



*Putting Intelligence in the Network™*

**NetLogic Microsystems, Inc.**

**February 2007**



# Safe Harbor Statement



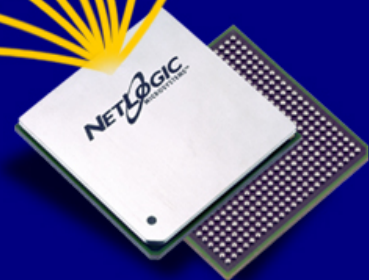
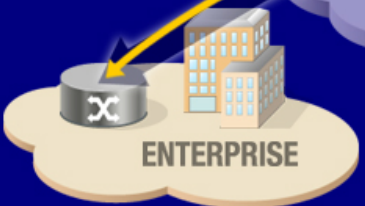
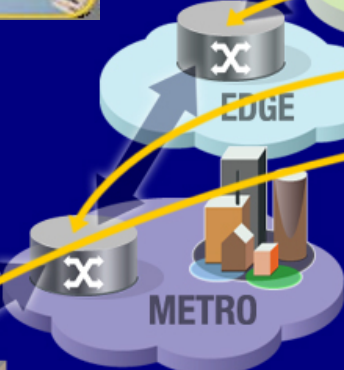
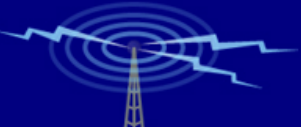
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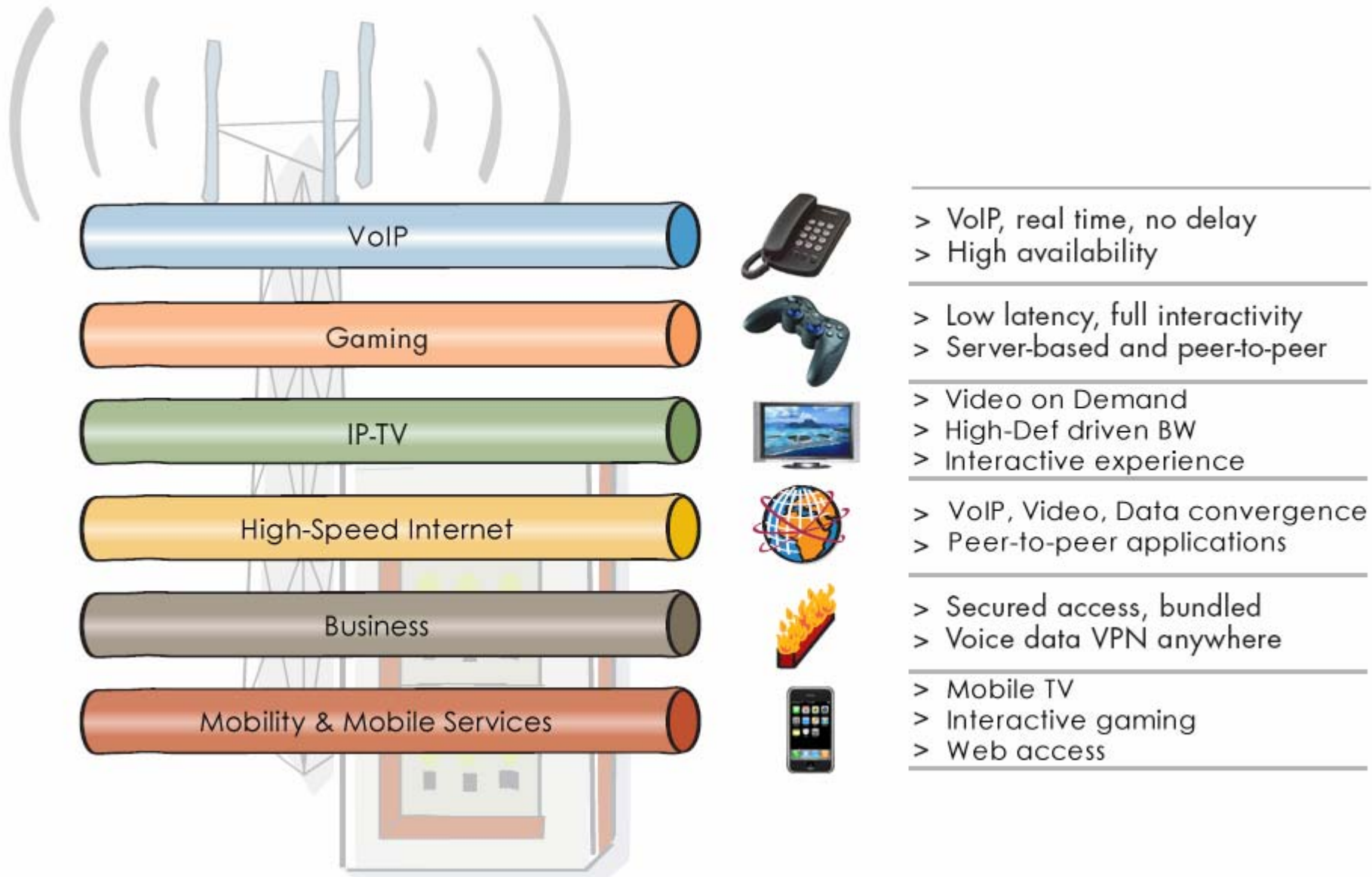
# Knowledge-Based Processing: From Entry-Level Packet Processing to Content Processing at Wire Speeds



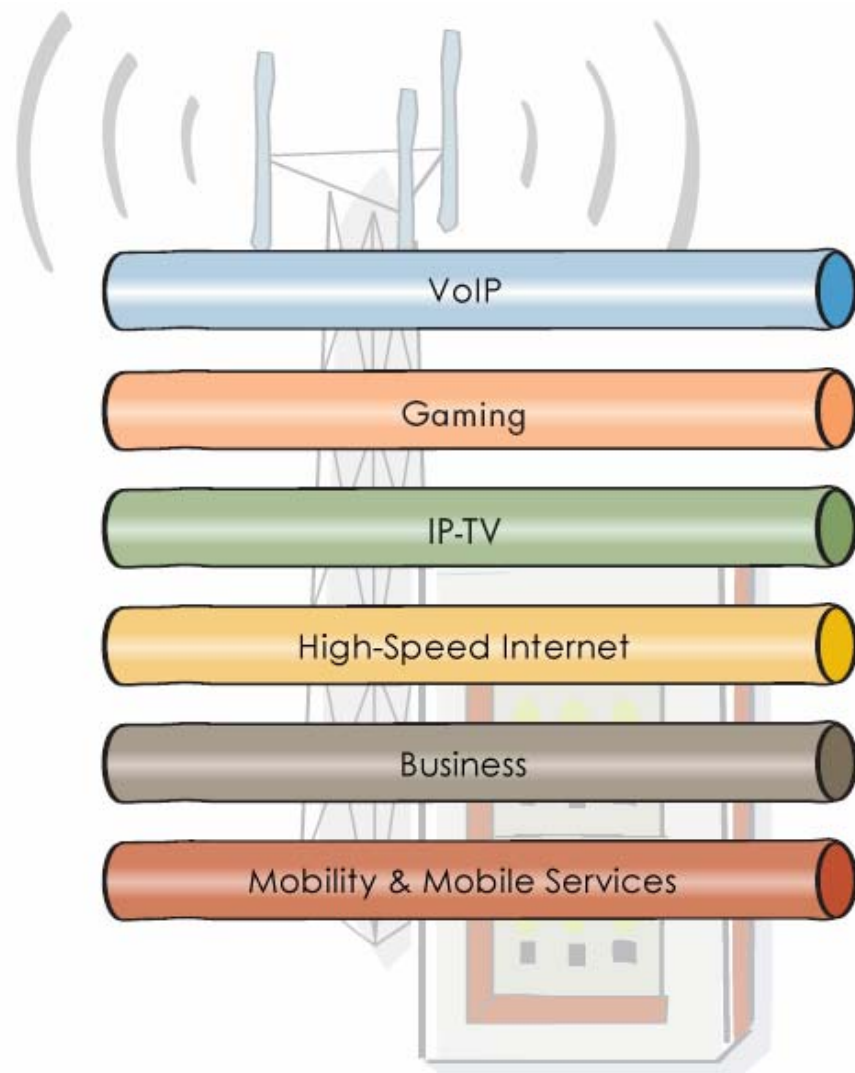
# Knowledge-Based Processing: Entry-Level Packet Processing to Content Processing at Wire Speed



# Web2.0 Content-Rich Services and Applications



# The Increasing Need for Knowledge-based Processing



10+ Gbps	ACL Security	QoS	IPv6	Billing	Application Acceleration	IPS	Malware Protection	DRM
✓	✓	✓	✓	✓	✓	✓	✓	
✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓

Layers 2-4

Layers 4-7

# Bandwidth Drivers



20Mbps

**HDTV IPTV**

(1-channel)

6Mbps

**DVD-quality IPTV**

(1-channel)

3Mbps

**Video Streaming / Video Conferencing**

350kbps

**VoIP**

256kbps

**Streaming Audio / Internet Radio**

128kbps

**Data, Web Surfing, Email**

# U.S. Telecom 2007 CAPEX Expansion



## comcast

- **Increasing YoY CAPEX by 24% to \$5.7B in 2007**
  - **\$4.2B (75%) will go toward new equipment (VoIP, Broadband, HDTV, VOD)**
- **Expects 73% in VoIP subscriber growth from 1.5M in 2006 to 2.6M in 2007**

