





## Transforming the Digital Enterprise

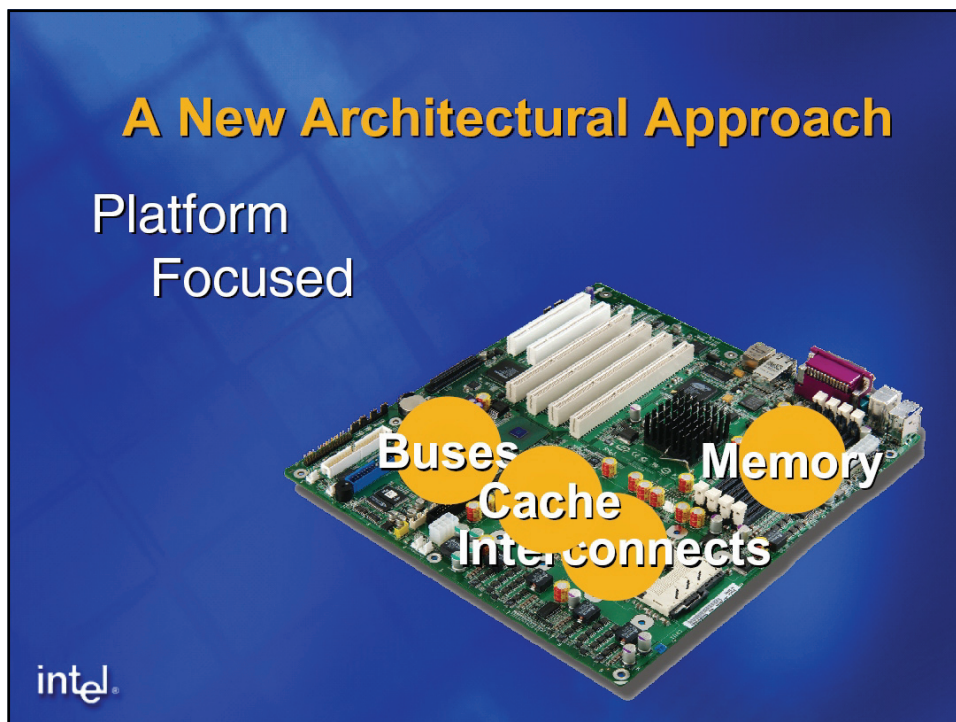
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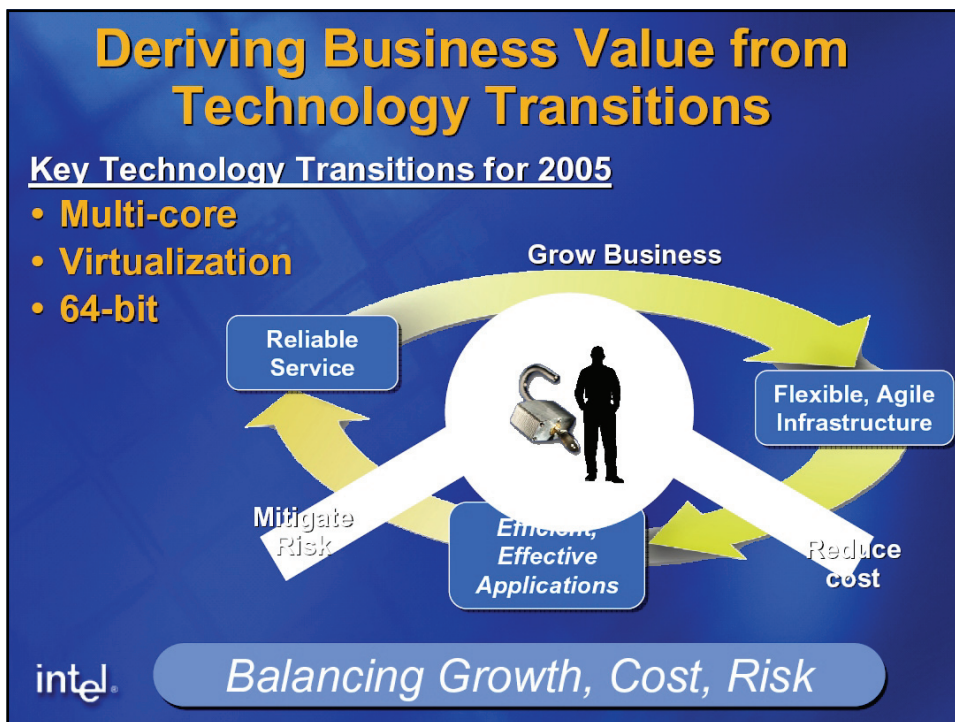
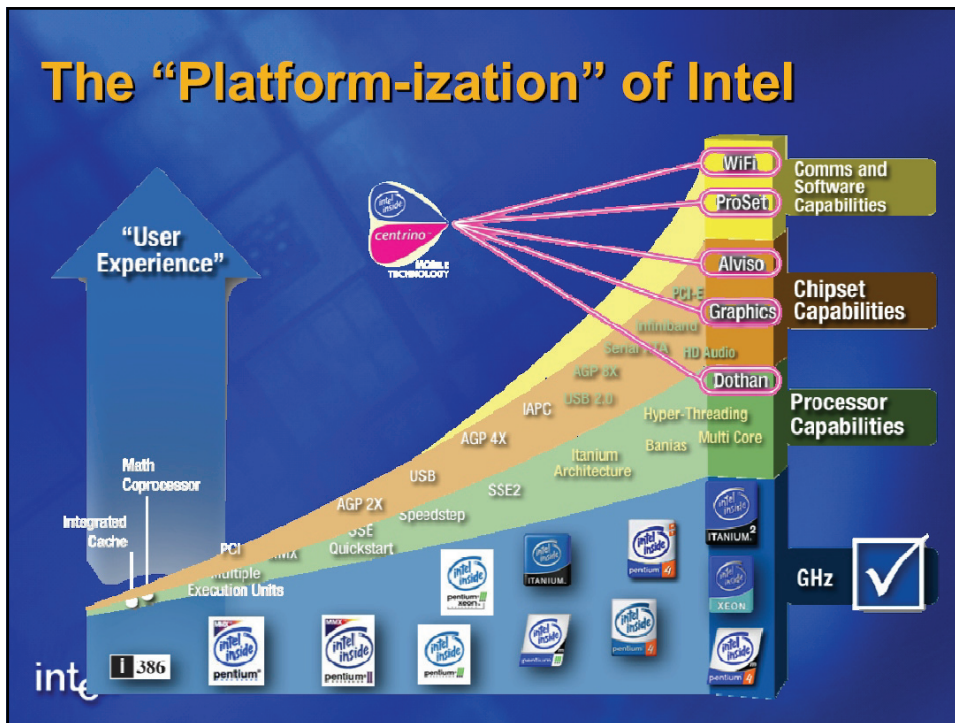
## Intel's figures CY2004

