



Supporting the World with Digital Gadgets

Hope N. Tillman
Director, Libraries
Babson College
Babson Park MA 02457
tillman@babson.edu

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What do I mean by “gadgets”?

- **Merriam-Webster Dictionary & Thesaurus:**
An often small mechanical or electronic device with a practical use but often thought of as a novelty.
- **Wikipedia:** “A **gadget** or **gizmo** is a device that has a useful specific purpose and function. Gadgets tend to be more unusual or cleverly designed than normal technology.” Examples: MP3 players, remote control devices of any sort, cordless mouse, Swiss army knife
- **Consumer electronics**



Gadgets all around us

- Productivity versus Distraction?
- Useful gadgets or time-consuming toys?
 - Time shifting
 - Blurring of work and personal time
- Overload versus the More the Better?
 - Makes time to do more
 - Makes more to do

Today's Students

Beloit Mindset - Class of 2009 (Sept. 2005)

The list of 50 statements looks at the world of students entering college each fall, probably at age 18. This fall, that means they would have been born in 1987.

- 16. Telephone voice mail has always been available.
- 20. They may have fallen asleep playing with their Gameboys in the crib.
- 61. Digital cameras have always existed.
- 75. They have always been challenged to distinguish between news and entertainment on cable TV.
- 49. Libraries have always been the best centers for computer technology and access to good software.



Topics to be covered

- Why single out gadgets?
- A tour of gadgets
- How are libraries using gadgets?
- What's next?



Why single out gadgets?

- They represent what consumers are willing to buy
- They reflect the customization and personalization trends
- They continue to change - show evolution and shifts



Questions to consider before the tour

- What features in gadgets lend themselves to be good tools for information management & knowledge sharing?
- How identify gadgets to adopt/support in this volatile world?
- What do your customers use? Who do you listen to?
- What makes your life easier?
- What do you see other libraries using that makes sense for you to emulate?
- What is your tipping point?
- How do you look at interoperability, standards, and migrations to next versions



Trends

- **Convergence**
 - Gadgets are rarely single purpose.
 - Different preferences
- **Personalization and customization**
- **Miniaturization (portability)**
 - Technology keeps letting us make things smaller.

ZDNet's Top 10 Gadget Must Haves

(Updated March 21,2006 by CNET Staff)

1. Creative Zen Vision M - video player
2. Sony PSP - game
3. Microsoft Xbox 360 - game
4. Archos AV 500 Mobile DVR (30GB) - portable video player
5. Panasonic TH-42PHD8UK - 42" plasma screen
6. Sling Media Slingbox - remote tivo
7. Soundmatters MainstageHD - speakers
8. Dell XPS M170 - laptop
9. Palm Tree 700w - smart phone
10. Canon PowerShot S80 - digital camera



A few of the gadgets

- PDAs, handhelds, smart watches
- Tablets, downsized laptops, ultra personals
- Cell phones, Smart phones
- MP3 players, voice players/recorders
- Video players/recorders
- Digital still and video cameras
- Pocket scanners and document pens
- Game machines
- GPS devices
- Jump drives (USB drive, fit key)
- Wireless devices, i.e. cordless presenters
- Remote controls: RFID, handheld apps

Morphing the Name of the PDA

- Personal Digital Assistant (or PDA)
- Palm or Pocket PC
- Handheld
- Portable Media (used more for MP3)
- Mobile Media Companion
- Pocket PC Phone (or Palm Phone)
- Ruggedized handheld
- Ultra Personal Computer or Ultra-Mobile Personal Computer



PDA/Handhelds/Tablets

- Convergence is changing the products
- Thickness and weight versus functionality or not?
PDA's are still part of the mix



HP, Sony Vaio Ultra portable, Nokia Internet tablet, IBM Lenovo thinkpad tablet, Sony reader, IBM Project Origami

Smart Watches



Many different brands on the market today:
Casio, Microsoft, Nike, Timex, etc.

- Abacus new Fossil product introduced at CES 2006, improved storage, battery, speed (new version of SPOT)
- Content: Calendar, weather, news, sports, stock quotes, movie listings
- Wireless or synched
- Limited by reception area

Wherify watch has embedded GPS (locate children)

- Limited use (child must be outside and visible to satellites)

New market for watches as wearable computing

- IBM [Linux Watchpad](#)TM - SIP technology

From top to bottom: Microsoft, Casio, Wherify, IBM



Smart phone/Multimedia mobiles

- Single, integrated device for all your data and voice needs.
- Access your existing email wirelessly.
- Integrated phone, SMS, browser, and organizer applications.



