



IPv6 & Pan-European VPNs

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Sales & Marketing - SAQ

Presentation Overview



- 1. Introduction – SAQ**
- 2. Introduction – What's happening in the real world?**
- 3. The line in the sand**
4. Hardware, Software & what's new
5. Trad' VPN clients & their consequences
6. Pan-European v6 VPN – Target market
7. Technical Issues
8. MSE Requirements, VPN Prices
9. Security
10. Conclusions

Introduction I - SAQ



UK-Based ISP SME Clients

Change since last year:

ADSL & always on connections
Virus/DoS attacks growing
GPRS is nearly here

Unchanged:

Client Ignorance
(What's a protocol?)
(Why do I need a firewall?)

Introduction II – Real World Developments Down Turn



Tel Co mega death
(following Dotcom
extermination)

Global Crossing, Carrier 1, Viatel,
(Flag – soon?), Level3.....

Industry downturn

PC sales in Europe 11% down
(3Q 2001 compared with 3Q 2000)

IP connectivity
declining

UK households – was 40%, now
39% connected

SAQ experience?

3 to 4 companies per day canceling
web sites (where is the benefit?)

SIA IC Forecast
(2000 for 2001)

\$240bn (reality = \$141bn)



Introduction II – Real World Developments

IPv6 & Its supporters

Comments From April 2001

DT does not believe that there is any real demand for IPv6 at the moment. Mr XXX notes that there are practically no IPv6-applications currently available (he notes that 3G in 2002 is the exception). In turn this means there is no real customer demand (characterised by Mr XXX as the classic “chicken and egg” problem). He also noted that Microsoft will only implement IPv6 with its next generation Windows system in 2002. When this system becomes available, DT believes that more applications will emerge which will stimulate customer demand.



Introduction II – Real World Developments

IPv6 Decision Making Process

“The decision to use v6 in mobile systems in our mobile networks will be a main board decision”

