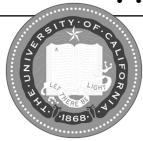


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Jonathan
McKinsey



The Beauty and Joy of Computing

Lecture #11 Social Implications II



The Maker Movement



<https://www.youtube.com/watch?v=Wuza5WXiMkc>

https://www.youtube.com/watch?v=f_zp42fQ_d0

<http://time.com/104210/maker-faire-maker-movement/>

UC Berkeley "The Beauty and Joy of Computing": Impact of Computing II (1)



Computing Enables Innovation



UC Berkeley "The Beauty and Joy of Computing": Impact of Computing II (2)



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Computing Enables Innovation I

- Machine learning and data mining have enabled innovation in medicine, business, and science.
- Computing enables innovation by providing the ability to access and share information.
- Open and curated scientific databases have benefited scientific researchers.



IBM Watson (Image by Clockready, Wikipedia)



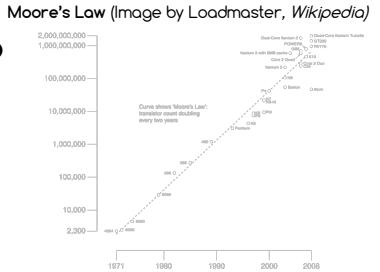
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Computing Enables Innovation II

- Moore's law has encouraged industries that use computers to effectively plan future research and development based on anticipated increases in computing power.
- Advances in computing as an enabling technology have generated and increased the creativity in other fields.



Pixar Studios (Image by Coolcaesar, Wikipedia)



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Economic, Social, Cultural Contexts

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Economic, Social, Cultural Contexts I

- Computing innovations influence and are influenced by the economic, social, and cultural contexts in which they are designed and used!

Laptop (Image by Petr Kratochvil, [publicdomainpictures.net](#))



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Economic, Social, Cultural Contexts II

- Mobile, wireless, and networked computing have an impact on innovation throughout the world.
- Networks and infrastructure are supported by both commercial and governmental initiatives.
 - E.g. Google Fiber
- The innovation and impact of social media and online access varies in different countries and in different socioeconomic groups.

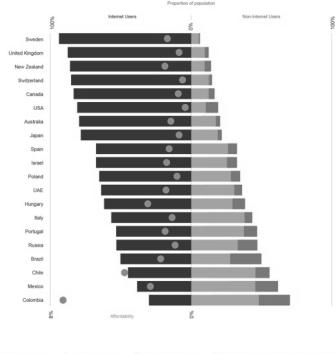


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Economic, Social, Cultural Contexts III

- The global distribution of computing resources raises issues of equity, access, and power.
- Groups and individuals are affected by the "digital divide" — differing access to computing and the Internet based on socioeconomic or geographic characteristics.
 - Affordability
 - Quality of Service (QoS)
 - Language



<http://news.bbc.co.uk/2/hi/technology/8552410.stm>
<http://techcrunch.com/2015/07/12/the-shrinking-digital-divide>
<http://www.wired.com/2015/01/the-digital-divide-is-not-binary>



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The best way to solve the Digital Divide is...

- a) Free iPads for all kids
- b) More computers in libraries
- c) Free wifi for communities
- d) One Laptop Per Child
- e) Something else!



<http://www.latimes.com/local/lanow/la-me-ln-ipad-curriculum-refund-20150415-story.html>

<http://one.laptop.org>

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<http://www.businessinsider.com/9-cities-with-the-best-free-wifi-2014-2>



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Where do you get your music?

- a) I bought everything, as a download or ripped from CD
- b) I bought most of my music but there are a few exceptions
- c) I bought a little of my music, but most of it I didn't buy
- d) It's all from BitTorrent/ friends/ etc



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Intellectual Property

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UC Berkeley "The Beauty and Joy of Computing": Impact of Computing II (1)



Intellectual Property via Copyright

- Brian Harvey:
 - "We're going to make a bargain with creators. We're going to give you a limited time monopoly to profit from your idea in return for sharing your idea with us. ..."
 - Congress keeps extending the duration of copyright"
- US Constitution, Article I, Section 8:
 - "The Congress shall have power... to promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventions the exclusive Right to their respective Writings and Discoveries."



Logo for opposition to Copyright Term Extension Act (CTEA), or "Mickey Mouse Protection Act"
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en.wikipedia.org/wiki/Copyright_Term_Extension_Act
<copyright.gov>

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Economic, Social, Cultural Contexts I

- Widespread access to digitized information raises questions about intellectual property.
- Creation of digital audio, video, and textual content by combining existing content has been impacted by copyright concerns.
- The Digital Millennium Copyright Act (DMCA) has been a benefit and a challenge in making copyrighted digital material widely available.

The Statute of Anne, the origin of modern Copyright law, from 1710 (Public Domain)



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Economic, Social, Cultural Contexts II

- Legal and Ethical concerns are raised by
 - Innovations enabled by computing
 - Authenticated and anonymous access to digital information
 - Commercial and governmental censorship of digital information
 - Open source and licensing of software and content
 - Commercial access to music and movie downloads and streaming
 - Access to digital content via peer-to-peer networks



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