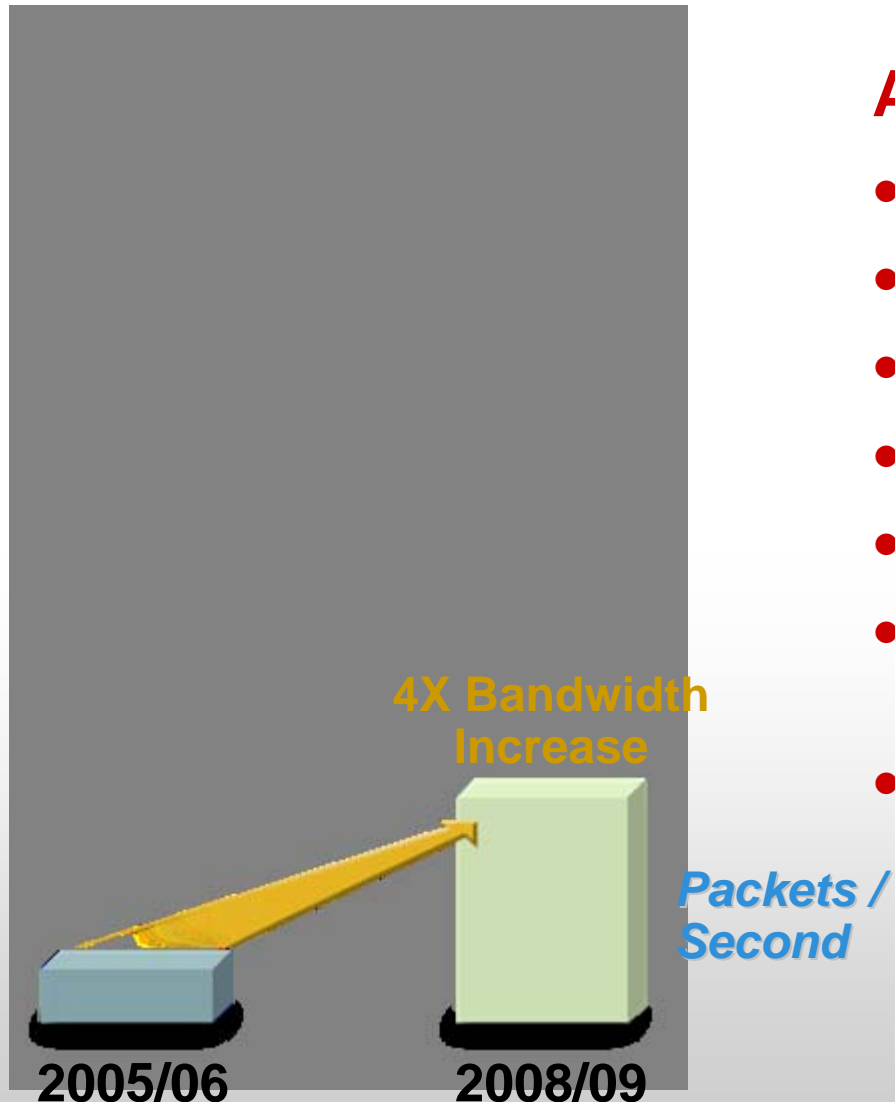
## at&t

- **Ramping U-verse IPTV deployment aggressively**
- **Expects 8M users by end-2007**



- **Increasing wireline CAPEX to \$10.8B, and wireless CAPEX to \$6.7B in 2007**
  - **Majority of wireline CAPEX will go toward FiOS FTTP/IPTV infrastructure**

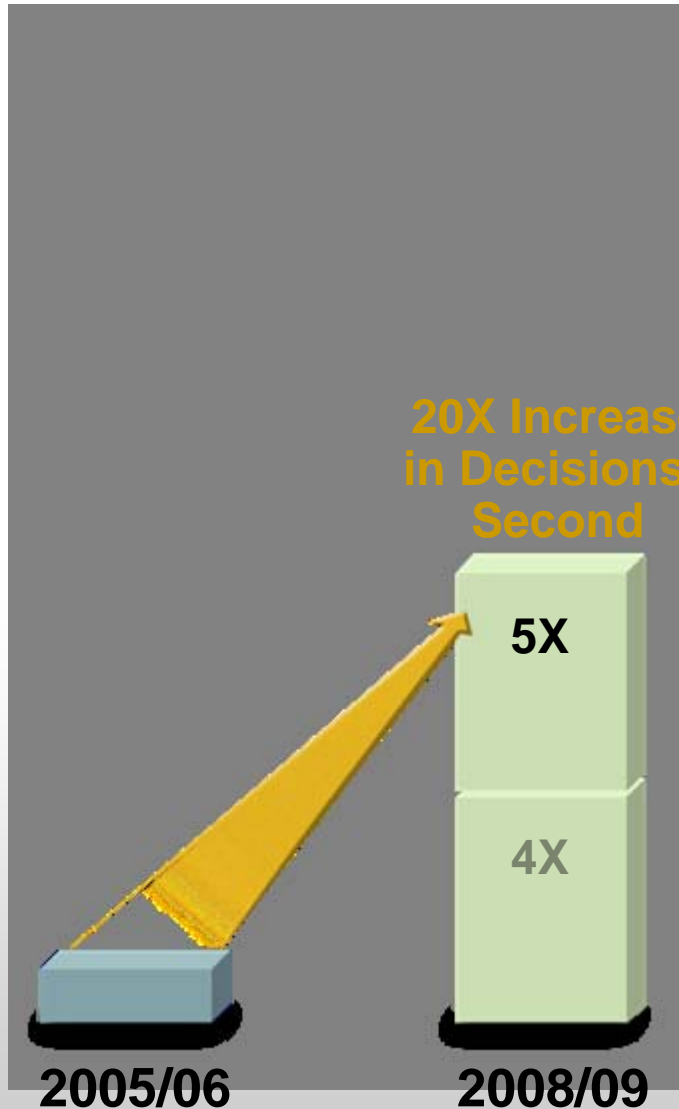
# Next-Generation Internet: New Bandwidth-Intensive Applications



## Applications

- eMail
- eCommerce
- VPNs
- VoIP
- Video / Audio on Demand
- Music Downloading / File Sharing
- Online Games

# Next-Generation Internet: More Complex Packet Processing

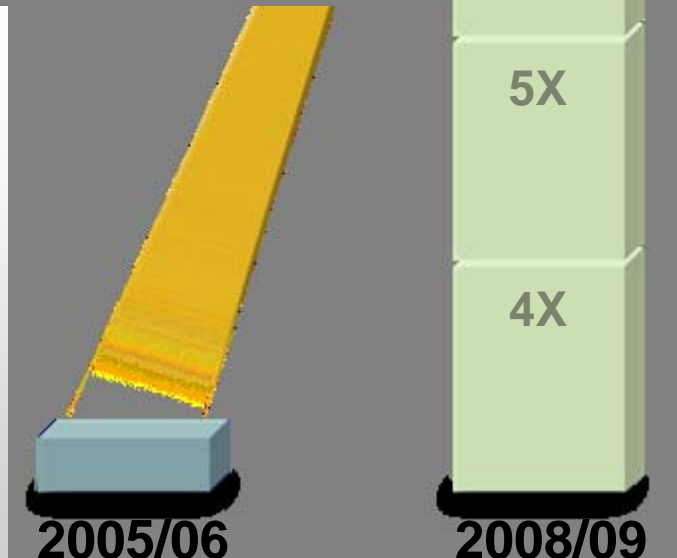


## Packet Processing Tasks

- Forwarding / Routing
- Prioritization for QoS
- Access Control for Security
- Measurement for Billing

# Next-Generation Internet: More Nodes → Longer IP Addresses

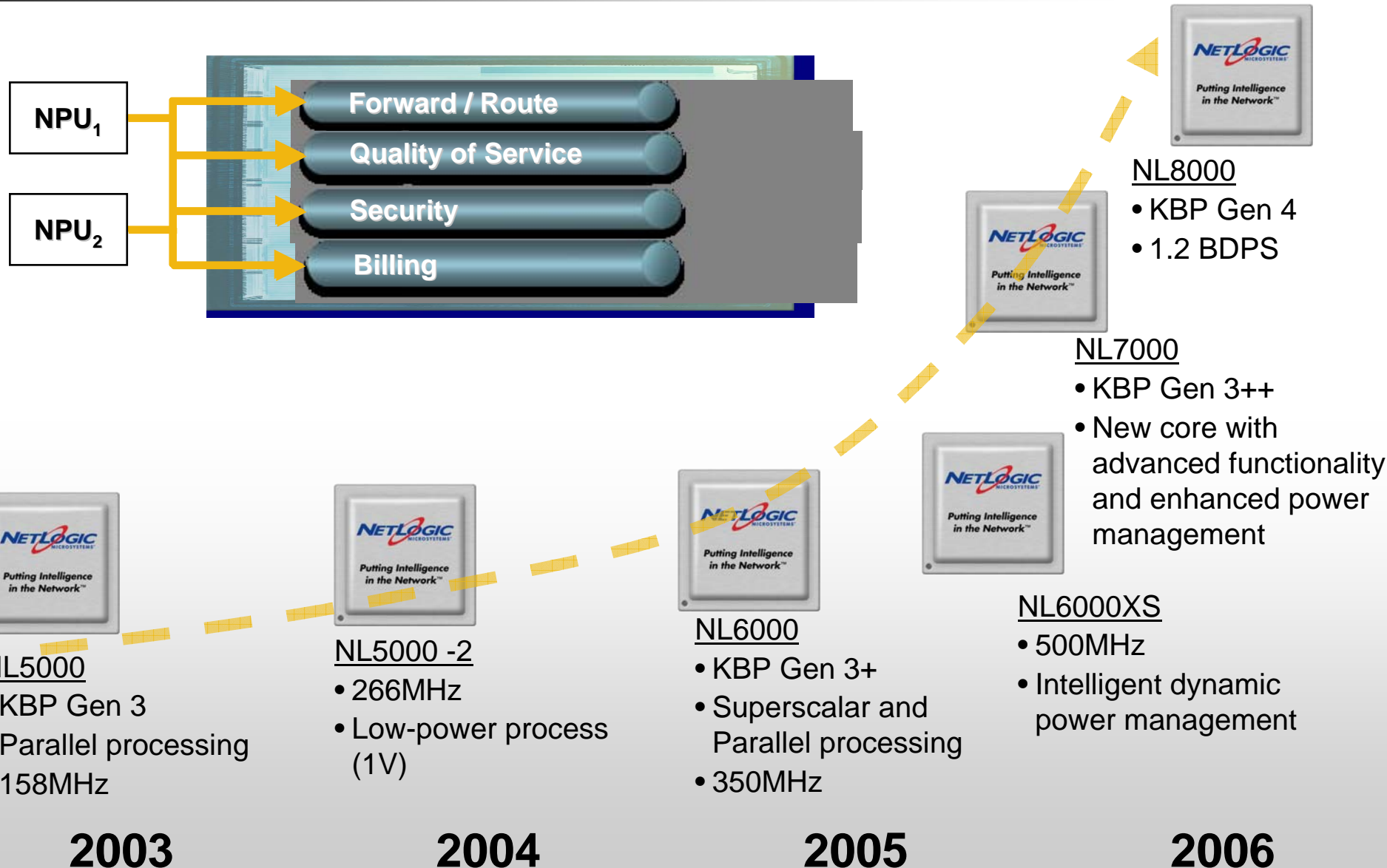
**300X  
Increase  
in Processing  
Performance  
Required**



## Network Intelligence Drivers

- More
  - IP Addresses
  - Network Systems
  - Routing Paths
  - Service Types / Levels
- IPv6
  - Larger Records (4X)
  - More Complex Processing

