



# **PAUL S. OTELLINI**

President and Chief Executive Officer

Intel Developer Forum 2007 • San Francisco  
September 18, 2007

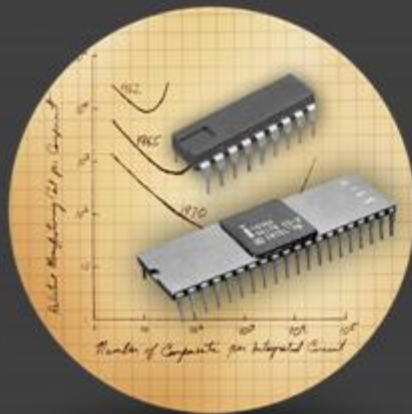
# **Risk Factors**

**This presentation contains forward-looking statements. All statements made that are not historical facts are subject to a number of risks and uncertainties, and actual results may differ materially. Please refer to our most recent Earnings Release and our most recent Form 10-Q or 10-K filing available on our website for more information on the risk factors that could cause actual results to differ.**

***EXTREME* to MAINSTREAM**

# **EXTREME** to **MAINSTREAM**

## History of **INNOVATION**



## Unparalleled **CAPABILITIES**



## The Next **MAINSTREAM**



# INTEL INNOVATION

TIME

## PROCESSOR / ARCHITECTURE

4004  
First  
Microprocessor

8080

8088  
IBM PC

Integrated FPU  
and Cache



## CONNECTIVITY

Ethernet

Modem



## MEMORY

1101  
First MOS SRAM