Left to right:

Sony Ericsson W800i , Blackberry 8700c, Palm Treo, Nokia

MP3 players

- Ipods
 - Ipod (now with video)
 - Ipod Shuffle
 - Ipod Nano
 - Ipod Mini
- Creative Nomad Jukebox 3
- Sony Network Walkman Bean
- iRiver H320
- Rio Carbon, Carbon Pearl, Forge Sport
- Creative Zen Micro, Touch
- Samsung Yepp YP-T7X
- Many more



Range of types:
CD/MP3 player
Digital player, voice recorder
Flash player
Hard drive
Micro drive
With or without FM radio

Digital voice recorders

Tradeoffs between separate recorder and built-in or add-on to another device

- Smart phone
- Ipod MP3 recorder add-on
- Olympus DM-20 USB Interface Digital Voice Recorder w/ MP3 and WMA music playback



Griffin iTalk
For Ipod



Olympus

Video players/recorders

- Creative Zen Vision
- The Ipod (with video)
- Archos Gmini 402
- Samsung YEPP YH-999 PMC



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Digital Cameras and Digital Video Cameras

It's all about what you want to do!

- Standalones: Canon, Kodak, Minolta, Nikon, Sony
- Embedded or add-ons to other devices
- One time use/disposable - CVS
 - Time Gadget of the Week August 25, 2004
- Webcams



Nikon, Ipod, Samsung camera phone, CVS, webcam



Pocket scanners (Reading pen)

- Scan, store and send
 - Reads notes aloud.
 - Beams to Smart phones, as well as to PDAs and PCs.
 - Includes English dictionary definitions.
 - USB connection to PC
- Get Immediate Translations and Definitions
- Reading Aids - portable devices for dyslexic users

Wizcom Technologies

<http://www.wizcomtech.com>

DocupenRC800

<http://www.planon.com>



Digital Pen (Drawing pen)

Logitech io2 Digital Writing System

Take notes or draw sketches in ink on the smart paper and a “tiny camera” captures your work, storing up to 40 pages at a time. Intelligent power management maximizes every battery charge.

Capture the familiar feel of how you have created in the past and moves it to digital.





Security everywhere

- Fingerprint scanning
- Biometric scanning
- RFID

Fingerprint recognition



Built-in [Keyboard](#) and Mouse or USB storage

- Remember your password with [Sony Puppy fingerprint identity device for Windows](#)
- Secure your data when transporting with [Index Security bio stik fingerprint reader](#)

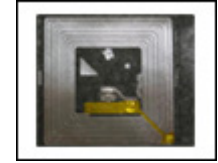
Naperville Public Library, Illinois

- [Fingerprint ID system for Internet access](#) (from ALA Online, May 2005)

Buffalo and Erie County NY Public Library

- [Buffalo and Erie County \(N.Y.\) Public Library, use of Ultra-Scan Corporation's Touch and Go system since 2001 as a library card alternative in the downtown library.](#)





RFID – Special Purpose Chips

***Remote control: RFID technology

- Pros: Locate, Inventory, Self-check-in/ check-out
- Cons: Privacy and confidentiality concern

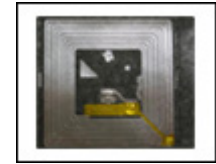
"3M RFID Tracking Solutions: Tag It - Track It - Manage It."

<http://www.3m.com/rfid/>

"RFID." American Library Association. 2005.

<http://www.ala.org/ala/oif/ifissues/rfid.htm>

***Human bar codes: injectable chips



RFID – Special Purpose Chips

"Given the potentially huge benefits to consumers from wide-scale deployment of RFID, including higher productivity and lower prices, the privacy community knows that the only way they can stop RFID at the consumer level is to make all sorts of outlandish claims about the Orwellian uses of RFID, which either can't happen or are so unlikely as to be a non-issue."

Robert Atkinson, Vice President, Progressive Policy Institute;
(economic policy analyst)

Special Purpose Chips

- USB drives: thumbdrive, jumpdrive
- Flash memory chip
 - May also be hybrid usb drive
- Fitkeys
- Dexit
- SanDisk FlashCP Cruzer (Booklocker)
- DRM dongle
- IBM soulpad project



Wireless devices

- Wireless mice & keyboards
- Logitech cordless presenter
 - Value for library instruction



Remote control: Handheld apps

- Logitech Harmony 880 - universal remote
- MyNevo from UEI - handheld device remote control



Game machines

Sony PlayStation Portable was **THE** gadget of 2005



"...as a form, games encourage exploration, personalized meaning-making, individual expression, and playful experimentation with social boundaries..."

Shaffer, et al. *Video Games and the Future of Learning* (2004)

"...forward planning, lateral thinking, and sustained problem solving required in modern computer games provides a healthy 'cognitive workout' that supports broad mental development."

