



How convergence leads to innovation

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belgacom

proximus
belgacom mobile

telindus
Belgacom ICT

Belgacom

Belgacom Group



Consumer
Business Unit

Enterprise
Business Unit

Service
Delivery Engine

The 3 strategic steps

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STEP 1: Build an MPLS network infrastructure

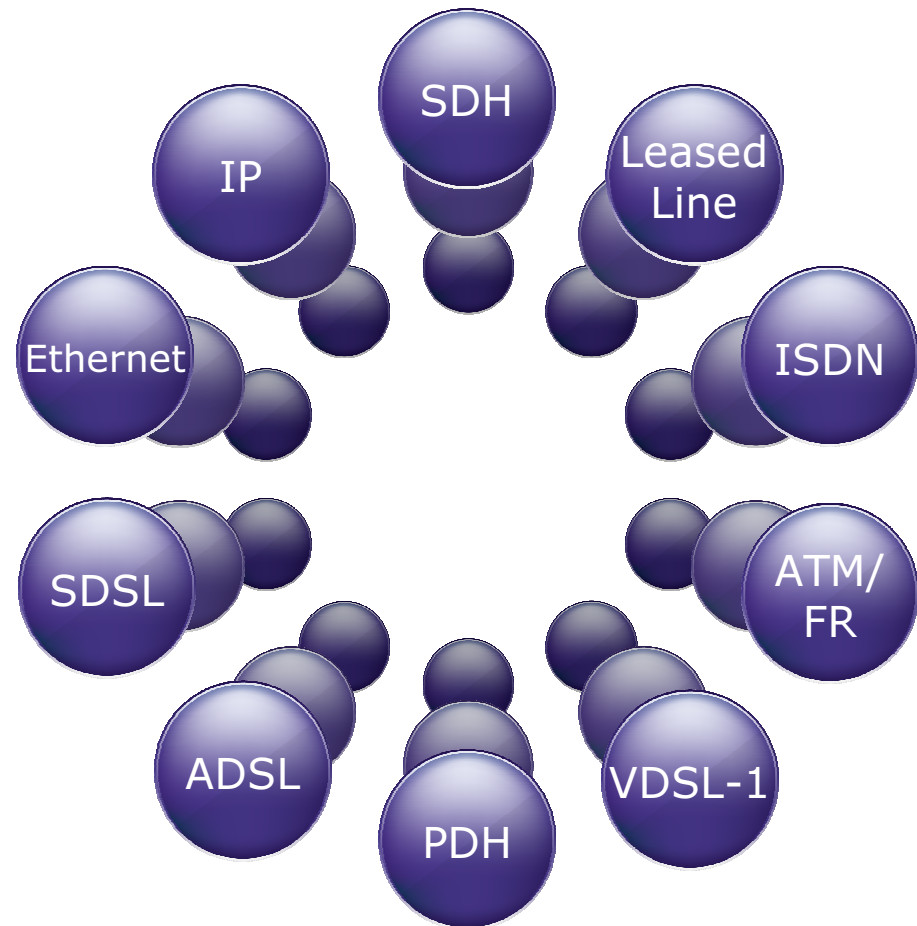
STEP2: Offer end-to-end services

STEP3: Transform into application aware platform

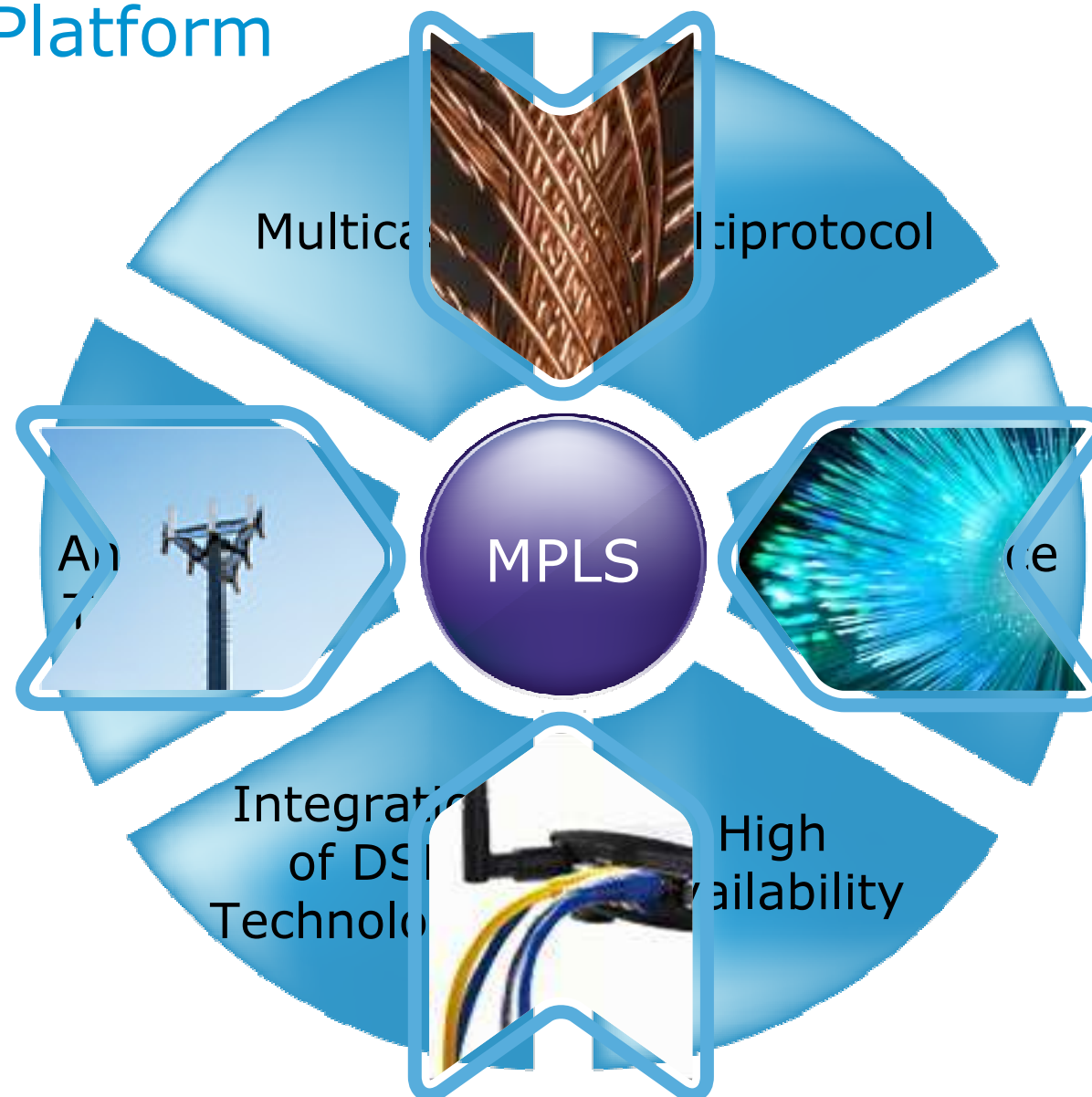
Traditional Communication Platforms

