# PREFACE

In the spring of 1996, at an annual conference organized under the name "Computers, Freedom, and Privacy" (CFP), two science-fiction writers told stories about cyberspace's future. Vernor Vinge spoke about "ubiquitous law enforcement," made possible by "fine-grained distributed systems"; through computer chips linked by the Net to every part of social life, a portion would be dedicated to the government's use. This architecture was already being built—it was the Internet—and technologists were already describing its extensions. As this network of control became woven into every part of social life, it would be just a matter of time, Vinge threatened, before government claimed its fair share of control. Each new generation of code would increase this power of government. The future would be a world of perfect regulation, and the architecture of distributed computing—the Internet and its attachments—would make that possible.

Tom Maddox followed Vinge. His vision was very similar, though the source of control, different. The government's power would not come just from chips. The real source of power, Maddox argued, was an alliance between government and commerce. Commerce, like government, fares better in a better regulated world. Property is more secure, data are more easily captured, and disruption is less of a risk. The future would be a pact between these two forces of social order.

*Code* and *commerce.*

When these two authors spoke, the future they described was not yet present. Cyberspace was increasingly everywhere, but it was hard to imagine it tamed to serve the ends of government. And commerce was certainly interested, though credit card companies were still warning customers to stay far away from the Net. The Net was an exploding social space of something. But it was hard to see it as an exploding space of social control.

I didn't see either speech. I listened to them through my computer, three years after they spoke. Their words had been recorded; they now sit archived on a server at MIT It takes a second to tune in and launch the replay of their speeches about a perfectly ordered network of control. The very act of listening to these lectures given several years before—served on a reliable and indexed platform that no doubt recorded the fact that I had listened, across high-speed, commercial Internet lines that feed my apartment both the Net and ABC News—confirmed something of

their account. One can hear in the audience's reaction a recognition both that these authors were talking fiction—they were science-fiction writers, after all—and that the fiction they spoke terrified.

Three years later it is no longer fiction. It is not hard to understand how the Net could become the perfect space of regulation or how commerce would play a role in that regulation. The current battle over MP3—a technology for compressing audio files for simple distribution across the Net—is a perfect example. Last year MP3 was quite the rage: CDs were copied and e-mailed, and web sites were built with thousands of songs archived and ready for anyone to take. "Free music" joined the list of free stuff that the Internet would serve.

But this year the story has changed. The recording industry is pushing a standard that would make it easier to control the distribution of these files; Congress has passed a statute that makes it a felony to produce software that evades this control; and one company that produces Sony Walkman–like machines to play MP3 files has already announced plans to enable its machine to comply with these standards of control. Control will be *coded,* by *commerce,* with the backing of the government.

Vinge and Maddox were first-generation theorists of cyberspace. They could tell their stories about perfect control because they lived in a world that couldn't be controlled. They could connect with their audience because it too wanted to resist the future they described. Envisioning this impossible world was sport.

Now the impossible has been made real. Much of the control in Vinge's and Maddox's stories that struck many of their listeners as Orwellian now seems quite reasonable. It is possible to imagine the system of perfect regulation that Vinge described, and many even like what they see. It is inevitable that an increasingly large part of the Internet will be fed by commerce, and most don't see anything wrong with that either. Indeed, we live in a time (again) when it is commonplace to say: let business take care of things. Let business self-regulate the Net. Net commerce is now the hero.

This book continues Vinge's and Maddox's stories. I share their view of the Net's future; much of this book is about the expanding architecture of regulation that the Internet will become. But I don't share the complacency of the self-congratulatory cheers

echoing in the background of that 1996 recording. It was obvious in 1996 who "the enemy" was; now nothing is obvious.

The future is Vinge's and Maddox's accounts together, not either alone. If we were only in for the dystopia described by Vinge, we as a culture would have an obvious and powerful response: Orwell gave us the tools, and Stalin gave us the resolve, to resist the totalitarian state. A spying and invasive Net controlled by Washington is not our future. *1984* is in our past.

And if we were only in for the future that Maddox described, many of our citizens would believe this utopia, not science fiction. A world where "the market" runs free and the evil we call government, defeated, would, for them, be a world of perfect freedom.

But neither story alone describes what the Internet will be. Not Vinge alone, not Maddox alone, but Vinge and Maddox together: a future of control in large part exercised by technologies of commerce, backed by the rule of law.

The challenge of our generation is to reconcile these two forces. How do we protect liberty when the architectures of control are managed as much by the government as by the private sector? How do we assure privacy when the ether perpetually spies? How do we guarantee free thought when the push is to propertize every idea? How do we guarantee self-determination when the architectures of control are perpetually determined elsewhere? How, in other words, do we build a world of liberty when the threats are as Vinge and Maddox together described them?

The answer is not in the knee-jerk antigovernment rhetoric of our past. Reality is harder than fiction; governments are necessary to protect liberty, even if also sufficient to destroy it. But neither does the answer lie in a return to Roosevelt's New Deal. Statism has failed. Liberty is not to be found in some new D.C. alphabet soup (WPA, FCC, FDA, etc.) of bureaucracy.

A second generation takes the ideals of the first and works them out against a different background. It knows the old debates; it has mapped the dead-end arguments of the preceding thirty years. The objective of a second generation is to ask questions that avoid dead-ends and move beyond them.

There is great work out there from both generations. Esther Dyson and John Perry Barlow still inspire, and still move on (Dyson is now the temporary chair of an organization some think will become the government of the Internet; Barlow now

spends time at Harvard.) And in the second generation, the work of Andrew Shapiro, David Shenk, and Steven Johnson is becoming well known and is compelling.

My aim is this second generation. As fits my profession (I'm a lawyer), my contribution is more long-winded, more obscure, more technical, and more obtuse than the best of either generation. As fits my profession, I'll offer it anyway. In the debates that rage right now, what I have to say will not please anyone very much. And as I peck these last words before e-mailing the manuscript off to the publisher, I can already hear the reactions: "Can't you tell the difference between the power of the sheriff and the power of Walt Disney?" "Do you really think we need a government agency regulating software code?" And from the other side: "How can you argue for an architecture of cyberspace (open source software) that disables government's ability to do good?"

But I am also a teacher. If my writing produces angry reactions, then it might as well affect a more balanced reflection. These are hard times to get it right, but the easy answers to yesterday's debate won't get it right.