padtec

padtec.com

Padtec goes where no one else goes_

by bringing high-capacity connections to life.
From Brazil to the Americas, from the smallest
to the largest business, we are where you are.

With a history that spans more than 20 years, _

we are honored to be a Brazilian multinational company that works alongside our customers to offer services that bring people together.

We live and breathe technology_

using our expertise to design new futures. We leverage connections and create new realities in a world that does not stop evolving.

Padtec by the numbers

R$ 384.6 mi

Net revenue (LTM* 2Q23)

*LTM = last twelve months

PDTC3

B3

740+

Employees (september/2023)

Headquarters

Campinas, São Paulo (Brazil)
Rua Doutor Ricardo Benetton Martins, 1.000
Polo II de Alta Tecnologia
Tel.: +55 19 2104-9600

CEO

Carlos Raimar Schoeninger

National offices

São Paulo – Rio de Janeiro – Brasília – Fortaleza – Curitiba

International offices

Argentina – Chile – Colômbia – USA – Peru

EUA

Colômbia

Peru

Fortaleza

Brasília

Campinas

Chile

São Paulo

Curitiba

Rio de Janeiro

Argentina

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We transform technology so that technology can transform the world_

Brazilian multinational

with more than two decades of experience in the Telecom market;

Global supplier

with a strong presence in Latin America;

It operates in a global market

worth US$14 billion per year.

Develops, manufactures and markets

solutions for high-capacity broadband networks, based on DWDM technology;

Service Unit

for communication networks, today with more than 40 points of presence in Brazil, Argentina and Colombia.

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Leaders
The people that drive our connections

CEO AND INVESTOR RELATIONS DIRECTOR
Carlos Raimar Schoeninger_

With a Master in Business Administration from Fundação Getúlio Vargas (FGV), Raimar has over 20 years of experience in executive positions in the telecommunications, electromechanics, oil products and food sectors.

In the telecom sector, he held senior positions in large companies such as Telefônica Vivo and Globenet. Raimar, who has served on Padtec's Board of Directors as an independent member since 2016, took over the leadership of the company in 2021

VP OF EQUIPMENT OPERATIONS
Argemiro Sousa_

An Electronic Engineer who graduated from the University of São Paulo (USP) and has a Master's Degree in Electrical, Electronics and Communications Engineering from Unicamp, Argemiro took over Padtec's Business Leadership in 2008. The executive has more than 30 years of experience in the telecommunications, working in large companies in the segment, such as Alcatel-Lucent.

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Leaders The people that drive our connections

CEO OF PADTEC AMERICA AND SVP OF INTERNATIONAL OPERATIONS

Manuel Andrade_

An Electronic Engineer with a Master's degree in Computer Science from IME (Instituto Militar de Engenharia), Manuel has more than 30 years of experience, working in countries in the Americas, Asia and Europe. Prior to his arrival at Padtec, Manuel held the position of vice president at large companies in the telecommunications sector – such as Xtera, ECI, Westell and Moddata. He has served as CEO of Padtec SA from 2015 to 2020.

VP OF PLATFORMS AND SOLUTIONS

Alexandre Piovesan_

A Systems Analyst graduated from the Pontifical Catholic University of Campinas (PUC), with an Executive MBA in Business Management from the Getúlio Vargas Foundation (FGV), the director has more than 30 years of experience in the areas of operations and services, working in large companies in the telecommunications sector – including Embratel.

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Leaders   The people that drive our connections

CHIEF LEGAL COUNSEL AND COMPLIANCE OFFICER

Patricia Iqueda_

A lawyer who graduated from the University of São Paulo (USP), Iqueda has more than 15 years of experience in the legal field, working for large companies in the telecommunications sector, such as Vivo and Oi.

CFO

Ramon Cabral_

Business Administrator with an MBA in Financial Management, Controllership and Auditing from Fundação Getúlio Vargas (FGV), Ramon Cabral Pereira has more than 10 years of experience in the financial area, working in companies from different sectors of the economy.

Leaders

The people that drive our connections

VP OF EQUIPMENT OPERATIONS

Argemiro Sousa_

CHIEF LEGAL COUNSEL AND COMPLIANCE OFFICER

Patricia Iqueda_

CEO AND INVESTOR RELATIONS DIRECTOR

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CEO OF PADTEC AMERICA AND SVP OF INTERNATIONAL OPERATIONS

Manuel Andrade_

CFO

Ramon Cabral_

VP OF PLATFORMS AND SOLUTIONS

Alexandre Piovesan_

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Values

Exceed expectations

Our bar is set high. We always look ahead, investing in excellent, long lasting and exceptional solutions.

Working together to increase knowledge

In our universe, everything depends on teamwork. We value our collective intelligence, as diverse as the challenges we solve.

Respect people, respect the future

We exist to improve people's lives. Respect, accessibility, honesty, transparency and ethics in relations are our values; to make an increasingly positive impact on the sector is our goal.

Challenge the complexity

Whether it's a new technology or service, special requirements or network performance, or even the analysis of a large volume of information, our industry seems complex – and it is.

But for us, it is an opportunity to take on and overcome challenges.

Create value for everyone

Each part of our ecosystem should benefit from our actions, improve their outcomes, differentiate themselves and retain their customers.

The world connects and both society and the economy win.

In short: we connect Brazil and the world and our shareholders receive the return they deserve.

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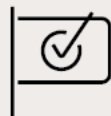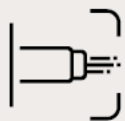# History

2001

Padtec starts_

as a spin-off from CPQD's optical communication laboratories, manufacturing and supplying long distance DWDM systems.

Padtec acquires important clients_

and begins its expansion throughout Brazil.

2002 - 2006

2010 - 2013

It completes a decade of operations _

with more than 100,000 km of backbone networks installed throughout South America and attracts a new investor: BNDESPar, the BNDES' shareholding arm. It also opens its commercial office in the United States.

Padtec connects Brazil and the world _

in the greatest World Cup of all times, performs the Sea Trial of its submarine repeater in the Caribbean Sea and implements a system with sub-fluvial cable in the Rio Negro, in Manaus.Negro, en Manaus.

2014 - 2016

2017 - 2019

Delivers its first deployment of an underwater optical network to Google_

Padtec completes the sale of the subsea systems division and its OTN Switching business unit to important multinationals in the sector.