Engineer at a pan-European mobile operator

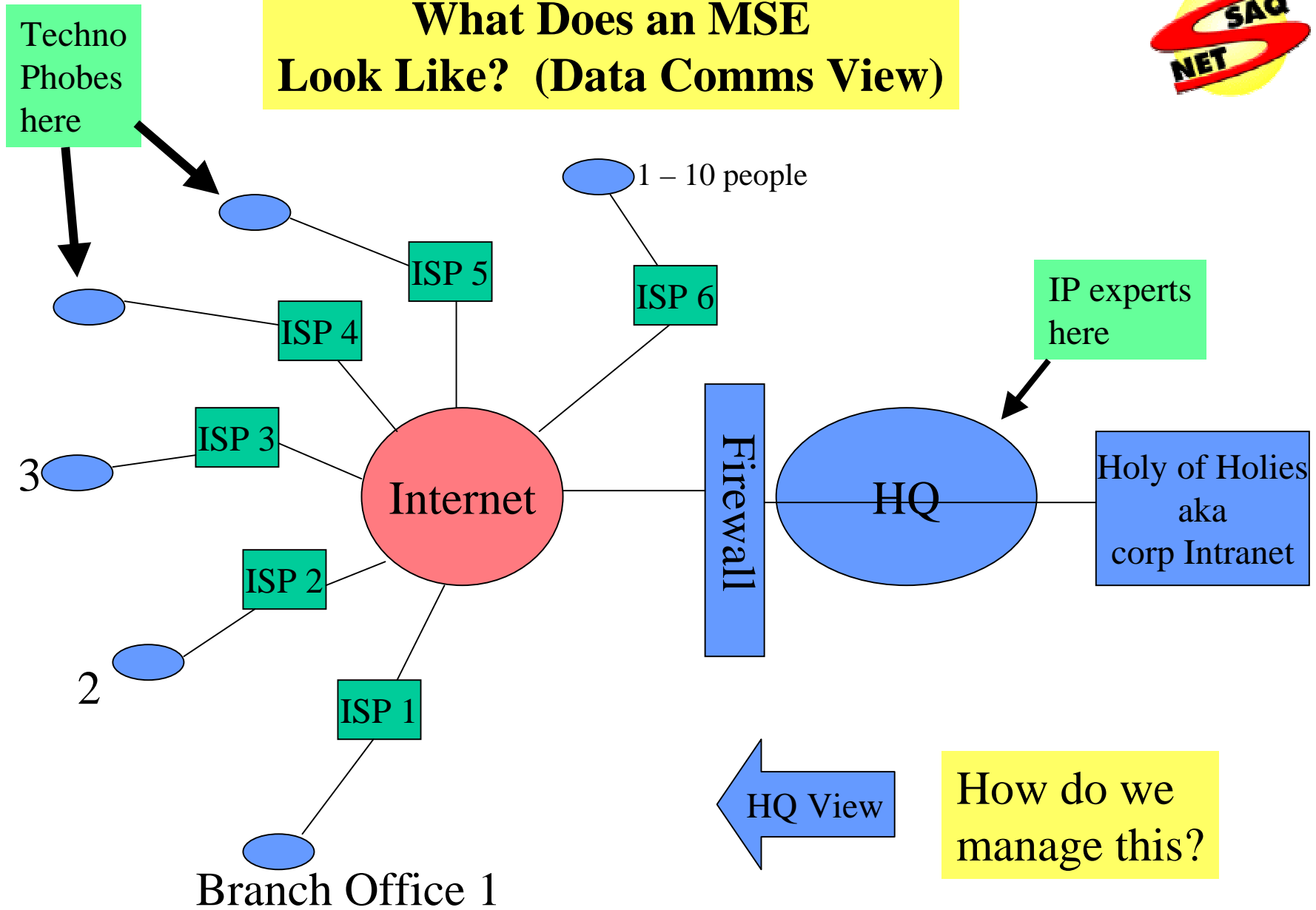


“Line in the sand”

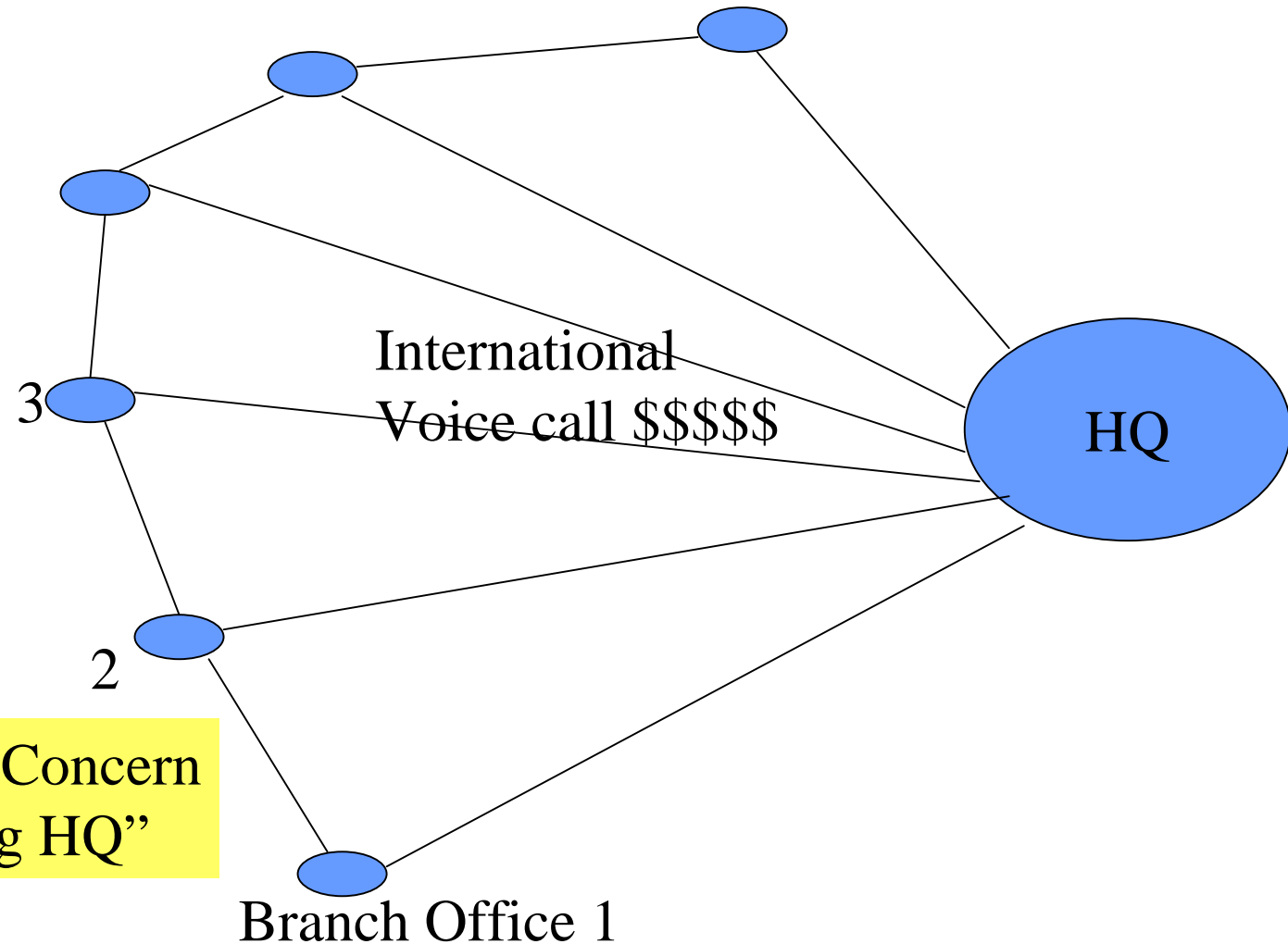
**IPv6-based VPNs for MSEs
appear by far to be the most
profitable currently un-tapped
market**

