of Brazil's Computing Law allowed complementing the laboratory of LABelectron (labelectron.org.br); resources from FINEP (the Brazilian Innovation and Research financing company – a federal government agency) made viable the construction of CERTI's Center of Innovation at Sapiens Parque; and cooperation between FIESC/SENAI/CERTI led to the transfer of the CERTI Foundation's Center for Cooperated Production to the Industry Institute at Sapiens Parque.

Management

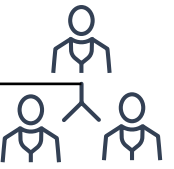
Steered by annual strategic planning and guidelines and goals, continuity was given to improving and consolidating management information systems, systematizing processes and providing information for institutional management at four levels: outside supervision and control agencies; the top administration (Boards, Superintendencies, Directors); managers of production units and the administration. The reference model at all the levels of the management system is the Plan, Do, Check, Act concept, supported by an ERP system integrated to the other specific systems, by means of which are generated the institutional indicators for management of the institution.

91 Projects executed in the year



667 Clients served

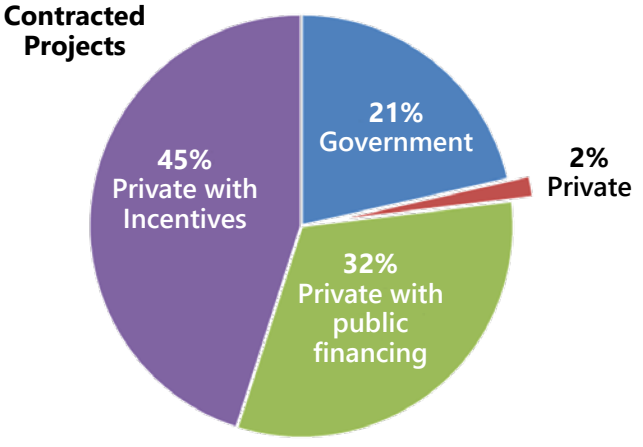
18 Number of market sectors served

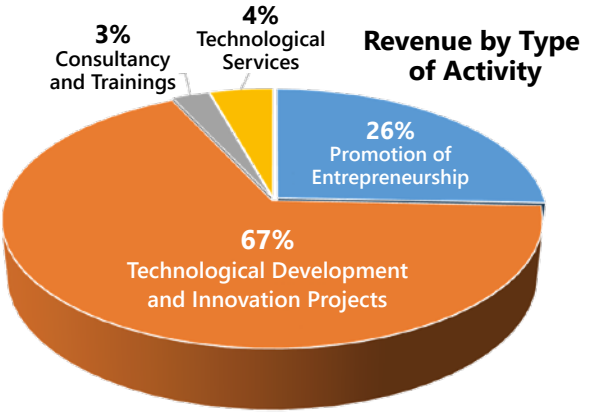


15% Revenue from projects with cooperation between the centers

8 Number of training sessions at the CERTI Academy

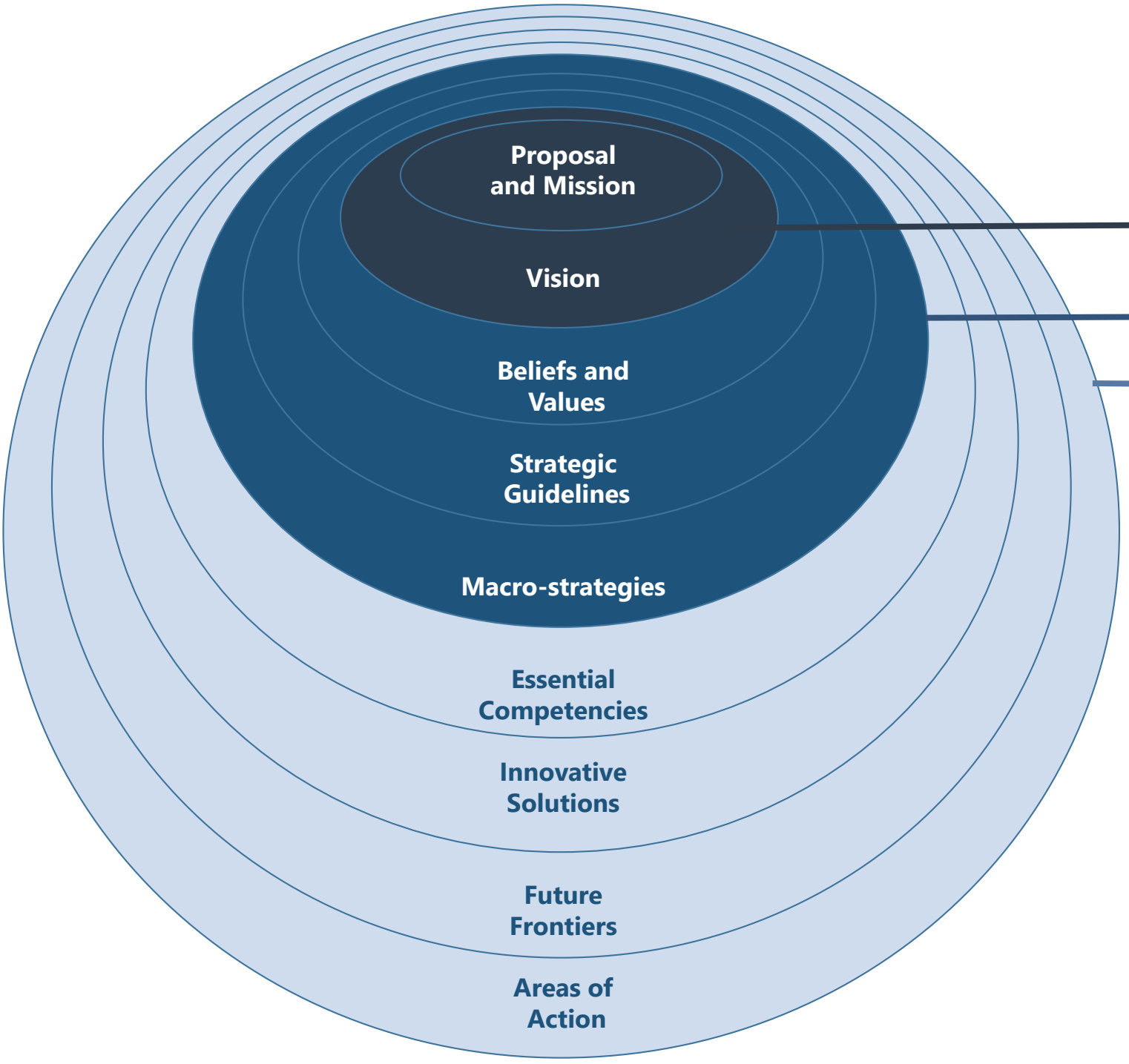
71% Growth in projects larger than U$ 1,5 million





