The Evolving Digital Landscape

Steve Logan
Marketing Manager

Global Electronics Industry Business Drivers

Programmable Imperative

Programmable Systems Integration

Insatiable *Intelligent* Bandwidth

XILINX ALL PROGRAMMABLE.

Trends Driving Insatiable *Intelligent* Bandwidth

Extreme Bandwidth

5X Growth in 5 Years

Smart Vision

Lane Detection

Smart Networks

Ubiquitous Computing

"Everyware"

The 3rd Wave in Computing

Embedded Security

Is It Safe?

Source: Ericsson, Adam Greenfield.

XILINX ➤ ALL PROGRAMMABLE.

The Programmable Imperative Accelerates

Estimated Chip Design Cost, by Process Node, Worldwide, 2011

Legend:
- Design cost ($M)
- Mask cost ($M)
- Embedded software ($M)
- Yield ramp-up cost ($M)

Y-axis (process nodes): 28/22-nm, 32-nm, 45-nm, 65-nm, 90-nm, 130-nm, 180-nm

X-axis: 0, 45, 90, 135, 180 ($ Million)

28nm = 2X 45nm Cost

> *$170 M*
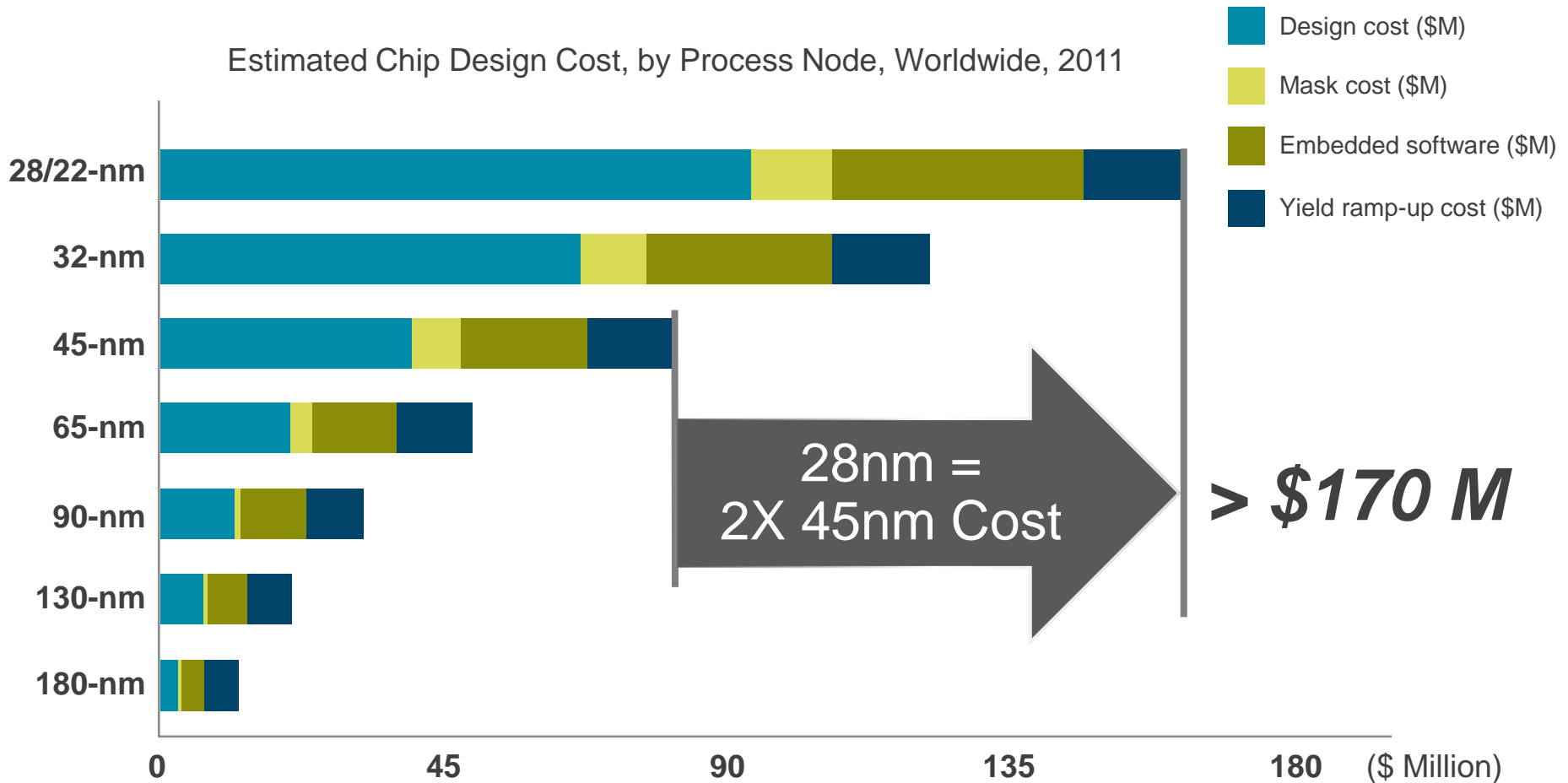
Extreme Costs Limit ASIC & ASSP Viability at 28nm

Source: Gartner

© Copyright 2012 Xilinx

XILINX ALL PROGRAMMABLE.

