
Revolutionary, Intelligent
Intel® Core™ i7
Processors
Coming Soon To a
Laptop Near You
Intel® Corporation
intel

Risk Factors

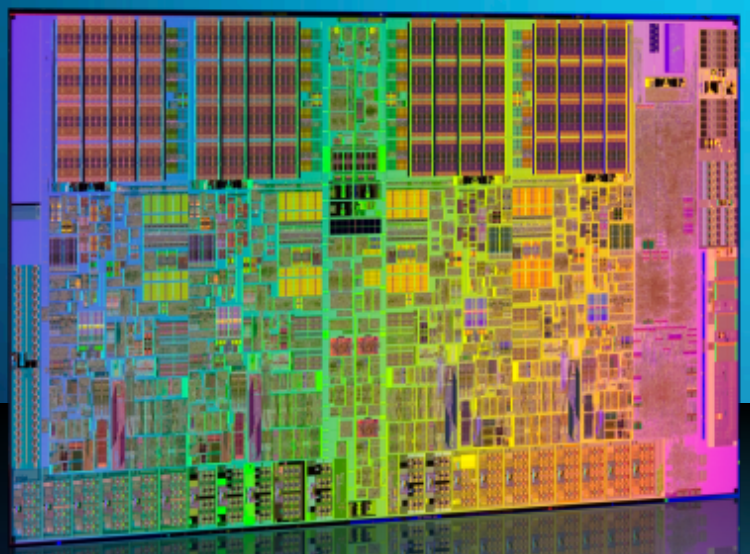
The above statements and any others in this document that refer to plans and expectations for the third quarter, the year and the future are forward-looking statements that involve a number of risks and uncertainties. Many factors could affect Intel's actual results, and variances from Intel's current expectations regarding such factors could cause actual results to differ materially from those expressed in these forward-looking statements. Intel presently considers the following to be the important factors that could cause actual results to differ materially from the corporation's expectations. Ongoing uncertainty in global economic conditions pose a risk to the overall economy as consumers and businesses may defer purchases in response to tighter credit and negative financial news, which could negatively affect product demand and other related matters. Consequently, demand could be different from Intel's expectations due to factors including changes in business and economic conditions, including conditions in the credit market that could affect consumer confidence; customer acceptance of Intel's and competitors' products; changes in customer order patterns including order cancellations; and changes in the level of inventory at customers. Intel operates in intensely competitive industries that are characterized by a high percentage of costs that are fixed or difficult to reduce in the short term and product demand that is highly variable and difficult to forecast. Additionally, Intel is in the process of transitioning to its next generation of products on 32nm process technology, and there could be execution issues associated with these changes, including product defects and errata along with lower than anticipated manufacturing yields. Revenue and the gross margin percentage are affected by the timing of new Intel product introductions and the demand for and market acceptance of Intel's products; actions taken by Intel's competitors, including product offerings and introductions, marketing programs and pricing pressures and Intel's response to such actions; and Intel's ability to respond quickly to technological developments and to incorporate new features into its products. The gross margin percentage could vary significantly from expectations based on changes in revenue levels; capacity utilization; start-up costs, including costs associated with the new 32nm process technology; variations in inventory valuation, including variations related to the timing of qualifying products for sale; excess or obsolete inventory; product mix and pricing; manufacturing yields; changes in unit costs; impairments of long-lived assets, including manufacturing, assembly/test and intangible assets; and the timing and execution of the manufacturing ramp and associated costs. Expenses, particularly certain marketing and compensation expenses, as well as restructuring and asset impairment charges, vary depending on the level of demand for Intel's products and the level of revenue and profits. The current financial stress affecting the banking system and financial markets and the going concern threats to investment banks and other financial institutions have resulted in a tightening in the credit markets, a reduced level of liquidity in many financial markets, and heightened volatility in fixed income, credit and equity markets. There could be a number of follow-on effects from the credit crisis on Intel's business, including insolvency of key suppliers resulting in product delays; inability of customers to obtain credit to finance purchases of our products and/or customer insolvencies; counterparty failures negatively impacting our treasury operations; increased expense or inability to obtain short-term financing of Intel's operations from the issuance of commercial paper; and increased impairments from the inability of investee companies to obtain financing. The majority of our non-marketable equity investment portfolio balance is concentrated in companies in the flash memory market segment, and declines in this market segment or changes in management's plans with respect to our investments in this market segment could result in significant impairment charges, impacting restructuring charges as well as gains/losses on equity investments and interest and other. Intel's results could be impacted by adverse economic, social, political and physical/infrastructure conditions in countries where Intel, its customers or its suppliers operate, including military conflict and other security risks, natural disasters, infrastructure disruptions, health concerns and fluctuations in currency exchange rates. Intel's results could be affected by adverse effects associated with product defects and errata (deviations from published specifications), and by litigation or regulatory matters involving intellectual property, stockholder, consumer, antitrust and other issues, such as the litigation and regulatory matters described in Intel's SEC reports. A detailed discussion of these and other risk factors that could affect Intel's results is included in Intel's SEC filings, including the report on Form 10-Q for the quarter ended June 27, 2009.

Agenda

- Today's news
- Current environment
- Advancing the mobile platform
- Experience the transformation
- Performance data and enabled applications
- Summary

Today's News

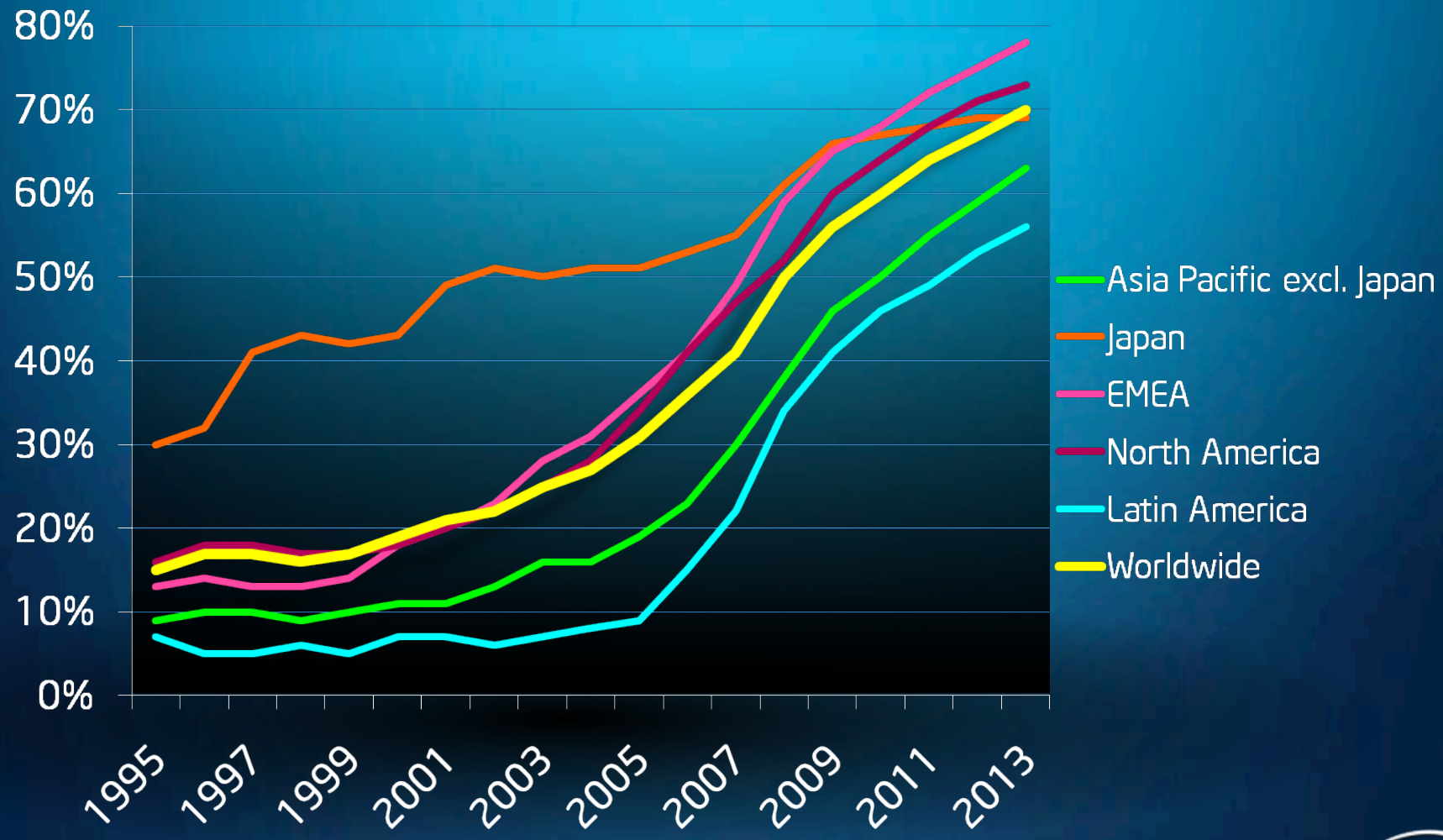
- What's launching today:
  - Three new Intel® Core™ i7 mobile processors, including the fastest notebook processor on the planet[1]
    - Intel® Core™ i7-920XM processor
    - Intel® Core™ i7-820QM Processor
    - Intel® Core™ i7-720QM Processor
  - New Intel® PM55 Express Chipset
- Intelligent, adaptable performance on the go enabled by
  - Intel® Turbo Boost Technology
  - Intel® Hyper-threading Technology
- For more information, go to
  - http://www.intel.com/pressroom/idf



