Nicholas Carr, The Big Switch, Rewiring the World, from Edison to Google, W.W. Norton & Company, New York, 2008.

Review by Geert Lovink

US Internet critic Nicholas Carr managed to write a second bestseller. Similar to Does IT Matter? in which Carr posed that IT investments have lost their (competitive) strategic value because everybody is using the same systems, The Big Switch can be summarized in one sentence: the shift from in-house computer systems to 'cloud computing'. Instead of storing applications on each individual PC, will we soon have everything store in central data warehouses. Such data centres are not entire new. What's emerging is the enormous scale in which companies like Google are actively anticipating the future migration of (corporate) IT systems to a few global hubs, making most of the in-house infrastructure obsolete. Already in the 1990s so-called 'server farms' could be found in the vicinity of international hubs, profiting from cheap and fast connectivity—a scarce commodity at the time. The existence, and location, of such computer warehouses was often unknown, even to insiders. If you were in need of a virtual server, what counted was speed and reliability, the exact details of what and where didn't matter. This all changed with the opening of Google's data centre in The Dalles, Oregon. The location was chosen because of a new, potential scarce resources: cheap electricity. As Wikipedians remark, "the performance of server farm is limited by the performance of the data centre's cooling systems and the total electricity cost rather than by the performance of the processors." Since Oregon server clusters are no longer unknown entities run by anonymous telecom firms but have entered centrestage in the ICT news reporting.

Virtual hosting of files has always happened, and it could be said that file transfer (through ftp, the file transfer protocol) has been the core of the Internet project from its inception. Around 1993 geeks explained me the workings of the then nouveau World Wide Web as a giant ftp machine: a great number of files were requested, and then put together on the screen by the browser. What has changed since then is not this principle, but the collective desire to keep the Internet infrastructure decentralized. The ownership of data centres in a few hands will undermine the very nature of the Internet and give data centre owners an unprecedented power to control their users.

Part 1 of The Big Switch is a brilliantly written allegory about Edison,

General Electric and Samuel Insull, one of Edison's clerks. Carr describes the development around 1900 to move away from the decentralized electrical power supply in which each factory or building block would have its own engine, towards the building of large electric plants—a development kicked off by Insull—to build one large plant that could serve the greater Chicago area. "Manufacturers came to find that the benefits of buying electricity from a utility went far beyond cheaper kilowatts. By avoiding the purchase of pricey equipment, they reduced their own fixed costs and freed up capital for more productive purposes." Along the lines what Carr had already predicted in Does IT Matter? "Thanks to Samuel Insull, the age of the private power plant was over. The utility had triumphed."

The Big Switch poses all sorts of interesting questions for those activists, researchers and artists who prefer to work independently. Ever since the public got access to the Internet, in 1993, it has been an issue whether or not to build autonomous infrastructures, or to virtual hosting from somewhere, usually in the USA. We see this dilemma repeated these days concerning gmail and other Google hosting services. It's estimated that universities will one day give up their own mail servers and let staff decide which email provider they prefer to use. Or worse: make a deal with Google. Will the surrender to (corporate) utilities cause a backlash and spark off a renaissance of distributed computing? How will the heritage of fear and paranoia for the 20th century totalitarian states respond to this twist in Internet history? On the one hand it could be reassuring for those FLOSS advocates who fought against Microsoft's monopoly position that MS Office-type application will be accessed via the Web. It is Microsoft that will suffer most from utilitarian computing. But which corporations would honestly all their sensitive data, from emails to sales spread sheets and strategic planning documents, on a central server of Google? One can only be amazed seeing the millions of gmail users are already doing just that.

The move towards a utility status could also spark a call for the founding of public utilities. Carr doesn't mention this possibility—and maybe it is not something we can expect from a US-American critic with a business background. Calls for wireless (communal) public infrastructures are heard, not only in Europe. There are already numerous non-profit initiatives that install wireless community networks. They have sprung up exactly because the initial investments for WiFi are low. This is not the case with data centres, and the possible search engines, public data storage and other facilities that one could imagine necessary for the 21st century public

library. The fact that our imagination stops here has got more to do with the neo-liberal hegemony, and the current poor state of existing public infrastructures in most countries than with investments or a deficiency of knowledge. What is necessary here is a re-invention of the 'public' in general, beyond inefficient state bureaucracies and hyped-up, non-committal corporations that are ready to close down or sell social networks and community services if it no longer fits into the portfolio. Internet culture could be catalyst in the re-imagination of what publicly-owned utilities could look like, but so far the rare political projects that exist do not go beyond the best-practice do-it-yourself status. Would the utility cooperative be a model here?