**Companies (and individuals)
buy services & benefits
not technology**

What Does an MSE Look Like? (Data Comms View)



What Does an MSE Look Like? Voice Comms



Branch Office Concern
“Cost of calling HQ”



Two Views of Two Networks

- HQ Keep the (Intranet) network going,
 keep the firewall going
 support the mini-nets in different countries
 (why do they have to use different ISPs?)

- BO These call charges are too high
 Why do we have problems getting into
 the corporate network
 The network is slow (corporate IP are idiots &
 don't care about us)

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Hardware & Software

v6-ready Hardware Routers	Hitachi (carrier class) 6Wind (edge/VPN) Ericsson Telebit (mobile)\ InterNetShare (edge/VPN) Juniper
Desk-top OS Server OS	Beta for Windows 2000 Sun, Microsoft, Linux, FreeBSD,
Applications?	What applications?



Tools & Application Availability

OS	12
Embedded OS	3
Routing Software	5
Access Software	14
Mail Apps	10
Multimedia Apps	3
Remote Access	5
WWW Server	6
WWW Client	4
Proxy & Cache	3
Net News	3
IRC Clients	5



VPN Enablers

1. Cost of leased lines continues to fall
(London – Bruxelles – 2Mbps approx \$2k/month.)
2. VoIP systems are plug and play, connect direct to LAN (no PBX) and with sensible form factors.
(& individual Ethernet VoIP phones are now available)
3. Large number of carrier hotels now exist in most major cities.
4. IP equipment is “cheap” and almost reliable.

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The Traditional view of Pan-European VPNs

Large companies use VPNs
(Shell, Alcatel, Unilever, Financial community)

Frame Relay has been the preferred route
(secure, reasonably fast, bit complicated)

High cost causes it to self-select large companies

Latest “fashion” IP VPNs (for large companies)



Some companies we talked to

Viatel	Gone
Level3	Gone
360Networks	Gone
Colt (C&W buy)?	
Carrier 1	Gone
Global Crossing	Gone

BTW

Will carrier hotels be next?

