ANNUAL REPORT
2024

ENG

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2024

The President's Highlights

Alessandro Talotta

2024 has been a decidedly positive year, with results that fully met our expectations.

Our peering platform continued its steady growth, setting new records and reinforcing its strategic role within Italy's digital ecosystem. The market experienced significant development, as Italy saw accelerated progress in data transport infrastructure and the adoption of advanced technologies for video content delivery and real-time services.

Milan, in particular, is positioning itself as a key digital hub alongside the FLAP cities, thanks to the rapid expansion of interconnection and hosting infrastructure, as well as the arrival of new submarine cables that further strengthen connections with pan-European backbones.

At the core of this transformation is technological innovation. Today, more than ever, promptly responding to market needs requires scalable, resilient, and economically sustainable solutions. The growing demand for high-performance digital services necessitates the continuous evolution of network architectures and the implementation of automation processes—now essential to ensure faster provisioning times and consistently high service quality.

In this context, MIX has made decisive investments in technology. The development of the third interconnection technology area represents one of the most ambitious projects undertaken in 2024.: a state-of-the-art infrastructure designed to support the evolution of traffic flows, enhance network security, and increase overall capacity.

At the same time, MIX has launched targeted initiatives to support the broader ecosystem, such as discounts and special offers aimed at small and medium-sized enterprises, with the goal of making access to innovation more inclusive and sustainable.

For MIX, technology is not just a means to an end, it is the engine of change. We will continue to invest in anticipating market needs and in building an infrastructure that is increasingly robust, intelligent and future-ready.

A quick overview [as for 31/12/2024]

420+
Connected ASNs

198
Unique ASNs

16.50+
Connected capacity (Tb)

2.8+
Traffic peak (Tb/s)

260+
DC Networks on-net

#8
European IXP

5
Domestic IXes

13
Metropolitan PoPs

18
Shareholders

25
Years of service

Identikit

- Leading Italian IXP, founded in 2000, long standing history of service

- Highest concentration of connected networks in Italy

- One of the few European IXPs equipped with its own datacentre

- Carrier-neutral and datacentre-neutral

- Interconnection services available at 13 different datacentres in Italy

- Authoritative resource for Italian Internet traffic statistics & trends

open hub med

With approximately 150,000 km of submarine cables reaching Sicily, Italy is the natural hub for the "wet nets" of the Mediterranean. Exploiting this strategic positioning to strengthen Italy's role in the international telecommunications sector was the driver that led to the establishment of the Open Hub Med (OHM) Consortium.
The Consortium was founded by MIX together with other important national and international players.

euro-IX

MIX is one of the founding members of Euro-IX, the European Internet Exchange Association, whose purpose is the coordination, the exchange of knowledge and experience and the development of harmonisation activities between the IXPs of different countries for the benefit of the entire European Internet community.
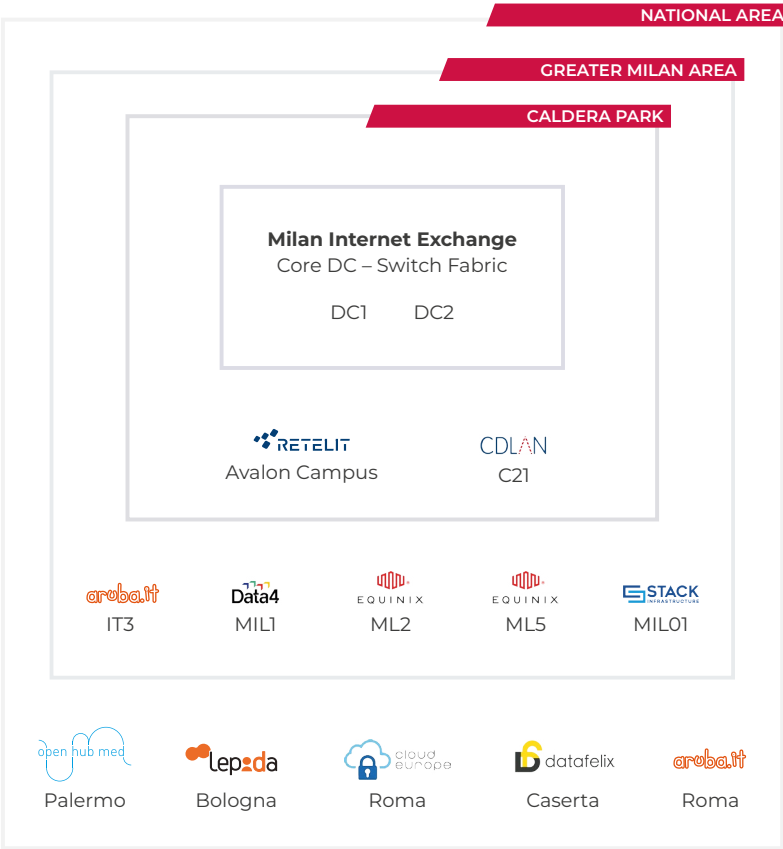
Certifications

ISO/IEC 27001

OIX-1 CERTIFIED IXP

Confirming the level of excellence of its services and infrastructures in these areas, MIX has obtained an **ISO 27001** certification, a standard issued by the International Organization for Standardization (ISO) which covers all the aspects of security of IT systems and processes.

