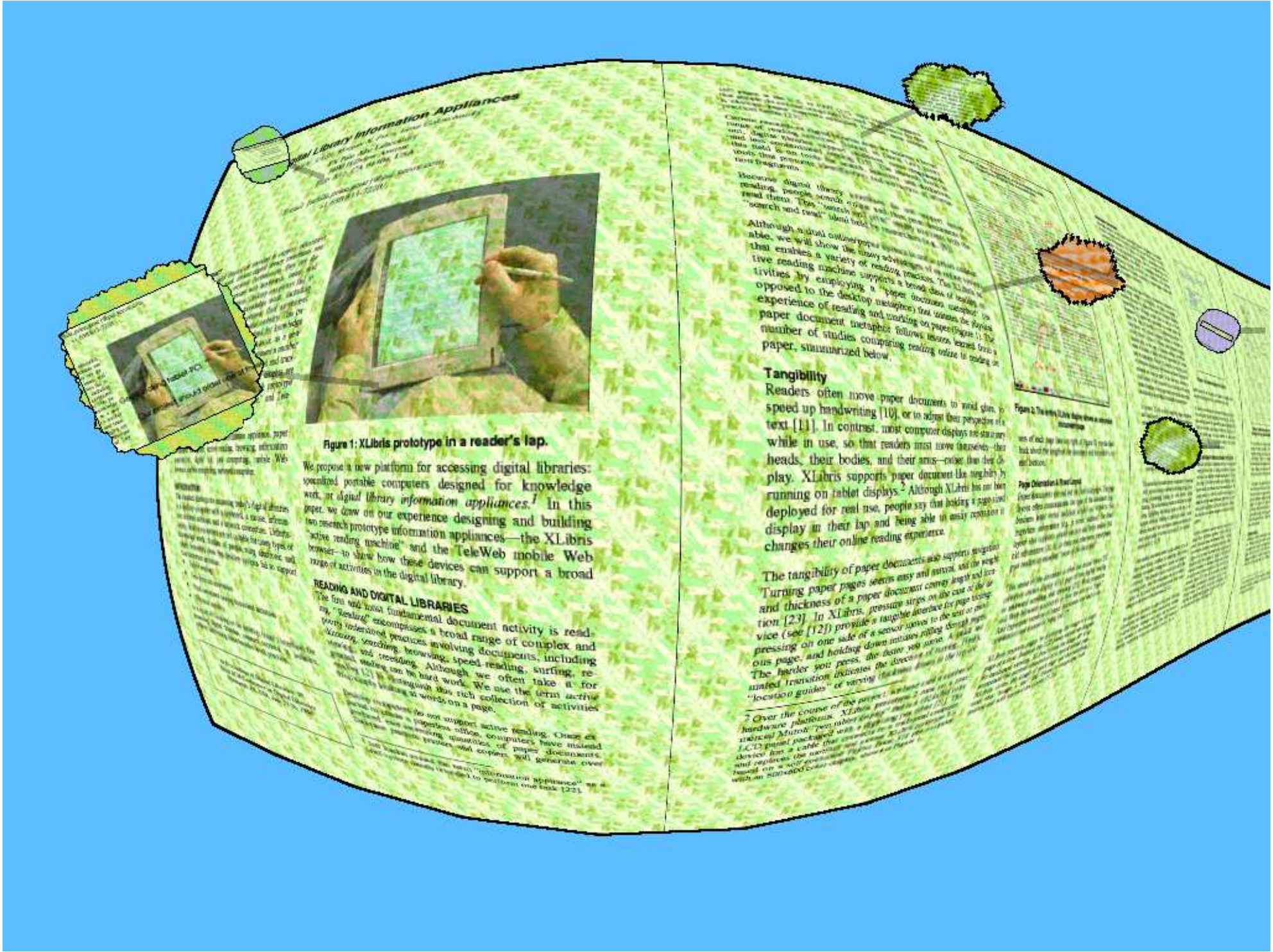
Digital Library Information Appliances
Figure 1: XLibris prototype in a reader's lap.
We propose a new platform for accessing digital libraries: specialized portable computers designed for knowledge work, or digital library information appliances.[1] In this paper, we draw on our experience designing and building two research prototype information appliances—the XLibris "active reading machine" and the TeleWeb mobile Web browser—to show how these devices can support a broad range of activities in the digital library.
READING AND DIGITAL LIBRARIES
Tangibility
Readers often move paper documents to avoid glare, to speed up handwriting [10], or to adjust their perspective of a text [11]. In contrast, most computer displays are stationary while in use, so that readers must move themselves—their heads, their bodies, and their arms—rather than their display. XLibris supports paper document like tangibility by running on tablet displays.[2] Although XLibris has not been deployed for real use, people say that holding a page-sized display in their lap and being able to easily reposition it changes their online reading experience.
The tangibility of paper documents also supports navigation. Turning paper pages seems easy and natural, and the weight and thickness of a paper document convey length and location [23]. In XLibris, pressure strips on the case of the device (see [12]) provide a tangible interface for page tilting: pressing on one side of a sensor moves to the next or previous page, and holding down initiates rifling through pages. The harder you press, the faster you move. A pulse-modulated transition indicates the direction of turning. Finally, "location guides" of varying thickness [illegible]