1103  
First LSI DRAM

1702  
First EPROM

2816  
EEPROM

FLASH

## POWER



Advanced Power  
Management

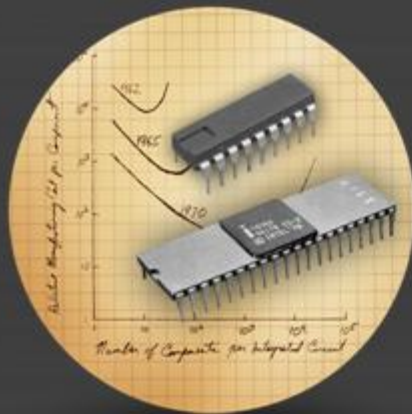
Voltage Reduction  
Technology

Smart  
Battery

Intel® SpeedStep®  
Technology

# **EXTREME** to **MAINSTREAM**

## History of **INNOVATION**



## Unparalleled **CAPABILITIES**

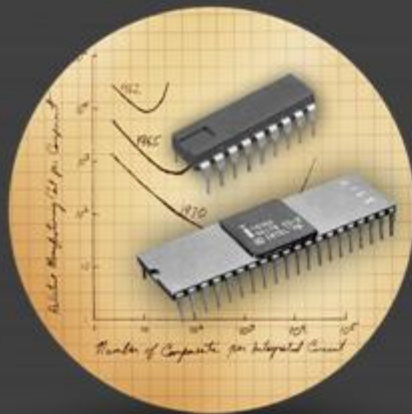


## The Next **MAINSTREAM**



# **EXTREME** to **MAINSTREAM**

## History of **INNOVATION**



## Unparalleled **CAPABILITIES**



Silicon Process Technology

Intel Architecture-based Platforms

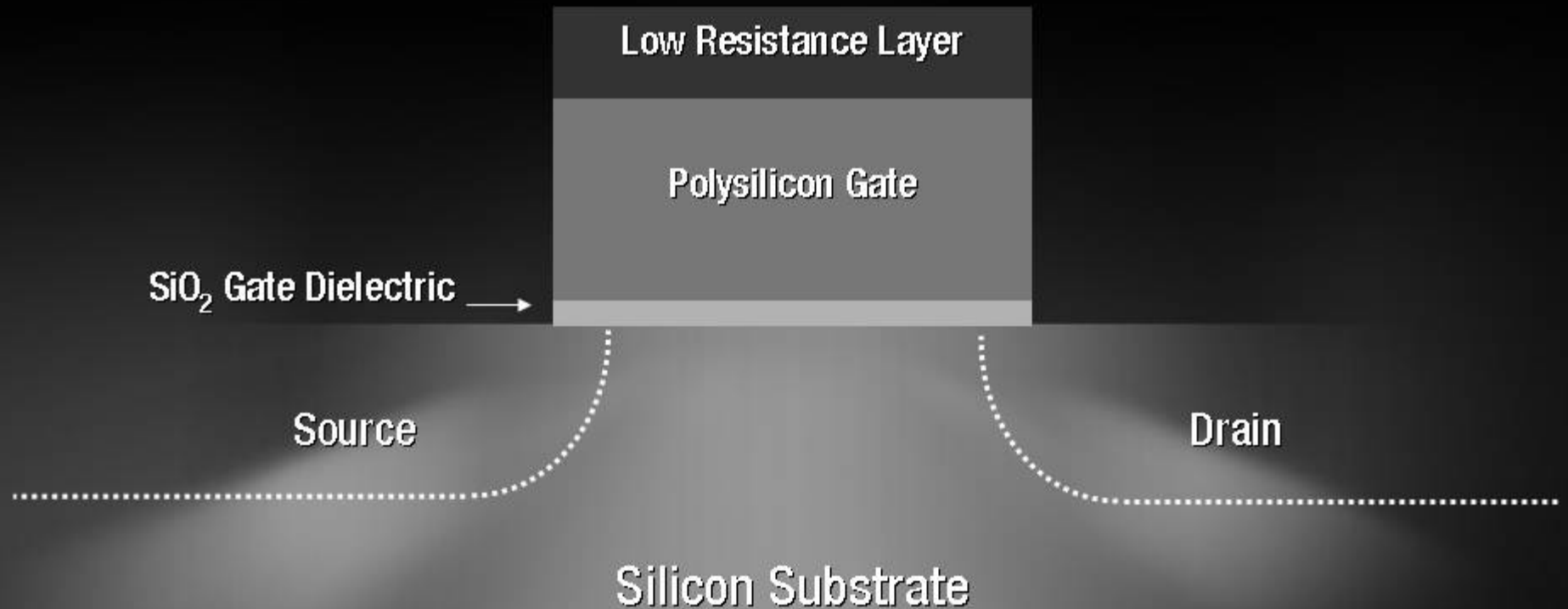
Market Creation

## The Next **MAINSTREAM**



# Silicon Process Technology

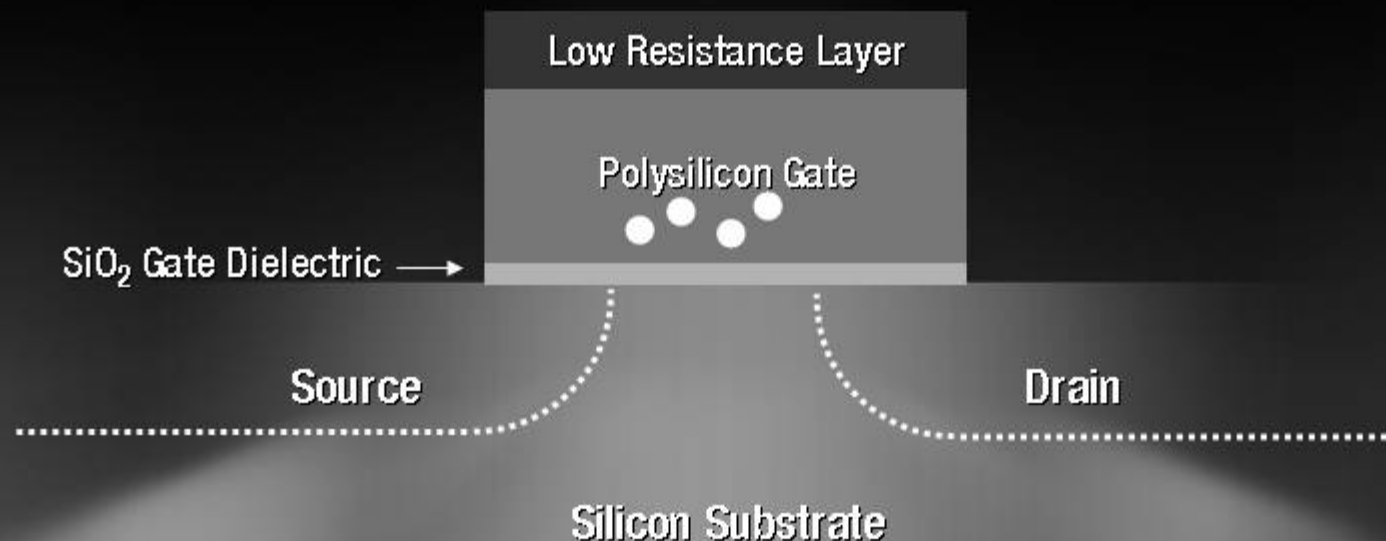
## *65nm Transistor*





# A Challenge in Silicon Process Scaling

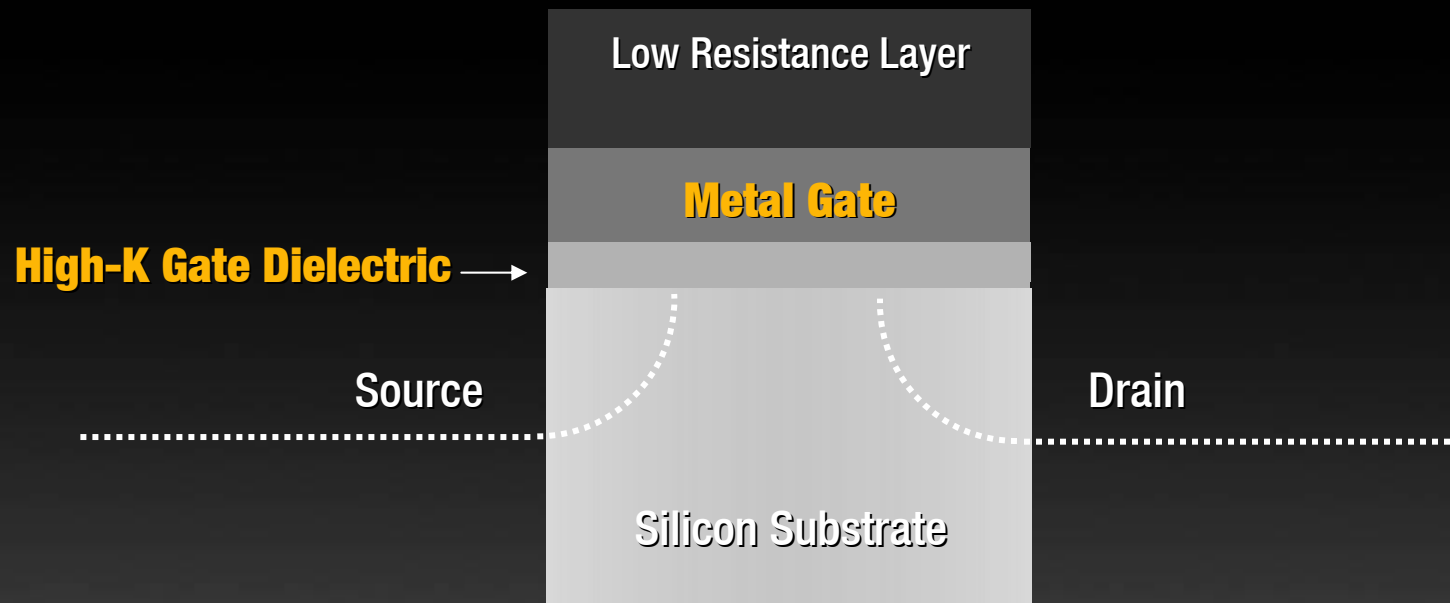
## *The Problem of Leakage*



Thinning SiO<sub>2</sub> Gate Dielectric Results in Increased Gate  
**Current Leakage**

