

Editorial

Mental models for personal digital assistants (PDAs)

Michael Seadle

The author

Michael Seadle is Editor of *Library Hi Tech*.

Keywords

Information facilities, Libraries

Abstract

PDAs (personal digital assistants) have evolved from toys for geeks into tools with real potential for professionals. This editorial examines mental models about PDAs in order to understand the expectations of patrons and to help libraries plan for the future.

Electronic access

The Emerald Research Register for this journal is available at <http://www.emeraldinsight.com/researchregister>

The current issue and full text archive of this journal is available at

<http://www.emeraldinsight.com/0737-8831.htm>

Introduction

The personal digital assistant has come a long way from the days when all it could do was maintain an electronic calendar and address book. There are PDAs that can play music and video clips. There are PDAs that can make phone calls, and send and receive email. There are even PDAs that can take photos or short movies (Mossberg, 2003).

Mossberg is right. PDAs (personal digital assistants) have evolved from toys for geeks who merely wanted the latest and smallest, regardless of how little they could do, into tools with real potential for professionals. Unfortunately much of the marketing still emphasizes toy aspects, as Mossberg's references to playing music and taking photos suggest, but their practical work-related capabilities have grown almost as fast. The PDA-related articles in this issue of *Library Hi Tech* describe how these hand-held computers have become useful tools in a library context.

Since other authors talk about utility, this editorial addresses expectations. By now even those of us without PDAs have some form of mental model about these devices and what they will do. The term mental model comes from recent psychological literature, and has obvious application to the kind of anthropological research that can help librarians to understand the behavior of patrons. Markman and Gentner (2001, p. 230) define mental models in their article on "Thinking:"

Causal mental models ... are related to several other kinds of representational structures ... Naïve theories and folk theories are global systems of belief, typically encompassing larger domains such as biology.

Mental models function as a built-in, culturally biased crystal ball with all of the usual crystal ball limits on accuracy:

... One way people employ their mental models is to perform mental simulations – to imagine the future trajectory of a system given a set of initial conditions. These projections involve qualitative estimates and often neglect some of the information relevant to the behavior of a system.

The final phrase is especially important. The point of examining mental models is not their



accuracy, but their power to set expectations, and the more that we as librarians understand our own models and those of patrons, the better we can serve them.

Experience

The mental model of a new tool depends heavily on experience with an analogous object. Since PDAs are hand-held computers, personal experience with the lighter form of laptop will do much to form the mental model of them.

Until recently I used a Dell Latitude LS that weighed only about 3.5lb (1.6kg). It was so portable that I grew accustomed to carrying it to meetings and taking all of my notes on it, a considerable saving for someone with handwriting as flawed as mine. My experience with that machine shaped my mental model of a PDA, and in my mental model of a PDA, there is nothing a PDA can do that a laptop cannot do better, as long as a way can be found to carry the laptop around. No pocket is big enough.

My mental model has also been shaped by colleagues with PDAs. One bought a PDA a few years ago, and sold it a few months later because she could do nothing with it except keep her calendar, which she preferred on paper anyway. Another developed an innovative use for it in maintaining the stacks, but rarely seems to use it for other purposes.

I have read Marshall and Ruotolo's (2002) study about students using a Jornada Pocket PC as an e-book reading device. This was an experiment where students were supplied with the devices, and a reasonable proportion found them useful. I have also seen people playing games on PDAs during long flights, and have seen a few computing colleagues taking notes with them during meetings. My mental model is a patchwork that lacks much of the multimedia, which seems integral to the usual sales pitch and therefore must matter to a significant portion of the buyers. That gap could be a problem.

Expectations

My library is about to install a wireless network, and one of our expectations is that patrons with

PDAs could quickly become the major wireless consumers. The building already has fast Ethernet ports in essentially every room, which are practical for laptop users, who seem unlikely to walk and work at the same time, which PDA users can and will do. We are also guessing that our students' mental model of a PDA resembles Mossberg's description above: a portable multimedia device that could make heavy bandwidth demands and could also drive the need for new library products – everything from the Innovative Interfaces' AirPAC for access to the online catalog to PDA-formatted resources like Ovid@Hand.

Our mental model of the PDA has assumed that the hand-helds are not used exclusively, but always in tandem with a larger computer. This tandem operation was once also normal for laptops, and the fact that it is no longer could be significant. On a campus that strongly promotes laptops for incoming students, students may not be able to afford both. That could reduce the number of PDAs to plan for, but it might not.

As laptops shrink and PDAs grow more powerful, their fungibility should increase. The time may soon come when a powerful PDA can serve as the sole computer, and in the meantime laptops may in fact function for many students like PDAs, driving some of the same desire for portable books and continuous wireless connectivity.

Conclusion

Libraries today are considering how our patrons will use PDAs, just as in the past we had to plan for their use of computers, laptops, and Internet access. In some fields, particularly the sciences, the physical library has grown less significant than access to digital resources. The health sciences have been early PDA adopters, while humanists still grieve over paper duplicates of the JSTOR journals being sent to remote storage. Since many librarians are aging humanists, our use of PDAs has lagged, and our mental models may be poor predictors of patron (especially student) use.

The articles in this issue show some of the flaws in my own mental model of PDAs. The authors describe the utility of devices small enough to carry in a pocket, while I still trudge around campus with a laptop in a back-pack. I may not rush out to buy a PDA tomorrow, but I have already started to plan for how my library needs to accommodate them.

References

- Markman, A.B. and Gentner, D. (2001), "Thinking", *Annual Review of Psychology*, Vol. 52 No. 1, pp. 223-47.
- Marshall, C. and Ruotolo, C. (2002), "Reading in the small: a study of reading on small form factor devices", Joint Conference on Digital Libraries, July, Portland, OR.
- Mossberg, W. (2003), "Jot down and address in Garmin's iQue PDA and it shows the way", *Wall Street Journal*, 4 September, p. B1.