



> THIS IS THE WAY

## Navigating the Turbulence

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Next Generation Architectures, Networks, & Technology

May 4, 2005

> THIS IS NO RTTEL

## Reacting to Change ...



You can't let the future just happen to you - Toffler.

Perspective is more important than IQ - Negroponte.



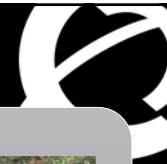
Taylor Warwick Consulting

# Fundamental Disruptions Are Transforming Today's Telecom Industry

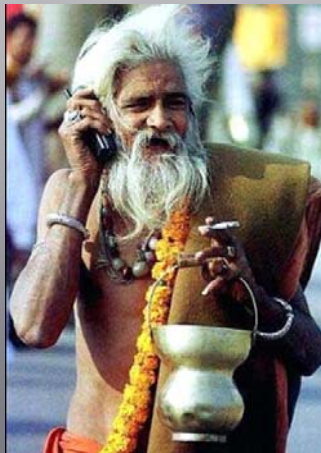
New World, No Rules



## The Changes We Can See...



Embracing Telecom



Stress All Designs



World Class-Capabilities



## China – Defining Growth



- > Population: 1.3 billion
- > GDP Growth: 9.5% (2004)
- > Fixed Line subscribers: 325 million
- > Wireless subscribers: 349 million
- > Broadband subscribers: 28 million
- > New wireless subscribers
  - 4.4 million/month
- > Internet users – to reach 134M in 2005 (world's 2nd largest market after the US)

Source: MII Mar 2005, China National Bureau of Statistics Mar 2005

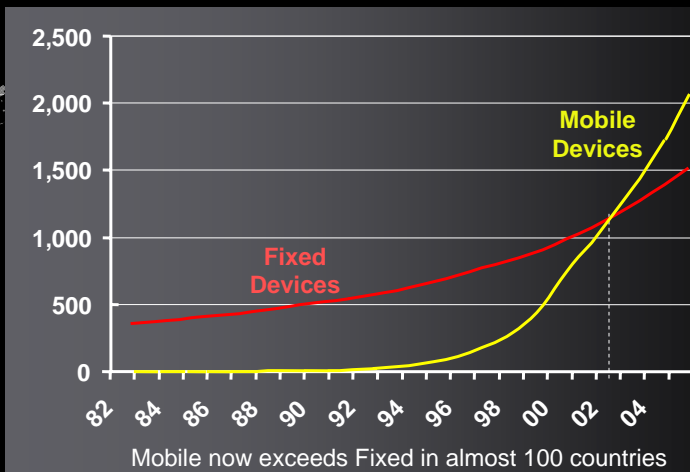
## India – More Growth ...it's a New World



- > Population: 1.076 billion
- > GDP Growth: 6.5% (2004)
- > Lowest tele-density in Asia (9%)
- > Internet Subscribers: 6.7 million
- > Fixed Line Subscribers: 46 million
- > Wireless Subscribers: 54 million

