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On the horizon: international consumer electronics show 2015
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On the horizon: international consumer electronics show 2015

Martin Kesselman

Once again, this January I was honored to attend the International Consumer Electronic Show along with 150,000+ other attendants, and, once again, I was wowed not only by the technologies but also by the innovations, the quick pace of development and the sheer number of exhibitors. This is one huge show! Disruptive technology is here to stay, and, by disruptive, I mean that new technologies take the place of old ones which might only be five years ago. Remember the Osborne Computer, the first luggable laptop? How about eight track players? And now, stores are dropping prices so fast to get rid of the old smart-TVs for the new ones with Ultra HD, 4K and curved screens and who knows what will come next. China seems to be the epicenter for low-cost ubiquitous devices such as tablets with many tablets running at quad core speeds with HD at a cost of less than $35. And, how about new pico projectors that at under $300 are the size of a smartphone and provide powerful HD displays Figure 1.

Shawn Dubravac, the Chief Economist for the Consumer Electronic Association and the author of the new book *Digital Destiny: How the New*

Age of Data will Transform, the way we Work, Live, and Communicate was the keynote speaker of the press conference. According to Dubravac, just because a product can be developed, for example, a smart toothbrush, does not guarantee acceptance in the market place. He went on to say that there are five major trends taking place: new technologies have become ubiquitous and commonplace, there is cheap digital storage, a great deal of connectivity is now possible, there is a proliferation of digital devices and we are in the midst of an age of sensors embedded in technology. Dubrovac further discussed major trends taking place. First, the digitization of our physical space which even includes sensors capturing information on surfboards! Prices have dropped particularly in devices such as three-dimensional (3D) printers which are now in the price range of many consumers. This year's show included over 50 3D printer exhibitors. But, it was clear that there is a need for open standards as they move into libraries and homes as consumer devices. The revenue for drones is up 50 per cent over last year with sales expected this year of over 500,000 units. In smart

watches, there is a great deal of experimentation going on with 11 million units expected to be sold this year. Who wants a smart watch? I'd much prefer a nice Rolex any day. Then there is the Internet of Me or a customizable experience with greater relevancy to your location. Then there is virtual reality, eye-tracking and motion tracking devices and connected devices that translate into smart homes and businesses. Follow him on Twitter at @shawndubravac.

CEA came out with their 2015 USA Tech Industry Outlook and the Technology Trends to Look for this year. Emerging technologies are expected to be big this year with smart watches, smart eye ware, fitness and activity trackers, drones, 3D printers and even smart thermostats. According to CEA, 85 per cent of consumers feel that using a fitness and activity tracker motivates them to reach their fitness goals. Sales leaders are expected to be smartphones with $51.3 billion in revenues, tablets with $24,5 billion, automotive electronics at $14 billion and as already noted 4K ultra HD television sets with $4.9 billion in sales and LCD panels at $17.4 billion in revenue. Look for these major technology trends in 2015: 3D printers, the Internet of Things with device connectivity, need for tech privacy, big data analytics including their use in disease prevention, smarter computers, and robotics. Cloud computing is big and will result in thinking machines, cloud robotics, and car technologies with self-driving now possible. Digital health will have a huge impact in quality-of-life issues. Entertainment and immersive content (a big trend I think will drive many library applications), and more tech start-ups, crowd funding and technology disruption will also have major impacts for libraries in the digital environment. More information on CES Marketplaces can be found at CESweb.org

This year's show was greatly expanded with more hotel exhibit space beyond the convention center known as Tech East. Tech West which included

many smaller and start-up companies were present at the Venetian and Sands exhibit centers and included the spaces for 3D printing, family technology, fitness tech, kid tech, health and wellness, robotics, sensors and university innovations. Also included was Eureka Park, with funding from NSF and included start-up companies. New this year was C Space at the Aria hotel which focused on companies dealing with marketing, advertising, entertainment and content communities. For me, C Space was vacant of attendees and I'm not sure it was much of a success, but who knows what took place in some of the private salons that many companies rented.

My favorite event and of most interest to libraries, is the one-day seminar on Transforming Edu (see more at @transformedu and #transforming edu. This year's event featured Microsoft's new Bing Pulse, that graphically depicts audience responses (or class responses for that matter) to what is being presented. According to David Levin, CEO of McGraw-Hill Education, we need to be able to make mobility, open platforms and measurable outcomes all work. He further said that learning has a huge social impact that

can be leveraged using technology. College Education, according to him (and as we all know), is a costly investment and 29 per cent of students never graduate. But, 85 per cent of college students said adaptive learning technologies helped them to achieve their learning goals. Mobile education is huge; 51 per cent of student study on a smartphone and 29.6 per cent study on a tablet.

All of these topics and more were part of the day's discussions that included sessions on the Next Generation in Adaptive and Personalized Learning, the Rise of the Mobile, Connected Campus, Tablets, BYOD (bring your own devices), Makers and Learning by Gaming, Ingenuity in Education and Predictions for 2015 and Beyond. It was fascinating to me to see how the responses to the talks on Bing Pulse were all over the place and that translates to me that no one really knows how transformation will truly take place with new options for learning such as MOOCS, opportunities for students to take control of their classes through flipped learning and how much is available for free. Only the marketplace will decide in the future regarding the importance of having a degree versus having credentials because of completing

Figure 1. *Walking through Hallway at the CES Show*

many freely available courses. In many cases, why pay when you can learn for free! Having already attended the annual Educause conference in Orlando, a few months before, I realized how this event at CES is so different. Here the focus is not just technology in education but also how there are many entrepreneurial opportunities in the education market because of technology. So, to all librarians, start thinking like entrepreneurs! Definitely

look for more details on all the talks with summit videos at transformingedu.org

Even if you do not get to attend this overwhelming yet exciting event, you can follow the industry at ce.org, the official Web site of the Consumer Electronics Association, Declareinnovation.com, the Consumer Electronics Association's public policy perspective and ce.org/blog, CEA's official blog, Greengadgets.org which is the CEA site that focuses

on sustainable use or recycling of consumer electronics. and the Twitter accounts @CEA and @CES2015. Next year's meeting will again be in Las Vegas from January 6-9, 2016, and I hope to be there.

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