



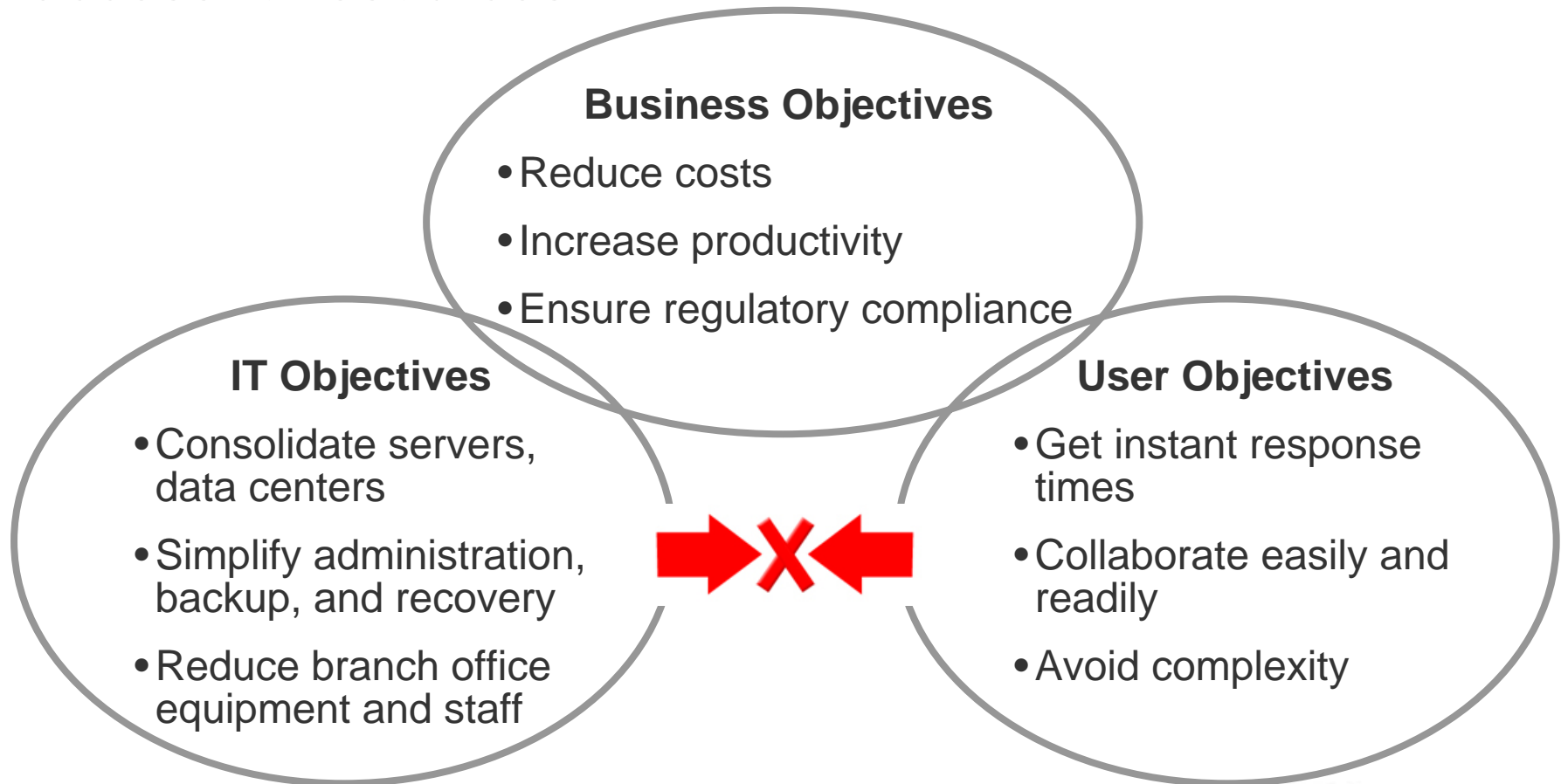
Consolidating My Data

The Role of Application Acceleration

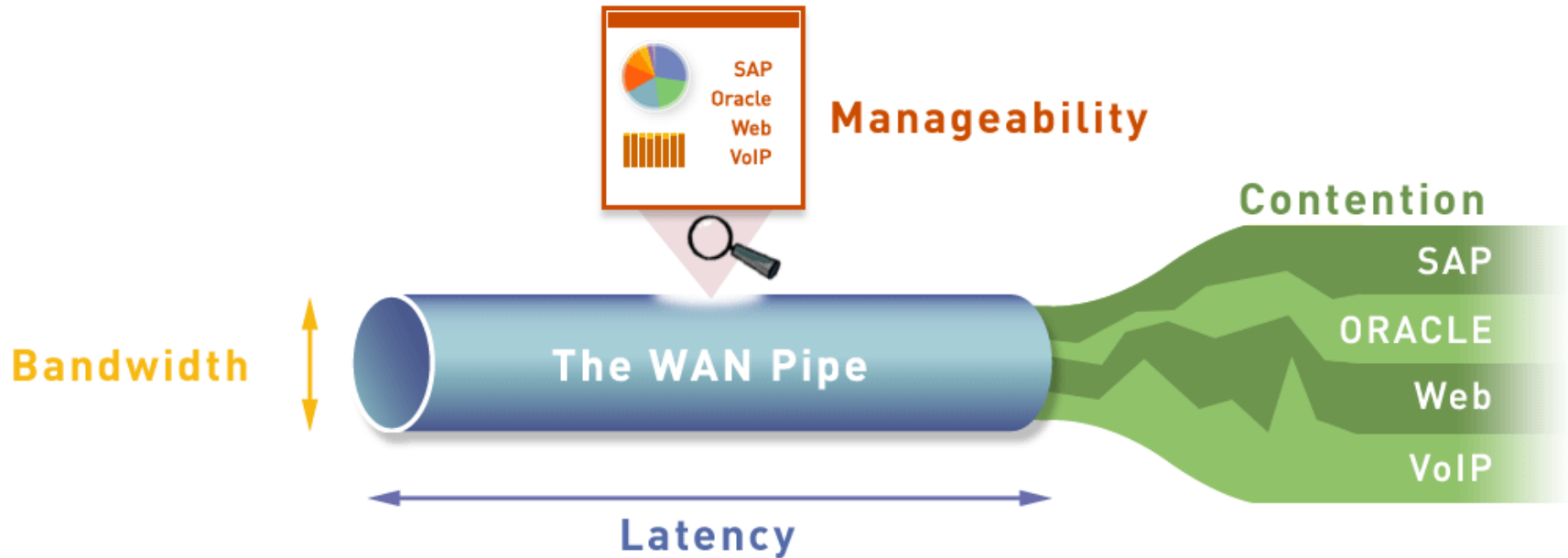
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CTO & Co-founder
Peribit Networks, Inc.

