



AR20799

The New AEC Industry: How to Survive in the New Information Age

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Learning Objectives

- Learn how to adapt your workflows to the new tools that are changing our traditional design process
- Learn how to partner with Millennials and Generation Zers to advance your corporate culture
- Understand the technology that's available today that enables design collaboration and access from with an internet connection
- Find out why you should be experimenting with the IoT and big data today

Description

Our industry has changed. New tools are challenging the traditional design process and impacting our cost structures. At the same time, a wave of Millennials and Generation Zers are entering the workforce and changing corporate cultures everywhere. They bring with them a mindset revolving around access to their work from anywhere, a warehouse of new customized tools, and an open-source mindset of collaboration and co-opition. All the while, the entire environment around us is becoming more connected through the Internet of Things, and bombarding us with more and more data. How will the architecture, engineering, and construction industry adapt to such drastic change? Do you have the skill sets needed to survive in this new age?

Your AU Expert(s)

Jimmy Rotella received his bachelor's degree in architecture from the Illinois Institute of Technology, and he is now part of the Digital Practice at CannonDesign in Chicago. In his 12 years of experience, he has worked for multiple large design firms implementing Revit software, developing project standards, managing software and infrastructure, providing technical support for design applications and computers, and teaching in both corporate and educational environments. Rotella's backgrounds in both IT and architecture put him at the forefront of design technology and position him to share his knowledge of new tools with others to help them build and realize their digital designs.



Historical/cross industry reference materials

- We should look at historical trends
- We should look at other industries
- How can these inform our industry?

The Third Wave – Alvin Toffler

https://www.amazon.com/Third-Wave-Alvin-Toffler/dp/0553246984/ref=sr_1_2?ie=UTF8&qid=1477407093&sr=8-2&keywords=third+wave

- 3 waves of culture
 - Agriculture – information came from experience and was passed down through generations (older=more information)
 - Industry – harnessed the forces of nature to amplify our tools. Efficient use of factories brought time analysis and drive evolution of 8hr workday
 - Information

The Third Wave – Steve Case

https://www.amazon.com/Third-Wave-Entrepreneurs-Vision-Future/dp/150113258X/ref=sr_1_1?ie=UTF8&qid=1477407093&sr=8-1&keywords=third+wave

- 3 waves of the internet
 - Infrastructure
 - Apps and Services
 - Internet of Everything

Technology that enables design collaboration

- **Virtualization**
 - Desktop
 - VMware/citrix
 - nVidia GRID

Check out the link below for another presentation I did at nVidia's GPU Technology Conference in 2016 that focuses specifically on CannonDesign's journey through virtualization.

<http://on-demand.gputechconf.com/gtc/2016/presentation/s6644-jimmy-rotella-architectural-design-firm-virtual-gpu-collaboration.pdf>

- SaaS (software as a service/app virtualization)
 - Google Docs/Office 365
 - C4R

<http://www.autodesk.com/campaigns/collaboration-for-revit>

- BIM360

<http://bim360.autodesk.com/>



- Future apps in the cloud?
 - Frame for Revit

<http://aecmag.com/technology-mainmenu-35/1026-news-autodesk-endorses-running-revit-in-a-browser>

New tools that are changing traditional design processes

- **Generative design/Visual programming**

- Dynamo

<http://dynamobim.org/>

- Grasshopper

<http://www.grasshopper3d.com/>

- Flux

<https://flux.io/>

- **VR/AR**

- Oculus/HTC Vive
- Enscape

<http://enscape3d.com/>

- Iris VR

<https://irisvr.com/>

IoT and big data

- **IoT**

- Project dasher

<https://autodeskresearch.com/projects/dasher>

- Estimate

<http://estimote.com/>

- **AI (Artificial Intelligence)**

- nVidia DGX-1

<http://www.nvidia.com/object/deep-learning-system.html>

- Slack Bots

<https://api.ai/slack/>

- **Data analytics**

- Tableau

<http://www.tableau.com/>

- Microsoft PowerBI

<https://powerbi.microsoft.com/en-us/>

auto

Partner with new generations

- Customized toolsets



- Work/life balance
- Co-opetition

What can we learn?

- Step out of the box
- Be paranoid and disruptive
- Leverage scale and partnerships to attain global reach