Source : UBS Asian Economic Monitor Jan/Feb 2005, Pyramid Research Q404, TRAI

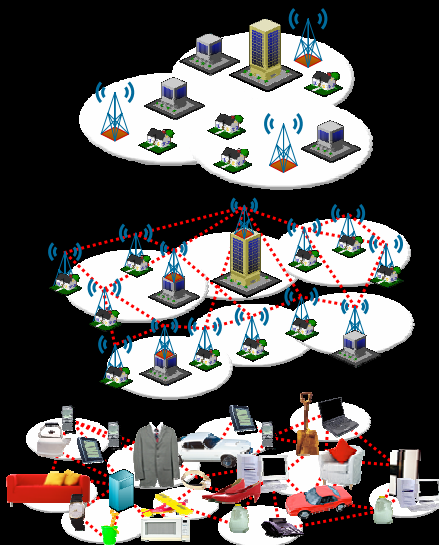
## The New Reality: Access is Wireless



Mobile devices are becoming increasingly more capable; rivaling PCs

In Asia alone – 11 million new wireless subscribers per month

## All Devices Connected ... Wirelessly



> Mobility / WWAN

- a million nodes @ \$50K

> Nomadic / Mesh / WLAN

- millions of nodes @ \$100

> Sensor / Ad-hoc / WPAN

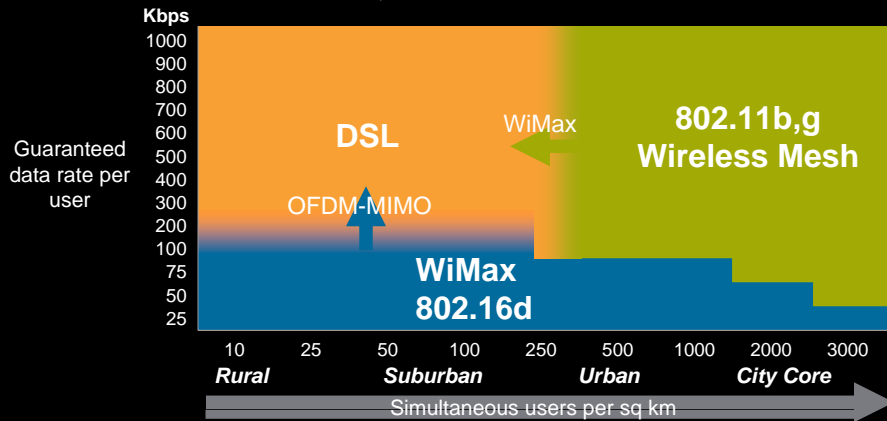
- billion of nodes @ \$1

Wireless is now the mainstream for access

# Broadband Access – Becoming A Wireless World



Lowest, total cost to the Service Provider



Wireless is already cost competitive for broadband access, PLUS it provides mobility

# What People Value



**The Multimedia Experience**

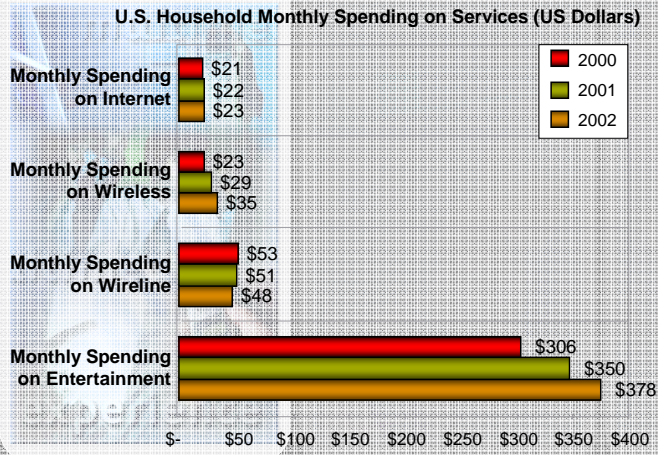
**Security & Personalization**

**The Freedom of Mobility**

... for enhanced productivity and user experience

## What People Value

### The Multimedia Experience



... for enhanced productivity and user experience

## What People Value

### Security & Personalization

In Q3, 2004:

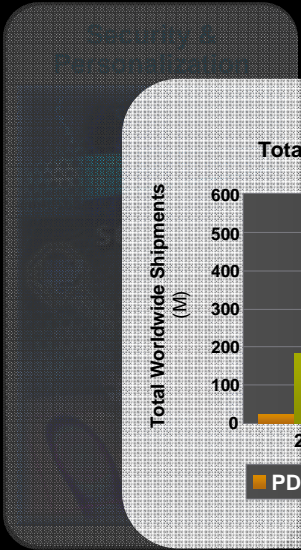
> **Total Network Security Market:**

- surpassed \$1B per quarter
- grew 2% sequentially
- grew over 25% over Q3 2003

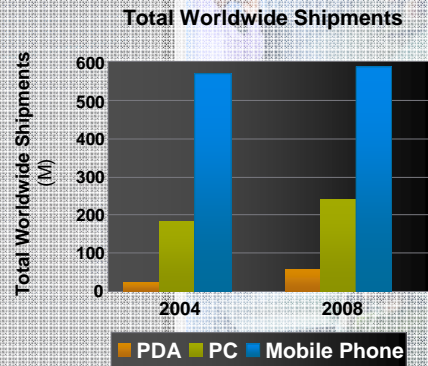
From Synergy Research Group, Inc:  
(December 2004):

