



Book The Laws of Disruption

Harnessing the New Forces that Govern Life and Business in the Digital Age

Larry Downes
Basic Books, 2009
[Listen now](#)

- [play](#)
- [pause](#)

00:00
00:00

Recommendation

Business strategist Larry Downes, author of *Unleashing the Killer App*, sees how digital technologies are changing the world – and why technology will advance more and have more impact. Downes looks beyond the obvious implications of digital technology to examine the root causes of change. He pays informed attention to the law and legal structures. He also draws parallels between the digital revolution and social change. This forward-looking book is fun, lively and useful for those who wish to study digital technologies or social structures.

Take-Aways

- Three laws direct the revolutionary changes wrought by computer technology.
- “Moore’s Law” says computer chip memory doubles every 12-18 months at no rise in cost to the consumer.
- “Metcalfe’s Law” says networks become more valuable as more people join them.
- The “Law of Disruption” says that “technology changes exponentially, but social, economic and legal systems change incrementally” and struggle to keep up.
- Digital goods are “nonrivalrous”: Multiple people can use them simultaneously.
- As the digital world converges with the analog world, conflicts occur. New community agreements must emerge to protect individual rights affected by digital technology.
- The right to privacy has dissipated. To protect yourself, share data pragmatically.
- No universal rights exist – on- or offline. Online firms should create “social contracts” that users must accept to gain admission to online services.
- Rather than pushing inapplicable existing laws into the digital realm, society needs new laws – such as in patent and copyright – based on community and corporate standards.
- In the end, open access will triumph over treating digital creations as products.

Summary

The Digital World and the “Law of Disruption”

When a new technology is introduced, society must adapt. To understand how a major technological change creates far-reaching ripples, consider the effect of replacing metal stirrups with “flexible leather” stirrups in Europe during Charlemagne’s reign. This simple innovation provided medieval knights with more balance, efficacy and deadly success. Essentially, the leather stirrup “saved Europe.” But, rather than pay their knights directly, kings gave them land and the right to collect rent. This led to a structured feudal society that outlasted – by 1,000 years – the initial need to pay victorious mounted knights. If you buy property in some areas of London

even today, you pay “tribute to the Duke of Westminster.”

“Throughout modern history, technological breakthroughs regularly surpass the people who invent them.”

Consider the effect of another disruptive technology, the railroad, which changed shipping in 19th century America. The courts had no “clear precedent to determine ‘fair’ rates” for rail shipping. Attempts to adapt old laws proved useless. As famous attorney Brook Adams argued, “The character of competition has changed and the law must change to meet it, or collapse.” The legal system had to accommodate this new technology and other disruptive innovations over time, from “reading glasses” to “the telegraph, antibiotics, automobiles” and the “atom bomb.”

“As information has become more central to the economy, the failure to account for its value becomes dangerous.”

Now, digital technologies are the disruptive innovation creating a sweeping revolution. In this case, as in many of the others, “technology changes exponentially but social, economic and legal systems change incrementally.” Thus, the “analog world” is reaching a point where it can no longer keep up with “digital life,” forcing the emergence of a paradigm shift in which existing systems fall and replacement systems evolve to make better sense of new phenomena. Amid such a shift, older laws become useless because they are based on assumptions that no longer apply. The free market, while imperfect, deals with such changes better than formal legal structures, like courts. Understanding how such impact spreads is a modern challenge. Three laws explain the changes that digital technology is creating:

1. **“Moore’s Law”** – In 1965, Intel’s founder, Gordon Moore, predicted that computer chip “processing power” would double every 12-18 months without a rise in users’ costs. This has held true since. While inflation harms other goods, deflation rules computer technology. Because software is manufactured and distributed electronically, it has “zero marginal cost,” unlike the carrying costs of older consumer goods.
2. **“Metcalfe’s Law”** – “Networking pioneer” Robert Metcalfe said that networks become more valuable the more people use them. Every time someone joins Twitter, Facebook or, by implication, the Internet, that network becomes markedly more constructive.
3. **“The Law of Disruption”** – The dissemination of change is “uneven.” Various elements of society struggle to keep up with rapid technological change.

“The Law of Disruption has initiated an arms race between those who use technology productively and those who use it destructively.”