Padtec completes the merger of its shares into Padtec Holding_

to raise capital on the stock exchange and expand its investments in the development of cutting-edge technology and expansion into new markets. Enters the switches and routers market.
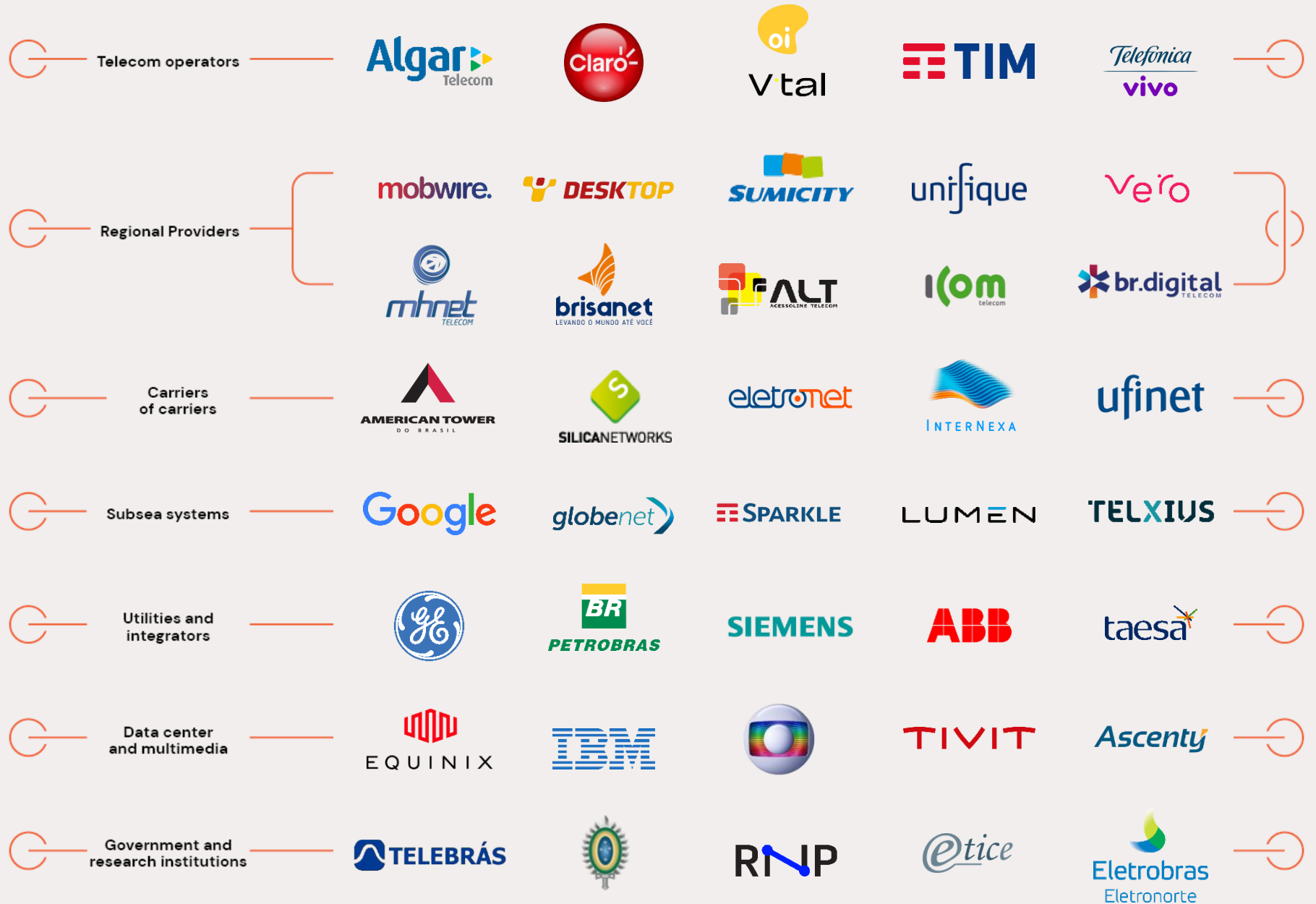
2020 - 2022

Customer portfolio

We've said it before and we'll say it again: from Brazil to the Americas, from the smallest to the biggest business, we're where you are.

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Telecom operators
Algar Telecom · Claro · Oi · Vtal · TIM · Telefónica vivo

Regional Providers
mobwire. · DESKTOP · SUMICITY · unifique · vero · mhnet TELECOM · brisanet LEVANDO O MUNDO ATÉ VOCÊ · ALT ACESSOLINE TELECOM · ICom telecom · br.digital TELECOM

Carriers of carriers
AMERICAN TOWER DO BRASIL · SILICANETWORKS · eletronet · INTERNEXA · ufinet

Subsea systems
Google · globenet · SPARKLE · LUMEN · TELXIUS

Utilities and integrators
GE · BR PETROBRAS · SIEMENS · ABB · taesa

Data center and multimedia
EQUINIX · IBM · Globo · TIVIT · Ascenty

Government and research institutions
TELEBRÁS · RNP · etice · Eletrobras Eletronorte

Made by people, for people

740+ 👤
employees and interns working in person, hybrid or fully remote

510+ 🏢
employees at the company's headquarters in Campinas

230+ 📍
employees in São Paulo, Rio de Janeiro, Fortaleza, Brasília, Argentina, Colombia and USA and in Maintenance Centers throughout Brazil

82%
is the engagement rate of the company's employees*

62%
of employees with college

4%
with completed doctorate and master's degrees

25%
of the company's employees are engineers

21%
of employees are women

Generations**

1.5%
Baby boomers
(born between 1940 and 1959)

26.5%
Generation X
(born between 1960 and 1979)

63.8%
Generation Y
(born between 1980 and 1999)

8.2%
Generation Z
(born between 2000 and 2010)

25%
of women in leadership positions

* Source: Padtec Climate Survey 2022   ** Definition by Sidnei Oliveira   Data from september/2023

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Business Units

Understand how we create new realities.
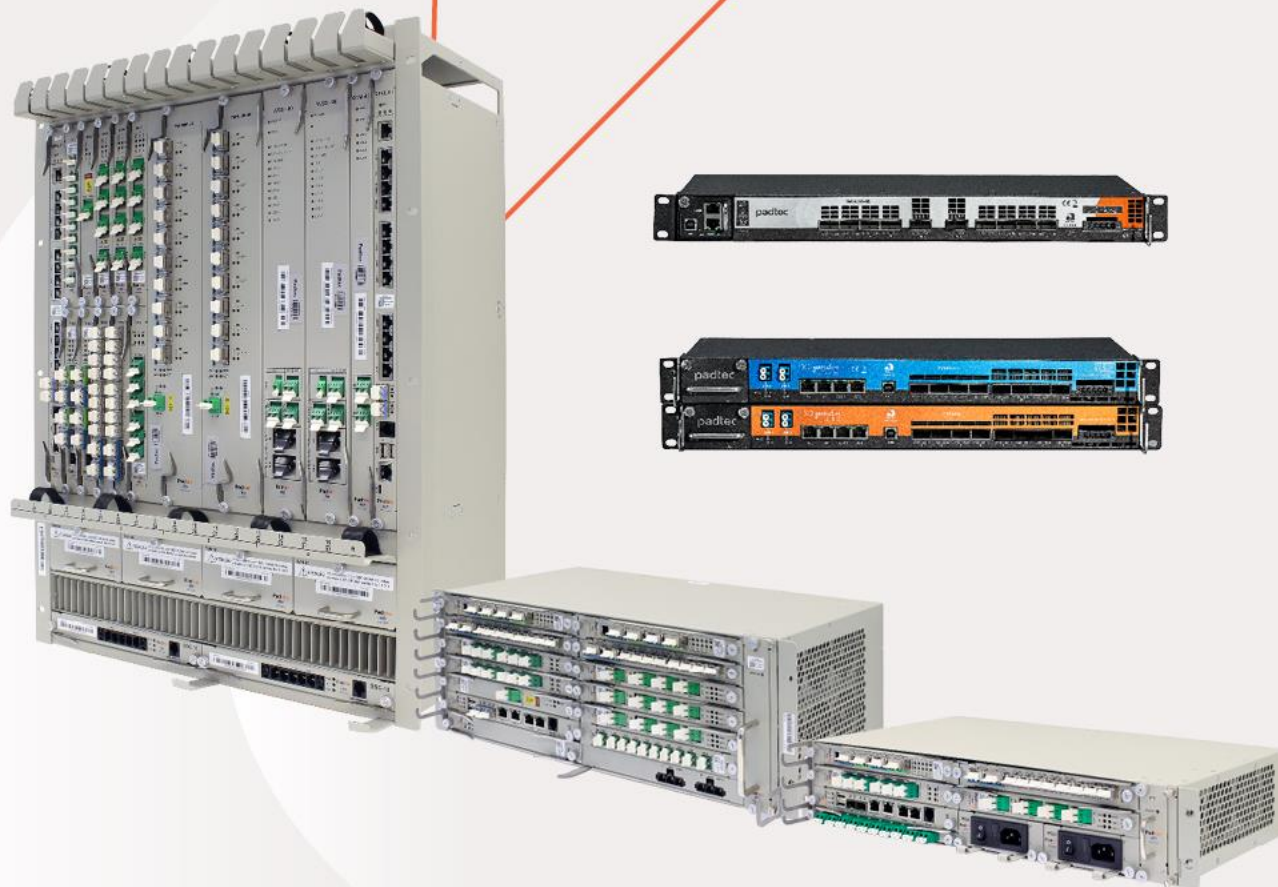
Business units