MIX is the first IXP to overcome the controls required by ISO certification.

MIX has also obtained the **OIX-1** certification, currently issued to only 35 IXPs worldwide by Open-IX. This certification defines the standards of performance, reliability and resilience for large-scale interconnection services.

NATIONAL AREA

GREATER MILAN AREA

CALDERA PARK

Milan Internet Exchange
Core DC – Switch Fabric

DC1   DC2

RETELIT
Avalon Campus

CDLAN
C21

aruba.it	Data4	EQUINIX	EQUINIX	STACK INFRASTRUCTURE
IT3	MIL1	ML2	ML5	MIL01

open hub med	lepida	cloud europe	datafelix	aruba.it
Palermo	Bologna	Roma	Caserta	Roma

Services

Peering Services

As Italy's leading Interconnection platform, MIX provides a number of solutions to meet your network needs of operators and companies with their own Autonomous S ystem (AS).

Peering Services enable all networks to interconnect with one another to exchange internet traffic.

Interconnecting with other networks can be achieved in the following ways:

Public LAN Peering

The MIX Public Peering service offers a direct connection to exchange Internet traffic with a multitude of connected networks on the MIX highspeed layer 2 interconnection platform.

Private LAN Peering

This service facilitates interconnections with connected networks at MIX to establish an interconnection agreement via a dedicated private VLAN with another specific network operator.
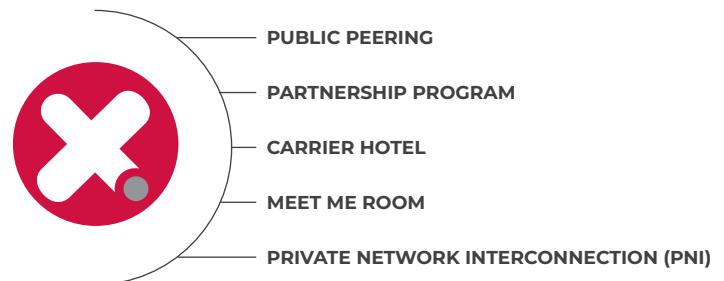
Private Network Interconnection (PNI)

This service facilitates interconnections with connected networks at MIX to establish an interconnection agreement via a dedicated private VLAN with another specific network operator.

Carrier Sevices

We offer operators who can provide Internet connectivity via their own infrastructure, fully equipped spaces in our data centers where they can install routing, transmission, or optical termination equipment in a secure and highly reliable environment.

MIX data centers exclusively offer housing services related to the public peering service.

PUBLIC PEERING

PARTNERSHIP PROGRAM

CARRIER HOTEL

MEET ME ROOM

PRIVATE NETWORK INTERCONNECTION (PNI)

Partnership Program

The program is designed to simplify network connections to MIX, even from locations where MIX switches are not physically present.

It is structured in two different models, designed to meet the diverse needs of Partners and offer them greater opportunities: **Reselling** and **Pooling**.

For both models

- Clients are fully connected to MIX

- First-level support for Clients is provided by Partners

- Peering service support is provided by the MIX NOC

- Colocation of equipment in MIX's data center is not allowed

MIX Partners

Resellers

Airbeam
Bezeq International
BSO Network Solutions
China Unicom (Europe) Operations Ltd.
Equinix
EXA Infrastucture Italy
Fiber Telecom
Redder Telco
Retelit
RETN
STACK EMEA
Telecom Italia Sparkle

Pool registrar

8Route
AS5398
BBanda
Briantel
BSO Network Solutions
Emaxy
Fiber Telecom
HAL Service
Lcom
Lepida
Net Global
Open Fiber
PCCW Global
RETN
Sirius Technology
Sysway
VSIX
Warian
Wifiweb

Datacentre Service

The MIX Datacentre is an optimal solution for housing network and transmission equipment intended for interconnecting at MIX.

The MIX Datacentre has been divided into four separate and specific areas to offer a tailored solution and to professionally manage both requested interventions by the MIX NOC staff, for connected network devices and for the arrival of newly connected networks.