# Rapid innovation in processor architecture, performance and features

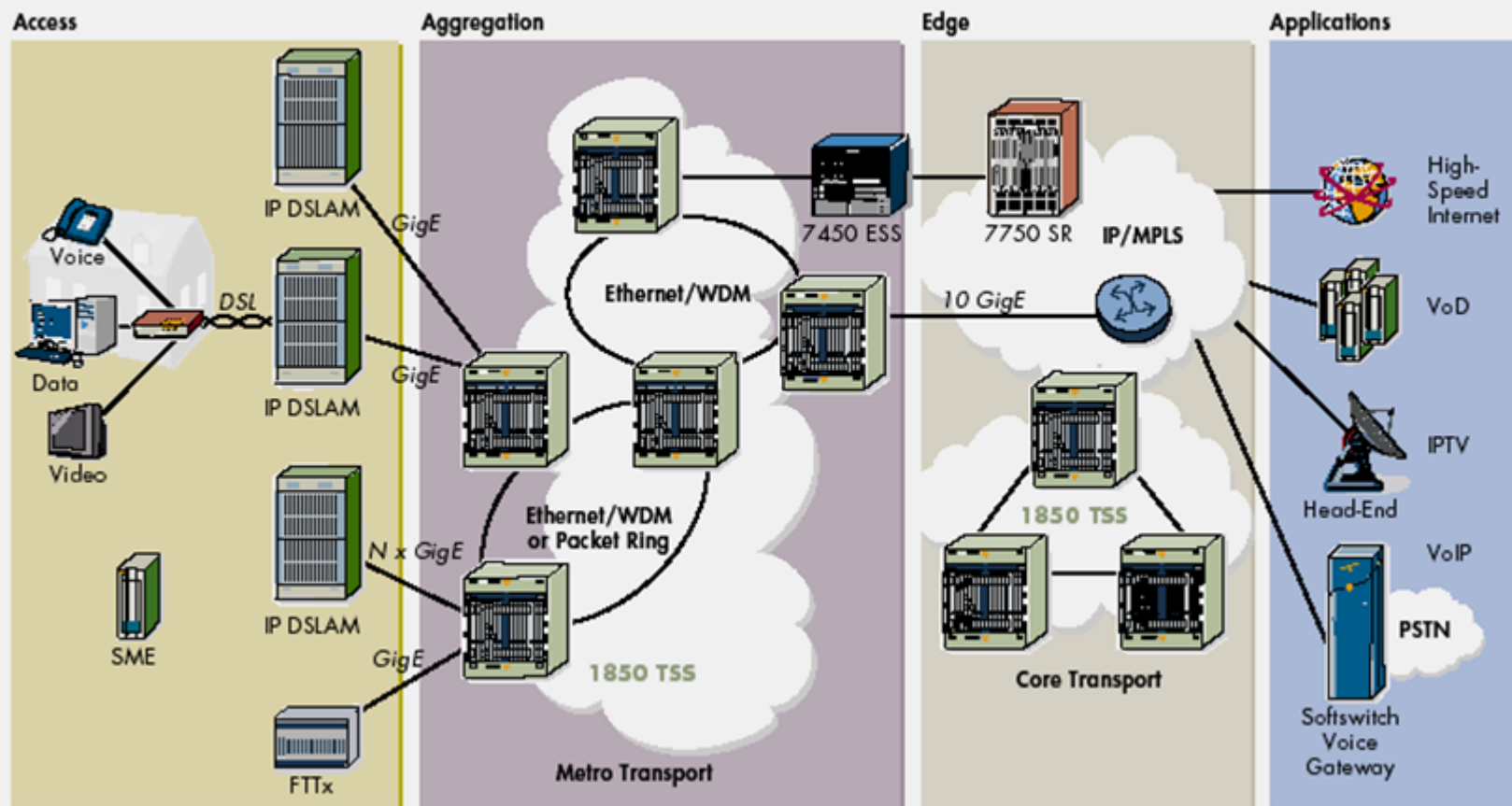


# Leading OEM Customer Base



# Targeting Triple Play Internet Convergence and Beyond

Figure 4 - Triple Play with the Alcatel 1850 TSS



Source: Alcatel-Lucent

# Quad Play Enablement



# Quad Play Enablement

- Per user rules
- QoS rules
- Security rules
- Billing rules
- DRM rules



MOBILITY

VIDEO



- Per video stream routing
- Video stream filtering
- Billing rules
- QoS rules
- DRM rules

**NETL**  
*Knowledge-based  
Processing*

- Per call routing rules
- QoS rules
- Security rules
- Billing rules



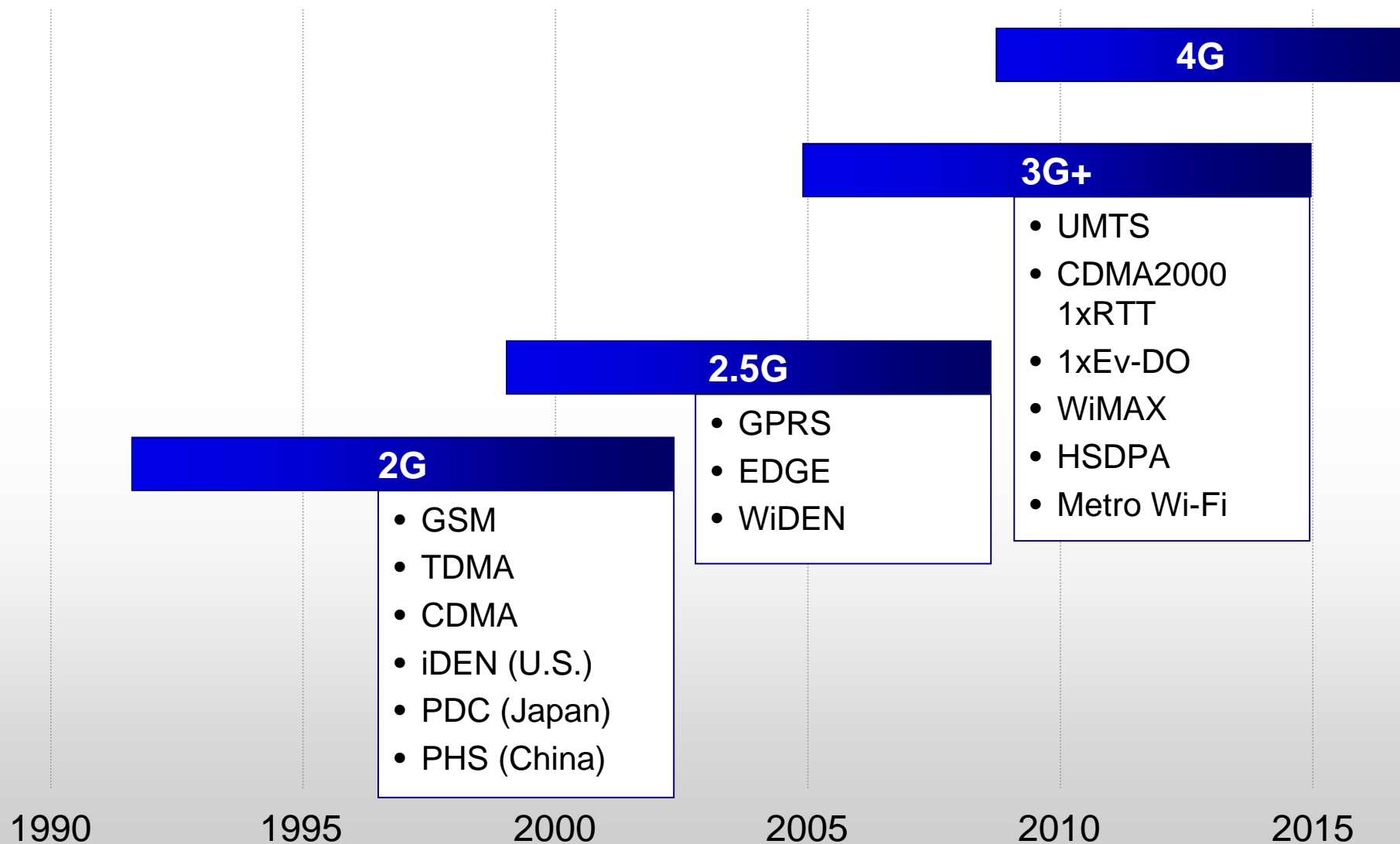
VOICE

DATA

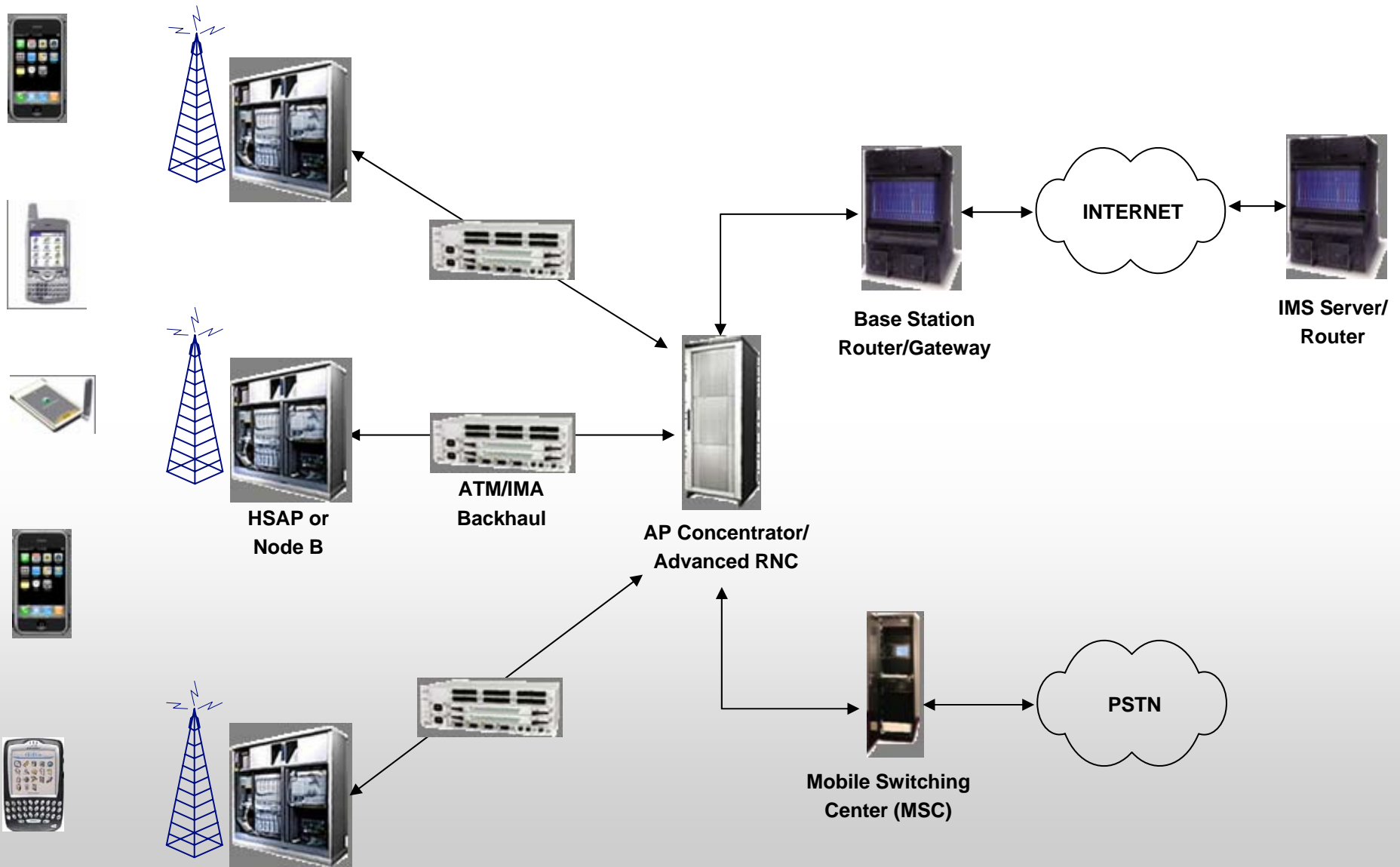


- Routing rules (IP addresses)
- Security rules (firewall, VPN, IPS, AV)
- Policy rules (load balancing)

