



**ANNUAL
REPORT
2018**



THE PRESIDENT'S COMMENT

Resilient and enduring

Joy Marino

Every year, when, at the annual Shareholders' Meeting, the time for final balances arrives, I can't help but look back at the history we have accumulated and, each time, I am a little surprised.

We are a technological company, which does a well-defined job, with an economic weight that is very small compared to the reality of the ICT industry in which we operate.

We have seen the industrial and strategic reference scenario change completely from luster to luster: the Internet has changed skin countless times, new business models have been successful, have been consolidated and have been replaced by others; the technologies used have evolved with multiplicative effects in volumes and disruptive solutions; the services that are offered and purchased on the net have varied in type and grown exponentially; companies are born almost from nothing and have become world leaders, or have been bought or merged in a continuous global Risk.

And yet, we are always here, always growing, with regularity and graduality, giving solidity and resilience to the services we provide, so that all the actors of the Net scenario can continue to rely on MIX, whatever happens, whatever new upheaval occurs in the national or global scenario.

Very recently, having to write a note for the Ministry on which we depend, the MISE (with which we have some disparity of views on what services are provided by MIX), I tried to reason about the specificity of our trade and the conclusion was, trivially, that if MIX were not there it would have to be invented!

The entire ecosystem of the Network benefits from the presence of the Internet Exchange; all the subjects involved, both the great ones, who might prefer a scenario with few subjects that control everything, and the little ones, who would ask every time for an immediate regulatory intervention of the Authority, in the end appreciate

the opportunities made possible by a competition space and informal cooperation, where the "invisible hand" of Adam Smith still manages to do his job.

In the end all this is for the benefit of the end users of the Network, those who are not among the "stakeholders" of MIX nor directly as partners, nor indirectly (as customers, business partners, public administration); those are the ones who most likely do not know that MIX exists and even that a bit of the bits, among the many they exchange on the Internet at any moment, passes right by here.

At the risk of repeating myself for the umpteenth time, presenting the results (economic but not only) this year, I can say that this happens because over time we have built a very close-knit team, where everyone, from the Board of Directors to the management, from the employees who have been with us for almost 20 years to those who have just entered have shared a spirit of belonging, the sense of doing something that not only increases the value of the company for its shareholders, but also and, above all, does something useful in a broader sense, for the good functioning of the Network in our country and for a growth that is harmonious and future-proof: so that we continue to have an Internet that is that "level playing field" that has allowed us to reach the end here and what we expect can do the same for future generations.

I believe that it is for this spirit that I see so much passion in everything we do, from the expansion of our infrastructure to commercial initiatives, from the continuous attention to security to the cordial relationship with the technical staff of the customers (even in the frequent night interventions that are scheduled), from the institutional Salotto - now an obligatory appointment for the operators of the sector - to the Salottini targeted to specific technical themes, up to the educational days for the schools that we periodically carry out.

We want to continue like this, you can count on it!

IDENTIKIT

Main Italian Internet
eXchange Point

Founded in 2000

Consortium like operated
company

Carrier independent
data center

IN NUMBERS



255 ASNs



585 Gb
traffic peak



2 Data Centers
directly managed



#14 world IXP
for ASNs - Source: IXPDB of Euro-IX



75%
Italian IXP traffic



3.6 Tb capacity

8 DOMESTIC LOCATIONS



IRIDEOS



*MIX core DC is located in Milan in the Caldera Park,
the campus with the **highest concentration**
of **Internet Operators** in Italy



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 harmonization activities between the IXPs of different countries for the benefit of the entire European Internet community.



With around 150,000 km of submarine cables reaching Sicily, Italy is the major 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 with other important national and international players.

CERTIFICATIONS

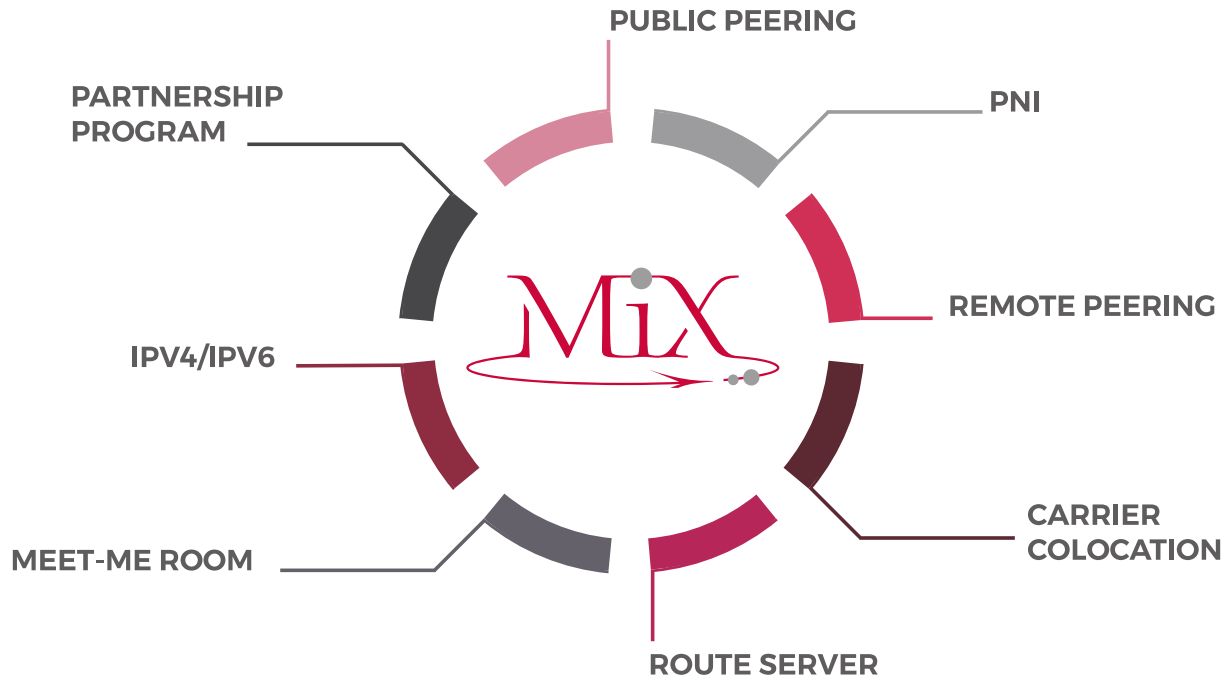
Aware of its role as an essential infrastructure of the Internet in Italy, MIX maintains a high level of vigilance in relation to all aspects of reliability and security.