Fundaments of the CERTI Foundation's Strategic Plan

The CERTI Foundation's Strategic Plan is the fruit of a process that began in 1994 and has been continuously improved as a function of changes in the environment and market challenges. The planning structure is composed of a set of elements, as presented below, which guide the process from the moment of the proposal from the institution to the specific action of its work units.



WHY WE EXIST

Proposal:
Contribute in a relevant manner to the competitiveness of companies and the sustainable development of Brazil, by helping to develop a consistent and dynamic ecosystem of innovation, technology and entrepreneurship.

Mission:
Develop solutions in innovation and technology to promote the competitiveness and importance of clients and partners.

Vision:
To be the 1st or 2nd best institution in its field of operation, to promote competitiveness and importance to an significant group of large companies, strategic government agencies and renowned startups.

HOW WE WORK

Beliefs and values
- Honesty and Loyalty
- Innovation and Courage
- Results for the client
- Competence and Agility
- Committed Teamwork
- Continuous Learning
- Partnership and Cooperation
- Personal and Professional Prosperity

Strategic Guidelines
- Importance
- Sustainability
- Satisfaction
- Synergy
- Synchrony

Macro-strategies
- Integrated Action of the Units
- Scientific and Technological Excellence
- Differentiated Market Position
- Meritocracy and valorization of people
- Financial Sustainability with Strengthening of Assets

WHAT WE DO

Essential competencies
- Engineering of Products and Processes
- Design and Management of Systems
- Digital and Information Technology

Innovative Solutions
- Development
- Consultancies
- Studies and Research
- Services and Training

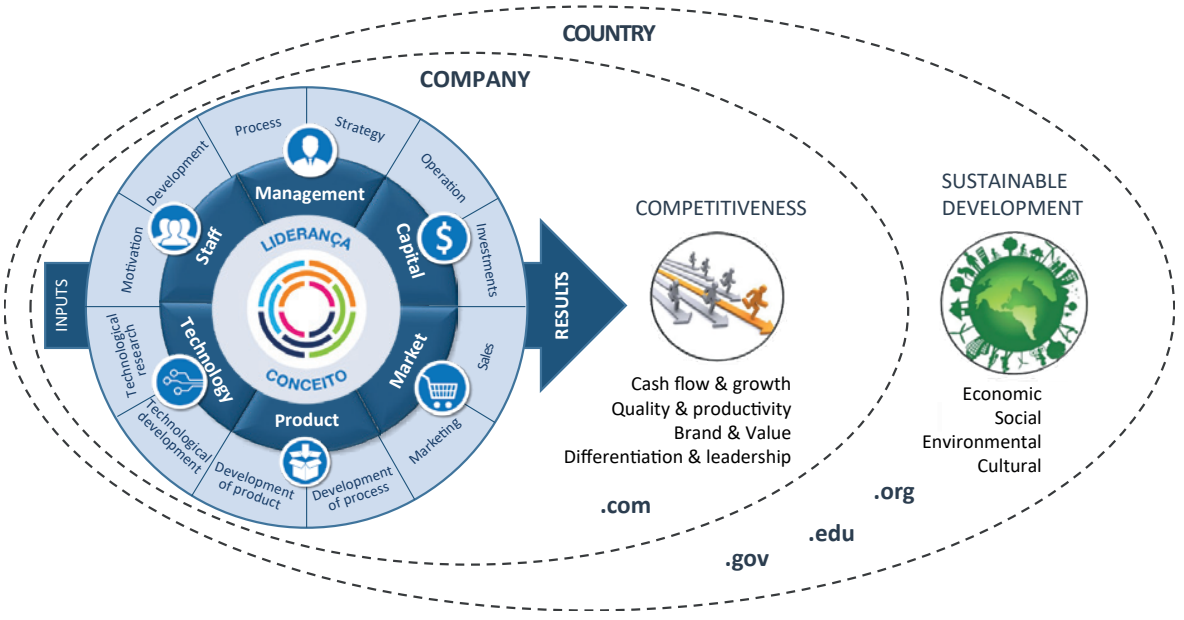
Future Frontiers
- Digital Transformation
- Industry 4.0
- Technological Convergence
- Sustainable World
- Intelligent Infra-systems
- Entrepreneurship and Ecosystemic Innovation
- Human Well-being

Areas of action
- Digital Convergence & Mechatronics
- Metrology and Instrumentation
- Cooperative Production
- Sustainable Energy
- Green Economy
- Innovative Entrepreneurship
- Company Incubation

