

We have gotten
used to
The Internet...
What about the:



*Tech Trends
with Tine*
Webinar Series
presents...

Internet of Things

Devices Collecting and
Reacting to Sensory Input

Tine Walczyk – February 26th, 2016
tine@trainers-r-us.com

Tech Trends with Tine

What is it?

- Objects (in addition to phones, computers, tablets, etc.) that are connected to the internet
- Provide information to us remotely
- Allows for remote-control of everyday things

Tech Trends with Time

All about interconnectivity

- Data flow between
 - BAN (body area network): the ambient hearing aide, the smart t-shirt, Glass
 - LAN (local area network): the smart meter as a home interface
 - WAN (wide area network): Telematics, ITS, Connected Car
 - VWAN (very wide area network): the smart city as e-gov services everywhere no longer tied to physical locations

(<http://www.theinternetofthings.eu/>)

Tech Trends with Time

How long has this been around?

- A famous Coke Machine in the 80's
 - Students made the data available
 - Server was on the internet
 - Telnet to the machine and it would tell you what it had in it and what was cold
- Term first coined in 1999

Tech Trends with Time

Where do we see it today?

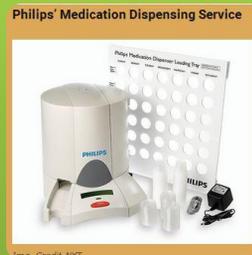
- Personal
 - Customized hotel room **every** time
 - Car tells when service is needed and makes own appt
- House
 - Nest
 - Many home hubs
 - Digital Life
- Community
 - Parking spaces
 - Trash pick-up
- Industry
 - Track livestock
 - Monitor airplane parts for repair
 - Asset Tracking
- Environment
 - Air/pollution quality
 - Forewarning of natural disasters – earthquakes, landslides



SMART House



Control your energy usage



img. Credit-NYT

Control your medication accuracy



SMART City



Manage trash collection



Auto-sensing light poles



Smart reminders



Open parking spots



Environmentally control growth



Track and monitor

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Why is it important for libraries?

- Patrons will have technical questions and may look to us for not only answers but education.
- Another case of the Digital Divide (and we are defenders of the faith...)
- Privacy matters – knowing how to spot them and understanding the new landscape IoT brings
- Immense data created containing immense value. Allows for research to be conducted at the community level.
- Knowing that patrons were satisfied with their experience when they leave the library

Source: Library of the Future Blog – ALA

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To what end?

- Tracking books so that students could find them while looking through the stacks by using their smartphones
- Being able to tell when students abandon or get frustrated with their research and resort back to Google
- A “hot spot” map that shows which areas of the library show most patron usage.

Source: American Libraries

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Specific examples

- *Locate items from my books list.*
- *An enriched Special Collections experience.*
- *Availability of machines.*
- *More details on items*

Source: Ned Potter's Ideas about Communication blog

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How may library world change?

- Staff
 - Increasing tech expertise
 - Stronger focus on curation
- Institution
 - Sensors and monitoring
 - SMART artifacts
 - Test beds
- Purpose
 - Trusted resource / advocacy

Tech Trends with Tine

What about libraries?

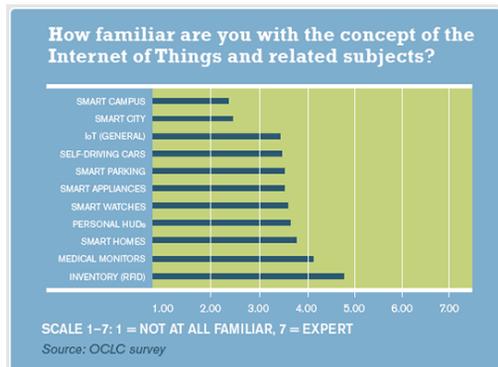
(OCLC Survey 2014)

- Questions asked:
 - How familiar are you with the concept of the Internet of Things and related subjects?
 - What's promising about IoT technologies for libraries?
 - Area of Concern
 - What is the library's role in supporting users' adoption of IoT?

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What about libraries?

- Results from Survey from OCLC 2014



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Survey - What's promising about IoT technologies for libraries?

- Inventory control
- Mobile payments, ticketing and event registration
- Access and authentication
- Climate and room configuration, accessibility and way-finding
- Mobile reference
- Resource availability for both content and physical plant (rooms, AV equipment)
- Smart books (features activated/enhanced by other IoT-enabled systems)
- Gaming and augmented reality
- Object-based learning
- Assistive technology

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Survey - Areas of concern

- Privacy, security and hacking (by far the largest concern)
- The expense of participating in IoT technologies
- Staff support and training
- Decline in use of library resources

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Survey - What is the library's role in supporting users' adoption of IoT?

- General knowledge, training, demonstrations
- Education regarding privacy and security issues
- Providing accessibility, compatible devices and resources

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What are your thoughts?

- Let's create some word maps!
 1. Use one word to describe how IoT could help your library.
 2. Use one word to describe an area of concern you might have with IoT (either within libraries or personally).
 3. Use one word to describe our role in libraries to support IoT use by patrons.

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Looking for program resources?

- <http://www.instructables.com/> - Project ideas, free membership, Pro members get discounts for resources
- <http://littlebits.cc/> - Electronics snap together kits, webinars, projects, educator discount, resource guide for librarians
- <https://www.particle.io/?redirected=true> - Kits for internet/cellular capability
- <https://www.simblee.com/> - Make your own IoT application
- <http://www.intel.com/content/www/us/en/do-it-yourself/edison.html> - Kits
- <https://www.sparkfun.com/categories/276> - Parts and more parts

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A little more reading on the subject

- 7 Things about IoT (Educause Article) - <https://net.educause.edu/ir/library/pdf/ELI7113.pdf>
- Book: *The Silent Intelligence: The Internet of Things*
 - Presentation by Author at ALA 2014 - oc.lc/ALA-IoT
- OCLC Next Space issue on IoT - <https://www.oclc.org/publications/nextspace/issues/issue024.en.html>
- Application on Internet of Things Technology Using in Library Management – doi:10.1007/978-3-642-20370-1_64
- Designing and Implementation of University Library Automatic Management System Based on the Internet of Things – doi: 10.1007/978-3-319-09265-2_25
- Integration of Library Services with Internet of Things Technologies - <http://journal.code4lib.org/articles/10897>

More examples!!

- PEW Internet - <http://www.pewinternet.org/2014/10/28/the-internet-of-things-and-what-it-mean-for-librarians/>
- IoT Future (Internet of Things Wiki) - <http://internetofthingswiki.com/iot-applications-examples/541>
- Examples - <http://postscapes.com/internet-of-things-examples/>

And more trends are still to
come this season...

See you again for “Robots and
Drones” on April 29th!

Tech Trends with Tine Webinar presented on February 26th 2016.