In these areas, confirming the level of excellence of its services and infrastructures, MIX has obtained ISO27001 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 released by Open-IX to only 5 IXPs worldwide, which defines the standards of performance, reliability and resilience for large-scale interconnection services. One of the key factors in achieving these certifications was the complete control of the two Data Centers built in the Caldera campus: being managed in total autonomy by MIX, they are entirely under its direct responsibility.



SERVICES



Peering at MIX

Peering is the interconnection service between networks (AS) available at MIX through high-speed layer 2 devices (switches).

Operators who present themselves on MIX have the opportunity to realize peering agreements in the point of greatest concentration of internet operators in Italy, with ease and at competitive costs.

The service includes

- 1 GE, 10 GE and 100 GE ports;

- peering relationships directly on the peering LAN with 3 instances of the 13 Root DNS servers existing in the world and of many TLD DNS servers;
- exchange of IPv4, IPv6 and Multicast traffic on the same infrastructure without additional costs;
- colocation of the peering devices in the core site of MIX.

Services for Carriers

The Carriers find in MIX spaces equipped to install their own transmission equipment or even optical termination fully managed and served by MIX.

Within a protected environment and guaranteed in its functionality, MIX carriers in the datacenter can offer interconnection services to operators connected on the peering LAN, transit services to the Big Internet and interconnect their equipment

(active or passive) to those of the operators installed in the datacenter, easily, quickly and at low cost.

Partnership program

The partnership program is designed to facilitate the connection of remote operators to the peering LAN.

To better cover the different needs and offer more opportunities to partners, two different partnership models are available: **Reselling** (Qualified service) and **Pooling** (Best effort service).

The criteria common to both are:

- Partners resell transportation plus connection to MIX in a "All-in-one" service.
- Partners are the only commercial referent with MIX.

First level support is provided by the Partner.

No colocation services are provided for the customer's equipment in the MIX DCs.

MIX Partners

Resellers

Enter
Equinix Italia Enterprises
GTT/Interoute
Retelit
SUPERNAP Italia

Poolers

BBanda
Briantel
Fiber Telecom
Internet One
IX Reach
Lepida
Sysway
Wifiweb

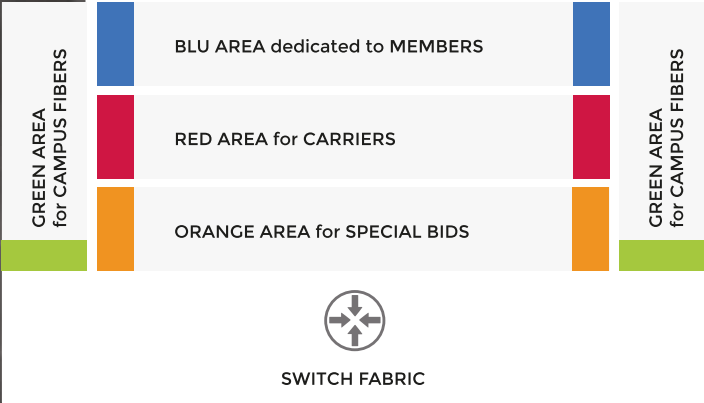




Datacenter services

MIX core datacenter is an optimal solution for housing network and transmission equipment.

It is divided into two datacenters – MIX DC1 and MIX DC2 – and sub-divided into 5 areas, to offer a tailor-made service and to manage each intervention quickly and accurately.



BENEFITS



EFFICIENCY

SPOC for any issue

Full support for interconnections at Layer 1, Layer 2 and Layer 3



RELIABILITY

>99,99% uptime track record

High and increasing redundancy infrastructure

Physical and logical security aligned to the best practices of the industry for data rooms and switching platform



CUSTOMER SUPPORT

Direct relations with MIX staff for all the problems concerning interconnection, peering and colocation

Tailored tools for **monitoring** and **statistics**



COST EFFECTIVENESS

Highest density of Network and Content players in the country and Southern Europe