Environment

The World Continues to Go Mobile

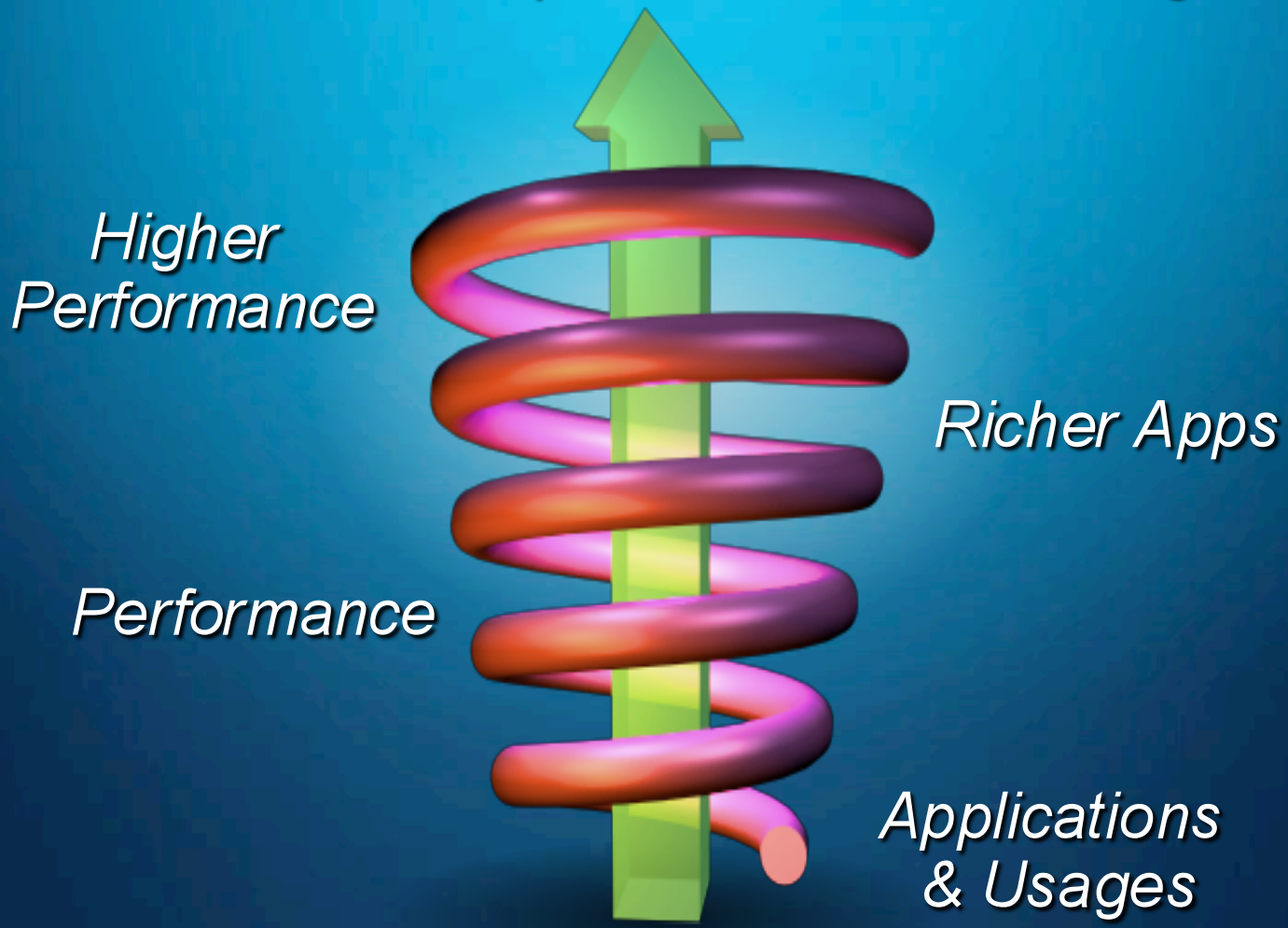
Mobile PC Share of Total Client



Source: IDC Worldwide Quarterly PC Tracker August 2009

The Need for Performance…

The HW-SW Spiral is Alive and Kicking



Social Media is on the Rise

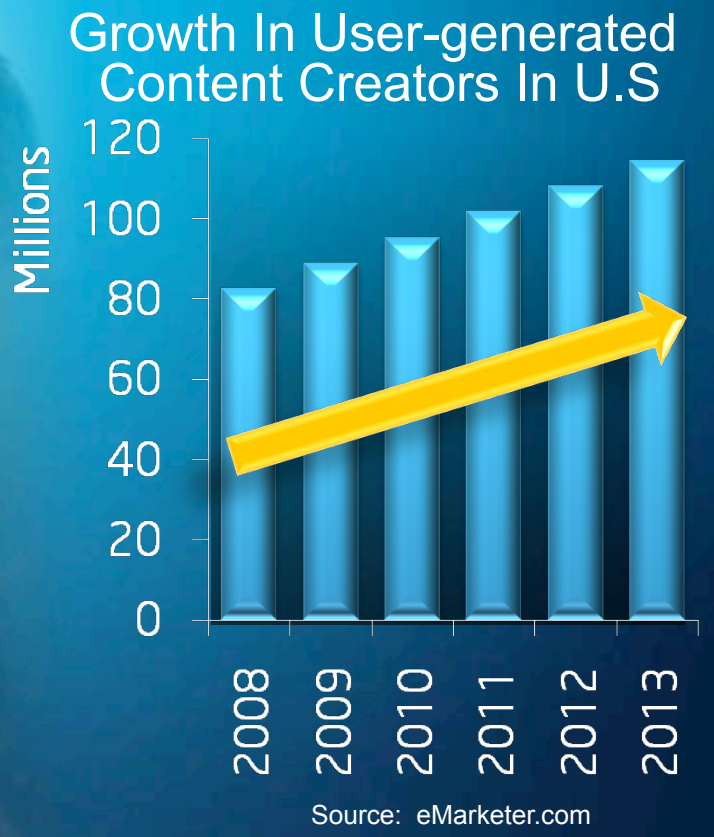


Source: Parks Associates

Usage Model Evolution

User Generated Content Creators Heading to 50%+ Crossover

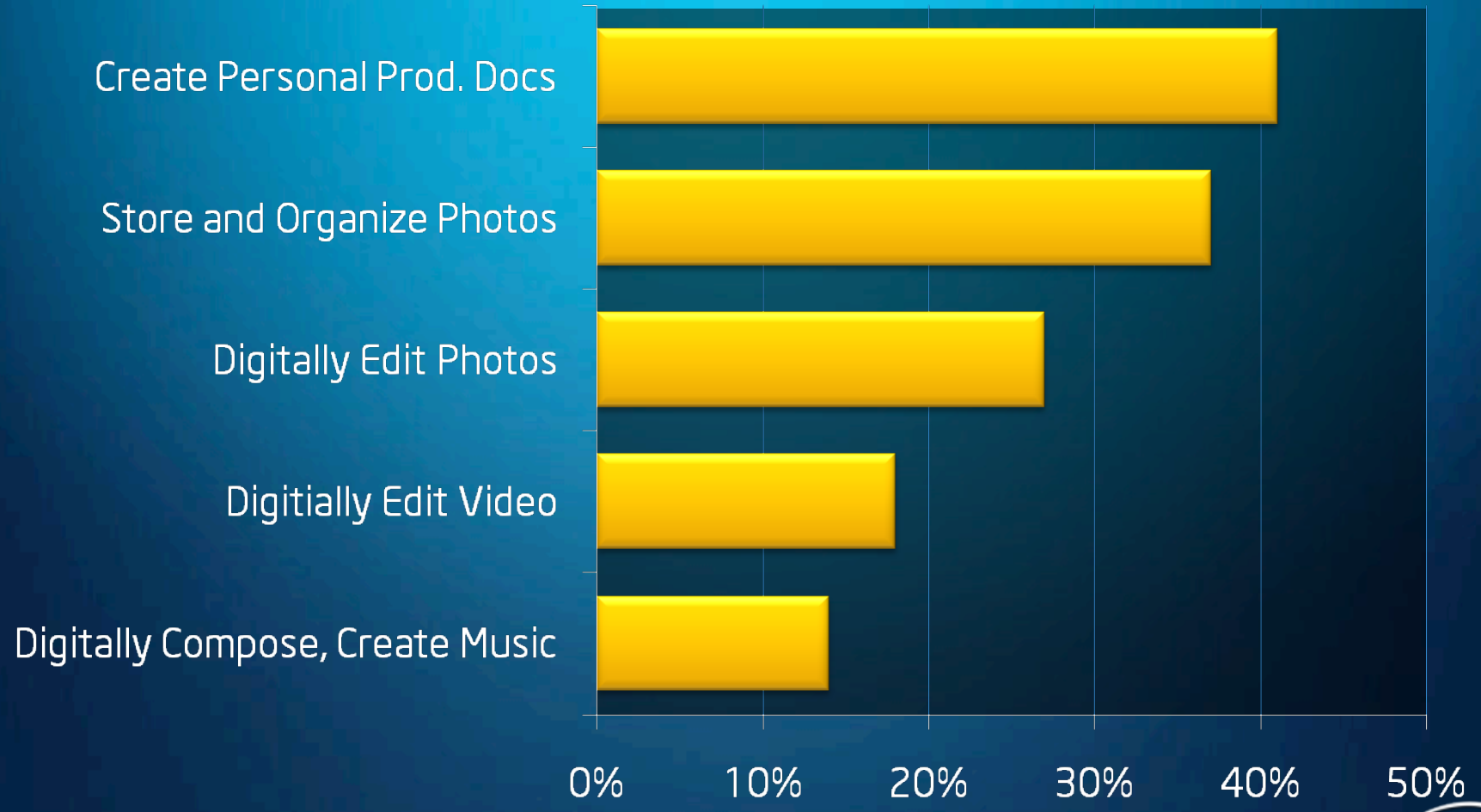




Social Networking and the Internet Are Driving Consumer Content Creation from Niche to the Mainstream

Content Creation Usages

PC Users (Worldwide) Who Do the Following A Few Times Per Week



Source: Intel Internal Research on PC Usage, 2009

The Aging Installed Base of Laptops May be Unfit for Today's Usages

"Is it painful, or even possible to…"

- Watch HD Internet TV and video with smooth playback?
- Easily upload, edit, share your family photos and videos?
- Watch a DVD or Blu-ray* movie?
- Run multiple programs at the same time?

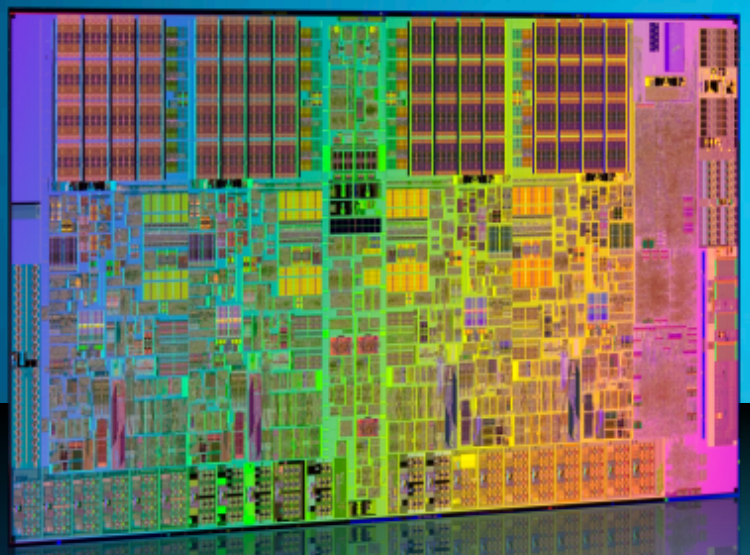
2006 Intel® Core™ Duo Processor T2700	2009 Intel® Core™ i7-720QM Processor
Time To Encode A 30 Minute HD Video Clip[13]	
2 Hrs 17 Min	38 Min

2009 PC Is >3.5X Faster On This Task

You Deserve a New Laptop!

*Other brands and names are the property of their respective owners.

For Benchmarking and Configuration details see Hardware Configuration 1



Advancing the Mobile Platform


Turning Sand Into
The Fastest,
Smartest Processor
In The World[1]
intel

Introducing…
Revolutionary, Intelligent Performance



Intel® Core™ i7-920XM Processor Extreme Edition



Intel® Core™ i7-820QM Processor
Intel® Core™ i7-720QM Processor



Intel® PM55 Express Chipset

Intel's Fastest Mobile Processors Just Got Faster



Intel® Core™ i7-920XM processor Extreme Edition
2.00 GHz
(Turbo up to 3.2 GHz)**
8M/8 threads***

The fastest notebook processor on the planet[1]