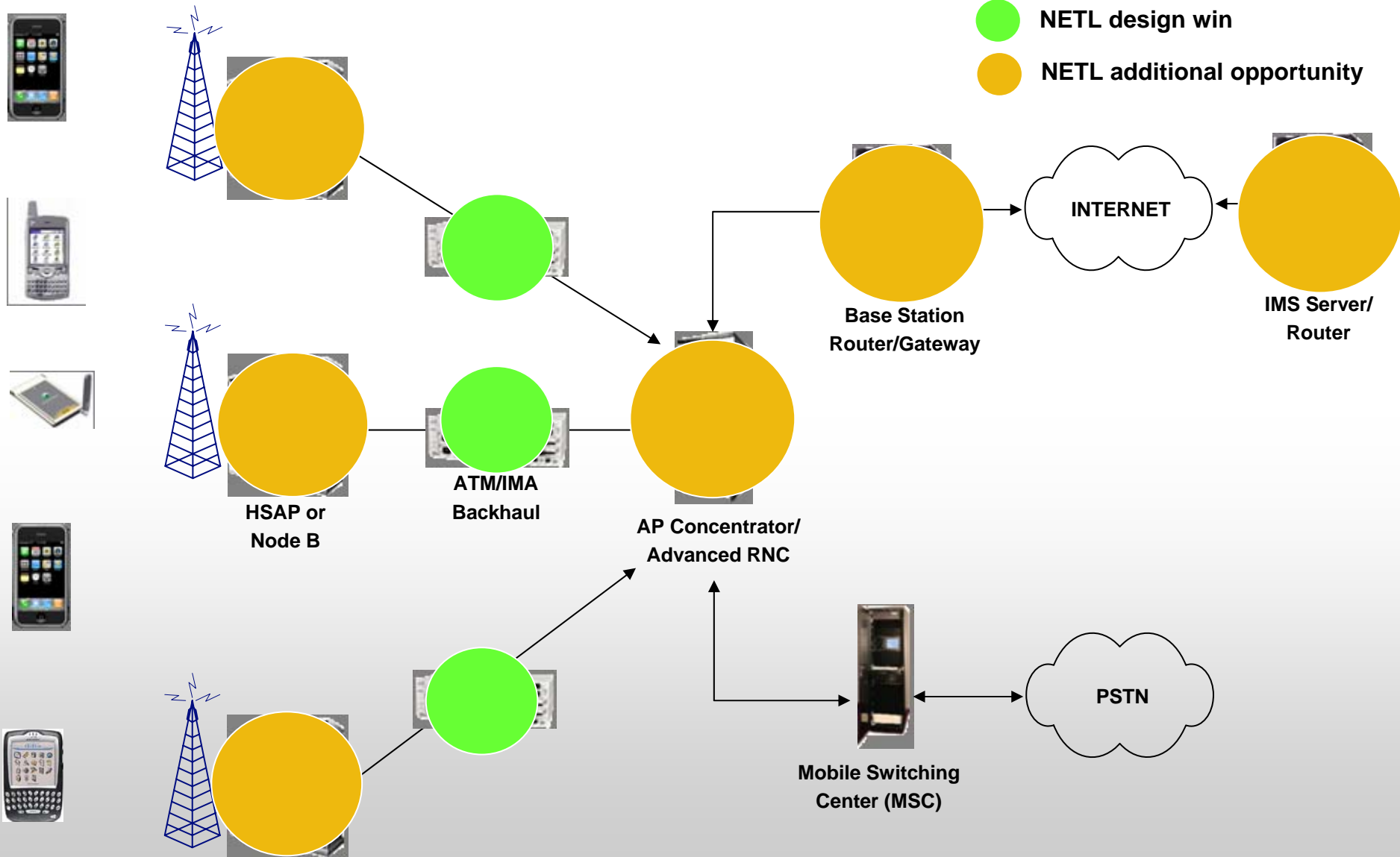
# Mobility – The Fourth Leg of Quad Play



# 3G+ Mobile Wireless



# 3G+ Mobile Wireless



# NetLogic 3G+ Opportunities



## Recent Design Wins



Alcatel-Lucent



**MOTOROLA**

**SIEMENS**

**FUJITSU**



## Additional Opportunities



Alcatel-Lucent



**MOTOROLA**

**NOKIA**  
CONNECTING PEOPLE



**NORTEL**

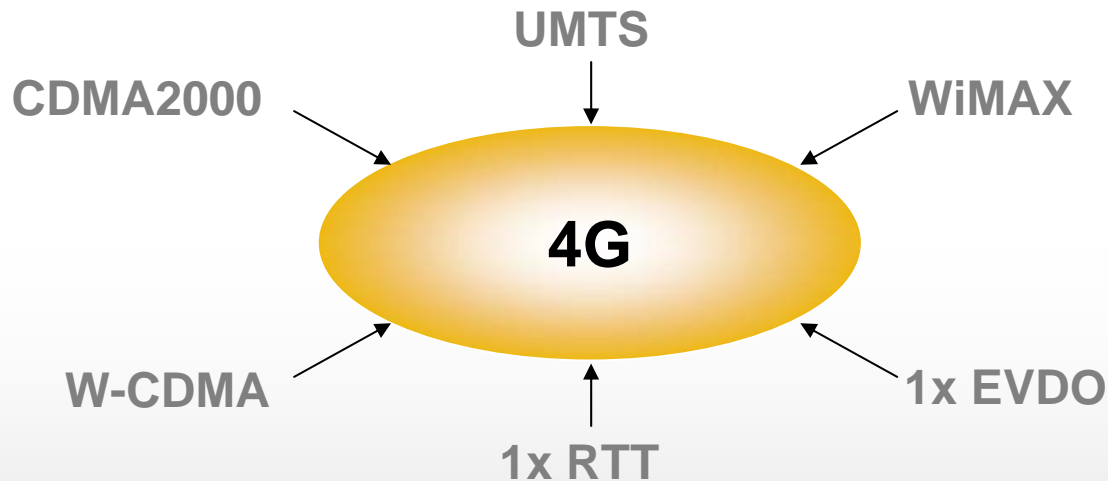
**SIEMENS**



**FUJITSU**



- Carriers are targeting 10x performance (bandwidth) at  $\frac{1}{2}$  the cost compared to 3G



- Multiple carriers targeting initial deployments in 2008

- **All IPv6 (packet-based) infrastructure**

- IPv6 keys = 2.5-4X larger than IPv4 keys

	<b>IPv4</b>	<b>IPv6</b>
Forwarding	32b	128b / 64b
ACL	128b	320b

- 4G requires 3-4 IPv6 lookups per packet
- **Net effect: 4G requires 8-16X more Knowledge-based Processing!**

- **Security at every access point to protect carrier's network**

- Widespread content inspection requirements ideally suited to NETL7

## Layers 3-4

### Advanced Core/Edge Routers, Enterprise, Metro Switches

- **NL5000/6000/7000**
  - Up to 500 million decisions/sec
  - 64K→1024K IPv4 database records
  - Parallel Processing
  - Deep Pipelining
  - Low power features & modes
- **NL8000**
  - Up to 1,200 million decisions/sec
  - 256K to 1024K IPv4 database records
  - Context Buffers
  - Key Processing Unit
- **Sahasra™ Processor**
  - 250 million decisions/sec
  - 1.5M+ IPv4 database records

# Product, Customer and Revenue Diversification



## Layers 2-3

### Entry-Level Switches & Routers

- **NETLite™ Processor**

- Simplified Instruction Set
- Low Cost Manufacturing
- Faster Time to Market
- 133 million decisions/sec
- 128K to 512K IPv4 database entries

- **Ayama™ Processor**

- Pipelined, synchronous architecture
- 128K to 512K IPv4 entries
- Mini-Key™ power mgmt

