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World on Wi-Fire

Feel the chaos? Technology is feeding mind-boggling volatility everywhere.

by Niall Ferguson | October 3, 2011 1:00 AM

(1) The human race is interconnected as never before. Is that a good thing? Ask the Lords of the Internet—the men running the companies Eric Schmidt of Google recently called "the Four Horsemen": Amazon, Apple, Facebook, and Google—and you'll get an unequivocal "yes." But is it true? In view of the extraordinary economic and political instability of recent months, it's worth asking if the Netlords are the Four Horsemen of a new kind of information apocalypse.

(2) Don't get me wrong. I love all that these companies have achieved. I order practically everything except haircuts from Amazon. I write this column on a MacBook Pro. I communicate with my kids via Facebook. It's 6:55 a.m., and I've already run six searches on Google. Did I forget to mention that I've already received 29 emails and sent 14?

(3) I also really like the Netlords. They are among the smartest guys on the planet. Yet they are also self-deprecating and sometimes very funny. (OK, not Steve Jobs.) So my question for them is a real question, not some kind of Luddite rant: does the incredible network you have created, with its unprecedented scale and speed, not contain a vulnerability? I'm not talking here about the danger of its exploitation by Islamist extremists or its incapacitation by Chinese cyberwarriors, though I worry about those things too. No, I mean the possibility that the global computer network formed by technologically unified human minds is inherently unstable—and that it is ushering in an era of intolerable volatility.

(4) The communications revolution we are living through has been driven by two great forces. One is Gordon E. Moore's "law" (which he first proposed in 1965) that the number of transistors that can be placed inexpensively on an integrated circuit doubles approximately every 18 months. In its simplified form, Moore's Law says that computing power will double every two years, implying a roughly 30-fold increase in 10 years. This exponential trend has now continued for more than half a century and is expected by the techies to continue until at least 2015 or 2020.

Illustration by Oliver Munday

(5) The other force is the exponential growth of human networks. The first email was sent at the Massachusetts Institute of Technology in the same year Moore's Law was born. In 2006 people sent 50 billion emails; last year it was 300 billion. The Internet was born in 1982. As recently as 1993 only 1 percent of two-way telecommunication went through it. By 2000 it was 51 percent. Now it's 97 percent. Facebook was dreamed up by an über-nerd at my university in 2004. It has 800 million active users today—eight times the number of three years ago.

(6) Russian venture capitalist Yuri Milner sees this trend as our friend (it has certainly been his). As the number of people online doubles from 2 billion to 4 billion over the next 10 years and the number of Internet-linked devices quadruples from 5 billion to 20 billion, mankind collectively gets more knowledge—and gets smarter. Speaking at a conference in Ukraine in mid-September, Milner asserted that data equivalent to the total volume of information created from the beginning of human civilization until 2003 can now be generated in the space of just two days. To cope with this information overload, he looks forward to "the emergence of the global brain, which consists of all the humans connected to each other and to the machine and interacting in a very unique and

profound way, creating an intelligence that does not belong to any single human being or computer."

(7) In the future as imagined by Google, this global brain will do much of our thinking for us, telling us (through our handheld devices) which of our friends is just around the next corner and where we can buy that new suit we need for the best price. And if the best price is on Amazon, we'll just click once and look forward to its next-day delivery. Maybe it'll already be there when we get home.

(8) That's the kind of sci-fi scenario that gets a true nerd out of bed in the morning. But is it just a bit too utopian?

Computer networks combine and amplify the primeval emotions of fear, love, and hate.

(9) Exhibit one for a contrarian view is the recent behavior of global financial markets, the area of human activity furthest down the road of computerization and automation. According to math wonk Kevin Slavin, algorithms with names like the "Boston Shuffler" are the new masters of the financial universe. Whole tower blocks have been hollowed out to accommodate the computing power required by high-frequency (and very high-speed) trading. So how is this brave new world of robot traders doing?

(10) Well, the VIX index of volatility—Wall Street's so-called fear gauge, which infers the expected volatility of the U.S. stock market from options prices—reached an all-time high of 80 in the aftermath of Lehman Brothers' failure and surged back up above 30 in early 2010 and again this summer. Part of this is just a good old-fashioned, man-made financial crisis, of course. But some of the volatility we've seen in the past four years is surely attributable to technology: think only of the "flash crash" of May 6 last year, when the Dow Jones industrial average plummeted 9 percent and then rallied in a matter of minutes.

(11) Could the same kind of volatility spread into other markets as these become as wired and as integrated as Planet Finance? The answer must be yes. Consider how Greece's fiscal woes have destabilized markets across Europe and around the world in recent months. Then there's the market for consumer durables. We know that the speed with which new technologies have been adopted by American households has increased around eightfold over the past hundred years. But that speed of adoption has its obverse in the speed of obsolescence. Consumers are becoming ever more fickle. Millions bought RIM's BlackBerry after its advent in 1999. But today the iPhone is the hotter handheld device, and I am far from alone in having a dead BlackBerry in my bottom desk drawer. In late September Amazon launched the Kindle Fire in a bid to challenge the iPad's dominance of the tablet market. The name is appropriate. The market for such devices is on fire. The whole world is on wi-fire.

(12) In politics, too, online electorates are becoming more volatile. The current race to find a Republican candidate for the presidency is a case in point. Only the other day Sarah Palin was a serious contender. Then Mitt Romney was a shoe-in. Until Rick Perry came along. Until Chris Christie came along. Meanwhile, the number of independent voters who have uncoupled themselves from the traditional parties has reached a historic high of 37 percent. Floating voters are the high-frequency traders of the political market.

(13) Computing power has grown exponentially. So has the human network. But the brain of Homo sapiens remains pretty much the same organ that evolved in the heads of African hunter-gatherers 200,000 years ago. And that brain has a tendency to swing in its mood, from greed to fear and from love to hate.

(14) The reality may be that by joining us all together and deluging us with data, the Netlords have ushered in a new Age of Volatility, in which our primeval emotions are combined and amplified as never before.

(15) We are LinkedIn, but StressedOut. And that "cloud" of downloadable data may yet turn out to be a thundercloud.