(Overclocking enabled for incredible performance[4])



Intel® Core™ i7-820QM Processor
1.73 GHz
(Turbo up to 3.06 GHz)**
8M/8 threads***

Intel® Core™ i7-720QM Processor
1.60 GHz
(Turbo up to 2.8 GHz)**
6M/8 threads***

The world's best family of laptop processors[1a]

**: Refers to the maximum single-core frequency that can be achieved with Intel® Turbo Boost Technology

***: Refers to the total number of threads that can be supported with Intel® Hyper-threading Technology

Intel® Core™ i7 Mobile Processors

Revolutionary, Adaptable, Intelligent Performance

Key Features:

INTELLIGENT PERFORMANCE WITH INTEL® TURBO BOOST TECHNOLOGY[3]

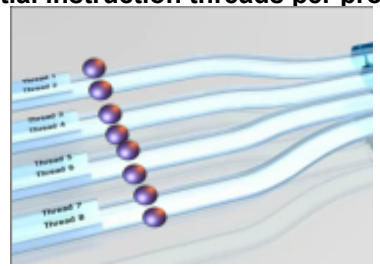
Dynamically Increases Frequency



Processor speed can increase when running below temperature/power limits

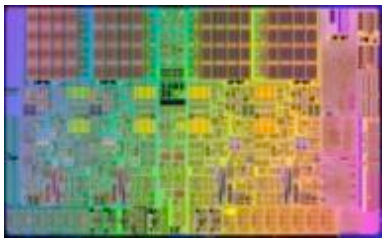
IMPROVED MULTITHREADING WITH INTEL® HYPER-THREADING TECHNOLOGY[2]

Potential instruction threads per processor



Processor delivers more performance in every day usage applications

NEHALEM ARCHITECTURE
Integrated Memory Controller
DDR3 1333/1066 Support
Up to 8M Shared Cache



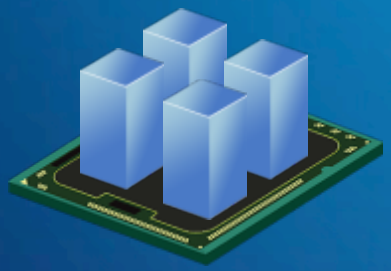
Revolutionary Architecture and Performance leadership with 45nm Nehalem Processor

Intel® Turbo Boost Technology

Dynamically Delivering Optimal Performance & Energy Efficiency

Previous Generation

without Intel Turbo Boost Technology

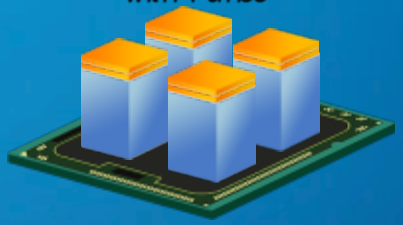


ALL Workloads

Intel® Core™ i7-920XM Processor

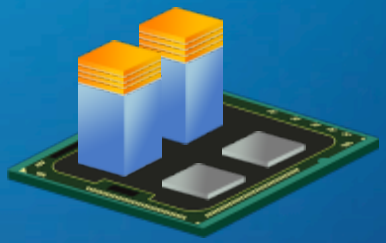
with Turbo

Highly Threaded Workload < TDP



2.26GHz for all 4 Cores

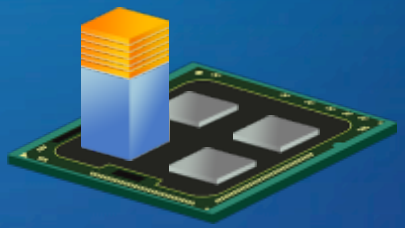
Lightly-Threaded Workload < TDP



3.06GHz for 2 active cores

Single-Threaded Workload < TDP

Near zero power for inactive cores

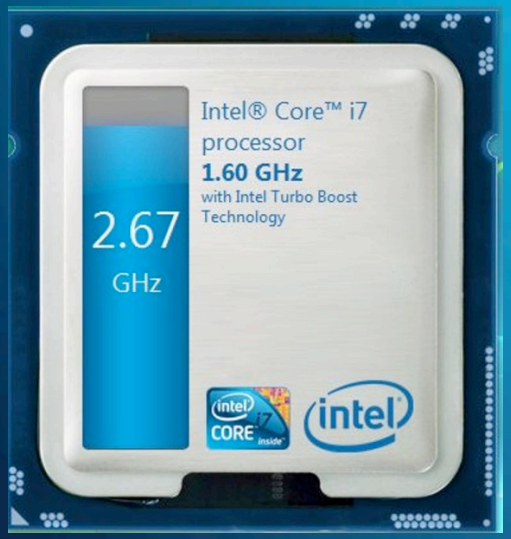


3.20GHz for 1 active core

Nehalem Architecture Featuring Intel Turbo Boost Technology[3] Enables A Dynamically Scaled Performance Boost

