draws too firm a line between a qualitative, "comprehensive" view of resources that offers critical possibilities and the narrow, specialized view of resources as isolated, quantitative objects to be exploited. Resource Investigation Board members such as Ōkita Saburō and Aki Kōichi developed their notions of "comprehensiveness" during the Asia-Pacific War (1937–1945) while serving as Asia Development Board engineers who conducted studies in occupied China on river basin planning and power development respectively. Japan planned and built a number of colonial infrastructure projects such as the Fengman Dam in Manchukuo, which while largely serving military purposes, also included "comprehensive" visions of urban planning, agricultural development, flood control, and transportation improvement. Matsui Haruo, who Satō credits with developing a critical comprehensive perspective, was only one of many wartime Cabinet Planning Board members such as Miyamoto Takenosuke and Mōri Hideoto who pushed for visions of wartime planning that emphasized long-term vision, interrelatedness, and local knowledge. "Comprehensiveness" was also developed in other organizations such as the South Manchuria Railway's research institutes and the Asia Development Board. In short, Japan's wartime and colonial system did not only emphasize a narrow, quantitative notion of natural resources but incorporated the qualitative, comprehensive types of visions that Satō examines as well.

Should we therefore classify these various efforts as somewhat critical of Japan's wartime/colonial system of total mobilization and exploitation of resources for state goals (or merely dismiss these as empty propaganda)? What were the specific power dynamics behind such comprehensive projects and visions that may have also mobilized people's energies for wartime and colonial objectives? This, of course, is not to say that the comprehensive perspective as Satō exhaustively explores cannot serve as the basis for a more critical theory of resources. But a closer consideration of the power dynamics, mechanisms, and relations within pre-war and wartime notions of "comprehensiveness" is also necessary, especially since many of these visions continued into the post-war era via influential figures who Satō examines such as Ōkita and Aki, both in Japanese domestic policy and in Japan's overseas development policies. Efforts to broadly mobilize vision and imagination constituted a key component of Japan's wartime/colonial system as well as its post-war "developmentalist" system, and therefore need to be researched more thoroughly. On the whole, however, this book not only introduces a variety of exciting new materials and opens up interesting avenues for historical research, but also manages to speak to a generalist audience in its attempt to revive a more meaningful conversation on resource planning – a relative rarity in academic publishing.

Technology of Empire: Telecommunications and Japanese Expansion in Asia, 1883–1945.
By Daqing Yang. Cambridge, Mass.: Harvard University Asia Center, 2010. Pp. xvii + 446.
ISBN 10: 0674010914; ISBN 13: 978-0674010918.
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Technology of Empire by Daqing Yang is a thoroughly researched history of Japanese telecommunications, administration, technology, and imperialism from the Meiji period through World War II. In fact, it constitutes a history of the Japanese empire from the standpoint of telecommunications. It will certainly be a standard work on the subject in English. It also contributes to the history of telecommunications in general. Finally, *Technology of Empire* contributes to the international history of the connections between technology and imperialism, as developed by writers such as Daniel Headrick. Yang suggests, for example, that Japanese technical advances not only provided the means of conquering and attempting to administer a truly enormous imperial space between 1931

and 1945; the realities and perceptions of these advances also contributed to creating and energizing Japanese motives to do so (p. 6).

As Yang recounts, Fukuzawa Yukichi had recognized as early as 1875 that the telegraph system served as "the nerve system of a country" (p. 15). The questions of who would control and administer this system, and to what ends, were thus central to the constitution of the national states and empires. The lessons drawn by the communications bureaucrat Matsumae Shigeyoshi (1901–1991) after a tour of Southeast Asia in 1937 suggests what was at stake: the Dutch, British, and French had very consciously established a "nerve system connecting the colonies and their home countries." Britain particularly held a hegemonic position. Its empire was held together by "a communications network that crisscrosses the earth like a spider's web." This worldwide web "completely controls world opinion" and was "a powerful weapon in trade and other international business warfare" (pp. 197–98). Matsumae's wartime vision of centralized control followed from this: "Electricity travels at the same speed as light. Clearly, ... something that transmits at such a high speed must be handled as a single entity. As the most important issue for the construction of Greater East Asia at the hands of Japan, it is a matter of course that [all telecommunications companies] must be absorbed into the nerve system of Japan" (p. 315).

Matsumae is the individual treated most prominently here. (His peaceful and progressive postwar career was also important, and would bear further study.) Communications bureaucrats Kajii Takeshi and Okumura Kiwao also have major roles. The Ministry of Communications (MOC) itself figures very prominently, as does the Manchurian Telegraph and Telephone Company and several other governmental or parastatal agencies. The book begins with an account of the development of telecommunications during the Meiji era, but its core focus is on the period from the 1920s through the 1940s, including an account of telecommunications imperialism in North China in the 1930s and a detailed survey of the takeover and operation of telecommunications systems in occupied China and Southeast Asia. Along the way, there is much detail about technology and technological nationalism. To offer one example, there are fascinating sidelights on the early history of facsimile technology in East Asia, where the complexities of regional script systems made it especially desirable (pp. 260–61). There is also much detail on the nature of the wartime state.

Yang's focus on Japanese "techno-imperialism," as he describes it, complements the use of the same term by other historians of Japanese empire and technology (Yang names Yoshihisa Tak Matsusaka's important study of the South Manchurian Railway Company and David Wittner's of Meiji-era technological development). Yang's work also complements the work of Richard Samuels on Japanese "techno-nationalism" (*"Rich Nation Strong Army": National Security and the Technological Transformation of Japan*, Cornell University Press, 1994). It is still closer to the recent work of Janis Mimura on "techno-fascism" (*Planning for Empire: Reform Bureaucrats and the Japanese Wartime State*, Cornell University Press, 2011). Indeed, given this abundance of thorough and careful studies, the stage seems set for some new syntheses. Yang does not enter directly into the debates over technocracy as Mimura does, yet many points that he develops concerning the development of a "technology bureaucracy" of engineer-bureaucrats centered on the Ministry of Communications could be considered in this connection (see, e.g., p. 154 on the "Technicians Movement"). One particular link is made by the bureaucrat-ideologist Okumura Kiwao, who has an important place in both Yang's and Mimura's studies. Altogether, there is a lot here. *Technology of Empire* is a big piece of work and will stand as a foundational study of its subject.