

Future of the IP Telephony Market

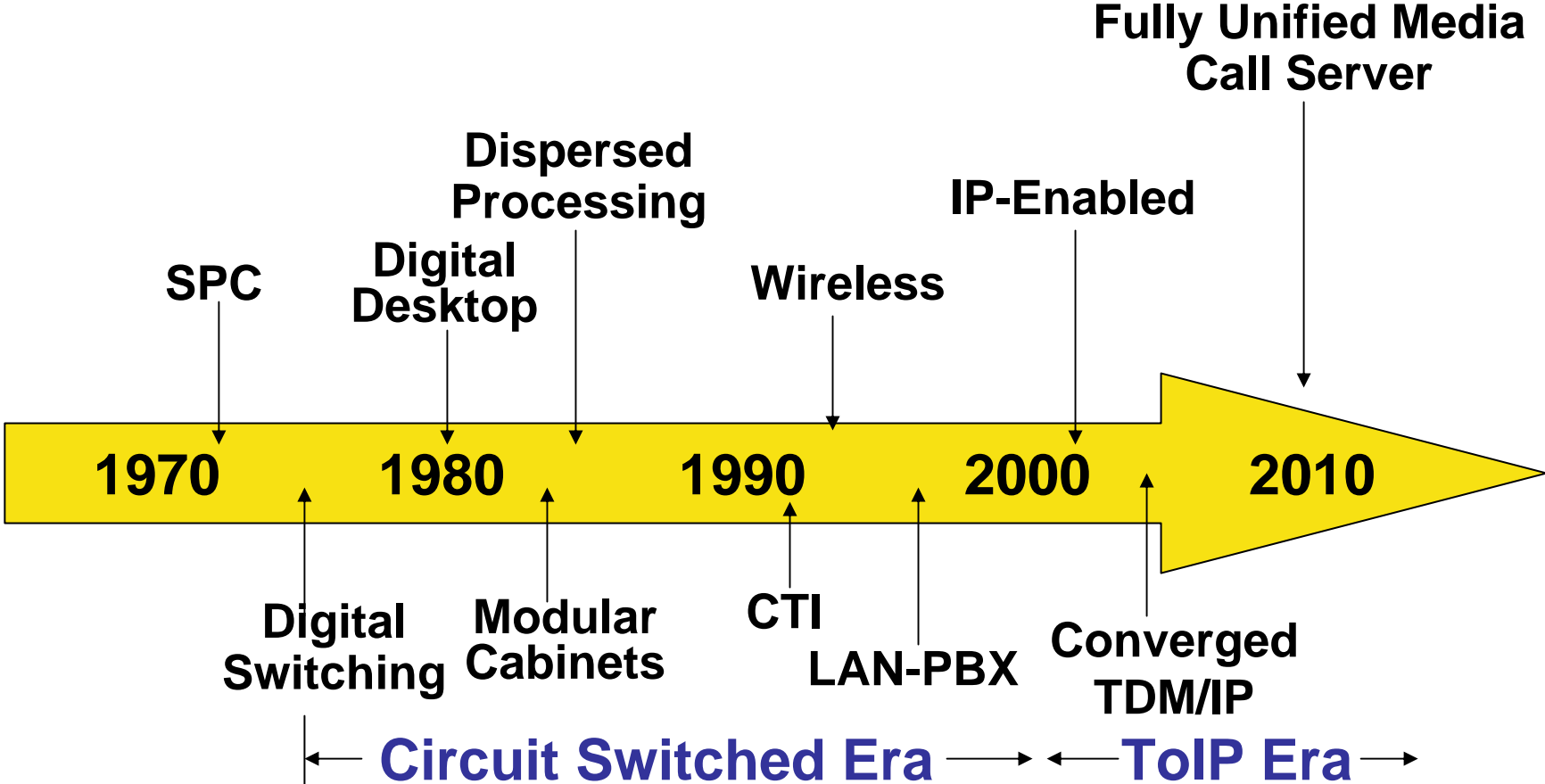
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IP Telephony Market Today

