

EUROPE IN 30 MINUTES

Presented By

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www.modt.se



BUS&BOARD 2001

In These 30 Minutes

- What I Do
- Geography
- Market Segments
- Numbers
- Vendors
- Trends



MODT AB

What We Do

- Consulting
- Market Research
- Market Report
 - European Embedded Board Market
- European Telecom Market Watch



The Market Research

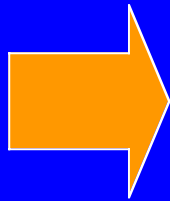
MODT AB And
Buses+Boards Europe

- Survey of Vendors
- Interviews With Users
- Interviews With Vendors



What Is Measured

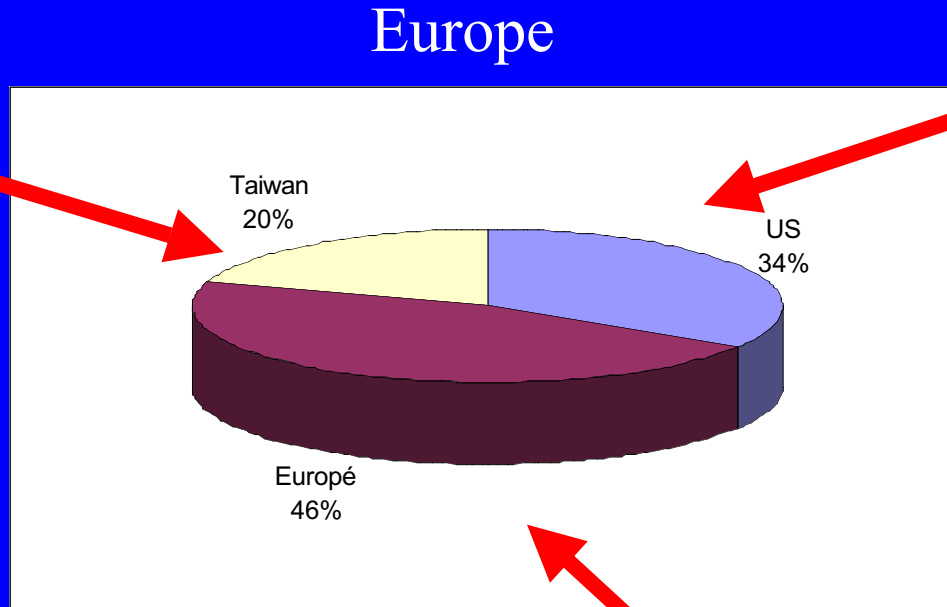
- Board Count Only
- Systems Are Converted To Board Count
- No Chassis, Software, Power Supply, etc



