Programmable Solutions Advantages

Spartan-II FPGAs: Programmable ASSP

- ◆ 100,000 system gates at under $10
  - — Extensive features: Block RAM, DLL, SelectI/O

- ◆ IP portfolio allows replacement of traditional ASSPs
  - — Provide density, features, performance at ASIC prices
  - — IP cores
    - – DCT/IDCT, DES, QDR SRAM, Reed-Solomon, PCI
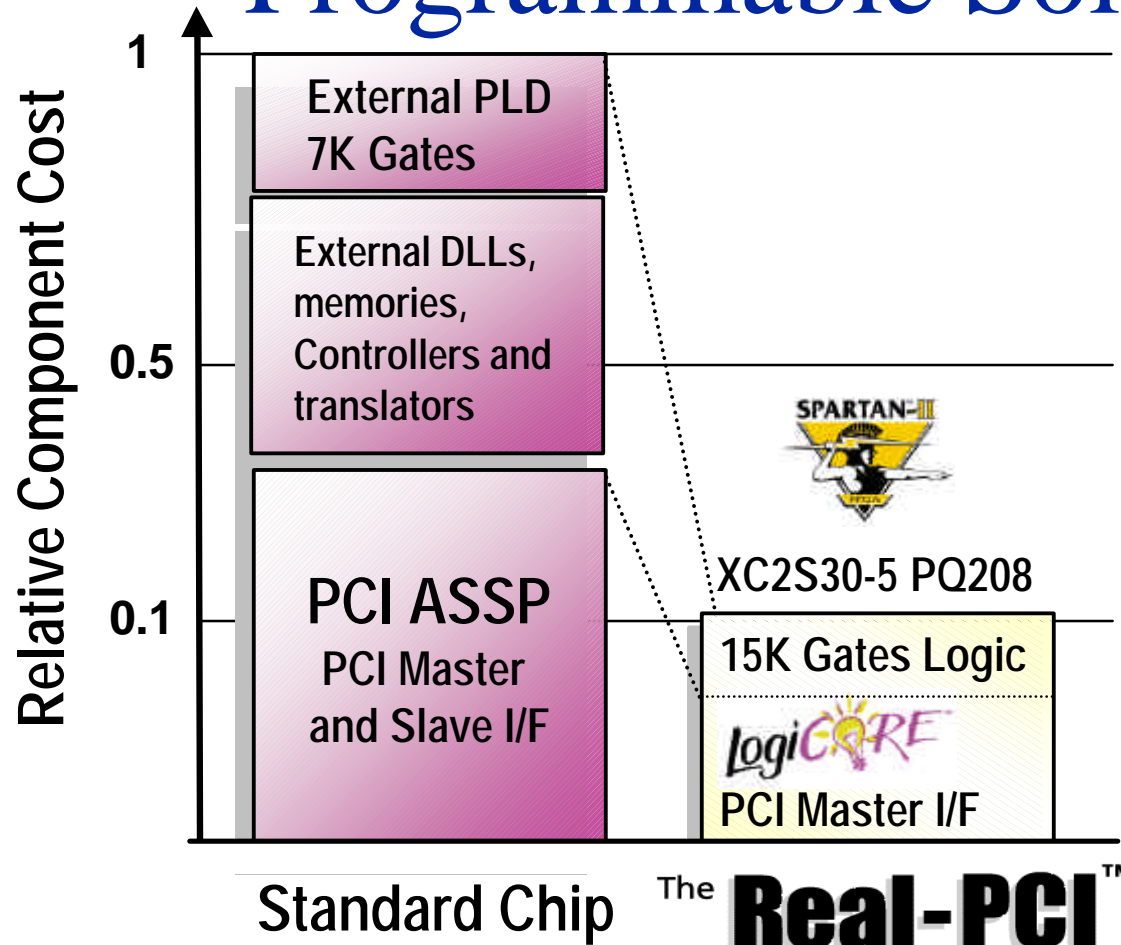   - – See IP Center for additional cores