Digital Technology Evolution

Programmable Logic Devices
Enables Programmable 'Logic'

ALL Programmable Devices
Enables Programmable Systems 'Integration'

XILINX > ALL PROGRAMMABLE.

The First **All Programmable SoC**

© Copyright 2012 Xilinx
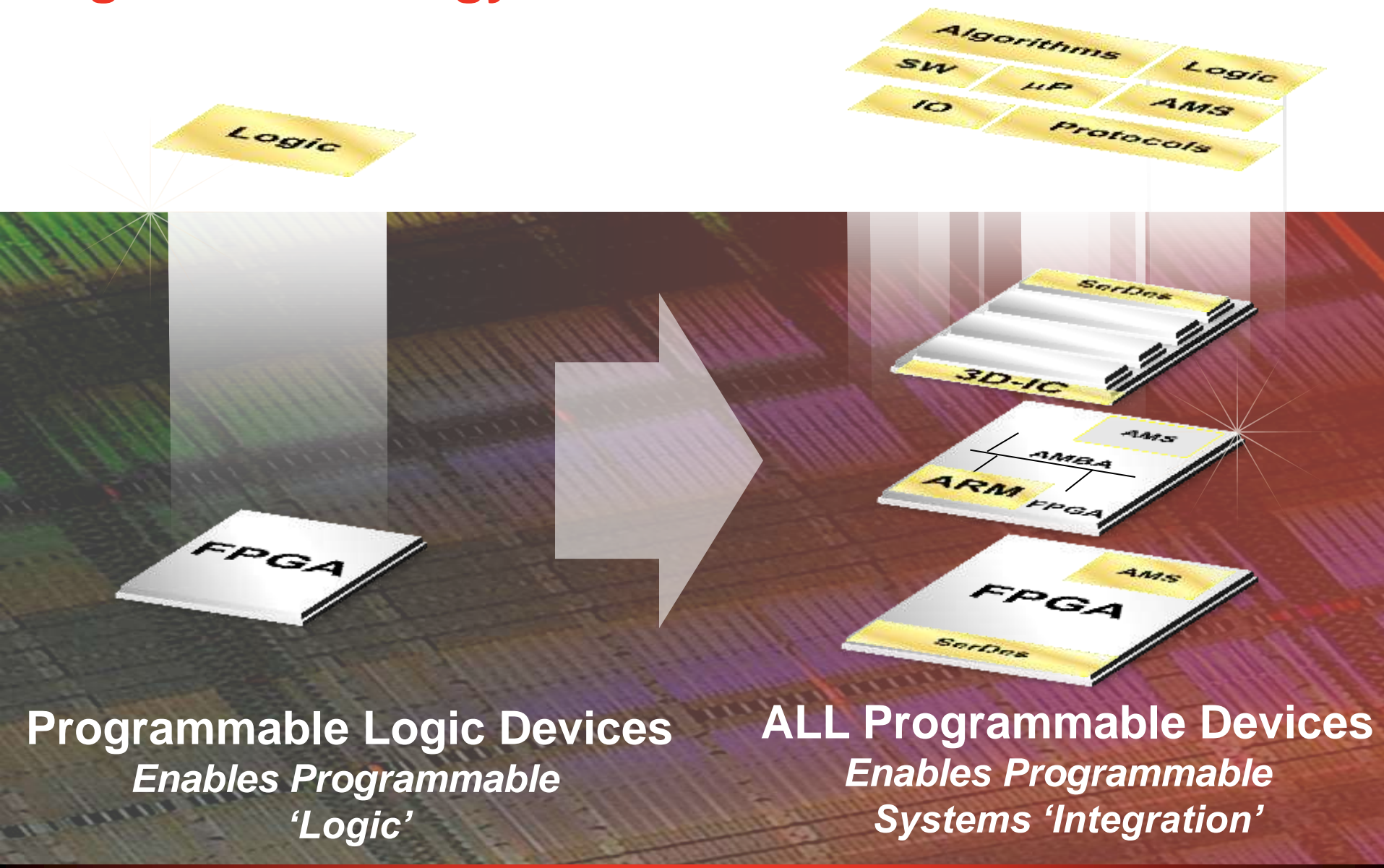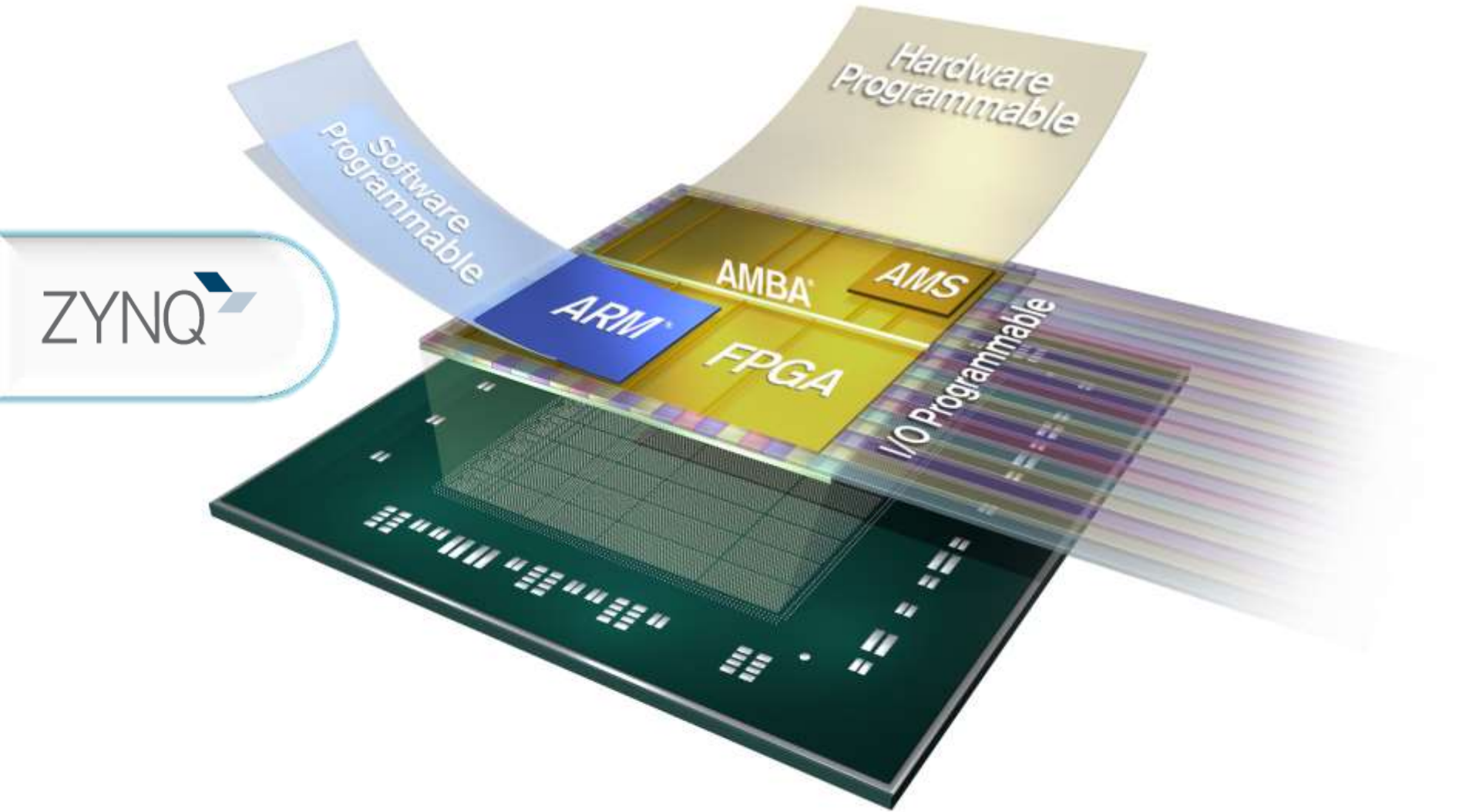
Value of the Zynq-7000 All Programmable SoC

