

We could look for one in the genetic technologies, or in nanotech, but their time hasn't fully come. But I want to argue that something deep is going on with information technology, something that goes well beyond the use of computers, social media, and commerce on the Internet. Business processes that once took place among human beings are now being executed electronically. They are taking place in an unseen domain that is strictly digital. On the surface, this shift doesn't seem particularly consequential—it's almost something we take for granted. But I believe it is causing a revolution no less important and dramatic than that of the railroads. It is quietly creating a second economy, a digital one.

Let me begin with two examples. Twenty years ago, if you went into an airport you would walk up to a counter and present paper tickets to a human being. That person would register you on a computer, notify the flight you'd arrived, and check your luggage in. All this was done by humans. Today, you walk into an airport and look for a machine. You put in a frequent-flier card or credit card, and it takes just three or four seconds to get back a boarding pass, receipt, and luggage tag. What interests me is what happens in those three or four seconds. The moment the card goes in, you are starting a huge conversation conducted entirely among machines. Once your name is recognized, computers are checking your flight status with the airlines, your past travel history, your name with the TSA¹ (and possibly also with the National Security Agency). They are checking your seat choice, your frequent-flier status, and your access to lounges. This unseen, underground conversation is happening among multiple servers talking to other servers, talking to satellites that are talking to computers (possibly in London, where you're going), and checking with passport control, with foreign immigration, with ongoing connecting flights. And to make sure the aircraft's weight distribution is fine, the machines are also starting to adjust the passenger count and seating according to whether the fuselage is loaded more heavily at the front or back.

These large and fairly complicated conversations that you've triggered occur entirely among things remotely talking to other things: servers, switches, routers, and other Internet and telecommunications devices, updating and shuttling information back and forth. All of this occurs in the few seconds it takes to get your boarding pass back. And even after that happens, if you could see these conversations as flashing lights,

¹Transportation Security Administration.