Spartan-II FPGA with IP provides Programmable ASSP

Programmable ASSP - Value

- ◆ Benefits
  - — Time to Market
  - — Flexibility
    - – Product customization to meet customer needs
    - – Adapt to specification updates
    - – Feature upgrades
    - – Low risk evaluation of new markets
  - — Field upgradability
    - – H/W and S/W upgradability opens new applications
  - — Efficiently address lower volume strategic applications
  - — Distribution and inventory management
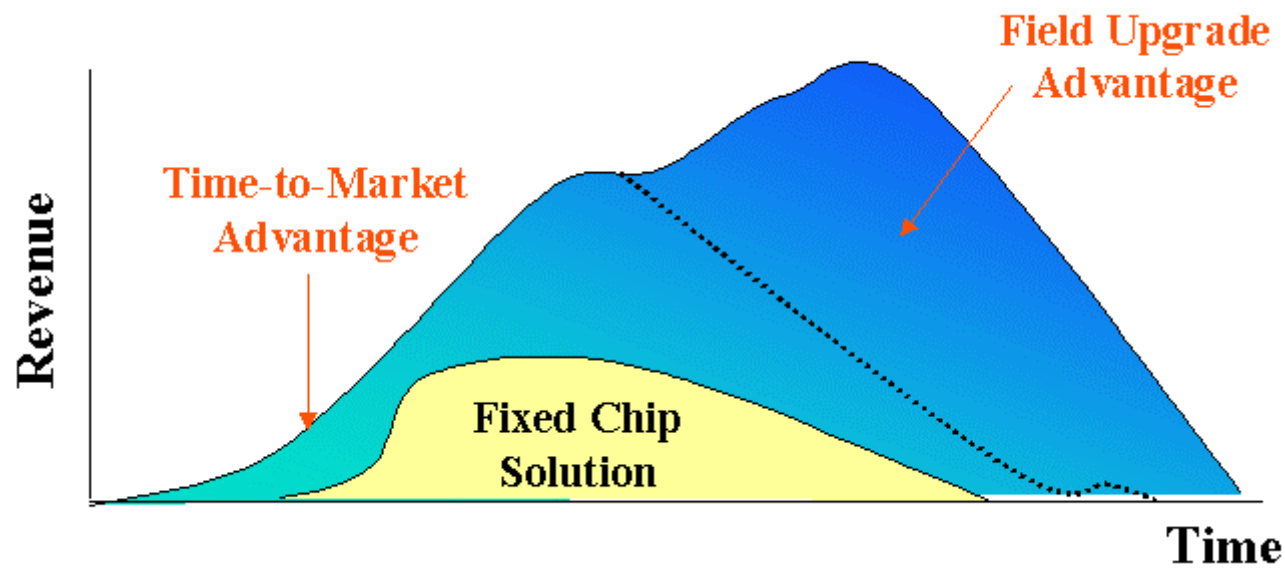
A Successful Programmable Solution

Relative Component Cost

1

External PLD
7K Gates

External DLLs,
memories,
Controllers and
translators

0.5

PCI ASSP

0.1

PCI Master
and Slave I/F

Standard Chip

SPARTAN-II

XC2S30-5 PQ208

15K Gates Logic

LogiCORE

PCI Master I/F

Xilinx PCI

Spartan-II FPGAs
Lower Overall
System Cost

The **Real-PCI**™

Solution ≤$6

esp
EMERGING STANDARDS
& PROTOCOLS

Set-Top Boxes

XILINX®

Xilinx On-line Field Upgradability

- ◆ Remote update of software and hardware

- ◆ Results in increased lifetime for a product

- ◆ Enable product features per end-user needs
  - — Opening up new opportunities in the ASSP area

Set-Top Boxes

Programmable Logic Solutions in Set-Top Boxes

- ◆ Glue Logic
  - — Between Host CPU and I/O Devices
  - — Interface Between Multiple Front-ends and Back-ends
  - — Interface between ASSPs

- ◆ Clock Distribution

- ◆ Memory Controller and Buffer

- ◆ ASSP Replacement

Spartan-II Enables Advanced Features Not Found in ASSPs

- ◆ Disk Drive Storage of Broadcast Channels

- ◆ ASSPs will be Developed with this Interface but will take 12 Months

- ◆ ASICs could be Spun in 6 Months

- ◆ FPGA could be Designed and Integrated in 1-2 Months

Spartan-II Enhancing Advantages of Programmable Logic

- ◆ Time to Market

- ◆ Flexibility

- ◆ Field Upgradable

- ◆ **Cost Competitive**