Part 2, Living in the Cloud, deals with the possible consequences of the World Wide Computer. It struck me here how Nicolas Carr the book author, really is a different author compared to Carr the blogger. Whereas the 'electricity' essay in the first part has the perfect form of an extended argument, with a balanced use of historical material, the second part is remarkably weaker in comparison to his often brilliant, witty and sharp blog postings. For me, a dedicated Carr fan, he is a role-model 'net critic' that is well-informed, engaged and courageous enough to not only take on large corporations but who is also not afraid to dismantle the world of good intentions. This is the hardest task. It's a big research task to take on monopolists (in the making). But, on a social level, it's much harder to deconstruct politically correct undertakings from FLOSS and Wikipedia to Google's corporate ethics ("Don't Be Evil"). A critic runs the risk of becoming an intellectual outcast, being accused of cynicism, misplaced irony and conservatism. What also struck me in the last chapters is the lack of a larger intellectual framework for Carr's justified criticisms. It's interesting to see Carr referring to Lewis Mumford, Joseph Weizenbaum, Neil Postman and James Beniger. There is an impressive tradition in the USA of critical technology thinkers, and Carr is on the way of becoming one. We should encourage him to follow this road and abandon the Harvard Business Review style, that, in the end, is not much more than intelligent trend watching as preformed in think tank newsletters. The step from a critical consultant to a true philosopher should be doable for someone as smart as Nicolas Carr. The larger issue is how a critical IT research agenda will establish itself outside of academia. Carr is one of the few IT writers with a considerable insider knowledge who makes a living as an independent investigative journalist. Carr is not required to quote the latest European fashions in the humanities such as Simondon, Badiou or Agamben. This gives him the freedom to dig

deeper into underlying trends in the US-American computer business. But this position can also become a shortcoming once the writer is in need of critical concepts necessary to describe developments in society-at-large. Maybe we shouldn't make more of Carr than an enlightened East Coast liberal. But I am not happy with such political reductionism. For the stakes are too high, and there are simply not enough informed IT critics to make such easy (mis)judgements.

What Carr does develop is a 'theory of unbundling'. In economics unbundling means the separate pricing of goods and services. In the Internet context this means that we no longer buy a newspaper or magazine but only read and download the exact article we're looking for. Unbundling is a consequence of the hegemony of search. In the society of the query we filter out the unwanted and classify as it as noise. This to the benefit of Google, and to the disadvantage of 'bundle' businesses where editors select content for their respective audiences. The outcome Carr sees is social segregation. "It is clear that the two hopes most dear to the Internet optimists—that the Web will create a more bountiful culture and that it will promote great harmony and understanding—should be treated with skepticism. Cultural impoverishment and social fragmentation seem equally likely outcomes."

The Big Switch doesn't offer a comprehensive theory of control, but for those in search of elements of a general network critique there traces we can take us further, elsewhere, like Carr's reflections on Richard Foreman's notion of the 'pancake people'. We're unlearning how to access our human memory in our brains, replacing it through access the databases of the Internet. "The Net provides no incentive to stop and think deeply about anything." This is where Carr, potentially, takes a conservative turn and could end up in the complaint camp of Andrew Keen and others. This is the risk of criticism as a genre when it disconnects from progressive movements and locks itself up in an elitist hide-out. However messy the situation, we have to promote the Internet as a tool for global mass education, in combination with ambitious public education programs. For that we have to reverse the disinvestment in education that has happened across the board. Sinking prices for storage, traffic and data processing result in data centres and new monopolies, but these developments are only a result of much broader policies—and it is time a new generation of net critics to situate the medium into the techno-social context it now operates in.

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Website of the book: http://www.nicholasgcarr.com/bigswitch/
Nicholas Carr's blog: http://www.roughtype.com/
Carr's unbundling thesis, a fragment of The Big Switch:
http://www.britannica.com/blogs/2008/04/the-great-unbundling-newspapers-the-net/
Andrew Orlowski's review of The Big Switch
http://www.theregister.co.uk/2008/01/17/nick_carr_big_switch_review/