Boards * ASP = Value

Who Ships Boards To Europe

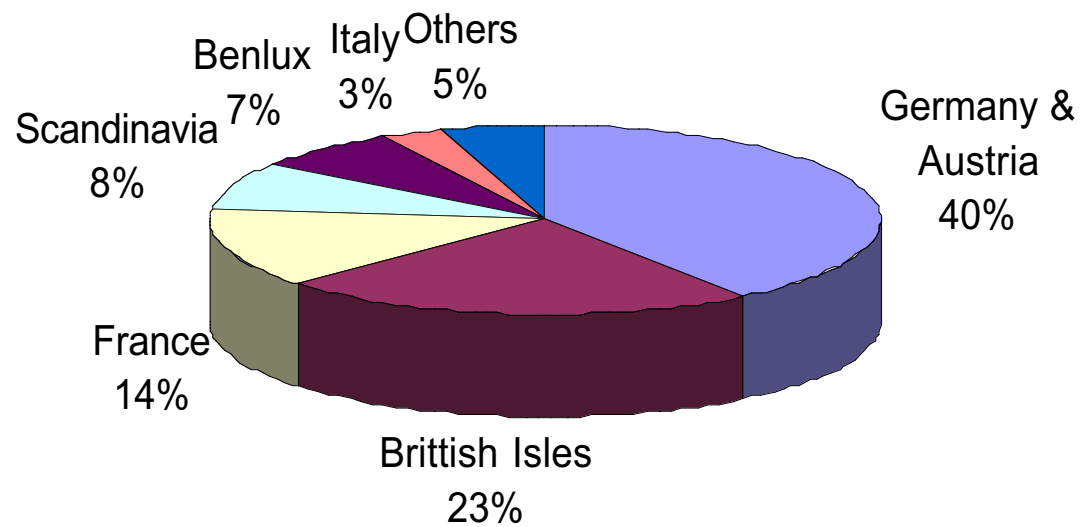
Taiwan
PCI
ISA
SBC
PC104
CPCI 3U



US
VME 6U
CPCI 6U
PCI

Europe
VME 6U, 3U
CPCI 3U, PCI, ISA, PC104

Geography



Europé - The Regions

Central- Germany + Austria

- 40% Of The European Market
- 55% Local Production
- Strong Industrial
- Medical, Telecom, Military

The Isles - UK And Ireland

- 23% of The European Market
- 25% Local Production
- Computer Telephony
- US Telecom Vendors' Production