... for enhanced productivity and user experience

## What People Value...Personal World



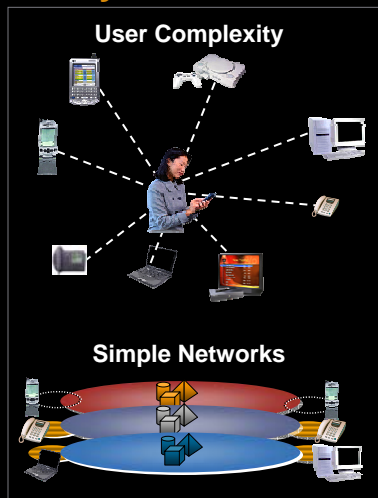
The Freedom of Mobility



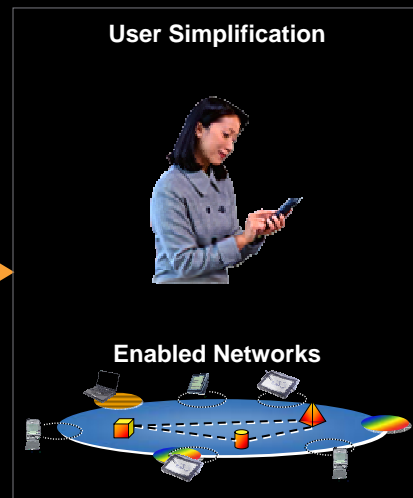
... for enhanced productivity and user experience

## Communications Paradigm Shift “Sessions” instead of “calls”

Today



Tomorrow



## Nortel's Network

- > Footprint similar to a small carrier
- > On monthly basis
  - 48.2 million e-mail messages
  - 80,000 reservationless audio conferences
  - 37.8 million telephone voice minutes
    - (70% packetized; 30% public)
  - 250 webcasts (25% growth over 2003)
  - 1.84 petabytes of routed data traffic
- > Security
  - Daily anti-virus updates
  - 100% users & partners on secure VPNs
- > Financials
  - Last 3 years – Optical Ethernet lowered overall costs by 78%; increased capacity 390%
- > 66% of workforce – ubiquitous mobility
- > 20,500 MCS users



## New Drivers

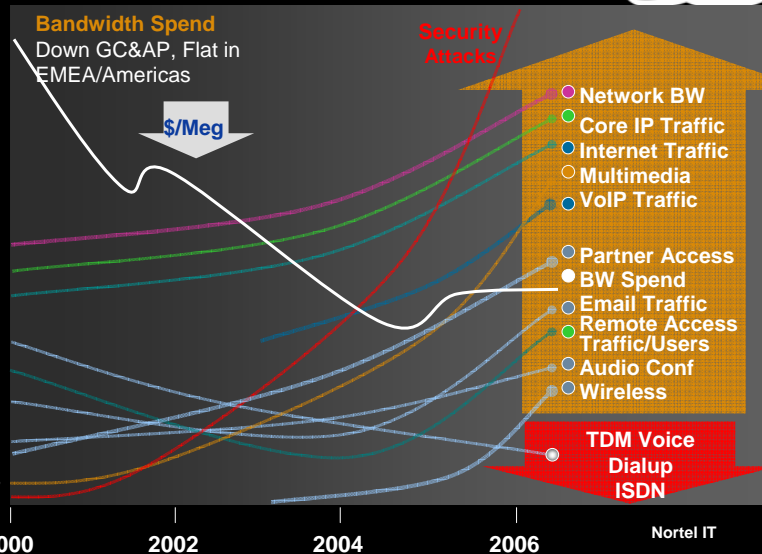
### Primary Bandwidth Drivers

#### Intranet

Data Center Consolidation, SAN Extension (Disaster Recovery), Voice over IP, Multimedia