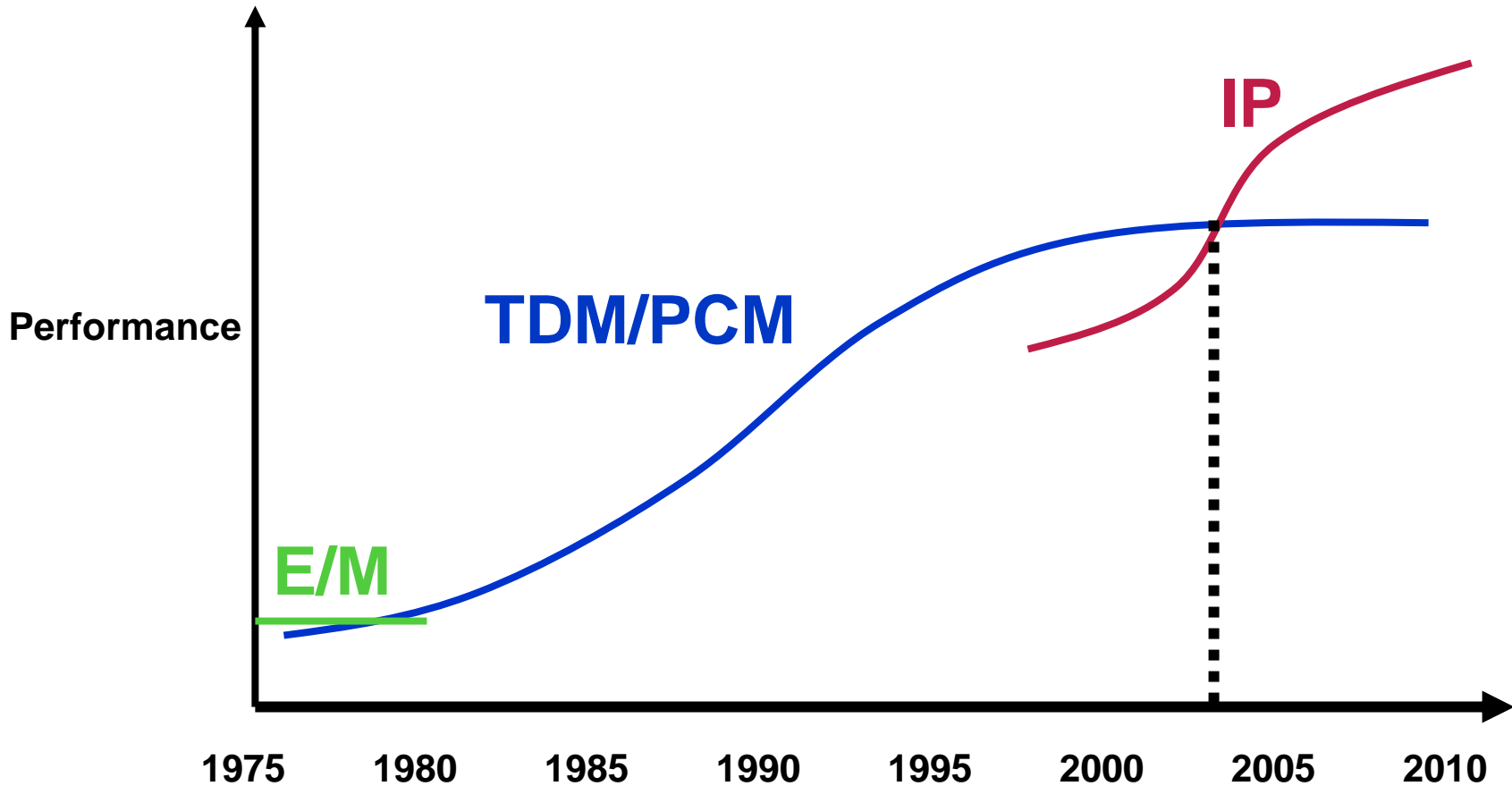
Enterprise Communications System Evolution Timeline: Major Design Developments



Limitations of Circuit Switched Telephony

- Beginning in 1975 circuit switched telephony systems evolved into highly reliable, feature-rich communications solutions, but there were several architectural design limitations:
 - Proprietary hardware/software and control signaling
 - Single transmission paths between major system design elements: common control, port signaling interfaces, and peripheral endpoints
 - Limited redundancy options
 - Fixed 64 Kbps transmission requirements
- Although still functional, circuit switched systems have reached the end of their market life-cycle and have been usurped by IP Telephony (IPT) systems

Voice Communications System Life Cycles



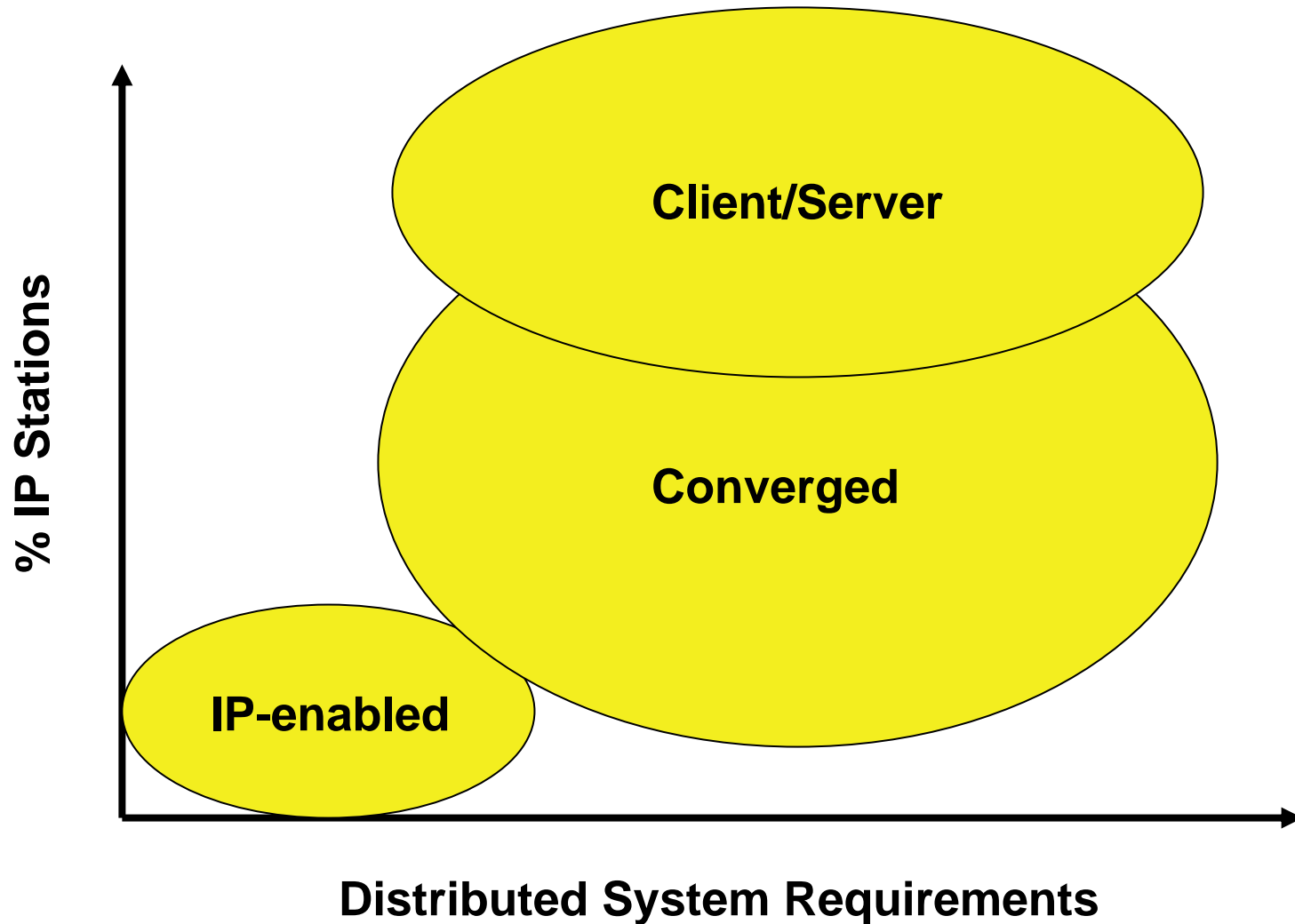
KEY E/M: Electromechanical
TDM/PCM: Time Division Multiplexing/Pulse Code Modulation
IP: Internet Protocol