CERTI Foundation Operations

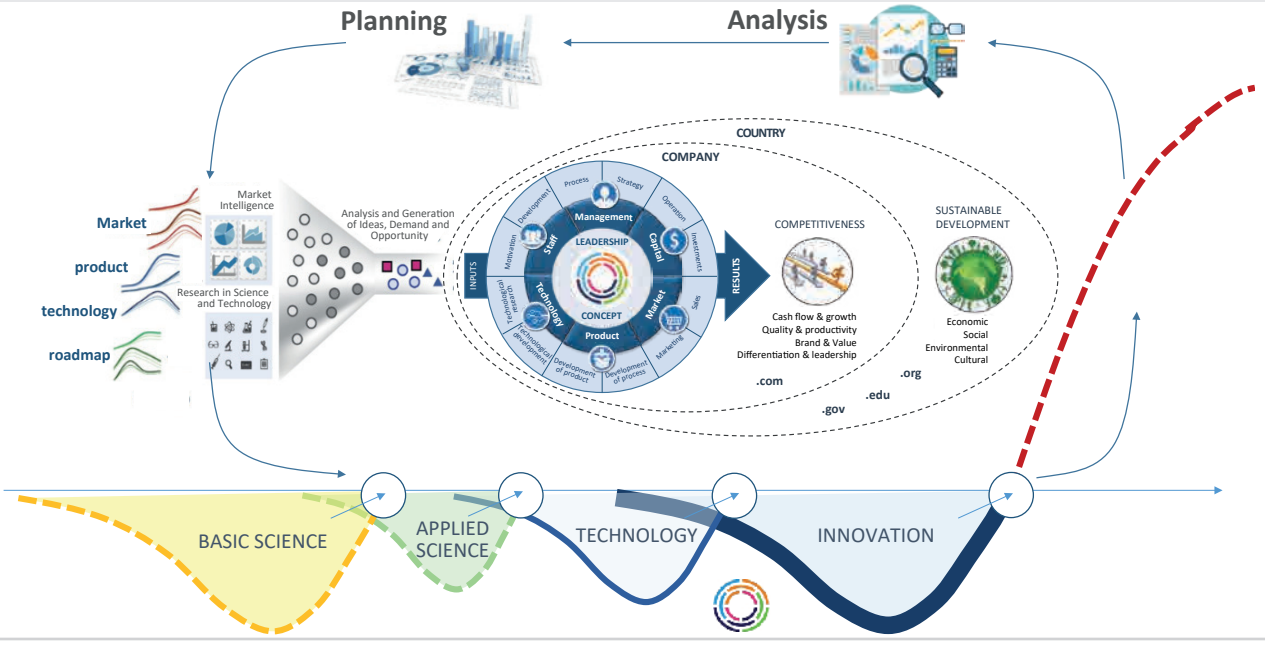
Focus of Action

Acting in keeping with its proposal to promote competitiveness of companies and the sustainable development of Brazil, the CERTI Foundation conducts its activities focused on a set of elements that are critical to a business organization, seeking to aggregate value by through innovation. Among a company's various critical processes, CERTI has important impact on issues related to the development of products, processes and new technologies, as illustrated below. Nevertheless, it is increasingly necessary to connect these projects with functions related to the market, people, administration and capital. In the meso- and macro-economic realm, CERTI conducts activities related to the development of production chains, innovation clusters and regional and sectorial development strategies.

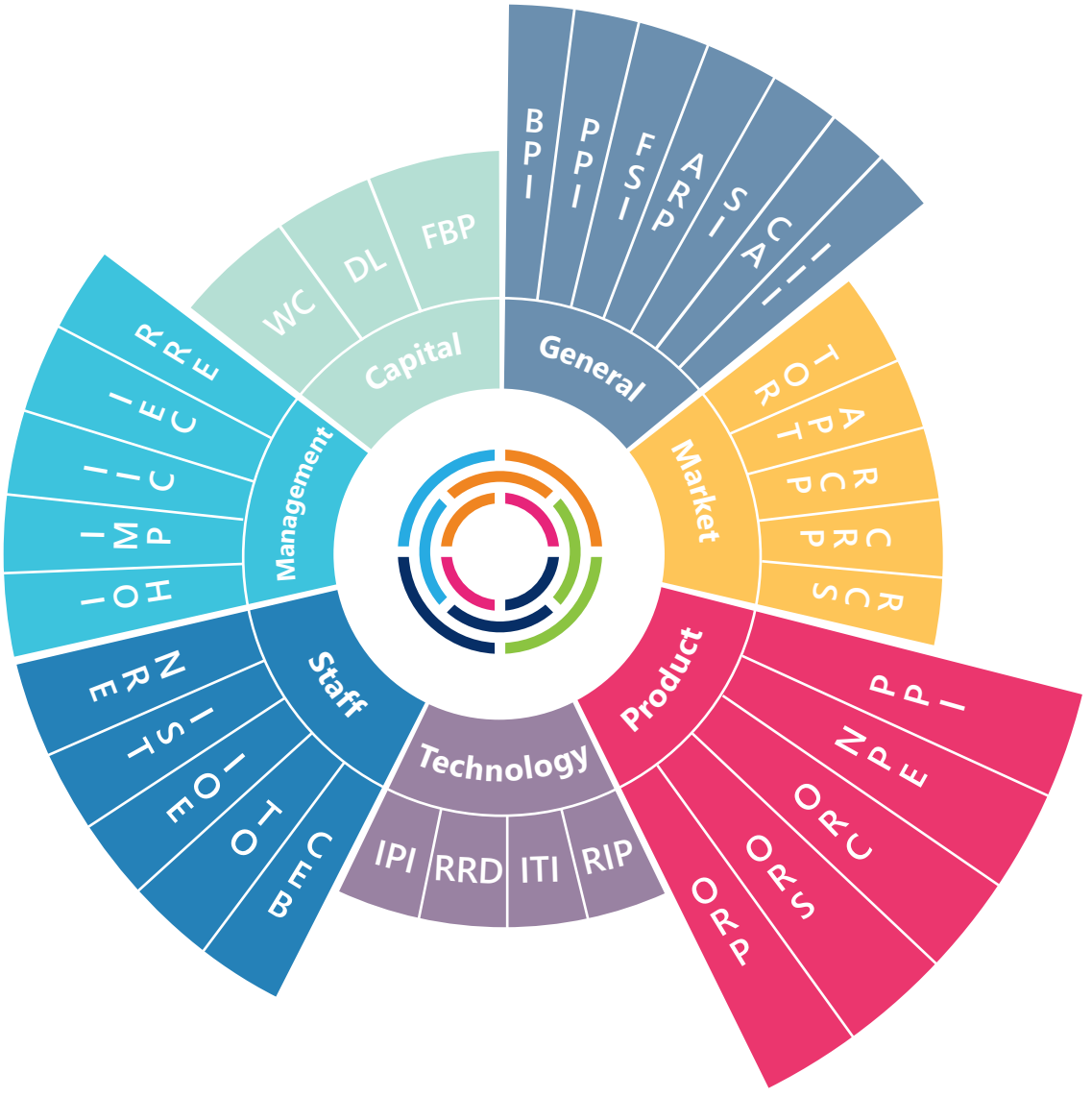


CERTI's Role

CERTI's form of action with its clients and partners is especially focused on the challenge of promoting the innovation of companies, sectors and regions, developing new technologies and generating effective results, by applying new knowledge and experiences.