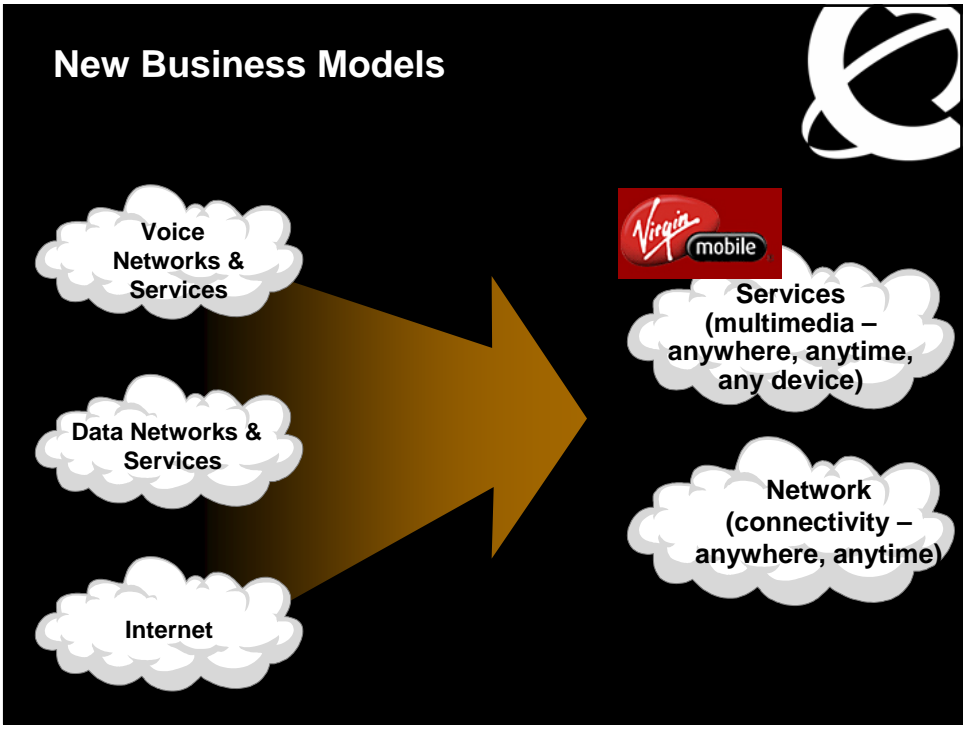
#### Internet

External Business, Remote Access

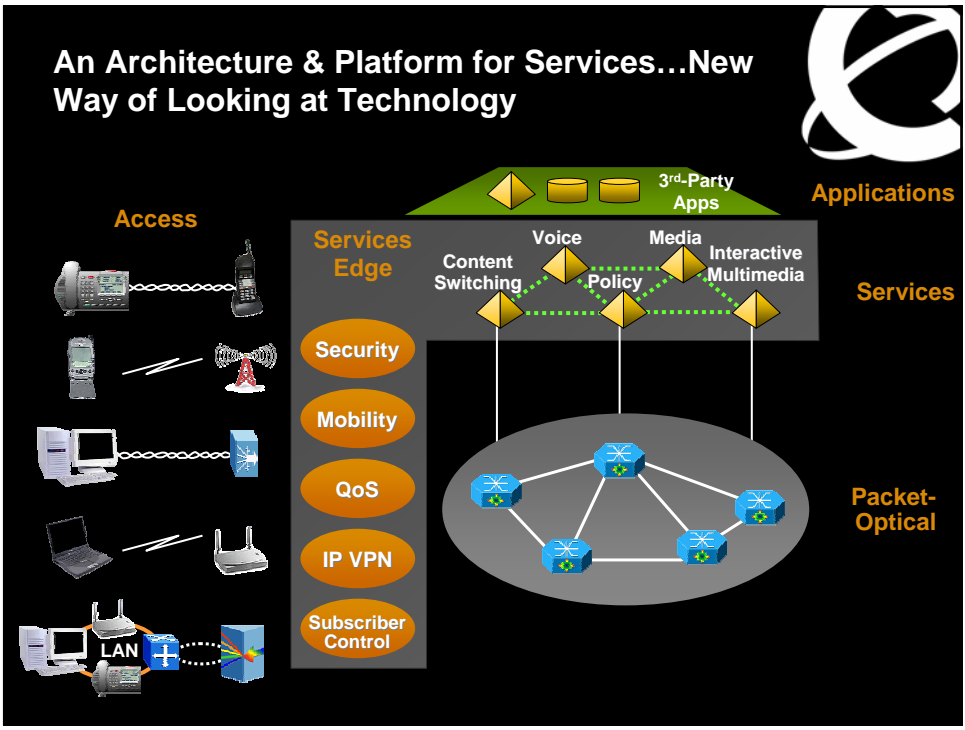




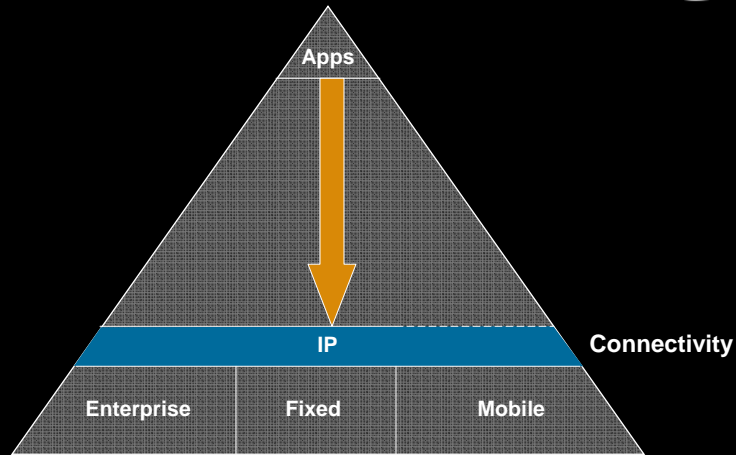