Conflict in the Distributed Enterprise

- IT needs simpler architectures but users need fast access to resources



The WAN Impacts Applications



Impact on applications:

More rich content

Protocol chattiness

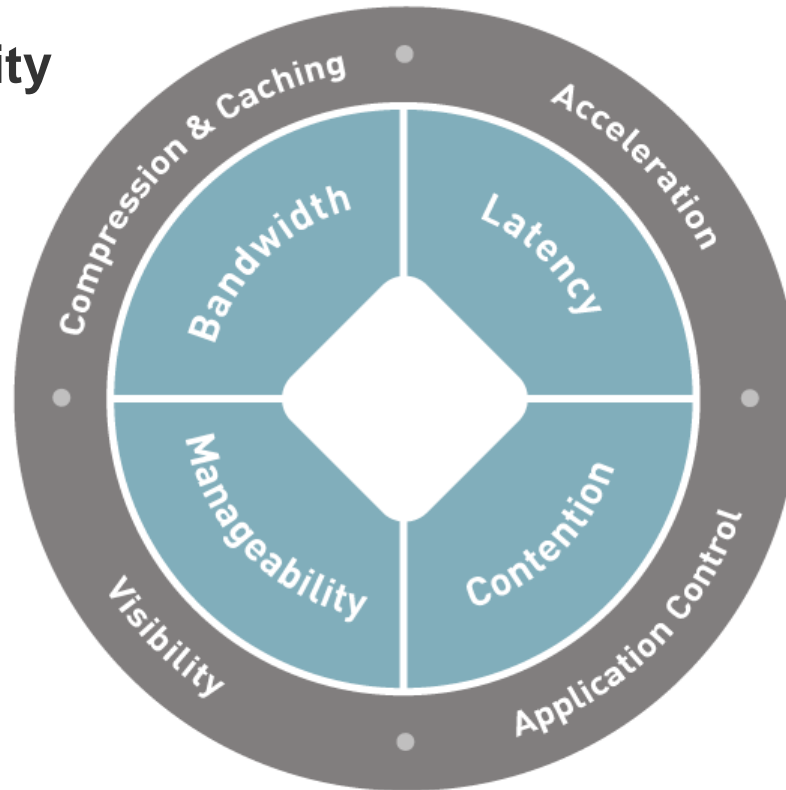
Lower-priority applications
slow down critical ones

Inability to understand application and WAN performance

Critical Application Requirements

- Increase capacity
- Memory and hard-disk techniques

- Reporting
- Classification
- Performance Monitoring



- TCP Acceleration
- App Protocol Acceleration

- Bandwidth Management
- Path Optimization

Application Acceleration

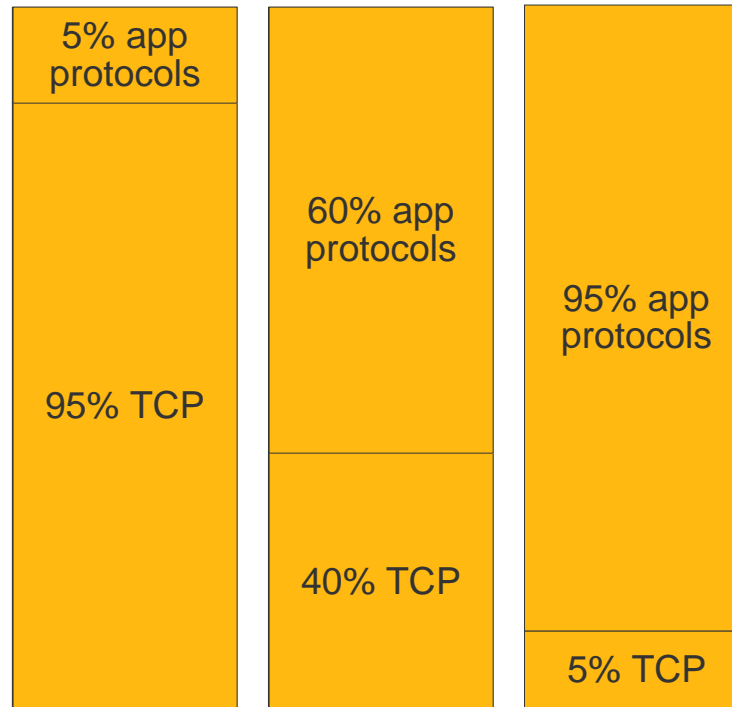
- Latency is leading cause of slow apps
- Two areas impacted – TCP and L7 app layer
- Source of delay differs by application – TCP vs. L7

