



SPARTAN™ III



Agenda



- Spartan™ Philosophy
- Spartan-II FPGAs: Extending Spartan Series
- System Integration
- Spartan-II family: ASSP Replacement
- Summary

Philosophy behind Spartan™ Series



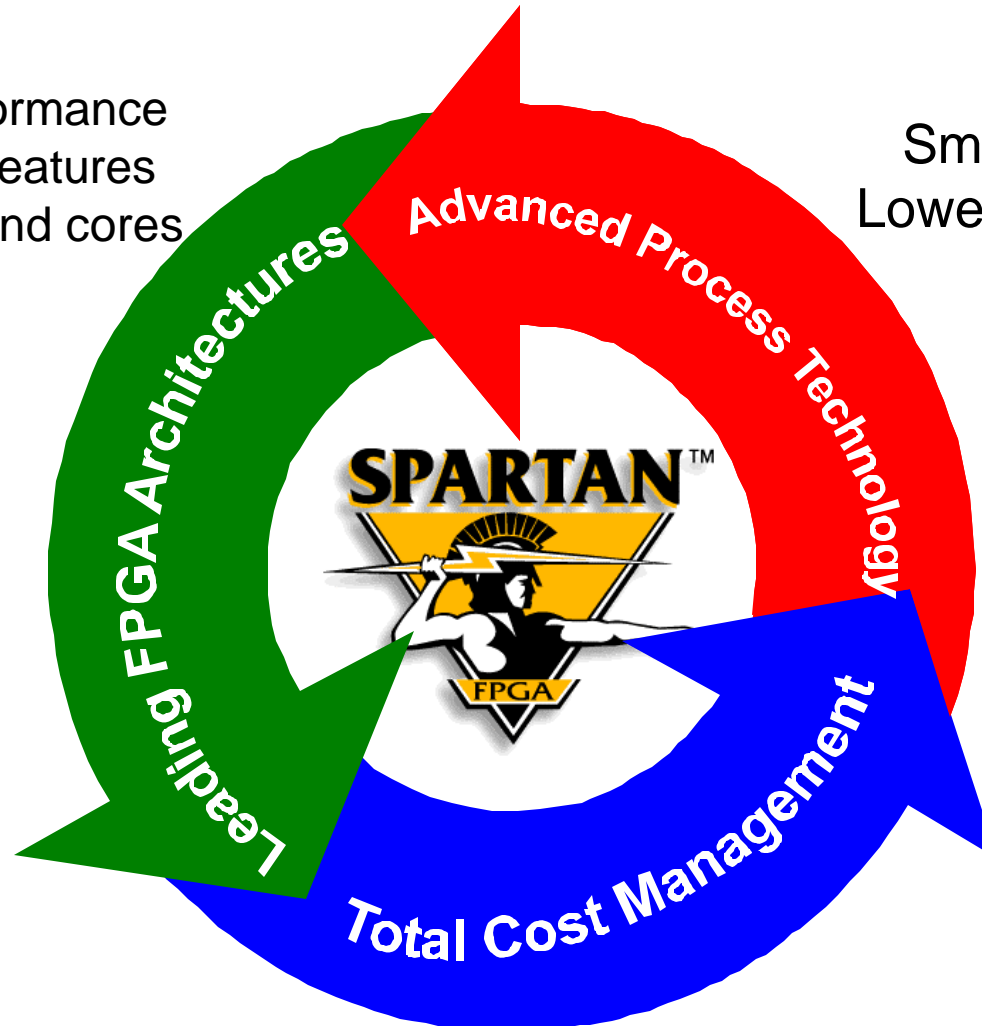
- “Boldly go where no PLD has gone before”
 - Expand PLD market to High Volume Segments
 - Sampling of Target Markets:
 - Digital Modems
 - DVD Players
 - Set-Top Box
 - Wireless Handsets
 - Computer Peripherals
- Low Cost
 - Provide Density, Features, Performance at ASIC prices
- Technology Enabler
 - Software and Cores enabling complex designs at very low cost, fast time to market