Switches and routers

Optical Networks

- LightPad i6400G Platform
- DCI transponders (up to 600Gb/s per channel)
- ROADMs up to 9 degrees
- EDFA, Raman and hybrid amplifiers
- LightPad OTDR Plataform
  (*Optical Time-Domain Reflectometer*)

Platforms and solutions

- Smart Site
- Network Operation and Maintenance
- Network Management
- Description
- Spaas (Spare Part as a Service)
- Fiber Monitoring
- Training center
- Site Survey

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LightPad i6400G Platform

LightPad i6400G: a platform for the most diverse solutions

Our platform delivers a carrier-class solution for high-capacity multi-service transport across diverse network architectures.
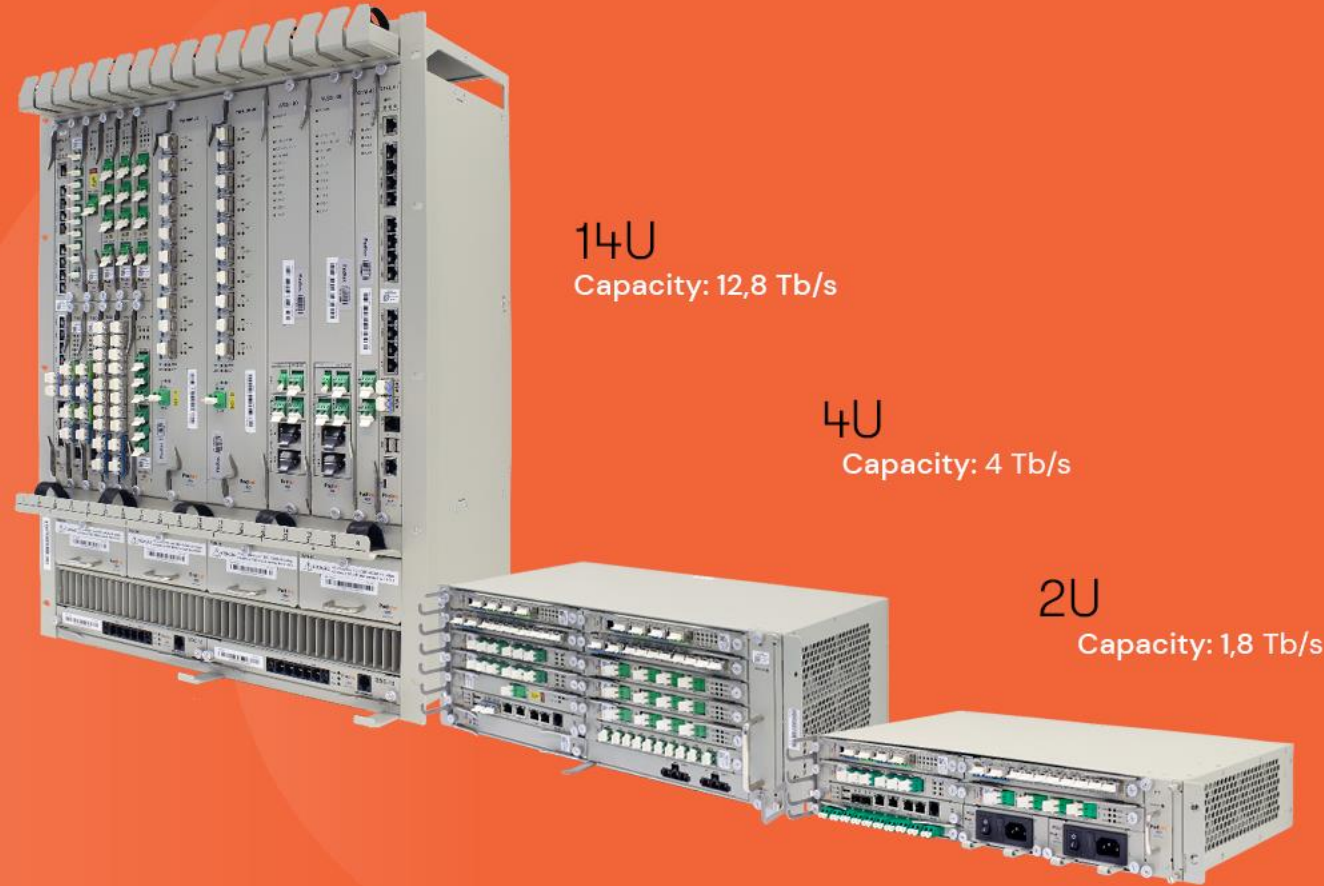
Applications

- Terrestrial and submarine backbones
- Metro and aggregation networks
- DCI and SAN extension scenarios

Technologies

- DWDM (*Dense Wavelength Division Multiplexing*)
- ROADM WSS (*Wavelength Selective Switch*)
- OTN (*Optical Transport Network*)
- ODU-XC (*ODU cross-connect*)

14U
Capacity: 12,8 Tb/s

4U
Capacity: 4 Tb/s

2U
Capacity: 1,8 Tb/s

Optical networks

LightPad i6400G Platform

Product family

Muxponder Dual 400G
TMD400G

Network Interfaces
- 2x CFP2-DCO 400G
- Rate configurable from 100 Gb/s to 400 Gb/s

Client Interfaces
- QSFP28 SR or LR
- Up to 8x 100G
- Port activation by license
- 4x100G dual muxponder application
- ALO protection features
  (Auto Laser Off), Loopback y OSNC

Combiner 200G
TCX200G-9A

- Line interfaces
- CFP2-DCO, applications:
- 1x CFP2 200G
- 2x CFP2 100G

Client Interfaces
- QSFP+
- 2x QSFP+/QSFP28 up to 100G
- Protocols: 4x10G/40G/100G
- SFP+ client interfaces
- 12x SFP+ up to 16G

Linecards
100/200 Gb/s

- Muxponder 200G (2x100G)
- Regenerador 100/200G (2x100G)
- Dual 100G ((2x100G)

Linecards
10Gb/s

Applications
- Dual Terminal
- Protected ring (x-connect)

Operation mode
- 2x OTU2
- 3x OTU1

Functionalities
- OSNC protection (route)
- ALO for use with optical switch

Passive solutions

Mux/Demux
Low Loss

• Low loss Mux/Demux developed specifically for this application
• Network design and performance guaranteed by Padtec
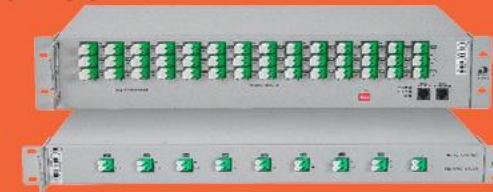• Possibility of using amplifiers for link extension

Mux/Demux
48 channels with and without VOA

Complete portfolio for Add/Drop channels.

Mux/Demux from 4 to 96 channels
• Standalone mechanics
• Options with VOA
• Colorless Options
• 2, 4 and 8 channel OADMS

Passive Box

• Entry solution for DWDM technology
• Colored SFP+ for use directly with switches and routers

OADM
Optical/Add-Drop/Multiplexer

Amplifiers

Amplifiers EDFA

Raman and ROPA

C Band EDFA

- Low noise amplifiers
- 18 dBm family

C+ Band

- EDFA 21 dBm
- Raman 29 dBm
- Hybrid EDFA + Raman

Hybrid R2

- Super compact Hybrid Amplifier with integrated Transmit EDFA, Receive EDFA and Raman stages

Special solutions

- Raman 33 dBm
- ROPA C+
- ROPA optimized for few channels

Optical switches
OPS-Hx (*Optical Protection System*)

Characteristics
- Switching time <15 ms
- Route monitoring
- Single and Multimode Models
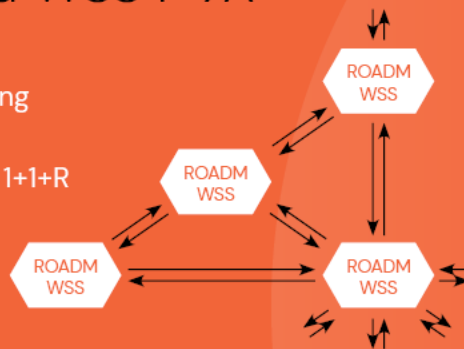- One or two switching units on the same module

ROADM

Wavelength Selective Switch
WSS9-9A and WSS4-9A

Functionalities
• End–to-end provisioning
• Automatic EQ
• Protection 1+1, 1+R and 1+1+R

Architecture:
• Directed
• Directionless
• Colorless
• FlexGrid

ROADM WSS

ROADM WSS

ROADM WSS

ROADM WSS

Wavelength Selective Switch
WSS2-HA

• 2 degrees
Characteristics:
• Ring topology
• Low insertion loss
• Embedded OCM
• Protection and restoration ready

OCM-HR
High Resolution - Optical Channel Monitoring

• Power monitoring and OSNR of DWDM channels
• 8 independent monitoring ports
• Compatible with FlexGrid channels
• Applications for networks without WSS or at WSS nodes

DCI Generation

Padtec Muxponders 1200G and 800G

If you have Padtec technology, capacity is included.