# New Business Models



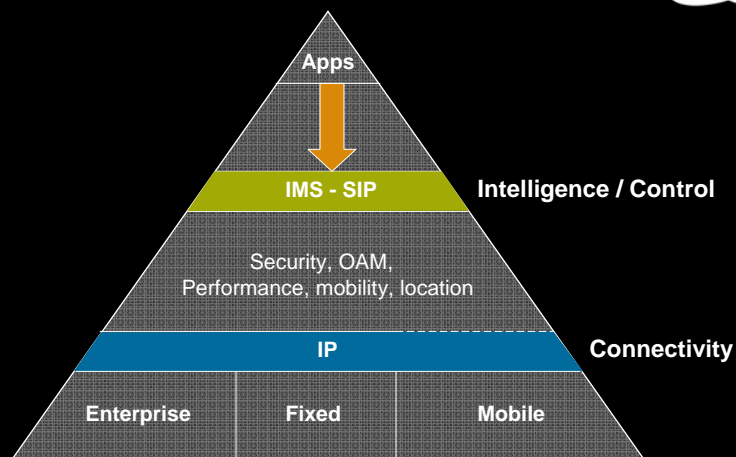
# An Architecture & Platform for Services...New Way of Looking at Technology



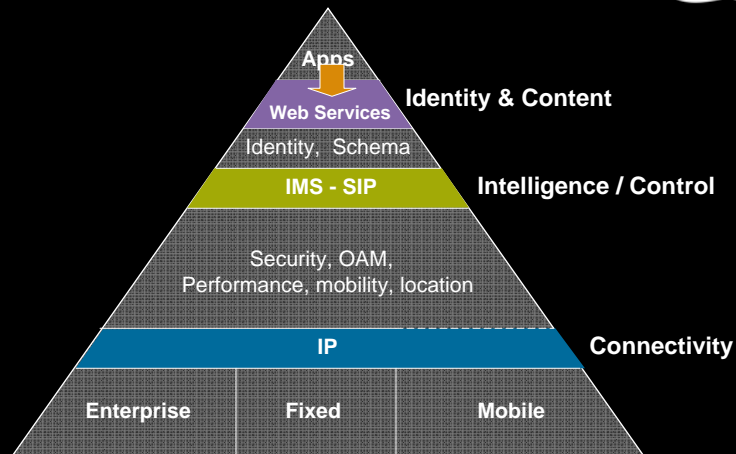
## The Power of Virtualization - Connectivity