Lowering the Cost = Increasing Value



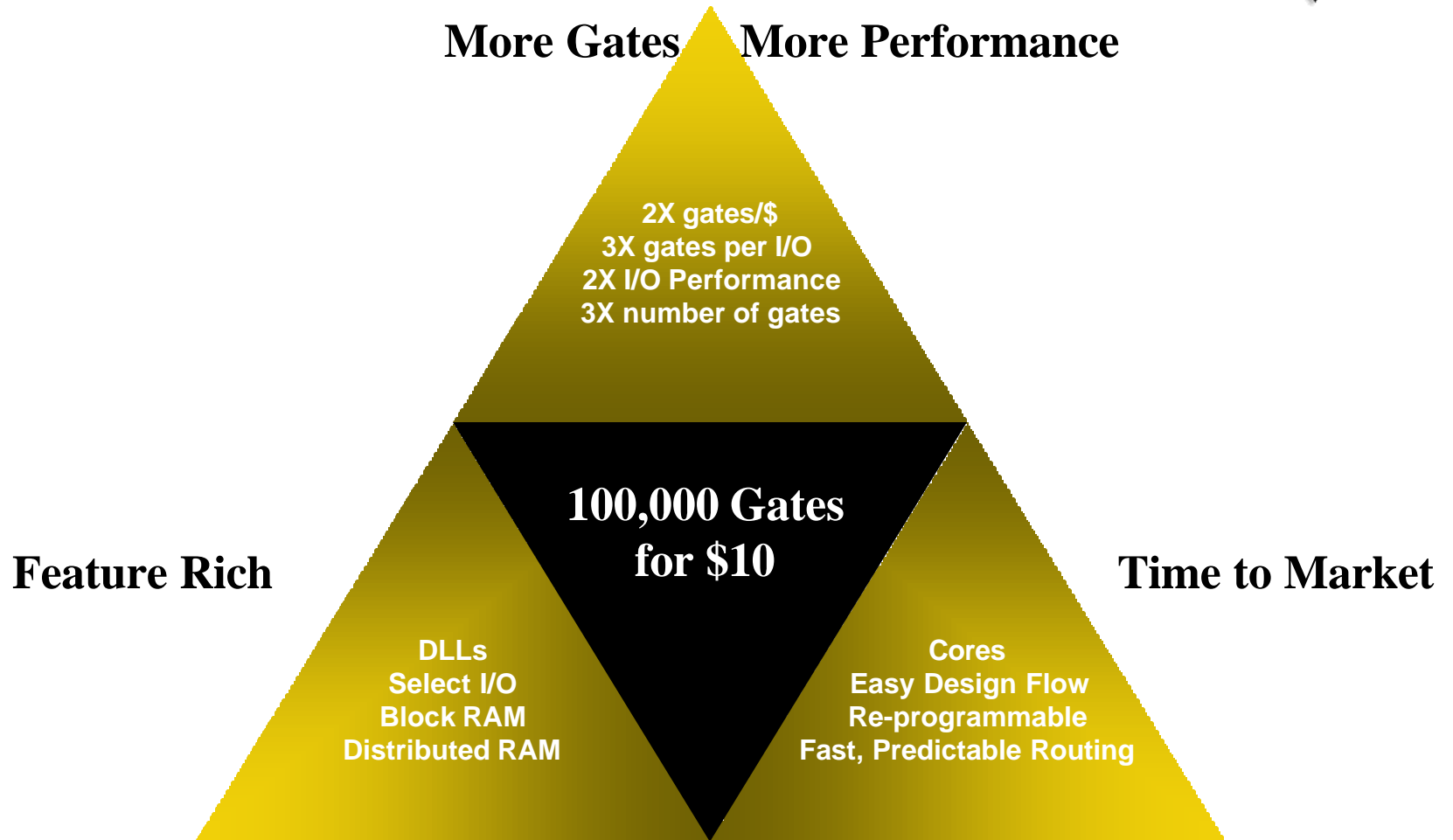
High Performance
System Features
Software and cores