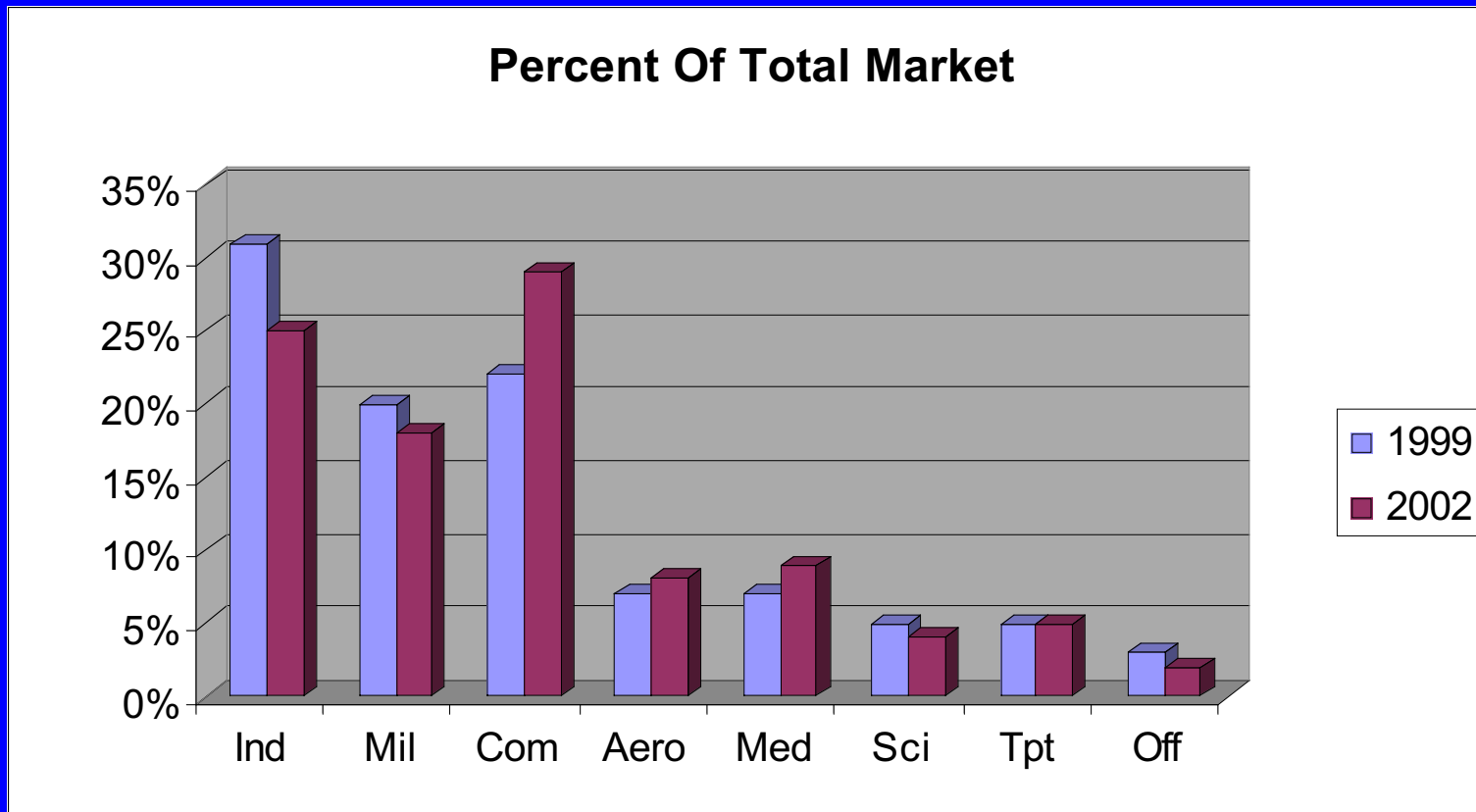
France

- 14% Of The European Market
- Not a Strong Telecom Market Yet
- Alcatel Is Important Everywhere But Not Really in France

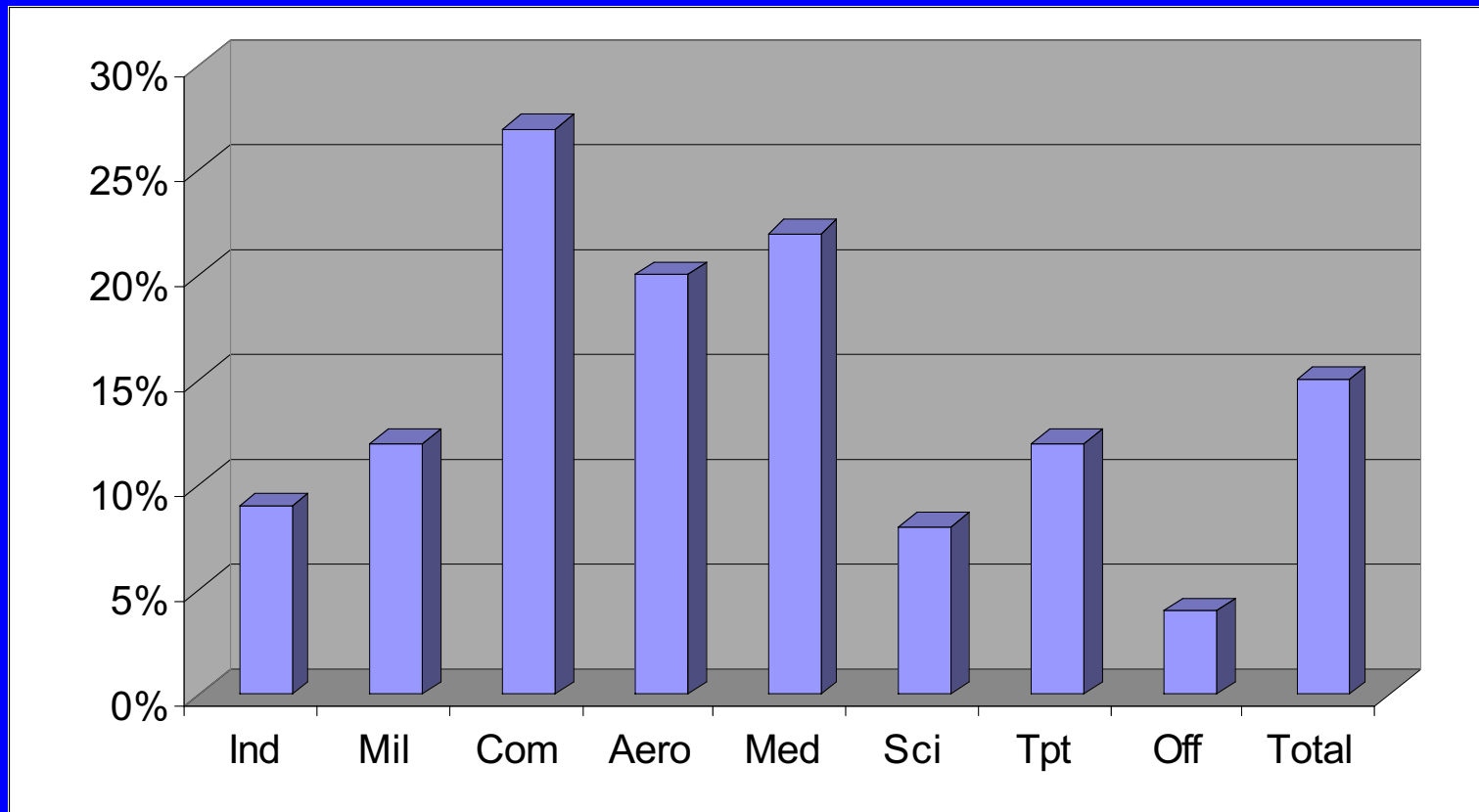
Scandinavia

- Ericsson And Nokia
- Leaders In Outsourcing
- Time To Market – No Big Protected Home Market
- GSM Dominance Today
- UMTS On A Very Steep Curve