Many apps are slow because of TCP window delays

Examples:

FTP, backups, bulk data transfer, collaboration apps

TCP Acceleration



Others are delayed by TCP as well as protocol “ping-pong” delays

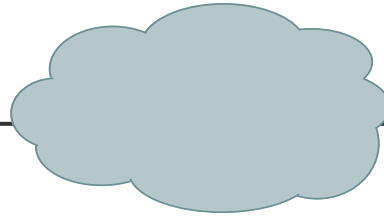
Examples:

CIFS, MAPI, web applications

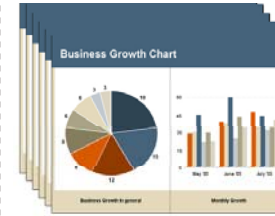
Application-Specific Acceleration

Exchange Receive/CIFS Read *without* Acceleration

CIFS or Outlook Clients



CIFS or Exchange server

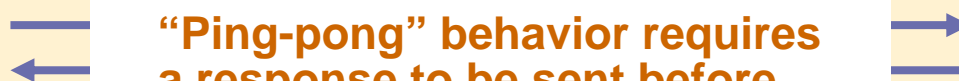


Begin Read Request,
Client asks for block 1



Sends 1st data block

Client asks for block 2



Sends 2nd data block

Client asks for block 3



Sends 3rd data block

Client asks for block 4



Sends 4th data block

Client asks for block 5

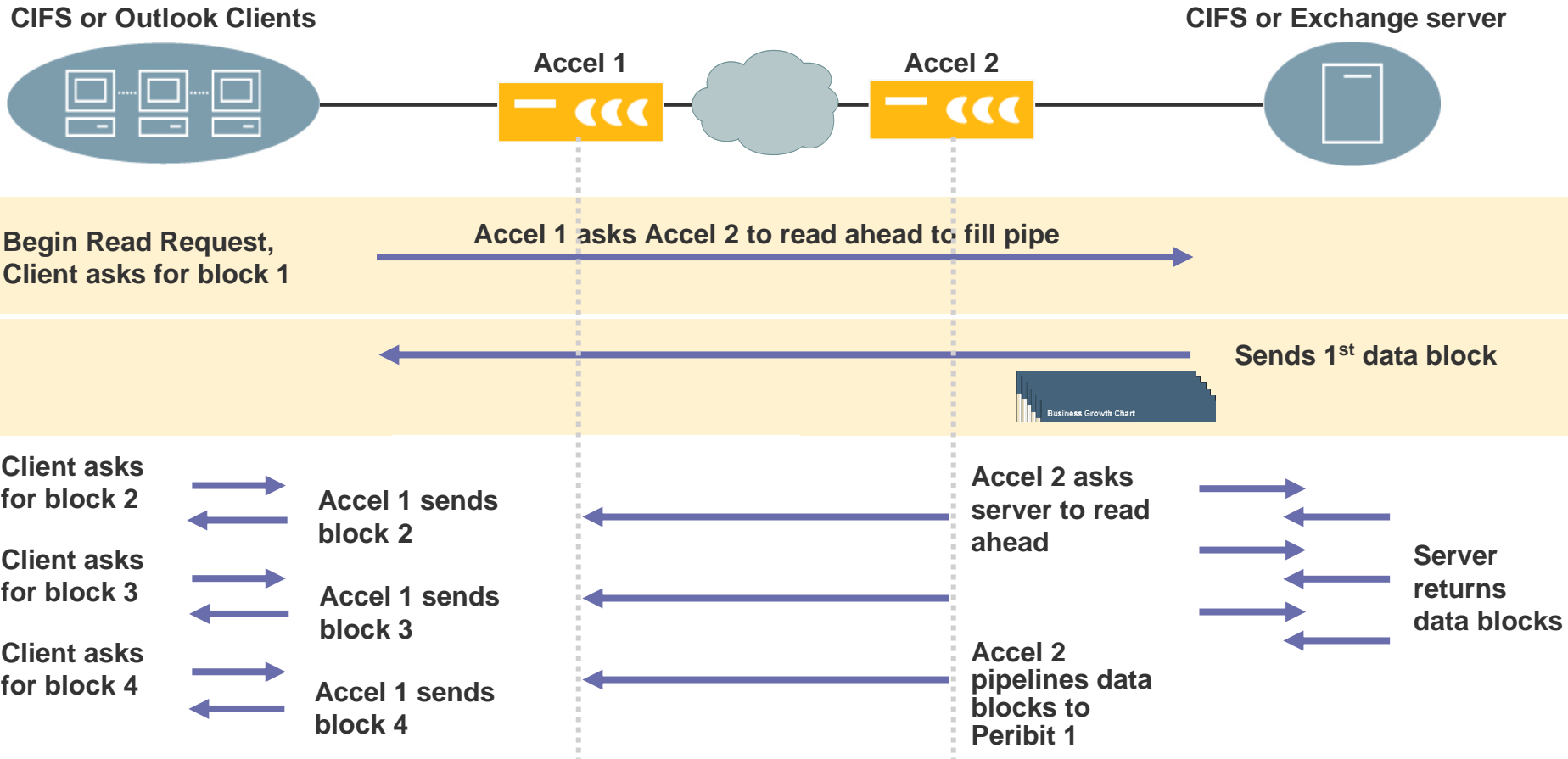


Sends 5th data block

“Ping-pong” behavior requires a response to be sent before the next request can be made