- **ARM Cortex™-A9 MPCore™ Processing System with hardened peripherals, ADC and 28nm scalable optimized programmable logic**

- **1 GHz dual core processors with NEON and vector floating point units**

- **High bandwidth, low latency connects enable acceleration of key functions**

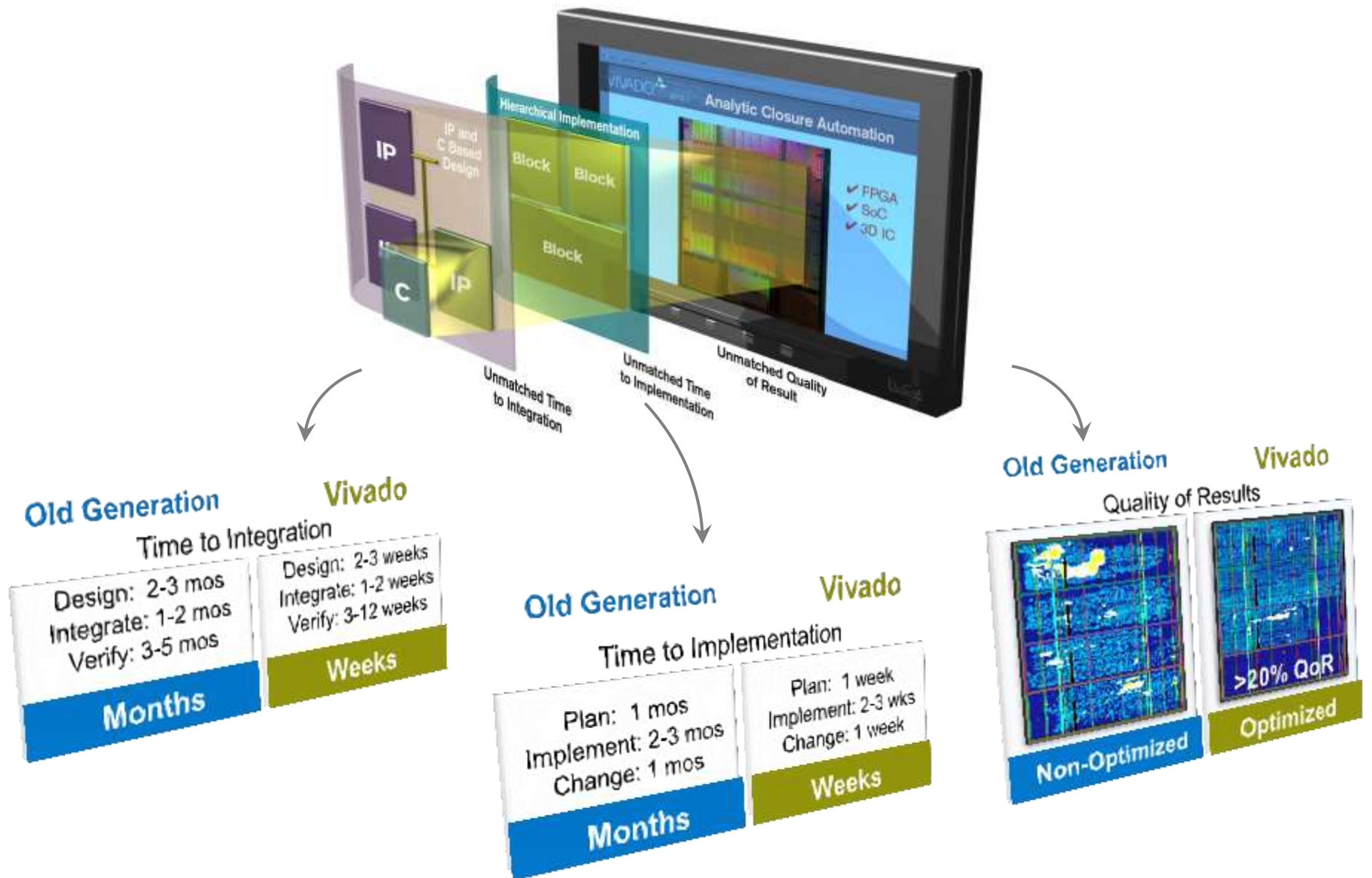- **Industry-leading ARM processors maximize MHz/W and low power states**
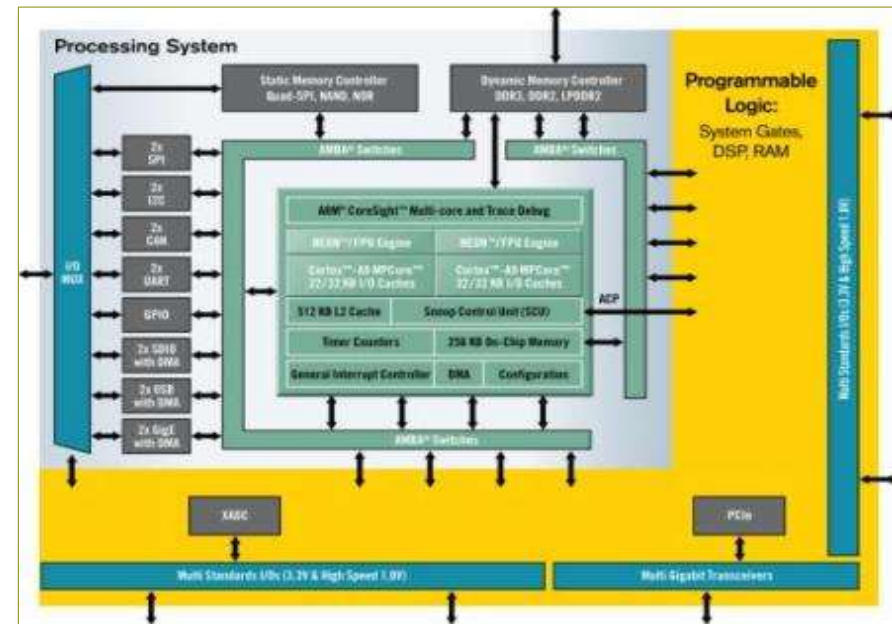
The First **All Programmable 3D IC**

