



Intel Embedded Technologies

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Innovation: Fingerprint recognition.

Powerful: 192 cubic-inch displacement delivering 250 horsepower.

Performance: Dual V-Twin motors.

Dependability: Extended battery life and hot swap capabilities.

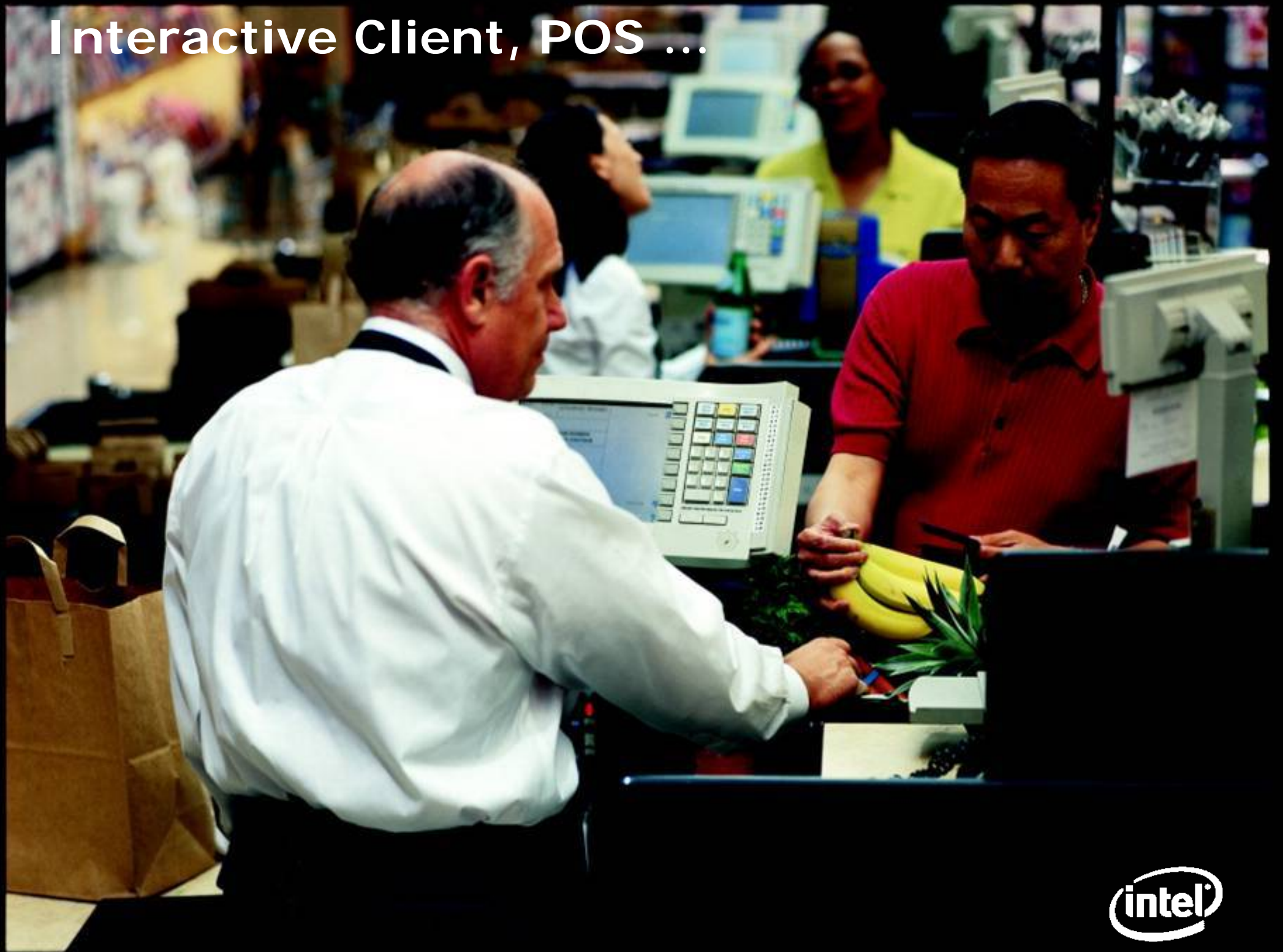
Embedded Technology: Black Diamond SwitchBack* ruggedized PC with Intel's low power Core™ Duo processor that operates the kickstand, rear view cameras, tachometer, and speedometer.

Reliability: Global Positioning System.