Institutional Indicators 2017



GENERAL

BPI	Business Performance Index
PPI	Production Performance Index
FSI	Financial Sustainability Index
ARP	Accounting Result for the Period
SI	Solvency Index
CA	Change in Assets
III	Index of Institutional Importance (for Clients and Partners)

PRODUCT

ORP	Operating Revenue from Projects
ORS	Operating Revenue from Technological Services
ORC	Operating Revenue from Consultancy and Training
NPE	Number of Projects in Execution
PPI	Project Performance Index

Staff

NRE	Number of Reference Employees
IST	Investment in Staff Training
IOE	Indicator of Organizational Environment
TO	Turnover
CEB	Contributions to Employee Benefits

MARKET

TOR	Total Operating Revenue
APT	Average Project Ticket
RCP	Rate of Conversion of Proposals
CRP	Contractable Revenue in the Period
RCS	Rate of Client Satisfaction

TECHNOLOGY

IPI	Index of Project Innovation
RRD	Project Revenue from R&D
ITI	Investment in Technical Infrastructure
RIP	Registration of Intellectual Property

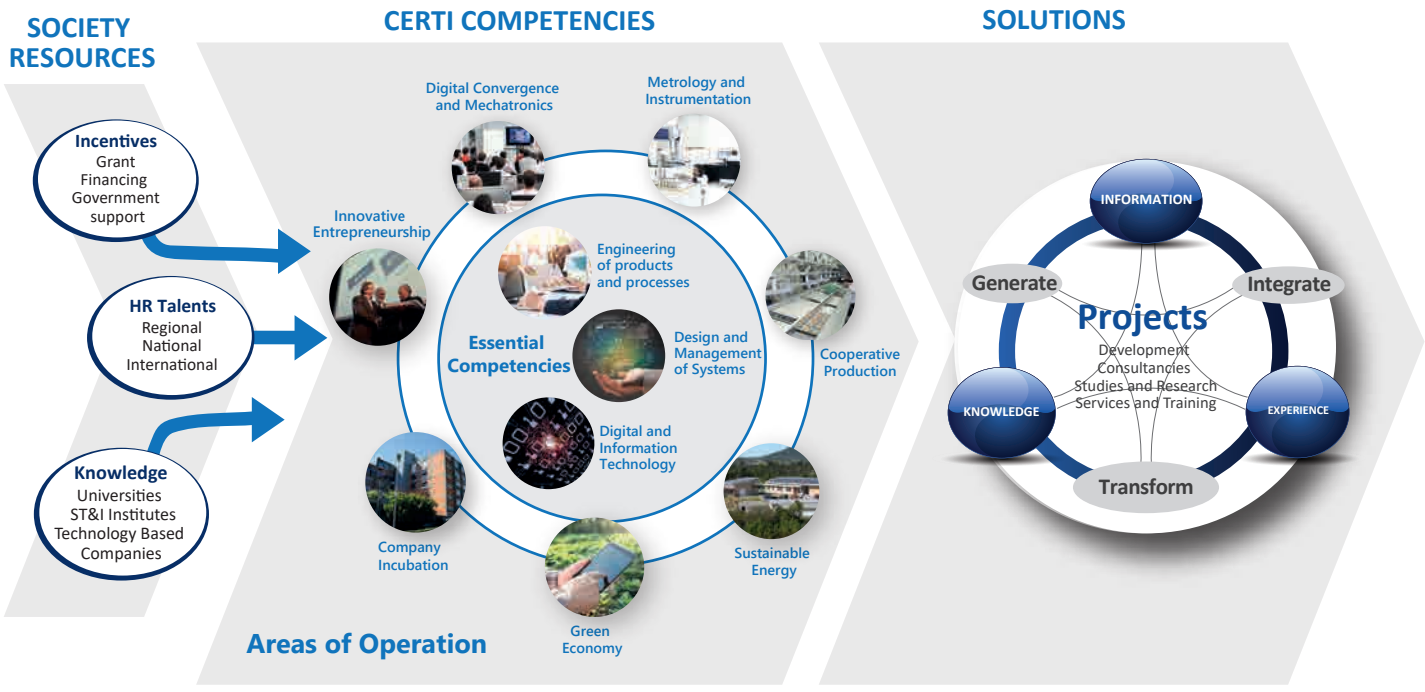
MANAGEMENT

IOH	Institutional Overhead
IMP	Index of Management Performance
IIC	Index of Internal Cooperation
IEC	Index of External Cooperation
RRE	Revenue per Reference Employee

CAPITAL

WC	Working Capital
DL	Debt Level
FBP	Financial Balance for the Period

CERTI - Form of operation, clients and partners



CLIENTS IN THE PAST 5 YEARS

PARTNERS

CLIENTS IN THE PAST 5 YEARS

PARTNERS

CERTI Reference Centers in Technological Innovation

Digital Convergence & Mechatronics

In 2017, CERTI consolidated its technological command in fields such as embedded systems, the internet of things (IoT), big data, aeronautical systems, healthcare systems, organic photovoltaics and collaborative robots. This allowed it to expand its action in new segments such as aerospace electronics, electromedical products, point-of-care equipment, ecosystems for digital education, agribusiness and industrial automation. It also strengthened its work in its already traditional segments, such as consumer electronics, digital TV, telecommunications and mobile solutions. Due to the high quality required for these new solutions and their regulations, especially in healthcare and aeronautics, aspects of technical execution of projects were improved, such as management of requirements, testing plans and compliance with norms.