Steven Johnson, *Everything Bad is Good for You* (2005)

Value of Games

"We're getting smarter in certain ways - pattern recognition, problem solving, abstract problem solving, system thinking, system analyzing with complex sort of multiple variables, visual intelligence, obviously technological intelligence, ability to adapt to new interfaces and find the information you need. On all those levels, kids are much brighter today than they were 20 or 30 years ago." (Interview with Steven Johnson, Time Magazine, March 20, 2006, "What's New Forum," pp. 84-86.)

Steven Johnson is author of *Everything Bad Is Good For You: How Today's Popular Culture Is Actually Making Us Smarter*. 2005.

Games in Learning

- Potential of games to play a role in the way we deliver content. Think of the computer gaming background of this generation.
 - John C. Beck and Mitchell Wade. [Got Game: How the Gamer Generation is Reshaping Business Forever.](#)
 - **Game Primer:**
<http://www.gotgamebook.com/primer.html>
- Visual/graphic learners - think of future of voice and visual: <http://www.gizmag.com/go/3519/>

Games and Libraries

- [Parallel Worlds](#): Online Games and Digital Information Services
John Kirriemuir, Silversprite
doi:10.1045/december2005-kirriemuir
D-Lib Magazine, Dec.2005, Vol.11, No.12
- [Gaming in Libraries Blog and Symposium](#)

Games are here to stay!

From Leslie Hitch and Jim Duncan:

What you should do:

- Get knowledgeable
- Adapt teaching and research:
 - Consider students' expectations
- Manage the technology required
- Experiment
 - <http://www.twitchspeed.com/site/companies.html>
- Strengthen use of video games in student and staff development, and in library instruction.

GPS devices

scavenger hunts, geocaching

Stand-alones

- Lowrance iWay 500c <http://www.lowrance.com>
- Magellan Explorist <http://www.magellangps.com>
- Garmin GPSMap 60CS <http://www.garmin.com>

Smart Phones

- Nokia 5140 phone -GPS shell <http://www.nokia.com>

PC-Based

- Delorme Earthmate <http://www.delorme.com>

Geocaching

<http://www.geocaching.com>

- also works with Google Earth

Library examples:

Shady Grove Mini Library Cache - GCKBYR

Annapolis Rocks Library Cache - GCGF41



What toys do your toys have?

- Memory chips -
 - ever larger ever cheaper
- Keyboards for pdas
- Speakers
- Skins
- Caps (for Ipods)
- Carrying cases
- Solar powered backpacks
- Ringtones
- External speakers
 - for MP3s and PDAs
- Paid Subscriptions
- Hotspot detector





Library Applications

- Marketing
- Operations
- Communication/Collaboration
- Learning/Entertainment

Library Applications

○
○
Marketing

○
Operations

- Inventory control, RFID
 - Use handheld bar code readers
 - RFID readers including self-checkout
- Remote control
- Circulation / lending
 - [Wireless cards](#)
 - [MP3 players \(circ e-audiobooks\)](#)
 - [Keyboards](#)
 - [Digital Cameras](#)
 - [Voice recorder](#)
 - [Tablets, laptops](#)
 - [USB drives](#)
 - [Devices](#)
- Bibliographic file management applications, such as [EndNote for handhelds](#)

Library Applications

- Marketing
- Operations
- **Communication/Collaboration**
 1. Instant messaging (via desktop, laptop, handheld, cell phone, game machine)
 2. Blogs, podcasts, videocasts (via desktop, laptop, handheld, cell phone, MP3 player, audio and video player, game machine)
 3. Videoconferencing
 4. Wikis

Consider value of social networking methods for internal library communication as well as external use

Communication/ Collaboration Podcast/Videocast Uses

Potential use for any questions answered over and over again

- Market your library
- Use to enhance web site resource instruction
 - [See Babson College library quick tutorials](#)
- Use for library instruction, tours, point of use instruction
- Answer questions about circulation policies
- Create personalized introductions to librarians and services they can provide



Library Applications

- Marketing
- Operations
- Communication/Collaboration
- Learning/Entertainment
 1. Delivery of files and data (books, articles, movies, photos, art, podcasts, videocasts, etc.)
 2. Role of games in learning

Learning/Entertainment

Files, data (books, articles, music, movies, photos, art, podcasts, etc.)

- Search engines: Google: <http://www.google.com/xhtml>
- E-books/e-journals/resources
 - NetLibrary, Ebrary, Knovel, Books 24x7, Safari Books, etc.
 - [Ereader for libraries](#)
 - Many databases, journals, i.e. [Ovid@Hand](#)
- Current Awareness: [Avantgo](#)
- E-audiobooks/files: [NetLibrary and Recorded Books](#)
- Ipod Use
 - [Duke University](#)
 - [Georgia College and State University](#)



Learning/Entertainment

Handheld/Smart Phone Research Applications

- Catalog pages:
 - [Cuyahoga County Public Library](#)
- NYU Libraries web site:
 - <http://library.nyu.edu/mobile/>
- Legal Content at New York Law School
 - <http://www.nyls.edu/pages/420.asp>
- Pubmed for Handhelds
 - <http://pubmedhh.nlm.nih.gov/nlm/>
- Health Sciences Resources for your PDA
 - <http://www.library.ualberta.ca/pdazone/health/index.cfm>



What's next

- E-ink, E-paper, flexible displays, keyboards with wall display?
- Wearable computing?
- More realistic simulations
- More "games" within libraries?