© Copyright 2012 Xilinx
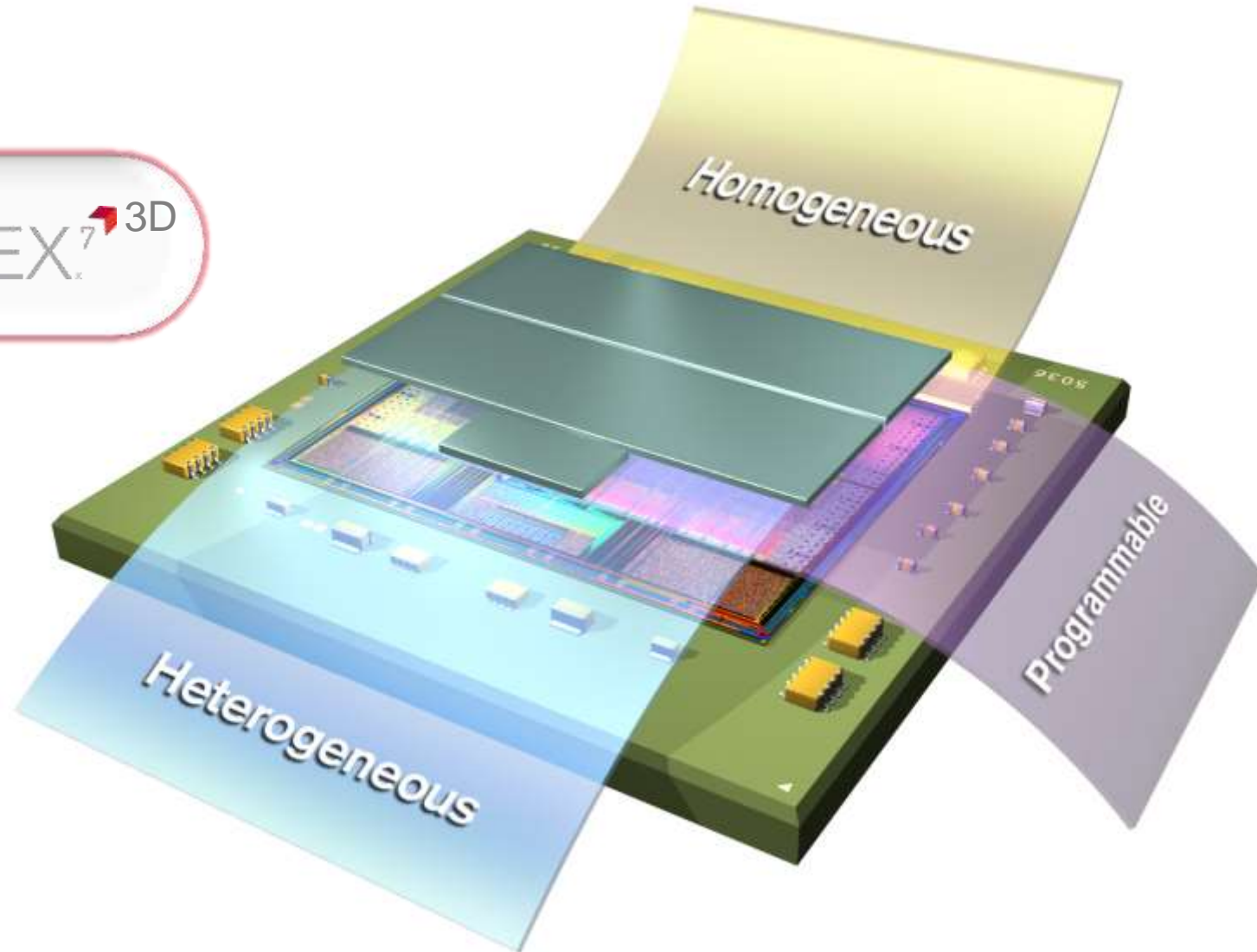
Vivado Design Suite: From Months to Weeks

© Copyright 2012 Xilinx

XILINX ALL PROGRAMMABLE.

Making FPGA Design Faster and Easier

Targeted Design Platforms

> **Complete design kits**
> – Development board
> – Design tools
> – IP cores
> – Targeted reference design
> – 38 kits for 7-series and Zynq
>   • Kintex-7 DSP Kit
>   • Zynq Video & Imaging Kit

Standardized, Scalable Boards

> **100+ standard FMC daughter cards available on day 1**
> – Designed to work with industry-standard form-factors
>   • PCIe, VME, cPCI, ATCA, AMC
> – FMCs include connectivity, high-speed converters, video imaging, motor control & more

© Copyright 2012 Xilinx

XILINX ➤ ALL PROGRAMMABLE.