Market Segments



CAGR 1999 To 2002



Industrial

- CAGR 9%
- Electronics Everywhere - Internet
 - PC Replaces Controllers
- Industrial PCs And Field Buses
- PC Technology In Various Forms
 - PCI - ISA - PC104 - PISA – *CPCI 3U*
 - Industrial PCs - Panel PCs

Military

- 12% CAGR
- COTS Is Not As Strong In Europe As In US
- All Major European Vendors State US As The Major Market
- 74% Of All Board Vendors Have Business in Military In 1999 (Top Segment)

Telecom

Europe Was Behind In Open Systems For Telecom

Year 2000 Was The Point Of Change

Telecom 1999

- VME Used for Interface Applications
- PCI Dominates Computer Telephony
- CPCI Starts In GSM Applications

Telecom 2000

- CPCI Default Standard
 - GSM
 - UMTS
 - Soft Switch
- PCI Still Dominates
 - CTI and Enterprise
 - Data Centres
- PMC on Customer Boards

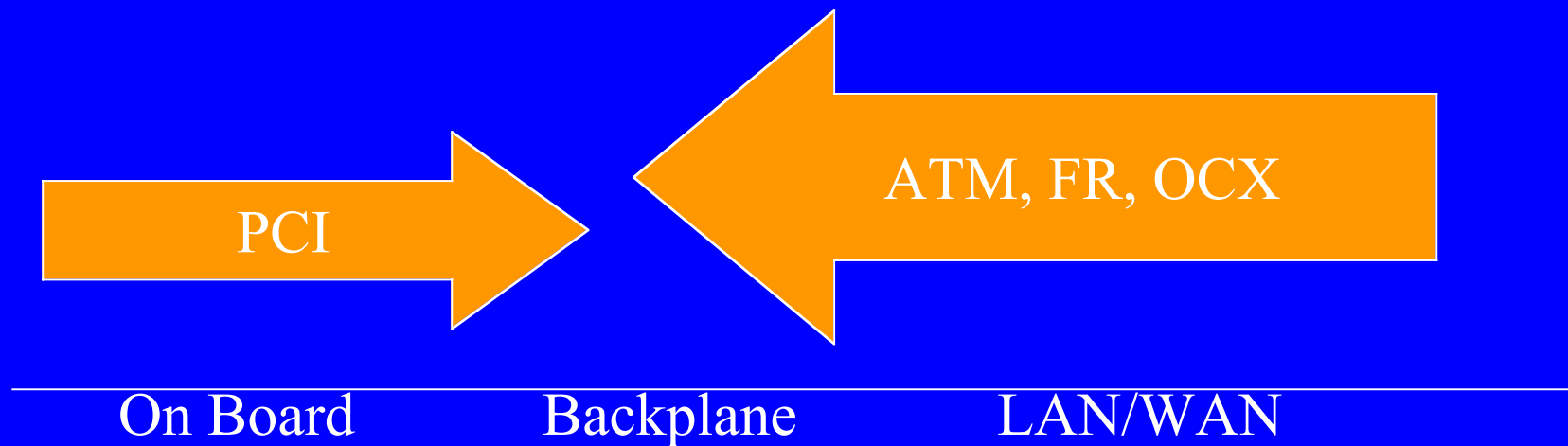
Processor
Blades

Why CPCI

- Customers Say
 - Standard Form Factor
 - Many Vendors
 - Low Cost
- Customers Do Not Say
 - Bus Speed
 - Hot Swap - HA
 - H 110

