

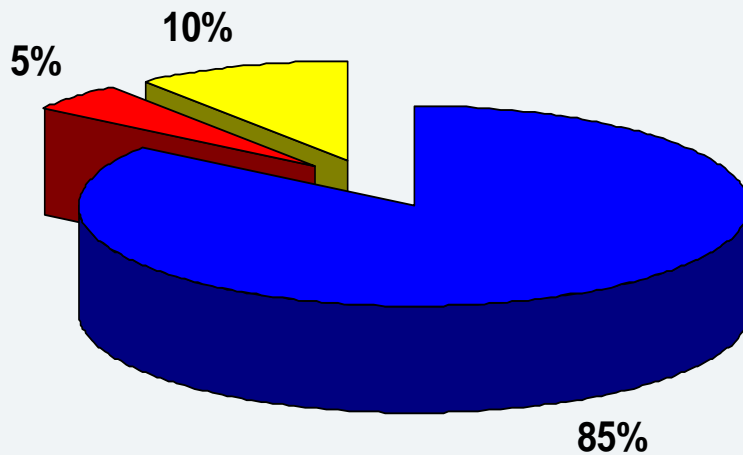


Texas Instruments Memory Module Components

Kent Novak
General Manager
High Speed Communications

Texas Instruments Overview

Revenue of \$9.83B in 2003



■ Semiconductor ■ Educ. & Prod. Soln. ■ Sensor & Controls

* Source: Databeans

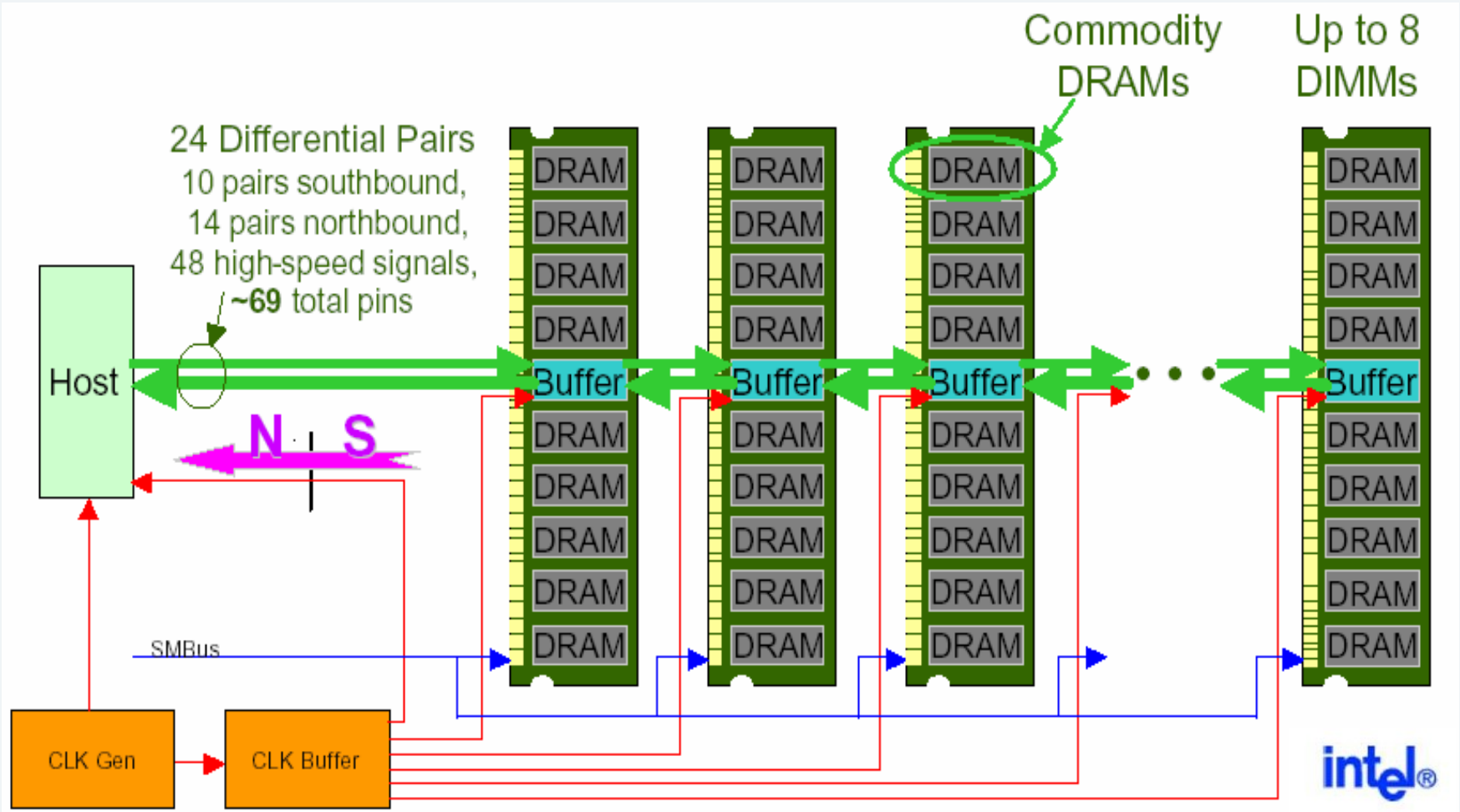
** Source: Forward Concepts

- ◆ Semiconductor sales of \$8.36B
 - Market share leader in Analog*
 - Market share leader in DSP**
 - Leader in HDTV, projectors and digital cinema with Digital Light Processing (DLP) technology
 - Leader in education technology

- ◆ \$1.75B in R&D in 2003