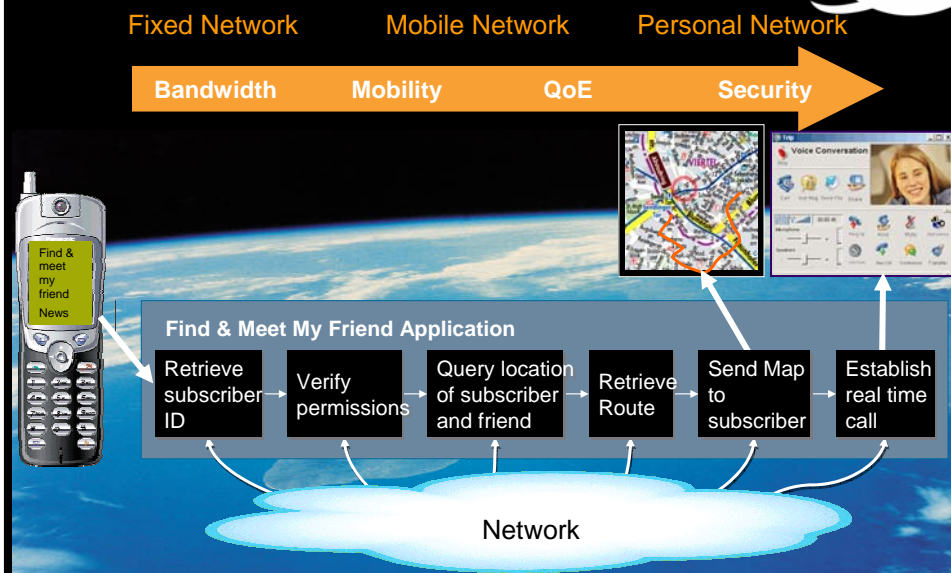
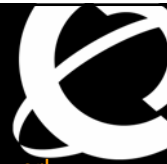
## The Power of Virtualization – Intelligence & Control



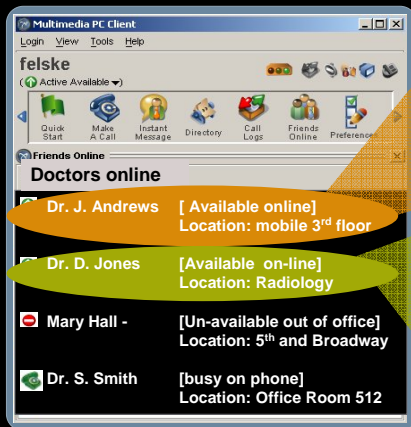
# The Power of Virtualization – Identity & Content