Industrial Control, Automation ...



Interactive Client, POS ...



In Vehicle Information, Entertainment ...



Medical, Health Care ...



Gaming, Entertainment ...



Digital Security Surveillance



Trend

Parallelism

Energy-Efficient Performance

Connectivity

Manageability



Intel Embedded Product Strategy

Performance Segment

High performance processors – DP in many cases

High memory and I/O throughput

Data Integrity – ECC and FSB Parity

Apps: Comms Infrastructure, Storage, Security

Scalable Segment

Highest performance to price ratio

Scalability between processor generations

Apps: Industrial, Interactive Client, General
Embedded

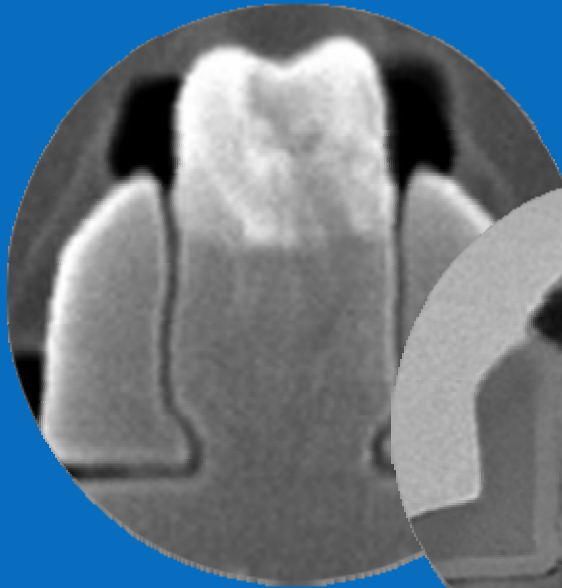
Low Power Segment

Small form factor/thermally constrained designs

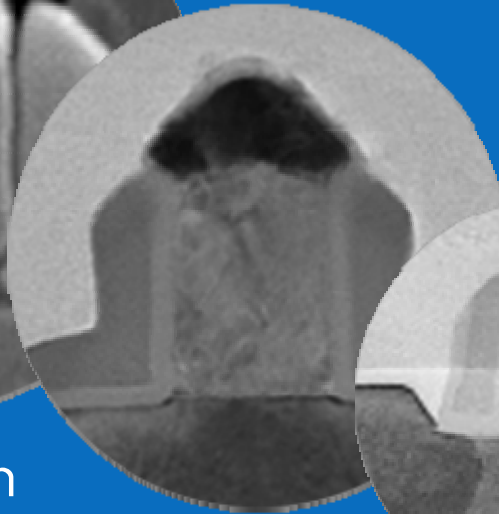
Options for fanless designs

Apps: Industrial, Interactive Client, SFF SBC's

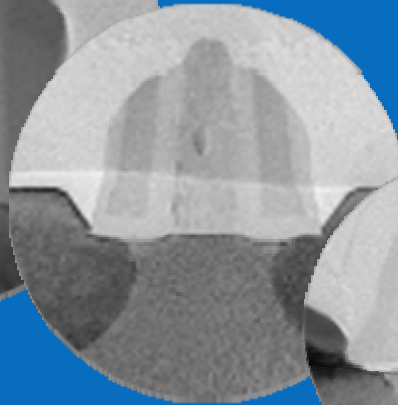
Intel Process Technology Leadership



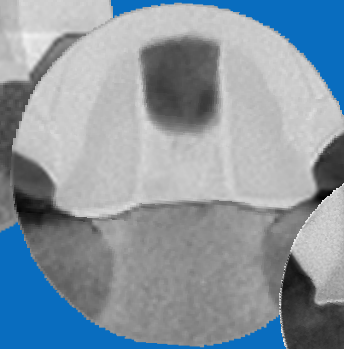
180 nm
1999



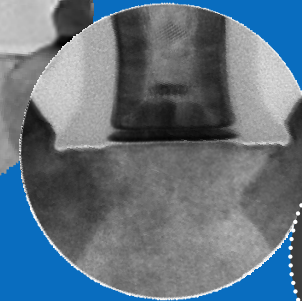
130 nm
2001



90 nm
2003



65 nm
2005



45 nm
2007

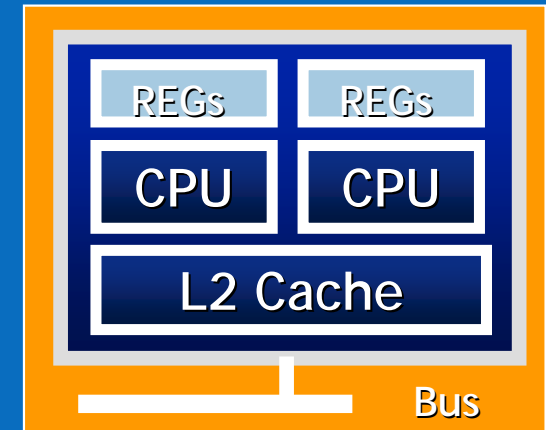


On
Track

32 nm
2009

