Leading a New Era of Computing
AMD 2010 Financial Analyst Day

Rick Bergman
Senior Vice President and General Manager

November 9, 2010
Agenda

- AMD Strategy
- Why AMD Fusion?
- Winning with AMD Fusion
- Product Roadmaps
AMD Strategy

Deliver winning platforms

Differentiate with GPU technology

Win with AMD Fusion
Agenda

 AMD Strategy

 Why AMD Fusion?

 Winning with AMD Fusion

 Product Roadmaps
## Data Dense and Parallel Workloads in Mobile Form Factors

<table>
<thead>
<tr>
<th>Technology</th>
<th>Mid 1990s</th>
<th>Mid 2000s</th>
<th>Today</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display</td>
<td>4:3 w/0.5 megapixel</td>
<td>4:3 @ 1.2 megapixels</td>
<td>16:9 @ 2-7 megapixels</td>
</tr>
<tr>
<td>Shared Content</td>
<td>Email, film &amp; scanners</td>
<td>Digital cameras, SD webcams</td>
<td>HD video flipcams, phones, webcams</td>
</tr>
<tr>
<td>Online</td>
<td>Text and low res photos</td>
<td>WWW and streaming SD video</td>
<td>3D Internet apps and HD video online, social networking w/HD files</td>
</tr>
<tr>
<td>Multimedia</td>
<td>CD-ROM</td>
<td>DVDs</td>
<td>3D Blu-ray HD</td>
</tr>
<tr>
<td>UI</td>
<td>Mouse &amp; keyboard</td>
<td>Mouse &amp; keyboard</td>
<td>Multi-touch, facial/gesture/voice recognition + mouse &amp; keyboard</td>
</tr>
<tr>
<td>Battery</td>
<td>1-2 hours</td>
<td>3-4 hours</td>
<td>All day computing*</td>
</tr>
</tbody>
</table>

* 8 hours of resting battery life

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**Performance that is seen and felt**
Many Parts, Fewer Watts, One Design

- Northbridge
- Dual-Core CPU
- Discrete-level DirectX® 11 GPU

= “Zacate” AMD Fusion APU

- 75 mm²
- 18 watts
Agenda

- AMD Strategy
- Why AMD Fusion?
- Winning with AMD Fusion
- Product Roadmaps
Why AMD Fusion Wins

Keys to victory

- World-class GPU
- Open and growing AMD Fusion ecosystem
- Leading-edge x86 CPU innovation
- Execution

Goal: AMD delivers the best APU every year!
People Prefer Visual Communications

**Verbal Perception**
Words are processed at only 150 words per minute

**Visual Perception**
Pictures and video are processed 400 to 2000 times faster

**What Matters Today:**
- Rich visual experiences
- Multiple content sources
- New types of applications
Accept NO SUBSTITUTES:

A True APU requires leading GPU technology
Discrete GPU Unit Share: AMD is #1

Source: Mercury Research
With more than 25 Million DirectX®11 GPUs shipped to date, AMD has led the DirectX®11 inflection point.

Source: AMD internal data
AMD Radeon™ HD 6870 The best just got better
GPU outpacing Moore’s Law

![Graph showing GPU outpacing Moore's Law over time.](image-url)
Open and Growing AMD Fusion Ecosystem
AMD Fusion is the right platform architecture – single-chip performance, programmability.

OpenCL™/DirectCompute makes the application portable across vendors and uses both CPU and GPU.

Widespread availability of CPU and GPU in the PC.

A Capable GPU is No Longer an Optional Part of the PC.

Industry Standard APIs

DirectX®11
Video: Enabling Next-Generation Software Experiences
Accelerate Adoption

Academia

Incubate start-ups

AMD Fusion Fund

Different investment approach

AMD Fusion Developer Summit

Training, support and tools for developers and academia
OpenCL™/DirectCompute: Mainstream App Adoption

A better internet experience

Tools for your digital life

Great looking videos and 3D

The best-looking games

Windows Internet Explorer 9
Adobe
necro
DIVX
SONY
Viewdle
ROXIO
ArcSoft
COREL
CyberLink
MotionDSP
EA
codemasters
turbine
FIRAXIS

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“Brazos” Demo
Leading Edge x86 CPU Innovation
“Brazos” Platform Addresses Two Distinct Markets

18W “Zacate” APU
Mainstream

- Mainstream notebooks
- All-in-one desktops
- 2x the gaming performance at half the power\(^1\)

9W “Ontario” APU
Low Power

- Netbooks
- Ultra-small form factors
- 10x graphics performance over today’s netbooks\(^2\)

Up to 10-plus hours of battery life!

