

Unmaking of a digital world? Major power rivalry and global system evolution

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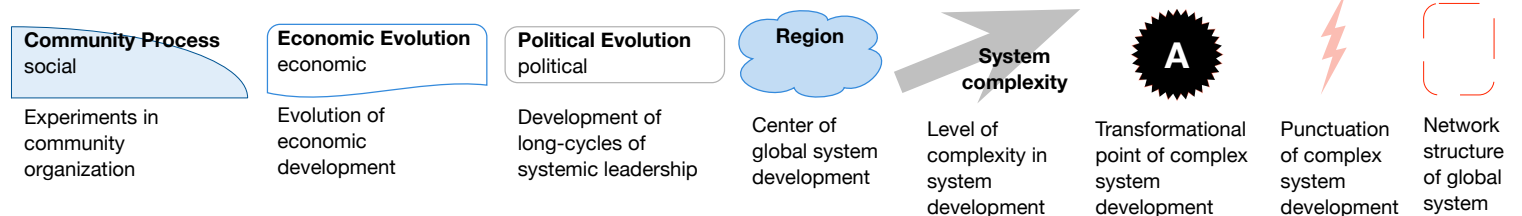
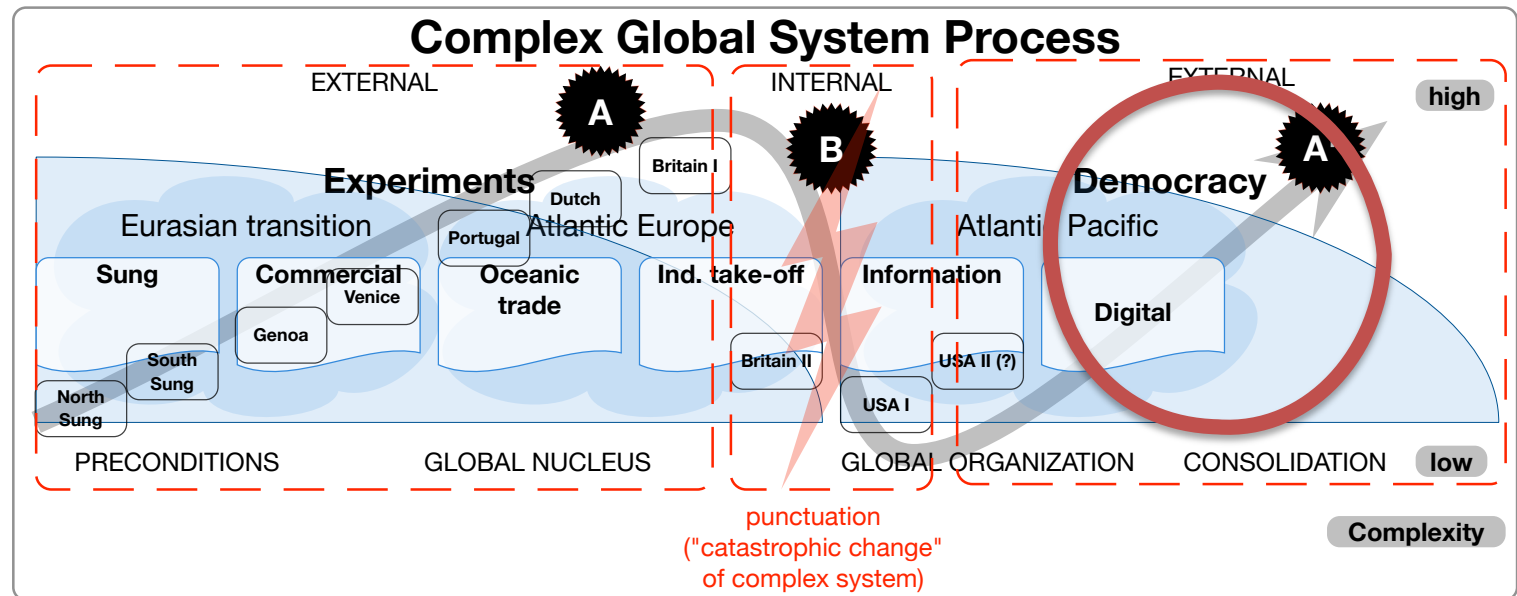
Evolutionary World System Model

Key processes:

- **Hegemonic transition:** institutionalization process (challenge > selection > establishment)
- **Buddenbrook cycle:** generational process
- **Phoenix cycle:** complex system process