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IP Telephony: Today's Foundation for Enterprise Communications Systems

- Internet Protocol Telephony (IPT) systems are based on interoperable third party hardware, packet switching technology, open system communications standards, and voice compression techniques
 - Greater system design flexibility
 - Increased levels of redundancy and resiliency
 - Facilitates converged communications applications
 - Potential cost savings and revenue generation opportunities
- Three basic IPT system designs
 - **IP-Enabled**: Circuit switched with media gateways for IP ports
 - **Converged**: Mix of circuit switched and packet switched
 - **Client/Server**: Packet switched with media gateways for non-IP ports

IPT System Positioning



Examples of IPT Systems

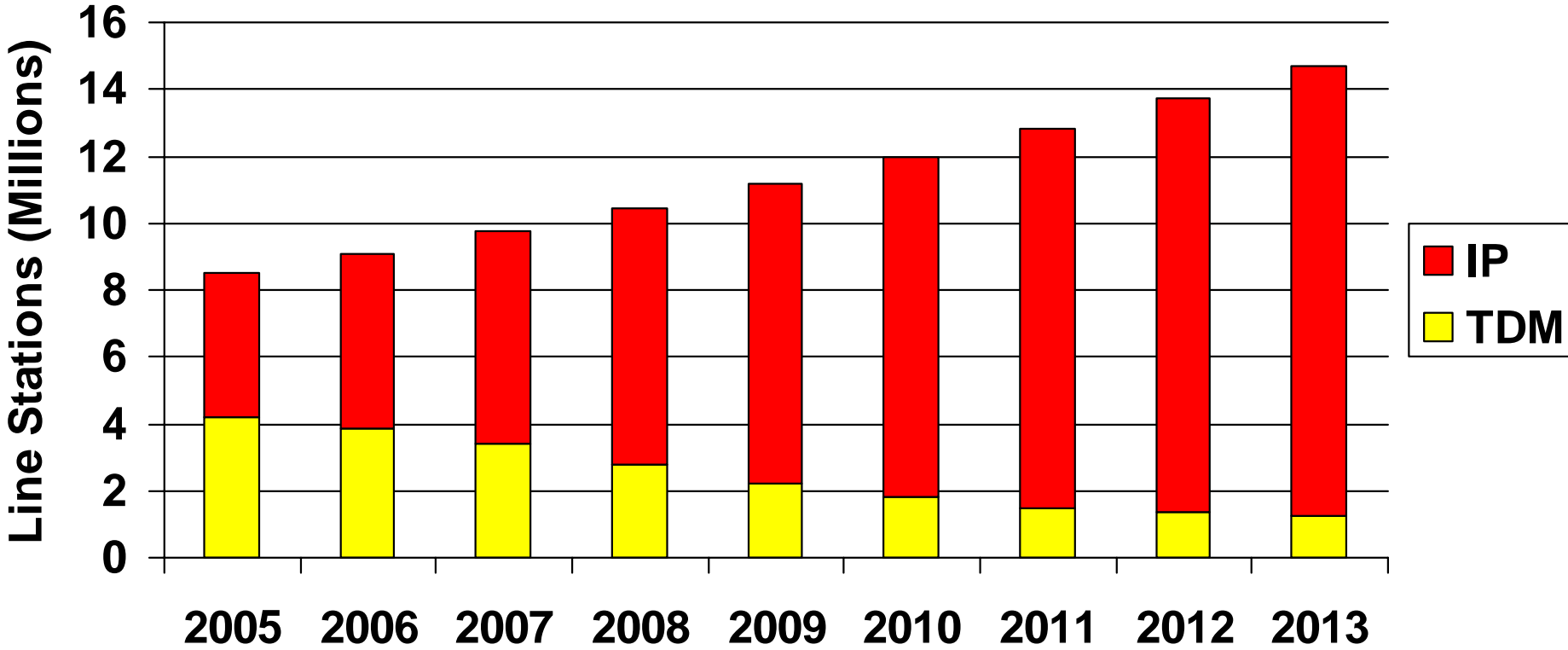
	IP-enabled	Converged	Client/Server
Avaya	Definity Server	S8400/S8500*/8700	S8300
Nortel	CS 1000M	CS 1000S/E	CS2100
Cisco			CallManager
Siemens	HiPath 4000*		HiPath 8000*
NEC	NEAX2000/2400*		Univerge SV7000
Mitel		SX-200 ICP	3300 ICP*
Alcatel		OmniPCX Enterprise	
Inter-Tel	AXXESS		7000
Ericsson	MD110		MX-ONE
3Com			VCX7000
ShoreTel			ShoreTel 6