Some customers, some
services
Silo based approach

All customers, all
services
Supports convergence

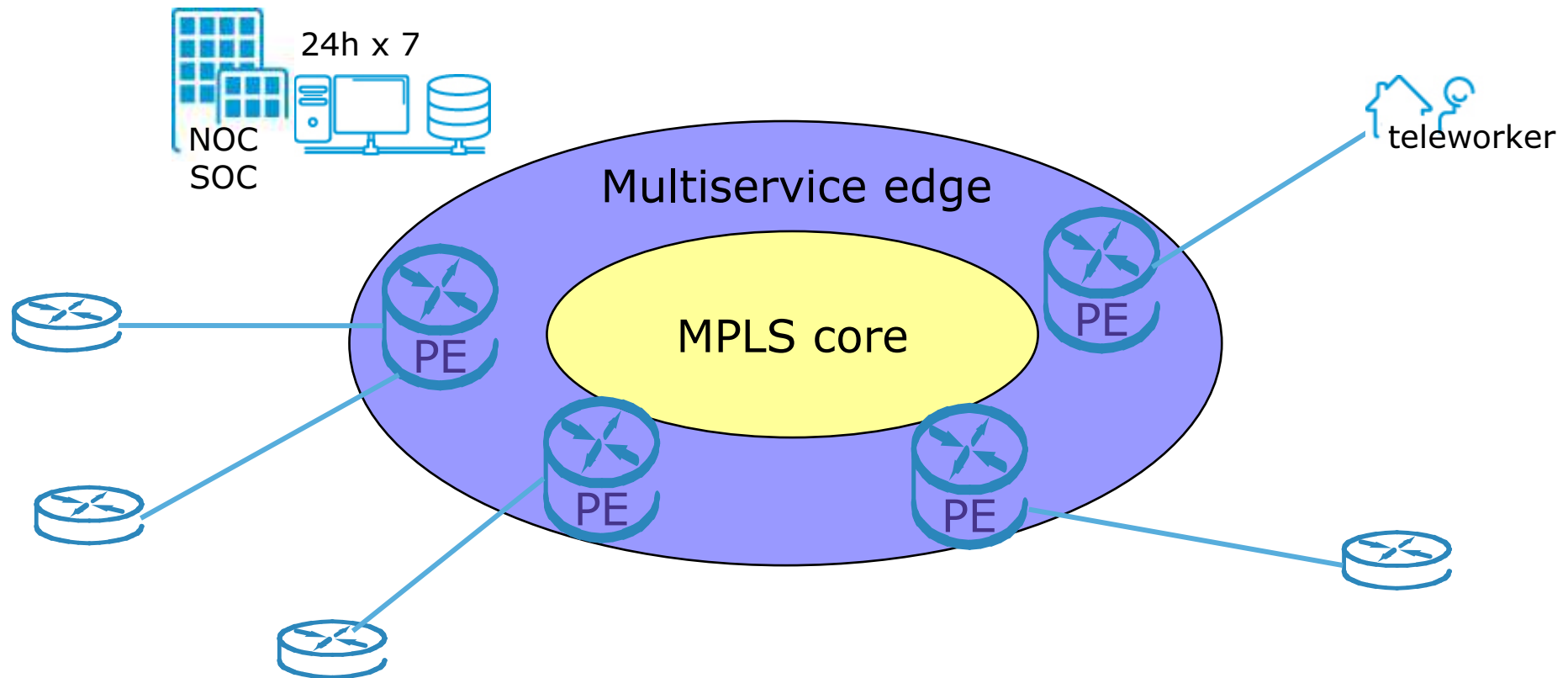


MPLS Platform



Belgacom explore

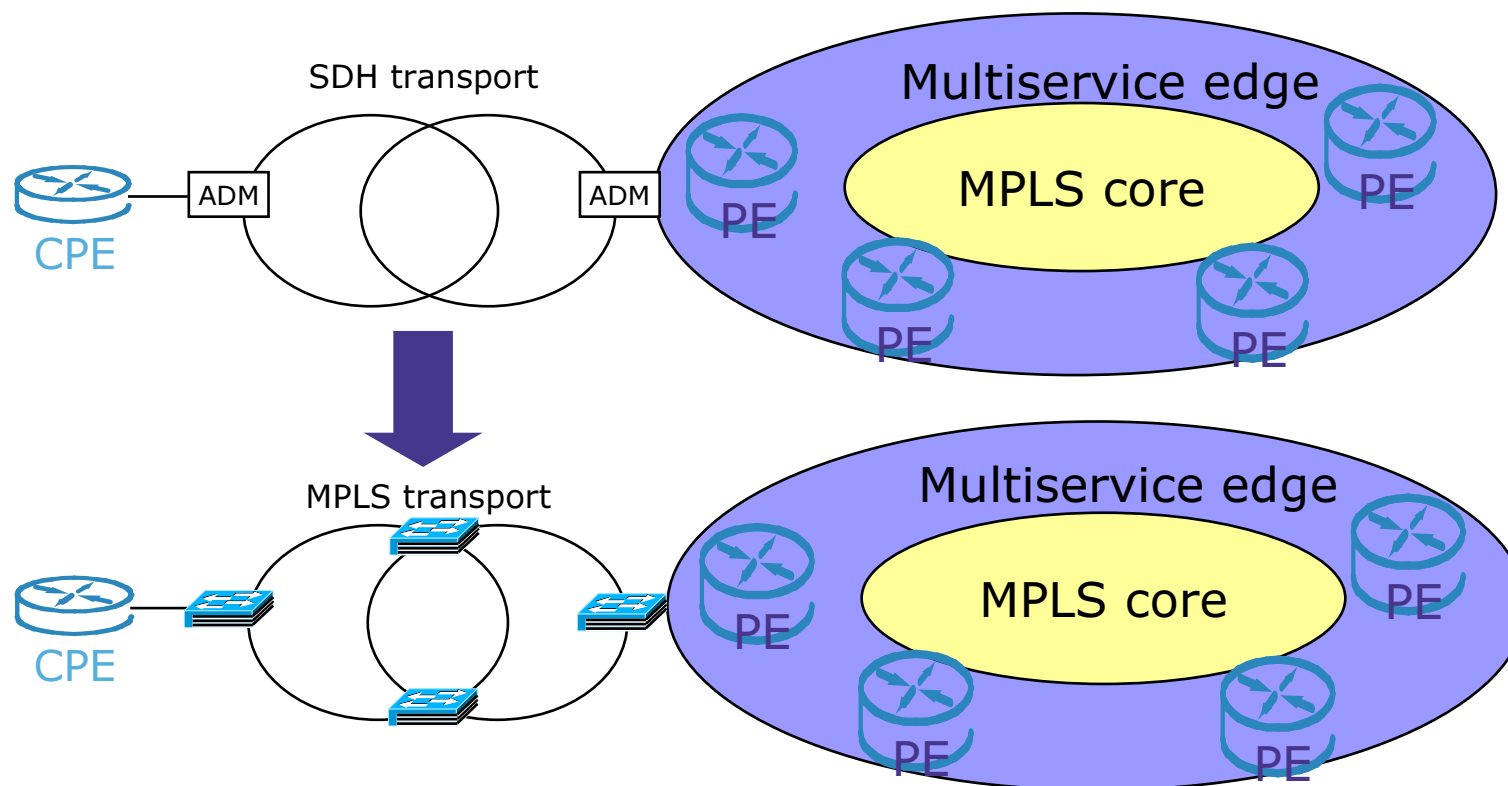
One single MPLS infrastructure



One single MPLS infrastructure
