
ELEC 694
COMP 694

Topics Not Chosen

Scott Cutler
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4/10/2013



Current Roster



■ Ryan Artecona



■ Jianbo Chen



■ Rob Bauer



■ Ahmed Haque



■ Enoch Chang



■ Zhiyong Tan



Schedule for Spring 2013

- **01/09/13** Introduction and Accelerating Technology (*Cutler*)
- **01/16/13** Disruptive Technologies (*Cutler*)
- **01/23/13** Creating and Delivering Great Presentations (*Volz*)
- **01/30/13** Consumer Medical Electronics (*Ahmed Haque*)
- **02/06/13** Identity Theft / Phishing (*Enoch Chang*)
- **02/13/13** Internet of Things (*Ryan Artecona*)
- **02/20/13** No Class – family emergency
- **02/27/13** No Class - Rice midterm recess
- **03/06/13** Storage (*Jianbo Chen*)
- **03/13/13** No Class – family emergency
- **03/20/13** HTML 5 (*Zhiyong Tan*)
- **03/27/13** Ecosystem Group Discussion (*All*)
- **04/03/13** Internet Video (*Rob Bauer*)
- **04/10/13** Topics Not Chosen (*Cutler*) - Prep for Final Projects (*All*)
- **04/17/13** Final Projects - Final Papers Due (*All*)
- **04/21/13?** Possible Optional Off-site (a.k.a. end of semester party)



Next Week's Mini-Discussion

- Some weeks, we will have a short group discussion on a topic rather than Events of the Week.
- Purpose is an exercise in thinking beyond the top level issues of a topic.
- I expect roughly 30 minutes of research and thought
- Our final mini-discussion is this week. Next week we have:

Events of the Week
Presented by All



Final Paper

- Everyone has to submit a paper on any of the topic from the list
 - 99% chose same topic as presentation!
- Roughly 20 pages; but can be more or less
- Covers same material as presentations with a stronger emphasis on the future and what other technologies impact or are impacted by chosen topic.
- Submit electronically – save trees
- ***Can be started and submitted at ANY time***
 - Due April 17



Final Projects

- At the April 3rd class, you will be assigned to one of two teams.
- You will be given a topic covering a technology with a 10 year horizon.
- The April 10th class will start with a discussion on Topics Not Chosen (I will present) followed by prep time for final project.
- April 17th class will consist of two 15-20 minute group presentations on final topic.



Final Projects

- Topic:
 - Automobile Electronics in the year 2020
- Team A
 - Ahmed Haque
 - Ryan Artecona
 - Zhiyong Tan
- Team B
 - Enoch Chang
 - Jianbo Chen
 - Rob Bauer



Seminar #12

- Final projects– Teams A and B
 - Logistics
 - Wednesday, April 17, 9:30 – 11:00, DH-2014
- Mini-Discussion – Final Events of the Week
- One-on-One meetings:
 - None !



Topics Not Chosen

Scott Cutler
4/10/2013



Candidate Topics – Spring 2013

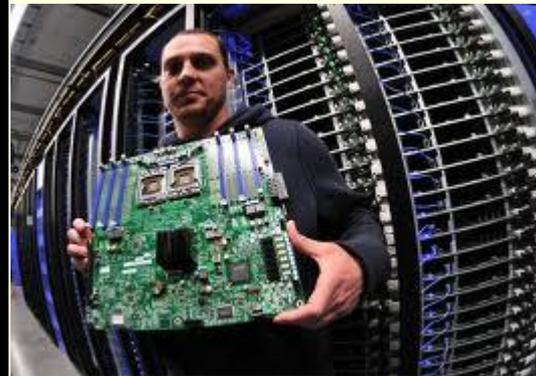
- Advanced Computer Inputs – Kinect, Touch Screens
- ARM vs. x86 for mainstream usage and/or Intel vs. NVIDIA
- ~~■ Automotive Electronics beyond the engine including GPS, XM audio, XM data, cellular data~~
- Cloud Computing
- ~~■ Consumer Medical Devices / Electronic Medical Records (consumer)~~
- Digital Living Room - AirPlay and dLNA, networked receivers
- ~~■ HTML 5~~
- ~~■ Identity theft / phishing~~
- Intellectual Property, patent trolls, law suits, DRM for movies / TV ad revenue model
- ~~■ Internet of things, Embedded cellular data modems, Ultra low powered computing~~
- ~~■ Internet Video / Netflix / Google TV, Apple TV, repurposed game machines~~
- Main Stream Processors and Chipsets / Parallel, multi-core technology for consumer uses
- NFC and Mobile Payments
- Shared Metered 4G LTE Data Plans
- Social Media – specifically Facebook long term or quick rise/fall or Twitter business model
- ~~■ Storage – SATA, Solid State Drives, Flash, RAID, Backup, disk in the clouds~~
- Voice Recognition Assistants
- Windows 8 / 8RT



Advanced Computer Inputs



ARM vs. x86 for mainstream usage and/or Intel vs. NVIDIA



Cloud Computing



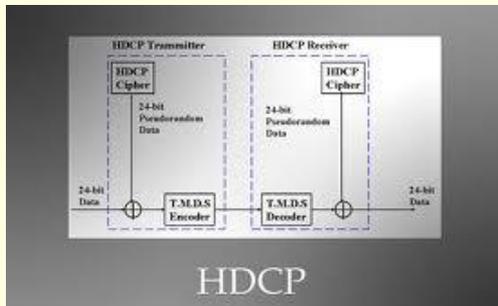
Digital Living Room - AirPlay and dLNA, networked receivers - 2



AirPlay
Broadcast live
to your HDTV
and speakers.