Note: * Primary Configuration Design

Ongoing IPTS Design Trends

- **Greater support of customer-provided 3rd party call servers and media gateways**
- **Widespread deployment of Linux O/S**
- **Fully embedded SIP capabilities (IP voice client, VoIP trunk interface and peripheral server applications)**
- **More sophisticated, high performance desktop IP telephone instruments (wideband, interactive pixel display screens, peripheral interfaces)**
- **Increased focus on mobile communications options (802.11 VoWLAN, cellular extensions, dual mode handsets)**

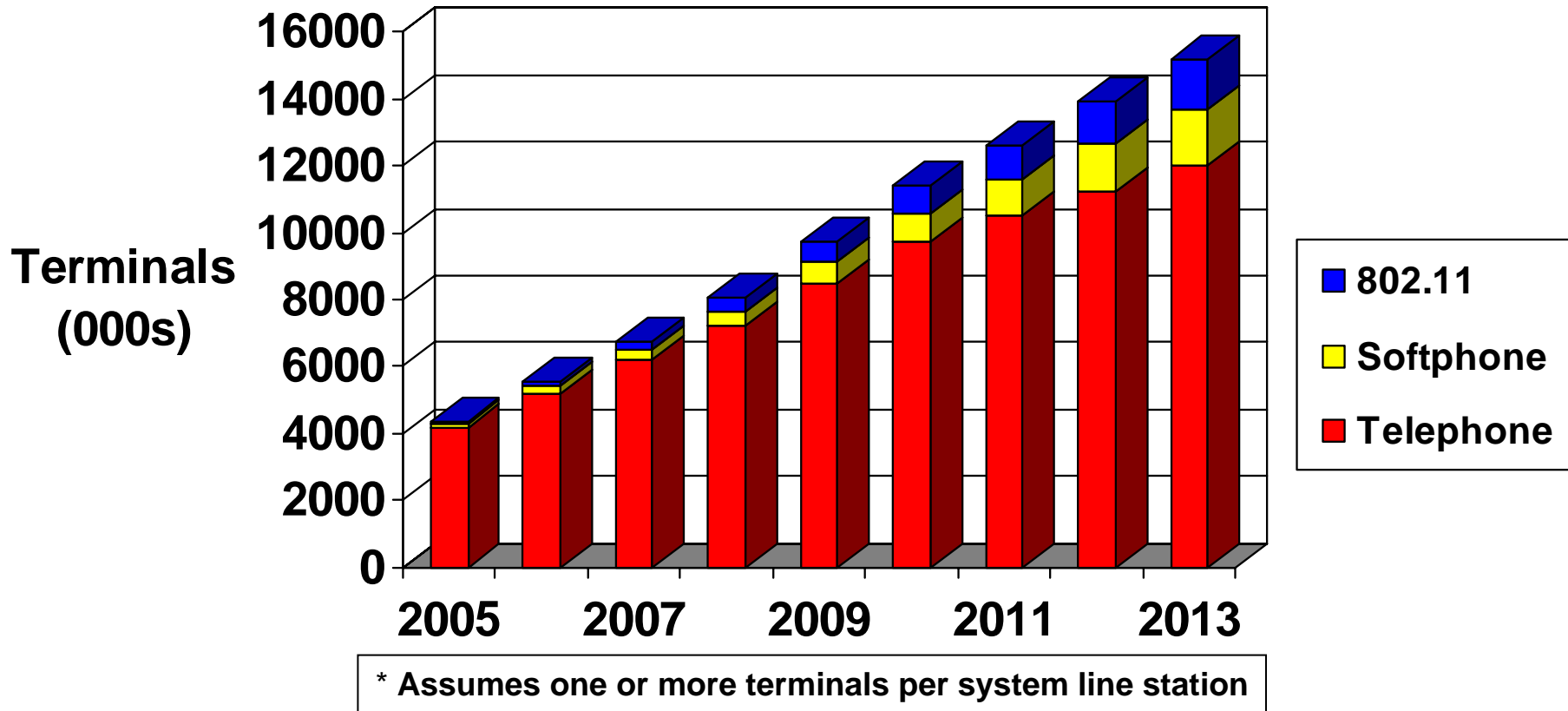
PBX Line Station Shipment Forecast



*IP Line Station Shipments Exceeded
TDM Line Station Shipments for the first time in 2005!*