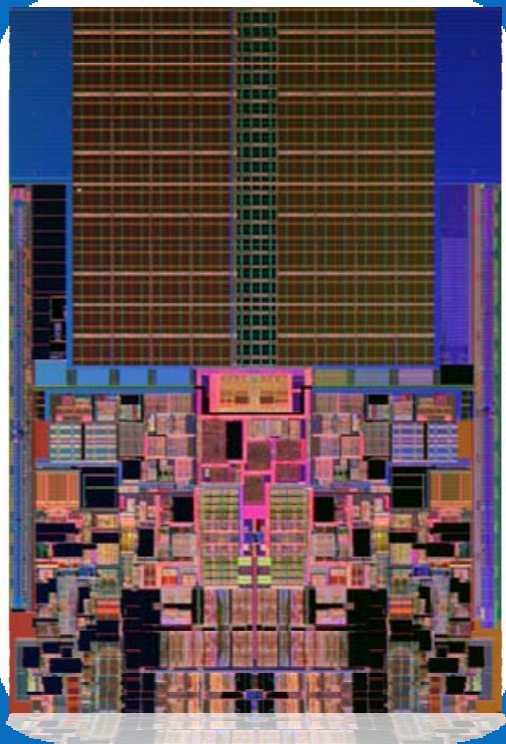
Moving to Multi-core Technology

Two or more “execution cores” that plug directly into a single processor socket. OS treats each core as a discrete logical processor.



- **Multi-Core** delivers higher performance per watt
 - Two cores clocked slower = lower input voltage
 - One core clocked faster = higher input voltage
- **Multi-Core** increases processor density
 - Two cores in the same footprint as a single processor
- **Multi-Core** reduces latency
 - Schedule priority tasks on 'more available core'
- **Multi-Core** paves the way for greater functionality
 - Shortens development time
 - Smaller form factor, eases thermal issues

Intel® Core™ Microarchitecture



Wide Execution Engine

4 wide platform engine

Intel® Wide Dynamic Execution Engine

Shared and multi-core optimized L2 cache

2 - 4x more cache¹ per core

Intel® Advanced Smart Cache

Highly Efficient Memory Architecture

Improved data flow

Intel® Smart Memory Access

128 bit SSE/2/3 Instruction Performance

2x Throughput

Intel® Advanced Digital Media Boost

Power Optimized Design (including ultra-fine grained power control, split bus, platformized power management architecture)