Current State of FPGA Mezzanine Cards (FMC)

http://www.vita.com/fmc

High-speed analog

Networking interfaces

Display / Video

Many others …

TEXAS INSTRUMENTS

4DSP

Computer Systems, Inc.
MERCURY
www.mc.com

ANALOG DEVICES

CURTISS WRIGHT

Nutaq

…

Global HITECH

XILINX

…

AVNET

TEL TEL

Advanced Electronic Designs

ANALOG DEVICES

…

ALPHA DATA

TEXAS INSTRUMENTS

NXP

MAXIM

DIGILENT

…

30+ Partners Offering 100+ FMC Products Today

XILINX > ALL PROGRAMMABLE.

Summary

- **Intelligent bandwidth**
- **Programmability**
- **Flexibility**

XILINX ➤ ALL PROGRAMMABLE.

XILINX

ALL PROGRAMMABLE™

APPENDIX

Abstract

> **Abstract: The impact of FPGA technology continues to grow with each generation. FPGAs are used in signal and video processing, general purpose I/O and many other areas on SBCs and specialized boards. Here we will look at roadmaps from the leading vendors, highlight how they are being used in critical embedded and intelligent systems, the challenges, and what to expect in the future. A special look will be taken as what is being done to make it easier for user to deploy FPGA based systems using technology such as FMCs, FPGA IP, and FPGA programming tools.**

XILINX > ALL PROGRAMMABLE.

State of the Industry

> **Smaller size**

> **Higher performance and bandwidth**

> **Higher precision**

> **Lower power**

> **Do more with less manpower**

ΣXILINX ➤ ALL PROGRAMMABLE.

Insatiable Bandwidth… and Spending

We Will Soon Live in a 100 Gbps World

By Stacey Higginbotham I Feb.22, 2011, 8:21 PT I 14 Comments

---

15 October 2011 Last updated at 05:53 ET

198 Share F ✉ 🖶

EU plan to spend billions on boosting broadband speeds

LTE spending projected to boom in 2013

Dylan McGrath
1/31/2012 1:56 PM EST

China's big data center build-out

December 28, 2011, 6:22 PM

Sprint announces "aggressive" LTE 4G rollout for mid-2012

October 7, 2011 | Devindra Hardawar

Add a Comment

---

mobile
BUSINESS BRIEFING
« Back to Mobile Business Briefing Homepage

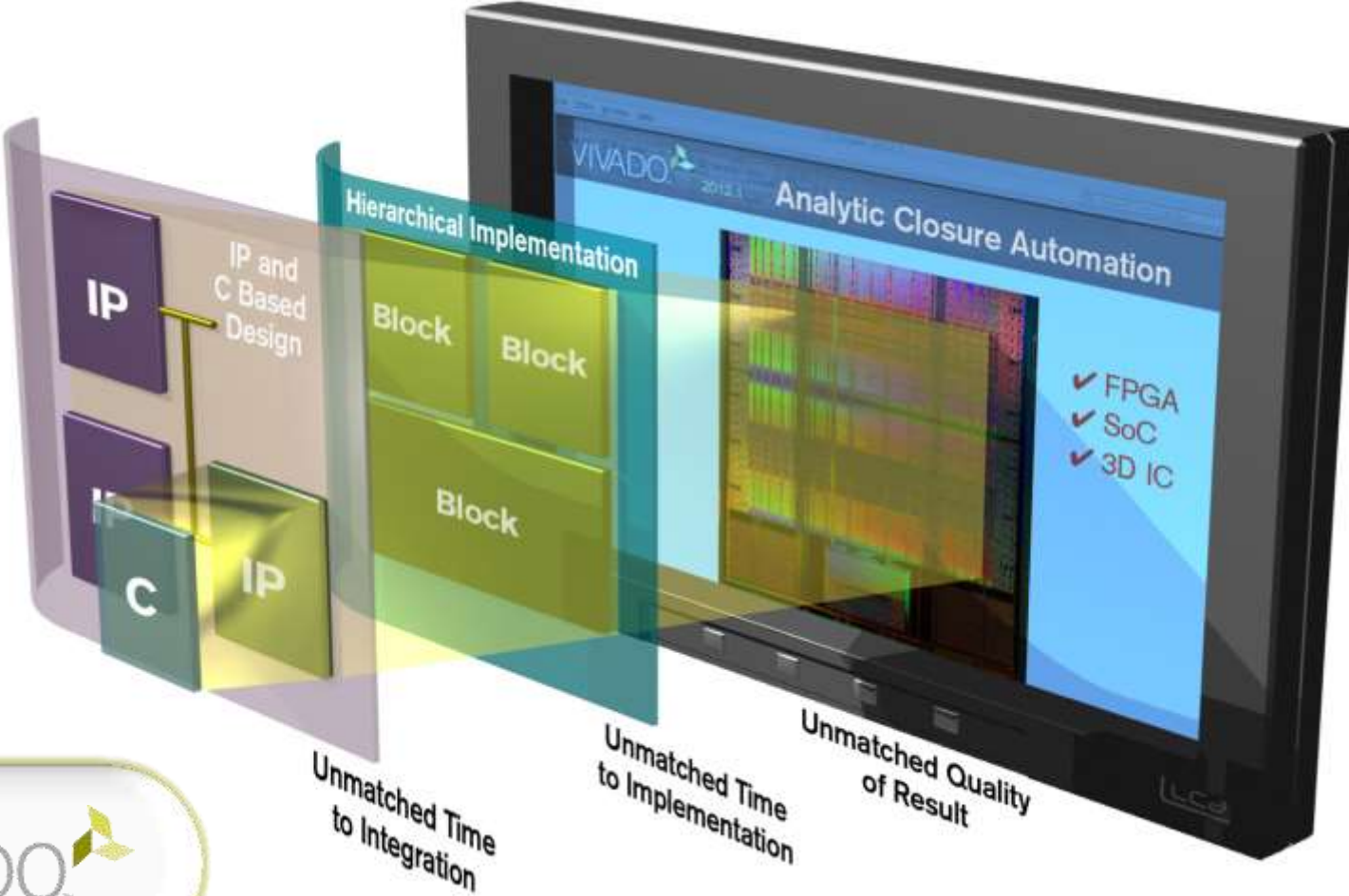**Docomo to ramp network spending following outage**