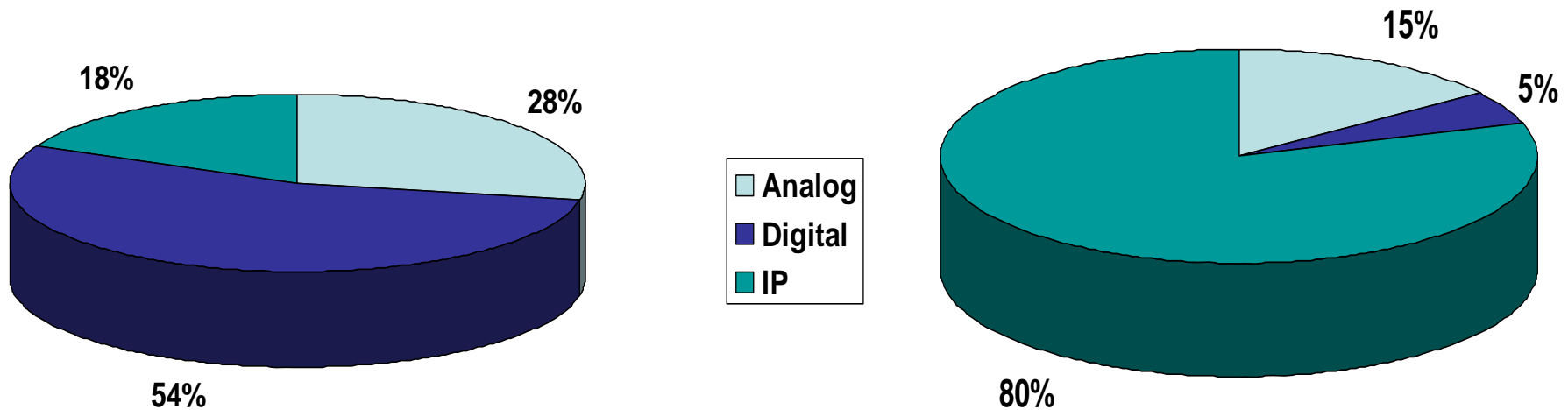
Source: TEQConsult Group, 2006 ECA CCS Market Report

PBX System IP Voice Terminal Shipment Forecast*



Source: **TEQConsult Group, 2006 ECA CCS Market Report**
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Changing PBX System Installed Base by Line Station Type

