HIGH-PERFORMANCE GRAPHICS
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HPG 2011 Panel Presentation

Thoughts and speculation about the future

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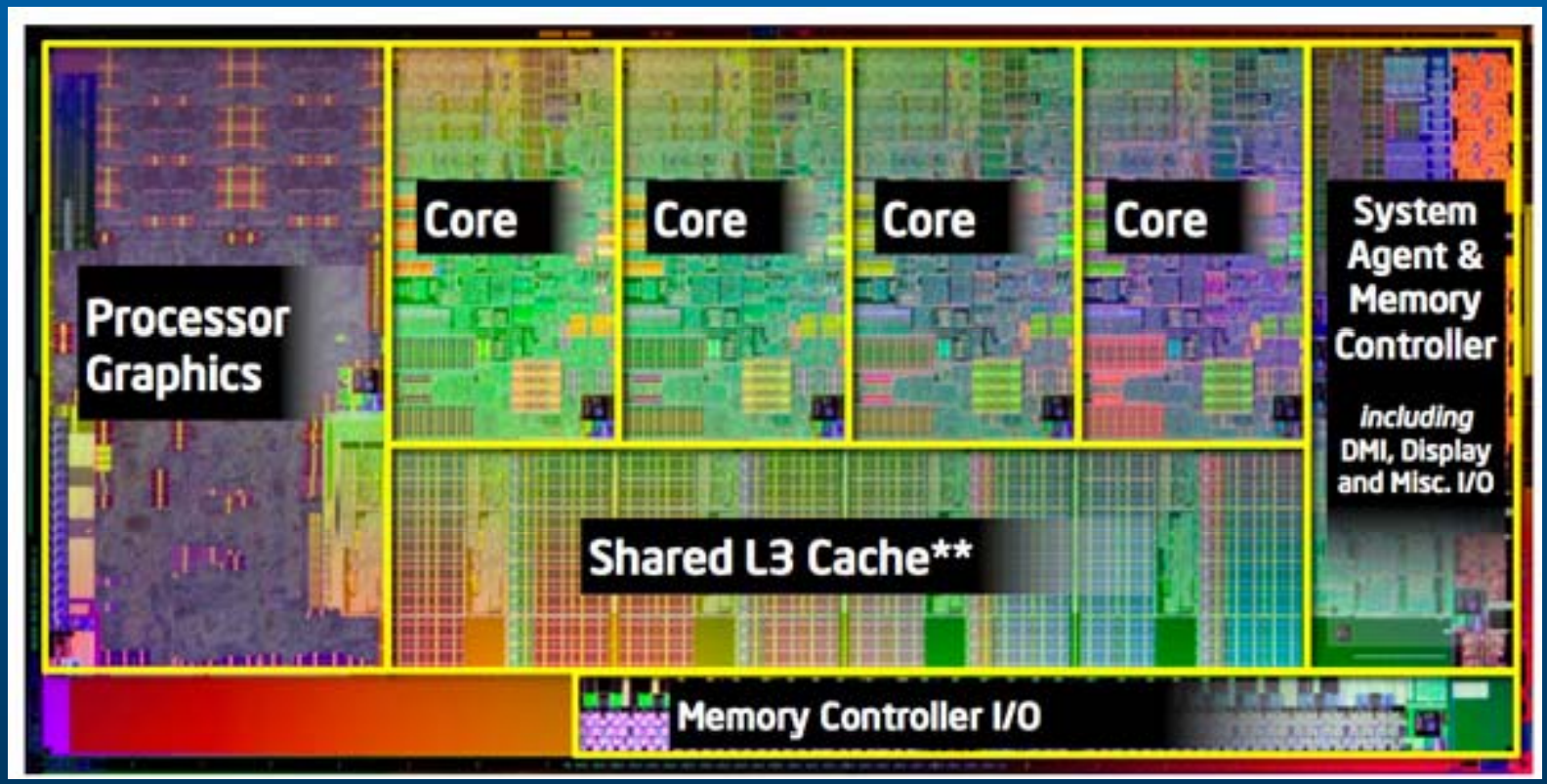
Thin, light, long battery life -> continued focus on power efficiency

Ultrabook

~40% of consumer laptop sales by end of 2012

Graphics integrated with CPU will gradually displace most discrete graphics



Integrating graphics with CPU will make GPU programming easier

- Shared L3 cache (shipping)
- Shared virtual addresses (possible)
- Low overhead task dispatch (possible)
- Etc.

Change ahead for workstations?

- Use processor graphics?
  - Perhaps several chips?
- Continue using discrete graphics?
  - Distinct technology from regular PCs, like SGI era?
- Use CPU-based rendering?
  - Esp. for ray tracing – CPUs are very efficient for this

Increased tension between programmability and power efficiency

- Programmability is nice, sometimes essential
- Fixed-function HW often more power efficient
- GPUs are an unusual combination of both
- Possible for evolution to occur in either direction

More emphasis on input-side computation

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