for end to end IP & Ethernet services

Belgacom explore

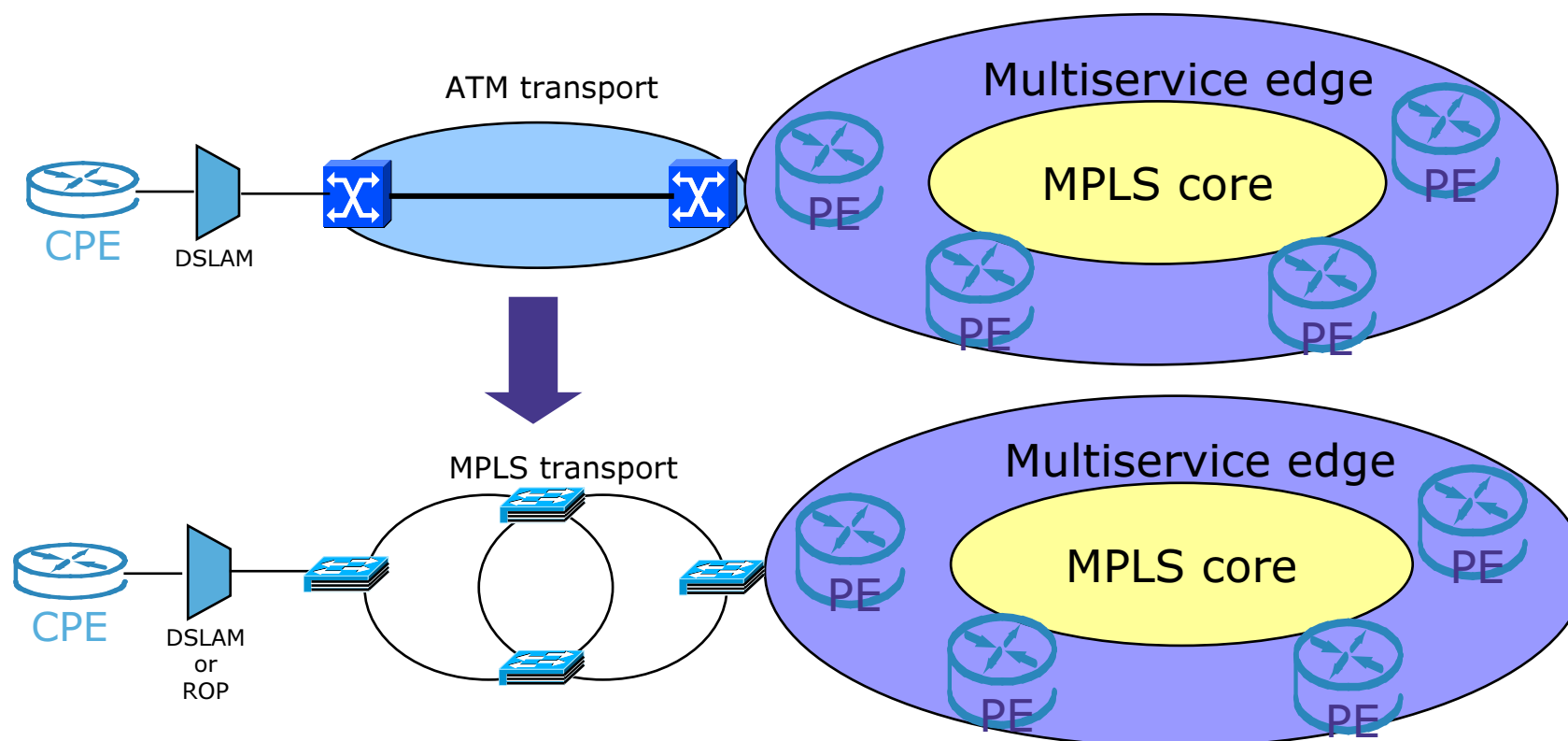
Towards End-to-end MPLS services on Fiber



Fiber-based accesses evolve from SDH to MPLS

Belgacom explore

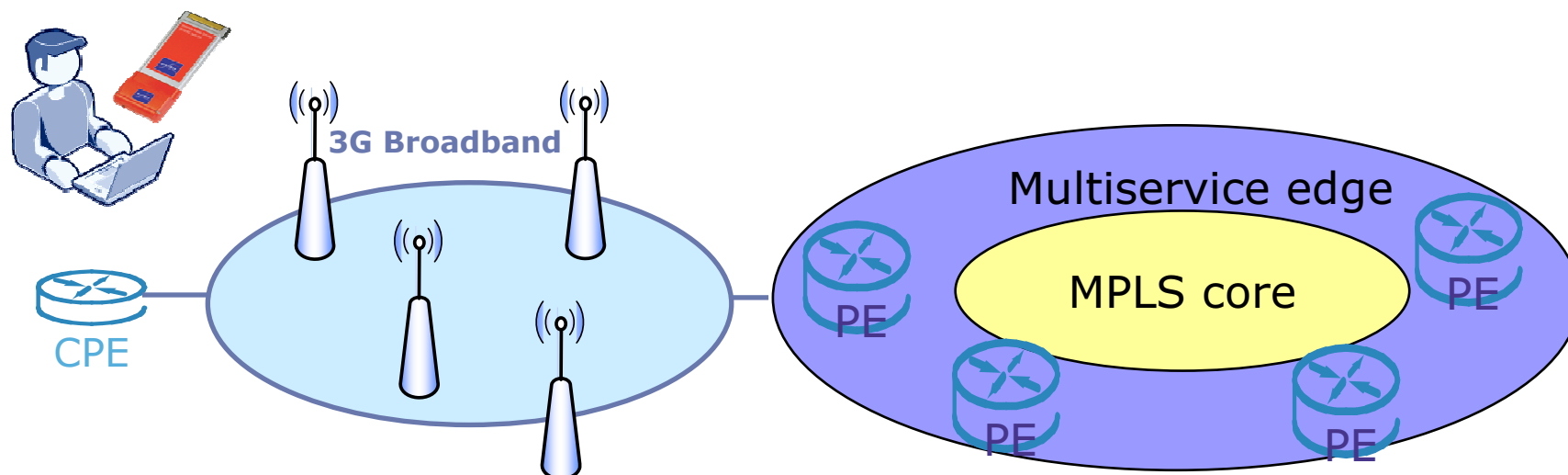
Towards End-to-end Ethernet services on DSL