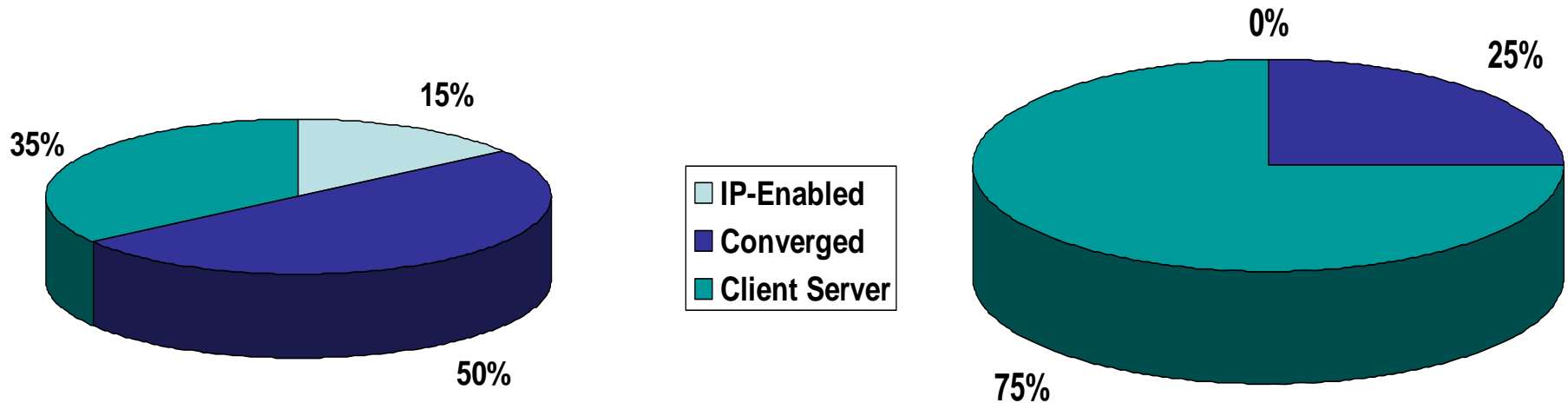


2005: 60.5 Million Line Stations

2013: 80.55 Million Line Stations

Source: **TEQConsult Group, 2006 ECA CCS Market Report**

Changing Enterprise IP Telephony System Shipments by Design Type



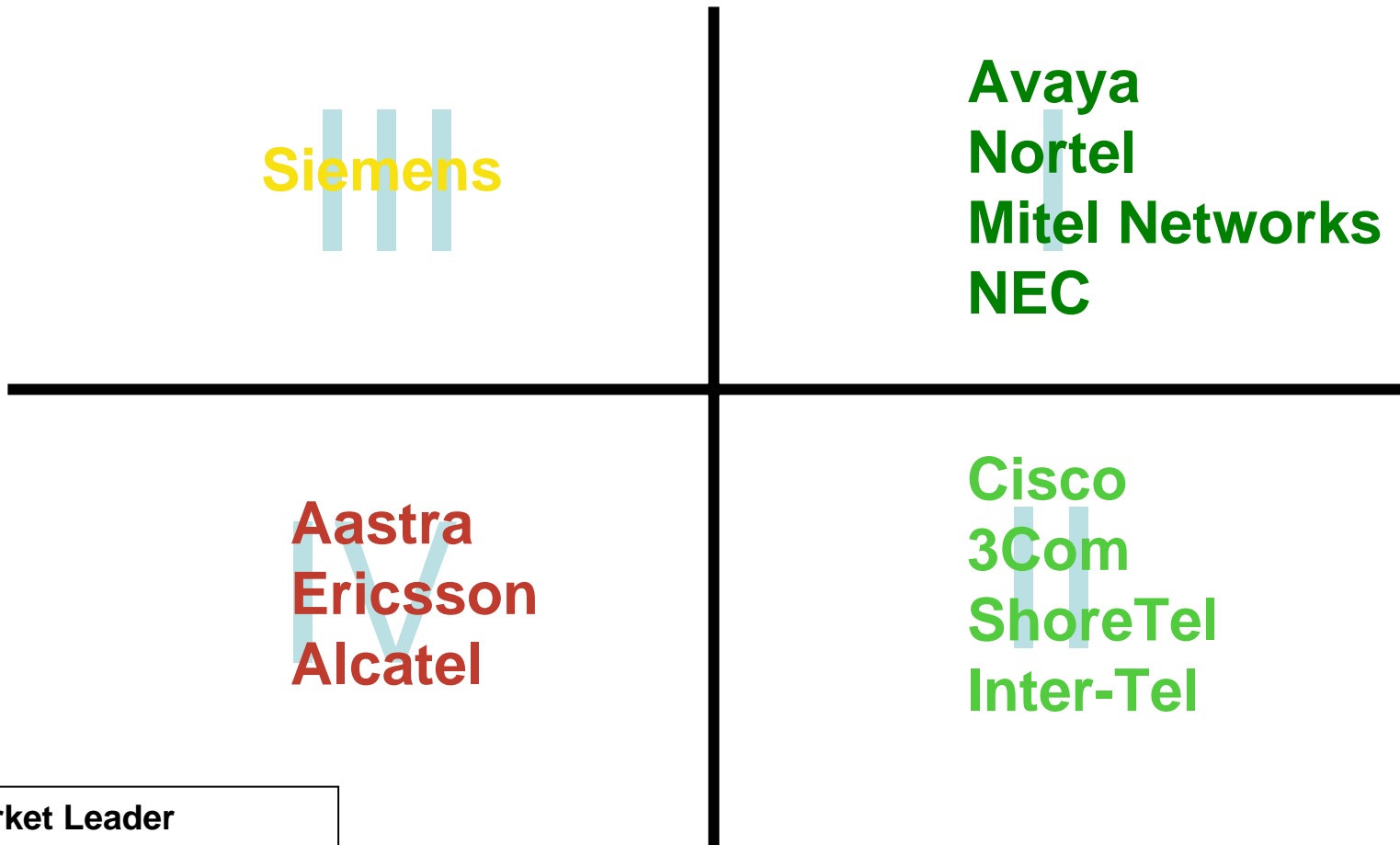
2005: 8.5 Million Line Stations

2010: 12 Million Line Stations

Source: TEQConsult Group, *2006 ECA CCS Market Report*

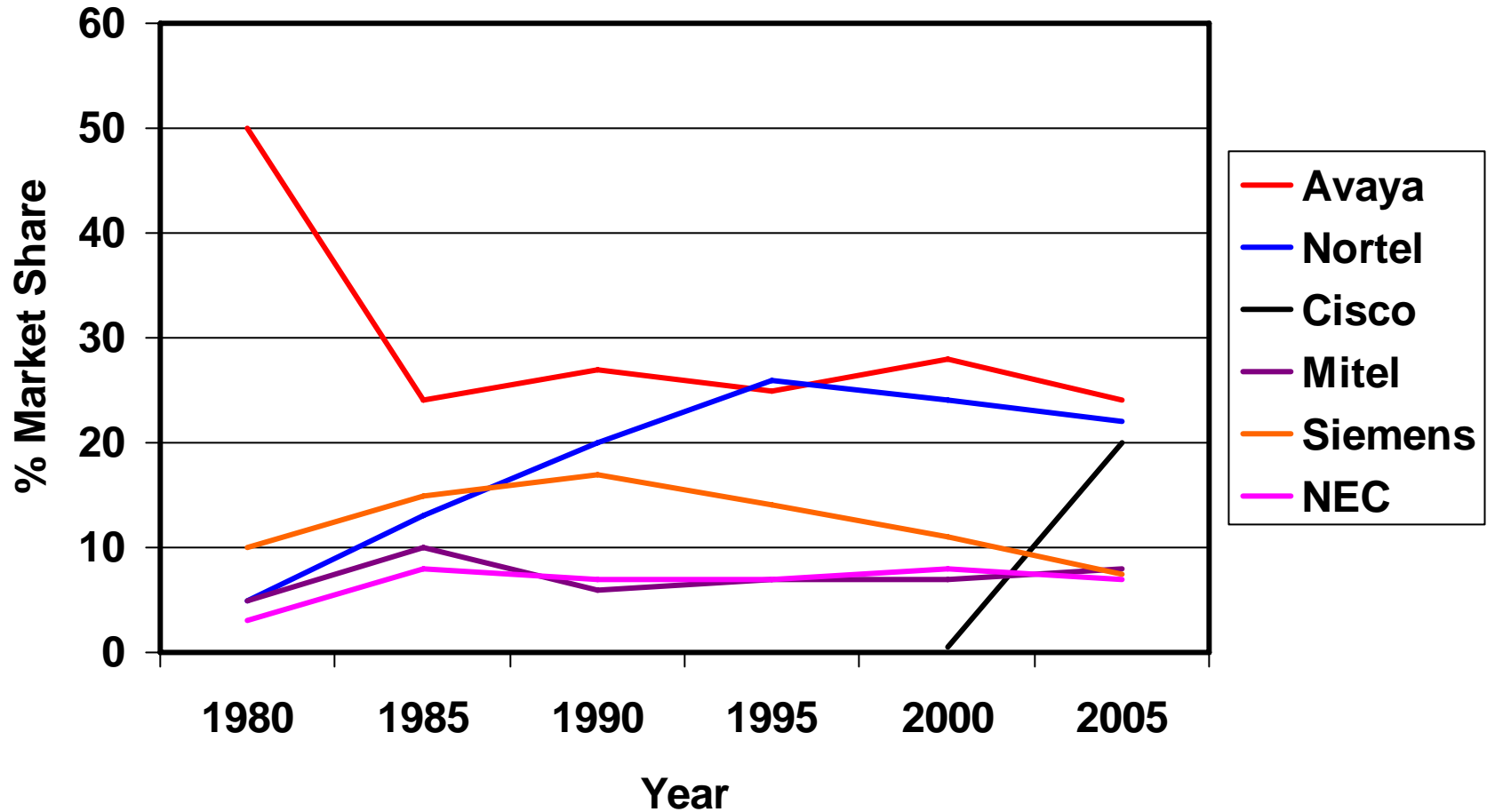
IPT Enterprise Market Competitors

Competitor Market Positioning



- I: Market Leader
- II: Improving Competitor
- III: Slipping Market Leader
- IV: Lagging Competitor