 - Estimate about \$2.1B in 2004

- ◆ History of Innovation
 - Integrated circuit
 - Commercial transistor radio
 - Electronic hand-held calculator
 - Single chip DSP

FB-DIMM Application - Server

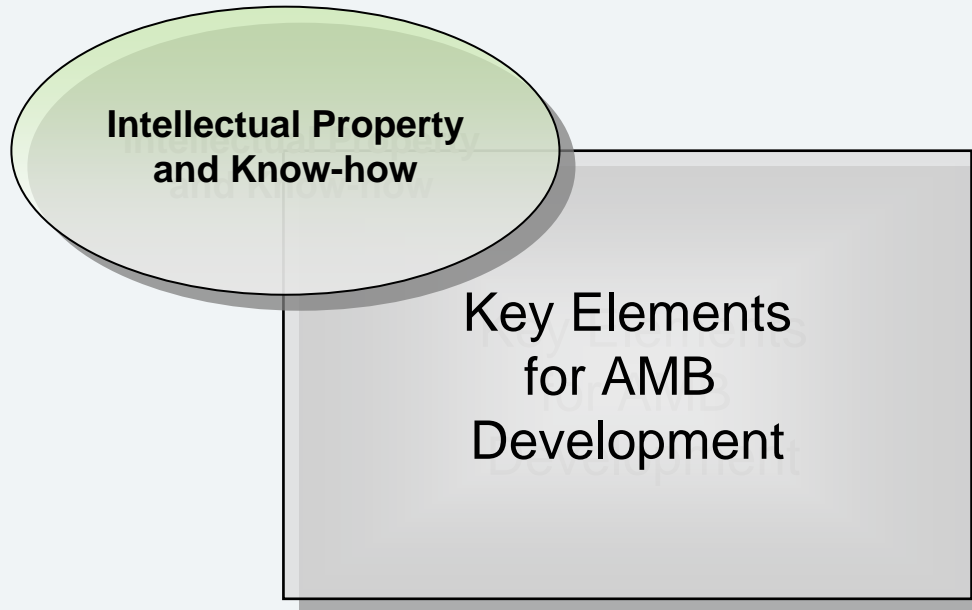


TI Offers AMB1 & Future Generation

- ◆ **Future Server System requires Memory Modules of**
 - High Speed Interface
 - High Capacity
 - Good Signal Integrity
 - Advanced Memory Buffer

- ◆ **TI offers**
 - High Speed SerDes Transceivers in production
 - Proven PLL, Register and Analog blocks
 - ASIC – Integration of Analog and Digital
 - Advanced nm Wafer Process
 - AMB1 and future generation