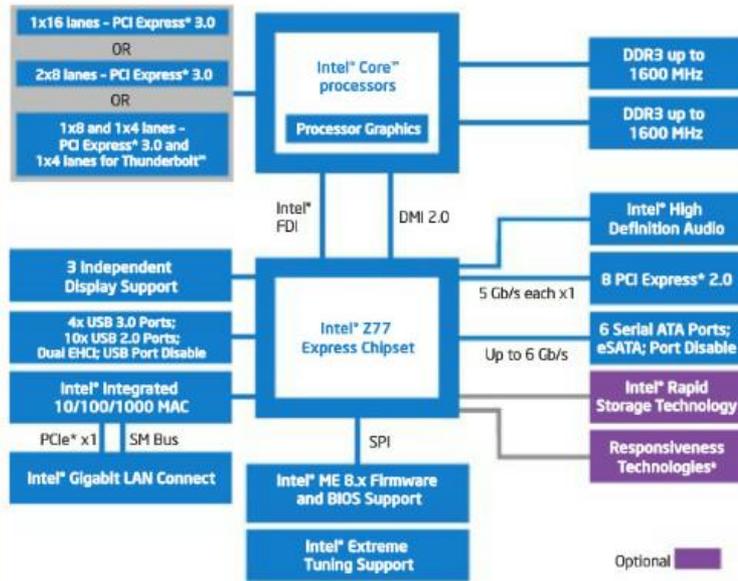
Intellectual Property, patent trolls, law suits, DRM for movies / TV ad revenue model



Main Stream Processors and Chipsets

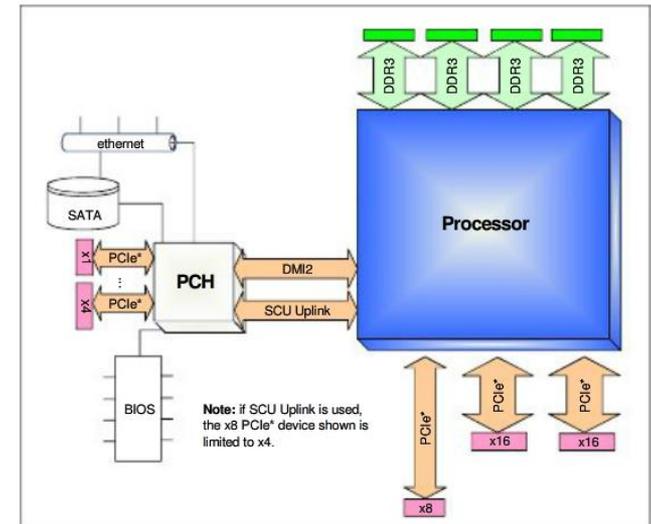
- 64 bit computing
- Parallel, multi-core technology for consumer uses

Intel® Z77 Express Chipset Block Diagram



Introduction

Figure 1-1. Processor Platform Block Diagram Example



1.1 Processor Feature Details

- Up to 6 Execution Cores
- Each core supports two threads (Intel® Hyper-Threading Technology) for up to 12 threads
- A 32-KB instruction and 32-KB data first-level cache (L1) for each core
- A 256-KB shared instruction/data mid-level (L2) cache for each core
- Up to 15 MB last level cache (LLC): up to 2.5 MB per core instruction/data last level cache (LLC), shared among all cores

1.1.1 Supported Technologies

- Intel® Virtualization Technology (Intel® VT)
- Intel® Virtualization Technology for Directed I/O (Intel® VT-d)
- Intel® Virtualization Technology Intel® Core™ i7 processor family for the LGA-2011 socket Extensions
- Intel® 64 Architecture
- Intel® Streaming SIMD Extensions 4.1 (Intel® SSE4.1)
- Intel® Streaming SIMD Extensions 4.2 (Intel® SSE4.2)
- Intel® Advanced Vector Extensions (Intel® AVX)
- Intel® Hyper-Threading Technology
- Execute Disable Bit
- Intel® Turbo Boost Technology
- Enhanced Intel® SpeedStep® Technology

NFC and Mobile Payments



Shared Metered 4G LTE Data Plans



WE DID THE MATH. DATA CAPS = HEADACHES.

Unlimited data from Sprint means you don't have to do the math. Look how fast you hit your data cap with Verizon or AT&T. Some things should be monitored. Like your 4-month-old baby. Or your bank account. But not your data.



The above numbers are estimates and data transfer amounts may vary. Our math works like this: 1024 kb=1MB. 1024 MB=1 GB. We used these estimates to do our calculations on each type of data transfer: music streaming: 60MB/hr; video streaming: 250MB/hr; picture: 300KB/ea.; 28.4MB/downloads.



Social Media – specifically Facebook long term or quick rise/fall or Twitter business model



Voice Recognition Assistants



Windows 8 / 8RT



Automotive Electronics

- ***I would not want to spoil all of your fun!***



So Many Technologies

Life is good!