The digital and material economies function differently. Most material products are “rivalrous goods.” If one person uses them, another cannot; two people can’t build a house on the same site. Digital goods are largely “nonrivalrous.” Several people can use them at the same time. Copying a song doesn’t use it up, destroy it or keep anyone else from using it. This information-based digital economy follows five general principles:

1. **“Renewability”** – You can renew data, but not exhaust it.
2. **“Universality”** – Everyone can access the same data simultaneously.
3. **“Magnetism”** – Information grows in value as more people absorb it, which, in turn, creates a network effect, drawing more people who want to learn.
4. **“Lack of friction”** – The more smoothly information flows, the more valuable it is.
5. **“Vulnerability”** – Criminals can harm or misuse information. They can destroy it, ruin it or steal it (as in identity theft). In this one sense, data is like physical goods.

“Your digital self aspires to a better kind of civilization. Netizens will not accept a form of government that moves backwards from the best that democratic societies enjoy today.”

Disruption follows nine significant laws:

“Law One: Convergence – When Worlds Collide”

When the physical world and the digital world clash, society has to negotiate the chaos. This job has fallen largely to ill-equipped lawyers and judges, who have used legal reasoning and precedent to create the “emerging law of digital life.” Consider the repeated court battles between the Beatles’ Apple Corporation and Apple Computers. First, they fought over the name. The courts resolved that by dividing up business arenas: the Beatles could use the name to sell music, while Apple Computers could use it for computers and related technologies. The convergence problem emerged with the development of the digital transfer of music and, then, of iTunes. Changing technology led Apple Computers into a new area where earlier delineations between operating areas no longer applied. Today, you can download Beatles songs from Apple Computers. Such changes, though they take time to unfold, are happening across society.

“A computer is a fundamentally new kind of machine. One minute it is a word processor and the next a thermostat regulator; even better, sometimes it’s both at the same time.”

Should predigital rules for cellphones, auctions, radio stations and other realms also govern Web phone calls, auctions, radio stations, and so on? Court decisions have varied. National boundary conflicts and issues concerning “digital vice” add complexity. Combatants tend to phrase their attempts to regulate digital vices (pornography, gambling) in moral terms. Actually, the fight is really more about who gets the revenue from regulating vice. Most courts have dealt with digital technologies’ power by trying to limit it. This generally fails because businesses and “consumers reject these artificial limits” and oppose out-of-date legal systems. Emergent networks let tech users communicate and collaborate, so they easily can organize against obsolete structures. They seek a legal system that finds justice by creating new approaches, not adapting old ones, given “the danger of using ‘legal reasoning’ to analogize old cases to new activities.”

“Law Two: Personal Information – From Privacy to Propriety”

Personal information issues are shifting from matters of privacy to issues of propriety. People think that “they have a right to privacy,” but they don’t agree on its extent or origins. In fact, no universally accepted right to privacy exists. The digital world is changing how much data about private individuals is readily available and how other people can obtain it and use it. Governments protect people from different kinds of intrusion. Generally, European laws shelter citizens from corporate monitoring. In the U.S., the 1974 Privacy Act protects citizens against government invasiveness. On the Web, personal information is currency, so protect yourself. Offer your data pragmatically to meet your own purposes. If your firm collects personal data, safeguard it. People imbue their personal information with emotion. If you want it, ask

delicately.

“Law Three: Human Rights – Social Contracts in Digital Life”

Technological disruption has radically changed human rights. Some of this shift is due to external factors, such as the U.S. government’s increased monitoring due to its “war on terror.” Other changes result from the clash of the physical and digital realms in human rights. Just as no universal right to privacy exists, no universally recognized human rights exist either. Specific governments grant their citizens some rights, but which national rules apply in the borderless digital realm? Ultimately, governmental attempts to protect civil rights in the digital world will fail. The best alternative is a set of “social contracts.” Facebook, Microsoft and other “application providers” have established codes of conduct for their sites. They set a precedent by asking people to accept their codes in order to gain admission to their online communities.