The TM1200G and TM800G muxponders are ideal for very high capacity applications in short, medium and long distance DWDM

TM1200G

- Transmission rates from 100 Gb/s to 600 Gb/s
- Configurable modulations: DP-QPSK to DP-64QAM
- Transmission capacity of 38.4Tbps in the C+ Band
- Support for Fine Tuning
- Compatible with MicroMux module
- 27% SD-FEC* for "Ultra High Gain"
- Maximum power consumption: 340W

TM800G

- Transmission rates from 100 Gb/s to 400 Gb/s
- Configurable modulations: DP-QPSK to DP-16QAM
- Transmission capacity of 25.6Tbps in the C+ Band
- Support for Fine Tuning
- Compatible with MicroMux module
- 27% SD-FEC* for "Ultra High Gain"
- Maximum power consumption: 340W

Dual 400G Transponder

Standalone transponder with up to 400 Gb/s (per optical channel) ideal for point-to-point applications or traditional DWDM solutions

TMD400G-SD

• Standalone mechanics with low rack space requirements (1RU height)

• Low cost coherent solution from 100G to 400G

• Used in single wavelength point-to-point systems

• Traditional DWDM application

• Network interface based on the new 400G ZR standard

• Entry level solution with built-in supervisor

Coherent transponder families

Business units

Long-Haul (> 600km) Metro (< 600km) Edge/DCI (< 80km)

400G CIM8 LightPad Max 2024 1,2T

TM800G TM1200G

MSA

100G 200G

CFP2

400G

CFP2

400G NA*

QSFP-DD

200G 400G

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LightPad OTDR

Optical Time-Domain Reflectometer

Monitoring, in real time, the status of your network.

The latest generation product, which is part of VIAVI's OTDR OTU–5000 series, remotely and automatically monitors the integrity of optical fibers.
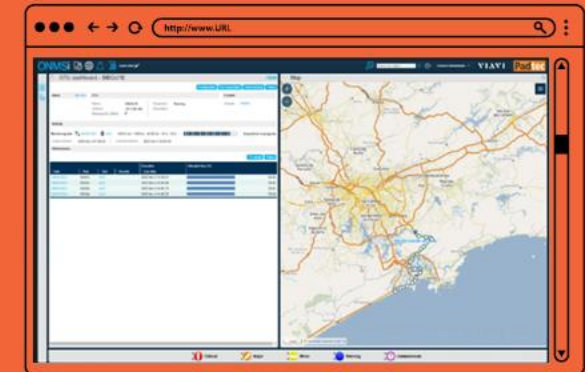
• Unit with 3 slots for OTDR or WDM filters
• Number of fibers monitored: 4, 8 or 16
• Low power consumption (10W)
• Range of ~120 km (Dynamic Range: 39 dB)
• Monitoring of active or dark fibers
• Network operating band 1260 nm to 1580
• Graphical interface with conventional OTDR traces

Monitoring Software

Monitoring chart example

Switch and router platform

Access networks
S9510-28DC

Responsible for providing direct connectivity to residential and corporate users, the access infrastructure provided by the partnership between Padtec and **UfiSpace** features open access routers that are temperature resistant, compact and easy to maintain.

- 2 doors 100/400G QSFP-DD
- 2 doors 40/100G QSFP28
- 24 doors SFP28 10/25G
- 800 Gb/s switching capacity

Aggregation networks
S9600-56DX

The aggregation systems delivered by the partnership between Padtec and **UfiSpace** use switching techniques and advanced routing, to aggregate traffic from multiple access points, effectively directing you to the highest capacity aggregation nodes.

- 8 doors QSFP-DD 40/100/400G
- 48 doors QSFP28 de 40/100G
- 4 doors 1/10/25G SFP28
- 4,8 Tb/s switching capacity

1 S9500 Family
2 S9600 Family
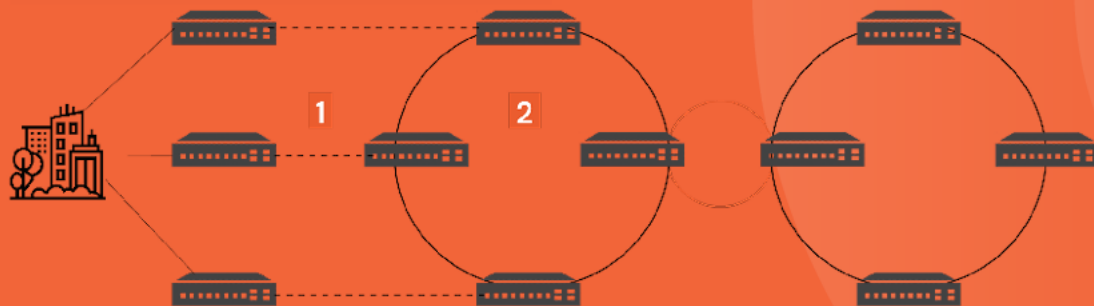
Network Operating Systems
The functionalities are enabled through OcNOS (**IPInfusion** software).

Funcionalidades:
- Routing (Layer 3)
- Multiprotocol Label Switching (MPLS)
- Layer 2 VPN (L2VPN)
- Layer 3 VPN (L3VPN)
- Virtual Extensible LAN (VxLAN)
- Segment Routing (SR)

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Padtec NMS+

It's never been easier to manage your network

Comprehensive web management platform for DWDM networks.

