



Two-minute review

A Prehistory of the Cloud

Author: Tung-Hui Hu

Why you should read the book

You are curious about how studying Victorian sewage systems and 19th century railroads can help you understand modern ICT infrastructures.

You need to be reminded that what is sold as new, often is not. For example, did the cloud start in 1970, 1951, or was it 1922?

You like the challenge of reading a difficult book on the social impact of your technological dreams.

Why you should not read the book

You have been told before that you are merely an economic commodity for big internet corporations.

The episode about the 1960's *Ant Farm videotruckstop* network convinces you that books about technology should only be about technology. Was there really a need to discuss the sexual tension of early computer programming?

What you should learn from the book

A first key message of the book is that the future has a history, and that that history has an influence on how the future plays out. As a first example from the book, Tung-Hui Hu discusses how fiberoptic telecommunication lines in the US follow 19th century railroads, just as telegraph and television cables did before. As a result, the internet exists as the newest element in a series of networks on networks – not as a brand new thing that goes where no (wo)man has gone before.

Secondly, the history of the internet is intricately connected to the history of labour. Networks do not create and maintain themselves, this is still a job done by actual people. The labour circumstances of these workers are a much less tantalizing element of the progress Big Tech promises, but it is a highly important social aspect of innovation – think of the people Facebook employs, under difficult circumstances, to filter out radical messages and extreme violence from its pages.

Thirdly, history can also help us inform debates about privacy. In the 1960's, it would have been deemed absurd that, on the one hand, you connected yourself to a network, whilst on the other you demanded rigorous privacy. The internet was not designed to explore by yourself, but rather to share the things you wanted to share – an interesting reminder that if you put things online, the underlying principle has so far been that you do so to share that information with the people who are also involved in this network.

Another, more difficult message included in the book is that the cloud represents a process of virtualization – "a technique for turning real things into logical objects, whether a physical

network turned into a cloud-shaped icon, or a warehouse full of data storage servers turned into a 'cloud drive'. However, this virtualization of things has created a gap between the real and the virtual, and both the positive and the negative consequences of this gap are underestimated. Just one example: a network helps to spread information faster, but also speeds up the dissemination of potential harms such as viruses. Networking yourself thus both increases your resilience and your vulnerability.

A last key message is that the digital is also political, especially the cloud. Al-Qaeda was described as "cloud-like," a "network of networks," and IS effectively used the cloud to spread its online message. The book makes a big argument about the connection between online and offline violence, and goes as far to predict the re-emergence of sovereignty in the digital realm. The book was published in 2015, and the current power struggle between governments and Big Tech companies demonstrates that Hu might have been on the right track here.

The best bit

The part where Hu describes how the Egyptian Government hits the 'kill switch' in 2011. By powering down the leading data exchange server in the country, the Egyptian authorities tried to prevent Arab Spring protesters from organizing. Cutting the internet for six days led to an estimated direct loss of \$110 million and indirect losses of \$1 billion for the country, but the protests happened anyway. Cut off from modern means of communication, Egyptians were automatically forced to gather outside to talk to each other, filling the streets with angry citizens who would otherwise never have been outside. Further on in this section Hu also offers an example of how US local authorities similarly used a 'kill switch' to avoid unwelcome protests after the death of a homeless man in California.

The most remarkable quotes

"The cloud is both an idea and a physical and material object, and the more one learns about it, the more one realizes just how fragile it is."

"The US government's announcement of a National Data Center, a 1966 proposal deemed so dangerous to society that one scientist likened it to the development of a nuclear weapon."

"Network fever is the desire to connect all networks, indeed, the desire to connect every piece of information to another piece. And to construct a system of knowledge where everything is connected is, as psychoanalysis tells us, the sign of paranoia."

"If digital networks no longer require such dramatic protective measures, why are so many datacenters housed inside militarized structures built to defend physical territory?"

A prehistory of the Cloud by Tung-Hui Hu, The MIT Press, 2015. Review by Dr. Bram De Ridder, KU Leuven.