DSL accesses evolve from ATM to MPLS, allowing deployment of VDSL-2

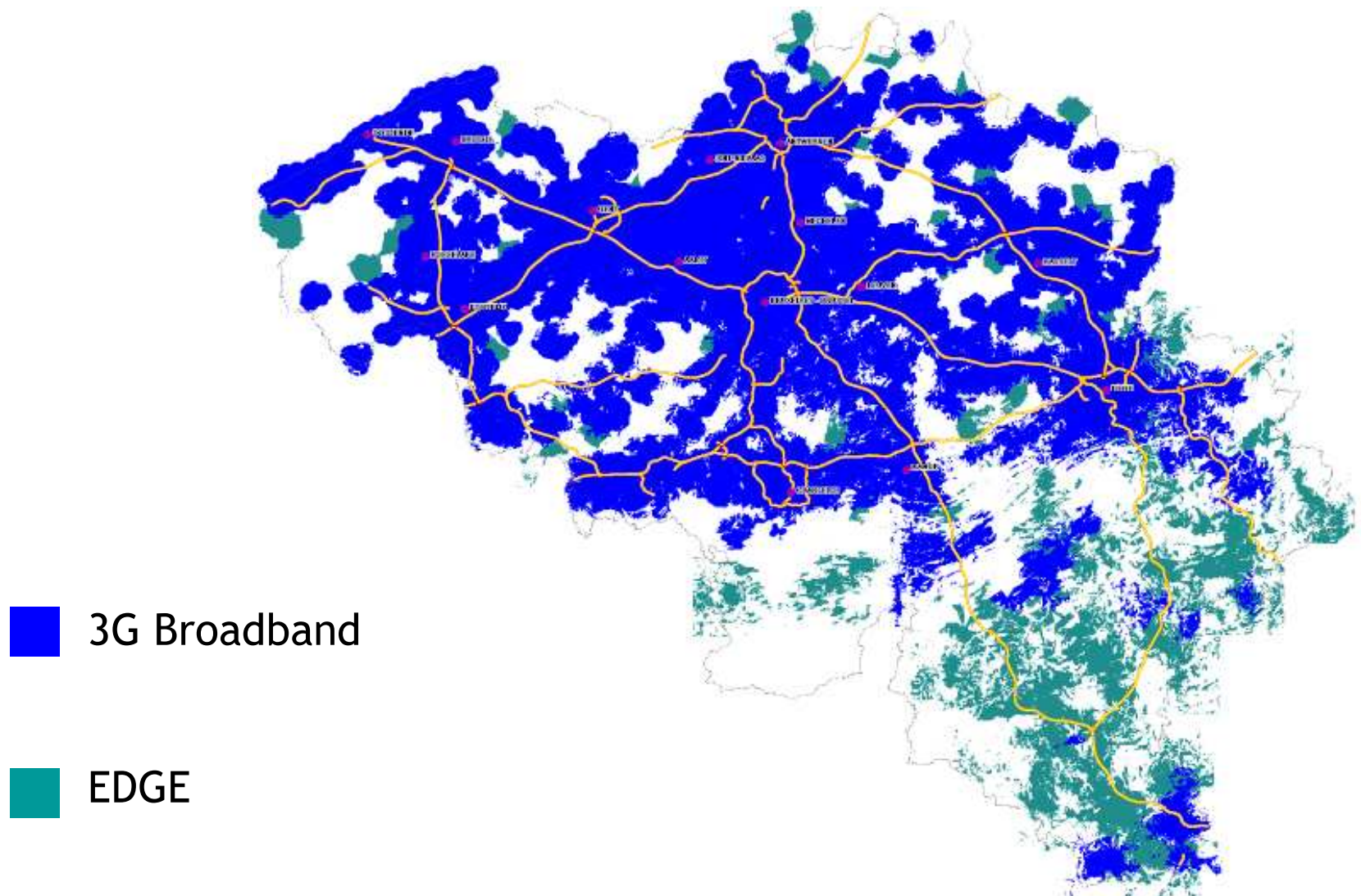
Belgacom explore

Integrate mobile accesses on MPLS



Integration of 3G mobile network on MPLS allows to extend MPLS services to mobile users

Current mobile network coverage



The 3 strategic steps

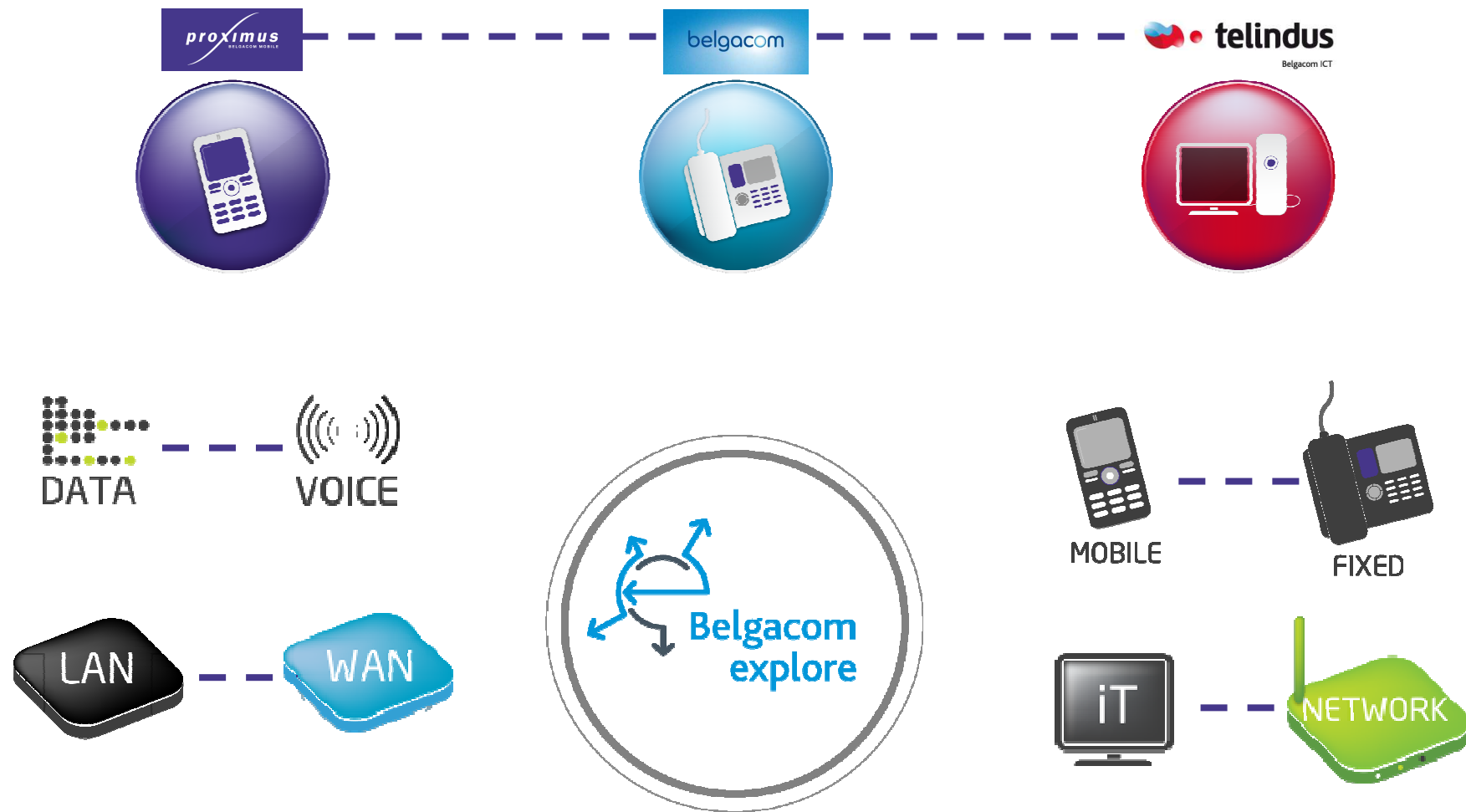
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STEP 1: Build an MPLS network infrastructure