E-ink / E-paper

- Electronic ink is an ink that carries a charge enabling it to be updated through electronics.
- It is a reflective technology which requires no front or backlight,
- It is viewable under a wide range of lighting conditions, including direct sunlight, and
- It requires no power to maintain an image.



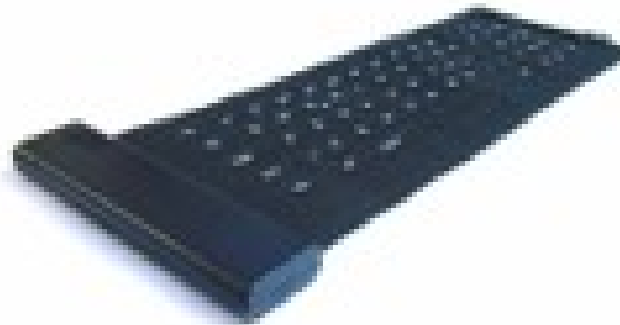
Seiko Epson watch



Sony Librie Ereader

Soft Hardware

- ElekTex keyboard uses Bluetooth technology to connect wirelessly to PDAs and smart phones.
- Charcoal gray fabric keyboard
- The electronics' plastic housing has embedded LEDs that show keyboard and Bluetooth connectivity status.
- It comes with a mobile phone / PDA stand.
- When not in use, the keyboard can be rolled up to fit easily in a pocket or handbag



Wearable computing

MIT Labs

"With heads-up displays, unobtrusive input devices, personal wireless areas networks (LANs), and a host of other context sensing and communication tools, the wearable computer can act as an intelligent assistant, whether it be through a Remembrance Agent, augmented reality, or intellectual collectives."

<http://www.media.mit.edu/wearables>

<http://borglab.media.mit.edu/wiki/borglab/>

<http://tangible.media.mit.edu>

Early example: Tunewear jacket with iPod controls stitched to the sleeve.



Wearable computing today

Movie Glasses

- In Skymall magazine -
Icuity Video Eyewear (optional
DVD player)



MP3 sunglasses

- Thump by Oakley.com
[http://oakley.com/news/
thump_review/](http://oakley.com/news/thump_review/)



Voted one of the top worst new technologies for 2005!

Head-worn display

Icuity M920 – small and lightweight



Games and libraries: Embedded librarians

- Future educational game environments as an additional tool to help librarians provide realistic simulations and “games” within libraries while educating students to visualize and understand information in new ways:
- Reference librarian avatars
 - Play a character in a game who comes in to help
 - Provide guided learning
 - Prototype was seen in CIL 2006 presentation by Mark Puterbaugh, Eastern University, in their adoption of the gaming community “[Active Worlds](#)”
- We need to reach a generation that expects to find FAQs, hint books, strategy guides, and cheats

Convergence of information and connectivity

This year's must read is: Peter Morville's *Ambient Findability: What We Find Changes Who We Become*. O'Reilly, 2005.

Morville explores the convergence of information and connectivity. He demonstrates that information literacy, information architecture, and usability are all critical components of the new world order.

See Peter's blog at: <http://findability.org/>



Trends

- Convergence
- Personalization and customization
- Miniaturization (portability)

Some things never change:

- Save the time of the reader!

Today's customers want what they want anytime, anywhere, in any way they want to receive it (and the possibilities are much greater than ever before).



Ranganathan Five Laws

- Books are for use.
- Every reader his or her book.
- Every book its reader.
- Save the time of the reader.
- The [Library](#) is a growing organism.

"Five Laws of Library Science" from [Wikipedia](#)

For More Information

Everything you pick up to read has something on gadgets, devices. Magazines, conference presentations, Lists, Blogs, Podcasts

Gadgets:

<http://www.gizmodo.com>

<http://www.engadget.com>

<http://www.the-gadgeteer.com>

PDAs, Handhelds:

<http://www.handheldlib.blogspot.com>

<http://www.thepdawiki.com>

Cnet:

<http://shopper.cnet.com>

Wikipedia:

<http://www.wikipedia.com>

Yahoo groups: Pdalibraries, Pda-ebook

Contact me at:

Hope N. Tillman
Director, Libraries
Babson College
Babson Park MA 02457
781-239-4259
tillman@babson.edu
<http://www.hopetillman.com>

Find the presentation at:

http://www.hopetillman.com/presentations/digital_gadgets.pdf