Result is that application performance is constrained by WAN delay (round trip time)

Exchange Receive/CIFS Read *with Acceleration*

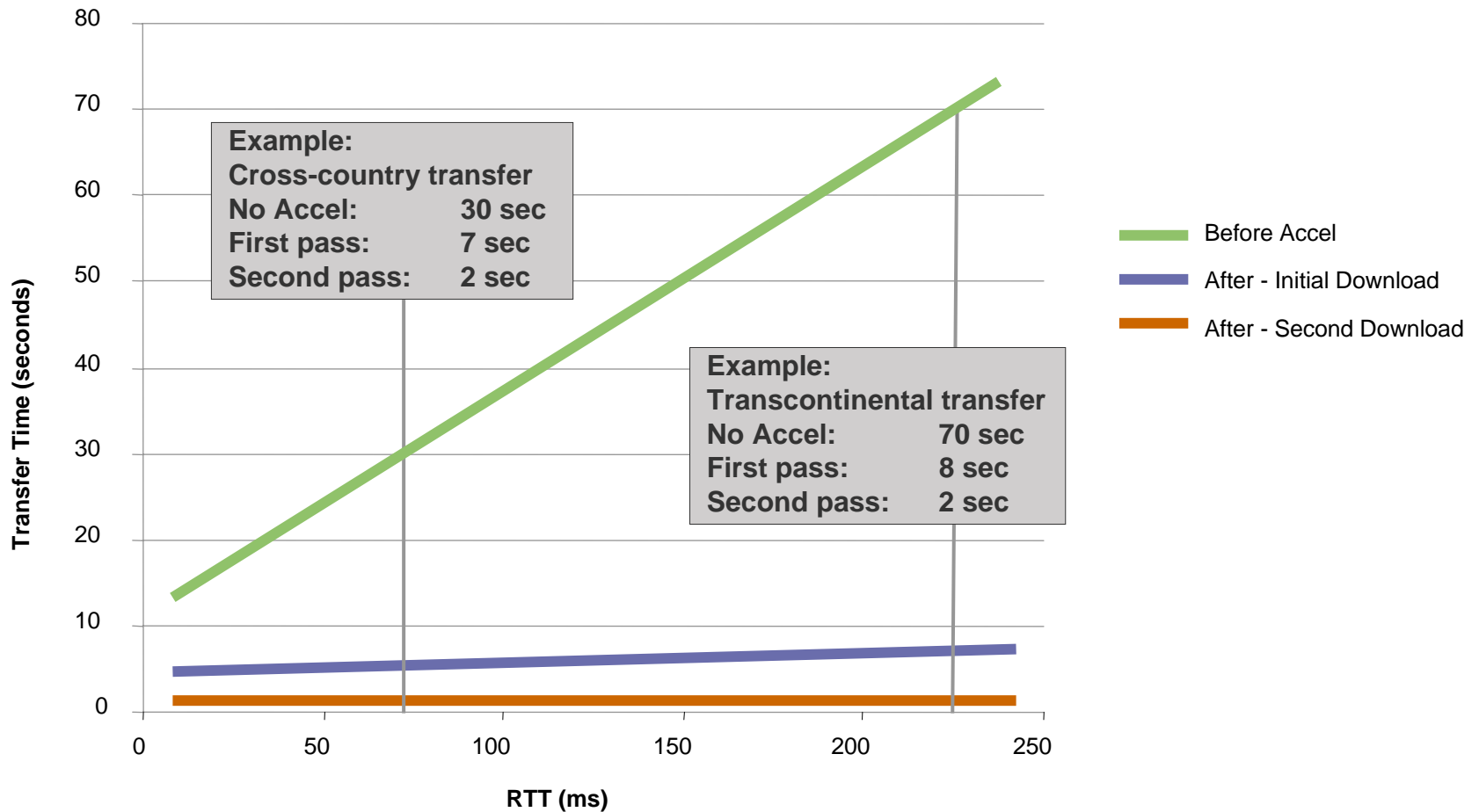


Total time needed for round trips greatly reduced

Result: significantly faster read/receive experience for user

Exchange (MAPI) Results

Time To Retrieve a 2 MB Exchange Attachment Over a T1



Test environment: Exchange 2000 with 50% compression on initial download and 95% compression on second download

Acceleration Results

Exchange Results

- 2 MB e-mail with Excel file
- 768 Kbps link, Boston to NY, 35 ms latency
- Results:
 - Without accel: 45 seconds
 - With Exchange accel: 2 seconds
- 23x performance gain

CIFS Results

- 98 MB file
- T-1 link with 60 ms latency
- Results:
 - Without accel: 711 sec
 - TCP & CIFS acceleration: 13 sec
- 55x performance gain

Web Apps: Slow Performance



The screenshot shows the Peribit website. At the top, there is a navigation bar with links: COMPANY | PRODUCTS | SOLUTIONS | NEWS | SUPPORT | WORLDWIDE. The Peribit logo is on the left, and a 'HOW TO BUY' button is on the right. A sidebar menu on the left contains the following items: At a Glance, System Overview, Sequence Reducers, Sequence Mirrors, SRS Software, PeriScope CMS, and Free Trial. A large orange text box is overlaid on the page content.