## Layers 3-4

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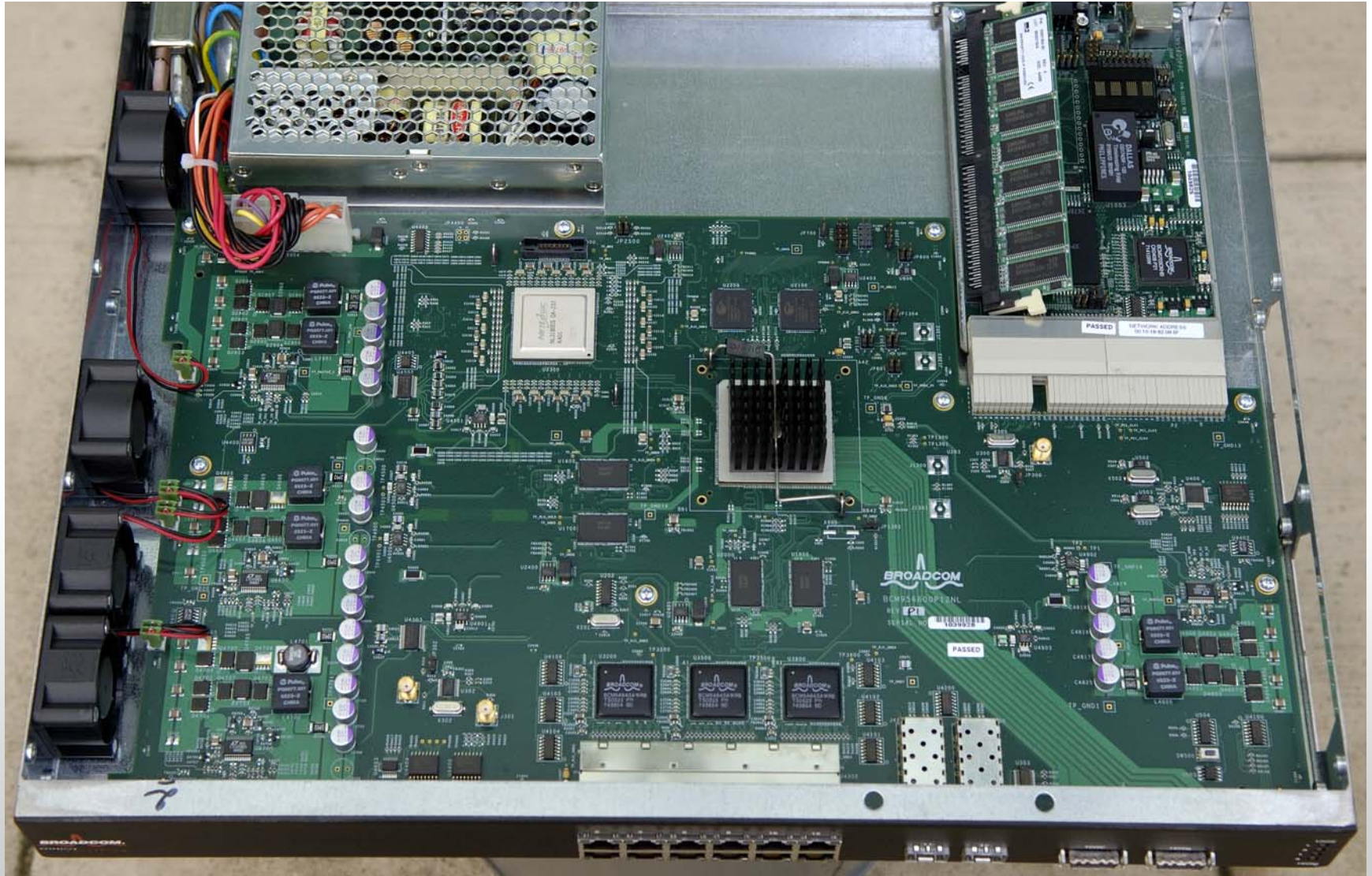
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# NETLite™ Processor - Layer 2/3 Switch Router (Broadcom-based)



# NETLite™ Partners & Target Customers



## Silicon Partners



## Existing Customers (Expansion)



## New Customers



# Product, Customer and Revenue Diversification



## Layers 2-3

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## Layers 3-4

### Advanced Core/Edge Routers, Enterprise, Metro Switches

- **NL5000/6000/7000**

- Up to 500 million decisions/sec
- 64K→1024K IPv4 database records
- Parallel Processing
- Deep Pipelining
- Low power features & modes

- **NL8000**

- Up to 1200 million decisions/sec
- 256K to 1024K IPv4 database records
- Context Buffers
- Key Processing Unit

- **Sahasra™ Processor**

- 250 million decisions/sec
- 1.5M+ IPv4 database records

## Layers 4-7

### L7 Routing/Load Balancing, UTM, IDS/IPS, Anti-Virus/Spam

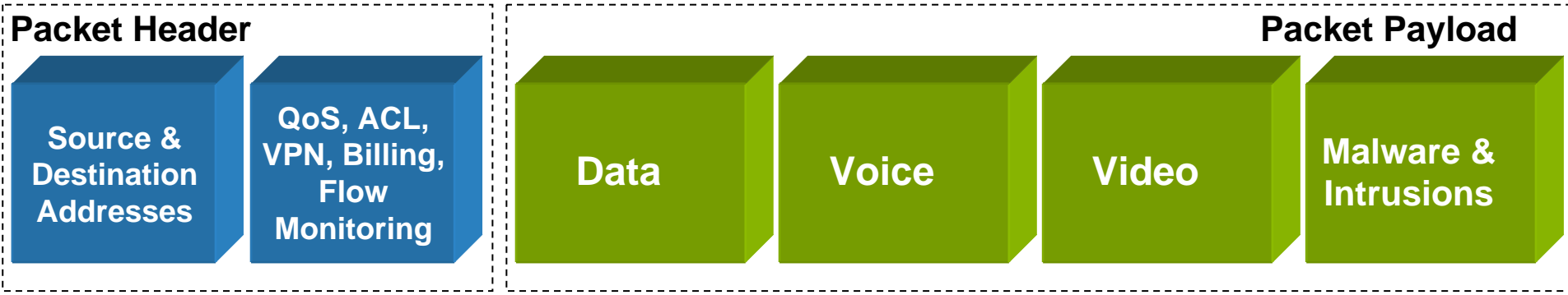
- **NETL7™ Processor**

- NLS1000 - Industry's first 10Gbps content processor
- Application-layer networking
- Network security applications
- Deep-packet content inspection and signature recognition

**NETL7™**  
knowledge-based processors

**Layer 7 Content Processing**

# Leveraging NETL's Leadership in Packet Processing



## Layer 4

250-500 bits

Market Leader



## Existing KBPs

- 10-40 Gbps
- Packet HEADER Inspection
- Layer 2-4 (Network Awareness)

## Layer 7

5K+ bits

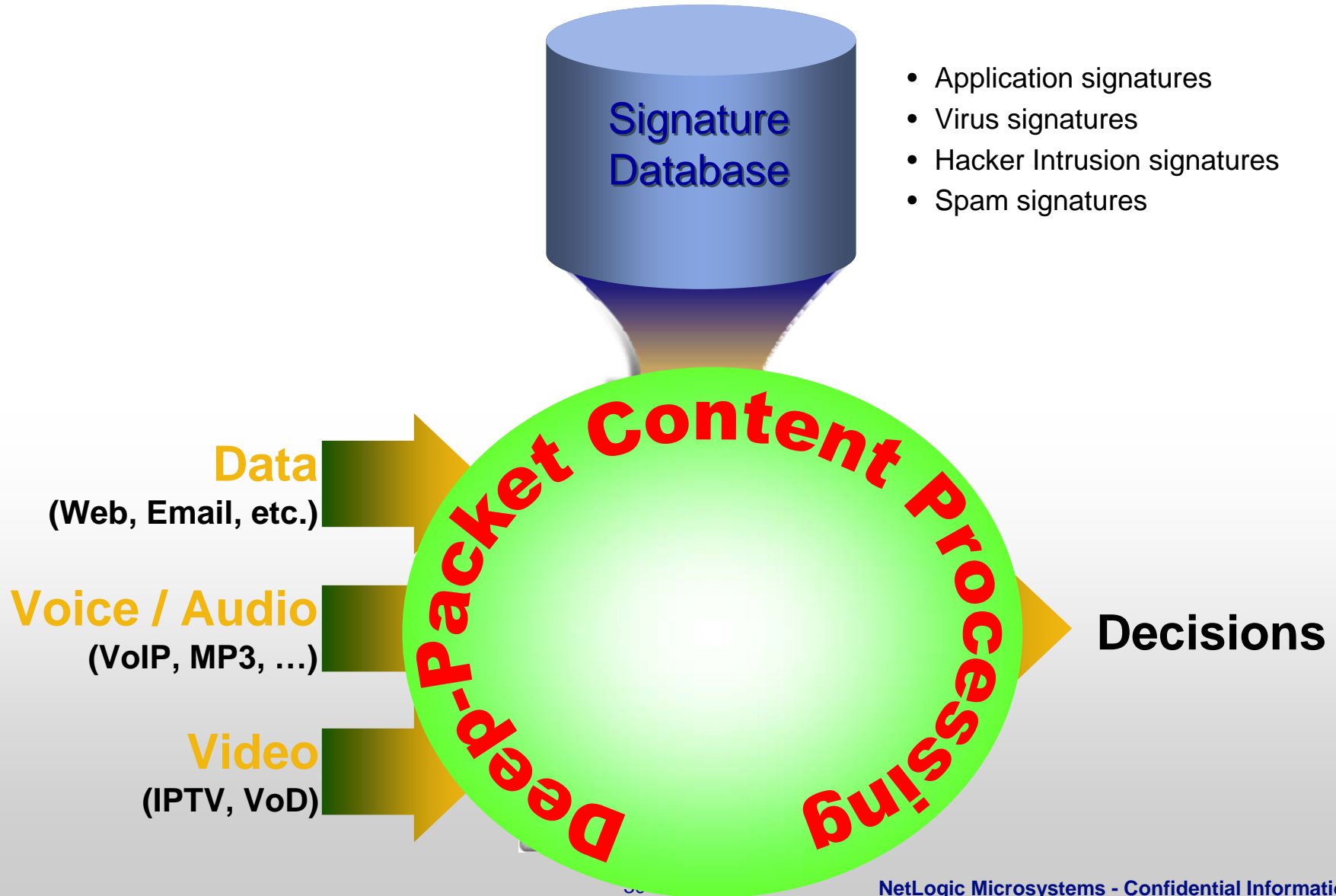


## NETL7™ Knowledge-based Processors

- 10 Gbps
- Packet PAYLOAD Inspection
- Layer 7 (Content Awareness)

# What is Content Processing?

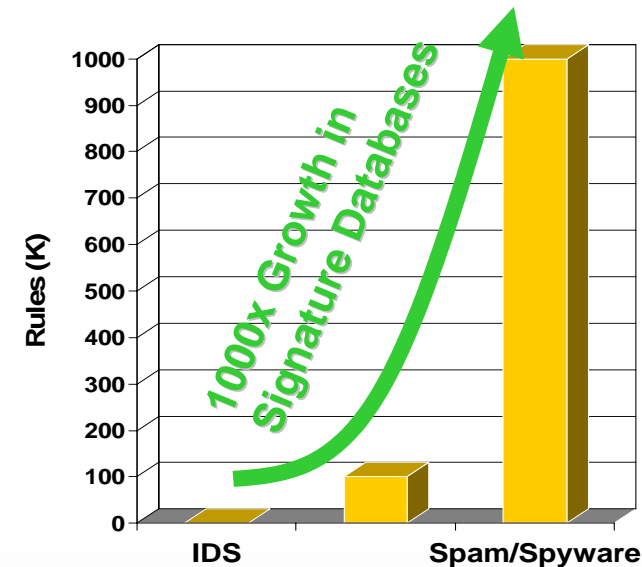
- Application signatures
- Virus signatures
- Hacker Intrusion signatures
- Spam signatures