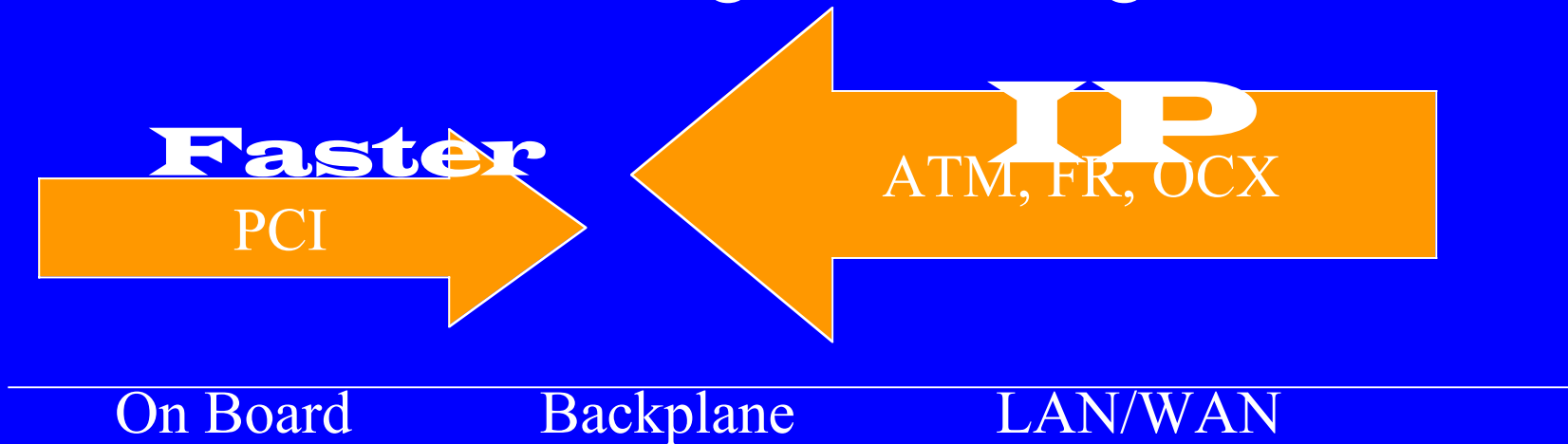
Telecom 2001 And On

- CPCI In Data Centres
 - Density
- New Compatible Data Buses
- PCI Is Not Winning The Battle Of The Back-plane



Telecom 2001 And On

- CPCI (+) In The Real Volume
 - Compatible
- Access - Routing - Switching



Form Factors

	1999 Mil. \$	2000 Fcst	2000 Prel. Actual
VME 6U	311	Flat	
VME 3U	22	Flat	
CPCI 6U	45	+68%	
CPCI 3U	27	+44%	
PCI	105	+17%	
PC104	38	+13%	
PMC	8	+39%	

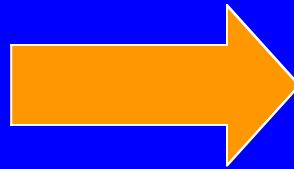
Convergence But...