Smallest Die Size
Lowest Possible Cost



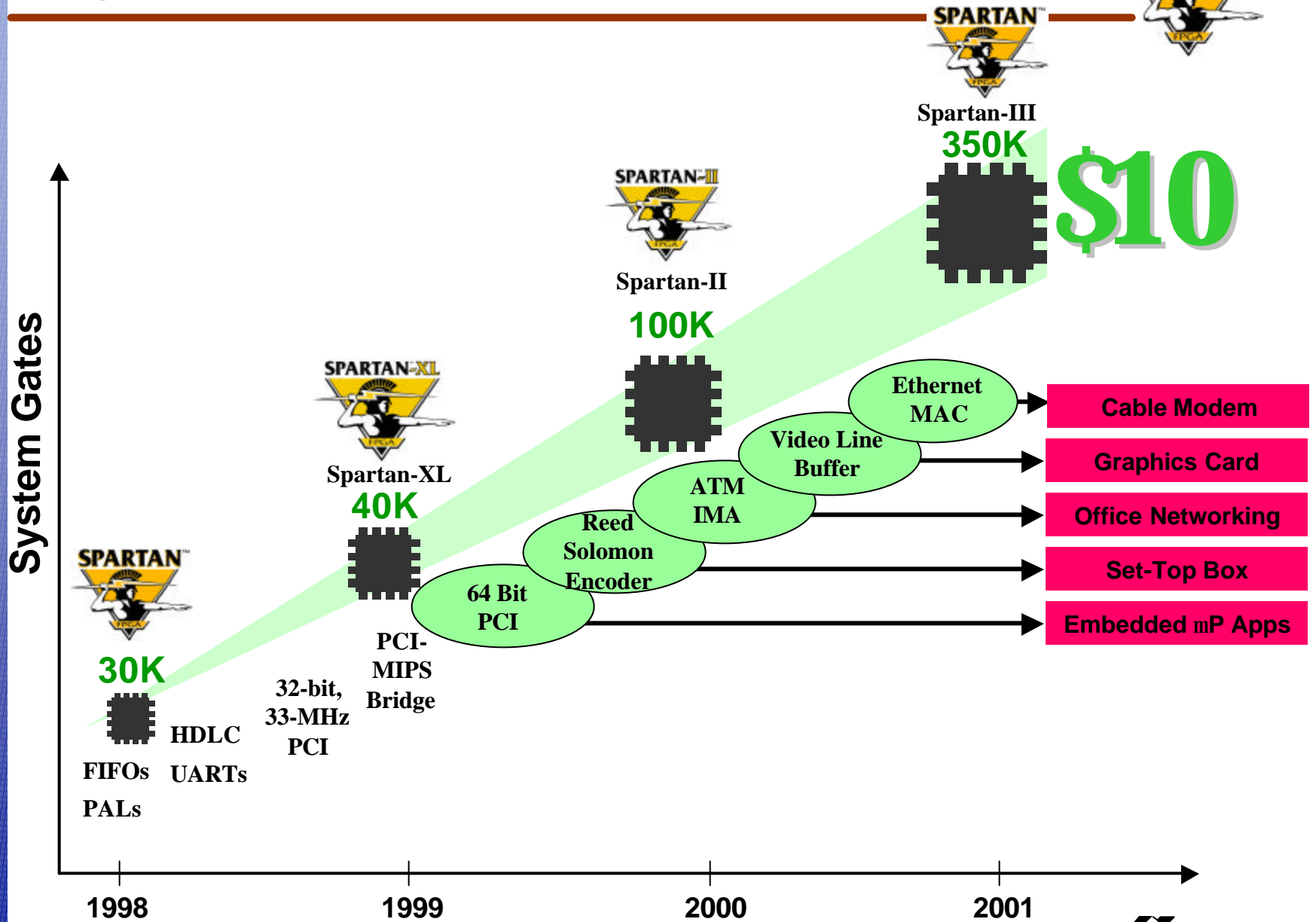
Low Cost Plastic Packages
Streamlined Testing