Place-to-be for **top efficiency** and **any interconnection need**

Fully owned and operated DC dedicated to Internet interconnection

Access available from **8 remote locations**

INTERCONNECTIONS



204.000+

IP network prefixes
announced



1200+

PNIs



255

ASN connected



34

new ASNs

INTERCONNECTION ENVIROMENT



OTT



GAMING COMPANIES



CONTENT DISTRIBUTION
NETWORKS



TRANSIT PROVIDERS



INTERNET SERVICE
PROVIDERS



CARRIERS



CLOUD PROVIDERS



PUBLIC ADMINISTRATION
GOVERNMENT



ON-DEMAND CONTENT
PROVIDERS



MIX RESELLERS



LIVE CONTENT
PROVIDERS

CONNECTED NETWORKS as of 12.31.2018

2bite	Cesena Net	ePress	Innsbrucker Kommunalbetriebe
3P System	Cielo	Equinix	Insiel
a2asmartcity	Cisco	Estracom	Intercom
Abilene	Clio	Etisalat	PT Telkom Indonesia International/TELIN
Acantho	Cloudfire	Eurocall	Internet One
Active Network	Cloudflare	Eurosys	Internet One SA
Adal Network	CloudItalia	Expereo International	Interoute/GTT
Afilias	Cogent Communications	Facebook	Interplanet
Airbeam	COLT International	Fastnet	Intred
Aircomm	Comando C4 Difesa	Fastweb	IPKom
Airnetwork	Connesi	Fiberling	IPRoute
Akamai	Conessioni Metropolitane	Forcepoint	IPTP Networks
Alfanews	Continent 8	FUB - Fond. Ugo Bordon	Irideos/Infracom Italia
Almaviva	Convergenze	G Core Labs	Irideos/KPNQwest Italia
Altitud	D.T.S. - RetelVO	GARR	Irideos/Mc-Link
Amazon	Dada	Geant	Irpina Net-Com
AMT Services	Deltaweb	Genesys Informatica	Isi Line
Aruba	Digitel Italia	Geny Communications	It.Net/IOL
Asdasd	DIR.org	Go Internet	ITGate Network
AT&T Global Network Services	Dolomites Network	Goline	IX Reach
Aut O'Mattic	Dropbox	Google	JCom
Bbanda	Dueenne	Grifonline	Knipp
BBBell	E-Mind	Hibernia	Leonet
Blizzard Entertainment	E4A	Horizon Telecom	Lepida
Bluwifi / Newmediaweb	EasyConn	Hurricane Electric	Libera Univ. di Bolzano
Brennercom	Easynet Italia	I.T.S.	Limelight Networks
Briantel	El.Com.	ICTeam	Lispa
BT Global Services	Elmec Informatica	IFOM	Logos Technologies
BT Italia	Elsyconn	Il Sole 24 Ore	Lottomatica
BV Networks	Engineering D.Hub	Imperva Inc.	Maide
CDLan	Enter	Init7 (Schweiz)	
CDNetworks Co.	Eolo	InNet	

Mandarin	OVH	Sky	TTK - TransTelecom
Mediaset	Panservice	Smart Provider	Twitch
Melita	Planetel	Smartline	TWS Italia
Metrolink	Positivo	SoftLayer Technologies Italia	TWT
Micro Servizi	Poste Italiane	Sony	Unidata
Microsoft	Professional Link	Spadhausen	Uno Communications
MU Network	Progetto 8	Sparkinit	Utility Line Italia
Mynet	Progetto Evo	Spaziotempo	ValcomCalabria
Mynetway	Promo.it	Spin	Verisign - j.root-server
Nemo	Qcom	StackPath	Verizon Digital/EdgeCast
Net Global	Quantil Networks	Stadtwerke Hall in Tirol	Verizon Italia
Net-IT	RadioFibra	Stel	Videobyte
NETandWORK	RAI - RadioTelevisione Italiana	Stelkom	Vimpel
Netflix Streaming	Redder Telco	Sunrise Communications	Vodafone Group Services
NetIX Communications	Reevo	Supernap	Voix
Netnod - i.root-server	Registro .it	Swisscom	Vuetel Italia
Newtec	Retelit/e-via	Symantec	Warian
Nexim	Retn	T.Net	Wavecom
Nexin Technologies	Riot Games	TeamSystem	Webdiscount
Next.it	RIPE NCC - RIS project	Tech Digital	Welcome Italia
Nexus	RIPE-NCC - k.root-server	Tecno General	WI-GO
NHM	S.P.E.	Tecnotel	Wifiweb
Nice Blue	Seeweb	Telecom Italia	Wind Tre
Noitel Italia	Seflow	Telecom Italia San Marino	Wish Networks
Nova Networks	Servereasy	Telecom Sicilia	WispOne
Nova Quadri	Sg.Gs	Telemar	Wolnet
Oath (EMEA)	SI.EL.CO.	Telmekom	Xmatica - Progetto Fibra
OmanTel	Sicula System	Telnet	xstream
Onecom Global	Siltel	Terra	Zscaler
Optima Italia	Siportal	Time-Net	
Orakom	Sirius Technology	Tiscali Italia	
Orange Business	Sistemi HS	Trentino Network	

CARRIERS ON-NET

Aruba

Asdasd

BBanda

Briantel

BT Italia

CDLan

CenturyLink Communications

CloudItalia Telecomunicazioni

Cogent Communications

Colt Technology Services

Digital Telecommunication Services

Enter

Eolo

Equinix (Italia) Enterprises

Fastweb

Fiber Telecom

Internet One

Irideos

It.Net

IX Reach

Lepida

Mediaveneto

Nexin Technologies

OpenFiber

Progetto Vendita

Qcom

Retelit / e-via

Seeweb

Supernap Italia

T.Net Italia

Telecom Italia

Telecom Italia Sparkle

TeliaSonera International Carrier

Tiscali Italia

Uno Communications

Verizon Italia

Vodafone Italia

Wifiweb

Wind Tre

Xmatica

SHAREHOLDERS

AIIP – Associazione Italiana Internet Providers	9.97%
BT Italia S.p.A.	11.09%
Clio S.p.A.	2.25%
Eolo S.p.A.	9.97%
Eutelia S.p.A.	1.12%
Fastweb S.p.A.	1.12%
Irideos	23.11%
It.Net S.r.l.	5.37%
Orange Business Italy S.p.A.	1.12%
Sequenza S.p.A.	3.37%
Spin S.r.l.	1.12%
Telecom Italia S.p.A.	11.09%
Tiscali Italia S.p.A.	2.25%
Tiscali Business GmbH	1.12%
Utility Line Italia S.r.l.	3.68%
Vodafone Enterprise Italy S.r.l.	2.25%
WindTre S.p.A.	9.97%