Page display slowed by WAN latency – subsequent displays of this page remain delayed because cached objects must be confirmed

Client browses to:
www.peribit.com

Gets the page, displays what it can and figures out what objects it needs to get

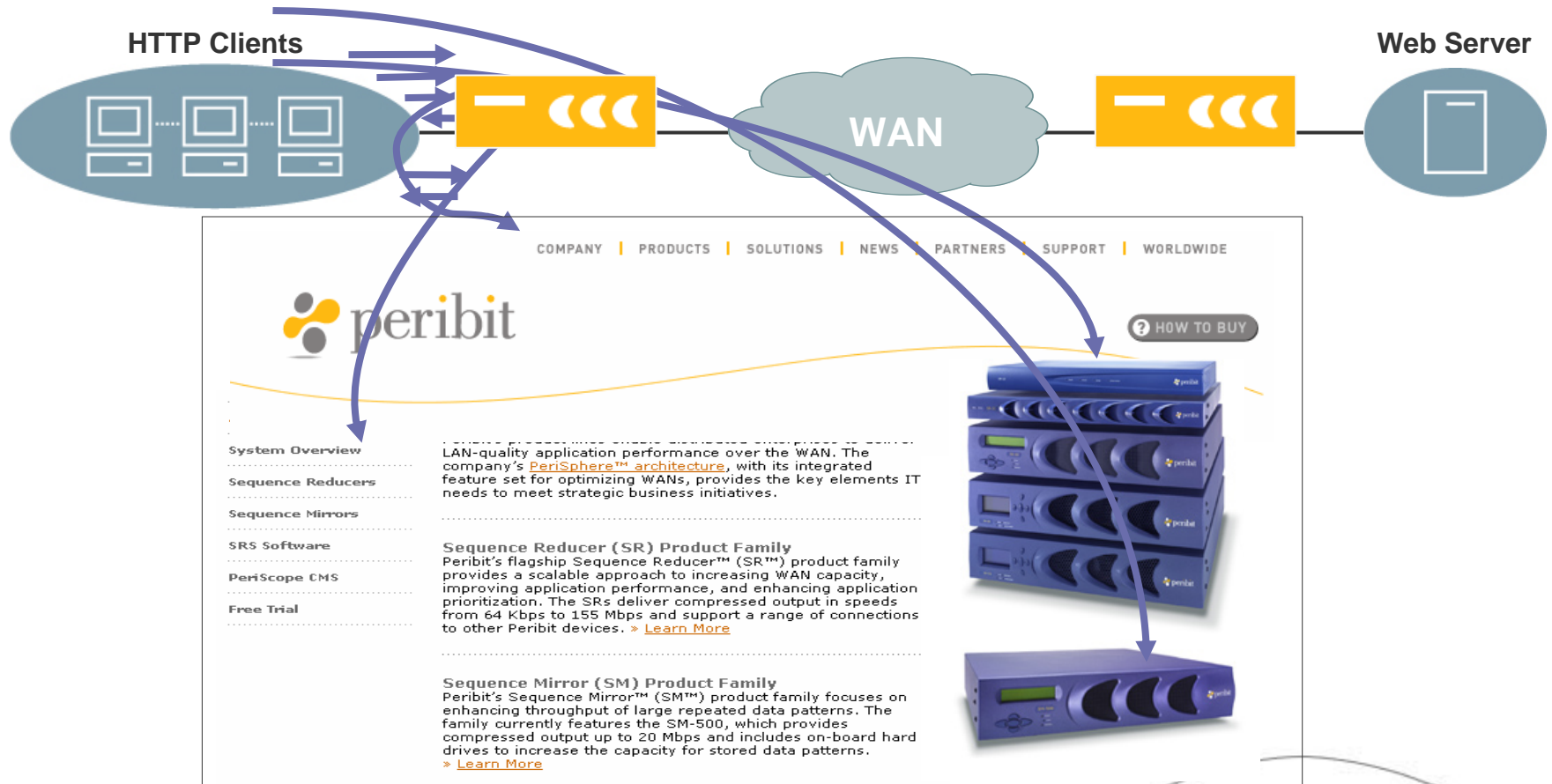
Asks for object 1, receives and displays it