# NETL7™ Layer 7 Knowledge-based Processors



- **Industry's first 1-10Gbps content processor**
  - Inspect every bit of voice, video and data traffic against an increasingly complex signature database
  - Signature database size and complexity expected to double every 12-18 months
- **Accelerate processing-intensive and compute-intensive functions:**
  - Deep-Packet Inspection
  - Signature Recognition (Pattern Matching)
  - Regular Expression processing
- **10-30X acceleration over software-based solutions!**



## 1. Layer 7 networking (application awareness)

- a) Application acceleration
  - Accelerate network traffic and create tiered services based on applications
- b) Content-based routing/switching
  - Apply QoS and routing policies based on content
- c) Datacenter load balancing
  - Optimize loading on servers based on applications and content

## 2. Network security

- a) Unified Threat Management (UTM)
  - Provide unified layers of defense against blended threats
- b) Intrusion Detection & Prevention Systems (IDS/IPS)
  - Prevent hacker intrusions
- c) Malware Protection
  - Prevent virus, spam and spyware attacks

## 3. Compliance and enforcement

- a) Digital Rights Management
  - Enforce legal download and transmission of media files
- b) Sensitive document protection
  - Prevent transmission of watermarked sensitive document outside of private network

# Target Markets



## Networking

### Applications:

- Layer 7 Routers
- Layer 7 Switches
- Application Acceleration Equipment

### Sample Customer Base:



## Security

### Applications:

- Unified Threat Management (UTM) Appliances
- Intrusion Detection/ Prevention Systems (IDS/IPS)
- Anti-Virus Gateways
- Anti-Spam Gateways

### Sample Customer Base:



## Datacenter

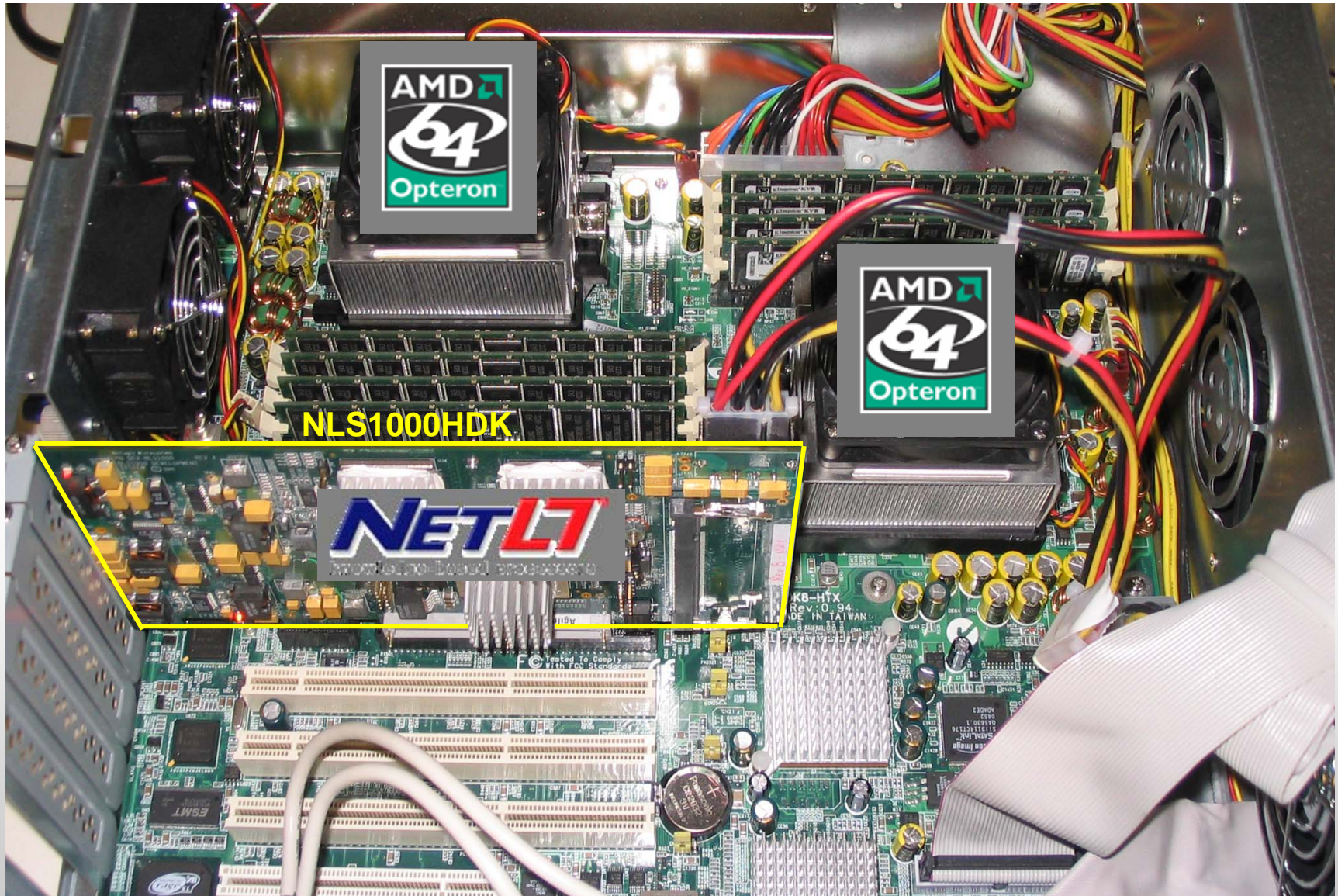
### Applications:

- Datacenter Servers
- Web Caching Servers
- Load Balancers
- Protocol Analyzers

### Sample Customer Base:



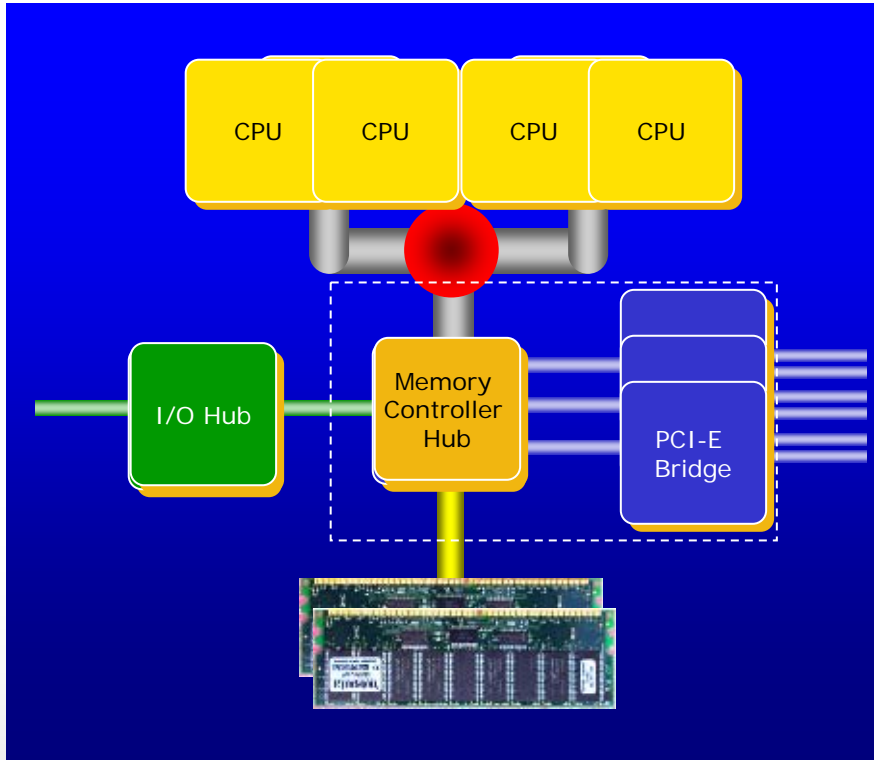
# Announced Collaboration With AMD – Opens x86 Computing Market



# High Performance Content Processing Platform

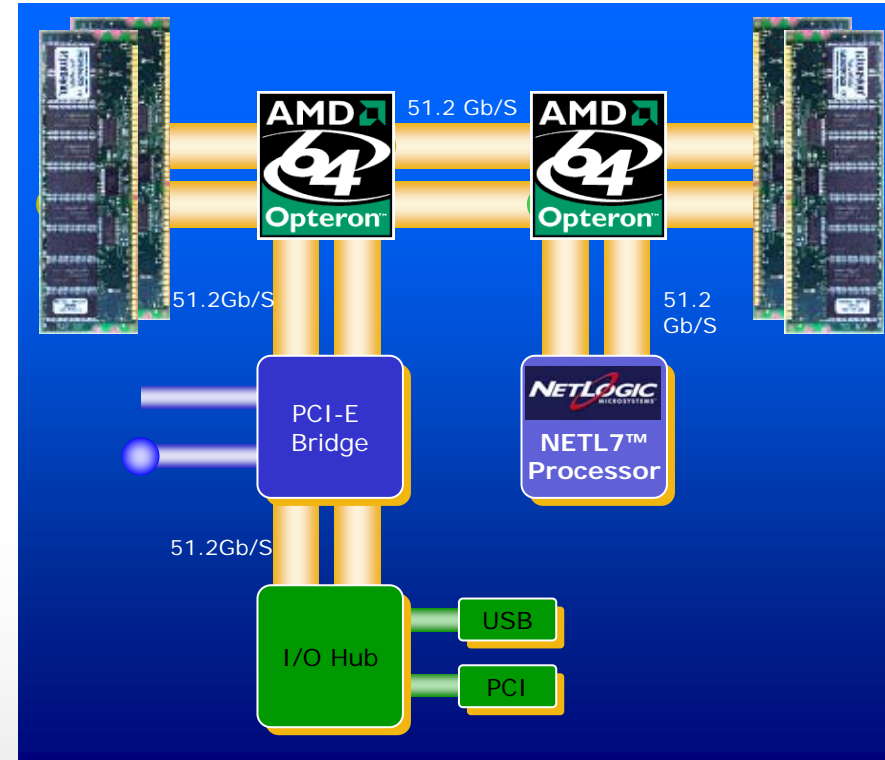


## Legacy System



- Memory and I/O compete for bandwidth on the same bus
- Memory access through MCH introduces longer latency
- Acceleration solutions connect to Processor through both PCI-E bridge and MCH

## NETL/AMD System



- Separate memory and I/O pathways eliminates bandwidth competition
- Low latency memory access with integrated memory controller
- Acceleration solutions connect directly to Processor

- Ranked by IEEE Spectrum magazine in Top 10 Companies with the **Most Powerful Patent Portfolios** in the Semiconductor Manufacturing Category, Dec 2006
- NetLogic Microsystems ranked
  - **FIRST** in “Pipeline Originality”
  - **SECOND** in “Pipeline Impact”
  - **TENTH** in the overall “Pipeline Power”
- Others in the Top 10 included Broadcom, Intel, Micron Technology, Sandisk, Texas Instruments and Xilinx