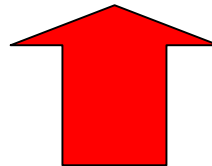


This is the Target Market

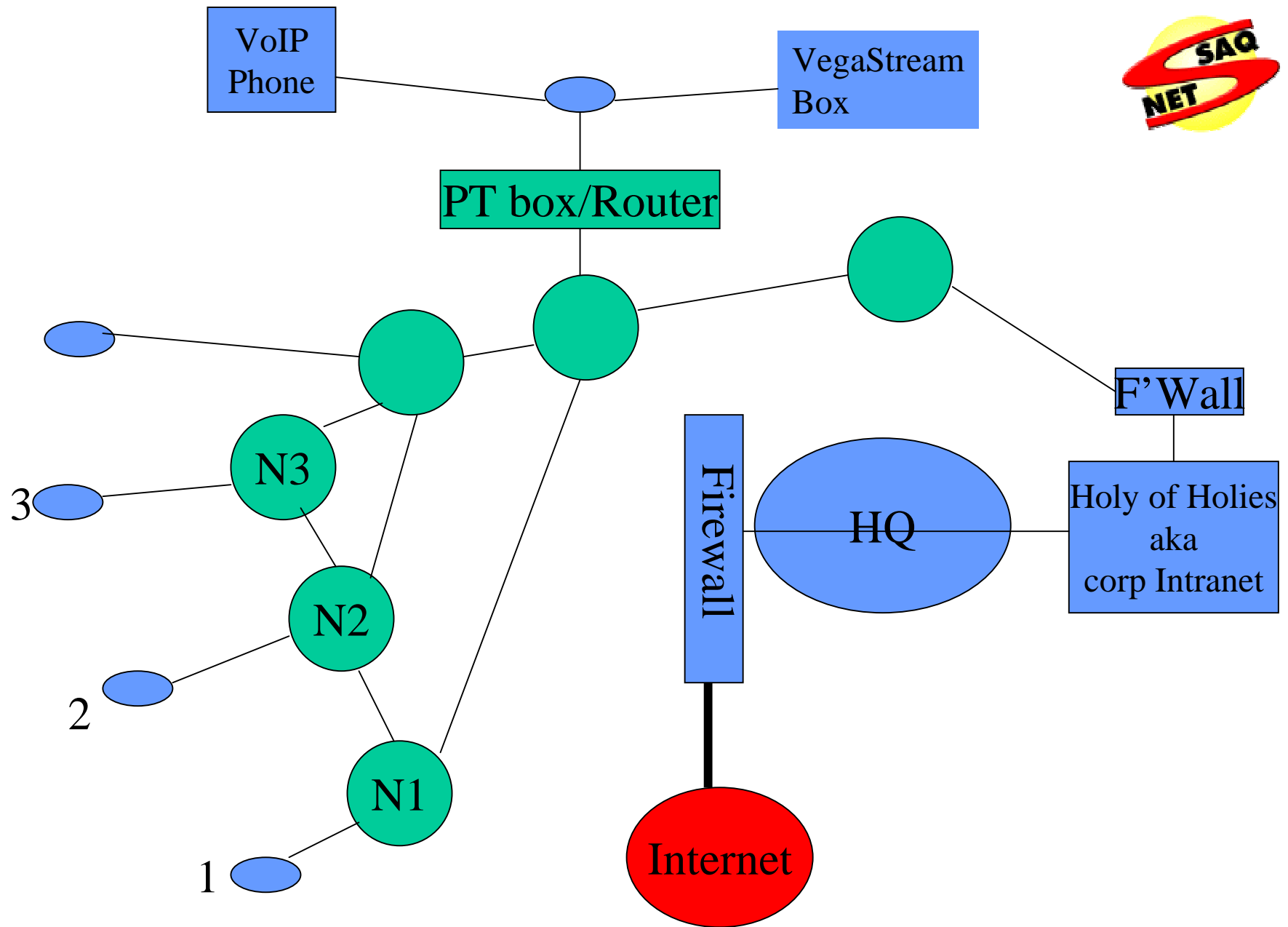
Medium Sized Companies with offices & sales outlets
operating on a pan-European basis

Number?