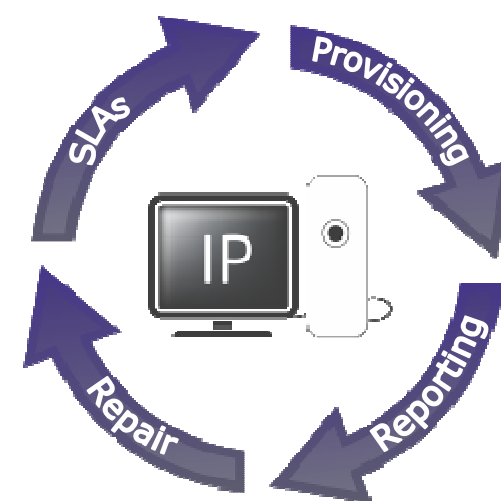
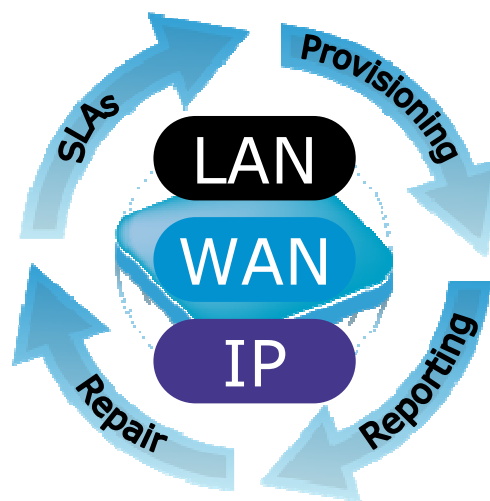
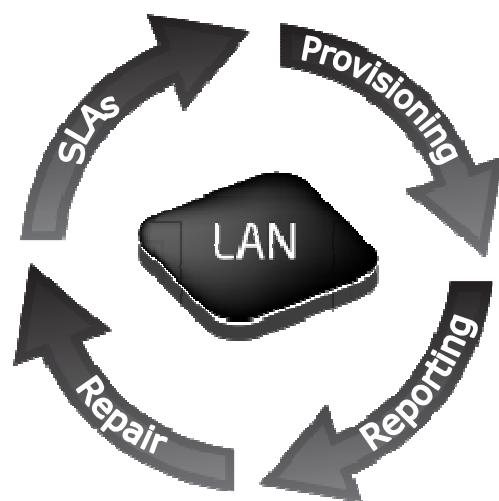
STEP2: Offer end-to-end services

STEP3: Transform into application aware platform

End to end services on explore



Integrated End-User Experience



Integrated mobility services



The 3 strategic steps

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STEP 1: Build an MPLS network infrastructure

