Institutional Presentation
Padtec S/A

- Largest Optical Networking Manufacturer in Brazil.
- Global supplier: equipment and solutions sold in more than 40 countries.
- Productivity: revenue of USD 800 k per employee per year.
- R&D investment: ~ 15% of revenue.
CPqD is an independent institution focused on innovation through Information and Communication Technologies (ICT), aiming at contributing to Brazil’s competitiveness and the digital inclusion of the Brazilian society. It develops the most extensive research and development program in ICT in Latin America, fully dedicated to the development of ICT solutions for telecommunication, finance, energy, and other industries, to both corporate and government sectors.

Ideiasnet is a public Venture Capital entity, focused on companies in the technology sector in Brazil and in Latin America. Ideiasnet operates in its invested companies, by promoting synergies, adding management, and contributing to strategy definition, in market positioning, and merger and acquisition structuring.

BNDESPAR is responsible for the variable income operation, invests in companies from priority sectors in BNDES’ investment strategy, such as the renewable energy sector, oil and gas chain, information technology and communications, biotechnology and life sciences, second-generation ethanol and green chemistry.
Semiconductor company that develops high-speed ICs and complex DSPs for 10G, 40G, 100G and 200G.

Civcom is a pioneer company in manufacturing laser modules for transponders 10G, 40G and 100G and 200G.

WxBR is a Brazilian high-tech company in wireless telecommunications industry (WiMAX, WiFi, LTE, etc).

Padtec's subsidiary specialized in services such as implementation, activation, fiber characterization and network monitoring.
Mission
Provide for the global market, with agility and flexibility, devices solutions, equipment and optical communications systems that exploit the potential of optical layer.

Vision
Being the global market leader in providing innovative and high value-added solutions, exploiting the potential of technology and contributing to the progress of telecommunications.

Values
Creativity
Agility
Flexibility
Responsability
Respect
Perseverance
**Major LATAM clients**

- **Embratel**
  - Festoon (submarine): 3000 km (RJ and RN) - G.653 (DSF).
  - DWDM System at Manaus, essential for national interconnection.
  - First 40 Gbps systems at South America.

- **Telefónica**
  - Wide backbone used on Vivo’s operation and support.
  - Large portion of all Brazilian DWDM infrastructure.
  - Strategic partner at Campus-Party.
  - São Paulo's Metro Ethernet network.

- **Oi**
  - Largest SAN network at Latin America with over 400 channels in service to an important financial institution.
  - 40 Gbps Systems and ROADM WSS.

- **GVT**
  - National backbone across the entire country (RS to Northeast).
  - First 100 Gbps systems in Brazil.

- **Silica Networks**
  - DWDM System (40 channels) across 5000 km between Argentina and Chile, through the more challenging and different geographies such as Patagonia and the Andes.

- **Telebrás**
  - 100% of Backbone of PNBL
  - Biggest bidding of DWDM optical transmission in Brazil’s history.
Padtec S/A
Global Presence

HQ: Campinas, SP – Brasil
Regional offices: São Paulo, Rio de Janeiro and Brasília
Abroad offices: Argentina, USA, Mexico, Colombia, Italy and Israel
Equipment and solutions in more than 42 countries.
Padtec offers solutions to the major organizations in areas as:

- Telcos/Carriers
- Carriers of carriers
- Information Technology
- Utilities
- Integrators and Service Providers
- Research and Education
- MSOs/CATV
- ISPs
• Thousands of kilometers linking all Colombia and Central America (from southern Mexico to Panama)
• Transport network designed for signals 10, 40 and 100 Gbps
• Redundant architecture with ROADM and GMPLS
LightPad i6400G Platform

High Capacity Optical Transport

Through the LightPad i6400G Platform®, Padtec provides a Carrier-class solution for multi-service transport with high capacity in several network architectures, being able to meet the growing changes of traffic profile, with high flexibility and availability.

- DWDM – Dense Wavelength Division Multiplexing
- OTN Switching
- ODU-XC – ODU Cross-connect
- OTN - Optical Transport Network
- ROADM WSS – Wavelength Selective Switch

Submarine Backbone  |  Terrestrial Backbone  |  Metro / Aggregation  |  Corporative Access
**Gen. II 100 Gbps Transponders (OTU-4)**

- **Muxponder**: Multiplexes 10x 10G client interfaces
- **Terminal**: 100 GbE Input (CFP)
- **Flexponder**: Multiplexes 2x 10G + 2x 40G
- **Regenerator**: 2x OTU4 DWDM Interfaces
- **Modulation**: Coherent **DP-QPSK or DP-DQPSK**
  - DWDM 100/50/37.5 GHz Tunable at entire C+ or L band
- **100G Line Cards Second Generation**
- **Compliant with existing 10 Gbps and 40 Gbps system**
Gen. II 100 Gbps Transponders (OTU-4)

- OTU2 / OTU2e
  - 10GbE LAN/WAN
  - 8.5G FC
  - STM-64
  - 10G FICON
- OTU3 / OTU3e
  - 40GbE
  - STM-256
  - 100 GbE

100 Gbps Muxponder G.709 (x10)
100 Gbps Flexponder G.709 (x2)
100 Gbps Terminal G.709 (x1)

100 Gbps Lambda
- DWDM OTU4 Signal
- FEC 20% OH
- 127.156 Gb/s

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Combiner ODU-XC 8x2

Available in two form factors, the Combiner ODU-XC is a dual transponder which can be used as a standalone or with LightPad i6400G sub-racks (compact 4U or 14U). It has two 10G line interfaces implemented with grey or colored XFP.