Benefits

- Enhanced network performance
- Reduced network latency
- Improved customer and end user connectivity experience
- Reduced IP transit costs
- Better insight and control over routing and Internet data flows
- Increased redundancy and resiliency of your network connectivity
- Direct connections with other networks in a secure environment
- Highly reliable connectivity platform adhering to the highest technical standards

SWITCH FABRIC

BLUE AREA dedicated to **MEMBERS**

RED AREA for **TLC NETWORKS**

ORANGE AREA for **SPECIAL BID**

GREEN AREA for **INCOMING FIBERS**

Interconnections [as for 31/12/2024]

420
Connected networks

35
New customers

3.650+
PNIs

Connected Networks

CONTENT DISTRIBUTION NETWORKS

GAMING COMPANIES

INTERNET SERVICE PROVIDES

TRANSIT PROVIDERS

CLOUD PROVIDERS

CARRIERS

ON-DEMAND CONTENT PROVIDERS

PUBLIC ADMINISTRATION GOVERNMENT

LIVE CONTENT PROVIDERS

RESELLERS

18 Shareholders [as for 31/12/2024]

AIIP - Associazione Italiana Internet Providers	**12.50%**
BT Italia S.p.A.	**11.09%**
Clio S.p.A.	**1.24%**
Dedagroup S.p.A. **NEW ENTRY**	**3.37%**
Eolo S.p.A.	**15.00%**
Fastweb S.p.A.	**1.13%**
ITnet S.r.l.	**3.37%**
Mynet s.r.l.	**6.24%**
Orange Business Italy S.p.A.	**1.13%**
Panservice s.a.s. **NEW ENTRY**	**1.25%**
Retelit Digital Services S.p.A.	**15.00%**
Telecom Italia S.p.A.	**11.09%**
Tiscali Italia S.p.A.	**2.25%**
Tiscali Financial Services SA	**1.13%**
TNET Servizi S.r.l. **NEW ENTRY**	**1.00%**
Vianova S.p.A. **NEW ENTRY**	**1.00%**
Vodafone Enterprise Italy S.r.l.	**2.25%**
Wind Tre S.p.A.	**9.97%**

Board

[as for 31/12/2024]

Alessandro Talotta
Executive President and Chairman

Board members
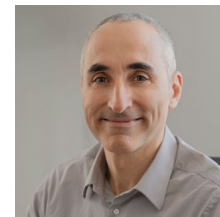

Francesco Castelli
TIM

Marco Fiorentino
A.I.I.P.

Giudo Garrone
Eolo

Andrea Giovanardi
BT Italia

Luca Legittimo
Utility Line Italia

Roberto Loro
Dedagroup

Luca Orabona
ITNet

Andrea Podda
Tiscali

Giulio Signorelli
Wind Tre

Ruggero Slongo
Retelit

Peering Crew

Cristiano Zanforlin
Chief Commercial
Officer

Mauro Magrassi
Chief Technical Officer

Monica Arensi
General Secretary
& Administration Mgr

Giorgia Montano
General Secretary
& Administration Assistant

Giovanni Verzotti
Accountant

Gabriel Ramini
IT Manager

Daniela Cipriani
Marketing &
Communications Mgr

Martina Mordà
Account Manager

Simone Morandini
Service Development
Manager

Michele Perrucci
DC Manager

Gianmarco Clerici
Network & Security
Manager

Gaetano Tomasi
NOC

Leonardo Schiavini
NOC

Stefano Genovese
NOC

Luca Rubino
NOC
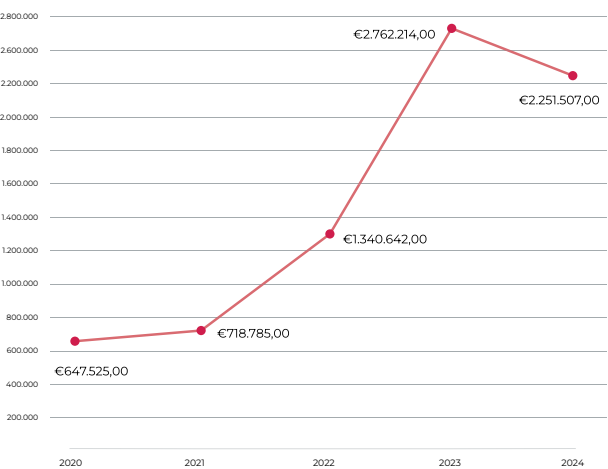
Ester Balzarotti
Marketing
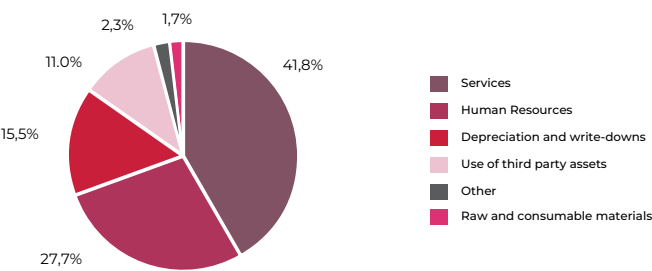Communications
Specialist