Intel® Turbo Boost Technology Monitor

Provides a simple real-time display of Intel® Turbo Boost technology activity





Intel® Turbo Boost Technology[3] Monitor is a Microsoft* Windows* 7 or Vista* (32 & 64 bit) widget that displays turbo frequency changes in the sidebar or on a desktop

*Other names and brands may be claimed as the property of others

Introducing Intel® Core™ i7 Mobile Platform
The Microprocessor Re-Invented



Revolutionary

An Intelligent Architecture Like Nothing Before It In Mobile Computing



Smart

Transparently Accelerates Workloads

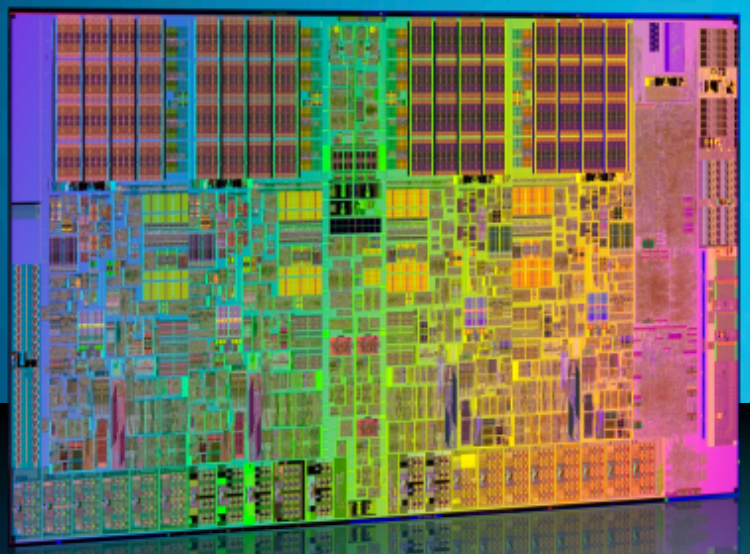


Fast

Incredible Performance



The Choice for Multimedia Enthusiasts and Gamers



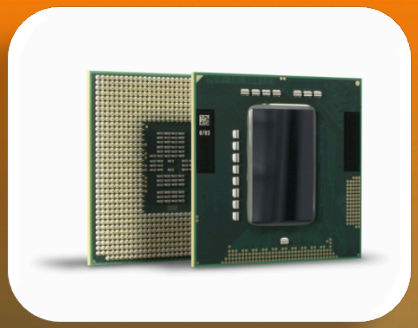
Experience the Transformation

It's Time for a Change

The Transformation of Your Mobile Processor for Flexibility On-the-Go



Today, Everyone Does A little Bit of Everything



The First Processor Designed to Change With Its User



The Promise of Flexibility On-the-go

A Revolutionary Processor That Changes With The Use



Power Efficient at its Core

A Revolutionary Processor That Changes With The Use



The Brawn to Handle Challenging Compute Terrain

A Revolutionary Processor That Changes With The Use



Blazing Speed to
Get the Job Done Fast

intel

Intel® Core™ i7 Mobile Processor
Change the Game; Stop Waiting

Content Creators –

Don't Be Content with Content



Stop Waiting. Start Doing. Whether you're editing a video, composing a song or designing a new product, The Intel Core i7 mobile processor changes to provide the right processing power for the task.

Gamers –

Stop Debating, Start Playing



The Intel Core i7 mobile processor delivers the best experience for games optimized for dual core, while providing headroom for games that will take advantage of quad core and Intel Turbo Boost Technology[3]. Enjoy the best of both worlds.

But… I Am Not A Content Creator… Think Again!
Do you Do Any of This?

Movies/ Video



- Edit video clips to create home movies
- Transcode videos for transfer your portable device
- HD/SD video encoding for sharing or archiving on Blu-ray* & DVD

Photos



- Organize and enhance digital photos
- Resize & edit batches of photos
- Create visually compelling slide shows

Social Networking



- Create online albums to share with friends & family
- Create collages of your favorite photos & build web galleries
- Prepare videos for online sharing and social networking

But… I Am Not A Content Creator…Think Again!
The Intel® Core™ i7 mobile Processor is a Great Choice!

Movies/ Video



Prepare home videos in Blu-Ray* format **68%** faster[5]

Photos



Create DVD quality slideshows **74%** faster[7]

Social Networking



Create your family web gallery and re-size your photos at the same time **24%** faster. [8]

*Other names and brands may be claimed as the property of others
For Benchmarking and Configuration details see Hardware Configuration 2

Intel® Core™ i7 Mobile Processor
Change the Game; Stop Waiting

Content Creators –

Don't Be Content with Content



Stop Waiting. Start Doing. Whether you're editing a video, composing a song or designing a new product, The Intel Core i7 mobile processor changes to provide the right processing power for the task.

Gamers –

Stop Debating, Start Playing



The Intel Core i7 mobile processor delivers the best experience for games optimized for dual core, while providing headroom for games that will take advantage of quad core and Intel Turbo Boost Technology[3]. Enjoy the best of both worlds.

Gamers Are Going Mobile

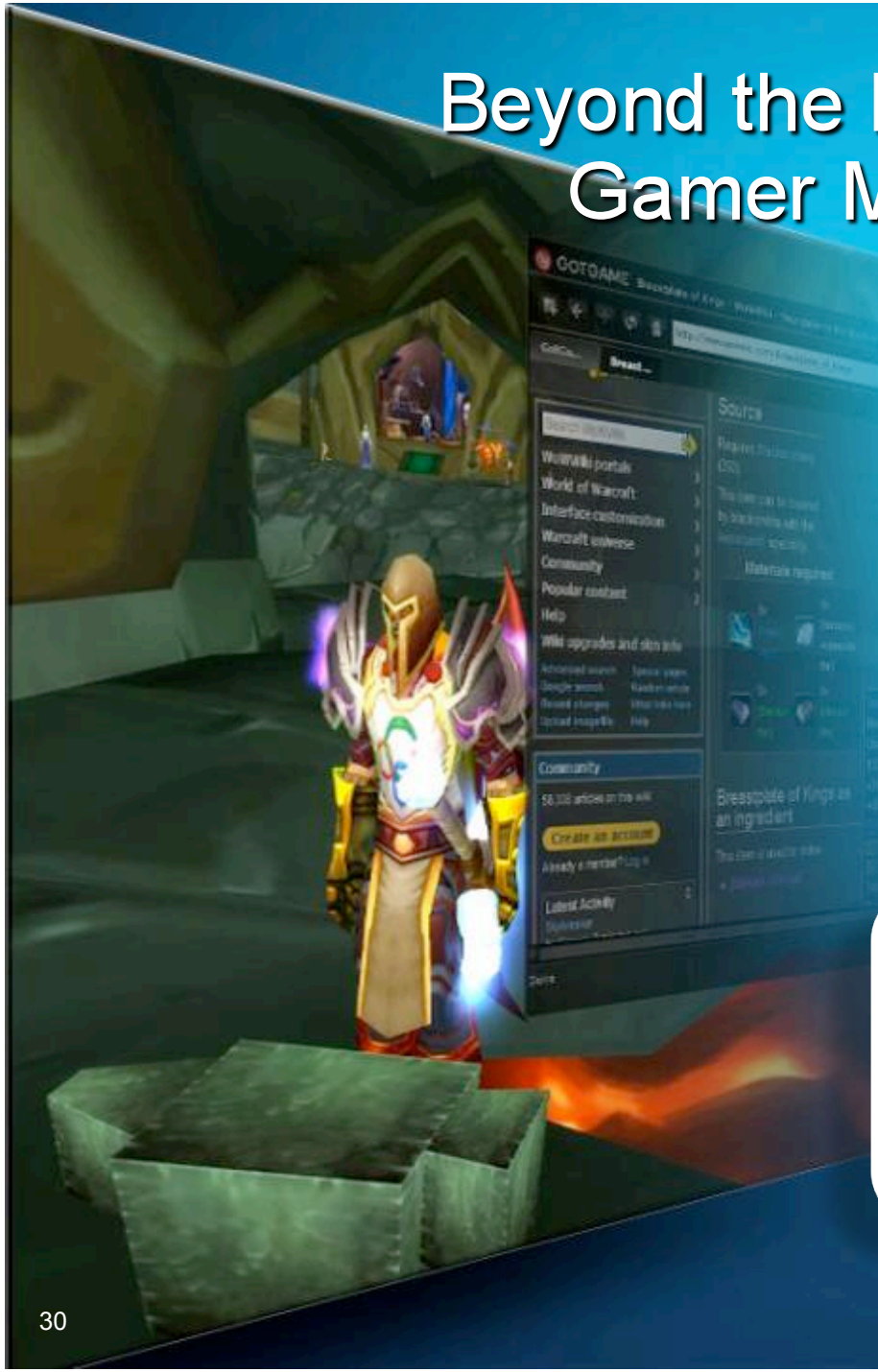
- PC gaming growing
  - 16% growth in 2008 #
  - $12.7B software revenues #
  - 240 million PC gamers#
- Increased shipments and lower cost of gaming-ready Quad Core and Discrete Graphics+
- Performance that rivals desktops