Spartan-II: Extending Spartan Series

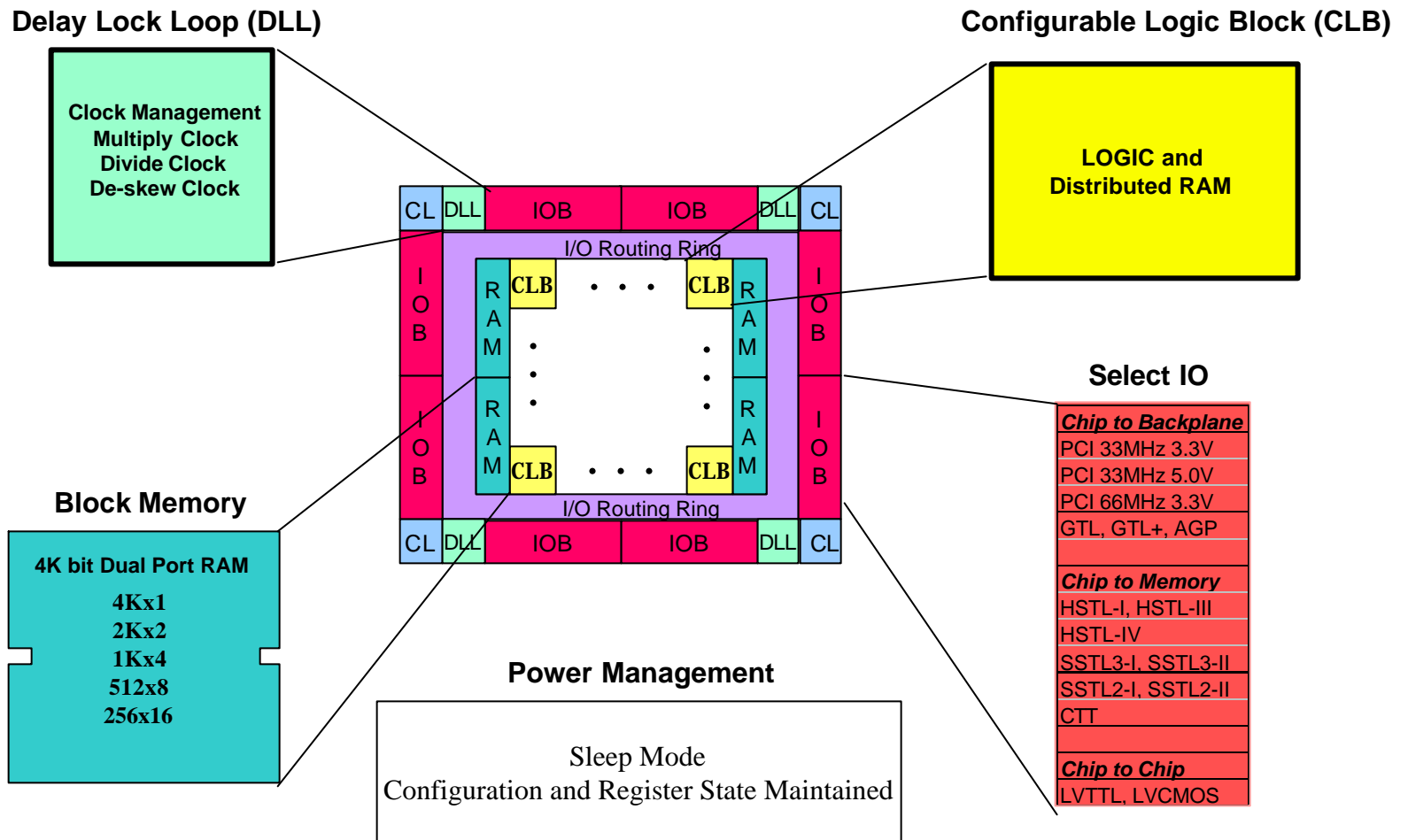


Reprogrammable ASIC/ASSP Replacement!