• Web interface for board management
• New platform administration tools
• Supports high availability platforms
• Graphical interface for managing geolocated networks
• Addition of new provisioning features
and restoration services
• External authentication support
• Displays a list of correlated alarms
• Web based
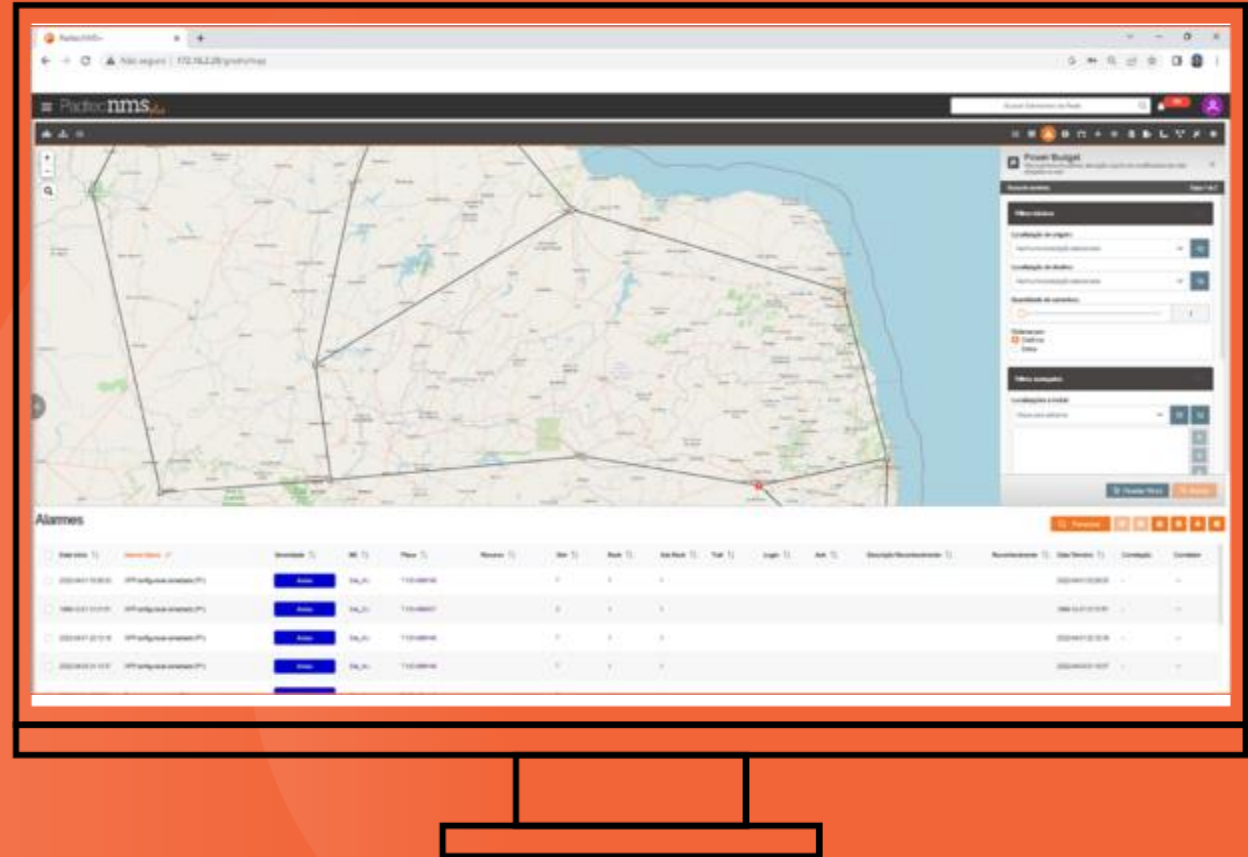
Platforms and solutions
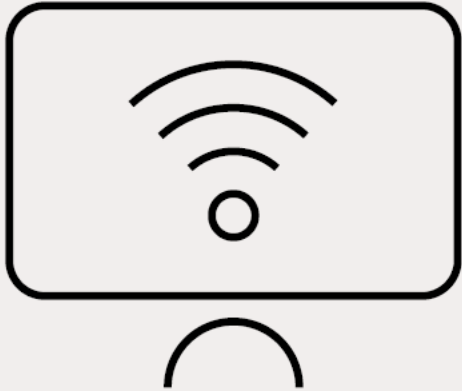
Smart Site

Monitor your network sites wherever you are: with this service, operators and ISPs, can remotely monitor and control, in real time, the elements that make up the infrastructure of their network environments.

Network Operation and Maintenance

- More than 40 MCs (Maintenance Centers) throughout Brazil, Argentina and Colombia;

- Four-hour service agreements (SLA) for the start of service in any section of a monitored network.

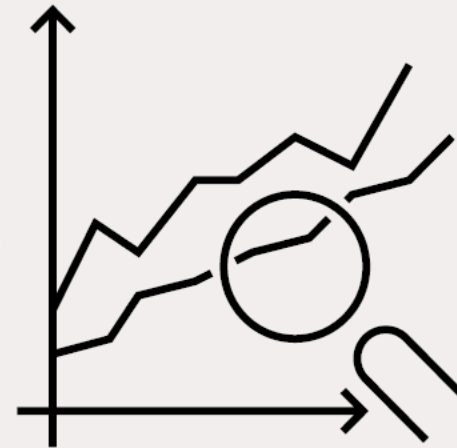padtec.com

Platforms and solutions

Network Management (NOC)

Padtec is always with you.

To fully monitor and manage routes, built with different technologies, in real time, Padtec also offers network operation and maintenance services from its Network Operations Center (or NOC).

• 24x7 operation;

• Performance Reports;
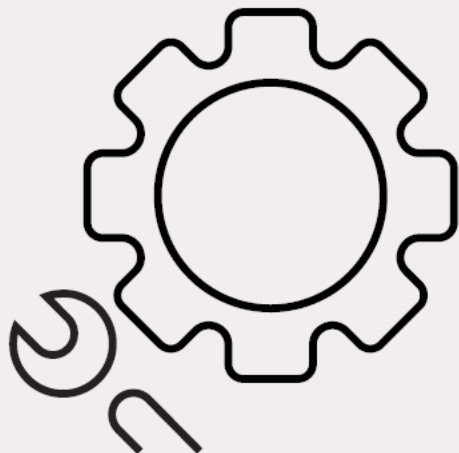
• Real-time monitoring.

Characterization

For systems already in operation, the fiber characterization service helps plan expansions or even identify bottlenecks that are affecting the network's competitiveness.
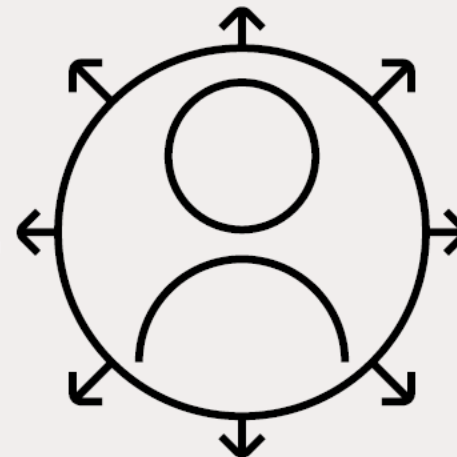
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Platforms and solutions

Spaas - Spare Part as a Service

Service for contracting spare parts for immediate replacement in cases of original equipment failure.
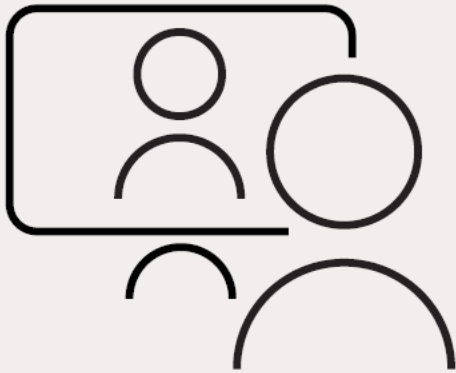
Fiber Supervision

Through its NOC, Padtec offers the supervision of both the monitoring systems and the fiber itself, providing information on degradation events, and precise geolocation of faults, in addition to attenuation history.

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Platforms and solutions

Training center

Basic and advanced modules for entry level and ongoing training.

Padtec's varied training portfolio includes theoretical courses in the areas of network planning and engineering and practical courses in the areas of operation and maintenance of DWDM networks.

Site Survey

In order to carry out comprehensive and detailed mapping of a site's capacity and network equipment, Padtec offers technical inspection services.