STEP2: Offer end-to-end services

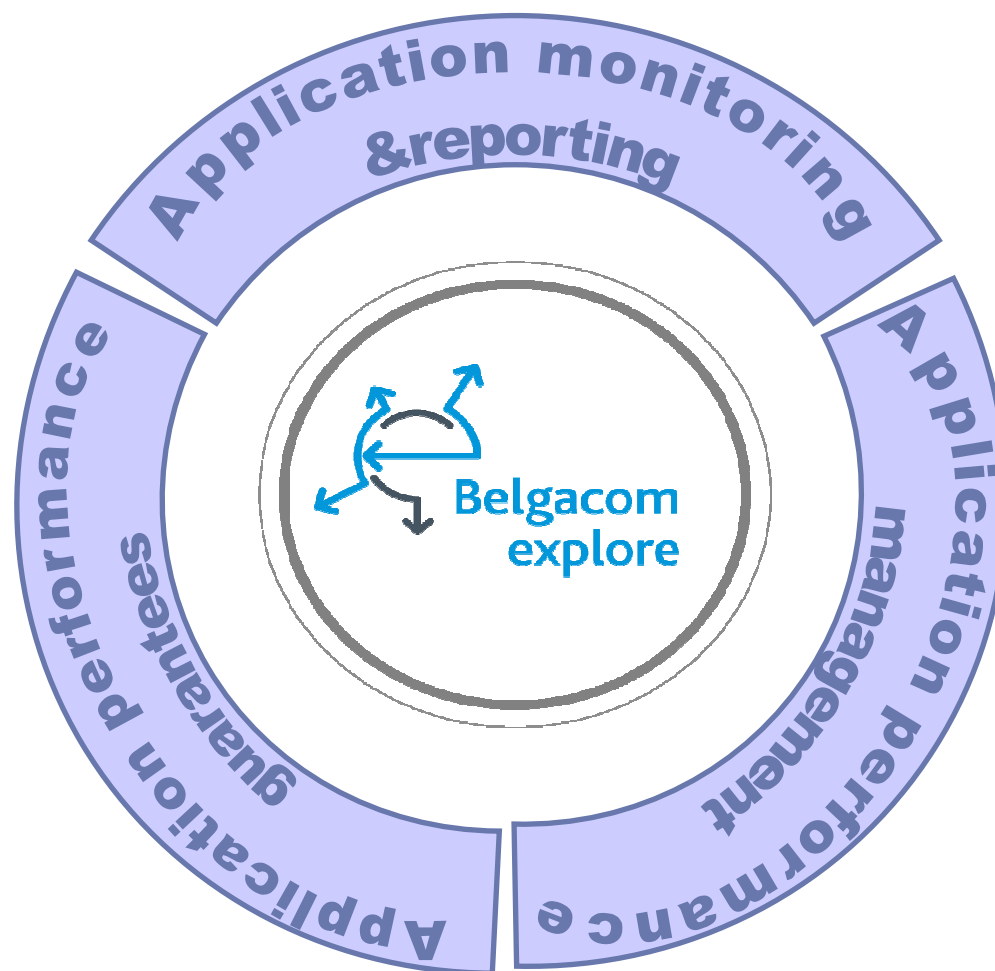
STEP3: Transform into application aware platform

An application aware platform

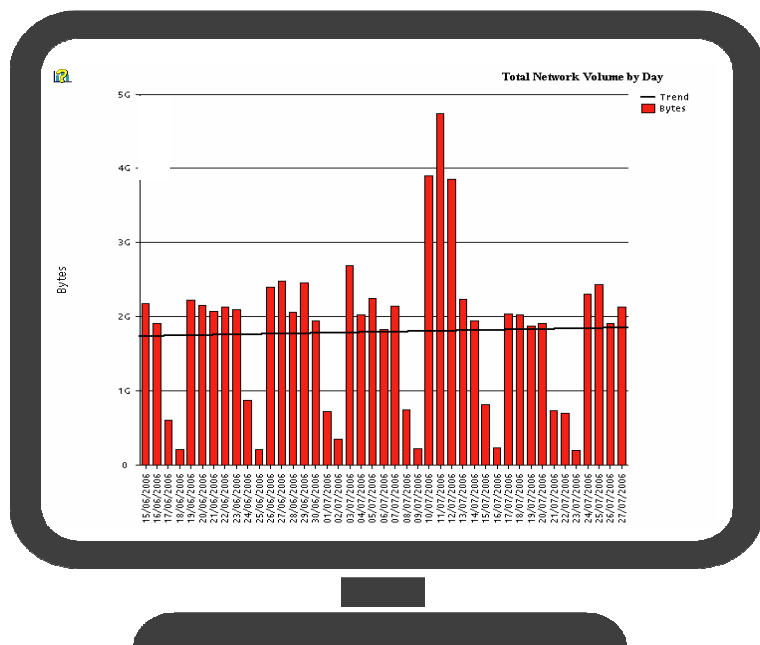
« Intelligent networks (IN) » get a new meaning:

It is about understanding the customers applications

Explore: the application aware platform

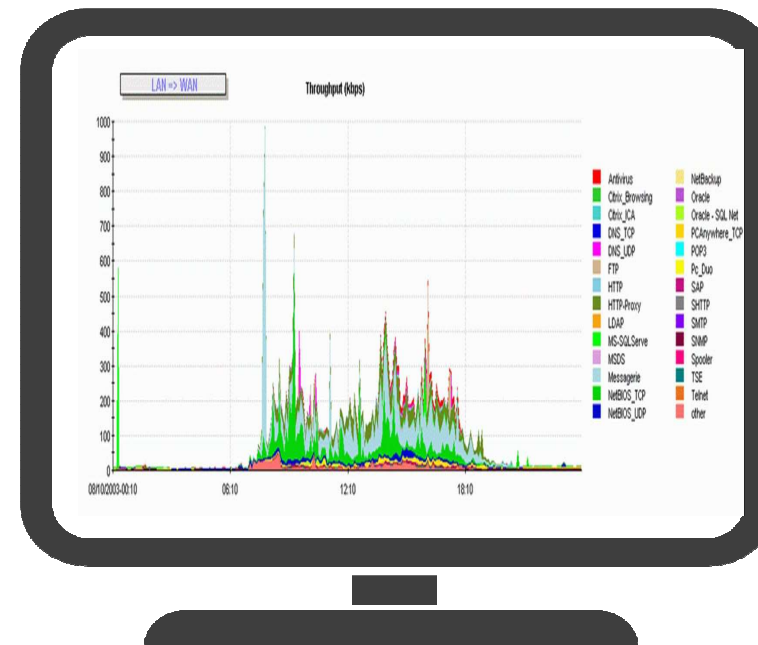
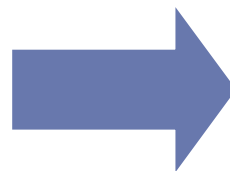


STEP 1: Bringing the reporting to the Application level



Bytes, IP, MPLS or Ethernet
Packets,...