# Intel's Unique Solution

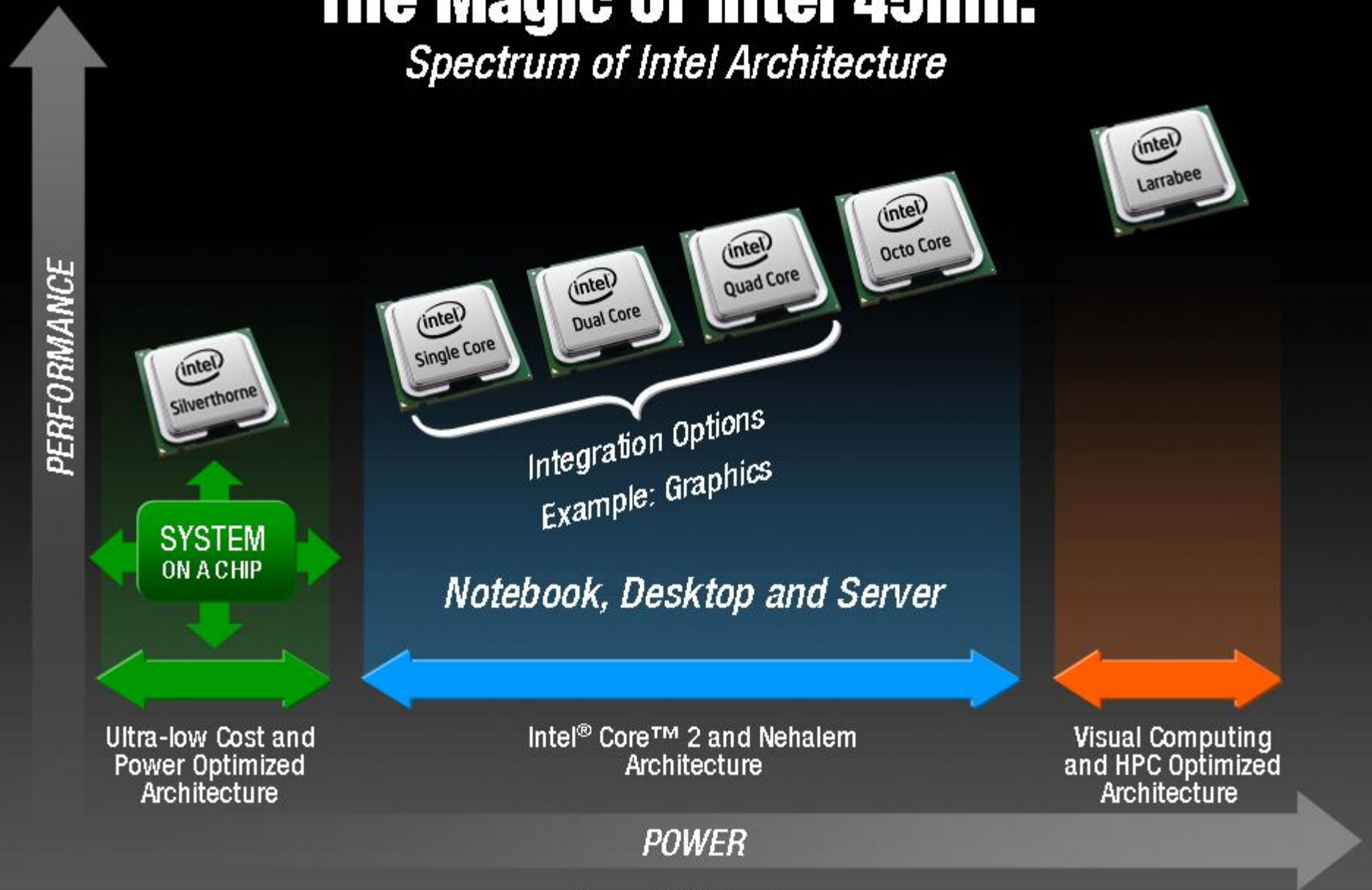
*High-K Metal Gate 45nm Transistor*



**>20%** Performance Increase

**>10X** Gate Leakage Reduction

# The Magic of Intel 45nm: *Spectrum of Intel Architecture*



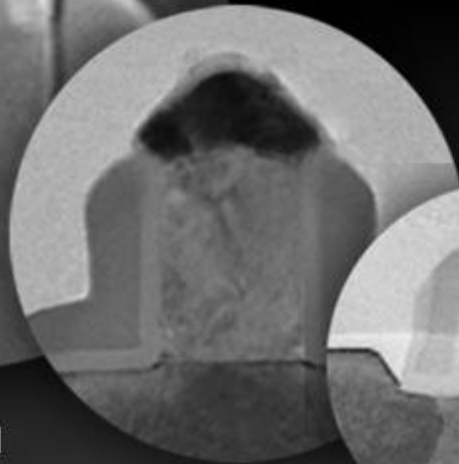
Source: Intel Internal

# Silicon Technology Intel Execution

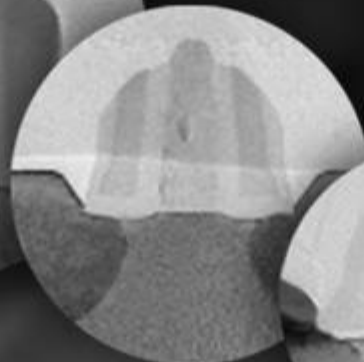
*On-Time 2 Year Cycle*



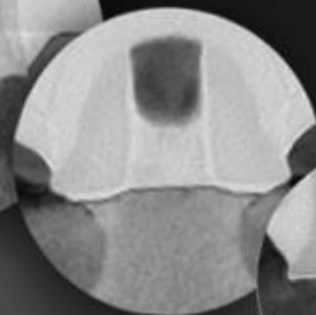
180 nm  
**1999**



130 nm  
**2001**



90 nm  
**2003**



65 nm  
**2005**



45 nm  
**2007**



On  
Track

32 nm  
**2009**

# Intel Architecture-based Platforms

*Industry Leading  
Microprocessors*

*Chipsets*

*User-Valued  
Features*



+



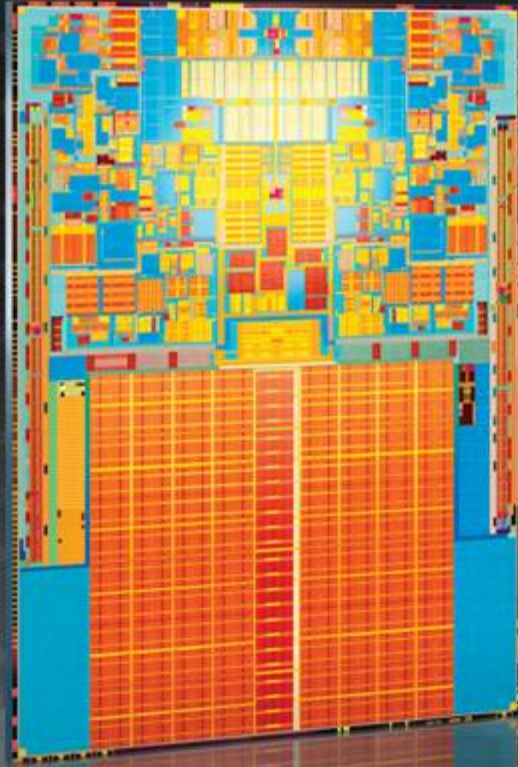
+

Wireless  
Secure  
Manageable  
Standards  
⋮

=



**Supported by a Broad Ecosystem**



**PENRYN**

# Packaging Innovations

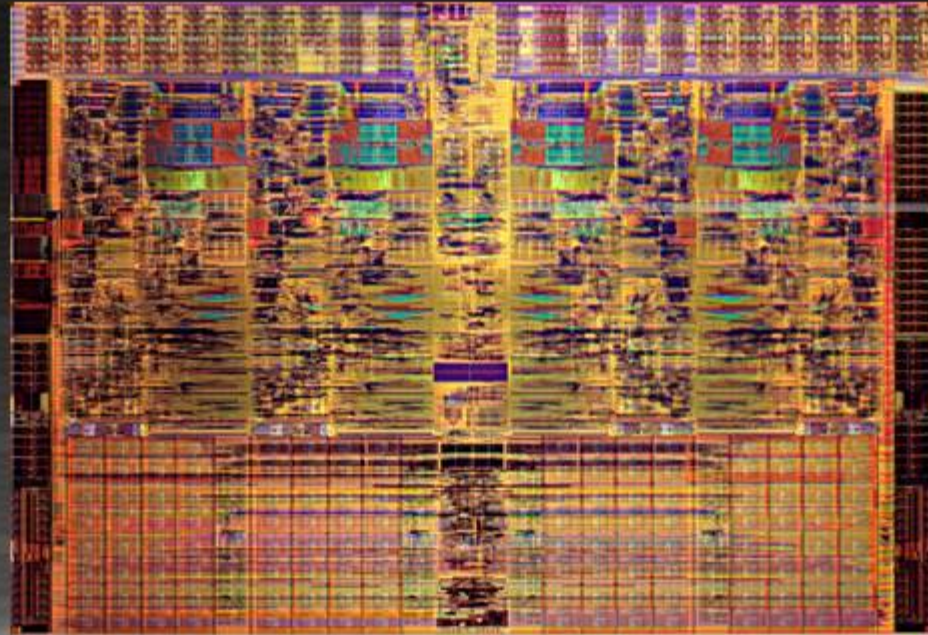
**60% Smaller**  
CPU Packages



**100% Lead Free**  
Technology

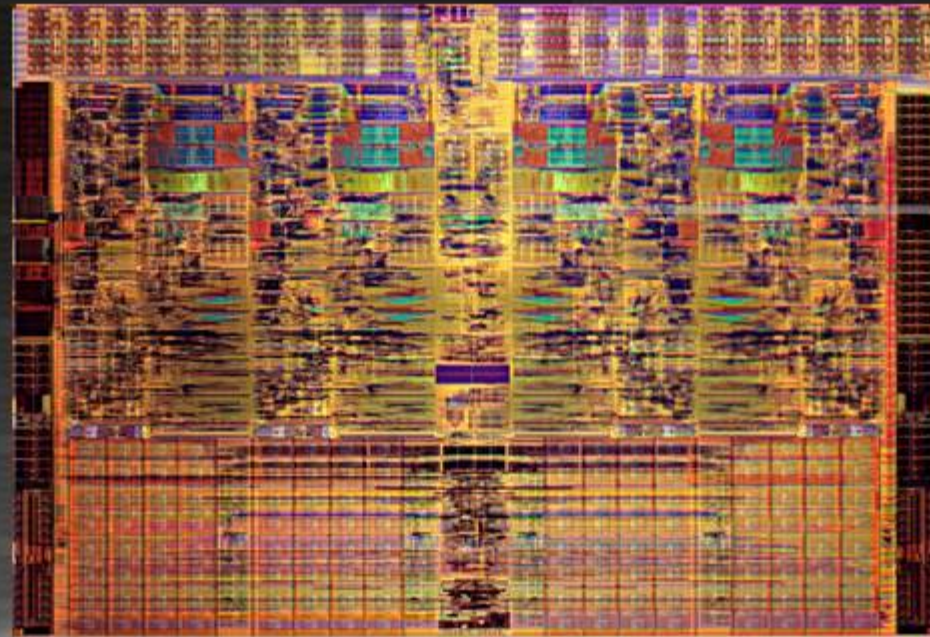


**2008: All 45nm CPU's Halogen Free**



**NEHALEM M**



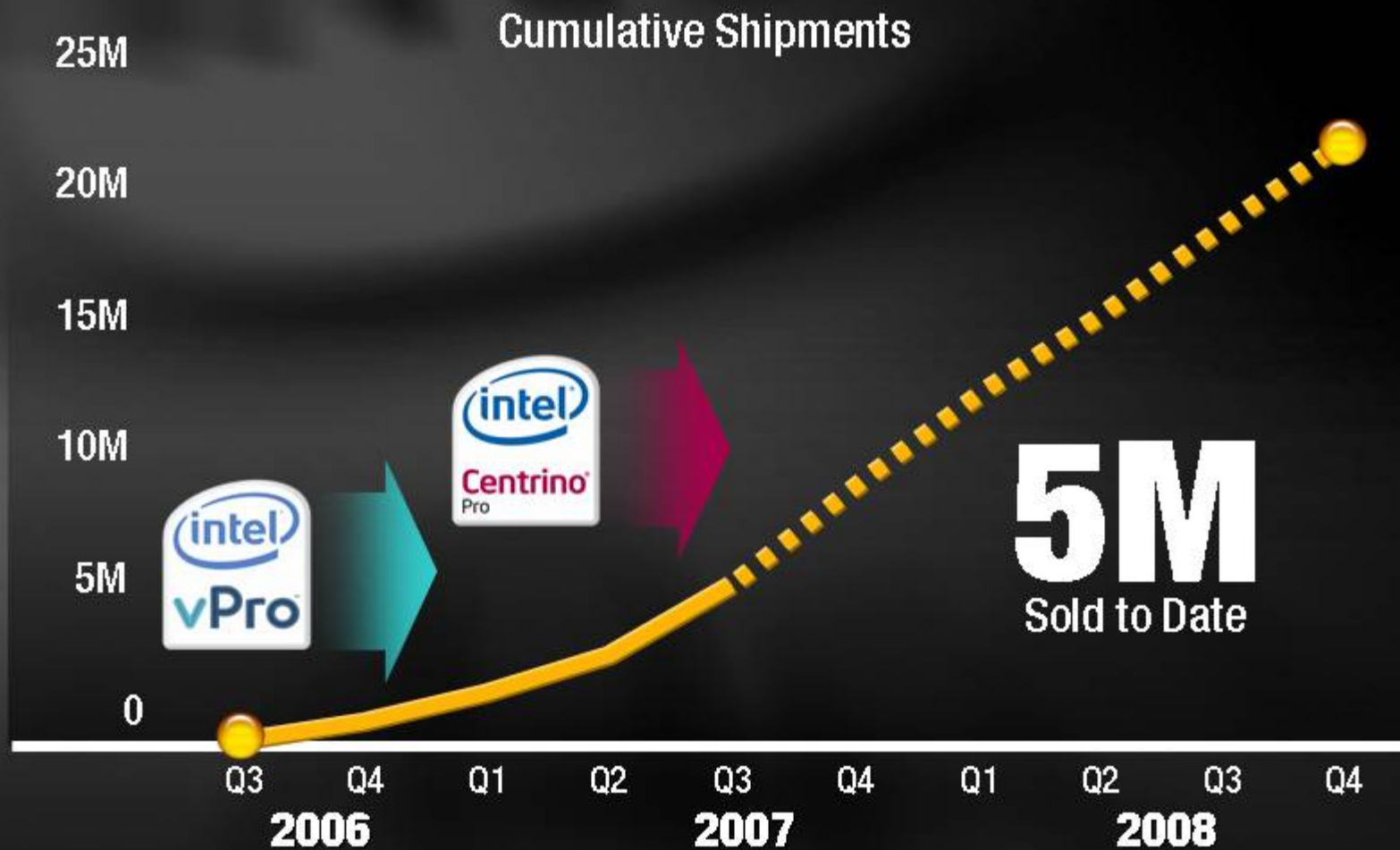