30 Jan 2012

France Telecom Orange to increase fiber network spending in 2012

February 2, 2012 — 10:06am ET | By Sean Buckley

+1 0   Like

Source: EETimes, Light Reading, Gizmodo.

XILINX ➤ ALL PROGRAMMABLE.

The First SoC Strength Design Suite

Relentless System Integration

Extreme Bandwidth

Smart Vision

VIRTEX-7HT FPGAS

16 x 28G = BANDWIDTH

Xilinx Imaging Solutions

XILINX INDUSTRIAL IMAGING SOLUTIONS

Programmable Systems Integration

Xilinx 3D IC

AMS

AMS

Ubiquitous Computing

Embedded Security

AMBA
Digital Highway from ARM

XILINX ▶ ALL PROGRAMMABLE.
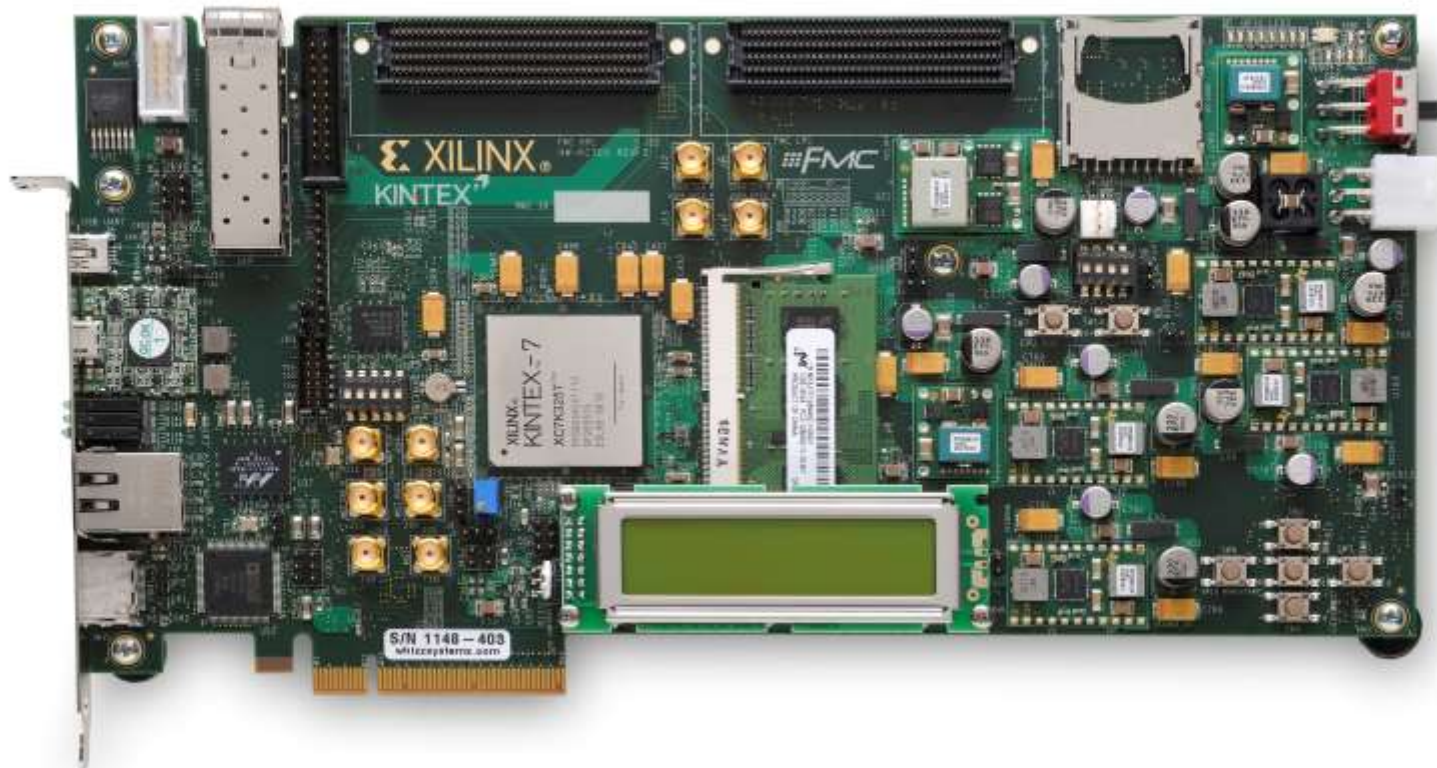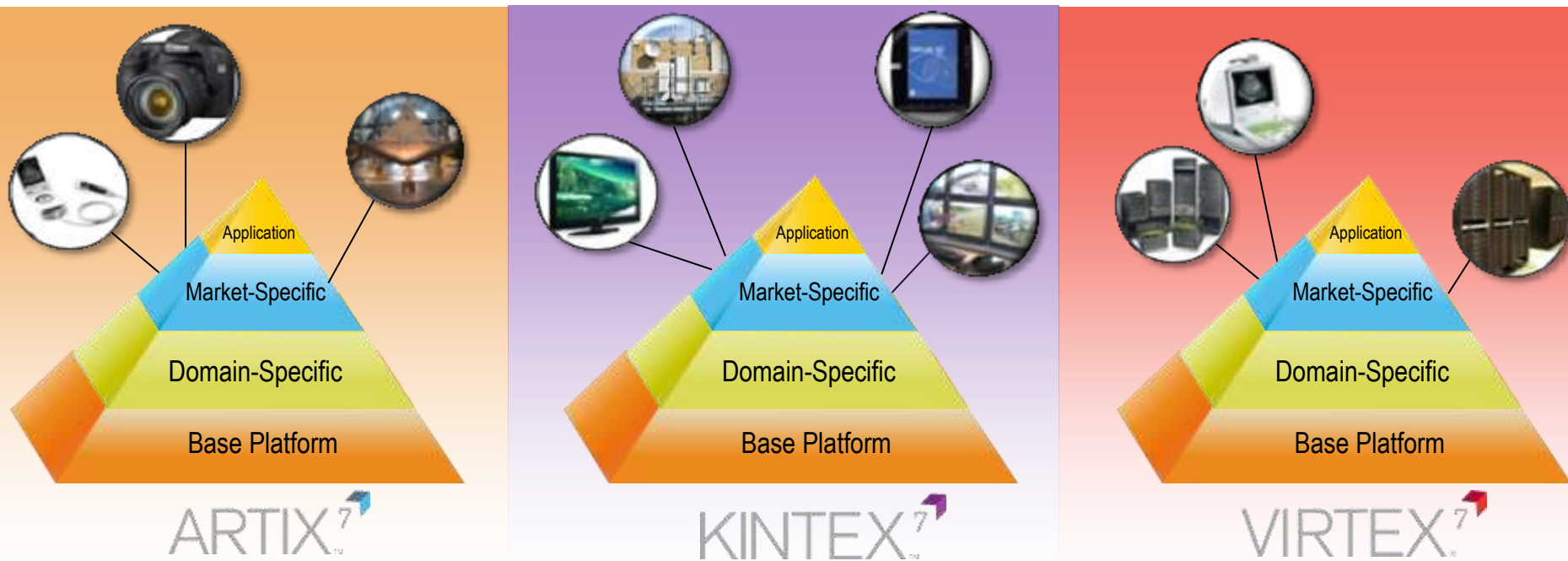
Kintex-7 KC705 Base Board Offers Many Ways to Get Data In and Out

Enhanced Productivity with Targeted Design Platforms

The Foundation for Next Generation Targeted Design Platforms

– Expanded eco-system enabled by Plug-and-Play AXI based IP

– Targeted reference designs accelerate development

– Scalable boards using FMC