

Excerpt from

**The Book Review Column**<sup>1</sup>  
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Volume 40, No. 1, 2009.

Review of  
**Blown to Bits: Your Life, Liberty, and Happiness after the Digital Explosion**<sup>2</sup>  
**Author: Hal Abelson, Ken Ledeen, and Harry Lewis**  
**Publisher: Addison Wesley, 2008**  
**\$25.95, 366 pages, Softcover**

Reviewer: William Gasarch ([gasarch@cs.umd.edu](mailto:gasarch@cs.umd.edu))

## 1 Disclosure

Harry Lewis, one of the authors of the book under review, was my adviser.

## 2 Overview

The Music industry has the following valid complaint:

**People who download music illegally are ripping off the artists! That's an outrage!  
That's our job!**

The book under review is about the changes to society caused by the electronic age. My impression is that they started out wanting to do an intelligent and unbiased view, and that they succeeded. However business look immoral and the government looks incompetent. As Stephan Colbert might say *The truth has an anti-business agenda.*

The book is not just about business and government. Its about virtually all aspects of the electronic age. Much of what the book says is obvious *once you see it written down* but not obvious before that point. This is quite valuable. Will this book become out of date as technology changes? There are two answers: (1) NO, and (2) HELL NO- they have a blog associated to the book that has updated material: [www.bitbooks.com](http://www.bitbooks.com).

Note that the website associated to the book also has an errata sheet.

## 3 Summary of Contents

### 3.1 Chapter 1: Digital Explosion—Why is it happening and what is at Stake?

The first chapter drives home the point that the world really has changed. It states 7 Koans about the modern world which are obvious once they are stated, but worth stating. I give one example:

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**Koan 5:** More of the same can be a whole new thing.

This means that even though computers, to some extent, do what we used to do only faster, this is still very new. Compare looking up information in a library to on a computer. Same activity, yet very different.

The first chapter also emphasizes that technology is not good or bad, its how you use it. Again, this is obvious but needs to be stated. This book is not an anti-technology tract by any means. But it is a sequence of true cautionary tales.

### **3.2 Chapter 2: Naked in the Sunlight—Privacy Lost, Privacy Abandoned**

Twenty years ago the biggest threat to privacy was the government. Phone taping, cameras everywhere, etc. While this is still a problem (e.g., intercepting emails) two unexpected things happened: (1) people give up their privacy too easily, and in the process may give up yours, and (2) little brother is watching. Not big brother, little brother.

Who is little brother? Its you! And me! And anyone who has a cell phone camera or Internet connection. It seems that anyone can look up and find out anything. The notion of *sealed records* is now a joke. This works both ways— people can find out things about government and companies.

This chapter describes how we got here: not by some nefarious plan but by the slow erosion of privacy laws, the fast evolution of technology, and people’s willingness to trade information about themselves for convenience. This chapter does not say what we can do about it. Its not clear we can do anything about it.

### **3.3 Chapter 3: Ghosts in the Machine—Secrets and Surprised of Electronic Documents**

When I email a pdf file or word document I am emailing more information than I think. Material I blocked out, material from earlier versions, may well be hidden there. And if someone wanted to they can find that information. This could be a problem for national security and privacy.

There is so much hidden in what we send that we may not realize how much we are giving away. This happened in a more concrete setting recently. In the blog associated to the book I read the following:

*... the McCain-Palin campaign was much less clued in on how to use the technologies [than the Obama-Biden campaign]. And the evidence for this continues to accumulate after the campaign is over. The campaign auctioned its Blackberry phones without wiping the memory clean— so those who bought them bought phone numbers of donors, lobbyists, and journalists too. Apparently they were not amused when the purchaser called them up.*

### **3.4 Chapter 4: Needles in the Haystack—Google and other Brokers in the Bit Bazaar**

Searching the web is a complicated phenomenon. It has changed everything. And there are still issues to work out with it. For the user this is great— we can actually find anything we want. In fact, we are spoiled! I was disappointed I could not find a translation into English of Hilbert’s article *Über die irreduzibilität ganzer reationaler funktionen mit ganzahigen keffizienten* from *J. Reine Angew. Math* which appeared in 1892, volume 110, pages 104-129. I couldn’t even find a

copy in German! I had to go to a non-digital *library* and use a *photocopy machine* (if you don't know what these terms mean then ask your grandfather).

But there are issues. Some sites have advertisers pay to be ranked higher (goto.com). Google does not do this which is part of its popularity. However, google's own pagerank system may (unintentionally) discriminate. There have been lawsuits about this (KinderStart v. Google). There have also been lawsuits in the other direction— suing because Google copies their index (Field v. Google). Google has also blacklisted companies that try to game the system. Its a constant game of cat-and-mouse.

More troublesome is that if you search for something then somewhere somehow there is a record of it. This may come back to haunt you.

### **3.5 Chapter 5: Secret Bits—How Codes become Unbreakable**

The good news: with modern crypto we can have privacy. The bad news: few people use it, and there are ways around it. This chapter details all of this, plus a discussion of the Clipper Chip Controversy. It was good to see the whole story told.

### **3.6 Chapter 6: Balance Toppled—Who Owns the Bits?**

Now that everything is online and we have perfect copies (Koan 2: Perfection is Normal) books, journal articles, music, movies, information, is all free. Neither Business, government, nor the legal system has adjusted to this yet.

You've probably all heard stories about 12-year olds being prosecuted for downloading music. Its worse than you think. The music companies have not only gone after people who have downloaded music. They have also gone after people who are involved in a secondary way, and even some who have not connection to downloading whatsoever.

While companies have acted terribly (and perhaps counter productively as their claims to be 'protecting the artists rights' seem more and more spurious) the law has been mixed. The legal system is not designed to handle fast changing technologies.

Do the music companies have a legitimate complaint? And what can they or the law do that is fair to all parties concerned. The book *Wikinomics* would say that they need to find a new business model. Services like itunes may be a step in the right direction; however, it may be too little too late.

This chapter details this entire story accurately. The story goes back further than most people think: there were lawsuits about VCR's that foreshadow lawsuits about Napster and other services (I wonder if painters sued photographers who took pictures of their paintings and sold them). Even though the book is written factually (unbiased), the companies look awful and the Government looks incompetent.

### **3.7 Chapter 7: You Can't Say That on the Internet: Guarding the Frontiers of Digital Expression**

The title of the chapter makes you think of censorship. However, the issue of this chapter is far more complicated. Lets say an adult male uses FACEBOOK to arrange a meeting with an underage female for immoral purposes. Should FACEBOOK be liable? Who is responsible?

This chapter gives a nice history of what has happened here, Much like the last chapter, some of the laws being debated here have been looked at before in other contexts. It is good to know those contexts.

### **3.8 Chapter 8: Bits in the Air—Old Metaphors, New Technologies, and Free Speech**

At one time the radio spectrum needed the government to referee it so that stations would not interfere with each other. This is no longer true. Yet our laws still operate as though it is true and entrenched interests are resistant to change. This chapter tells that story. And more.

## **4 Opinion**

The one word that describes this book is *intelligent*. For every issue they give history, context, relevancy, and current status. If this ends up making certain people or organizations look bad, that's fine.

Who should read this book? People who technology affects should read this book. Who should not read this book:  $\emptyset$ .

The book is available for download at [www.bitsbook.com](http://www.bitsbook.com). I asked Harry Lewis what their business model was. He says that printing it out is more expensive than buying it, and the fact that its online will create buzz. That's an alternative business model that may work.