Gaming Laptops will outsell Gaming Desktops by end of 2010+

+ PC Gaming Alliance & IDC Horizon's Hardware Research
# PC Gaming Alliance Horizon's Software Research

Beyond the Benchmarks…
Gamer Multitasking



- In-Game Web Browsing & Video Viewing
- MMO Macro Overlay
- Voice Chat
- Instant Messenger
- In-Game Twitter*
- Game Server
- Video Recording of game play

XFIRE GAMING SIMPLIFIED · PLAYXPERT™ · raptr · STEAM™ · CURSE · teamspeak COMMUNICATION SYSTEM

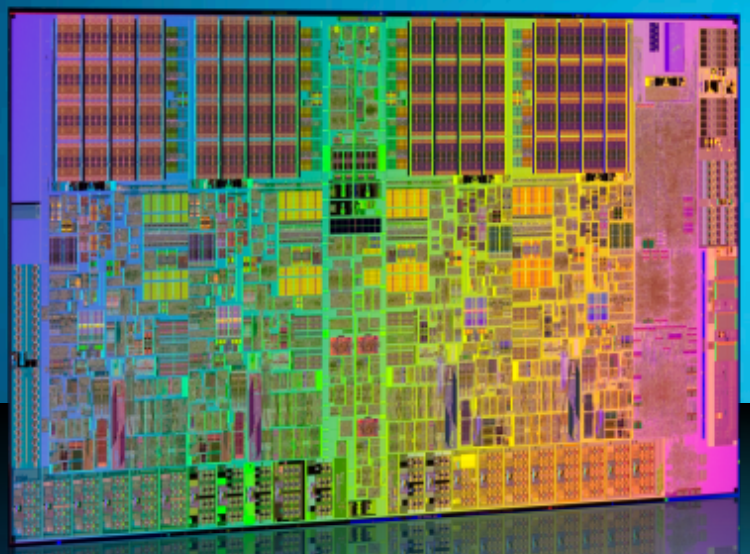
intel

The Fastest Laptop Processor on the Planet![1]



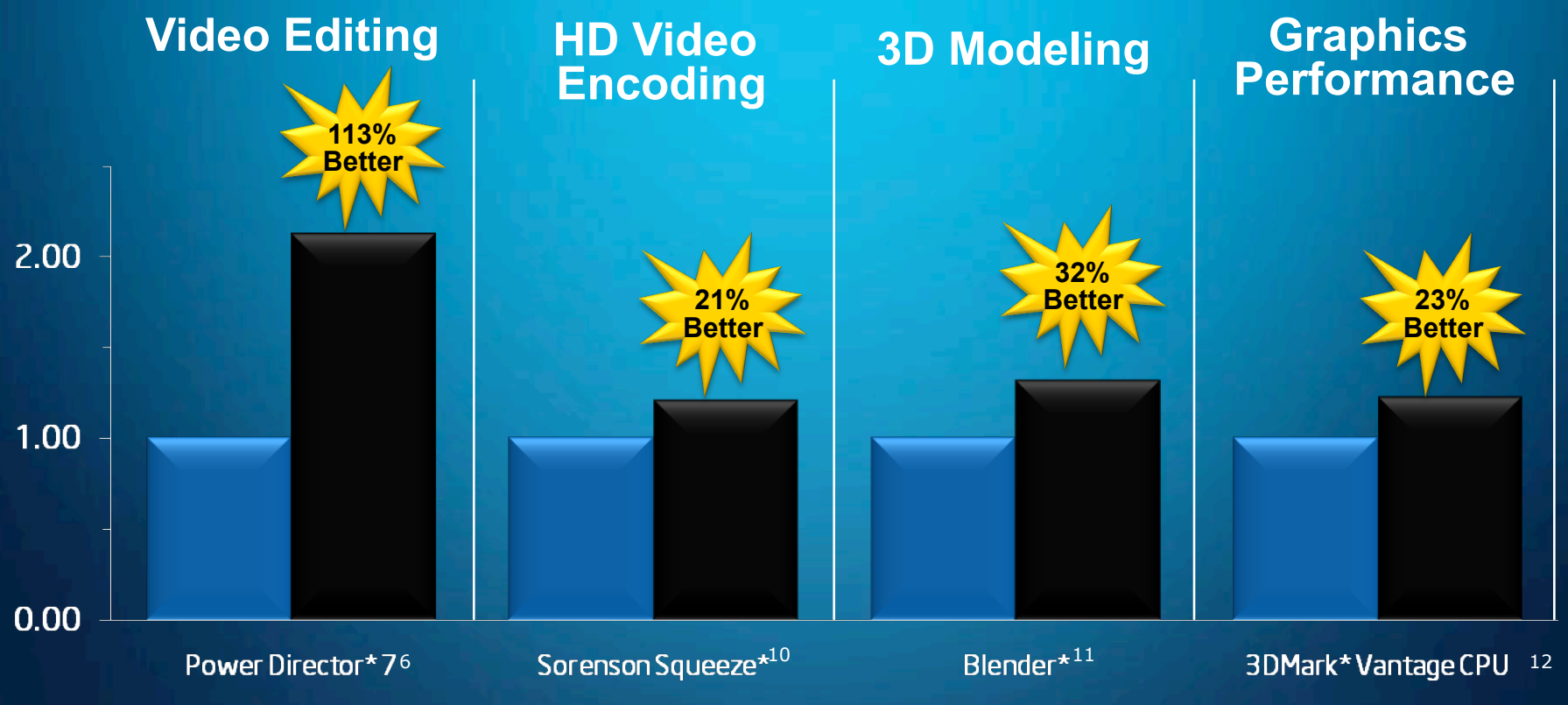
Intel® Core™ i7 Mobile Processor Extreme Edition

The Choice For Multimedia Enthusiasts and Gamers
Incredible 4-core, 8-threaded Performance To Handle Massive Throughput