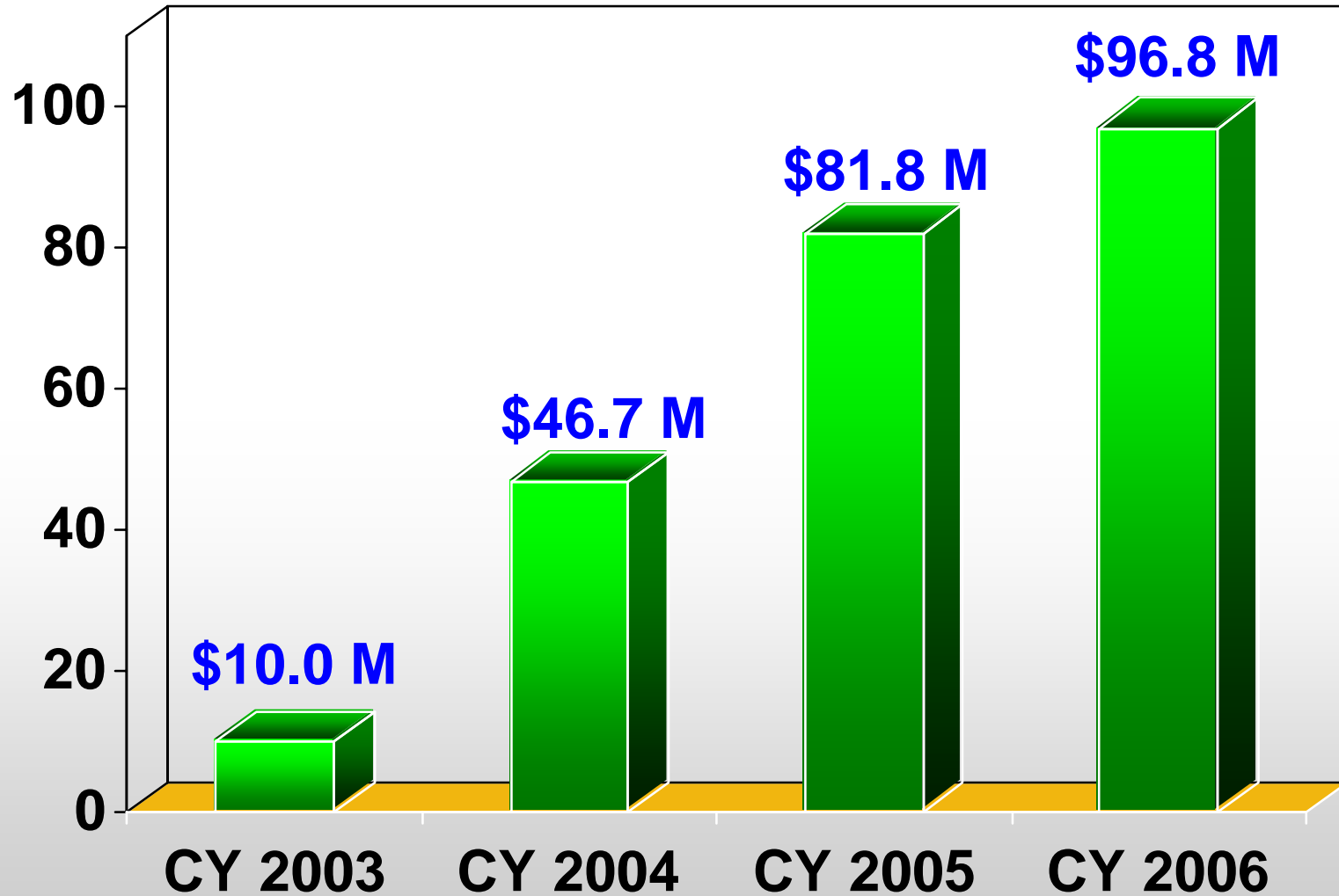
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MICROSYSTEMS™