Asks for object 2, receives and displays it

Asks for object 3, receives and displays it

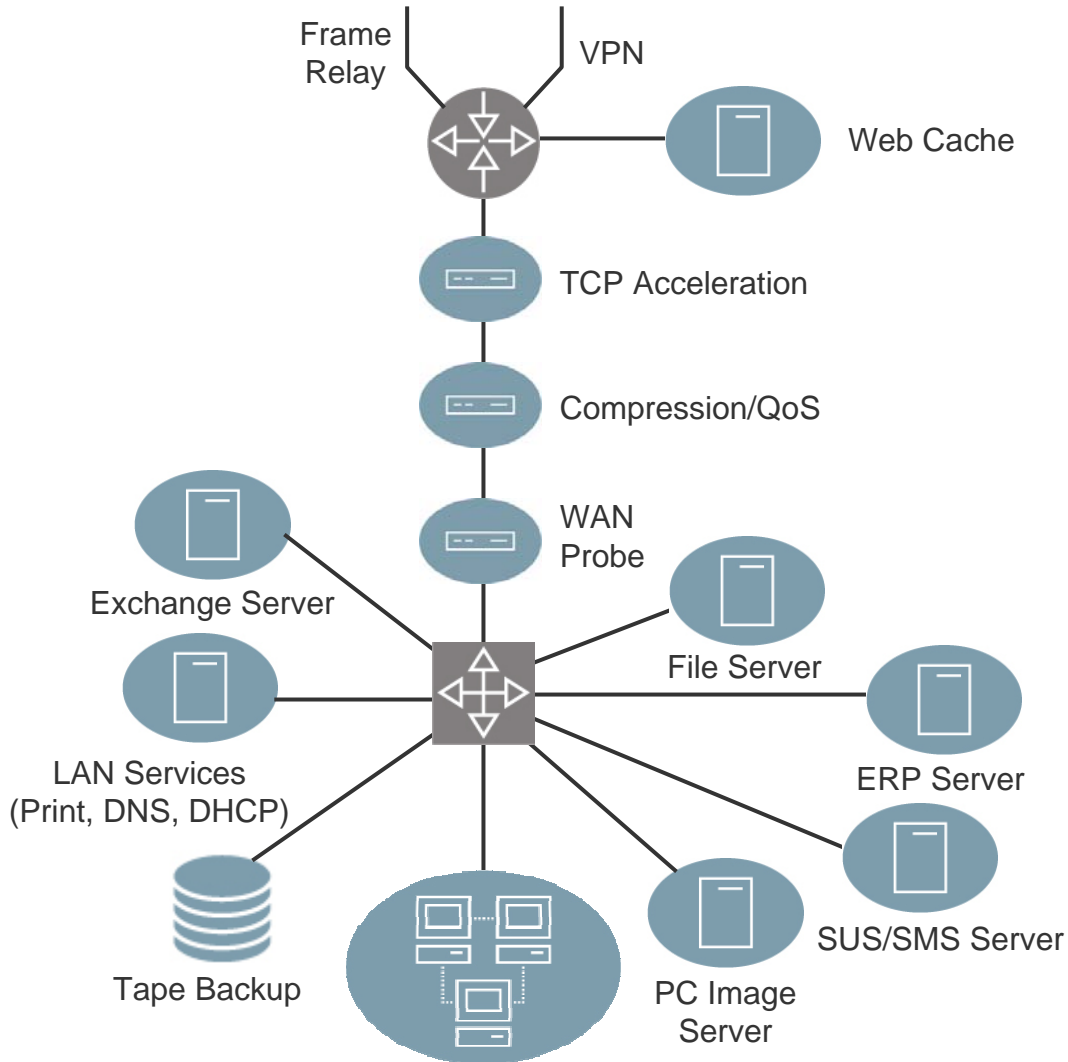
Web Application Acceleration

- Build table of URLs and their associated objects
- Request objects, confirm freshness, pipeline to client