# The Power of an Intelligent Network ....New, Powerful Application



# The Power of an Intelligent Network Healthcare Application



All calls automatically routed to tablet client

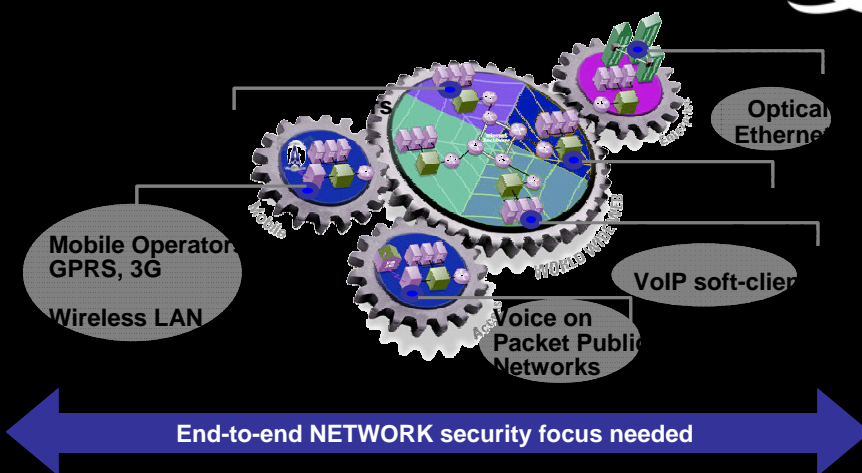


Images (content) can also be redirected automatically

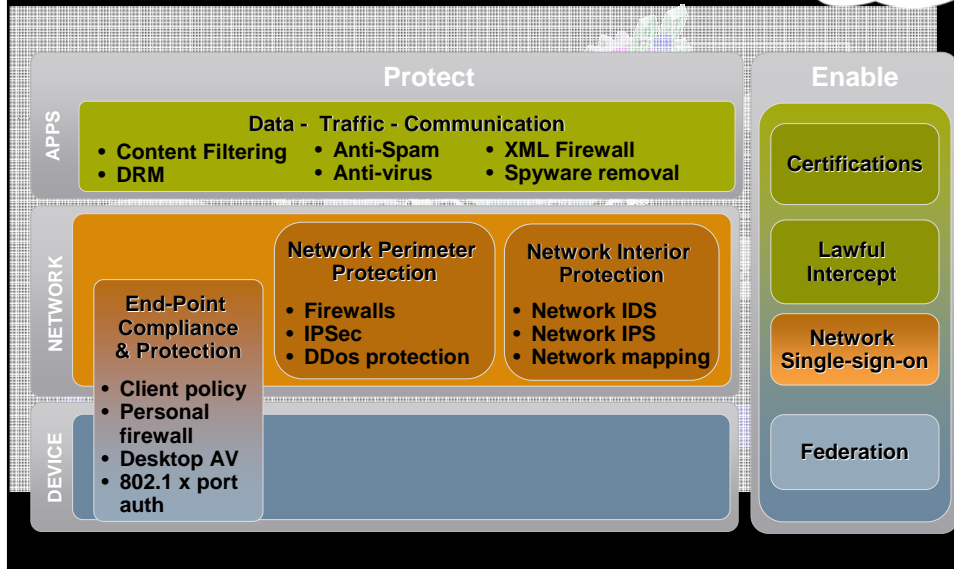


“Presence” is automatically updated to reflect the doctor’s location

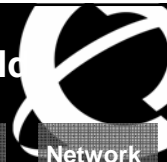
# System Approach to Security...New Tools required



# System Approach to Security



# Technologies That Matter in the New World

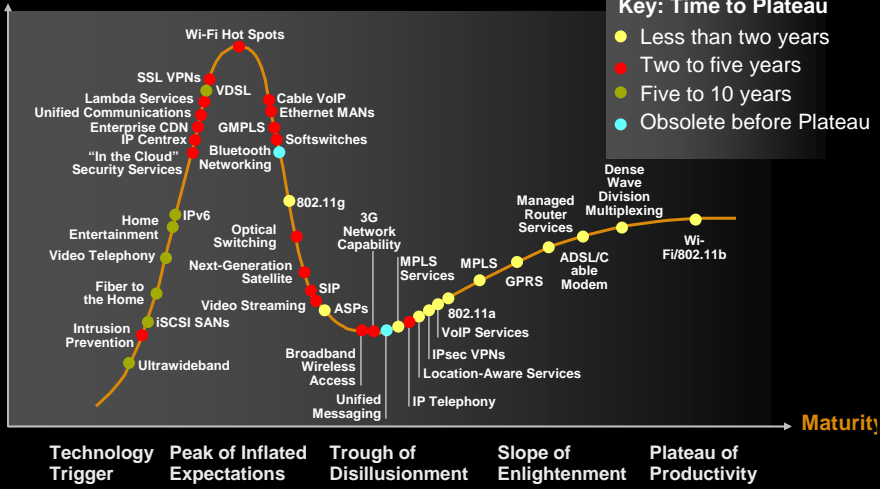


	User Focused	Network Focused
SIP (Session-Initiative Protocol)	●	●
Multimedia Communications Platforms	●	
Broadband Wireless Access	●	●
End-to-End Security Services	●	●
Carrier-Grade Linux		●
Standard Software components and Open Source		●
Network Processors for packet networks		●
Integrated S/W Development and productivity tools		●
IPV6		●
Carrier Grade components, products, networks/services	●	●
Presence, Identity management	●	●
Ethernet Switching		●
Quality of Experience (QoE) for end users	●	●

## Innovation Dynamics... Increasing Pace



Visibility



## 'Navigational Aids'



- > End User Perspective
- > New value propositions
- > New Virtualization Technologies
- > Wireless
- > Partners
- > Security
- > Network Intelligence
- > Standards