Competencies

Software Development/ (Firmware to applications) / Embedded Systems/ Mecaoptoelectronics / IOT, BIG DATA and cloud computing

Solutions

Digital TV Systems and Devices/ Mobile Solutions/ Healthcare Devices and Systems/ Hardware and Software for Education / Solutions in Smart Cities / Lighting Solutions/ Design of Machinery and Robotic Systems

CDM

Company Incubation

In 2017, nine more companies were graduated by CELTA, reaching more than 100 graduated companies. Among them, TREEVIA was considered the best Brazilian company in a Samsung program for promotion of the creative economy, whose objective is to identify, select and offer support to innovative companies. One of the actions with large companies was the inauguration of the new Center for Engineering and Technology (CETE-SC) of Embraer. The presence at CELTA of an Embraer center, one of the most innovative companies in Brazil, represents a great advance for the development of the entire ecosystem of technology and innovation, not only with the incubated companies, but for all those in Santa Catarina. It will allow even greater growth in this field of action and the development of increasingly relevant projects and solutions in the aerospace and defense sector. CELTA completed the year with 34 incubated companies and 12 virtual incubated companies.

Competencies

The CERNE mode of incubation of innovative companies / Corporate, academic, governmental and social network / Infrastructure and technological, corporate environment, and entrepreneurial culture.

Solutions

Incubation of Base Technology Companies / Virtual incubation of innovative companies

CELTA

Innovative Entrepreneurship

CERTI works in projects to develop innovation environments, encourage entrepreneurship and promote corporate innovation, to expand the systemic competitiveness of regions and companies through the development of customized and high impact solutions. In 2017, this center maintained its leadership in Brazil in the development of projects for technology parks, innovation centers, incubators and ecosystems of innovation throughout Brazil for private and public entities. In addition, it strongly expanded the impact of its programs for promotion of innovative entrepreneurship like the Synapse of Innovation and InovAtiva Brasil. In the corporate environment, it worked to develop solutions for corporate innovation, using the concepts of open innovation and corporate venture innovation to expand the innovative capacity of companies and its relationship with startups

Competencies

Economy of Innovation and Regional Development / Management of Innovation and Technology / Entrepreneurial Culture / Conception and Articulation of Ecosystems and Networks / Management and Promotion of Innovation in a Business Environment

CEI

Solutions

Development of Innovation Environments / Programs for the Development of Innovative Companies / Systems of Entrepreneurship and Corporate Innovation

Metrology & Instrumentation

In 2017, the Metrology and Instrumentation Center focused its action on the sectors of oil & gas, mechanical manufacturing and healthcare. In dimensional engineering, for which the CERTI's competence is recognized in Brazil and abroad, more than 4,000 certifications of calibrations and measurements were issued, and more than 300 people were trained in the courses offered. In the theme of intelligent instrumentation, CERTI developed various solutions for automation and tests, and others for the Industry 4.0 context, integrity based on risk and management of networks for complex production systems.

Competencies

Dimensional Engineering / Intelligent Instrumentation / Systemic relation between innovation, measurements, quality and competitiveness

Solutions

Technological Services / Solutions in Inspection and Monitoring / Systems of Quality and Integrity / Modeling and Implementation of Technological Networks

CMI

Cooperative Production

In 2017, the Center for Cooperative Production executed projects focused on industrial competitiveness through innovation in manufacturing processes, with a focus on automation of the production steps, intelligence of factory systems and digitalization of production. Projects in Industry 4.0 were developed and applied to different sectors, with an emphasis on electronics, healthcare, aerospace and defense and consumer electronics.

Competencies

Engineering of Costs and New Industrial Companies / Manufacturing Intelligence / Digital Manufacturing/ Industry 4.0 / Quality Assurance, Conformity and Reliability

Solutions

Engineering of Costs and New Industrial Companies / Manufacturing Intelligence / Digital Manufacturing/ Industry 4.0 / Quality Assurance, Conformity and Reliability

CPC

Sustainable Energy

CERTI consolidated itself in the energy sector in strategic fields such as: distributed generation and storage of energy, energy management systems, electrical mobility, micro-networks, and innovative business models. In 2017, the projects executed and activities initiated focused on developing solutions for the insertion of products and improvements in the market, generating results for society, by means of projects for companies in the sector and industrial partners. The institution is thus aligned with incentive mechanisms and financings for the realization of projects in the energy field.

Competencies

Intelligent technical and commercial solutions for the energy sector: Distributed Generation / Energy Storage / Energy Management / Electrical Mobility / Business Modeling in Energy / Sustainable Energy Systems

Solutions

Automation in intelligent networks / micro energy networks / Energy management systems / Autonomous systems for isolated areas / Subterranean Networks / Charging stations for Electrical Vehicles / Viability study and business models / Special electrical projects and consulting / Energy market

CES

Green Economy

The year of 2017 marked the five first years of the Green Economy Center. This symbolized the attainment of a first development cycle by the Center, overcoming the enormous challenges of constructing a new field of competence at CERTI during a period of great uncertainty in Brazil. The consolidation of specific competencies, technologies and models is represented in the strength of a young, transdisciplinary and integrated staff, and in the fruits of its work: successful innovative projects and initiatives. This success is also the result of another principle of CERTI, the importance of constructive partnerships. The integration of objectives, competencies and organizational cultures among partners with different trajectories, acting in an environment of mutual trust and synergic causes, was essential in this development cycle. It is in this spirit that CERTI is looking towards the next cycle that is now beginning, seeking a new level of contribution to environmental competitiveness, efficiency and sustainability of Brazilian natural capital.

Competencies

Management of Natural Capital (Dynamic Support Capacity, Carryover & Trade, Biodiversity Offsets) / Management of Ecosystemic Services / Modeling of Businesses with Impact / Remote Sensing, Multi-criteria analysis and environmental modeling / Water Resources Management/ Knowledge Management

Solutions

Development of models, systems and mechanisms for creating shared value / Implantation and support to innovative experiences with sustainability

CEV

Outstanding projects in 2017

Intelligent Control Center

Development and implantation of a system for operation of an intelligent control center based on telemedicine solutions. This center will be responsible for standardizing, monitoring, controlling and improving the use of electromedical equipment, such as magnetic resonance and computerized tomography, and also allow integration with hospital management, radiology and patient management systems.