# Glenn Hinton

Chief Nehalem Architect, Intel Fellow

# The "Pro" Platform Family

*Proactive Security • Built-in Manageability • Energy Efficient Performance*



# Extending Intel Architecture Platforms

Ultra Low Power  
Sufficient Performance  
Extreme Integration

Performance  
Energy Efficiency  
User Valued Features



MID

CE

Ultra  
Low-Cost PC

Notebook

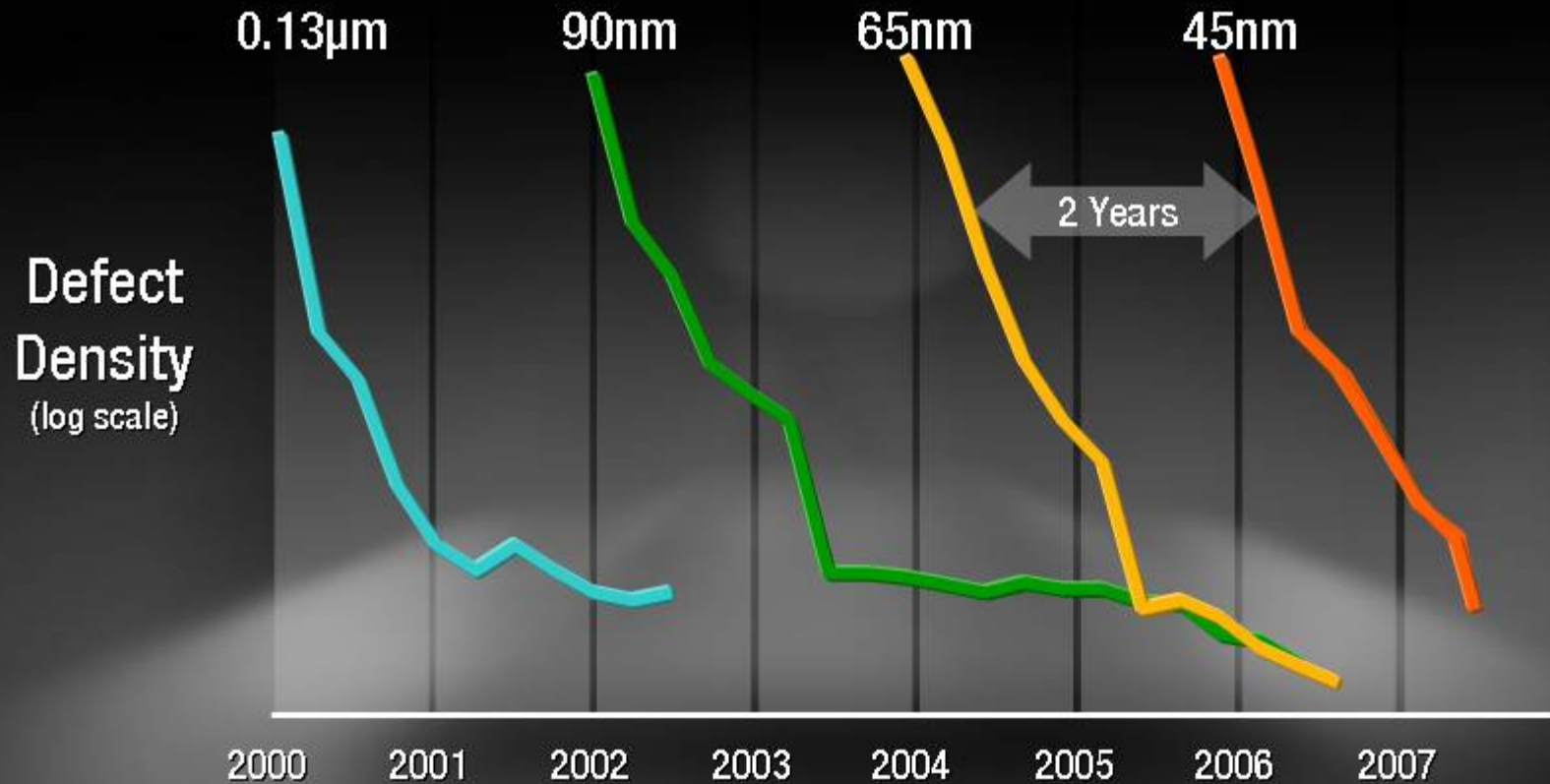
Desktop

Server



**Growth Opportunities for the Industry**

# Market Creation: *SCALE*



Source: Intel Internal

**45nm: Ready to Ramp**

# Market Creation: *CAPACITY*

## Intel 45nm Fab Network

D1D Oregon - NOW



Fab 32 Arizona - NOW



Fab 28 Israel - 1H '08



Fab 11X New Mexico - 2H '08



# Market Creation: *DIFFUSION*

Intel Developer  
**FORUM**

Announcement

Success Metric

**2001**

**Performance/Power**

Banias Shipments Crossed Over  
Predecessor in **7 Months**

**2002**

**Hyper-Threading**

**100%** of Servers and  
**Over Half** of Clients by 2004

**2003**

**Wireless**

In **Over 90%** of Notebooks  
by 2005