Performance Data and Enabled Applications

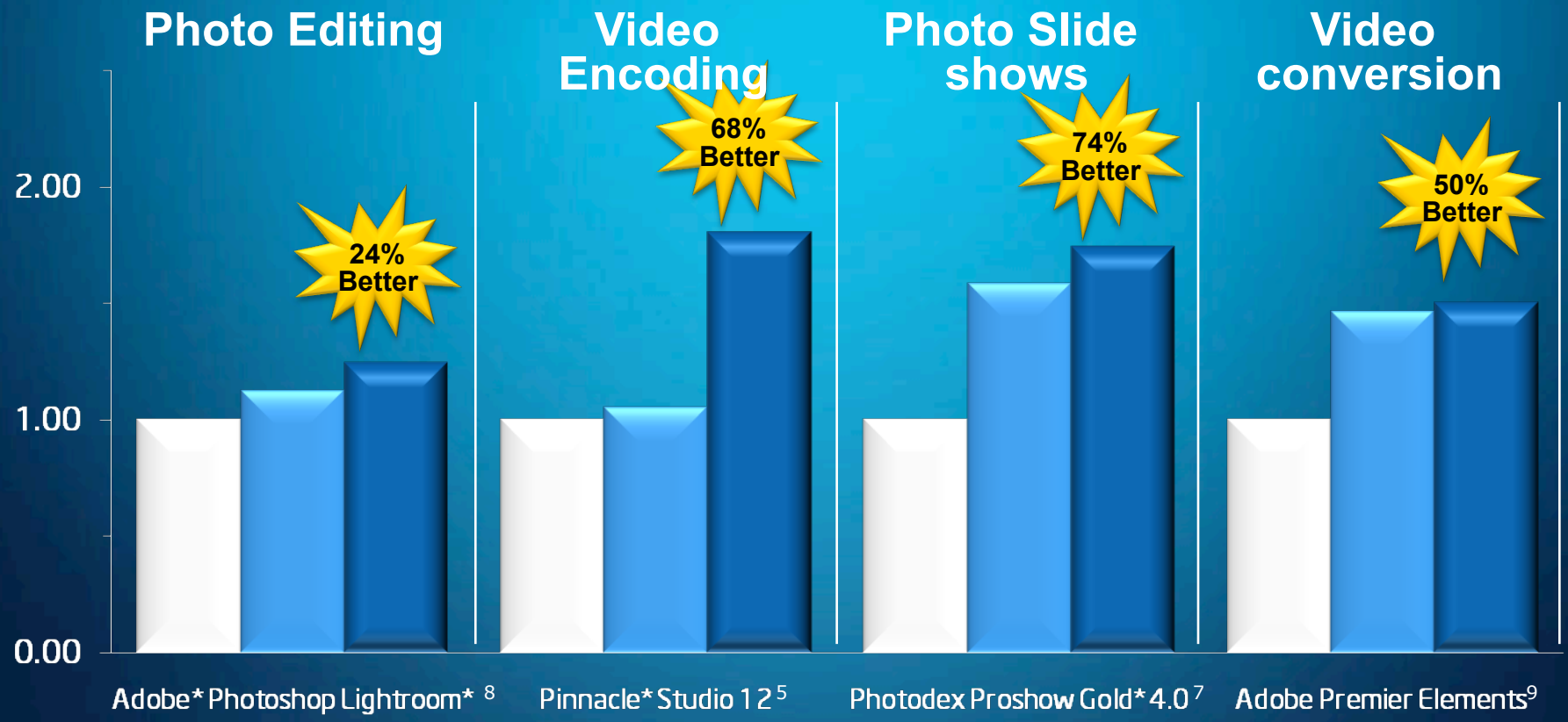
Experience the Ultimate Intelligent Performance of the new Intel® Core™ i7 Processor Extreme Edition



*Other names and brands may be claimed as the property of others.

For configuration details, see hardware configuration 3

Get unmatched, intelligent performance with the Intel® Core i7 ™ processor



*Other names and brands may be claimed as the property of others.

For configuration details, see hardware configuration 2

Mobile Multi-Core ISV Enabling

For Intel® Core™ i7 Processor Family

Media Creation *(partial list)*

- Adobe Premiere Pro*
- Adobe After Effects*
- Avid Pinnacle Studio 12*
- Sony Vegas Pro*
- Corel Video Studio X2*
- CyberLink Power Director 8*
- Cakewalk Sonar*
- Thompson Canopus Edius Pro*
- Nero 9 Multimedia Suite*
- Arcsoft Total Media Showbiz*

Games *(partial list)*

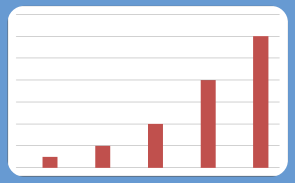
- Massive* World In Conflict*
- Ncsoft* Lineage II*
- Neowiz* Alliance of Valiant Arms*
- Activision Wolfenstein*
- Terminal Reality/Atari Ghostbusters*
- Sega Football Manager 2009*
- Capcom Resident Evil 5* *(coming soon)*
- Codemasters Operation Flashpoint* *(coming soon)*

Intel is working with many ISVs on Nehalem multi-core optimizations

*Other names and brands may be claimed as the property of others

Not Intended for End User Messaging

Intel® Core™ Processors Deliver an Incredible Microsoft* Windows* 7 Experience



Make it Powerful

- Get fast and powerful performance for multi-tasking and multi-media with an Intel® Core™ processor-based PC running Windows* 7



Make it Easier

- Sleek, energy-efficient, ultra-thin laptops based on Intel® Core™ processors let you take Windows 7 wherever you go
- Enables stylish, cooler, and quieter desktops based on energy-efficient Intel® Core™ processors that let you enjoy Windows 7 in any room of the home



Make it Entertaining

- From high-definition TV and movies to music, video, and photos, you'll be entertained like never before with Intel® Core™ processors, Intel Clear Video Technology and Windows 7

Intel Platforms deliver outstanding energy-efficient performance to run the new Microsoft Windows 7 Operating System*

*Other names and brands may be claimed as the property of others.

Summary

- Content creation and mobile gaming are on the rise, requiring new levels of performance
- Nehalem partitioning and adaptable, intelligent, energy efficient performance is great news for laptops
- Intel® Core™ i7 processors deliver high performance for both heavily and lightly threaded applications and workloads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- Intel Corporation uses the Palm OS® Ready mark under license from Palm, Inc.

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[1] Based on SPECint_rate_base2006* scores. Results have been based on internal Intel analysis and are provided for informational purposes only. Any difference in system hardware or software design or configuration may affect actual performance. See http://www.intel.com/performance/mobile/extreme/index.htm for additional information.

[1a] As based on the overall features and Intel technologies in the Intel® Core™ i7 processor family. Performance will vary depending on specific hardware and software used. See www.intel.com/products/processor/corei7/ for more information.

[2] Intel® Hyper-Threading Technology requires a computer system with a processor supporting HT Technology and an HT Technology-enabled chipset, BIOS and operating system. Performance will vary depending on the specific hardware and software you use. For more information, including details on which processors support HT Technology, see http://www.Intel.com/info/hyperthreading

[3] Intel® Turbo Boost technology (Intel® TBT) requires a PC with a processor with Intel TBT capability. Intel TBT performance varies depending on hardware, software, and overall system configuration. Check with your PC manufacturer on whether your system delivers Intel TBT. See http://www.Intel.com/technology/turboboost for more information.

[4] "WARNING: Altering clock frequency and/or voltage may: (i) reduce system stability and useful life of the system and processor; (ii) cause the processor and other system components to fail; (iii) cause reductions in system performance; (iv) cause additional heat or other damage; and (v) affect system data integrity. Intel has not tested, and does not warranty, the operation of the processor beyond its specifications. Intel assumes no responsibility that the processor, including if used with altered clock frequencies and/or voltages, will be fit for any particular purpose."

Benchmarking Disclaimers

Disclaimer Details for Application Workloads and Benchmarks

[5] Pinnacle Studio* 12 Ultimate is a creative video-editing software that allows you to work with the latest in HD editing from AVCHD to Blu-ray. After editing and polishing your video, export them to portable devices, high-definition discs, or even publish them on YouTube* through Pinnacle Studio's built-in disc burning and web publishing features. The workload consists of a one minute high-definition AVC-HD 1080P video clip from a HD camcorder being imported in a project timeline and then encoded into an AVC-HD Blu-Ray disc folder structure ready to be burned to a disc.

[6] CyberLink PowerDirector 7* is a powerful video editing software that allows editing and fine-tuning of high-definition videos. It includes such features as adding effects, transitions, and picture-in-picture. When you're ready to produce, PowerDirector* allows you to export in formats for YouTube, iPods, PSPs, DVDs, Blu-ray and AVCHD discs. The workload consists of a one minute high-definition AVC-HD 1080P video clip from a HD camcorder where the second pencil sketch effect is applied over the duration of the movie as the movie is exported out to an HD MPEG-2 1080i video file.

[7] Photodex ProShow Gold* 4.0 allows the user to combine photos, videos and music to create spectacular slide shows. The workload takes 29 high resolution jpeg photos and converts them to an mpeg2 DVD quality slideshow video file. The photos are in 3872x2592 resolution and total about 170MB. The output slideshow file is about 3 minutes and 9 seconds long.

[8] Adobe Photoshop Lightroom* 2.3 is a photography application that lets you manage, adjust, and present a large amount of photographs. For this scenario Lightroom 1.1 is used to resize 125 ten-megapixel and 75 six-megapixel JPEG photos at 480x360 resolution for posting to Facebook* or viewing on portable devices such as an iPhone*. The photos are also used to create a personal HTML web gallery that can be published online. Extrapolation used to calculate the number of images you can prepare in 3 minutes for upload to Facebook* 8.2

[9] Adobe Premiere Elements* 4.0 is used to edit video. The input file is a ~1 minute, 59 second, ~370MB 1440x1080 HD video imported from an HD camcorder. The output is a ~7MB 352x288 video in 3GP format for mobile phones.