X million within Europe



The future market for v6-based VPN services



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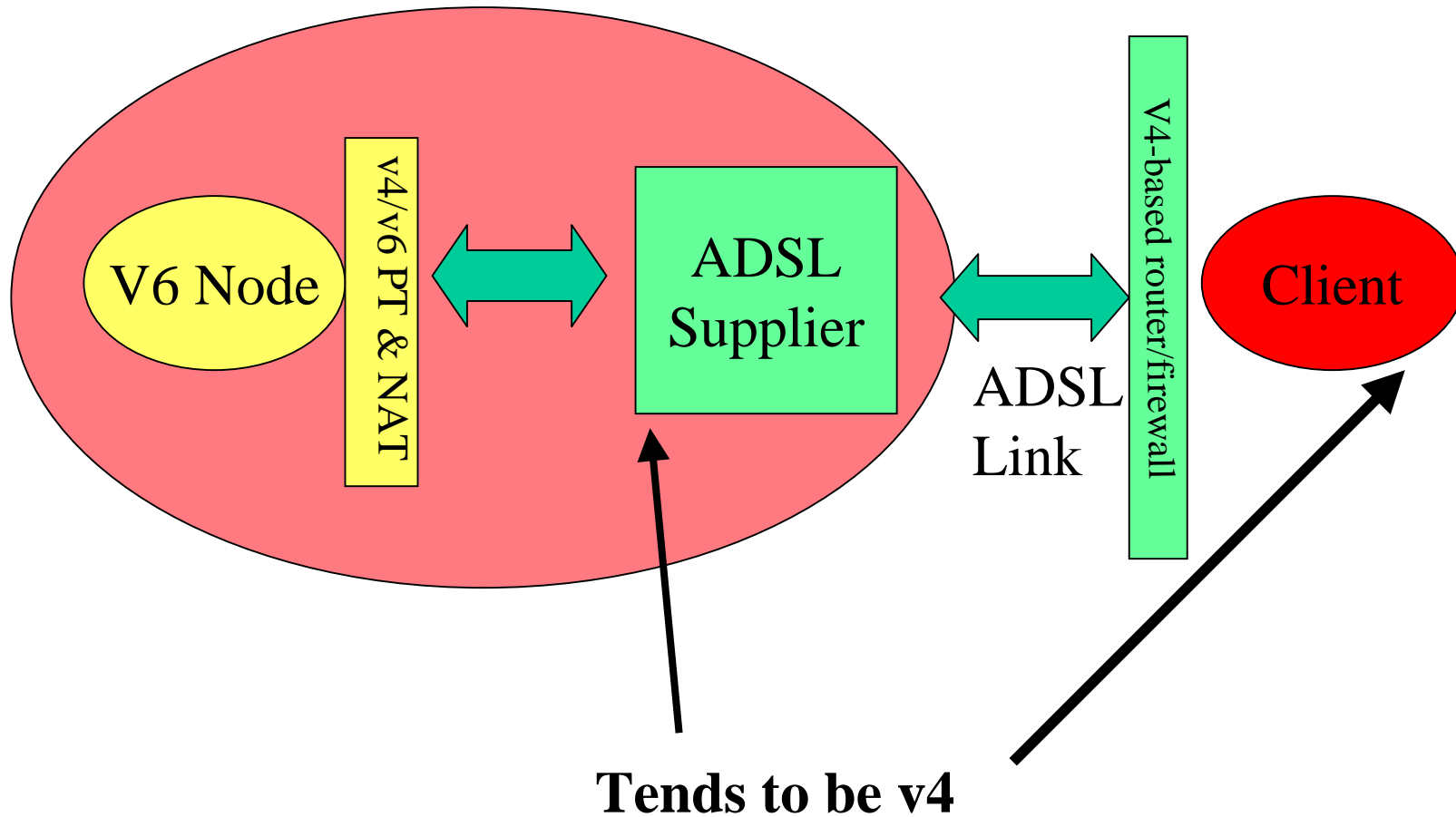
Technical Issues I

VoIP in a v4 (ethernet) to v6 environment
(i.e. point to point communication)

How to make VoIP work in a dial-up environment
(many offices still use ISDN)

The ADSL/Cable problem

Issue II - ADSL



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Medium-Sized Company Service Needs



Voice Comms: HQ – Branch offices
(typical budget @ branch office - \$800/month
for 4 person office? – ouch!)