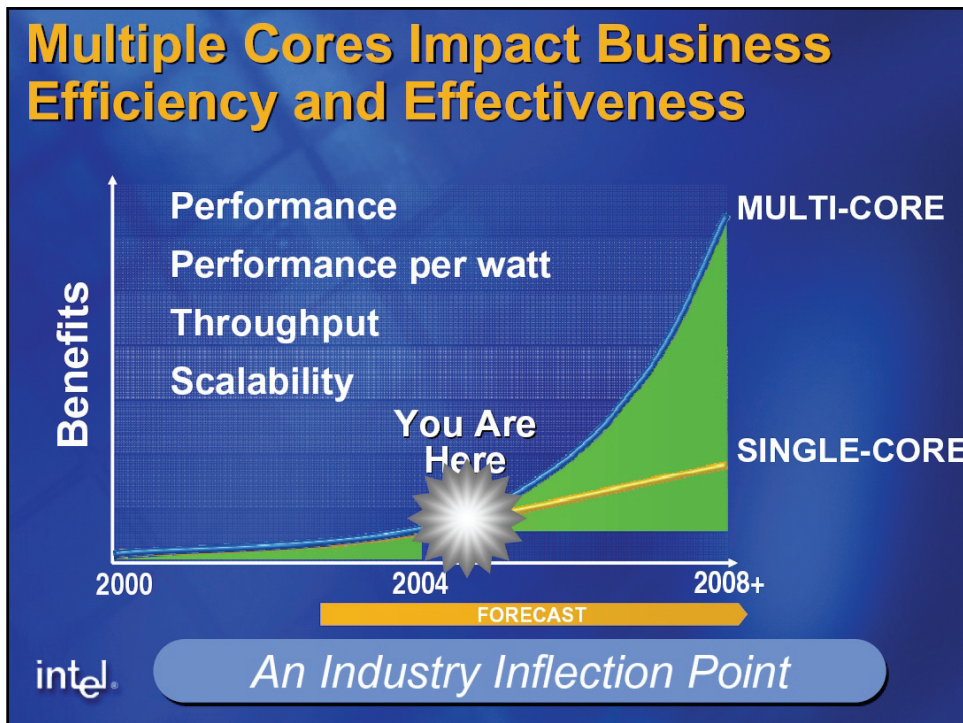
- Revenue 2004: \$ 34,2 billion
- R&D Investments 2004: \$ 5.4 billion
- 22 Factories
- 83.000 Employees
  - 17.000 working in the Intel Software Solution Group