[10] Sorenson* Squeeze 5 Pro for Flash is a video conversion tool able to convert supported video files into Adobe* Flash Video (FLV). The input consists of eight 15sec, ~30MB 1280x720 MPEG-2 from an HD camcorder. The output is eight 15 sec 1280x720 FLV files ready for upload to a webpage/blog.

[11] Blender 2.48a is a free open source 3D content creation suite that is available for various operating systems. The workload consists of a ~6.9 MB character model of a flying squirrel.

[12] 3DMark* Vantage is a 3D graphics benchmark, designed for Microsoft Windows Vista* and DirectX*10. It includes two graphics tests, two CPU tests, and several feature tests. The CPU tests measures the contribution of the processor on 3D graphical performance while the graphics test measures game simulation performance.

[13] Pegasys TMPEGEnc* 4.7 allows you to take almost any video file and encode it to your desired file format including DivX*, AVI, QuickTime*, MPEG-4 ISO, H.264, DVD-Video, DVD-VR, HDV camcorder, Blu-ray* disc and much more. The input file for this workload is a 1min34sec, 29.97fps, 1920x1080 video clip with VBR encoding and a total size of about 1.12GB. The output is an HDV format MPEG file with 1440x1080 resolution, 29.97fps and 25000Kb/s CBR encoding.

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Hardware Configurations:

Source : Intel® Corporation

Hardware configuration 1

- Processor: Intel® Core™ i7 - Clarksfield (6 MB L3 Cache,1.6 GHz,), Customer Reference Board Redfort FAB 3, Bios: American Megatrends v.68, Chipset INF Driver Intel v.9.1.1.1009, Memory: Transcend TS128MSK64V3V PC3-10700H 2x1GB Dual Channel Double-sided DDR3 1333 9-9-9-24, Graphic: NVIDIA GeForce 9800GTX with 512 MB, Graphic Driver: nVidia 190.38, 100 GB Hitachi Travelstar HTS721010G9SA00 7200 rpm, Microsoft* Windows* 7 Ultimate x64 RTM build 7600.
- Mobile Intel® Core™ Duo Processor T2700 (2M Cache, 2.33 GHz, 667 MHz FSB) on Lenovo* T60, Chipset Intel® i945GM, Memory Micron* MT16HTF12864HY-66783 2x1GB 5-5-5-15 Dual Channel, Graphics Mobile Intel® 945 Express Chipset Family Running on Microsoft* Windows* XP Professional SP 2, BIOS Lenovo* 79ETE1WW

Hardware configuration 2

•Intel® Core™2 Quad processor Q9000 (6MB L2, 2.00GHz, 1066 FSB) and Intel® Core™2 Duo processor P8800 (3M L2, 2.66 GHz, 1066 MHz FSB), Intel® Silver Cascade reference board, BIOS: American Megatrends Inc* AMVACRB.86C.0089.B00.0811021819, Chipset INF: 9.0.0.1011. , 4GB (2x2GB) Micron* PC3-8500 DDR3-1066

•Intel® Core™ i7-720QM Mobile Processor (1.60 GHz, 6MB L3), Intel® Red Fort reference board, BIOS: American Megatrends Inc*, ACLPCRB1.6C.048.B00.0903180653, Chipset INF: 9.1.1.1009, 4GB (2x2GB) Micron* PC3-10600 DDR3-1333

•Common Elements: Intel® X25-M (160GB SSD SATA2), ATI* Mobility Radeon* HD 4850 PCIe graphics, ATI* V.8.612.0.0, Microsoft* Windows* 7 64-bit Ultimate 6.1 build 7600 NTFS, Microsoft DirectX* 11, screen resolution 1400 x 900, 32-bit color

Hardware configuration 3

- Intel® Core™ i7-920XM processor Extreme Edition (8MB L3, 2.00 GHz,) in Customer Reference Board Redfort FAB3 – 301, BIOS: American Megatrends Inc*, ACLPCRB1.6C.048.B00.0903180653, Chipset INF: 9.1.1.1009, 4GB (2x4GB) Micron* PC3-10600 DDR3-1333
- Intel® Core™2 Extreme Processor QX9300 (12M L2, 2.53 GHz, 1066 MHz FSB) Customer Reference Board Silver Cascade CRB FAB1 – 103, BIOS: American Megatrends Inc* AMVACRB.86C.0089.B00.0811021819, Chipset INF: 9.0.0.1011. 4GB (2x2GB) Micron* PC3-8500 DDR3-1066

•Common Elements: Intel® X25-M (160GB SSD SATA2), ATI* Mobility Radeon* HD 4850 PCIe graphics, ATI* V.8.612.0.0, Microsoft* Windows* 7 64-bit Ultimate 6.1 build 7600 NTFS, Microsoft DirectX* 11, screen resolution 1400 x 900, 32-bit color

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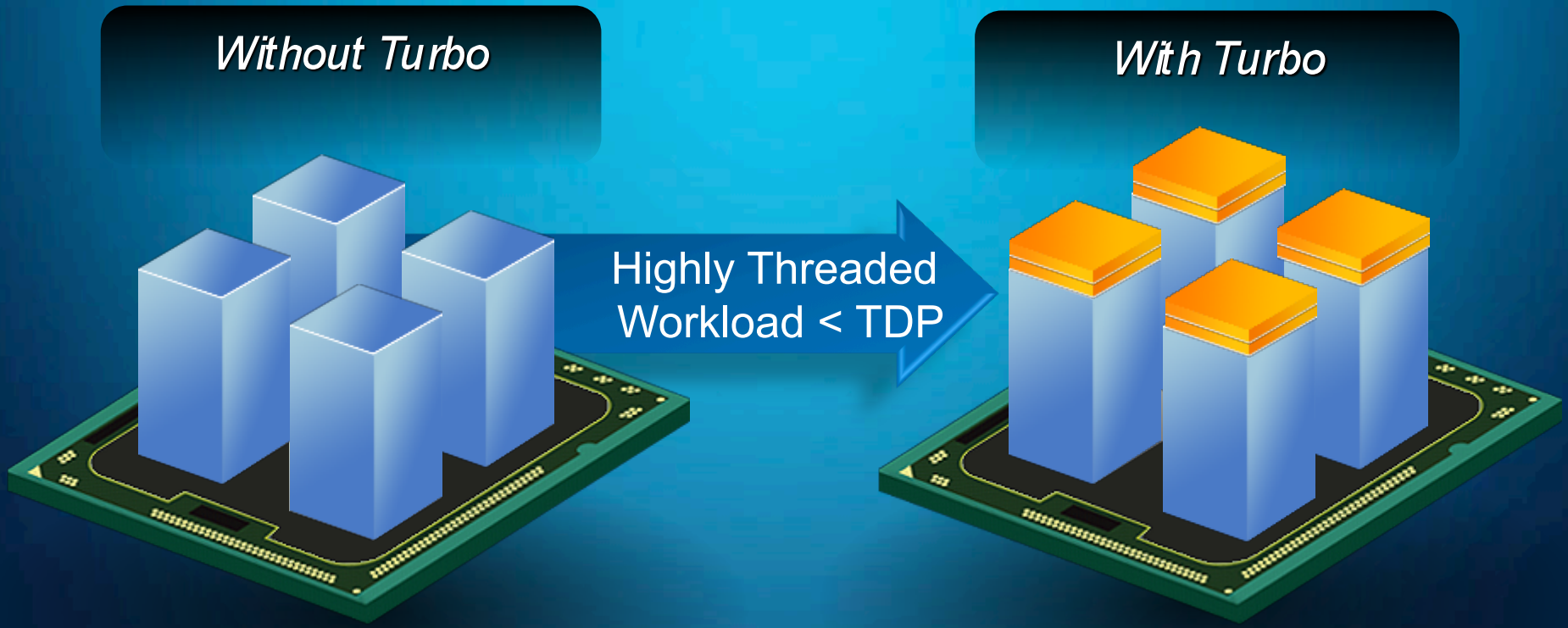
Intel® Turbo Boost Technology