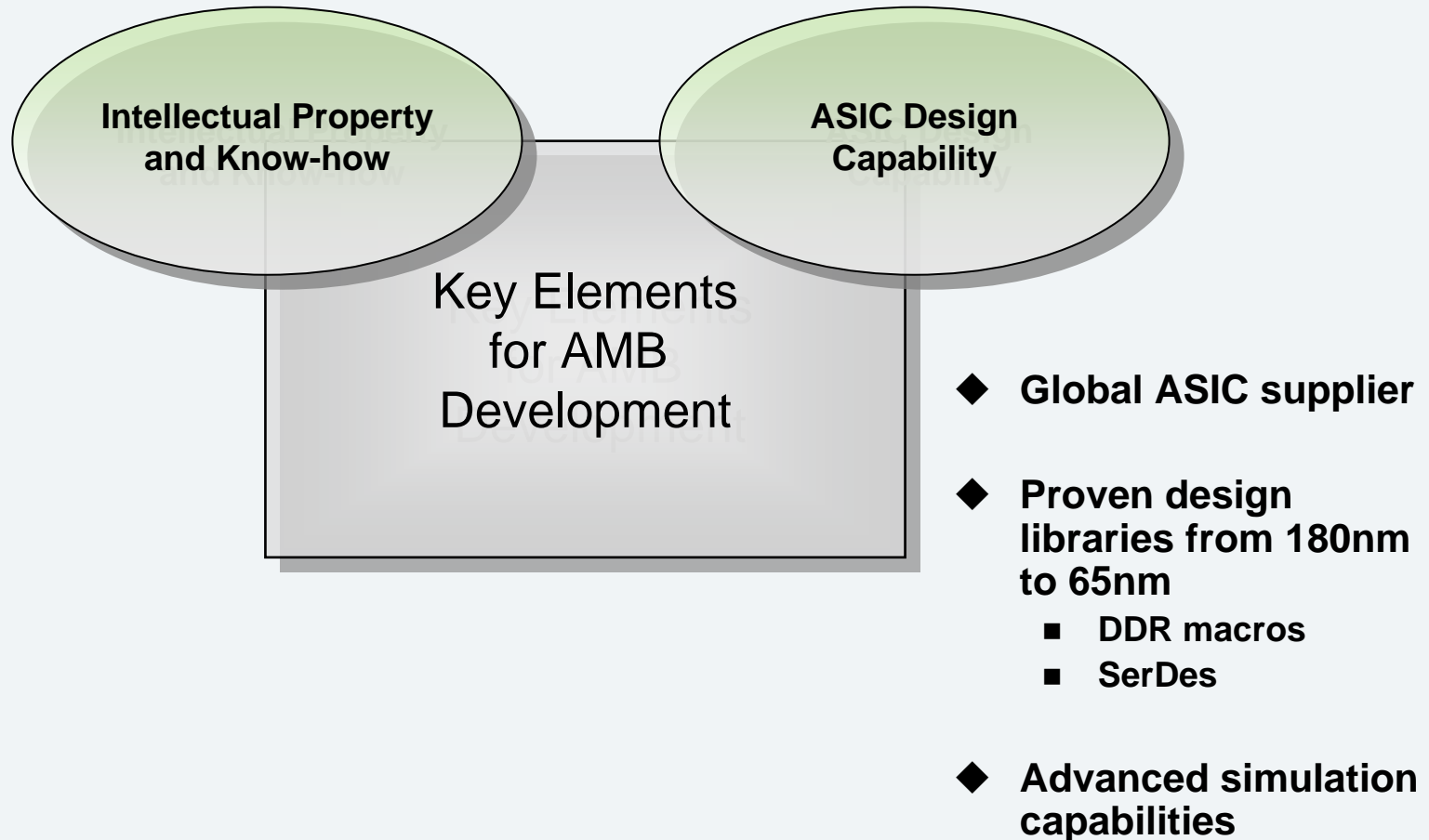
AMB Success Drivers



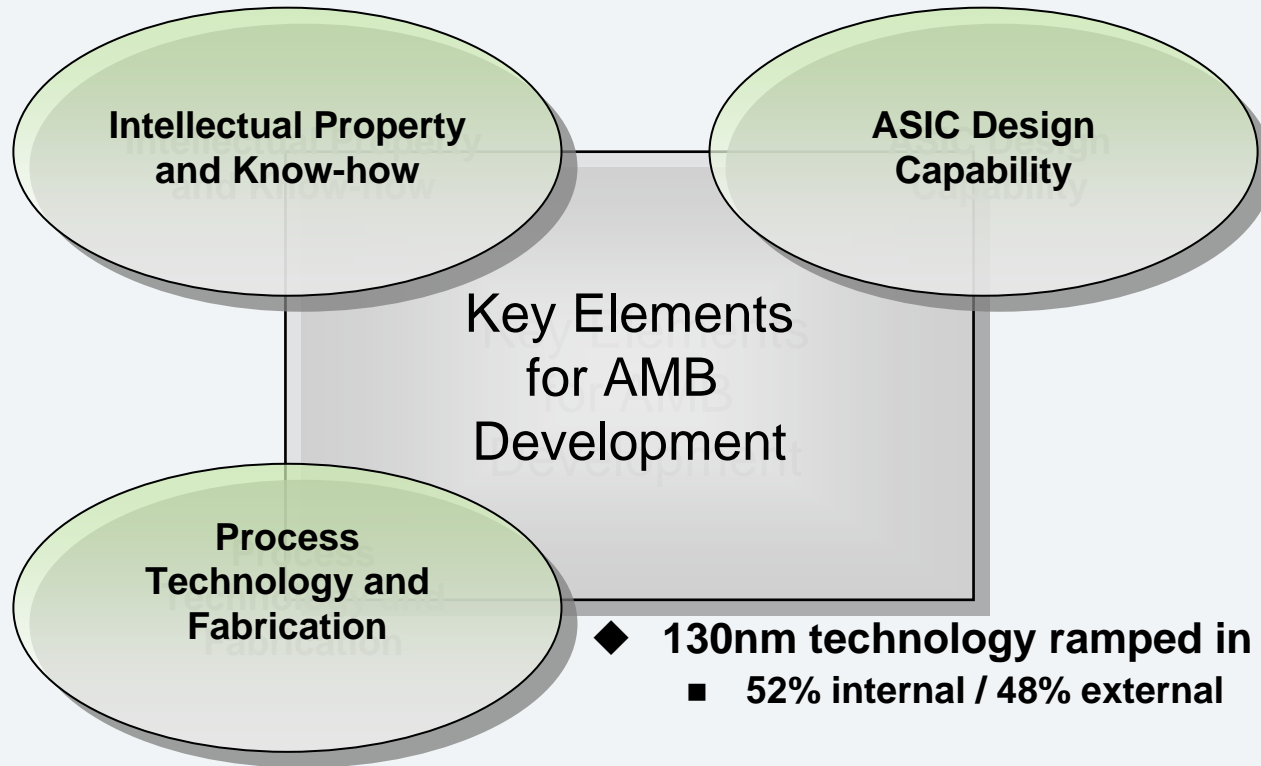
- ◆ **Market leader in high performance analog**
- ◆ **Market leader in high speed linear* (Interface, amplifiers, data converters)**
- ◆ **Industry's first DDR1 memory clock driver**
- ◆ **Industry's first DDR2 register**
- ◆ **Industry's first 800 Mb/s PLL**