BOARD



Joy Marino
President



Simone Bonannini
OpenFiber



Eugenio Contatore
ITNET



Vittorio Figini
Utility Line Italia



Marco Fiorentino
Irideos/KPNQwest



Alberto Maria Langellotti
TIM



Federico Protto
Retelit



Luca Spada
Eolo



Gaetano Tomasi
DC Operator

Simone Morandini
System & Network
Engineer

Gianmarco Clerici
System & Network
Administrator

Gabriel Ramini
IT Manager

Giorgio Bellocci
Media Relations
Consultant

Mauro Magrassi
Service Development
Consultant

Michele Perrucci
DC Manager

Monica Arensi
General Secretary

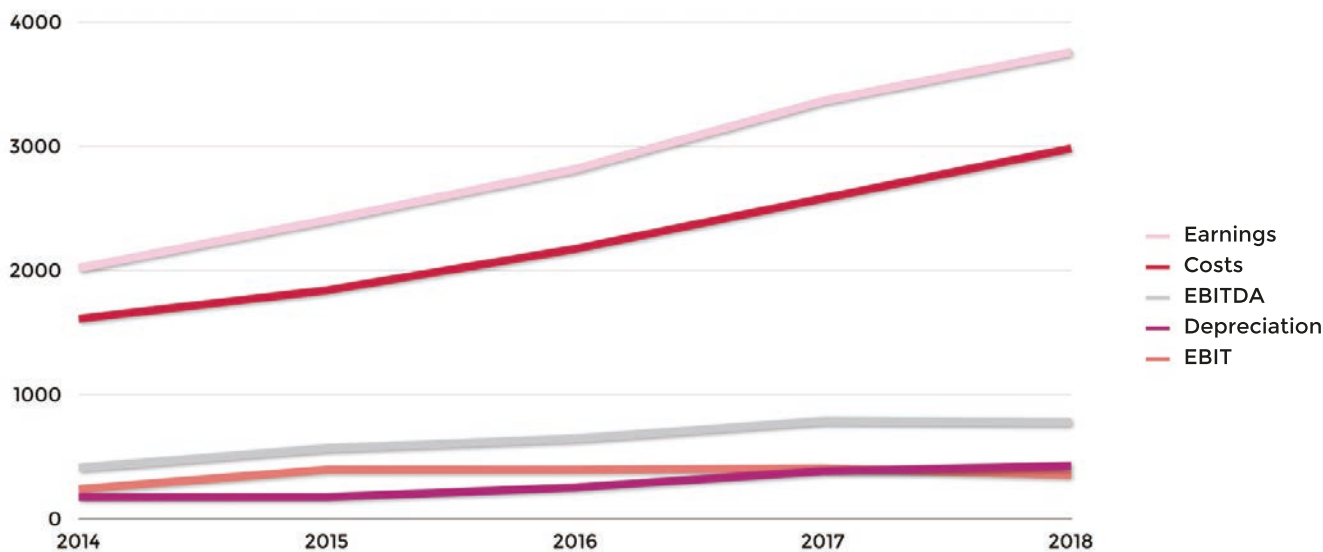
NEW ENTRY
Daniela Cipriani
Marketing &
Communications
Manager