Dynamically Delivering Optimal Performance & Energy Efficiency



Performance When You Need It

Conserves Power When You Don't

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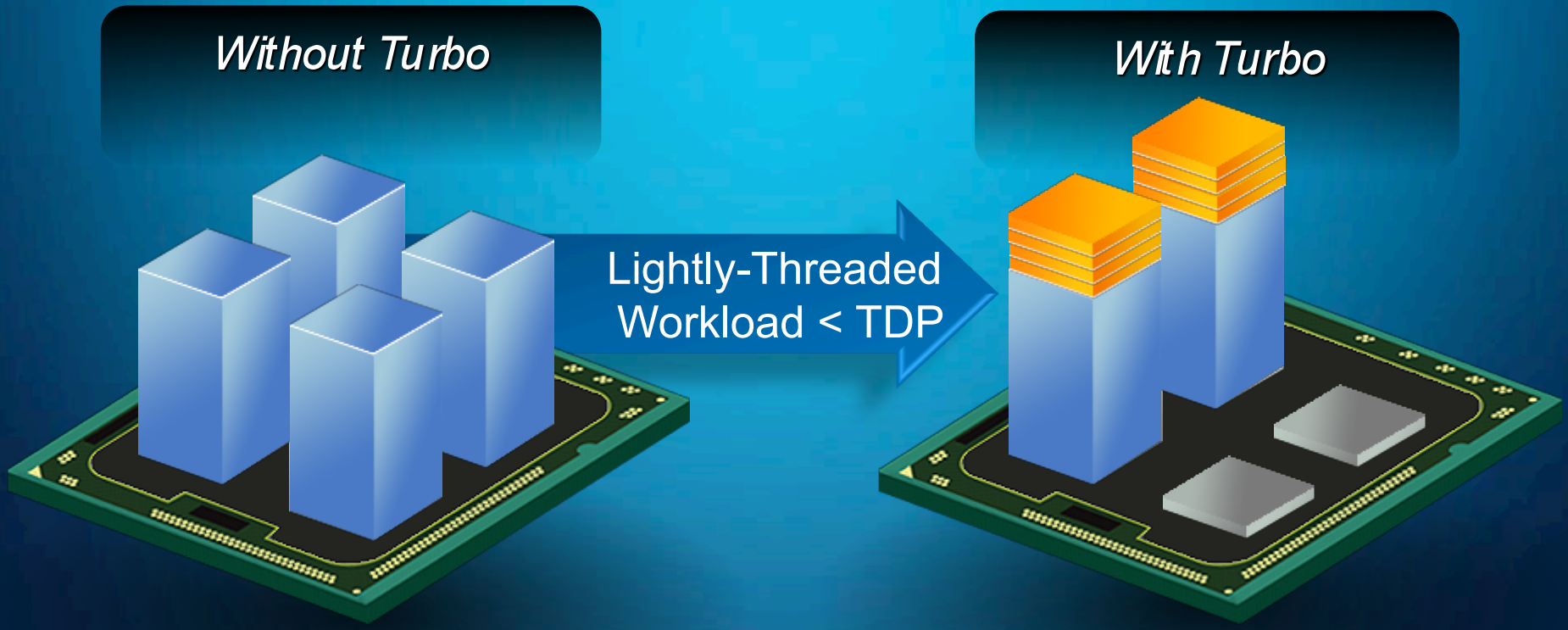
Intel® Turbo Boost Technology

Dynamically Delivering Optimal Performance & Energy Efficiency



Performance When You Need It

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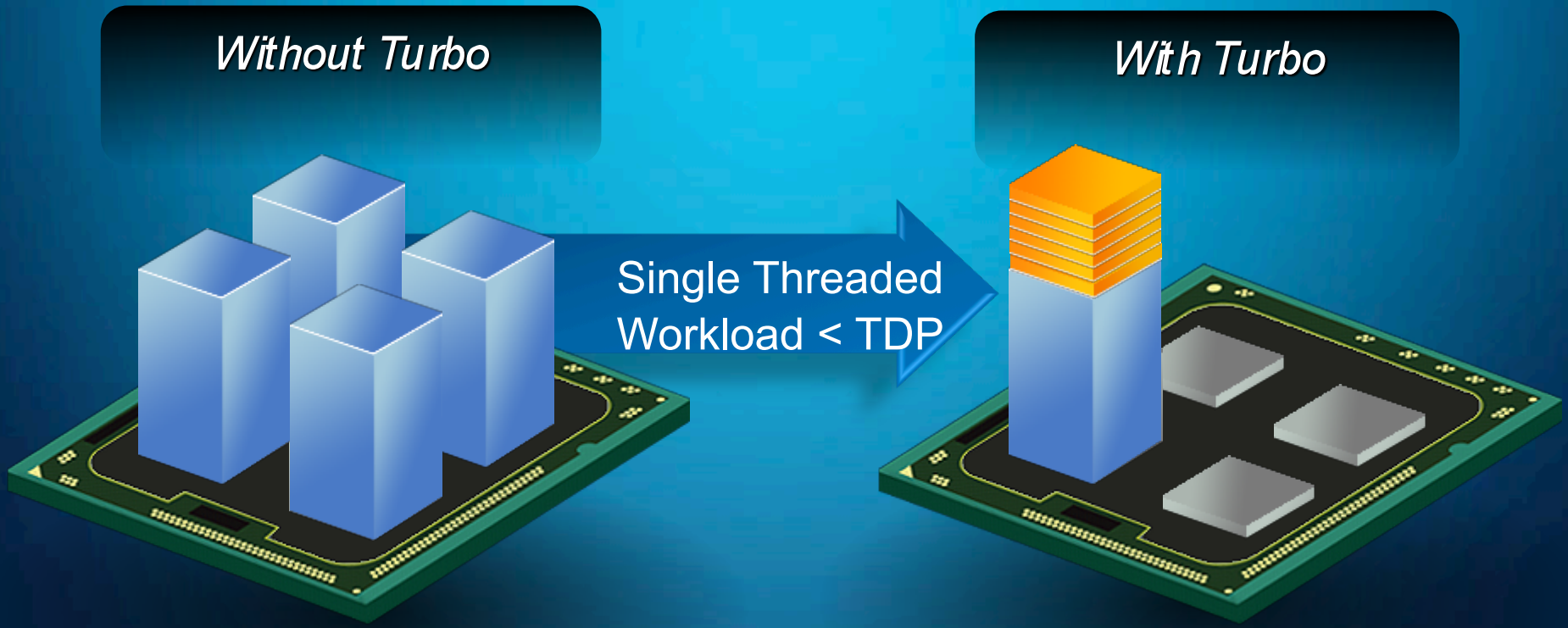

Performance When You Need It

Conserves Power When You Don't

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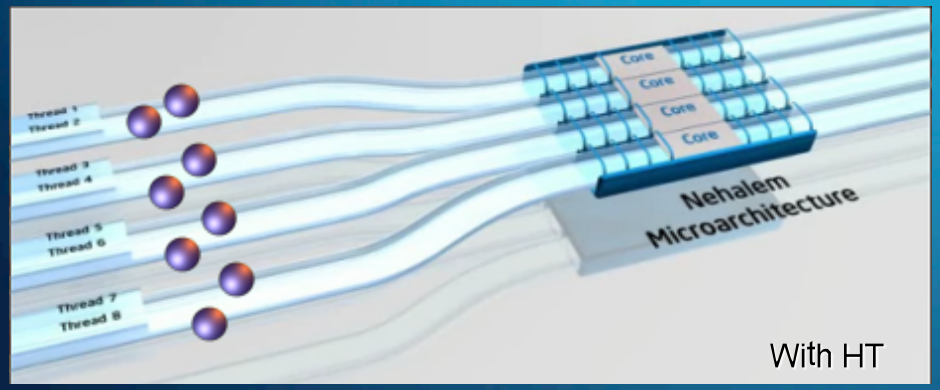
Intel® Hyper-Threading Technology For Better Multitasking[3]





***2** thread engines **per** core, enabling **8**-way processing in **4**-core systems. It means that a quad-core processor could run up to eight threads simultaneously*

- Helps you do more and wait less
- Like having a freeway with multiple car lanes instead of just one
- With multiple lanes cars more cars can move more quickly

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Intel® Core™ i7 Mobile Processor Lineup

Processor Number	Base Clock Speed (GHz)	Turbo Frequency (GHz)	Cores/ Threads	Cache	Memory Speed Support	TDP
Intel® Core™ i7-920XM	**2.0**	**Up To 3.2 GHz**	**4/8**	**8 MB**	**DDR3-1333**	**55 W**
Intel® Core™ i7-820QM	**1.73**	**Up To 3.06 GHz**	**4/8**	**8 MB**	**DDR3-1333**	**45 W**
Intel® Core™ i7-720QM	**1.60**	**Up To 2.8 GHz**	**4/8**	**6 MB**	**DDR3-1333**	**45 W**

Pricing
(1ku)

Intel® Core™ i7 – 920XM - $1054 USD

Intel® Core™ i7 – 820QM - $546 USD

Intel® Core™ i7 – 720QM - $364 USD

Intel® PM55 Express Chipset- $40 USD

1 - NOTE: Intel processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families. See www.intel.com/products/processor_number for details.

2 - Refers to the maximum single-core frequency that can be achieved with Intel® Turbo Boost Technology