Higher Density Enables New Applications



Spartan-II Architecture

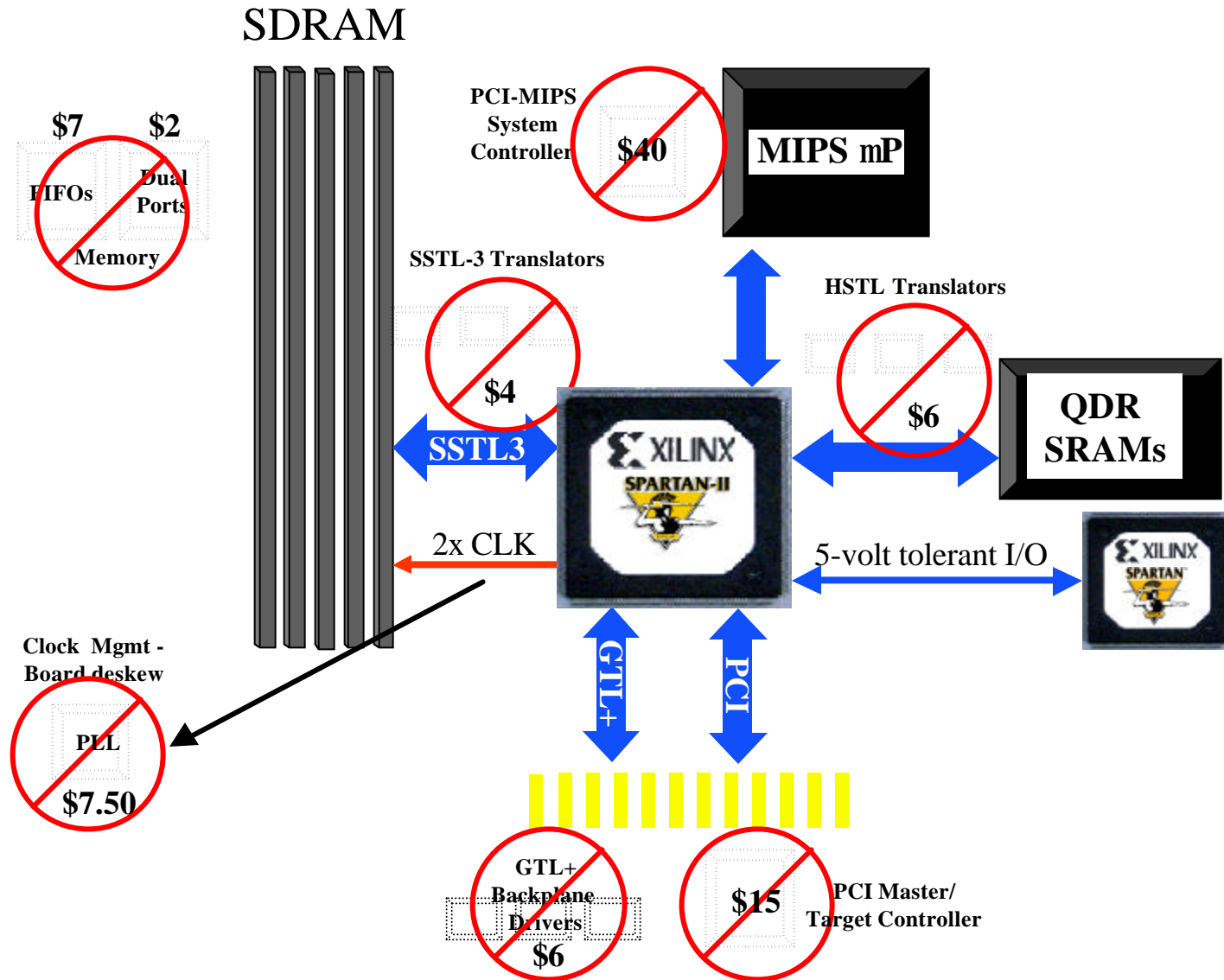


Spartan-II Product Matrix

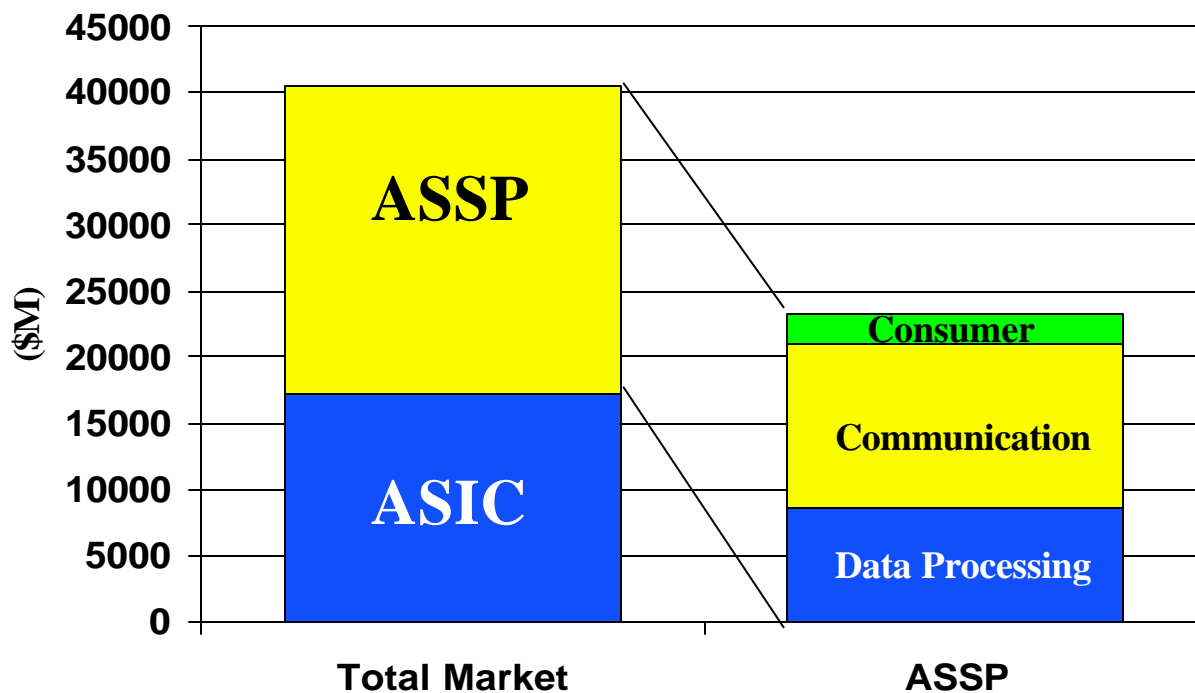


Device	XC2S15	XC2S30	XC2S50	XC2S100	XC2S150
System Gates	15K	30K	50K	100K	150K
Logic Cells	432	972	1728	2700	3888
Block RAM Bits	16,384	24,576	32,768	40,960	49,152
Block RAM Blocks	4	6	8	10	12
DLL's	4	4	4	4	4
I/O Standards Supported	17	17	17	17	17
Max I/O	82	132	176	196	260
Packages 14x14mm	VQ100	VQ100			
20x20mm	TQ144	TQ144	TQ144	TQ144	
12x12mm	CS144	CS144			
28x28mm		PQ208	PQ208	PQ208	PQ208
17x17mm			FG256	FG256	FG256
23x23mm				FG456	FG456