NEW ENTRY
Cristiano Zanforlin
Chief Commercial
Officer

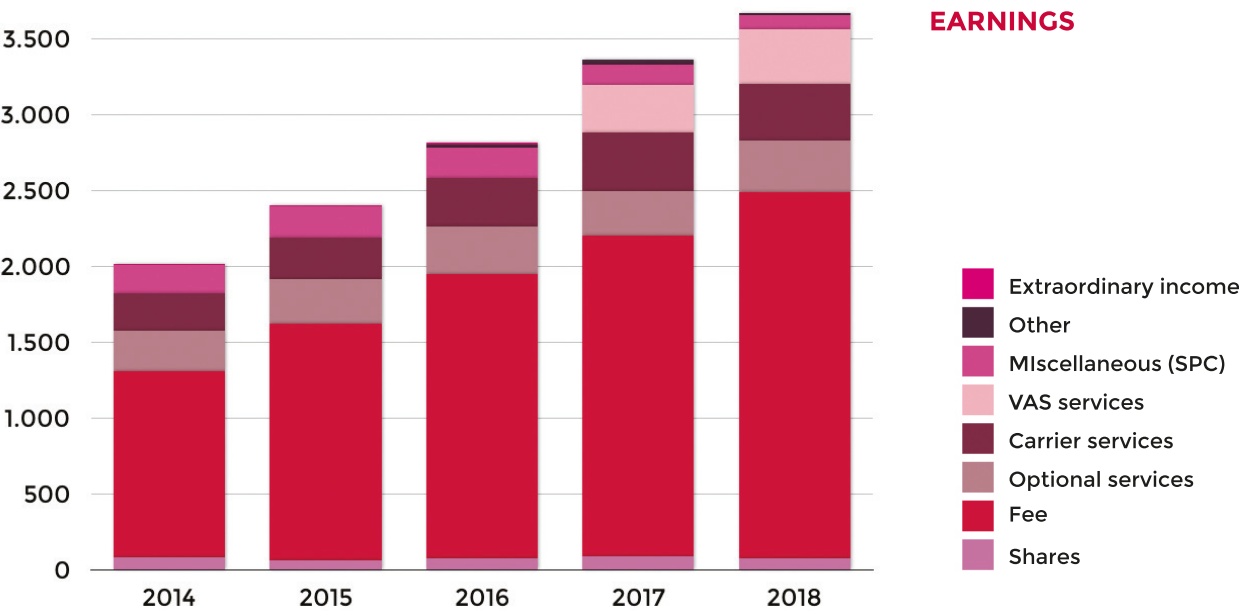
Valeria Rossi
General Manager

THE TEAM

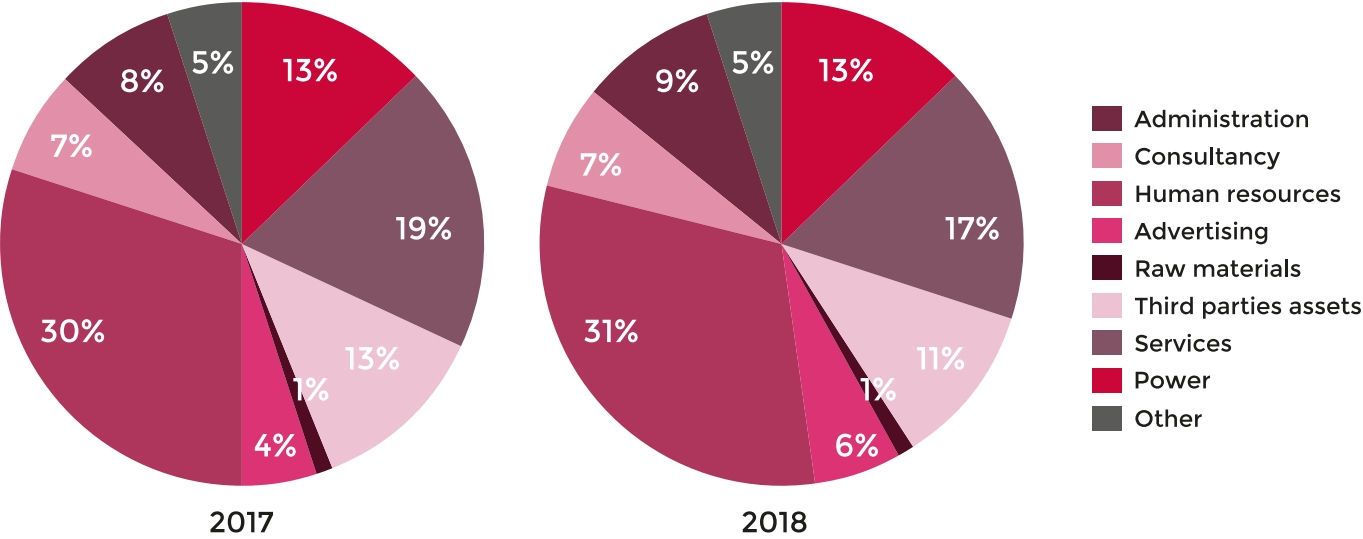
PROFIT & LOSS



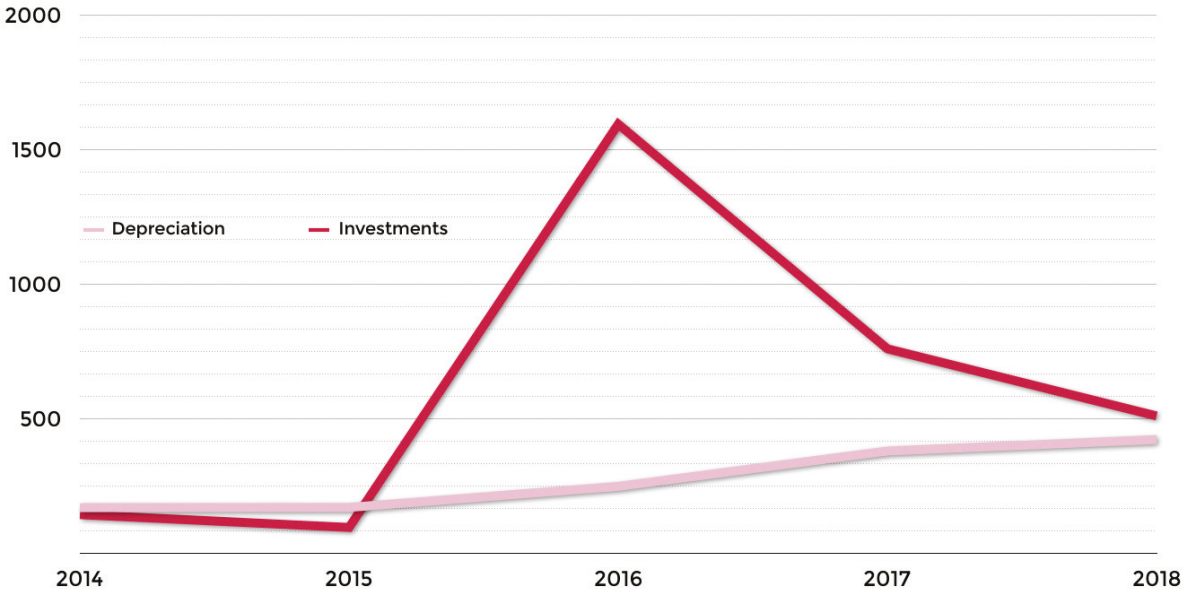
FINANCIAL RESULTS

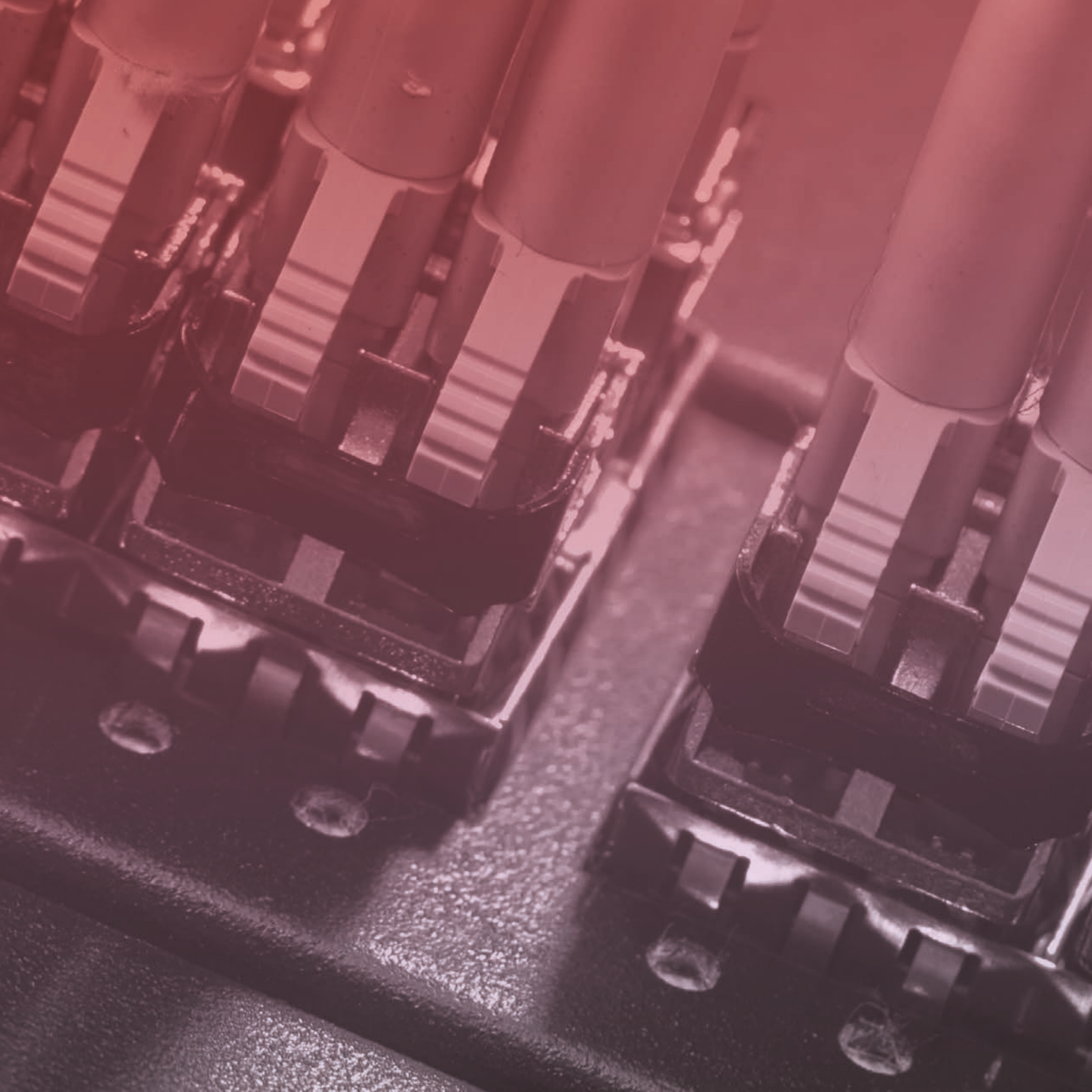


COSTS



INVESTMENTS





A close-up photograph of a mechanical assembly, possibly a printer or a similar device, featuring several cylindrical components and a complex metal frame. The image is overlaid with a semi-transparent red filter. The text "KEY FACTS IN 2018" is centered in white, bold, sans-serif font.

KEY FACTS IN 2018

COMPANY

Free share capital increase to 1 Million

The initiative was made possible thanks to the constant growth over the years: the increase in traffic exchanged by operators through the MIX infrastructure is currently among the highest in Europe

On April 24th, 2018, the Shareholders' Meeting of MIX approved a free share capital increase from € 99,000.00 to € 1,000,000.00, by transferring to capital a corresponding part of the available reserves of the companies included in the balance sheet.

The initiative was made possible thanks to the constant growth that the Company has seen over the years, the result of major investments aimed at developing the Italian portion of the Internet.

The success of these operations has meant that the increase in traffic exchanged by operators through the MIX infrastructures is currently among the highest in Europe, with growth rates comparable to those of the main European IXPs. The most important Italian IXP, which celebrates its first 18 years of activity, has therefore reached the age of majority also from an economic and financial point of view.

Joy Marino, president of MIX, comments as follows: "For us, the capital increase was now a

duty: the growth of MIX from every point of view and, above all, the size of the investments made in the last three years required to officially certify the substantial solidity achieved. I think of the "seed money" collected 18 years ago by a group of courageous and far-sighted Internet operators, I think of our ability to self-finance and always grow, at every juncture and without any institutional help. And today, after 18 years, upon reaching a symbolic age of majority, MIX certifies its value and acknowledges both its members and the stakeholders of the broad community of the Internet community it addresses.

If, as I believe, the "Lindy effect" applies, I can add that we are here to last a long time, because, through all the transformations that the Internet has experienced and will live in the future, in Italy there will always be a need for a facilitator junction for the Network".