Claudio Zucchetti
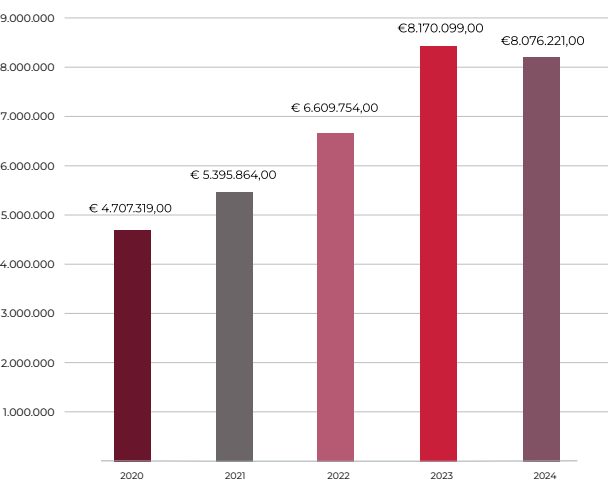Inside Sales
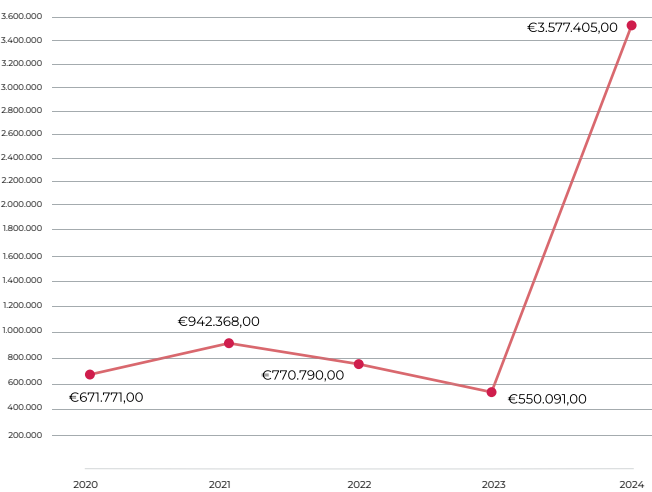
Financial results

[as for 31/12/2024]

EBIT

€2.762.214,00
€2.251.507,00
€1.340.642,00
€718.785,00
€647.525,00

Costs

- Services — 41,8%
- Human Resources — 27,7%
- Depreciation and write-downs — 15,5%
- Use of third party assets — 11,0%
- Other — 2,3%
- Raw and consumable materials — 1,7%

Earnings

€ 4.707.319,00
€ 5.395.864,00
€ 6.609.754,00
€8.170.099,00
€8.076.221,00

Investments

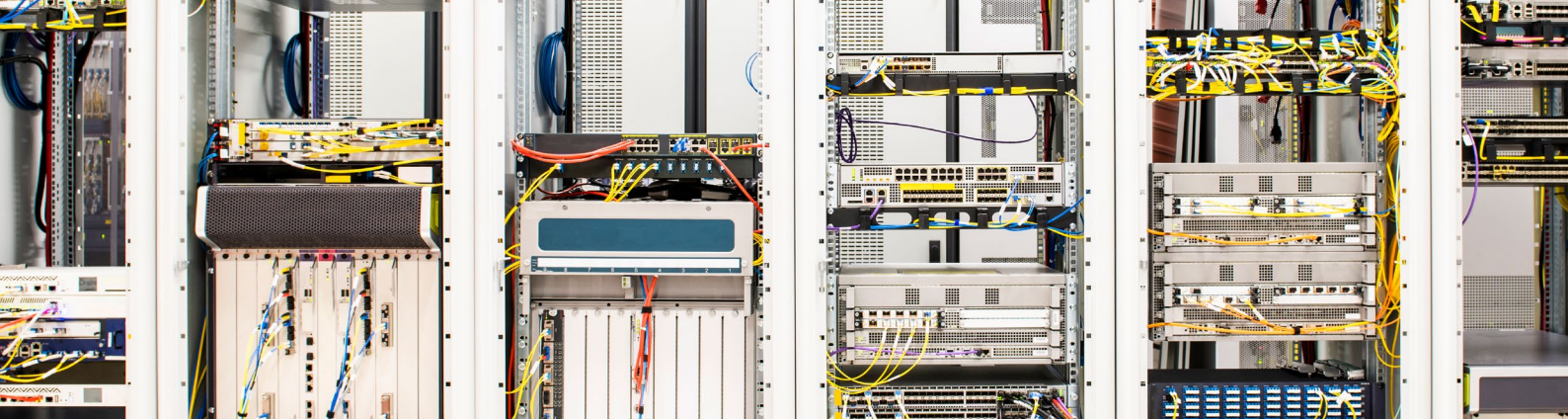

€3.577.405,00
€942.368,00
€770.790,00
€671.771,00
€550.091,00

KEY
FACTS
2024

MIX Gold Sponsor of Peering DB

PeeringDB is a freely accessible database containing information about networks that is input directly by users. It is a non-profit project, managed and promoted by volunteers, with the aim of fostering the growth of the Internet and has over time established itself as a true reference point for anyone involved in interconnections.