Spartan-II: High Volume System Integration



ASIC & ASSP Market Data



Consumer

Portable Audio
DVD Players
PC Add-In Cards

Communication

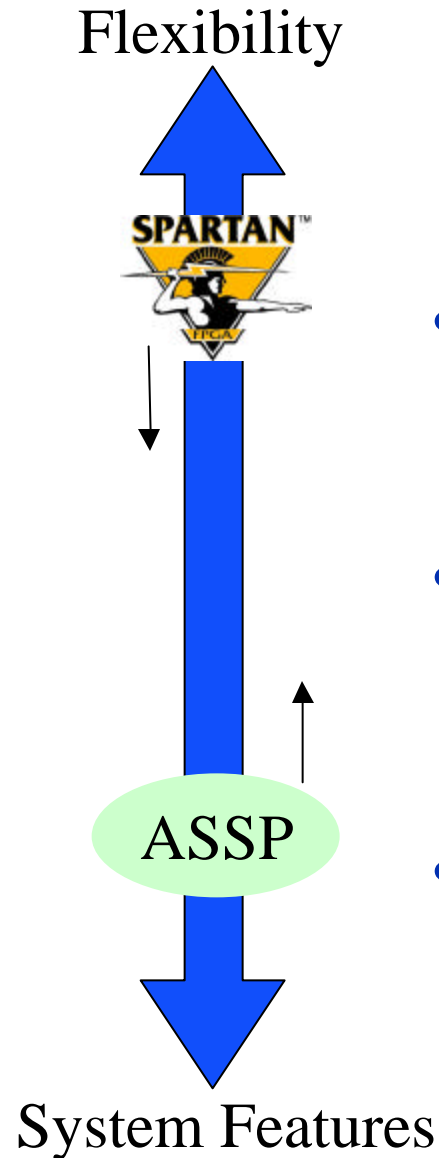
Wireless
Digital Modems
Line Cards

Data Processing

Servers
Laptops

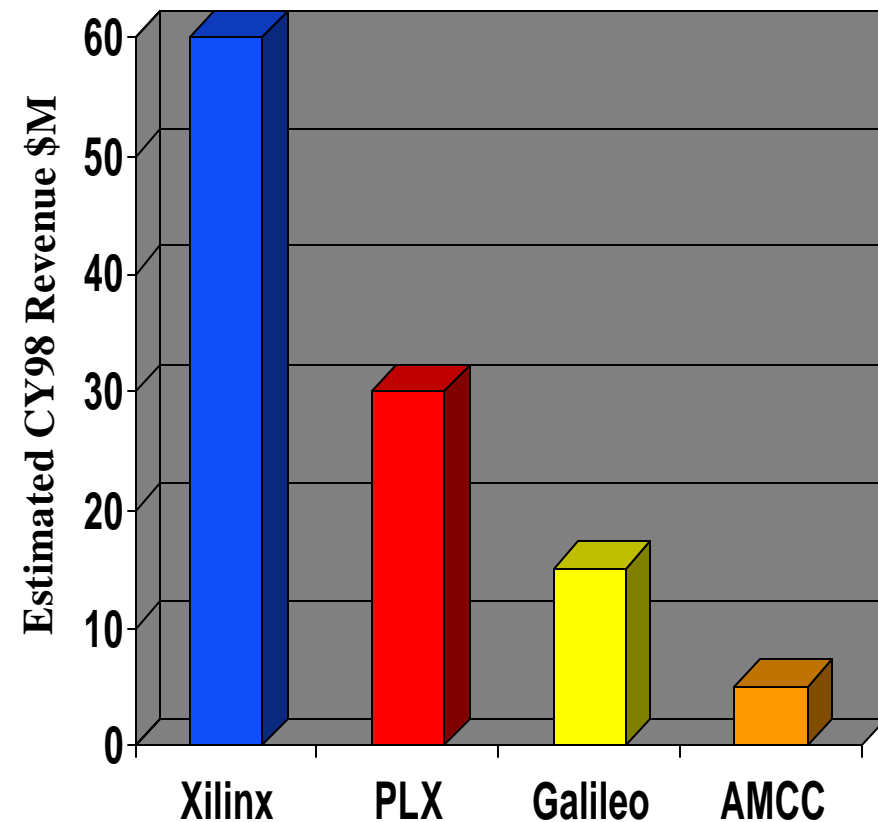
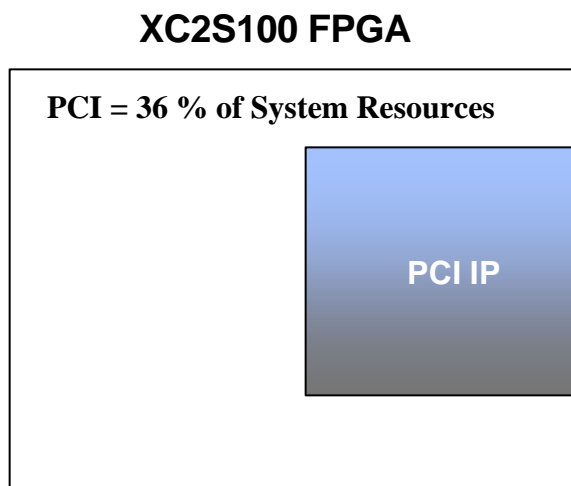
Source: Dataquest

ASSP Replacement Dynamics



- Spartan FPGAs migrate to higher densities to handle system features
- ASSP's attempting to offer flexibility
 - Differentiation need due to market pressures
 - Changing system standards
- PCI is the first successful ASSP competition

A Successful Programmable ASSP



The PCI IP from Xilinx is the most successful Programmable ASSP implemented to date

ASSP Replacement



Addressable ASSP's

Value Added ASSP's	Manufacturer	Price*	Spartan-II	Price
Viterbi with Reed Solomon Decoder	AHA, Conexant, LSI Logic	\$25.00	XC2S100	\$9.95
Quad ATM IMA Chip	Mitel	\$40.00	XC2S150	\$12.95
MIPS PCI Bridge	Galileo Technolgy	\$40.00	XC2S100	\$9.95
HDLC Controller	Mitel, Dallas, Conexant	\$10-\$60	XC2S100	\$9.95

ASSP's currently unavailable

Value Added ASSP's	Manufacturer	Price	Spartan-II	Price
Quad Data Rate Memory Controller	None	-	XC2S30	\$4.95

* Xilinx Estimate

SpartanII Projected Pricing



Xilinx Spartan II	
Product	Hi Volume Price*
XC2S15	\$3.95
XC2S30	\$4.95
XC2S50	\$7.95
XC2S100	\$9.95
XC2S150	\$12.95

*250Ku Resale price, slowest speed/cheapest package (end CY2000)

Spartan-II Summary



- Extends Spartan Series coverage into ASSP market
- More gates per I/O and more gates per dollar
 - Higher density and performance
 - New features: Block RAM, DLL, Select I/O
- Optimized for low cost and low power
- Shipping Today

Reprogrammability at ASIC prices
100,000 gates for \$10