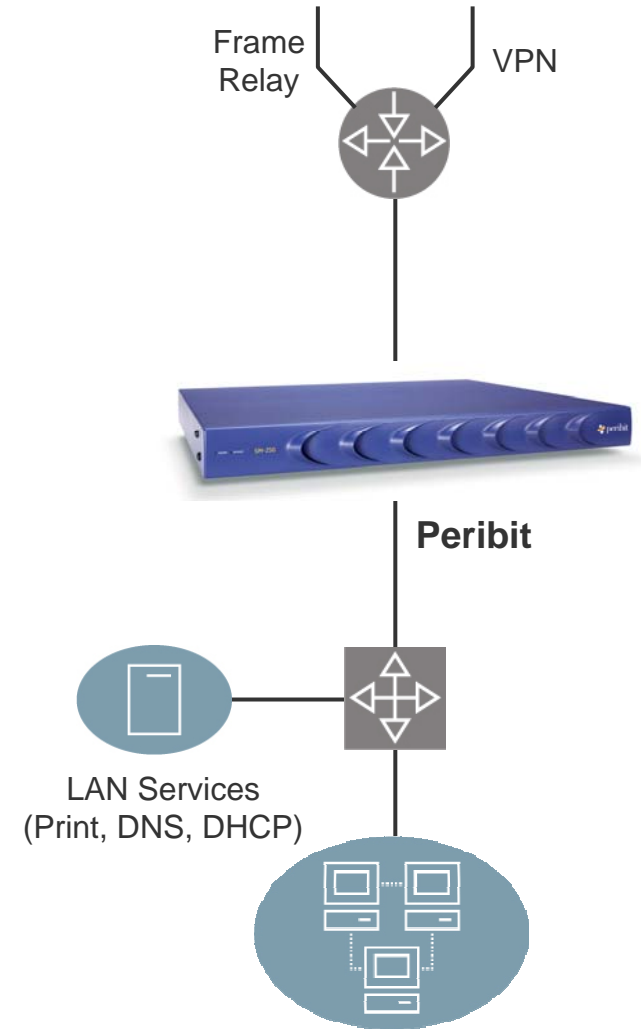


Simplified Branch Office Architecture

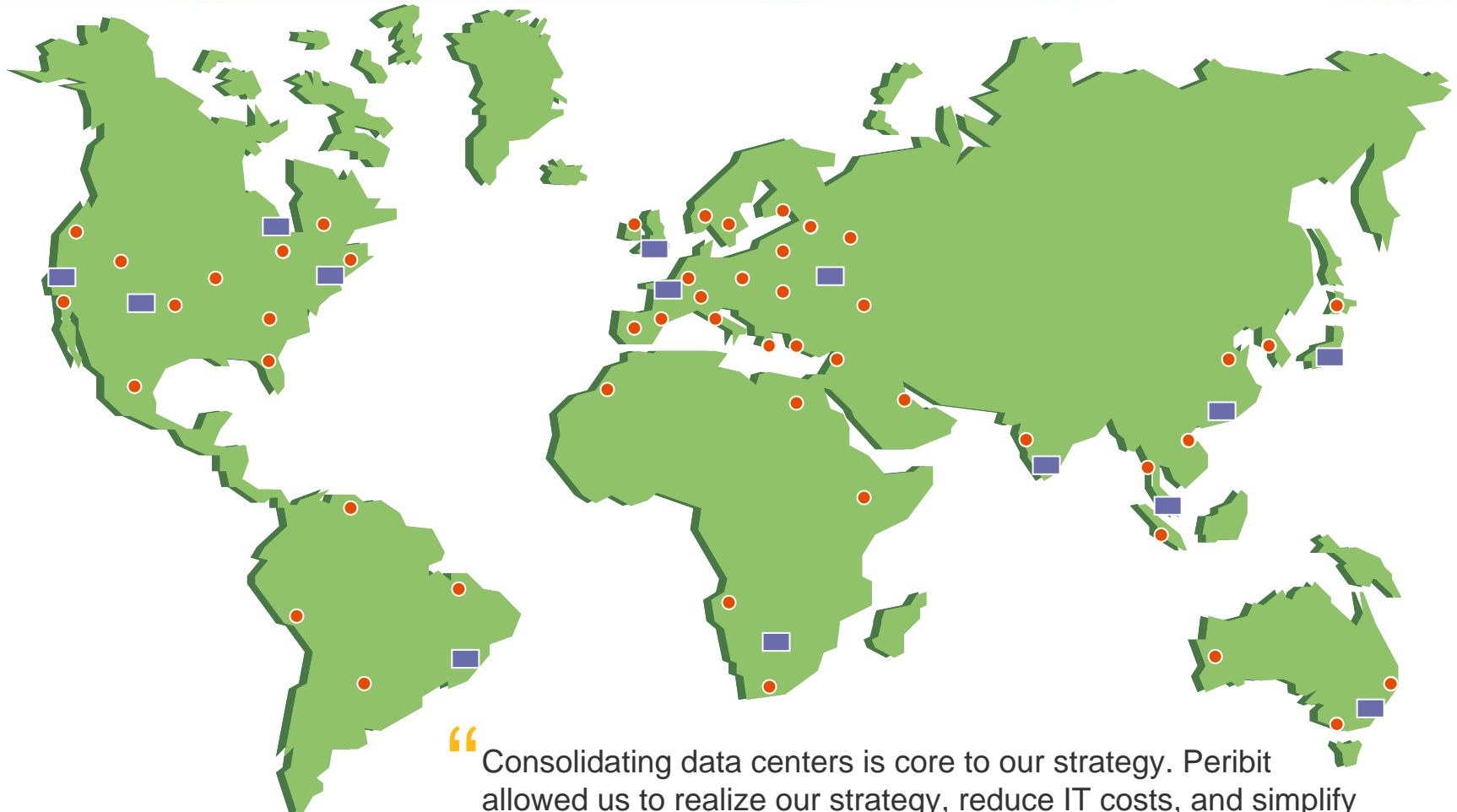
Without Acceleration



With Acceleration



Data Center Consolidation Case Study



 = large data centers

 = servers in branch offices

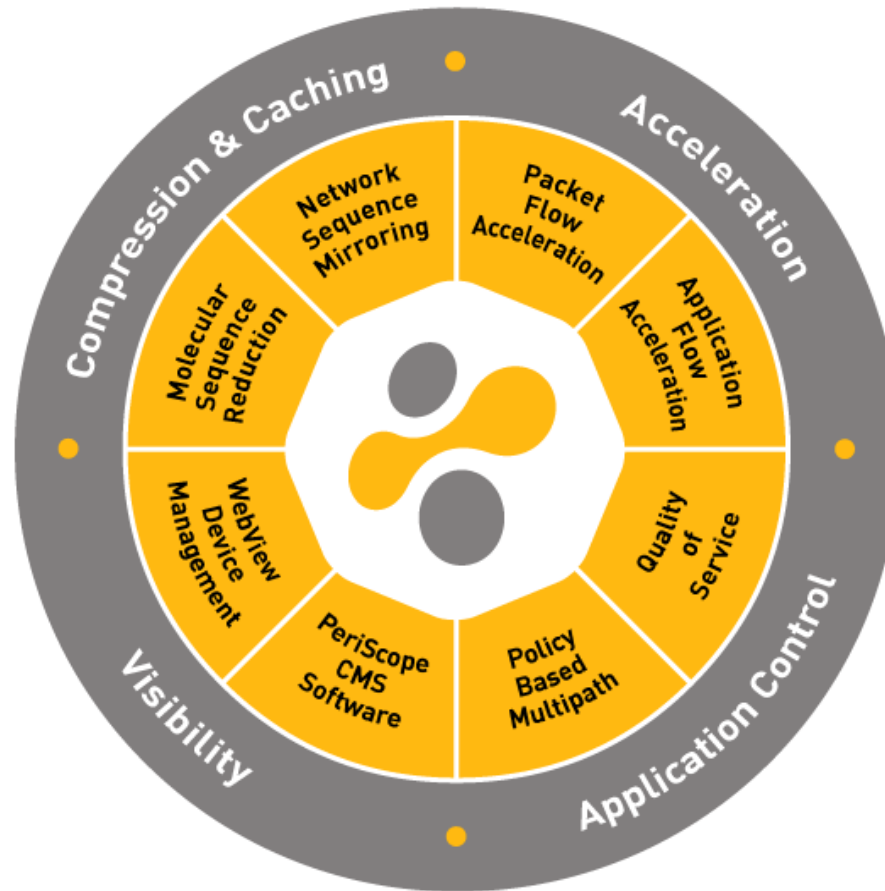
“Consolidating data centers is core to our strategy. Peribit allowed us to realize our strategy, reduce IT costs, and simplify server administration and backup – all while achieving LAN-like application performance for branch office users.”

