
CHAPTER 1

Digital Explosion

Why Is It Happening, and What Is at Stake?

On September 19, 2007, while driving alone near Seattle on her way to work, Tanya Rider went off the road and crashed into a ravine.* For eight days, she was trapped upside down in the wreckage of her car. Severely dehydrated and suffering from injuries to her leg and shoulder, she nearly died of kidney failure. Fortunately, rescuers ultimately found her. She spent months recuperating in a medical facility. Happily, she was able to go home for Christmas.

Tanya's story is not just about a woman, an accident, and a rescue. It is a story about bits—the zeroes and ones that make up all our cell phone conversations, bank records, and everything else that gets communicated or stored using modern electronics.

Tanya was found because cell phone companies keep records of cell phone locations. When you carry your cell phone, it regularly sends out a digital “ping,” a few bits conveying a “Here I am!” message. Your phone keeps “pinging” as long as it remains turned on. Nearby cell phone towers pick up the pings and send them on to your cellular service provider. Your cell phone company uses the pings to direct your incoming calls to the right cell phone towers. Tanya's cell phone company, Verizon, still had a record of the last location of her cell phone, even after the phone had gone dead. That is how the police found her.

So why did it take more than a week?

If a woman disappears, her husband can't just make the police find her by tracing her cell phone records. She has a privacy right, and maybe she has good reason to leave town without telling her husband where she is going. In

* Citations of facts and sources appear at the end of the book. A page number and a phrase identify the passage.

Tanya's case, her bank account showed some activity (more bits!) after her disappearance, and the police could not classify her as a "missing person." In fact, that activity was by her husband. Through some misunderstanding, the police thought he did not have access to the account. Only when the police suspected Tanya's husband of involvement in her disappearance did they have legal access to the cell phone records. Had they continued to act on the true presumption that he was blameless, Tanya might never have been found.

New technologies interacted in an odd way with evolving standards of privacy, telecommunications, and criminal law. The explosive combination almost cost Tanya Rider her life. Her story is dramatic, but every day we encounter unexpected consequences of data flows that could not have happened a few years ago.

When you have finished reading this book, you should see the world in a different way. You should hear a story from a friend or on a newscast and say to yourself, "that's really a bits story," even if no one mentions anything digital. The movements of physical objects and the actions of flesh and blood human beings are only the surface. To understand what is really going on, you have to see the virtual world, the eerie flow of bits steering the events of life.

This book is your guide to this new world.

The Explosion of Bits, and Everything Else

The world changed very suddenly. Almost everything is stored in a computer somewhere. Court records, grocery purchases, precious family photos, pointless radio programs.... Computers contain a lot of stuff that isn't useful today but somebody thinks might someday come in handy. It is all being reduced to zeroes and ones—"bits." The bits are stashed on disks of home computers and in the data centers of big corporations and government agencies. The disks can hold so many bits that there is no need to pick and choose what gets remembered.

So much digital information, misinformation, data, and garbage is being squirreled away that most of it will be seen only by computers, never by human eyes. And computers are getting better and better at extracting meaning from all those bits—finding patterns that sometimes solve crimes and make useful suggestions, and sometimes reveal things about us we did not expect others to know.

The March 2008 resignation of Eliot Spitzer as Governor of New York is a bits story as well as a prostitution story. Under anti-money laundering (AML) rules, banks must report transactions of more than \$10,000 to federal regulators. None of Spitzer's alleged payments reached that threshold, but his