**2004**

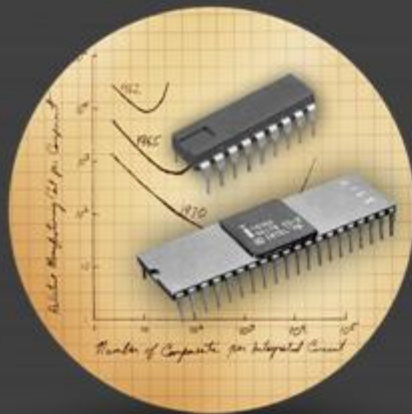
**Multi-Core**

Dual-Core **Crossover by 2006**,  
**1 Mu** Shipped in 4 Months

**Intel Delivers**

# **EXTREME** to **MAINSTREAM**

## History of **INNOVATION**



## Unparalleled **CAPABILITIES**



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Intel Architecture-based Platforms

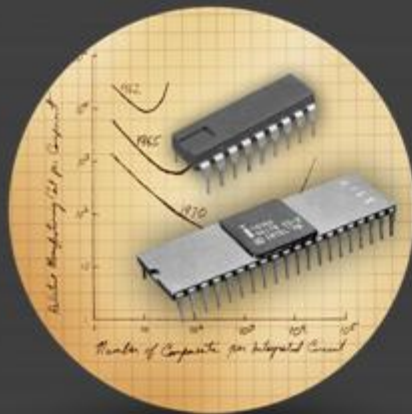
Market Creation

## The Next **MAINSTREAM**



# **EXTREME** to **MAINSTREAM**

## History of **INNOVATION**



## Unparalleled **CAPABILITIES**



## The Next **MAINSTREAM**



Mobility

Entertainment

Problem Solving

Inclusion





***EXTREME Mobility***

# Notebook Growth

*Intel Mobile Mix of Total Client*



Source: Intel Internal

# Mobility is MAINSTREAM



# The Future of MOBILITY



+ WiMAX

clearw're®

Sprint®



**KDDI**

*lenovo*

*acer*® **ASUS**®

**Panasonic**

**TOSHIBA**



**WiMAX**  
Moving  
Mainstream



# Low Power for *MOBILITY*

~~2010~~

2008

*In Addition ...*

**10X**

LOWER IDLE  
POWER BY

**2010**

IDF 2005

**10X** LOWER  
POWER

Intel  
Architecture