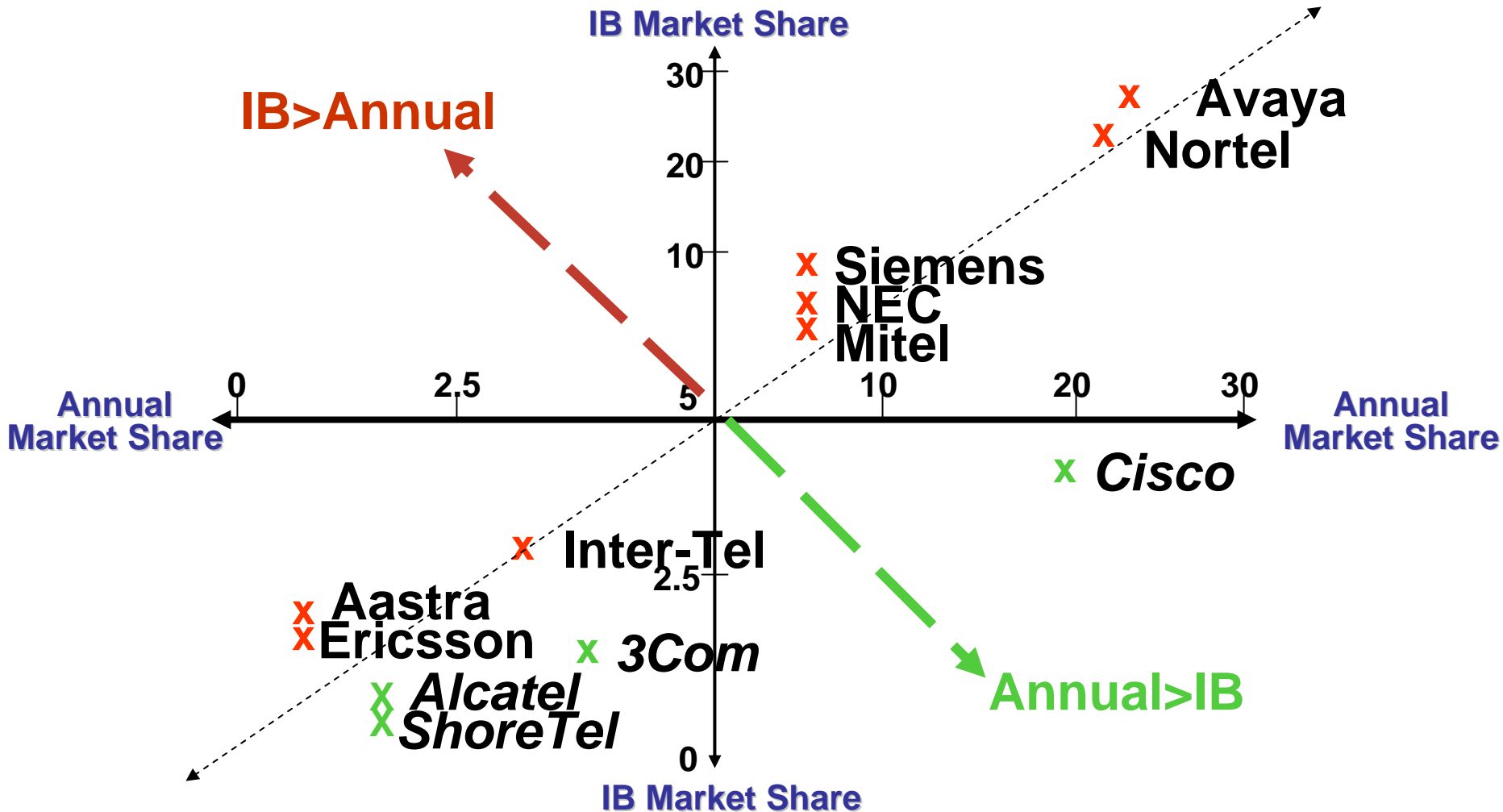
PBX Market Shares



Source: TEQConsult Group Estimates

Competitor Share Positioning

*Annual Market Share/IB Market Share**



*Source Data: TEQConsult Group Estimates TEQConsult Group

Competitor Offerings (1)

	IPT Systems	LAN/WAN	Comm. Applications	Professional Services
Avaya	Very Strong*	Moderate	Very Strong**	Very Strong*
Nortel	Very Strong	Strong	Very Strong**	Strong
Cisco	Strong	Very Strong*	Strong	Very Strong
Siemens	Very Strong	N/A	Very Strong**	Very Strong
NEC	Very Strong	Mod. Strong	Strong	Very Strong
Mitel	Strong	N/A	Strong	Moderately Strong