Data Comms: HQ (Intranet) to Branch Office
(but how to get through corporate firewall?
- collective groans from Corporate IT)

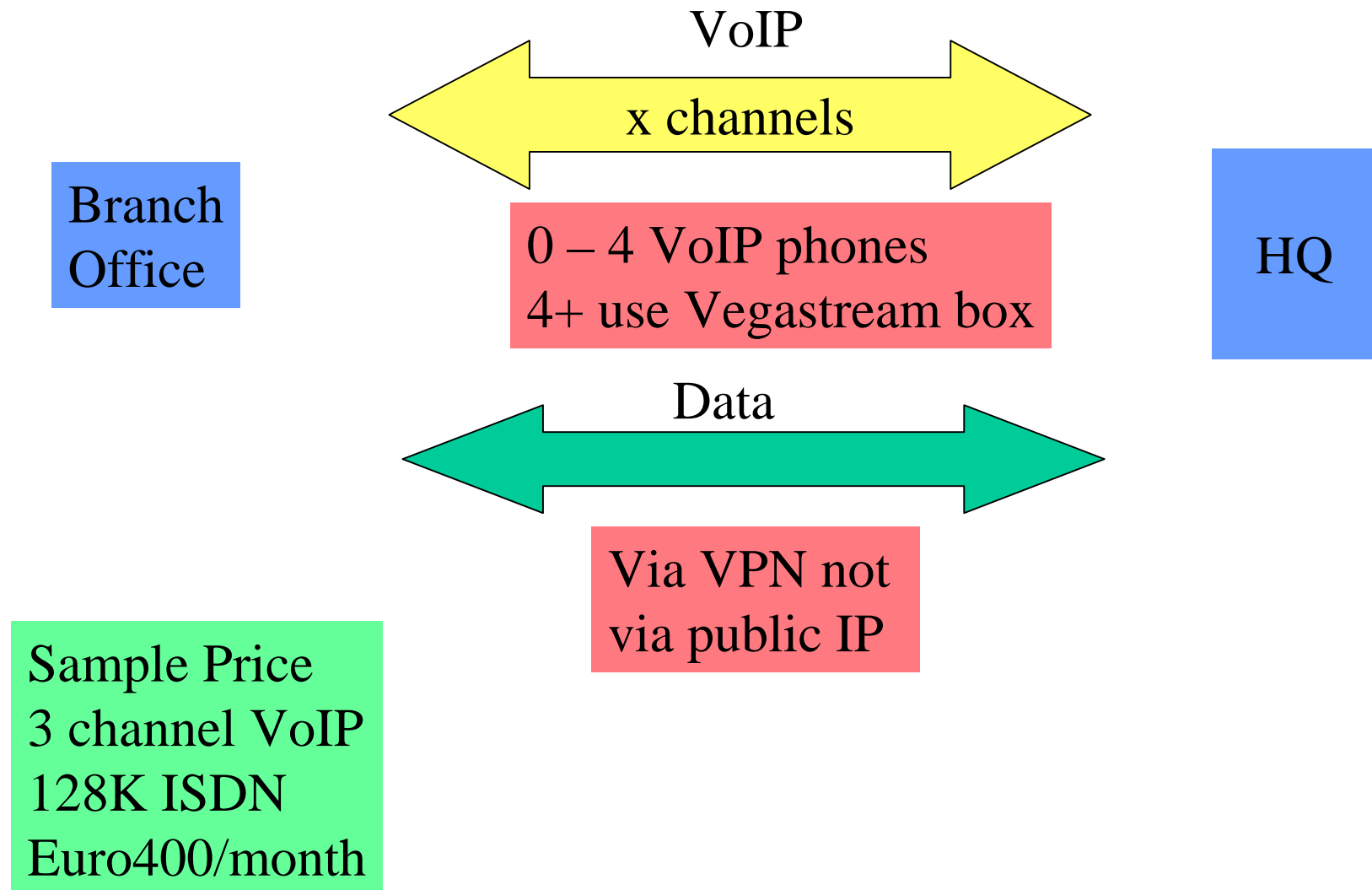
Video Comms

HQ – Branch: Branch – Branch

Security, Privacy & Encryption



Idealised VPN for Medium Sized Companies – Branch Office





Selling the Story (Why Buy?)