**10X** PERFORMANCE  
(MANY-CORE)



HANDTOP



SUB-LAPTOP



DESKTOP



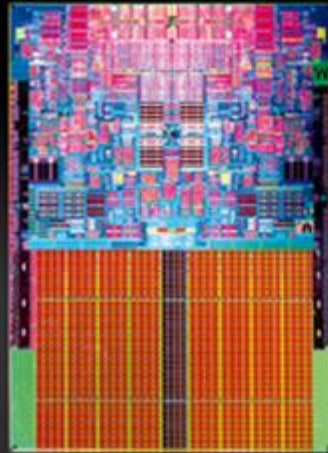
SERVER

# The Next Generation Laptop

**Santa Rosa**



**Over 10M Shipped**



**Montevina**



**WiMAX  
HD Video  
25W Version**

# Beyond the Laptop: Mobile Internet Devices

## Today's Devices



## 1H'08: Menlow



*Rich Internet Experience*



# ***EXTREME Entertainment***



# GAMING

## Games Go Mainstream

The McGraw-Hill Companies  
**BusinessWeek**

September 3, 2007

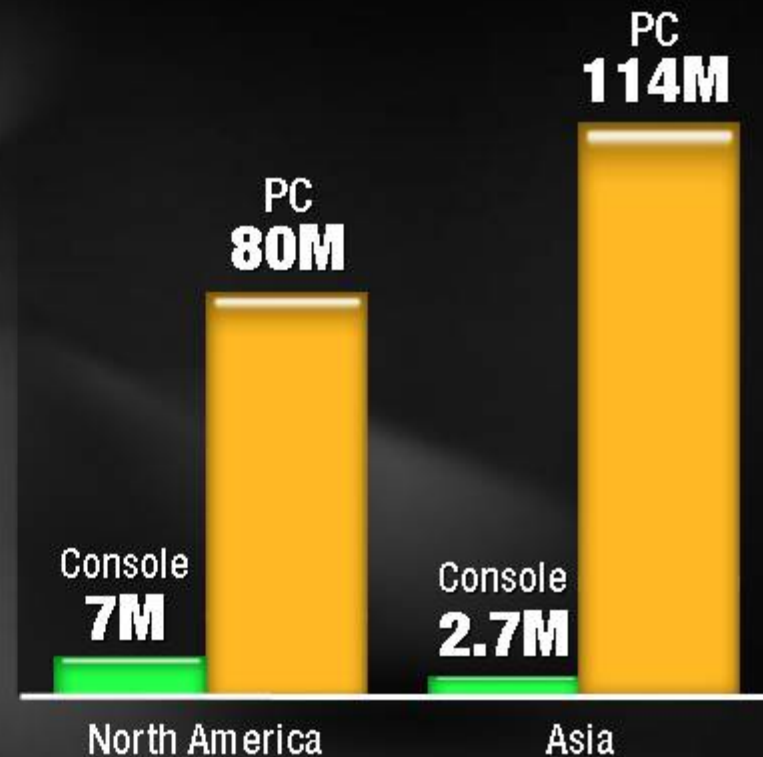
## Gaming PC's for the Masses

**THE WALL STREET JOURNAL.**

September 6, 2007

## Online Gamers

*PC vs. Console*



Source: DFC Intelligence, May 2007

# *Extreme* **GAMING =**

*High-Performance*  
**IA SYSTEM**




**+**

*High-Performance*  
**GRAPHICS**








Welcome To  
**XTREME SYSTEMS**  
Power: On

Home 

My Account

News 

Downloads 

Logout 

Topics 

Reviews 

## *Intel Presler 955XE Overclock @ XS*

I am sure a lot of you have seen the recent benchmarks and stock perf is merely an exhibition of the possibilities of new manufacturing proces:

Lets go over the hand picked hardware I will be using for the benchmar

The processor, Intel Presler 955XE ES

# Charles Wirth

Owner of XtremeSystems.org

# Overclocking Benchmarks – **NEW WORLD RECORDS**

- Max Freq Quad Core
- 3Dmark 2006 CPU
- 3Dmark 2005 CPU
- PCMark 2005
- Super pi 1m
- Aquamark 3
- Cinebench 10 32bit



# Intel® Extreme Tuning Utility



Home

Manual Tune

Processor

Voltage

Memory

Memory Timing

Bus

Cooling

## Cooling

- Manual  
 Automatic

Zone

Temp\_CPU\_CORE

Fan\_CPU

Temperature Threshold

50

Temperature Range

80

Maximum Duty Cycle

20

Power On

Active

Change

## Processor Performance

CPU Speed	2926.0 Ghz	2926.0 Ghz	0.00 %
Processor Multiplier	11 x	11 x	0.00 %
Host Clock Frequency	266.0 Mhz	266.0 Mhz	0.00 %

## Memory and Bus Speeds

System Bus	1064.0 Mhz	1064.0 Mhz	0.00 %
Memory	800.0 Mhz	800.0 Mhz	0.00 %
PCI-E Bus	100.0 Mhz	100.0 Mhz	0.00 %

## Voltages

CPU	1.438 V	1.438 V	0.00 %
FSB	1.438 V	1.438 V	0.00 %
MCH	1.675 V	1.675 V	0.00 %
Memory	1.840 V	1.840 V	0.00 %

## Memory Timing

tCL: 5 | tRCD: 5 | tRP: 5 | tRAS: 15

Tune using settings from this profile:

Save As

Delete

Monitor

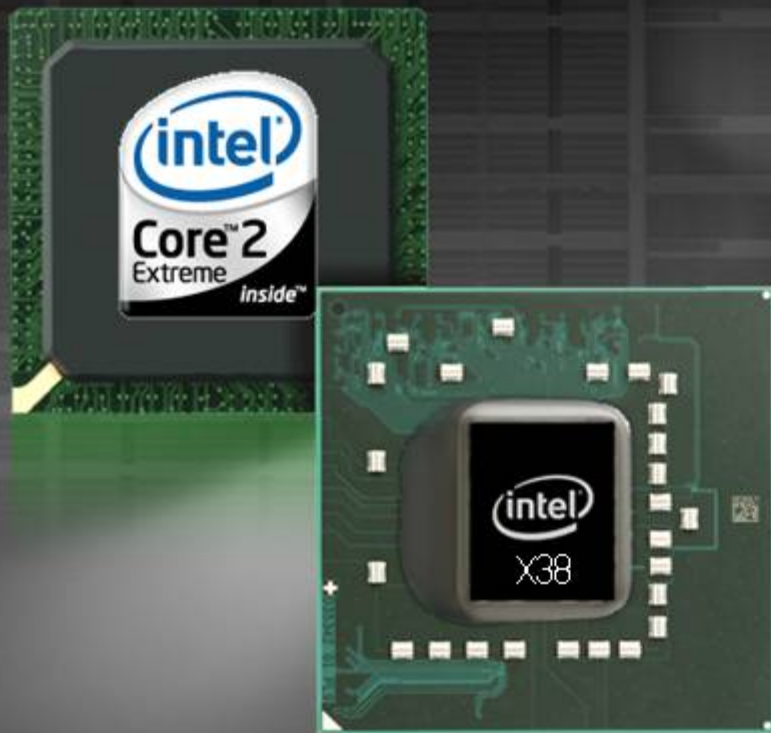
Reset All

Apply

Save to BIOS

Restart PC

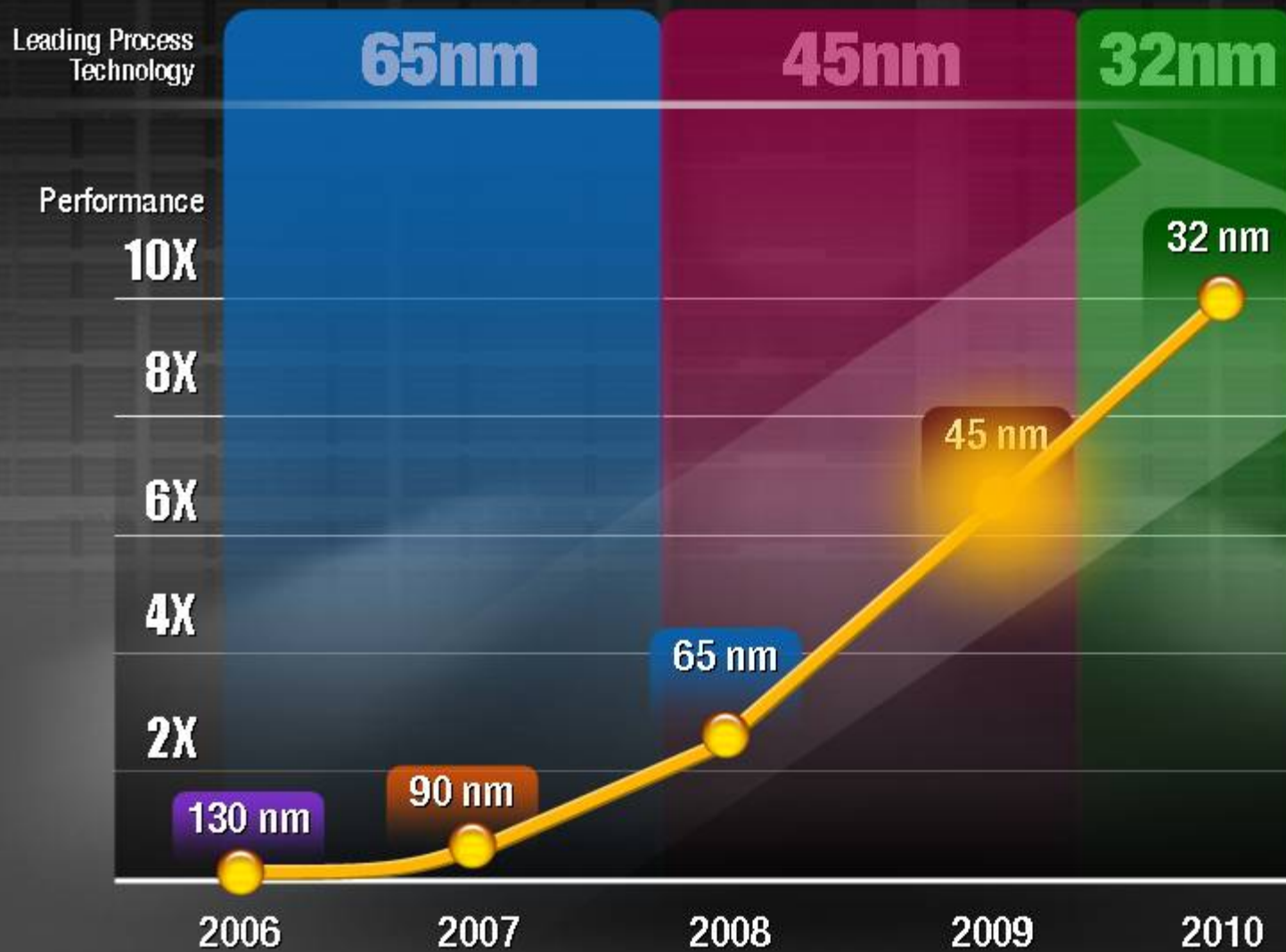
# The *Ultimate* Gaming Platform



Extreme Tuning



# Integrated Graphics Leadership



**10X**  
PERFORMANCE BY  
**2010**



# LARRABEE

One More Thing ... *GRAPHICS*



**Jeff Yates**

**Vice President, Product Management**



**Josh Resnick**

President and Co-Founder



# The Evolution of Consumer Electronics

*1.0 ANALOG*



*2.0 DIGITAL*



*3.0 INTERNET*



**The Internet Changes the Game**

# Consumer Electronics: Implications of the Internet

Rich, Immersive  
**INTERACTIVITY**



Support for  
**SERVICES**

**CONTENT  
PORTABILITY**

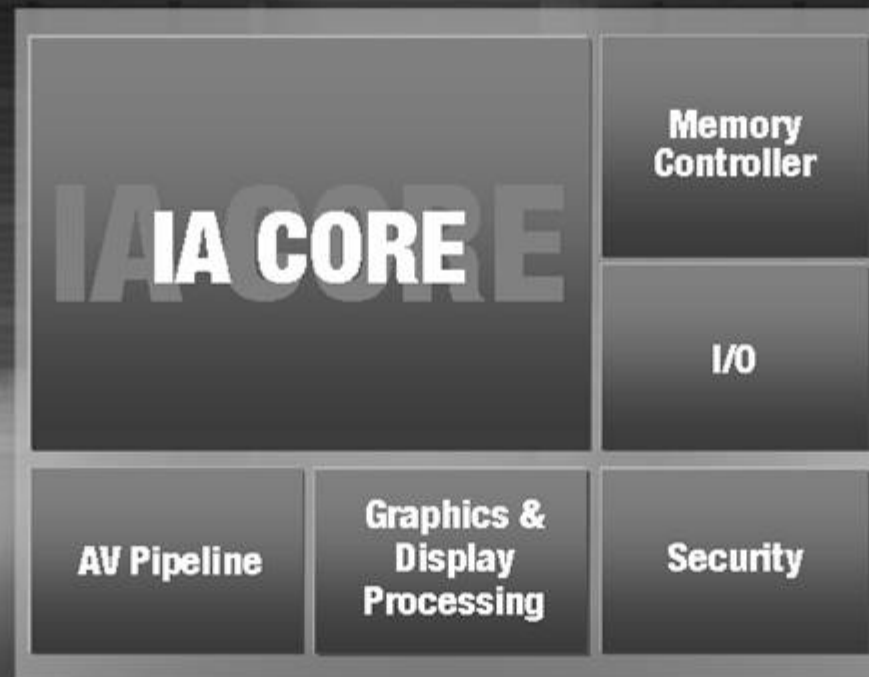


Compression of  
**PRODUCT  
DEVELOPMENT**

**Greater Role for Software**

# Consumer Electronics: Intel's Solution

System on a Chip





***EXTREME Problem Solving***



**MILLIONS**

Of Intel®

**Quad Core Processors**  
Shipped to Date

Platforms Compatible with Next-Generation

**45nm**

Coming in November



# **ANDREW FANARA**

Manager, Energy Star Product Specifications Development Team



# climate savers

smart computing<sup>SM</sup>

## Board of Directors



invent



Pacific Gas and Electric Company

## Sponsors



HITACHI  
Inspire the Next



Smarter Choice

# ***EXTREME Inclusion***

EDUCATION  
CONTENT  
ACCESSIBILITY  
CONNECTIVITY

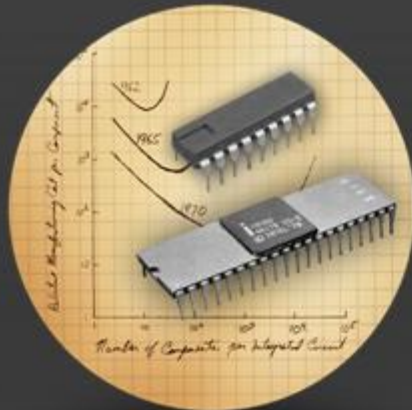


# The Next Threshold



# ***EXTREME* to MAINSTREAM...**

## **History of INNOVATION**



## **Unparalleled CAPABILITIES**



## **The Next MAINSTREAM**



**...DRIVEN by *INNOVATION***

# **IDF 2001**

1933



"I believe business will come back when we get some products that people want to buy,"

**Charles Kettering**

1933

This is the essence of IDF. . .  
especially now

Growth is not a given,  
it must be earned

Together we can build great products  
and re-ignite the growth engine

**GROWTH**

**ENVIRONMENT**

**OPPORTUNITY**

*Great Products Deliver GROWTH*