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Platforms and solutions

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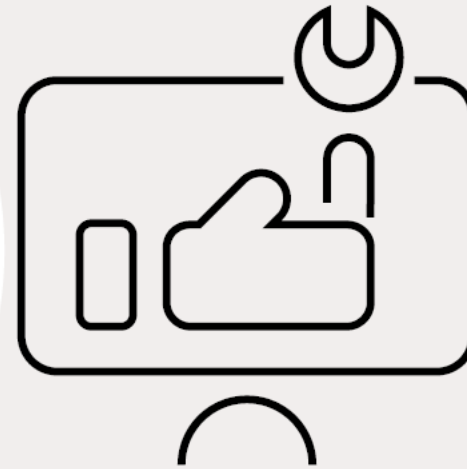### Training center

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Latest results

LTM* 3Q23

Net Revenue

R$384.6 mi

+ 5.2% (LTM 3Q23 x 2022)

Revenues from the international market

R$69.1 mi

- 10.6% (LTM 3Q23 x 2022)

Gross Margin 1H23

36.7%

R&D x Net revenue

R$42.4 mi

(11% of net revenue)
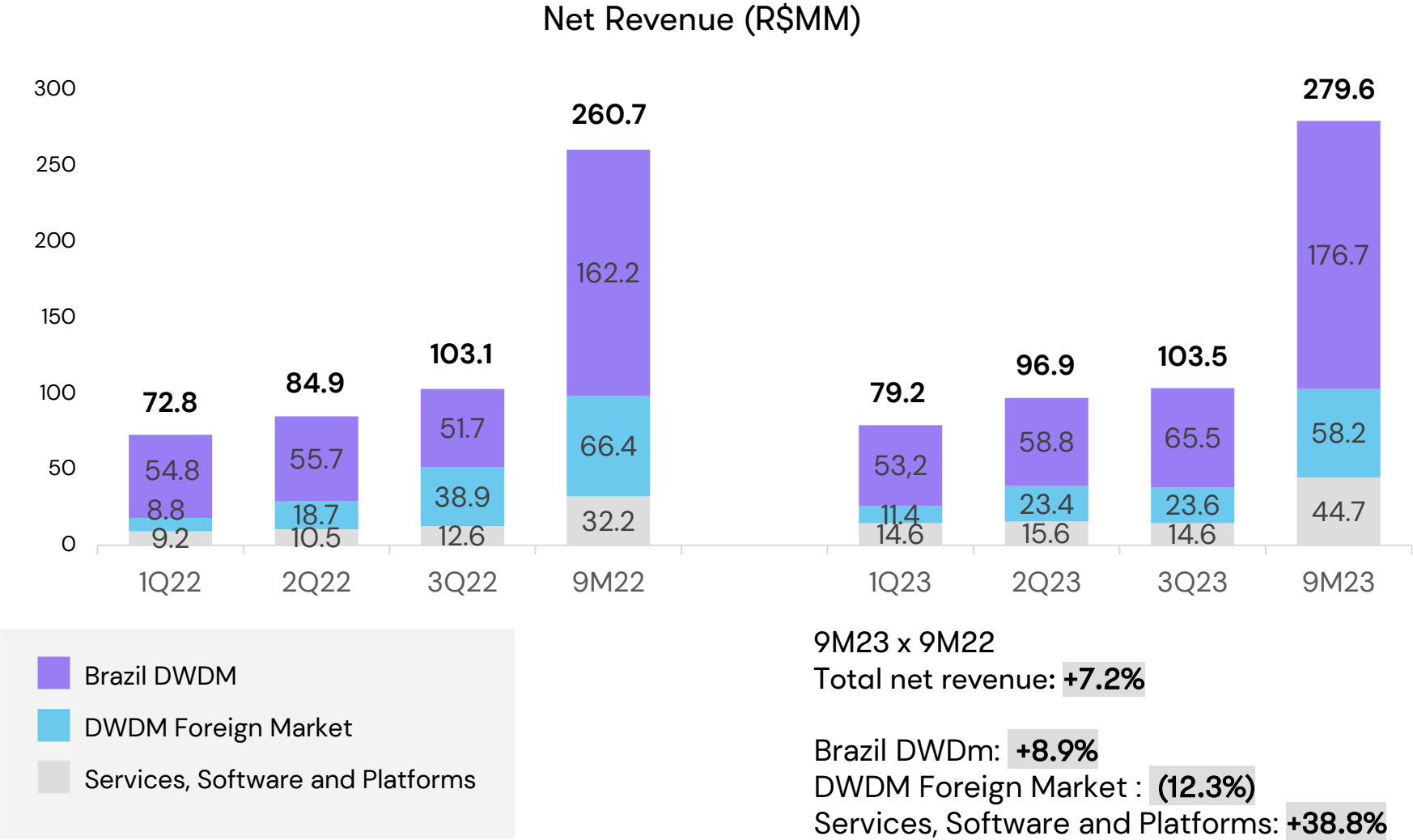
EBITDA

R$62.8 mi

+40.9% (LTM 3Q23 x 2022)

* LTM = last twelve months

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Results

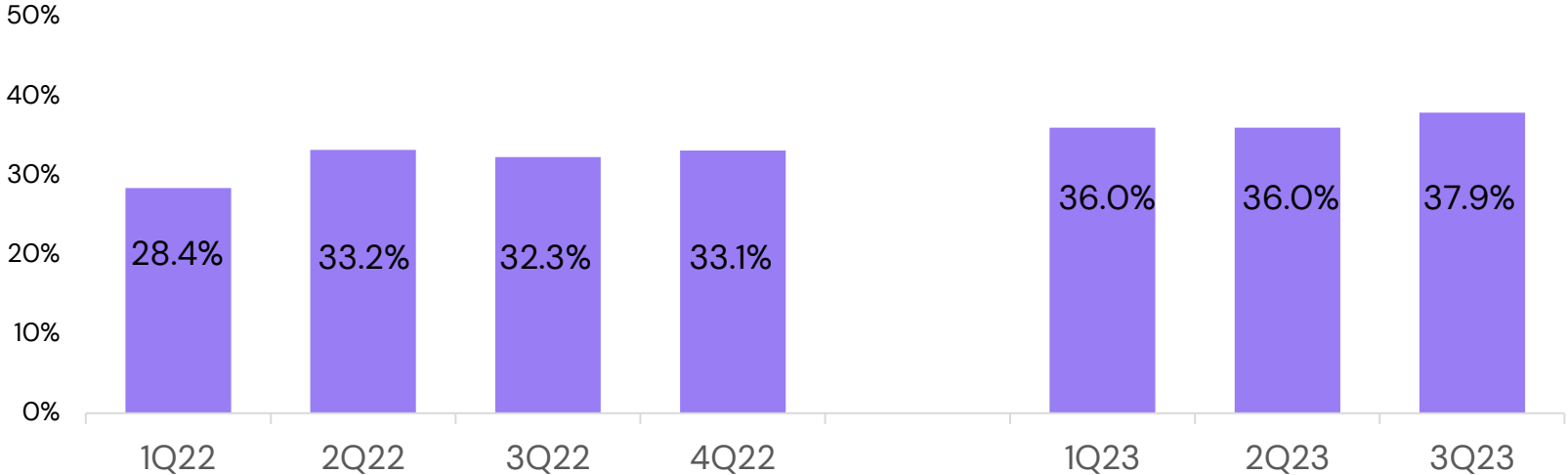Demand for Padtec solutions in Brazil resumes growth, remaining stable in the foreign market

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Net Revenue (R$MM)

	1Q22	2Q22	3Q22	9M22	1Q23	2Q23	3Q23	9M23
Total	72.8	84.9	103.1	260.7	79.2	96.9	103.5	279.6
Brazil DWDM	54.8	55.7	51.7	162.2	53,2	58.8	65.5	176.7
DWDM Foreign Market	8.8	18.7	38.9	66.4	11.4	23.4	23.6	58.2
Services, Software and Platforms	9.2	10.5	12.6	32.2	14.6	15.6	14.6	44.7

Legend:
- Brazil DWDM
- DWDM Foreign Market
- Services, Software and Platforms

9M23 x 9M22
Total net revenue: **+7.2%**

Brazil DWDm: **+8.9%**
DWDM Foreign Market : **(12.3%)**
Services, Software and Platforms: **+38.8%**

Results

Focus on profitability, record gross margin[1] in 3Q23: 37.9%
(9M23: 36.7%)

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Gross Margin (%)