**Supported Protocols:**
- FE, GE
- STM 1/4/16
- SD-SDI, HD-SDI
- 1G / 2G / 4G FC
- OTU1

**Applications**
- Corporative and dedicated links
- Mobile Backhauling

**Features:**
- Aggregating Flexibility
- Electric X- connections
- ODU level protection

**Supported Protocols:**
- FE, GE
- STM 1/4/16
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**Applications**
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*LightPad i6400G Platform*
Complete Line Cards Family

Rate Meter 3R 2.5G
Combiner 2.5G OTN
Terminal 3R Multirate 10G
Combiner ODU-XC OTN
Terminal 40G OTN
Muxponder 40G OTN
Terminal 100G OTN
Muxponder 100G OTN
Terminal 8G FC OTN

Regenerators 10G, 40G and 100G OTN

Terminal 2.5G OTN
MUX/DEMUX
ROADM WSS 9
ROADM WSS 9
MUX/DEMUX
OA
OA

Combiner 8x1 10G OTN

Flexponder 100G OTN

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LightPad i6400G Platform

ROADM WSS

- Available versions:
  - 2-degree (WSS-20)
  - 5-degree (WSS-50)
  - 9-degree (WSS-90)

- Automatic Equalization
- Colorless and Directionless

Amplifiers

- EDFA
- RAMAN
- 4,5U
- Dual Stage

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DCI
**OTN Switch LightPad OTS-30**

- Capacity up to 7 Tb/s (even more if in cluster mode)
- Three form factors of different capacities to Backbones and Metropolitan networks application
- Integration with DWDM Control Plane (Lightpaths)
- Several *line cards* models
- Up to 240 Gb/s per slot
- Commutation in several levels
Submarine Full Turnkey Solution

New Systems

Full Turnkey Supplier:
- High capacity and reliability DWDM
- Network Project
- DTS and Cable Route Survey
- Deployment and Burial
- Maintenance
- General services
- Integration with terrestrial backbone

Existing Systems

Upgrade
- Alien wavelength environments
- Flexible and seamless upgrade
- 100Gbps high performance transponders

Maintenance
- Qualified team
- Specialized Ship
- All necessary materials
Submarine Full Turnkey Solution

**Dry Plant**
- SLTE – Entire DWDM Optical Transmission Infrastructure
- Cable Termination
- Power Supply for repeated submarine system
- Complete Management System

**Wet Plant**
- Submarine Optical Cable
- Repeater (OSLA)
- Branching Unit

**SLTE – LightPad i6400G**
- Up to 200 channels per fiber
- Channels up to 100 Gbps
- Coherent detection
- Optical submarine amplification

**Submarine Backbone**

**Terrestrial Backbone**

**Metro / Aggregation**

**Corporative Access**

DCI
Padtec’s **OSLA** - Optical Submarine Line Amplifier embeds 12 EDFAs with very low noise figure and its articulated mechanic was developed to support the most severe environments at very high depth.

**Characteristics**

- Optimal power consumption and thermic dissipation
- Robustness with optical and electrical redundancy
- High reliability compliant with submarine requirements
- Optimized mechanic and ease of use
- Friendly management system

Depth supported: 8,000 m
**Cables, BUs, C-OTDR and PFE**

Padtec’s turnkey submarine solution spans:
- Active and Passive Branching Units (BUs)
- ROC-2 Family Cables (Nexans)
- C-OTDR to continuous line supervision
- Power Feed Equipment (PFE) of 6/12 kV

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**Submarine Backbone**

**Terrestrial Backbone**

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Submarine Systems

Deployment

- ROV
- Seabed Survey
- Specialized Ship
- Launching Machine
- Plow

Submarine Backbone
Terrestrial Backbone
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Padtec’s MultiPad Platform is an economic and efficient solution in wavelength conversion and optical signal amplification, allowing longer fiber spans in optical communications systems. The platform is transparent to transmission protocols and rates, assuring flexible application to single channel optical networks.

**Features:**
- Scalable
- Integrated Management

**Available units:**
- Transponders
  - Rate Meter
  - 2,5G and 10G OTN
- Optical Amplifiers
  - EDFA
  - RAMAN
- Optical Switch
- Supervision and cooling

**Single channel point-to-point systems**
Terabit Box

**Muxponder OTN Terabit**

Addressing cutting edge market requirements, the Terabit OTN Muxponder is a standalone optical transport platform that offers high density OTN aggregation. Its compact size enables customers to achieve a lower cost of ownership when aggregating services across multiple data centers.

- **Lightwave Innovation Awards 2015** Optical Subsystems category highest score

**Characteristics:**
- Compact 1RU 19” rack mountable chassis
- 5 x 200 Gbps CFP2 based line-side interfaces
- 10 x 100 GbE over OTN transparent transport
- Low Power consumption (750W, DC or AC)
- Stackable

**Submarine Backbone**

**Terrestrial Backbone**

**Metro / Aggregation**

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Thanks!