10x

Branch
Office

Save Money (VoIP)
Better connection to HQ Intranet
Fewer “problems”

1x

HQ

Easier to manage
More secure data comms
Lower costs

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Security & Encryption

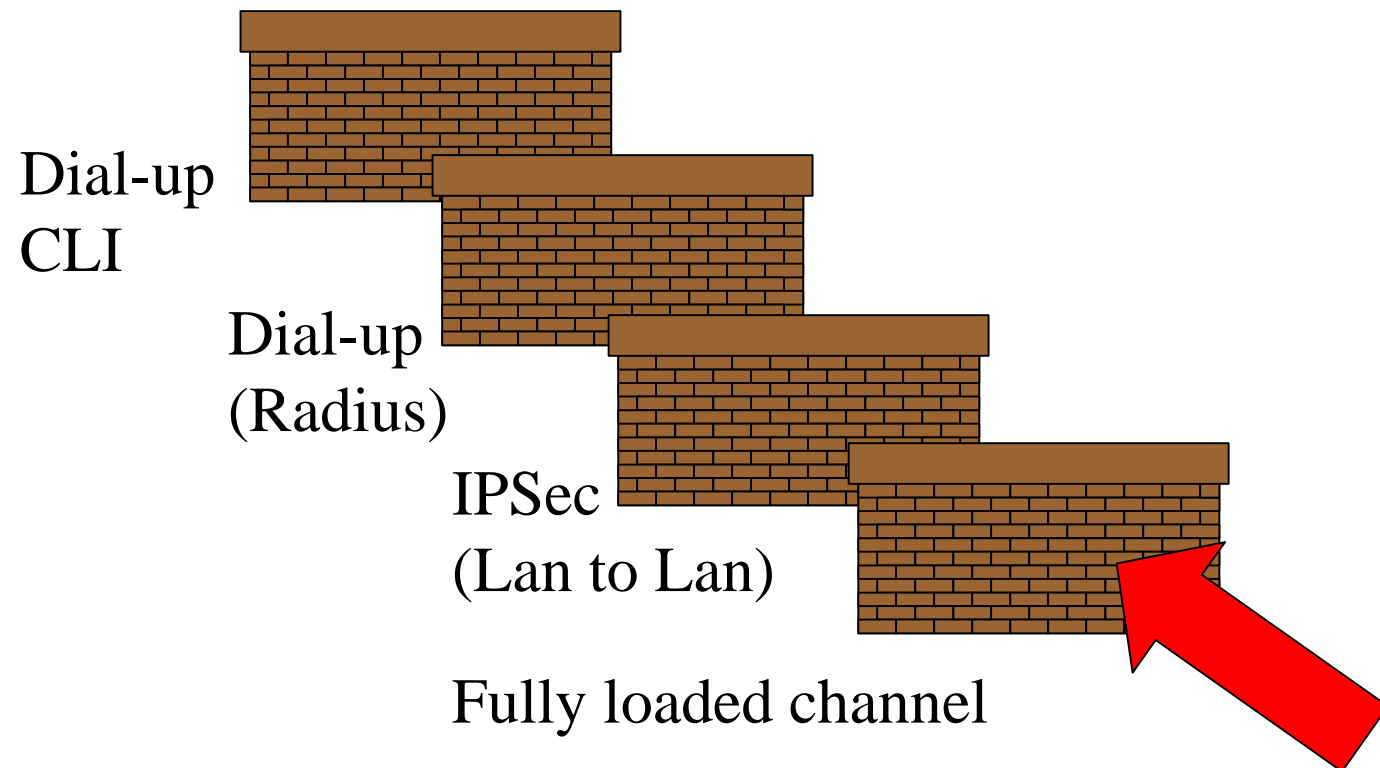


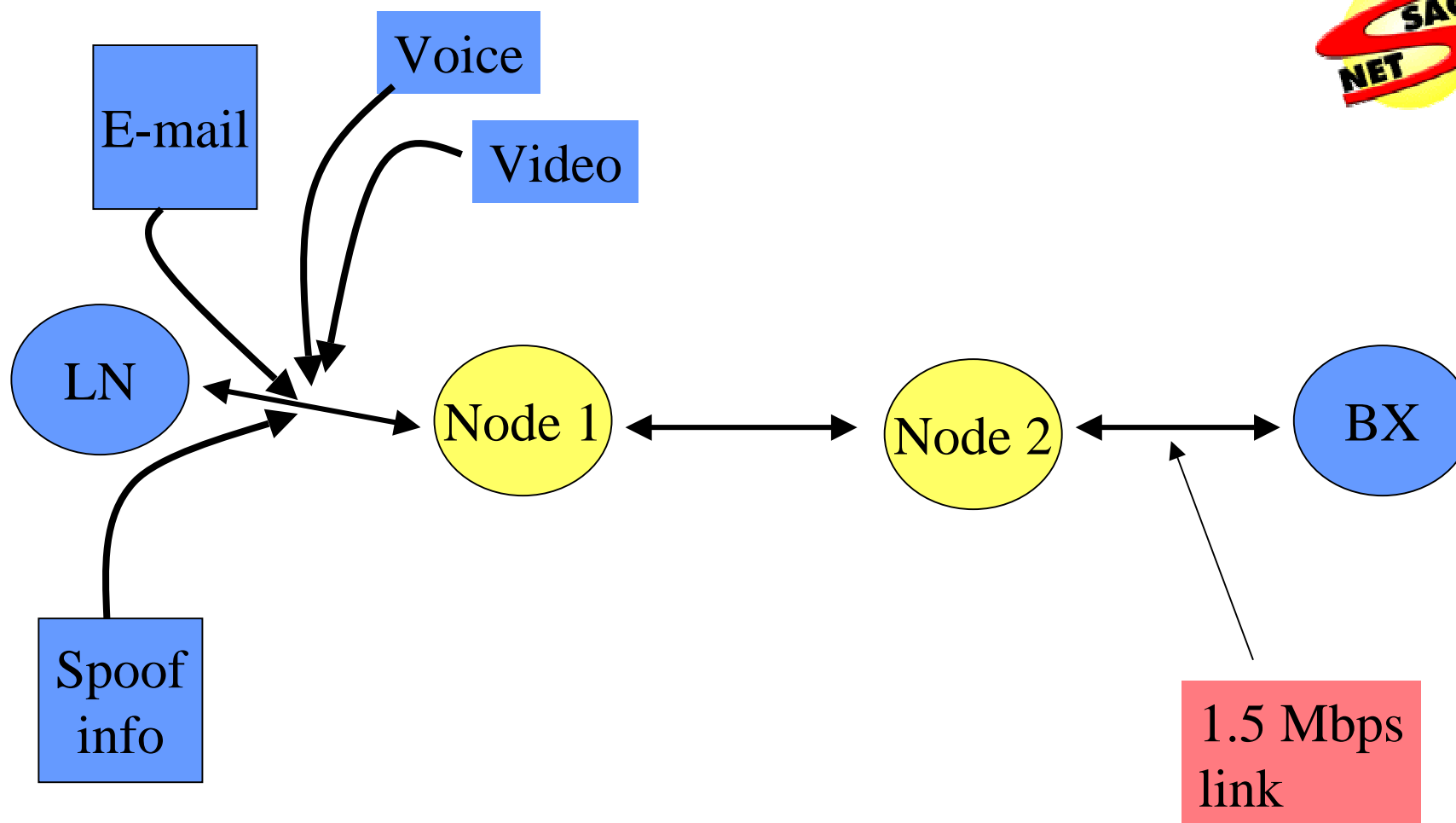
Security:	IPSec (?) Easier with v6 & fewer hackers with v6 knowledge
Privacy & Encryption	Closely related to traffic interception Use “full encrypted pipe” (IPSec?) to address the issue of unauthorised traffic interception.

Security is best ensured by using multiple layers



A “Layered” Approach To Security





**Anti- Interception
Through Spoof Traffic**



Conclusions

1. There is a massive business market waiting for cost-effective pan-European VPNs
2. It wants low cost voice and data (and eventually video)
3. IP is the only way to provide these functions
4. IPv4 can do it but IPv6 may be more “manageable” and is more future proof.
2. IPv6 solves most IPv4-related problems

**If the industry wants to get out of its current “mess”
it should implement IPv6 sooner rather than later**

The Motorcycle as a Metaphore



Norton Commando 1970
(fast, fragile & uncertain reliability)

IPv4?

Triumph Daytona – 21st Century
Fire and forget
Bullet proof
reliability

IPv6?





IPv6 – Pan-Euro VPN Enabler

IPv6 technology is here – now

There is a market demand for applications
only IPv6 can meet in a cost effective way

What are we waiting for?