## Manageability: Increase IT Productivity

**Discover** all of your hardware and software computing assets

**Heal** systems remotely regardless of the OS or system state

**Protect** your enterprise against malicious software attacks

Intel® Active Management Technology  
[www.intel.com/go/iamt](http://www.intel.com/go/iamt)

Manageability Across Infrastructure

All products and dates are preliminary and subject to change without notice. Other names and brands may be claimed as the property of others.



## What's the Intel® Virtualization Technology?

- Enables VMM software a privileged access to hardware
  - Ring 0 access
- Enables virtualization in 64-bit environments
  - 64-bit guest OS support
- Hardware-based mode transitions
  - vs. software only
  - New instructions supporting entry, exit, configuration and maintenance
- Memory protection within the processor

Increased Robustness  
Through Hardware Features  
For Virtual Software Solutions

## Intel® Extended Memory 64 Technology

	Features	Modes	
	Extended Memory Addressability 64-bit Pointers, 64-bit Registers	<div style="border: 1px solid black; padding: 5px; background-color: #800080; color: white;">Legacy 32/32</div> <div style="border: 1px solid black; padding: 5px; background-color: #ffa500; color: white;">Compatibility 64/32</div> <div style="border: 1px solid black; padding: 5px; background-color: #32cd32; color: white;">64-bit 64/64</div>	<p><i>with Intel® EM64T</i></p>
	Additional Registers 8-SSE & 8-Gen Purpose		
	Double Precision (64-bit) Integer Support		
	Support for flat virtual Address space		
Evolutionary IA-32 architectural enhancements to support extended memory			

All dates, products and features provided are subject to change without notice

## Addressing Power Efficiency

**TODAY** **2H'06**

*Performance/Watt*  
**Up to 3.5X PERFORMANCE /WATT\***

*Performance*  
**Over 2X PERFORMANCE\***

**Driven By Dual Core, Balanced Platform Performance and Lower Power Cores**

intel®  
CPU dies not to scale

\* vs. 64bit Intel® Xeon™ Processor based platform (as of May '05)

## Improving Efficiency and Utilization Combining Technologies For Greater Benefit

**Business Value**

**Efficiency**  
Virtualization, Power Management

**Manageability**  
Active Management, IPMI, ...

**Availability**  
Cache reliability, memory RAS, ECC...

**Performance**  
Multi-core, 64-bit, I/O acceleration

Efficient, Effective Applications

Flexible, Agile Infrastructure

Reliable Services

Throughput Parallelism Scalability Headroom

**Time**

intel® **To Address Growth, Cost, Risk**



## Intel Enterprise Server Technology Roadmap

	2004-2005	2005-2006	FUTURE
<b>Performance</b>	Hyper-Threading Tech PCI Express* DDR2 Memory	Dual-Core Intel® I/O Acceleration Tech FB-DIMM Memory	Multi-Core Enhanced I/O Enhanced Memory
<b>Efficiency</b>	Power Management (DBS) Hyper-Threading Tech	Dual-Core Intel® Virtualization Tech Power Efficiency Tools	Multi-Core Enhanced Virtualization
<b>Manageability</b>	Intel® LANDesk Mgt Suite IPMI 2.0	Intel® Active Mgmt Tech	Enhanced Manageability Common Platform Architecture
<b>Availability</b>	DDR2 Memory Enhanced MCA RAID 5	RAID 6 Intel Virtualization Tech	Enhanced RAS Enhanced Virtualization

*Intel offers the most comprehensive technology roadmap for the enterprise*

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## digital ENTERPRISE multi-core server

# Intel is driving 64-bit computing from datacenter to desktop

**ALIGNED WITH ATM, RM, FEATURES**

Source: Intel roadmap. \*Other names and brands may be claimed as the property of others.