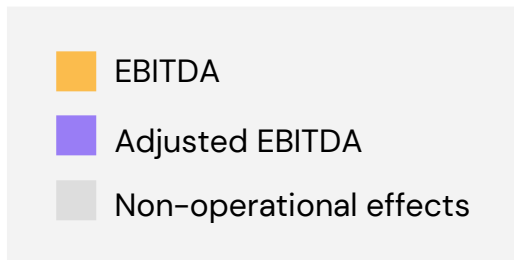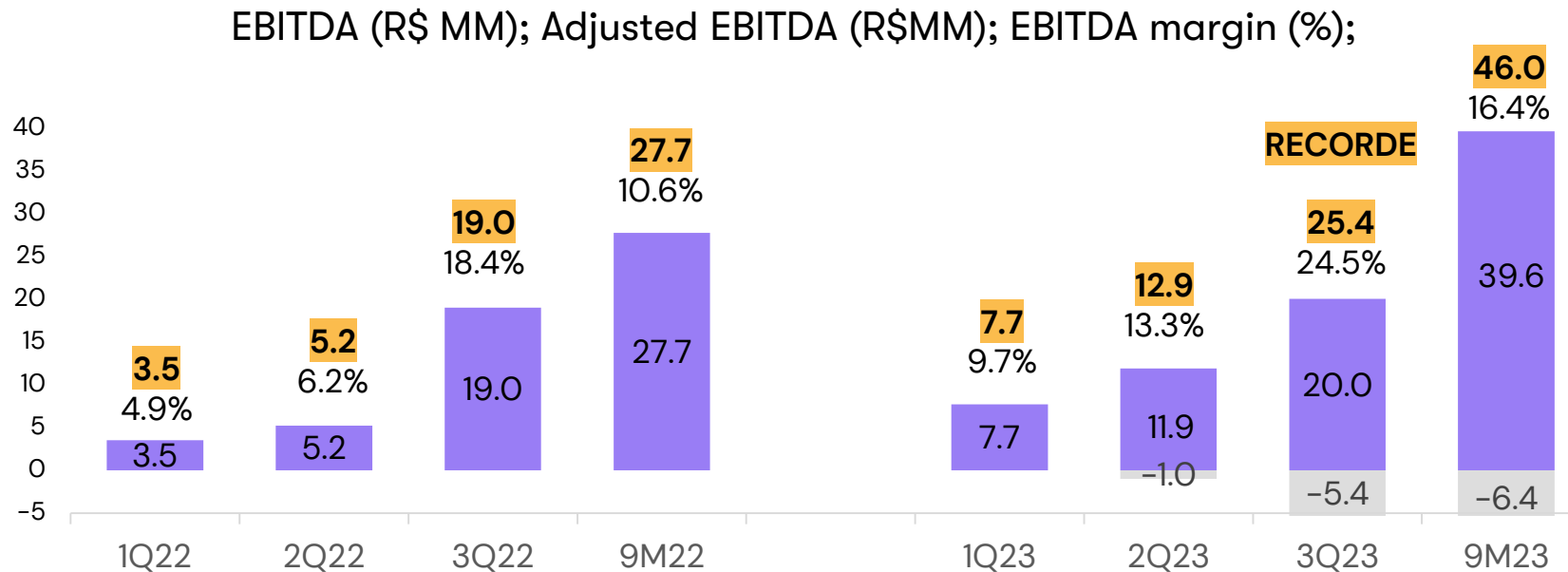| Quarter	Gross Margin
1Q22	28.4%
2Q22	33.2%
3Q22	32.3%
4Q22	33.1%
1Q23	36.0%
2Q23	36.0%
3Q23	37.9%

1 Considers combined consolidated Results (Padtec S.A. + Ideiasnet S.A.) since January 2019.

Results

Record EBITDA[1] in 3Q23: R$25.4 million

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EBITDA (R$ MM); Adjusted EBITDA (R$MM); EBITDA margin (%);

	EBITDA	Adjusted EBITDA	EBITDA margin
1Q22	3.5	3.5	4.9%
2Q22	5.2	5.2	6.2%
3Q22	19.0	19.0	18.4%
9M22	27.7	27.7	10.6%
1Q23	7.7	7.7	9.7%
2Q23	12.9	11.9 (−1.0)	13.3%
3Q23	25.4 RECORDE	20.0 (−5.4)	24.5%
9M23	46.0	39.6 (−6.4)	16.4%

Legend:
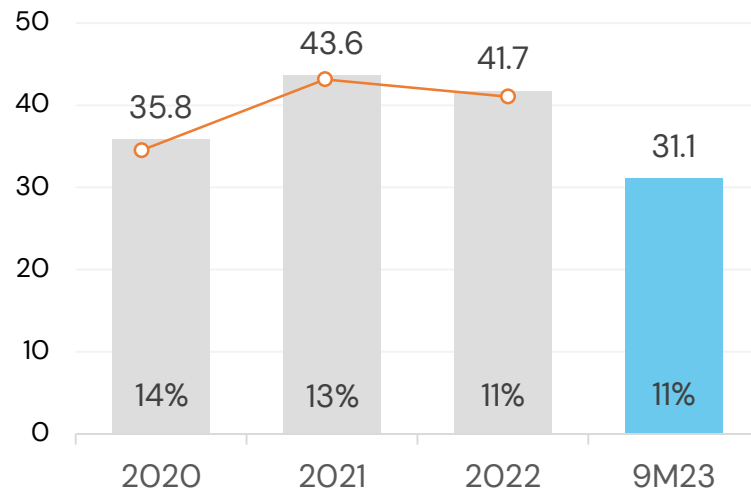- EBITDA
- Adjusted EBITDA
- Non-operational effects

EBITDA:
3T23 x 2T23 **+97.2%**
3T23 x 3T22 **+33.9%**
9M23 x 9M22 **+65.8%**

1 Considers combined consolidated Results (Padtec S.A. + Ideiasnet S.A.) since January 2019.
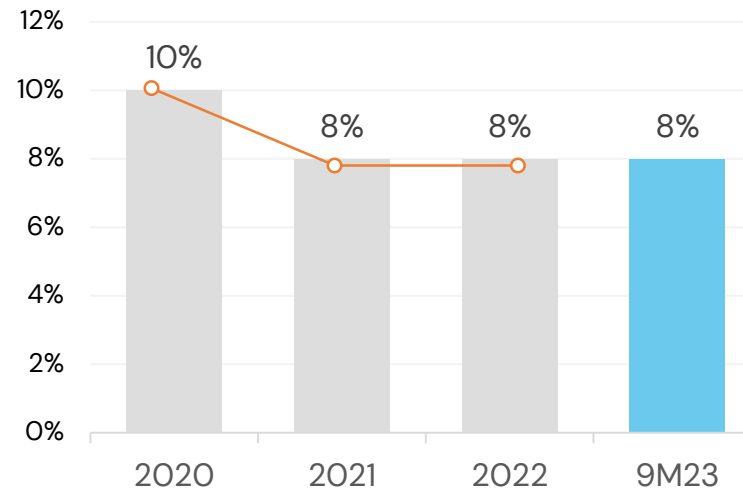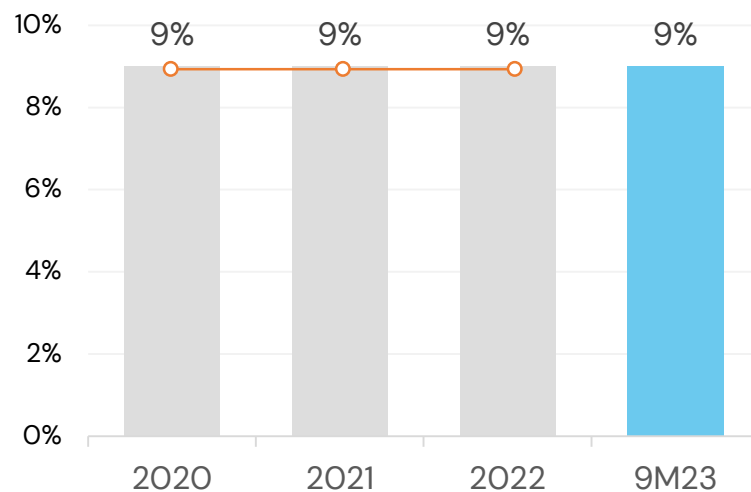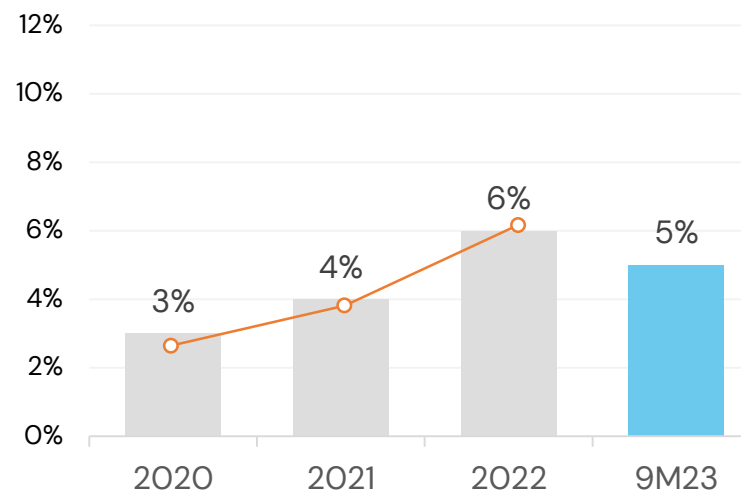
Results