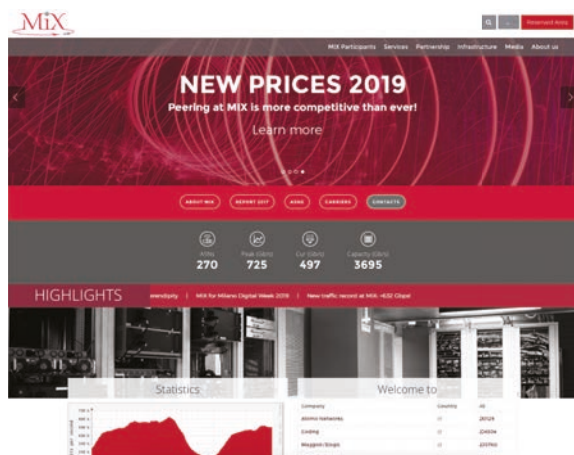
SECURITY

MIX supports MANRS

MIX has always been aware of the security issues that daily threaten the functioning of the Internet and implement actions to counter them. For this reason, consistent with its vocation as a facilitator of the Network, in 2108 MIX joined MANRS (Mutually Agreed Norms for Routing Security), the initiative supported worldwide by ISOC to reduce the main threats of routing malfunctioning.



MANRS



COMMUNICATION

New MIX website published

On October 18th, the new release of the MIX website was published, completely renewed in graphics and content.

The new portal is perfectly responsive on mobile platforms, to respond to users' browsing needs.

Through the reserved area, the MIX members can access customized statistics and tools.

The new version of the company newsletter was also launched in June.



NEW POP

MIX in Aruba Global Cloud Data Center

MIX's new PoP launched at the Aruba Global Cloud Data Center: the largest data center campus in Italy becomes a strategic data exchange hub for the country

On July 12th, MIX and Aruba announce the agreement set to boost capacity and interconnection services contributing to the growth of the Internet in Italy and Europe.

The agreement between Aruba and MIX involves the addition of new interconnections - peering between the networks - through the activation of a Point of Presence within the Global Cloud Data Center, thanks to devices connected to Milan with

a double fiber path, so as to facilitate the exchange of traffic with numerous other national and international carriers.

This means that Aruba customers, telecoms operators and all interested parties will be able to exchange traffic locally and with Milan's MIX operators directly from the Ponte San Pietro data center and – at the same time – the MIX itself will boost its own potential as an interconnection



"The first time I visited the Global Data Center, I was struck by the potential of the site and the vision that drives Aruba; we immediately made a commitment to achieve this shared goal.

Now that we have a PoP on the outskirts of Bergamo, we can really talk about MIX's Lombardy Ring as the infrastructure that makes peering between all Internet operators possible, wherever they are in the region's largest Data Centers.

The infrastructural gap with other European countries is being filled".

Joy Marino, MIX President

hub thanks to this new acceleration in the development strategy for the Internet exchange throughout Lombardy, which will then grow further with respect to the Milan Caldera complex.

The collaboration between the two players is strategic in terms of the development of the Italian and European Internet.

Global Cloud Data Center is a totally ecological structure, equipped with cutting-edge technologies. The data center has been designed to offer the highest standards in terms of safety and performance and guarantees the highest possible level of energy efficiency. This is aimed to fulfill two objectives: to reduce the impact on the environment as much as possible and to ensure the quality and convenience of services.

Global Cloud Data Center uses a high-efficiency geothermal cooling system and is 100% powered

by energy from renewable sources - of GO certified origin (Guarantee of Origin) - in addition to a hydroelectric power plant and proprietary photovoltaic systems, located within the campus itself. All systems have been designed and built to satisfy and exceed the maximum levels of resilience of the Rating 4 (former Tier4) level of ANSI/TIA 942-A.



MIX SALOTTO

Les jeux sont fait... ou non?

Record numbers for the XII edition: with 338 delegates from over 190 companies, MIX Salotto is confirmed as the reference event for the TLC sector in Italy

On November 27th, the Italian TLC community met in Milan at the Hotel Principe di Savoia for the MIX Salotto, the annual event of the largest Italian IXP. 338 delegates of the most important companies in the sector, 140 one-to-one meetings and many informal appointments, sipping a coffee or a glass of wine, have characterized what is now recognized as the only event in Italy that allows the telco community to meet, discuss relevant topics in the world of telecommunications and do networking.

The afternoon round table, as usual moderated by Enrico Pagliarini of Radio 24, was introduced by Stefano Quintarelli who framed the topic of the debate: the dominance of OTTs and the potential for Europe to compete in a market dominated by overseas companies. Simone Brunozzi, an Italian venture capitalist based in San Francisco, brought

his point of view from the privileged observatory of the Silicon Valley.