Solutions for the Aeronautical Industry

With the support of FAPESC, CERTI had its work as a unit of Embrapii (the Brazilian Agency for Industrial Research and Innovation) in intelligent systems extended to also provide technological support to aerospace and defense sector companies. In this context, Embraer signed a partnership with CERTI to conduct pre-competitive research and development of technologies for aeronautic use. The decision was influenced by the command of technical-scientific competencies of CERTI specialists in fields such as electronics, software, reliability and manufacturing. The finalization of the first step of this project culminated with the implantation of an Embraer engineering office in the CELTA building, in August 2017, and the contracting of a new development phase in aeronautical systems.

OPV – Organic Photovoltaic Panels

With financing from BNDES Funtec and active participation of the companies Celesc and Flexsolar, in 2017 CERTI began the development of panels with Organic Photovoltaics (OPV). This state-of-the-art technology presents great potential for renewable and sustainable energy generation. It is based on the use of organic materials, such as polymers, which can be manufactured by printing and are normally quite thin, flexible or even transparent.

RVM - Reverse Vending Machine

This project involves research and development of a solution for recycling of cans and PET bottles with generation of credit for users. Developed with the "Reverse Vending Machine" concept, the project calls for the installation of recycling machines in commercial environments and integration to their data network, providing, in addition to a financial return to the user, a suitable destination for the compacted material. The client is the EcoEducacional company and financing is from FINEP.

Center for Operation of Services

This center is working on the development and implantation of a system that will monitor the physical infrastructure of electromedical equipment, such as magnetic resonance and computerized tomography. The center will be responsible for registering data from sensors in a data base and issuing notifications about problems that occur in the equipment or in the environments in which they are operating. This monitoring of physical infrastructure, which will display alerts and notifications in real time, will be conducted by dashboards. These notifications will provide agile support to decision-making, reducing costs for services and accelerating the client service processes.

The LABelectron Nucleator Project

In 2017, actions were intensified to develop command of technologies, seeking excellence in competitive electronic manufacturing in small lots. The main highlight took place through the consolidation of a partnership with the SENAI system, through which LABelectron came to integrate the Industry Institute. In 2018 LABelectron will have its infrastructure expanded and installed at Sapiens Parque, thus consolidating for Brazil an environment of reference for development, experimentation, diffusion and training in Industry 4.0.

The Charging Station Project

Celesc's Charging Station project was an initiative of Celesc Distribuição S.A., which involved the installation of the Santa Catarina Electrical Corridor: which includes basic charging infrastructure to serve more than 300 kilometers of highways with three fast charging stations (in Florianópolis, Porto Belo and Araquari) and four for semi-fast charging (in Florianópolis, Blumenau and Joinville). The project studied vehicle charging and its interaction with the distribution network, and even explored the use of energy storage by batteries to reduce impacts, a system that was installed in partnership with WEG at an service station of the Ipiranga company in Florianópolis. In addition to the scientific contributions, the project encouraged adhesion to electrical mobility, contributing to the environment and generating new business.

Projeto Biogás SC

A law was proposed to develop a state policy for the Biogas Production Chain of Santa Catarina. CERTI was responsible for coordinating the project and part of its execution, with support from JMalucelli Ambiental, which has experience in the organization of energy generation and biomethane projects and the Andersen Ballão Advocacia, which has knowledge of regulatory and environmental law. The client, the Secretariat of Agriculture and Fishing of Santa Catarina state – received support from other institutions to guide the project, such as: Fapesc, Unoesc, Embrapa, Alesc, Apesc, Aresc and Fatma. The project involved analyses of business models, equipment and potential for energy production and use of biomethane in the state.

Implantation of 4.0 Solutions for Companies

During 2017, CERTI worked on various projects focused on the theme of Industry 4.0. The focus was on increasing the competitiveness of companies through the incremental adoption of technologies aligned with Industry 4.0. The applications developed included: collaborative robotics, intelligent systems for assistance to quality assurance, machine-machine integration, simulation of processes, traceability through the Internet of Things and others.

Improved Processes aimed at Product Reliability

The reliability of a product is the direct consequence of the reliability of the parts that compose it and of the quality of the processes used in its manufacturing. In 2017, projects were developed with this objective for ITB, EXATRON and INTRAL. They focused on the improved reliability of their products through implantation of process metrics and minute evaluation of factory conditions. The 6Ms concept was used (Methods, Manpower, Measurement, Mother Nature, Materials and Machines), to ensure the manufacturing of quality products, productivity, low cost, deadlines and reliability. As a result, it is possible to estimate the situation of each one of the systems that compose the factory structures and identify, case by case, the opportunities for associated improvements, thus elaborating strategic roadmaps that lead to advanced manufacturing.

Center for Innovation and Support Systems of Sapiens Park to expand the number of large and medium size companies, startups and advanced projects of ST&I Institutes

This project is being realized through an agreement with FINEP in a partnership between CERTI, UFSC, ACATE and Sapiens Park. The objective is to expand the number of companies operating in the park, intensify partnerships with universities and expand relationships with companies that compose the ecosystem of innovation of Florianópolis. In 2017, work was initiated for the implantation of the CERTI Innovation Center - Sapiens, which will have a total size of 2,845 m^2 in 26 modules for companies. Completion is scheduled for October 2018. In partnership with UFSC, the Novus space was located in the Attic of Inpetro, which will be the habitat of innovation for new entrepreneurs and innovative projects from UFSC at Sapiens. The ACATE space at Sapiens Park is also under development.

The Aerodin Project

This is a pre-competitive technical study designed to obtain and reuse data about the geometric quality of primary parts and the aerodynamically relevant surfaces of jet airplanes developed by Embraer, in an effort to identify the causes of the predominant variations to improve the performance of airplanes and implement manufacturing advances.

Outstanding projects in 2017

Project V-CONE

Financed by Petrobras, the objective of this project is to reduce the costs and time required to maintain the traceability of cone-type flow meters, using scientific metrology to improve knowledge about the causes of variation in metrological performance and its change over time. To do so, the CERTI staff developed a test meter that allowed purposeful and controlled altering of the dimensional and geometric parameters that determine performance in measuring flow. In possession of the data generated by the test meter, it was possible to identify the effect of the dimensional and geometric variations in the result of the flow and thus contribute to developing regulations about cone meters in Brazil.