On a per access line basis

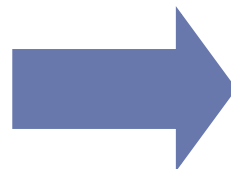


TCP flows, E-mail sessions,
SAP sessions,...

On a per user basis

STEP 2: Bringing the QoS to the application level

QoS Class	QoS parameters
Real-time class	Delay, Jitter Packet loss
Business-critical class	Delay, Packet loss
Business and best-effort	Delay, Packet loss



Key Applications	
Application	Criticality
SAP	Top
Citrix (CRM)	Top
VoIP (G729)	High
Oracle	High
Citrix (MS Office)	Medium
Web (http://intranet/*)	Medium
Other	Low
FTP	Low
CIFS	Low
Email	Low

Queuing on Class of Service

Averages per COS

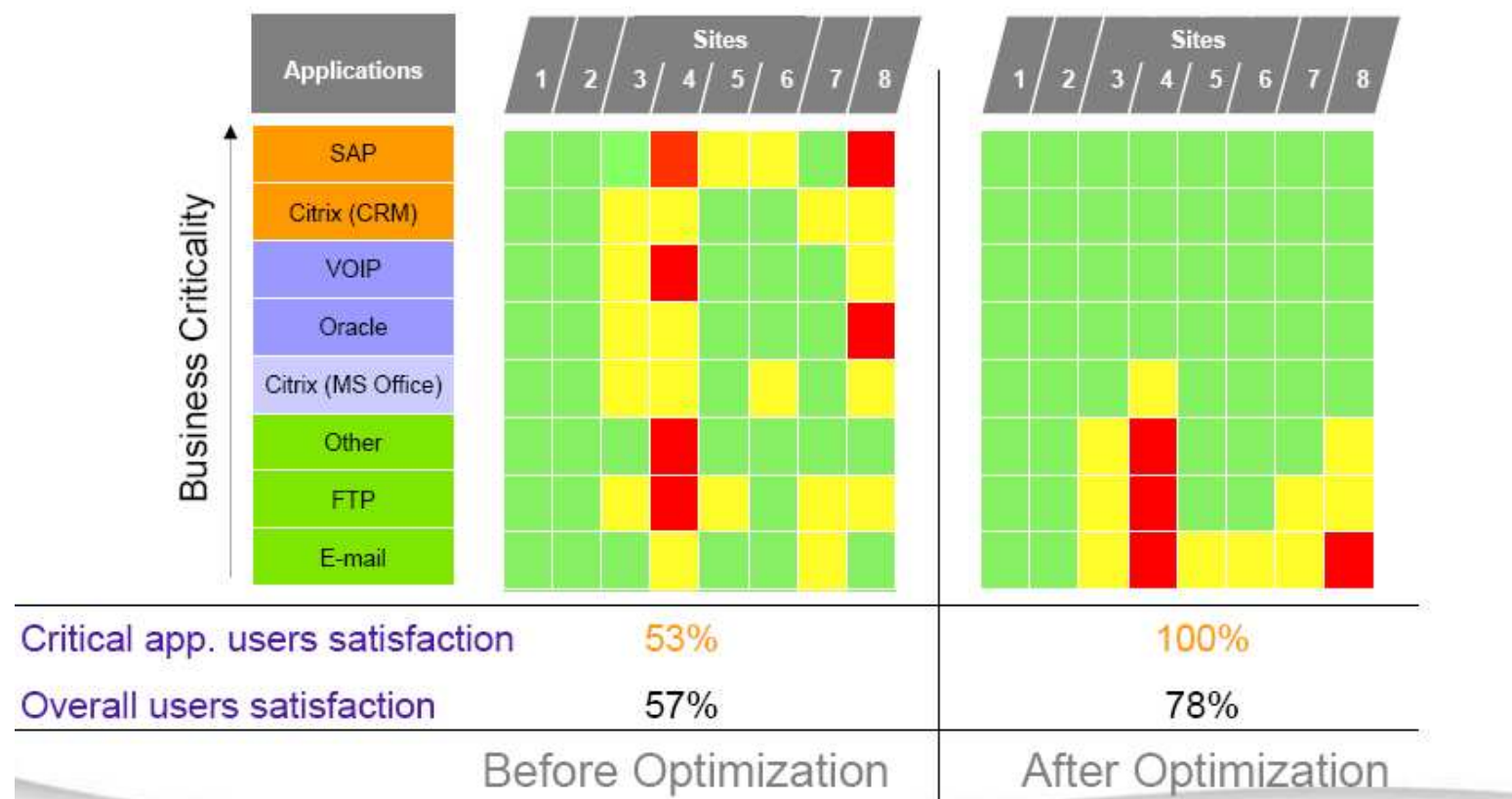
Queuing on application level

Per individual user session

Application acceleration mechanisms:

- TCP flow acceleration
- Application caching
- ...

STEP3: Moving to application performance SLA's



Enforcing the application performance objectives across the MPLS network

Closely follow up of application performance SLA's

Conclusion

Building an end-to-end MPLS based infrastructure to be used as single converged network is a logic action in an operator's strategy

However...

Customers don't care about the technology used for this converged network...

They see the innovative services on top of it

Our strategy is to transform this converged platform into an ICT service platform to bring real value to the customers