Vendor Roots Are Visible

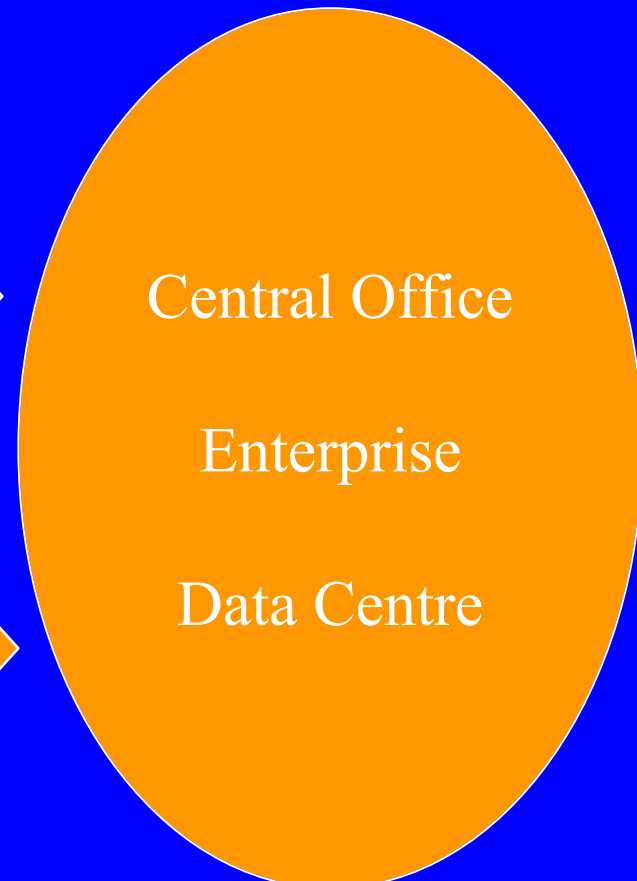
There Are Three Types Of Vendors

1. No Telecom Focus

2. Embedded;
Long Life
ETSI, NEBS



3. Commercial;
Performance
Price

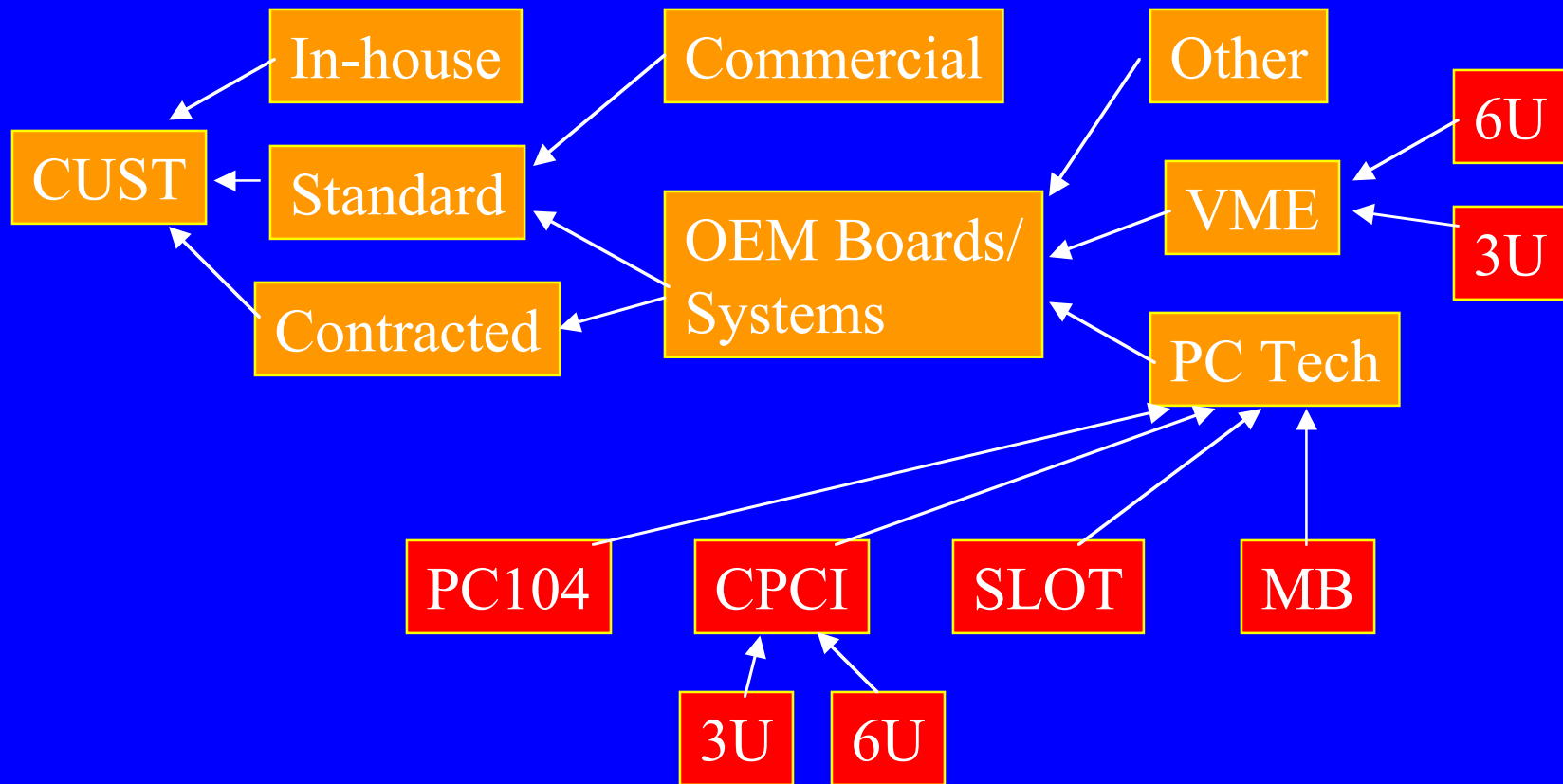


Major Vendors

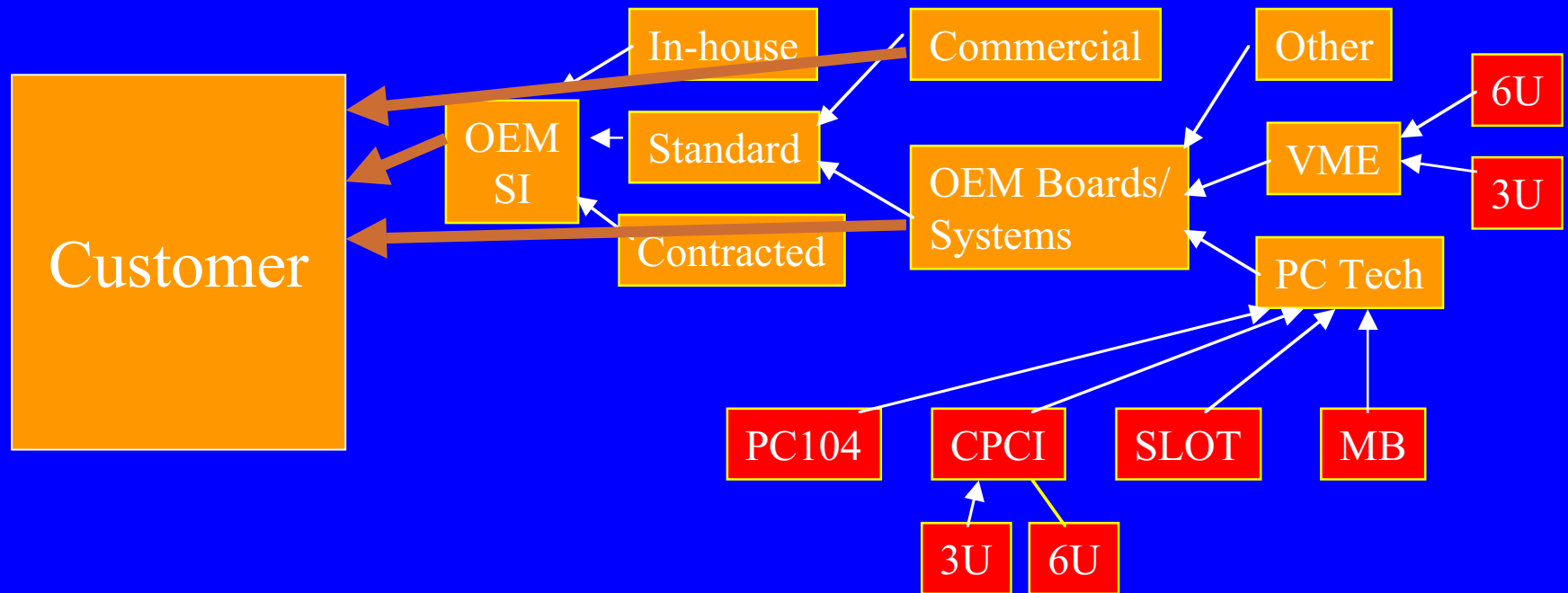
Acquisitions Have Made A Difference

Force	Smart
Radisys	Texas Micro, Artic
Motorola	Prolog
Kontron	Teknor, PEP, Rotec, TMC (Minority)
SBS	Greensprings, OR, VI, Bit 3, etc
Jump	Adastra, Inside, CSS, Dr Berghaus
Intel	Dialogic, Ziatech
Sun	
Advantech	

Sourcing- The Total Picture



Sourcing- The Telecom Picture



Finally – Who Is The Customer?

Boards Becomes Systems -Becomes Functions
The OEM Becomes System Integrator
Enterprise Becomes Service Provider

Convergence Means New Rules

The Embedded Market Has An Unique Chance
And A Major Threat