Through PeeringDB, it is possible to obtain information about networks and how to interconnect with them, as well as information regarding their presence at Internet Exchange Points (IXPs), data centres and other interconnection facilities.

It is therefore a valuable resource for making decisions on any type of interconnection. In this regard, MIX has always encouraged its customers to take full advantage of this opportunity.

The presence on PeeringDB maximises the visibility of their networks towards potential peering partners, facilitates the management of peering relationships, and allows them to make the most of the advantages associated with the MIX ecosystem.

Proud Sponsor of

PeeringDB

GOLD

News

Upgrade of the connection between VSIX and MIX to 100G: a step forward for connectivity in the Triveneto area

Just over a year after the activation of the connection between VSIX and MIX, it became necessary to upgrade it to 100G. Having moved beyond the initial experimental phase, it is already time to accelerate and increase the capacity of the connection between the Lombard hub and the one in the Triveneto area.

The increase in connection capacity between VSIX and MIX represents a concrete response to the growing data traffic demands in the Triveneto area. This decision is driven by the need to support the increasing demand for broadband and further improve the quality of services offered to end users.

Luca Finotti, Chief Technical Officer of VSIX, stated: *"We thank MIX because this collaboration allows us to enhance the offering of digital services to northeastern Italy. The upgrade of the connection is precisely in this direction and ensures us a large margin for future development. The cooperation between IXPs is an added value for Italy, in which we want to continue to invest."*

Cristiano Zanforlin, Chief Commercial Officer of MIX, added: *"We are very satisfied with how the collaboration with VSIX is progressing, particularly with this recent upgrade. It is a strong signal of our* *willingness to cooperate with other IXs, provided that it brings added value to the operator community and, consequently, to the end-user community. It is becoming increasingly important for users to have more alternatives to access content."*

The main benefits of this choice for VSIX and the Triveneto area include:

• **Increased network capacity**. The ability to handle a much higher volume of traffic reduces the risks of congestion related to unexpected traffic spikes.

• **Reduced latency times**. The increase in bandwidth capacity allows for a faster response of applications and online services, improving the overall user experience.

• **Support for economic growth and innovation**. A more robust and high-performing network infrastructure promotes the development of new initiatives and digital projects in the region, reducing the need for specific investments.

This initiative confirms the joint commitment of VSIX and MIX to cooperate in shortening the distances between their respective connected network communities.

MIX Point of Presence now active at Aruba's Hyper Cloud Data Centre (IT4) in Rome

Aruba S.p.A – Italy's leading provider of cloud, data centre, hosting, e-mail, domain registration and PEC (certified e-mail) services – and MIX (Milan Internet eXchange) – the main Italian internet exchange – have announced the activation of a new MIX-Rome Point of Presence (PoP) at the recently inaugurated Hyper Cloud Data Centre (IT4), located in the Tecnopolo Tiburtino area in Rome.

This new PoP of the IX Edge MIX-Rome represents the important expansion of MIX in the capital. The choice to establish a PoP in Aruba's Rome campus follows the 2018 decision to activate the MIX-Milan PoP at the Global Cloud Data Centre campus (IT3) in Ponte San Pietro (BG).

The new PoP will allow companies, internet operators, and content providers in Rome to benefit from a high-performance and low-latency interconnection. Furthermore, networks not yet connected to MIX-Milan will have access to remote control of the MIX-IT LAN with its over 400 connected AS.

Stefano Cecconi, CEO of Aruba, said: *"MIX's choice to activate a Point of Presence within our Rome data centre is a positive sign for the development of the capital as a strategic hub for data centres and for national and international connectivity. In*