## Intel Enterprise Technologies Vision

Deliver features and value demanded by business today and tomorrow

**Cores & Threads**


Supports larger number of software threads for greater performance

**Virtualization**

Robust, higher performance virtual partitions

**RAS**

Comprehensive data integrity & error recovery



**Power Management**

Lower power consumed and improved data center utilization


**I/O and Memory**

Higher bandwidth & reliability features; flexibility of industry standards

**System Management**





Common management standards for lower TCO

Server advancements led by Intel



## Server Roadmap Updates

New updates shown in Yellow

Segment/Processors	2005	1H'06 / 2H'06	FUTURE		
<b>RISC Replacement</b>  <span style="font-size: small;">2/4/8+</span>	Intel® Itanium® 2 - 9MB cache Intel® E8870, Enabled	Montecito / Montvale Intel® E8870, Enabled	Richford Tukwila / Poulson Future chipset		
<b>Enterprise &amp; Volume</b>  <span style="font-size: small;">4/8+</span>	Truland <span style="color: yellow;">Paxville MP</span> 64-bit Intel® Xeon MP 8M, 1M Intel® E8500/ <span style="color: yellow;">E8501</span> , Enabled	Truland Tulsa Intel® E8501, Enabled	Reidland <span style="color: yellow;">Whitefield / Dunnington</span> Future chipset		
<span style="font-size: small;">2</span>	<span style="color: yellow;">Paxville DP</span> 64-bit Intel® Xeon™ - 2MB Intel® E7520, E7320	Bensley <span style="color: yellow;">Dempsey / Woodcrest</span> Greencreek, Blackford	Future Platform Future Processor Future chipset		
<b>Entry</b>  <span style="font-size: small;">1</span>	Intel® Pentium® 4 / Pentium® D Intel® E7221 / E7230 <span style="color: yellow;">Dual-core</span>	<span style="color: yellow;">Presler / Conroe</span> Intel® E7230 / Next Gen. Dual-core	Future Platform Future Processor Future chipset Multi-core		
<b>Technologies</b> 	Hyper-Threading Technology 64-bit, Intel® EM64T PCI Express* I/O DDR-2 Memory Power Management (DBS) EPIC Architecture Enhanced MCA	plus	Intel® Virtualization Tech Intel® I/O Acceleration Tech FB-DIMM Memory Intel® Active Mgmt Tech <span style="color: yellow;">Next Generation Architecture</span> Foxtan / Pellston	plus	Enhanced Virtualization Enhanced I/O & Memory Enhanced RAS Enhanced Manageability Common Platform Architecture



## Montecito – The Next Big Advance for Itanium® Architecture

### Higher Performance<sup>1</sup>

4S Online Transaction Processing (OLTP)<sup>2</sup>

### More Power Efficiency

Thermal Design Envelope (TDE)<sup>2</sup>

### Increased Capabilities

- Multi-core, multi-threading, 24MB cache
- Dynamic performance boost – Foxtan Technology
- Robust virtual partitioning – Intel Virtualization Technology
- Server power savings – Demand Based Switching
- Cache reliability – Pellston Technology

- Montecito will deliver
  - Up to 2X performance and up to 3X power efficiency improvement<sup>2</sup>
  - With advances in virtualization, reliability, and more
- To enable more room to grow, at lower cost, with less risk

**Next generation Itanium® 2 processor Montecito will deliver new levels of performance and value**

intel <sup>1</sup> All comparison refer to Montecito relative to the current generation Itanium 2 processor. <sup>2</sup> Source: Intel estimates 6/05; based on preliminary testing only. Actual results may vary. All products, dates, comparisons, and information are preliminary and subject to change without notice.

## How Tools Help Win -- Example: Intel® IPP Performance Overview

Average Intel IPP Performance Gain over Optimized C Code


Task	Average Performance Gain (%)
Audio	~210%
Video	~320%
JPEG	~240%
Image Processing	~280%
Signal Processing	~200%
Speech Coding	~170%
Speech Recognition	~190%
Computer Vision	~150%
Matrix Processing	~50%
Vector Math	~300%
Strings	~130%
Cryptography	~40%

Performance tests and ratings are measured using specific computer systems and/or components and reflect the approximate performance of Intel products as measured by those tests. Any difference in system hardware or software design or configuration may affect actual performance. Buyers should consult other sources of information to evaluate the performance of systems or components they are considering purchasing. For more information on performance tests and on the performance of Intel products, reference [www.intel.com or call (U.S.) 1-800-828-8686 or 1-916-356-3104.

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# Intel Enabling Tools

### Developer Platforms



HT/ Dual Core platforms  
Remote Access

### SW Tools and Expertise




Intel Compilers  
Intel Threading Toolkit,  
Performance Libraries,  
Whitepapers  
SW Engineers

### Extensive Support Services

- Early Access Program
- Threading Immersion Program
- Application Tuning Centers
- Intel Solution Services
- Intel Software College

**Helping Users and ISVs Optimize Solutions Performance**



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