R&D x Net revenue (R$MM)

	2020	2021	2022	9M23
Value	35.8	43.6	41.7	31.1
%	14%	13%	11%	11%

Administrative expenses x Net revenue (R$MM)

2020	2021	2022	9M23
10%	8%	8%	8%

Commercial expenses x Net revenue (R$MM)

2020	2021	2022	9M23
9%	9%	9%	9%

Financial expenses x Net revenue* (R$MM)

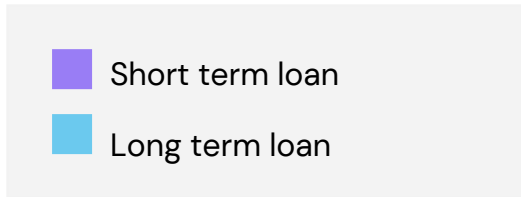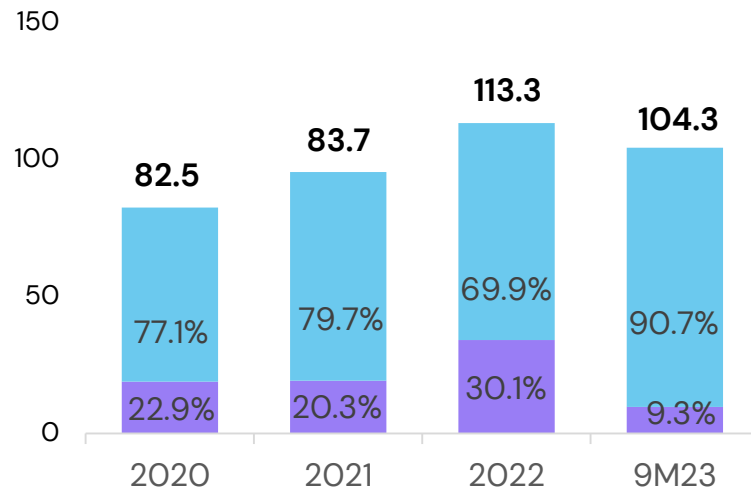| 2020	2021	2022	9M23
3%	4%	6%	5%

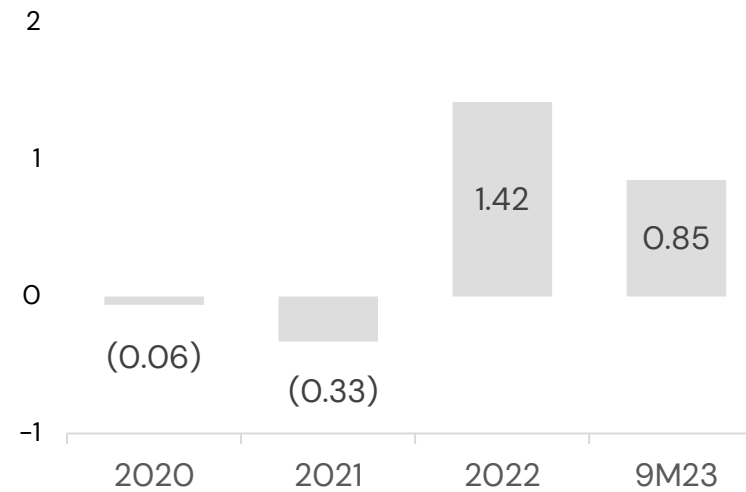*Não considera variação cambial.

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Results

Debt restructuring successfully completed in 2Q23
More than 90% in long-term bonds, average funding cost: **6.3%**

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Long-term x short-term loans (R$MM)

	2020	2021	2022	9M23
Total	**82.5**	**83.7**	**113.3**	**104.3**
Long term loan	77.1%	79.7%	69.9%	90.7%
Short term loan	22.9%	20.3%	30.1%	9.3%

■ Short term loan
■ Long term loan

Net debt / LTM EBITDA [1] (X)

2020	2021	2022	9M23
(0.06)	(0.33)	1.42	0.85

¹LTM EBITDA corresponds to the sum of EBITDA recorded in the last 12 months.

Evolution of debt (R$MM)

Gross debt 2022	Fees	Amortizations and payment of principal	New loans	Gross debt 9M23	Cash and cash equivalents	Financial investments in guarantee	Net debt 9M23
113.3	0.7	(50.5)	41.3	104.3	(4.3)	(1.5)	53.6
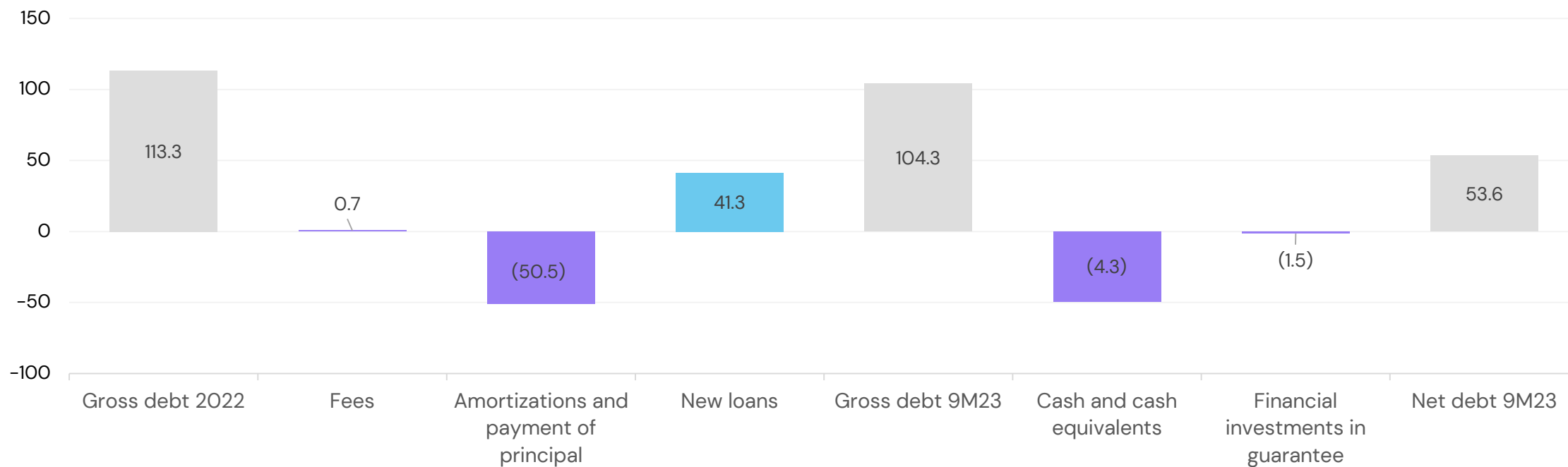
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transform

Driving connections to create new realities

revolutionize