the coming years, we expect exponential growth in the use of and traffic generated by the cloud and new technologies such as AI. It is crucial, therefore, to establish the necessary conditions to allow the technology's development. This includes considerations around the space and power needed for servers in data centres, interconnections, and network performance. Aruba will continue to strive to offer its customers the highest levels of quality and uptime with cutting-edge colocation and cloud solutions and the most advanced connectivity options, guaranteeing complete technological neutrality and maximum freedom of choice."
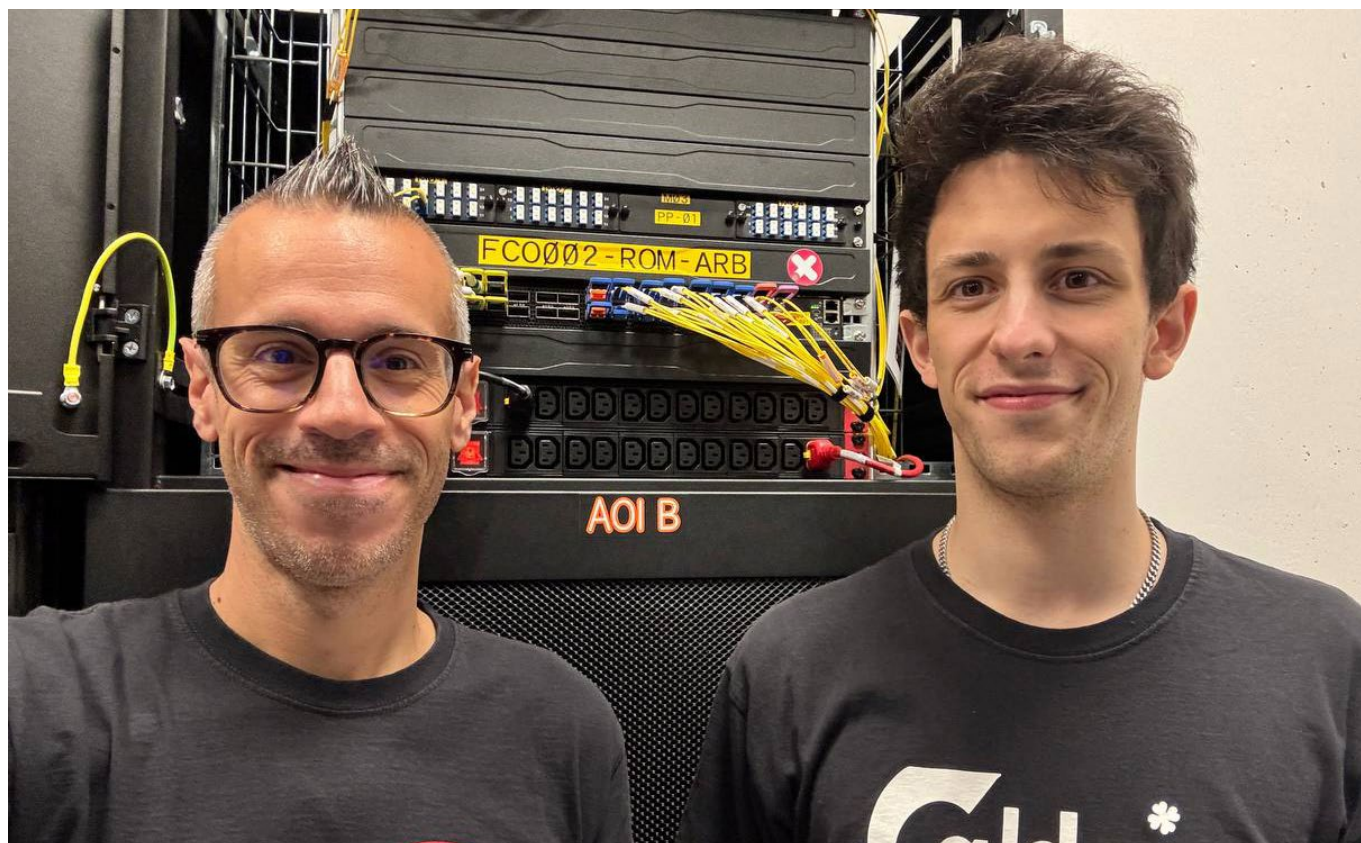
Alessandro Talotta, Executive Chairman and President of MIX, said: *"We are extremely satisfied with our new collaboration with Aruba, a leading player in the data centre sector in Italy. The Hyper Cloud Data Centre is a crucial driver in the digital transformation path of the capital. The presence of MIX in the new IT4 data centre in Rome further strengthens the interconnection infrastructure in Central Italy, offering a growing number of operators in the sector access to our services, improving network performance and ensuring efficient and high-quality connectivity. Respect for the principle of carrier neutrality is something we consider to be essential*

and a value we care deeply about. Our goal has always been to promote the development of internet traffic in the country, and this collaboration marks an important step in this.”

The Hyper Cloud Data Centre is a strategic hub for connectivity and digitalisation. The entire campus extends over an area of 74,000 m², with 52,000 m² of surface area dedicated to data centres. At full capacity, it will include 5 independent data centres for a total of 30 MW of IT power, delivered with a redundancy level of 2N or higher. With the first data centre on the campus already officially active (the DC-A), the second will be activated by the first half of 2025. The DC-A has also recently obtained the ANSI/TIA-942 Rating 4 certification confirming compliance with the industry's highest security standards in terms of its design, planning, and construction.

Connected to the main internet backbones, the data centre has multiple interconnections with the other Aruba data centres located in Arezzo (IT1 and IT2) and near Bergamo (IT3).

MIX Caserta: in DataFelix the first node of a local IX dedicated to Campania

From October 2024, the new local public interchange point at the Data Felix DF01 data centre is officially operational, supported by the remotisation of the MIX Milan node, which has over 400 interconnected networks.

MIX and Data Felix, a new carrier-neutral data centre located in Caserta, announce the official activation of MIX Caserta, the new regional Internet Exchange.

The infrastructure, designed and built according to high quality standards, hosts an IX designed to develop and optimise IP traffic in the territory, with the aim of offering local networks direct and high-performance access to the main players on the national Internet scene.