Power efficient performance

Intel® Intelligent Power Capability

Platform Enhancing Technologies

Intel® Core™ Microarchitecture

- New levels of high performance and power efficiency

Intel® 64 Architecture

- Support for 64-bit logical addresses and operations

Intel® Virtualization Technology

- Software isolation
- Merge multiple platforms into one physical platform

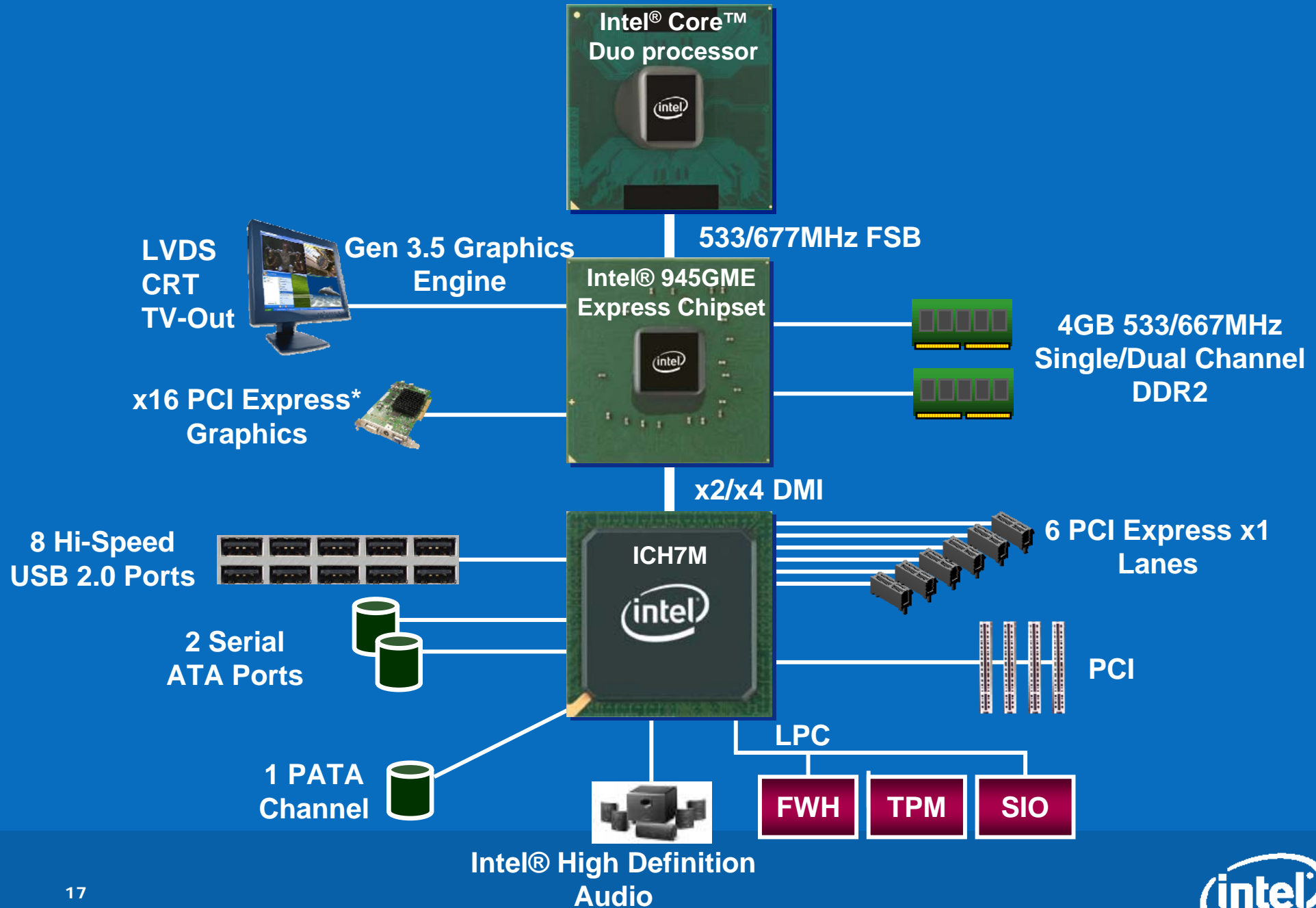
Intel® Active Management Technology (Intel® AMT)

- Remote access of networked computing assets

Intel® I/O Acceleration Technology (Intel® I/OAT)

- Platform based network acceleration
- Addresses multiple bottlenecks

Intel® Core™ Duo and 945GME Express Chipset Based Platform



Technical Resources

- Intel® Core™ Duo processors
 - http://www.intel.com/design/intarch/coreduo/index.htm?iid=ipp_embed+proc_coreduo&
- Intel® 945GME Express chipset
 - http://www.intel.com/design/chipsets/embedded/945GME.htm?iid=ipp_embed+chip_945GME&
- Intel Embedded Vertical Solutions
 - http://www.intel.com/design/embedded/solutions/index.htm?iid=nc+embed_allsol
- Intel architecture and silicon technologies
 - http://www.intel.com/technology/architecture-silicon/index.htm?iid=home+hdr_nav2_arch
- Intel platform benefits
 - http://www.intel.com/technology/platform-technology/index.htm?iid=home+hdr_nav2_platform

The image features the Intel logo and slogan 'Leap ahead' overlaid on a scenic landscape. The logo consists of the word 'intel' in a lowercase, sans-serif font, enclosed within a white, stylized swoosh that forms a partial circle. To the right of the swoosh, the slogan 'Leap ahead' is written in a similar sans-serif font, with a trademark symbol (TM) at the end. The background is a wide-angle shot of a valley with a dirt road in the foreground, leading towards a range of mountains under a bright blue sky with scattered white clouds.

intel® Leap ahead™