“Law Four: Infrastructure – Rules of the Road on the Information Highway”

In 1974, the U.S. Justice Department sued monopolistic AT&T “under federal antitrust laws.” After lengthy proceedings, the government split AT&T into seven regional companies. This required complex implementation and monitoring until the 1996 Communications Act passed. This law set out to deregulate telecommunications, but the Law of Disruption arrived first. While the U.S. government tried to decide what to do with telecommunications and how to do it, the Web exploded into existence, generating new physical infrastructures, such as fiber-optic cables, and new uses for old technologies, such as using voice lines to transmit data. This demonstrates disruption’s fourth law: The digital world will change the existing infrastructure and its use.

“Law Five: Business – All Regulation Is Local”

The U.S. Federal Communications Commission (FCC) played a major role at a time when technology firms held local monopolies over essential telephone communication and had to be compelled to serve not-at-all profitable rural areas as well as profitable cities. The need for such regulations – and even for distinguishing between phones and other communication technologies – no longer exists. In general, governments are good at “establishing the basic protocols” of an infrastructure and at helping to distribute “sparse resources.” Governments should fund research and provide safety nets, but should not apply outdated, moralistic or – in the modern marketplace – regional laws to the digital world, which has bypassed most such regulations. Many laws make online interactions harder without benefiting anyone. Instead, the public needs a “single uniform law of digital commerce,” a pragmatic, working code based on reality, not theory.

“Law Six: Crime – Public Wrongs, Private Remedies”

In the digital world, “crime is just another kind of information use.” Like most laws, policing agencies generally are bound by geography, which limits their effectiveness against digital crooks. Too often, officers don’t know the digital world. Data-gathering firms can self-regulate to some extent and can use the “Code of Practice for Information Security Management” to reduce the likelihood of identity theft. The free market could offer insurance against identity theft, maybe with the support of very focused legislation. Consumer education could teach people to share data more wisely. Criminals also attack the digital realm with spam and viruses. No single cure can mitigate these attacks, and banning them won’t help. Often, the perpetrators operate under free-speech laws. The best defense is a multipronged tactic, using technological solutions and taking advantage of “the Internet’s decentralized design,” which makes it resistant to disruption.

“Law Seven: Copyright – Reset the Balance”

Existing copyright law is partly “archaic” and partly useless in a digital world, where copying files is so easy. Recent actions by U.S. lawmakers, such as lengthening the term of copyrights, including retroactive extensions, make the situation worse. Additional steps taken by large corporations, such as instituting piracy-prevention mechanisms, also have a negative impact. These actions generate lawsuits, impede creativity and fail to block piracy or account for the digital world’s speed of change. Three actions would help:

1. Reduce the length of copyrights, making them more “realistic” and releasing works to the public domain sooner.
2. Restore laws on “fair use” to keep companies from duplicating and selling content that belongs to other parties. This will reduce lawsuits.
3. Reverse the “Digital Millennium Copyright Act,” which stifles free speech and disrupts the balance “between information producers and users.”

“Law Eight: Patent – Virtual Machines Need Virtual Lubricants”

Current law tries to treat software like a patented product. This doesn’t work because of the speed with which software is developed and becomes obsolete, the nature of software development, and the way software reuses “prior art,” in that new programs are built on their earlier versions. The U.S. must change its patent laws. This reform must occur at the legislative level, not in the courts. The patent office is inundated, and the many software patents being filed add to what are essentially very expensive nuisance suits. Some companies are “patent trolls,” that is, they file patents on everything and anything, claiming innovations they did not invent nor manufacture.

“Law Nine: Software – Open Always Wins...Eventually”

Software, digital life’s raw material, enables computers to function. Copyright and patent laws now protect software, but the way these laws are drafted fundamentally misunderstands the nature of software and the digital economy.

“The semiconductor, or ‘chip,’ was first added to a calculator in 1967, to a toy in 1978 and to a toaster in 1983.”

The logical future route is not to treat software as a product, but as an open resource, so that the collaborative nature of the digital world can renew and improve it continually. Rather than selling it, creators should give software away or sell it by subscription. In the end, open always wins. Adapting systems for greater openness fosters additional innovation.

About the Author

Larry Downes, a partner with the Bell-Mason Group, is a nonresident fellow at the Stanford Law Center for Internet and Society and the author of *Unleashing the Killer App*.