Thanks to the remotisation of the Milan PoP, MIX Caserta also allows small operators to connect to the Milan LAN and access the more than 400 networks already present on MIX-IT, thus benefiting from low-latency interchange without having to leave the regional perimeter.

The data centre is located in the heart of a strategic industrial district with a high technological vocation, in the centre of a territorial basin with more than 4 million users within a few kilometres.

With MIX Caserta, the territorial distribution strategy of interchanges is further strengthened, aimed at reducing costs, improving the resilience of local networks and promoting the growth of the digital ecosystem in Southern Italy.

'Data Felix represents a significant step forward for the digital ecosystem in Southern Italy,' explained Francesco Taurino, project developer and CTO of the company. *'With our wide range of services and thanks to this state-of-the-art infrastructure, we are ready to welcome companies, IT partners and operators, providing them with a secure, reliable and high-performance environment for their colocation, data processing and cloud services needs. And with the close collaboration with MIX and the activation of the local POP we will help raise the standards of speed and resilience of Internet connections in the South.'*

'The opening of our first regional IX in Campania, thanks to the partnership with DataFelix, testifies to the concrete commitment of MIX in fostering the development of edge traffic in Italy,' said Cristiano Zanforlin, Chief Commercial Officer of MIX. *'We believe that this is an indispensable element to face the digital challenges of the coming years'.*

With Cross-IX, MIX and AMS-IX Launch a Potential European Peering Platform Connecting 1,200 Networks

AMS-IX and MIX announced a Strategic Partnership to introduce the new Cross-IX service between the two Internet Exchanges.

With a single physical connection to either IX, users will gain access to networks on the other exchange. The partnership was unveiled during the Salotto 2024 event, which had 1,700 registered participants from the growing Italian IP community. Cross-IX will enable MIX customers, primarily small and medium-sized organizations, to connect to nearly 850 AMS-IX networks not present in Milan. Similarly, AMS-IX customers can connect to approximately 300 networks unavailable in Amsterdam, facilitating over 17 Tbit/s of premium peering traffic through a single physical connection. MIX is the second European Internet Exchange to offer its customers access to the AMSIX ecosystem, following Netnod, which connected to AMS-IX last May.

With the expansion of Cross-IX, participating Internet Exchange customers can access hundreds of new networks. The goal of Cross-IX is to allow small and medium-sized networks to increase their peering connections well ahead of the current situation, where an ISP must reach a critical mass to justify transport costs to another European IX. The Cross-IX service between MIX and AMS-IX will be available for subscription starting January, with the first activations expected within Q1 2025.

Alessandro Talotta, Executive President & Chairman MIX, comments: *"AMS-IX has always been a strategic partner for MIX. Milan and Amsterdam are two key areas for data development, and with this collaboration, MIX aims to strengthen its leadership by working alongside one of the most virtuous players in the Internet world. The agreement allows both organizations to expand their customer portfolios, providing the opportunity to seamlessly connect Milan and Amsterdam. A concrete example is the support offered to small local operators who need to virtualize their presence across borders. This agreement will further enrich MIX's service portfolio."*

Peter van Burgel, CEO of AMS-IX says: *"It is exciting to see another innovative connectivity partner like MIX offering their clients an expanded connectivity ecosystem through our Cross-IX service. With Cross-IX, customers of MIX and customers and members of AMS-IX can easily extend their ecosystem of networks without risk, delay, hardware requirements or additional administrative burdens. As we continue to build out our Cross-IX service, customers will be able to access to hundreds of connected networks across Europe with just one connection".*

Thanks Vittorio, Welcome Luca!

After over 20 years, Vittorio Figini is stepping down from his role on the MIX Board of Directors.

Alessandro Talotta, the Board of Directors, the shareholders' assembly and all the staff of MIX thank Vittorio for his invaluable contributions and unwavering commitment to our organization over the years.

Excitingly, Luca Legittimo will be joining the Board, bringing fresh insights.

Traffic Peak

+2.829 Tb/s

Record on December 11, 2024

Connected Capacity

16.50 Tb/s

+23% in 12 months

[as for 31/12/2024]

EVENTS
2024

SALOTTO 2024

Supporting SMES for a more competitive Italy

Facilitating dialogue between institutions and industry on the themes of digital development in Italy, as well as fostering networking among players in the supply chain: these were the goals of the 18th edition of Salotto, the annual event promoted by MIX – Milan Internet eXchange, held on December 10 and 11 at the Allianz MiCo Convention Center in Milan. **Over 1,500 participants, representing more than 500 companies** in the sector, engaged in discussions on topics such as infrastructure, competitiveness, and AI.

"During Salotto 2024, the pivotal role of the telecommunications sector emerged as a driver of competitiveness, supporting other industries that require digital tools to grow. The supply chain called on institutions to provide a response to incentivize innovation investments, thereby contributing to the creation of a more competitive Italy. This should

begin with an analysis of the Italian economic fabric, which does not need national champions but rather a system to support the many small and medium-sized enterprises that underpin the global recognition of Made in Italy," emphasized Alessandro Talotta, Executive President & Chairman of MIX.