* Databeans High Speed Linear report July 2004

AMB Success Drivers



AMB Success Drivers

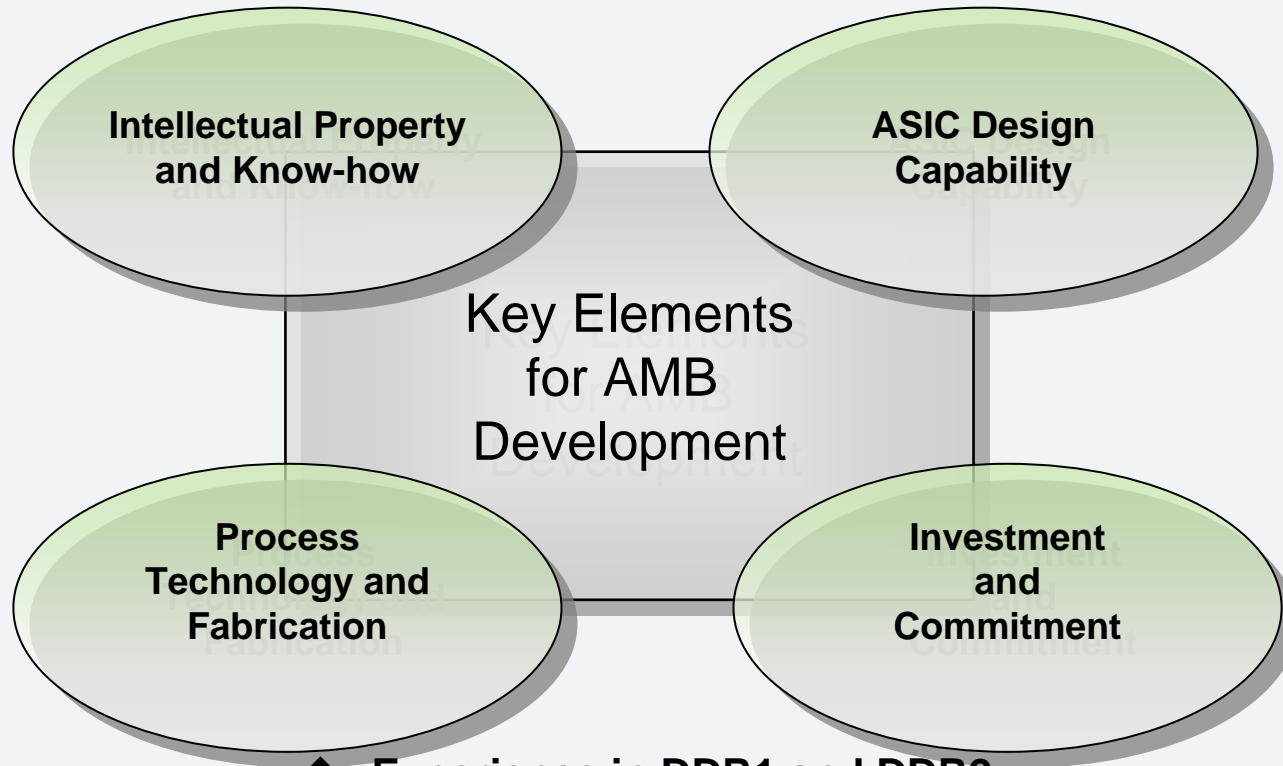


- ◆ **130nm technology ramped in three FABs**
 - 52% internal / 48% external

- ◆ **90nm technology in production ramp**
 - Three FABs by 4Q2004

- ◆ **65nm development underway**
 - Qualified production in late 2005

AMB Success Drivers

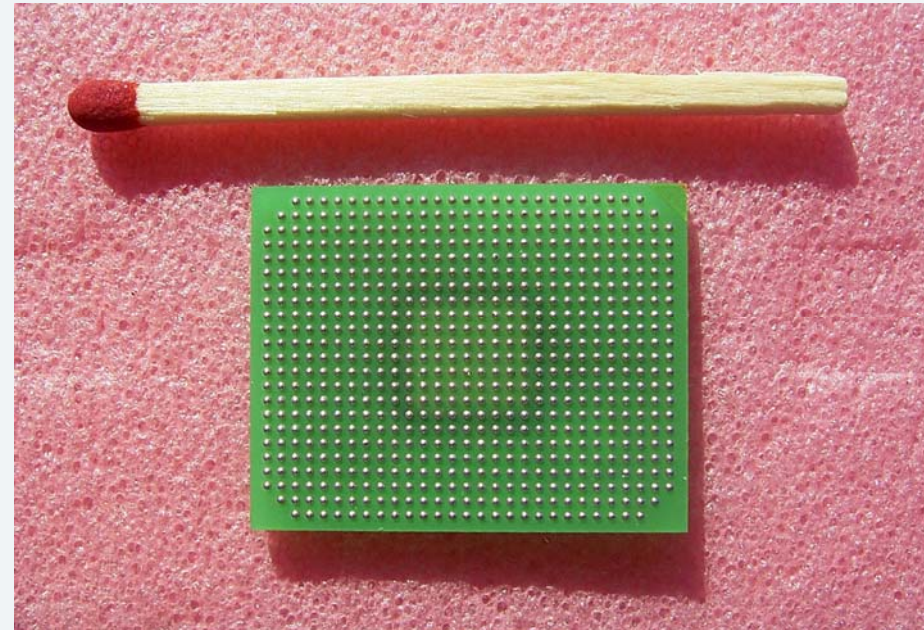


- ◆ Experience in DDR1 and DDR2
 - TI is committed to AMB and future developments
- ◆ Continued investments in core technology
 - \$2.1B in R&D
 - \$1.3B in capital

Picture of TAMB048



TOP VIEW



BOTTOM VIEW



Thank You!

Texas Instruments
Fall 2004 IDF
Memory Section, Booth #804

www.ti.com/ddrsdram