SUBSEA – Modeling of the Research, Development and Innovation Network in the Integrity of submarin equipment

The aim of this project, financed by Petrobras, is to create a specific-purpose organization in network, which is a model developed by CERTI that promotes and organizes R&D+I activities dedicated to management of integrity in submarine equipment. In 2017, the system of operational management for the network was developed, preparing it for the pilot-cycle with the operators in 2018 and creating conditions for replicability of the model for other challenges in the country.

State Water Resources Plan for Santa Catarina (PERH-SC)

In 2017, CERTI completed the water resources plan for the state of Santa Catarina, which is the public policy tool for properly adjusting the supply and demand of water resources in the territory. The Santa Catarina government through the State Secretariat of Development (SDS) and FAPESC established a partnership with CERTI to develop innovations in this instrument, more effectively incorporating savings, practicality and agility in water resource management. The organization of an Ecosystem of Innovation in Water Resources and the dynamic support capacity approach to watersheds are the highlights in the development of the plan.

The Ilha Grande Bay Initiative - BIG 2050

The BIG 2050 Initiative is an incentive mechanism dedicated to integrated management of ecosystems in one of the most beautiful and important tourist regions in Brazil: the Ilha Grande Bay. Developed in a partnership between the United Nations Food and Agricultural Organization (FAO), the State Environmental Institute of Rio de Janeiro (Inea) and CERTI, the effort has two main pillars: BIG Radar 2050 and the BIG Challenge. Based on monitoring of the environmental health of the Ilha Grande Bay to measure the performance of the ecosystemic services present in the region, the initiative identifies environmentally sensitive factors and offers various forms of incentive for members of society to present creative solutions that promote conservation in the region.

GINGA NCL Formatter

This project involves development of a new NCL module (NCL Formatter) for Ginga Middleware. The project challenges range from its complexity and compliance with Brazil's digital TV norm (ABNT NBR 15606-2), to revision and integration to the base of the existing middleware code. The project also focuses on the realization of the integration and validation of the final solution, and actions to transfer knowledge about command of the technology. With this final solution, new televisions can be manufactured with more advanced technology and an improved version of the middleware, providing consumers a better interactive experience.

Educational Kit - Positivo

This project involves research and development of an educational solution for Positivo Educação , with support from Embrapii. The final results will be an easy and intuitive solution for teaching programming, inserted in high school curriculums and composed of a programmable hardware kit, modules with sensors and actuators, in an environment of programming by blocks with a browser.

Synapse of Innovation

In 2017, the Synapse of Innovation Program expanded its operations to one more state o Brazil, reaching Espirito Santo for the first time. In the first phase of the program, 1,272 innovative ideas were received, involving and training more than 5 thousand entrepreneurs from 57 municipalities in the state. Moreover, the sixth edition of the program began in Santa Catarina state. In its nine years of operation, the Synapse of Innovation program has generated more than 10,000 ideas and more than 400 innovative businesses in the three states where it operates (Santa Catarina, Amazonia and Espirito Santo) contributing to the consolidation of CERTI as one of the main institutions promoting innovative entrepreneurship in Brazil.

ProdSaude and RP2M – Organization of Technological Services Networks

CERTI organized and coordinated two of the 19 Technological Services Networks in the Brazilian Technology System (SIBRATEC). Based on agreements with the Ministry of Science and Technology (MCTIC/FINEP), in 2017 transversal actions for training and quality assurance were executed for the RP2M network (in mechanical manufacturing) and ProdSaude (healthcare products). More than 5 thousand people were connected in networks through the programs, highlighting them in the context of SIBRATEC.

Inovativa Brasil

This is Brazil's largest program for the acceleration of startups, and has been executed by CERTI since 2013. It supports innovative entrepreneurs who have good technology, but little knowledge of and experience in business, by guiding their first steps in the market. In five years, seven editions of the program were realized, in intensive cycles of online training, individual mentoring and training and connection events, in which more than 640 startups were accelerated from 20 economic sectors and all regions of the country. In 2016, it won the Best Startup Accelerator Award and the OECD prize for Innovation in the Public sector. In 2018, CERTI was rehired to execute the program until 2020.

Cooperation SC - Berlin | OP. II

The Cooperation SC & Berlin program promoted cooperative projects between ST&I Institutes and companies, consolidating a methodology for 2+2 projects. The consolidation of the API - Photonics resulted in an important mapping of actors in the two states. In Santa Catarina, four regional workshops were held in which more than 80 companies participated. Technical demands were qualified and later presented to companies in Berlin during a business mission. The demands sparked interest and matches were made with 17 companies. Eleven of these established a partnership and submitted proposals to a public call for projects funded by FAPESC, which led to five projects with photonic solutions approved by a commission of specialists.

Technology Parks

CERTI conducted activities for the implementation of four technology parks in this period:

The Technology Park of Santo André was developed after a request by the Intermunicipal Consortium of Greater ABC, in São Paulo state. The project conducted the planning, modeling of the legal structure and governance, proposed the mix of companies and park services and prepared an architectural plan and business project at the Innovation Center (IC), which is the anchor of the technology park and of the Technology Pole in the Greater ABC region.

Maringá Technology Park – hired by Sebrae Paraná, with support from the Maringá municipal government, CERTI analyzed the region's Ecosystem of Innovation; defined a conceptual model and priority sectors for the park, the preliminary master plan, a business model, investment plan, and operations and services for the Park, the mix of companies and the legal model.

Alphaville Technology Park – contracted by Alphaville Urbanismo, the purpose was to conduct planning of the technology park, involving the concept, business model, areas of operation, legal model, governance and the economic viability plan for the park.

Mato Grosso Technology Park – contracted by the Mato Grosso state government through SECITEC/MT, the park was designed to be an environment dedicated to the creation, development, and provision of technological solutions. Its goal is to attract innovative companies to give potential to innovation in the state, through integration and the exchange of ideas and innovative cooperation through thematic networks in five fields of operation: agribusiness, biotechnology, geosciences, ICT and green chemistry and new materials.