The first day began with the MIXCOOL session, attended by over 350 high school students specializing in IT. They had the opportunity to learn firsthand about the world of Internet Exchanges and the latest innovations in the data center sector, presented directly by leading companies in the field.

During the opening panel of Salotto, an important partnership with AMS-IX, the Dutch Internet Exchange and one of the most virtuous players in the global Internet landscape, was announced. This partnership aims to create a potential European peering platform with 1,200 interconnected networks.
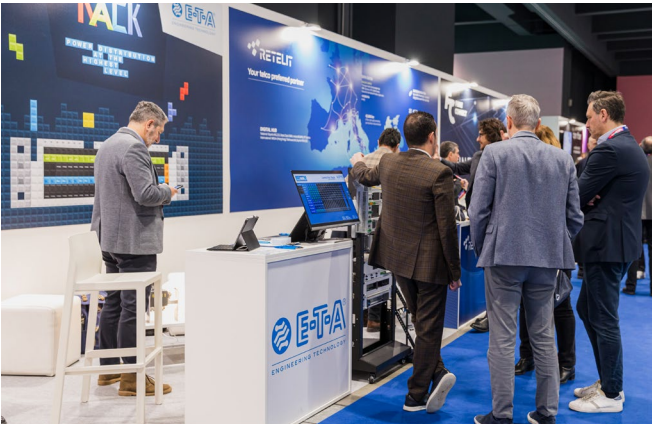
Two key panels brought together institutions and industry representatives:

"Data Centers in Italy: Opportunities, Challenges, and Issues in a Growing Market", featuring Giulia Pastorella (Member of the IX Transport Commission, Chamber of Deputies; Vice President of Azione), Layla Pavone (Coordinator of the Board for Technological Innovation and Digital Transition, Municipality of Milan), Alessandro Piva (Director of the Data Center Observatory, Politecnico di Milano), Giorgio Maria Tosi Beleffi (Executive, Minister's Office, Ministry of Enterprises and Made in Italy), along with industry representatives Stefano Mazzitelli (Director of Business Market, Open Fiber), Renzo Ravaglia (CEO and Co-Founder, FibreConnect), and Ruggero Slongo (Chief Operating Officer, Retelit).

"Italy's Challenges: Greater Digitalization to Support Competitiveness", featuring Alessandro Morelli (Undersecretary of State for Economic Policy Coordination and Public Investment Planning), Vinicio Peluffo (Member of the Commission for Productive Activities, Chamber of Deputies), and Patrizia Catenacci (Director General for Digital and Telecommunications, Ministry of Enterprises and Made in Italy), as well as industry representatives Guido Garrone (CEO, Eolo) and Marco Padula (Sales Director, BT Italia).

During the two-day event, 15 parallel technical sessions were held, alongside hundreds of one-to-one meetings. The doubling of sponsor participation, representing the entire Telco supply chain, confirms Salotto as the key B2B event for industry operators.

MIX'COOL

Since 2012, MIX has been committed to promoting digital culture by organizing educational activities for high school students. The MIX'COOL project aims to introduce young people to the world of Internet Exchanges, giving them a unique opportunity to explore what lies behind the platforms they use daily for on-demand content, gaming, online shopping and chatting with friends.

These sessions allow students, who are digital natives and experienced Internet users, to "hear the sound of the Internet" and understand the technological infrastructures that enable their connected lives.

Over the years, thousands of students from across Italy have participated in MIX'COOL, thanks to the strong trust established with educators.

Today, the program offers three participation options:

• **interactive video lessons** via live streaming,

• **in-person sessions** at schools,

• **MIX'COOL at Salotto**, during MIX annual event in Milan.

In 2024, more than **600 students** and teachers from **9 schools** took part in the program.

International Events

Peering Days Krakow
March 5-7

Winery Tour Campania
March 21

Winery Tour Lazio
Aprile 11

Data Center Nation Milan
Aprile 17

Winery Tour Tuscany
May 3

ITNOG Bologna
May 6-7

EURO-IX Heraklion
May 12-14

NWE Lucca
May 23

More-IP Amsterdam
May 29-30

Winery Tour Lombardy
May 30

Nam24 Naples
June 4

AIIP
Rome

June 6

Nanog 91
Kansas City

June 10-12

Winery Tour
Veneto

June 19

Subsea World
Marseille

July 10-11

IBC
Amsterdam

September 13-16

EPF
Vienna

September 16-18

Eurekalabria
Lamezia Terme

September 25-26

ITNOG-Naquadria
Piacenza

October 9

Capacity Europe
London

October 15-17

Euro-IX
Budapest

November 17-19

Meeting VSIX
Padova

November 27

ITW Asia
Singapore

December 4-5