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Book Review: Tim Wu, *The Master Switch: The Rise and Fall of Information Empires*

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Tim Wu, *The Master Switch: The Rise and Fall of Information Empires* (New York, NY: Alfred A. Knopf, 2011). 366 pp. $27.95 (hardcover) $15.95 (paper) $13.99 (Kindle). ISBN: 978-0-307-26993-5

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This book is both a chronicle of the past and a look to the future. The author, a law school professor at Columbia University on leave at the Federal Trade Commission when the book was published, reviews the history of the telegraph, telephone, movies, radio (amplitude modulation [AM] and frequency modulation [FM]), and television (broadcast and cable) industries. In all of these, he finds a recurring pattern, a cycle in which the industry begins in a state of chaos with many entrepreneurs competing for the right to provide peoplewith the means of receiving and/or sending information. The chaos period is short-lived and eventually a monopoly, or very tight oligopoly, emerges to dominate the industry (i.e., control the master switch), retaining its power until technology produces the means of its decline.

The cyclical pattern is Schumpeterian and Wu acknowledges his debt to the master. But there is more to the book than the historical pattern; the author's purpose is to learn the lessons of history and analyze their implications for the future of the Internet. At the risk of misrepresenting the author's message, what follows is an oversimplified version of each of the cycles. Rather than taking them in the same order as the author, I defer the discussion of the telephone until last.

To begin with radio, as someone who grew up in the era of network radio, I was surprised to read Wu's quotation from Herbert Hoover, then US Secretary of Commerce, at the first national radio conference in 1922: "It is inconceivable that we should allow so great a possibility for service, for news, for entertainment, for education, and for vital commercial purposes to be drowned in advertising chatter" (p. 74). Of course, we know that in the decade that followed the "inconceivable" is exactly what happened. The chaos period was ended with the aid of the federal government; beginning in 1927 the Federal Radio Commission was "clearing the airwaves" of small stations for, as their third annual report (1929) said, "There is not room in the broadcast band for every school of thought, religious, political, social and economic, each to have its separate broadcasting in the ether" (p. 84). Advertising became the medium's source of revenue; Wu quotes Henry LaFount, a commissioner of the Federal Radio Commission, who wrote in 1931, "Commercialism is the heart of the broadcasting industry in the United States" (p. 82). Thus, with the aid of a governmental agency appointed to oversee the infant industry, control came into the hands of two (eventually three) major networks— the producers and distributors of content. The radio networks, committed to AM broadcasting and aided by their new regulatory agency (the Federal Communications Commission [FCC]), managed to hold off the development of FM radio for over a decade. In the end, although they tried they could not hold back television, and their twenty-year reign ended.

In similar fashion movies began with many small independent filmmakers and independently owned theaters. Early on (1908) the largest film producers formed the Motion Picture Patent Company and, through a variety of means, began to force out smaller producers. The larger firms developed the studio system, but real power came to be vested in the major studios when they, and especially Paramount, began acquiring theaters and forcing so-called block booking onto the others. Wu describes one of the consequences of this concentration of power, the relative ease with which a morality-based production code, that is, censorship, could be enforced. Again, as with the case of radio, the vertical integration of content production with the channels of distribution led to the accumulation of power.

Television showed a similar pattern. Wu argues that the period of chaos began in the 1920s; by the early 1930s the technology existed for television to have come to the market but the combination of the resistance of the radio networks, the acquiescence of the FCC, and the economic conditions of the time followed by World War II, combined to delay its advent until the late 1940s. By then the radio networks could see the inevitable and cloned their familiar industry structure into the new medium, controlling both content and distribution. Cable, the nearly "outlaw" medium of the 1960s, aided by favorable rulings of the FCC in the Nixon administration, came to challenge this control and we have all seen the results. However, as Wu documents, although there are literally hundreds of channels, many of the favorites are owned by media conglomerates and the old pattern of content and distribution controlled by the same parties has reemerged.

The telephone industry receives much of Wu's attention because it is in that story that he finds the most telling lessons for the future of the Internet. As with the other industries, the Bell empire emerged from a chaotic field of small providers, with the original AT&T becoming a virtual monopoly, albeit a benevolent one. In spite of Bell's close relationship with regulatory agencies, the US Justice Department twice sought a breakup, succeeding in 1984 to create eight regional companies, separating them from each other and their parent company which retained, among other things, the famous Bell Labs. As a result of the breakup, for the first time other providers could use Bell equipment to provide their service and non-Bell equipment could be attached to the system. This latter point is important to Wu; he argues that, in spite of its lofty and largely realized goal of public service, the old Bell system:

> . . . became a menace when it sought to control every single aspect of "the system"—all handsets, long distance, data communications—ultimately making it the gatekeeper for all innovations. As a consequence, inventions from magnetic recording and electronic television to packet networking and fiber optics, developments feasible long before the moment with which they are associated, were squelched. The consequences of such action for economic growth and further innovation are incalculable; imagine trying to determine the effect on GDP growth if the broad rollout of email had been delayed ten years to suit one company. (p. 307)

Wu describes in detail the aggressive tactics by which the so-called Baby Bells have been reconfigured into just three firms, one of which has taken for itself the old AT&T name. The author sees this development as resulting from the natural inclination to control "the switch," coupled with an inattentive regulatory system.

So what does this have to do with the Internet? Wu sees the Internet at a critical stage of development. Thus far it is an open system in which anyone with a modest amount of equipment and access to the Internet can communicate, both send and receive, with anyone, anywhere. When AOL built its "fenced in" Internet environment it proved to be self-defeating, overcome by the open system created by the rise of the search engines, especially Google. Wu argues that Google has become, in effect, the "master switch" of the Internet and, in that sense, it has the capacity to become the modern day equivalent of the pre-1984 AT&T. However, up to now it has been the champion of openness, although that openness is threatened by those who would take away that which has become known as "net neutrality."

To Wu, society is now, and always has been, faced with a basic choice with respect to its information systems. On one hand, there can be an open system with all of its messiness but with both incentives for and few barriers to creativity and innovation. The Internet may be full of annoying spam and junky amateur content but the alternative, a controlled system with a more polished product, comes with the cost of a loss of creativity, both of content and technology. To Wu, Google represents the open system, while Apple and the various media conglomerates represent the alternative. Wu clearly favors the open system and sees it threatened by the kind of actions that led, in an earlier era, to the rebuilding of AT&T. He ends the book with a blueprint for public policy that, to oversimplify, is based on preventing the vertical integration of content and infrastructure.

The Master Switch should be of interest to the readers of this journal. Not only is the Internet the central feature of the evolving market but also is itself an evolving form (think cloud) that influences the creation and destruction of almost every marketing institution. We are living in an era of major change in the communications environment and Professor Wu has given us a perspective on that change—one that makes a book that is hard to put down, while at the same time it manages to be so thought provoking that one has to lay it aside occasionally to contemplate the message.