* Market Leader
 ** Co-Market Leader

Competitor Offerings (2)

	IPT Systems	LAN/WAN	Comm. Applications	Professional Services
3Com	Mod. Strong	Strong	Moderately Strong	Moderate
Inter-Tel	Mod. Strong	N/A	Strong	Strong
ShoreTel	Mod. Strong	N/A	Moderately Strong	Limited
Alcatel	Very Strong	Strong	Very Strong**	Moderate
Ericsson	Strong	N/A	Strong	Moderate
Aastra	Mod. Strong	N/A	Moderately Strong	Moderately Strong

* Market Leader
 ** Co-Market Leader







Competitor Assessment (1)

	Corporate Viability	Products & Services	Marketing	Distribution
Avaya	Strong	Very Strong	Strong	Very Strong
Nortel	Moderately Strong	Very Strong	Strong	Very Strong
Cisco	Very Strong	Very Strong	Very Strong	Very Strong
Siemens EN	Strong (?)	Very Strong	Strong	Strong
NEC	Very Strong	Very Strong	Moderately Strong	Very Strong
Mitel	Moderately Strong	Strong	Strong	Strong







Competitor Assessment (2)

	Corporate Viability	Products & Services	Marketing	Distribution
3Com	Moderately Strong	Strong	Moderately Strong	Moderate
Inter-Tel	Strong	Strong	Moderately Strong	Very Strong
ShoreTel	Moderately Strong	Moderately Strong	Strong	Moderately Strong
Alcatel	Very Strong	Very Strong	Moderate	Moderate
Ericsson	Very Strong	Strong	Moderate	Moderate
Aastra	Moderately Strong	Moderately Strong	Moderate	Moderate

Competitor Outlook (1)

	Outlook	Comments
Avaya		New CEO/COO; Continuing Product Enhancements; Likely M&A Activity; Strong Channels; Services & Applications Focused
Nortel		Corporate Recovery Phase; MSFT Relationship; Risky Distribution Relationships; Greater Services Focus; Potential ESPN Spin-off
Cisco		Dominant Datacom Position; Improving Telephony Products; Superior Marketing; Deep Pockets; Best Management Team
Siemens EN		Consolidation Will Enhance Market Presence and Market Space Focus; Improved (delayed) IPTS Portfolio; Very Strong Global Presence, but Too Euro-centric
NEC		Technology Focused; More Marketing Resources Needed; Competitive, but not Best in Breed, Applications Solutions; Strong Channel Strategy
Mitel		IPO Provides Cash Infusion, but More Scrutiny; Delayed Large IPTS Now Available; Very Competitive Pricing

Competitor Outlook (1)

	Outlook	Comments
3Com		SME Market Success, but Larger Enterprise Market Proving More Difficult; Stronger Channel Partners Needed; Corporate Position Shaky, a; Likely M&A Candidate
Inter-Tel		Corporate Ownership Fight; Limited Higher End Market Potential; Competitive Applications Solutions; Very Strong Direct Channel Operations (Managed Services)
ShoreTel		Only Successful Still-Independent 1990s Start-up; Establishing Market Credentials; Savvy Marketing; IPTS and Applications Offerings Still Need Improvement
Alcatel		Alcatel/Lucent Could Help or Harm Enterprise Group; Has Failed to Establish Strong US Market Presence; Limited Local Resources; Needs Direct Sales/Service Presence
Ericsson		Corporation is Mobile-focused; Weakened US Market Presence (Resources, Channels); Little Signs of Improvement; Enterprise Systems Spin-Off?
Aastra		Long Term Decline Looks to Continue; Outdated IPTS Portfolio; Limited Corporate Resources; Likely M&A Candidate

Tomorrow's Enterprise IPT Competitors?

- Microsoft
 - Slowly creeping into market via Unified Communications
 - Strategy is focused on PC as replacement for desktop telephone
- Nokia
 - Cellular PBX extension relationships with several IPT suppliers
 - Needs to expand from network to enterprise market to continue growth
- PC/Server Suppliers (HP, Dell, IBM): Voice just another application
- Internet Players (Google, Yahoo, AOL): Real-time voice communications builds on IM offerings

Network Hosted IPT: An Alternative Solution to CPE

- Network hosted IPT is a managed services offering that includes traditional telephony features/functions usually bundled with network transmission services (local access/long distance; voice/Internet)
- To date the primary customers have been SME customers, most who previously deployed KTS/Hybrids or Centrex service; larger enterprise customers are also being targeted
- Hosted IPT offerings are available from major carriers, such as AT&T and Verizon, independent local/regional start-up, and even established CPE suppliers, such as Avaya (Avaya on Demand)

Summary

- Customer demand for IPT systems and applications is growing and changing the look of the enterprise communications market landscape
- Established PBX system suppliers, such as Avaya and Nortel, have successfully migrated their offerings to IPT, but a few new competitors have also been able to establish their market presence
 - Cisco has upset the market equilibrium and is poised to assume a position atop the market leader board
 - New competitors, such as Microsoft, are also ready to enter from other market sectors that intersect with enterprise communications
- Competitor consolidation is very likely to occur, because there are currently too many competitors slicing up a moderately growing (5% - 7%) market pie

Thank You for your Time

Questions?

For More Information about:

TEQConsult Group: <http://www.teqconsult.com>

2006 ECA CCS Market Report: <http://www.encomm.org/eca-market-intelligence.htm>