Chief Architect, financial services firm

What's Needed in an App Performance Platform

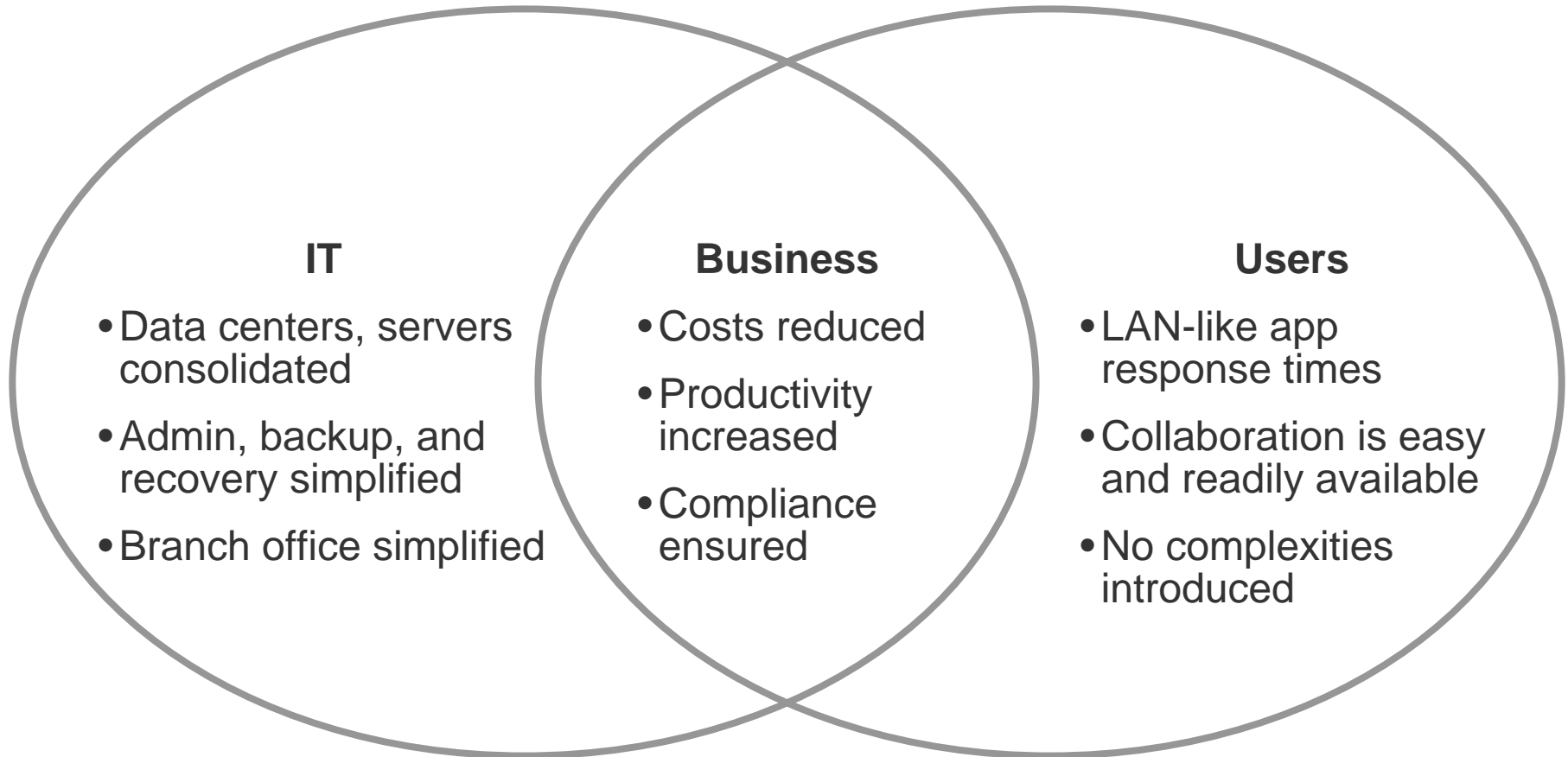
- A complete approach
 - Address: bandwidth + latency + QoS + multiple WAN links + reporting
- An integrated architecture
 - Each key feature affected by others – optimum performance requires interplay
- A history in the market
 - Reliance on first-generation development is too risky
- An easy-to-use platform
 - Simple integration with existing infrastructure
 - No changes to clients, servers, routers
- A flexible design
 - Work within multiple network topologies
 - Support incremental rollout in conjunction with app deployment

Value of an Integrated Solution



The PeriSphere Integrated Architecture

Enterprise Objectives – Conflict Resolved





Thank You