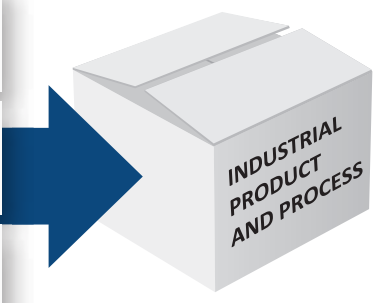
EMBRAPII
Empresa Brasileira de Pesquisa e Inovação Industrial

CERTI is an EMBRAPII unit that has been accredited to act in the field of competence of intelligent systems, allowing approved projects to have up to 33% of their total value subsidized.

In compliance with its strategic guidelines for 2017, CERTI intensified activities for prospecting large scale and complex projects, generating the desired results through contracting of eight project. It should also be highlighted that the projects contracted in 2017 represent 24.45% of the target in projects to be contracted in the six-year period defined by CERTI's Action Plan with Embrapii in 2014. The innovation projects will directly benefit companies such as Exatron Indústria Eletrônica, Siemens, Positivo Informática, Embraer, Proqualit Telecom and Alliage, which operate in the electronics, aeronautics and healthcare sectors.

INTELLIGENT SYSTEMS

SPECIALIST SYSTEM Artificial intelligence, digital signal processing, algorithms, high-level applications, etc.	**CONNECTIVITY** Authenticity, security, Internet, cloud computing, M2M, etc.
EMBEDDED SOFTWARE Middleware, operating system, kernel, control algorithm.	**HUMAN MACHINE INTERFACE** Manipulators, monitors, cameras, registers, interactive displays, biometrics.
ELECTRONIC HARDWARE Electronics, microelectronics, Microsystems (MEMs) firmware,	**SENSORS AND ACTUATORS** GPS Operation, signal acquisition, electro-mechanical triggering, etc.
EQUIPMENT AND DEVICES Encapsulating, interconnection, cabinets, mechanics, micromechanics, supply, design, optics and special materials, integration to physical system, etc.	



Laws for Tax Incentives to Research and Development of Technological Innovation Capturing Resources

Fund-raising

- Finep Subevenção
- BNDES Funtec
- FINEP 30 dias
- BNDES crédito
- BRDE Inova

LAW 8.248/91 — Computing Law

AT WHOM IT IS AIMED: Companies that produce in Brazil computing equipment listed in Decree no. N° 5.906/06, of 26/09/2006. Based on the Computing Law (Lei 8.248), companies that invest in R&D and innovation activities internally or with R&D institutes (such as CERTI) for computing and automation goods, can receive reductions of up to 95% of the Industrialized Product Tax (IPI).

LAW 11.487 — The Rouanet Law for Research

AT WHOM IT IS AIMED: This law is for companies in any sector that invest in research and development of technological innovation, use the real profit accounting regime and have operating profit during the year.

LAW 11.196/2005 — Lei of the Good

AT WHOM IT IS AIMED: Brazilian companies, from any sector, that invest in research and development of technological innovation, use the real profit accounting regime and have operating profit during the year can benefit from this law. The law aims to stimulate patents, thus decreasing imports of computing equipment and components, as well as local training and to attract new companies to the country.

DIRECTIVE 950

OBJECTIVE: The purpose of Directive 950 is to define the methodology for recognition of technology developed in the country for goods or products. Advantages to the company: a) right of preferences in public bids for purchasing goods and services. b) the margin of preference can reach up to 25% of the foreign products. They are specifications of parameters so that equipment (product) is considered to be developed in Brazil.

Ecosystem of organizations with operational and strategic partnerships with CERTI

The CERTI Foundation has partnerships with countless organizations and institutions in Brazil and abroad. They are highlighted by the institutional relationship with the entities listed below, either because of the existence of a specific cooperation agreement or because of the shareholder participation in the companies.

INSTITUTO SAPIENTIA – IS

The Instituto Sapientia is a scientific technological institution for innovation (ST&I Institute) based in Brasília focused on the digital technology sector. In 2017, Sapientia stood out for the expansion of its portfolio of projects and clients, with the conquest of significant companies in the sectors of agribusiness and electronics.

INSTITUTO CERTI AMAZÔNIA – ICA

This ST&I Institute based in Manaus is focused on the industrial pole and the environmental challenges in the region. In 2017, ICA expanded its production capacity and strengthened its competencies in the fields of digital TV, web systems and electronics projects. Cooperation with other CERTI units contributed to the maintenance of its current clients and the transfer of technologies with potential to generate new business at the Manaus Industrial Park.

CVENTURES

This company administers capital and participations, operating a venture capital fund of U$ 25,5 million for investment in technology startups. In 2017, Cventures effectively assumed management of the Cventures Primus Fund and approved investments in three new companies, reaching more than U$ 18,75 million invested in 15 startups.

DARWIN STARTUPS

This startup accelerator has offices in Florianópolis and São Paulo. It is recognized by entrepreneurs as smart money, makes investments of seed capital and approximates companies to its network, like B3 (a merger of BM&FBovespa and Cetip), TransUnion, CNSeg Par, RTM and Neoway.

SAPIENS PARK

This innovation park is dedicated to attracting and hosting innovative companies in the fields of ICT, life sciences, energy and the creative economy. In 2017, Sapiens expanded its infrastructure and the number of companies and people working at the park. It reached about 12% of the implanted area, and began a new phase of direct commercialization, attracting new investments to the development, estimated at U$ 7,3 million, for the coming years.

SYNAPSIS OF INNOVATION

This is a program for the promotion of entrepreneurship that transforms ideas into innovative companies. In 2017 it had operations in the states of Santa Catarina, Amazonia and Espirito Santo. The Synapse of Innovation has received more than 10 thousand proposals and has generated 400 companies, most originating at Brazilian universities .

LABELECTRON

This is a factory-laboratory of the CERTI Foundation that works in the production of high complexity circuit boards in small series. In 2017, LABelectron entered the second phase of the LABelectron Nucleator project, at a value of U$ 4,2 million, together with MCTI/SEPIN, for the implantation of technologies that seek an increase in competitiveness in the electronics sector.

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