New low-power “Bobcat” x86 cores and a DirectX®11 capable GPU

1) Based on 3DMark Vantage Entry of “Danube” platform (Athlon P320/RS880) = 2133
   compared 3DMark Vantage Entry of “Brazos” with “Zacate” APU = 3294 (54% higher)

2) 3DMark 06 of Intel Atom N-450 = 157 vs.
   3DMark of “Brazos” with “Ontario” = 1748
And it Only Gets Better with “Llano”

“Sabine/Lynx” Platform

- Enthusiast-class entertainment capabilities
- High-performance DirectX® 11 capable GPU on die
- Gigaflops of compute power
“Llano” demo
### AMD Notebook CPU/APU Roadmap

<table>
<thead>
<tr>
<th>Performance</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mainstream</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>“Llano” AMD Fusion APU</td>
<td>“Trinity” AMD Fusion APU</td>
<td></td>
</tr>
<tr>
<td>2-4 “Stars” CPU cores</td>
<td>2-4 next-generation “Bulldozer” CPU cores</td>
<td></td>
</tr>
<tr>
<td>DX®11 capable GPU</td>
<td>DX®11 capable GPU</td>
<td></td>
</tr>
<tr>
<td><strong>Essential</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>“Ontario” and “Zacate” AMD Fusion APUs</td>
<td>“Krishna” and “Wichita” AMD Fusion APUs</td>
<td></td>
</tr>
<tr>
<td>1-2 “Bobcat” CPU Cores</td>
<td>1-4 enhanced “Bobcat” CPU Cores</td>
<td></td>
</tr>
<tr>
<td>DX®11 capable GPU</td>
<td>DX®11 capable GPU</td>
<td></td>
</tr>
</tbody>
</table>

**HD Netbook**

- “Ontario” and “Zacate” AMD Fusion APUs
  - 1-2 “Bobcat” CPU Cores
  - DX®11 capable GPU

**Tablets**

- “Krishna” and “Wichita” AMD Fusion APUs
  - 1-4 enhanced “Bobcat” CPU Cores
  - DX®11 capable GPU

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AMD roadmaps are subject to change without notice.

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### AMD Desktop CPU/APU Roadmap

<table>
<thead>
<tr>
<th>Performance</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>“Zambezi” CPU</strong></td>
<td>4-8 “Bulldozer” CPU cores</td>
<td><strong>“Komodo” CPU</strong></td>
</tr>
<tr>
<td><strong>“Llano” AMD Fusion APU</strong></td>
<td>2-4 “Stars” CPU cores</td>
<td><strong>“Trinity” AMD Fusion APU</strong></td>
</tr>
<tr>
<td>DX®11 capable GPU</td>
<td>DX®11 capable GPU</td>
<td></td>
</tr>
</tbody>
</table>

### Essential

| **Ontario” and “Zacate” AMD Fusion APUs** | 1-2 “Bobcat” CPU Cores | DX®11 capable GPU |
| **“Krishna” AMD Fusion APU** | 2-4 enhanced “Bobcat” CPU Cores | DX®11 capable GPU |

### AIO/Small Form Factors

**CORRECTION March 8, 2011:** There was an error in the original desktop roadmap slide posted. The "Komodo” CPU was erroneously listed as having a 'DX®11 capable GPU’. The desktop roadmap slide currently posted is and always has been plan of record. AMD roadmaps are subject to change without notice.

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“Zambezi” Demo
### AMD Server CPU Roadmap

<table>
<thead>
<tr>
<th>2P and 4P enterprise, mainstream platform</th>
<th>1P and 2P cost-optimized, energy-efficient platform</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AMD Opteron™ 6100 Series CPU</strong></td>
<td><strong>AMD Opteron™ 4100 Series CPU</strong></td>
</tr>
<tr>
<td>8/12-cores</td>
<td>4/6-cores</td>
</tr>
<tr>
<td>12M L3</td>
<td>6M L3</td>
</tr>
<tr>
<td>4x HT-3 (6.4GT)</td>
<td>2x HT-3 (6.4GT)</td>
</tr>
<tr>
<td>DDR3 (quad-channel)</td>
<td>DDR3 (dual-channel)</td>
</tr>
<tr>
<td><strong>“Interlagos” CPU</strong></td>
<td><strong>“Valencia” CPU</strong></td>
</tr>
<tr>
<td>8/12/16 “Bulldozer” CPU cores</td>
<td>6/8 “Bulldozer” CPU cores</td>
</tr>
<tr>
<td>4x HT-3 (6.4GT)</td>
<td>2x HT-3 (6.4GT)</td>
</tr>
<tr>
<td>DDR3 (quad-channel)</td>
<td>DDR3 (dual-channel)</td>
</tr>
<tr>
<td><strong>“Terramar” CPU</strong></td>
<td><strong>“Sepang” CPU</strong></td>
</tr>
<tr>
<td>Up to 20 next-generation “Bulldozer” CPU cores</td>
<td>Up to 10 next-generation “Bulldozer” CPU cores</td>
</tr>
</tbody>
</table>

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- 2010
- 2011
- 2012

45nm 32nm
Execution
2010 Execution is the Final Key to Win With AMD Fusion

- Launched AMD Opteron™ 6000 series platform ahead of schedule; 45 designs now shipping
- Second generation of DirectX® 11 capable graphics products launched ahead of schedule
- World’s first AMD Fusion APU is shipping NOW
AMD Fusion Requires "Velocity"

**Velocity:**
visual computing technologies now drive the **AMD pace of innovation**

**AMD Fusion beyond 2011**

- True heterogeneous, single-die computing
- The lowest power, parallel computing
- Ongoing x86 innovation
- GPU leadership

The best APU every year
Summary

- We are executing to our plans
- GPU is key to giving users the experience they deserve
- More great things to come
- AMD Fusion is here ... TODAY
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