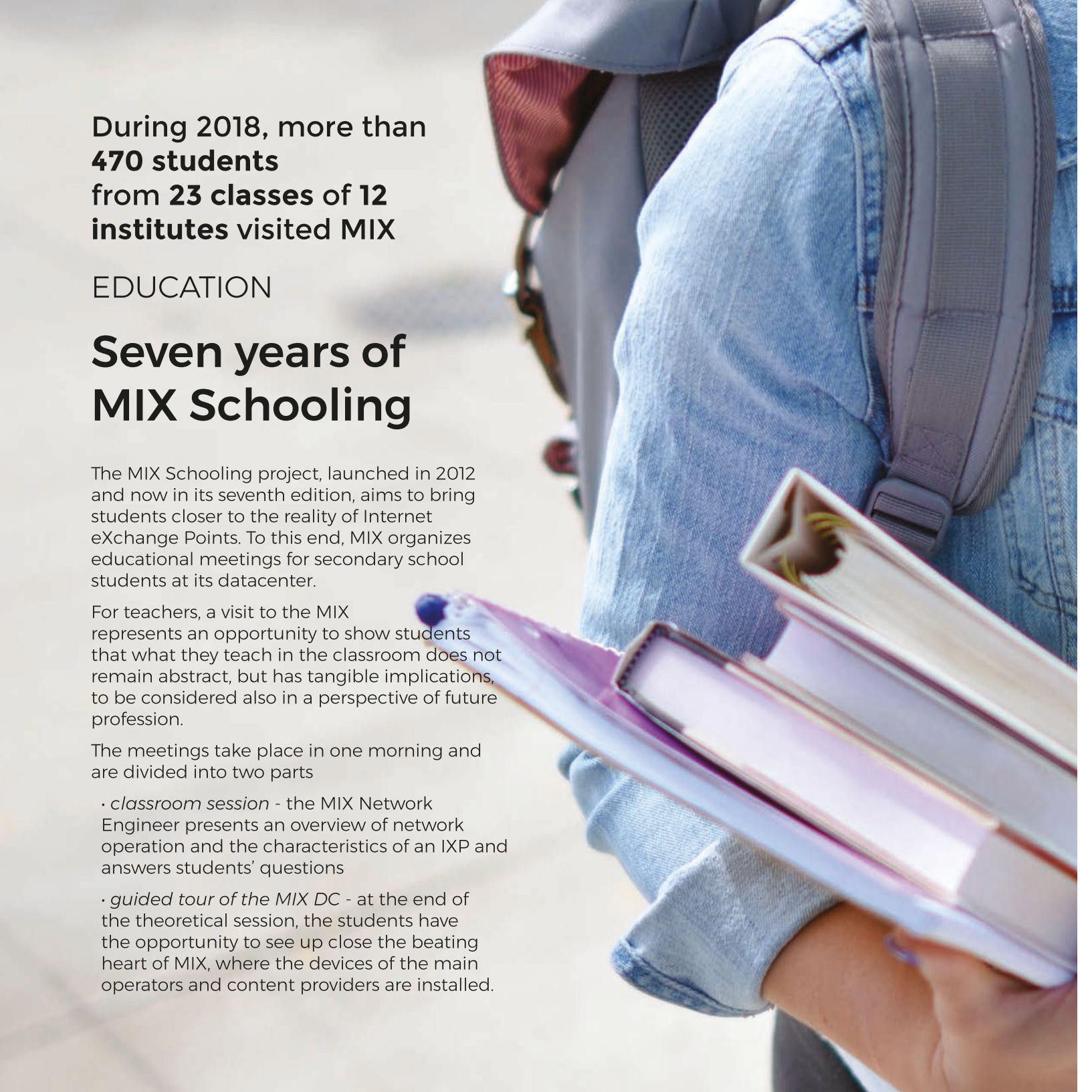
The world of politics and institutions was represented by Andrea Cioffi, undersecretary of the



Ministry of Economic Development and by Jasmin Battista, head of the e-commerce sector of DG CNECT, European Commission. To complete the panel, besides Joy Marino, president of MIX, Luca Balestrieri, Director of Platforms and Distribution of RAI, who talked about the state of the art of the State TV initiatives.

The splendid rooms of the historic Milanese hotel have therefore hosted the aperitif and the buffet dinner, enlivened by the live music of a swing quartet, a worthy end to a memorable day.



A close-up, slightly blurred photograph of a student's back and shoulder. The student is wearing a blue denim jacket over a grey shirt and has a grey backpack with a red strap. They are holding a stack of books, with a pink book visible in the foreground. The background is a bright, out-of-focus outdoor setting.

During 2018, more than
470 students
from **23 classes** of **12**
institutes visited MIX

EDUCATION

Seven years of MIX Schooling

The MIX Schooling project, launched in 2012 and now in its seventh edition, aims to bring students closer to the reality of Internet eXchange Points. To this end, MIX organizes educational meetings for secondary school students at its datacenter.

For teachers, a visit to the MIX represents an opportunity to show students that what they teach in the classroom does not remain abstract, but has tangible implications, to be considered also in a perspective of future profession.

The meetings take place in one morning and are divided into two parts

- *classroom session* - the MIX Network Engineer presents an overview of network operation and the characteristics of an IXP and answers students' questions
- *guided tour of the MIX DC* - at the end of the theoretical session, the students have the opportunity to see up close the beating heart of MIX, where the devices of the main operators and content providers are installed.

MIX for the Association of Journalists

On December 12th in the morning, at MIX headquarter in Milan about 20 journalists took part in the seminar “World Wild Web: the internet network and its nodes such as MIX”, promoted by the Association of Journalists of Lombardy, among the calendar of educational meetings for the professional update.

After the opening, Michelangelo Bonessa, the order representative, and Valeria Rossi, General Manager of MIX, gave the floor to Simone Morandini, MIX System & Network Engineer.

Morandini provided the audience with an overview

on the basics of the network operation, its features and possible threads.

The high level of interest for the theoretical session was transformed into real enthusiasm during the visit to MIX Core DC, where the participants had the possibility to see Internet from the inside.

Through the collaboration with the Association of Journalists of Lombardy, MIX wants to carry on its mission of promoting and sharing the internet culture, starting from the education of the information professionals, to provide them with useful knowledge about technical subjects.





HEADQUARTER

MIX is based in Milan, at Caldera Park, the area with the highest concentration of Internet operators in Italy.