**Putting Intelligence in the Network™**

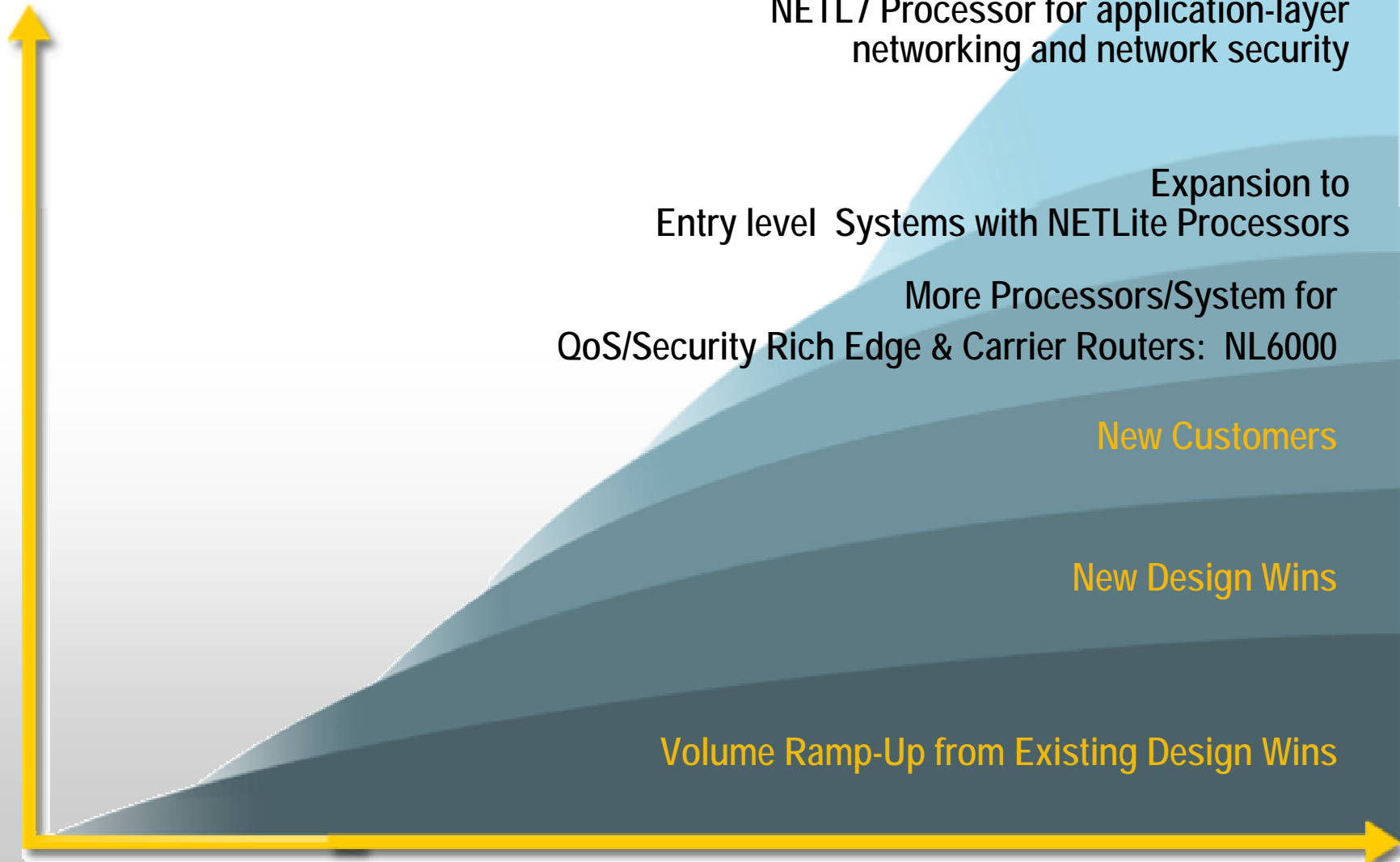
**Financials**



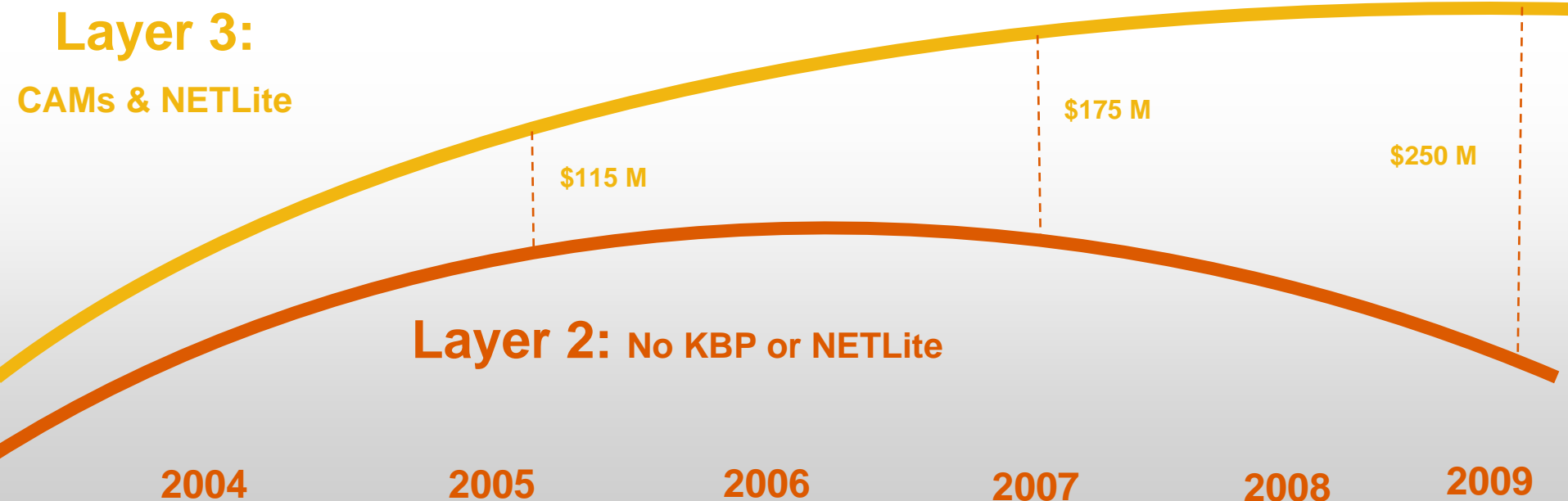
# Product Revenue Growth



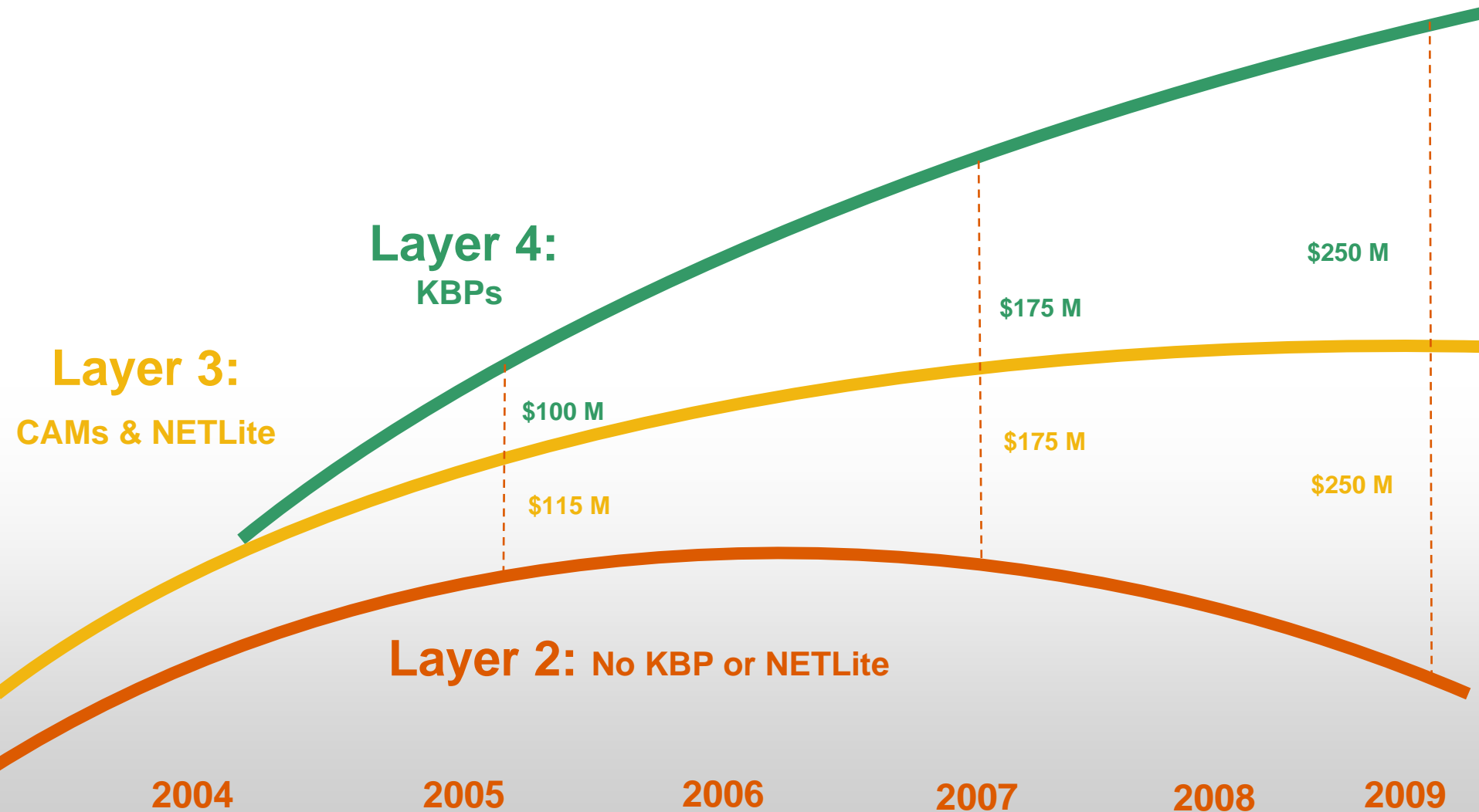
# Growth Strategy



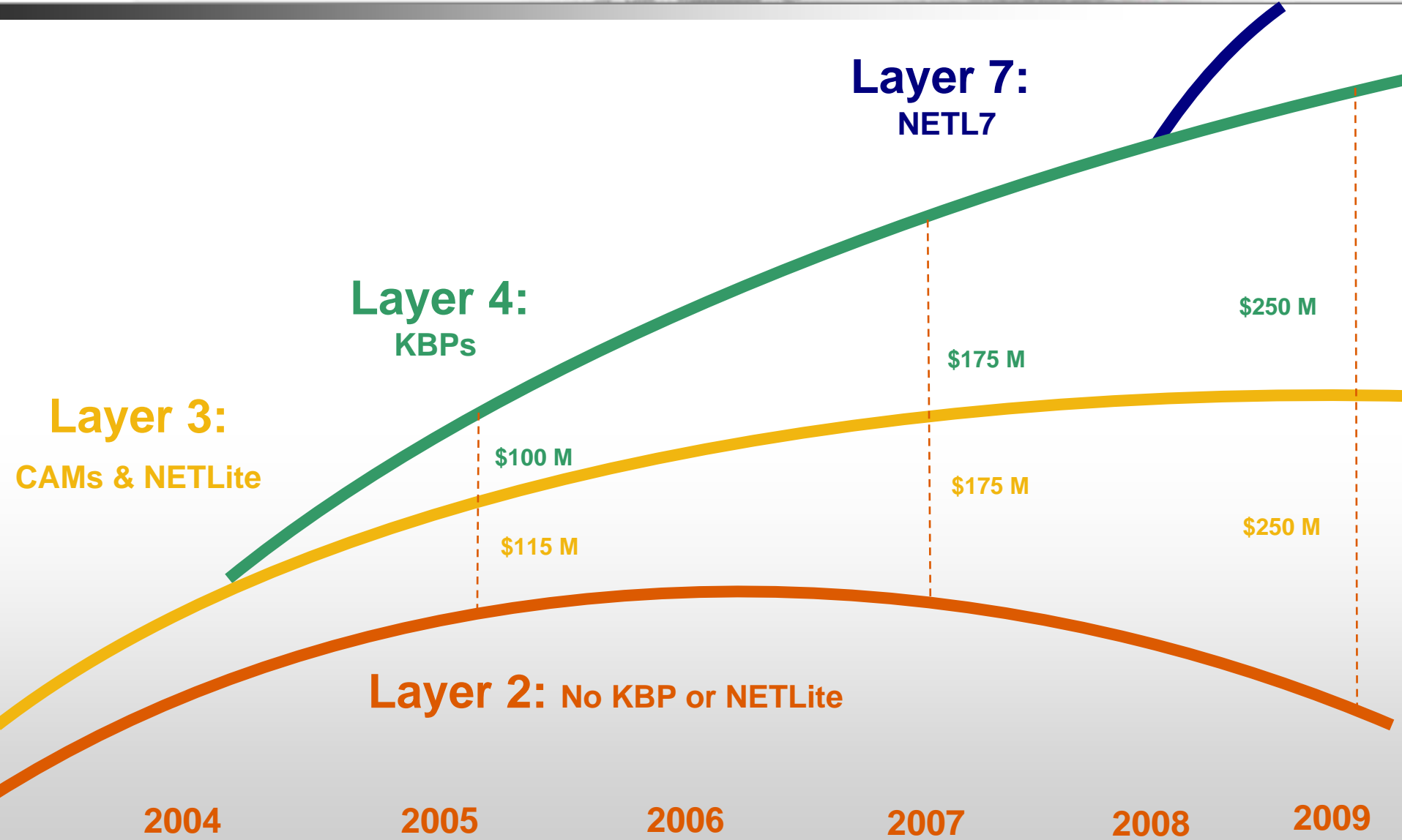
# TAM – NETL Estimates



# TAM – NETL Estimates



# TAM – NETL Estimates



# 2005 to 2006 Financial Comparison



	<u>2005</u>	<u>2006</u>	<u>% Growth</u>
Revenue	\$81.8M	\$96.8M	18%
Non-GAAP Gross Profit*	\$48.4M	\$62.90M	24%
Non-GAAP R&D*	\$21.1M	\$29.1M	38%
Non-GAAP Net Income*	\$18.3M	\$25.5M	39%
Cash Balance at Dec. 31	\$65.8M	\$89.9M	37%

\*Non-GAAP gross profit, non-GAAP net income and non-GAAP R&D excludes stock-based compensation expense and the following charges associated with the acquisition of the network search engine business from Cypress Semiconductor: amortization of intangible assets, an in-process R&D charge and the effect of a fair value adjustment to acquired inventory.

# GAAP/Non-GAAP Reconciliation



## RECONCILIATION OF GAAP GROSS MARGIN TO NON-GAAP GROSS MARGIN (UNAUDITED)

	<u>2006</u>	<u>2005</u>
Total GAAP gross margin	\$ 60,044 62.0%	\$ 48,344 59.1%
Reconciling items:		
Stock-based compensation	548 0.6%	76 0.1%
Amortization of intangible assets	1,974 2.0%	-
Fair value adjustment related to the inventory acquired from Cypress Semiconductor Corp.	288 0.3%	-
Total Non-GAAP gross margin	<u>\$ 62,854 64.9%</u>	<u>\$ 48,420 59.2%</u>

## RECONCILIATION OF GAAP NET INCOME TO NON-GAAP NET INCOME (IN THOUSANDS) (UNAUDITED)

	<u>2006</u>	<u>2005</u>
GAAP net income	\$ 592	\$ 16,439
Reconciling items:		
Stock-based compensation	11,907	1,897
In-process research and development	10,700	-
Amortization of intangible assets	1,974	-
Fair value adjustment related to the inventory acquired from Cypress Semiconductor Corp.	288	-
Non-GAAP net income	<u>\$ 25,461</u>	<u>\$ 18,336</u>

## RECONCILIATION OF GAAP R&D EXPENSE TO NON-GAAP R&D EXPENSE (IN THOUSANDS) (UNAUDITED)

	<u>2006</u>	<u>2005</u>
GAAP R&D expense	36,578	21,939
Reconciling items:		
Stock-based compensation	(7,481)	(814)
Non-GAAP R&D expense	<u>29,097</u>	<u>21,125</u>



**NETLOGIC**  
MICROSYSTEMS™

The logo features the word "NETLOGIC" in a bold, blue, sans-serif font. A red, stylized swoosh or ribbon-like element loops around the "O" and "L". Below "NETLOGIC" is the word "MICROSYSTEMS" in a smaller, blue, sans-serif font, followed by a trademark symbol (™). The background is a gradient of blue and purple with a faint, glowing circular light effect behind the "N".

**Putting Intelligence in the Network™**



**NETLOGIC**  
MICROSYSTEMS

A close-up, angled view of a square integrated circuit (chip) with a gold-colored lead frame. The chip surface is white and features the "NETLOGIC MICROSYSTEMS" logo in a light blue color. The chip is positioned in the lower right quadrant of the image, overlapping with a faint, translucent image of a human head in profile on the left.

**Knowledge-based  
Processors™**