Evolutionary World System Model

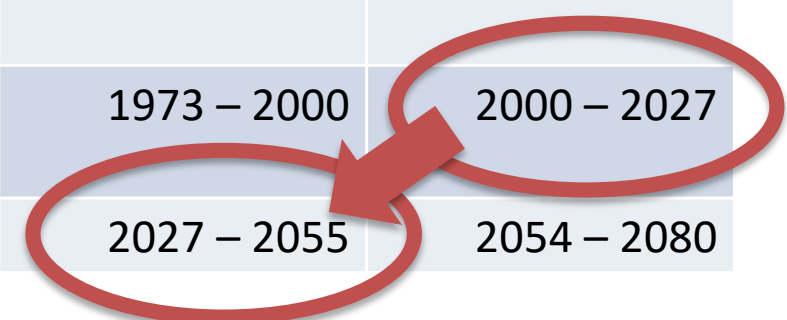
- nested
- dynamic
- learning + adaptation
- feedbacks ↔ environments
- environments:
 - hardware: technologies
 - software: institutions



Based in parts on Rennstich (2008)

Kondratiev-Waves

K-Wave	Global Lead Sectors	Take-off	High-growth
K17	Steel, chemicals, electric power	1850 – 1873	1873 – 1914
K18	Motor vehicles, aviation, electronics	1914 – 1945	1945 – 1973
K19	ICT, Biotechnology	1973 – 2000	2000 – 2027
K20	Networking, AI	2027 – 2055	2054 – 2080

A red circle highlights the '2000 – 2027' period in the 'High-growth' column of the K19 row. Another red circle highlights the '2027 – 2055' period in the 'Take-off' column of the K20 row. A red arrow points from the first circle to the second, indicating the transition between the two waves.

Based in parts on Rennstich (2008)

Long Cycle and Global Lead Sectors

Long Cycle (LC)	Global Lead Sectors	Period
LC7 GB I	Trade	1640 – 1740
<i>Industrial Production</i>		
LC8 GB II	Manufacturing & Mobility	1740 – 1850
LC9 US I	Manufacturing & Mobility	1850 – 1973
<i>Informational</i>		
LC10 US II	Information Platform	1973 – 2060

Based in parts on Rennstich (2008)

K-Waves in LC10

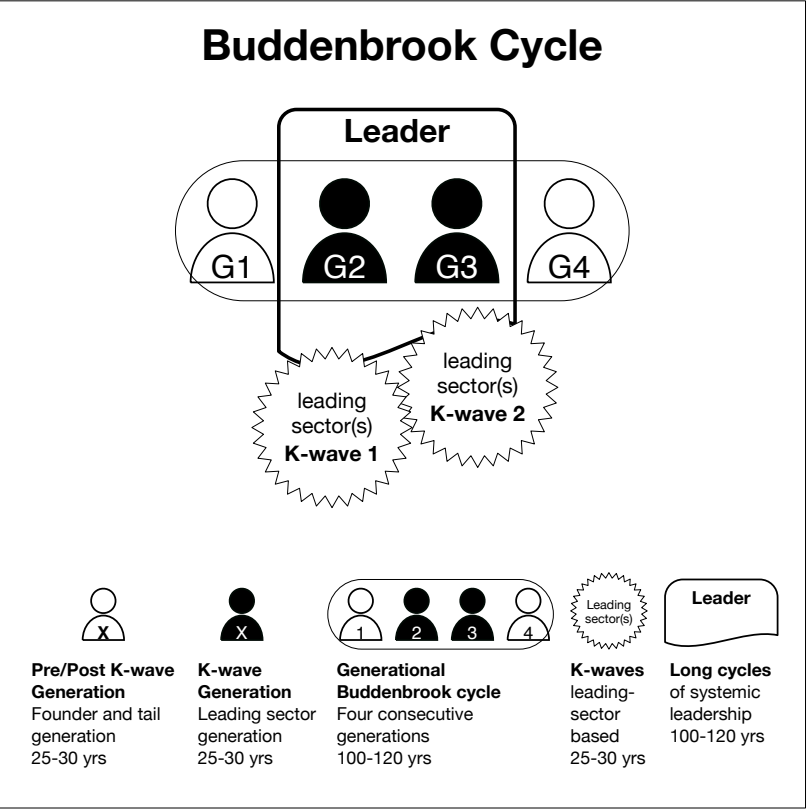
Global lead sectors in K20 ($\approx 2027 - 2055$) include:

- **Networking**: understood as digitalization of productivity processes (services and manufacturing)
- **AI**: Artificial/Algorithmic Intelligence

Expected Processes

- **Hegemonic transition:** rise of challenger(s) > multipolarity > selection (global warfare)
- **Phoenix cycle:** dual-development within system leader
- **Buddenbrook cycle:** creation of new lead-technologies > transition

Buddenbrook Cycle



Major Power Rivalries (1494 – 2000)

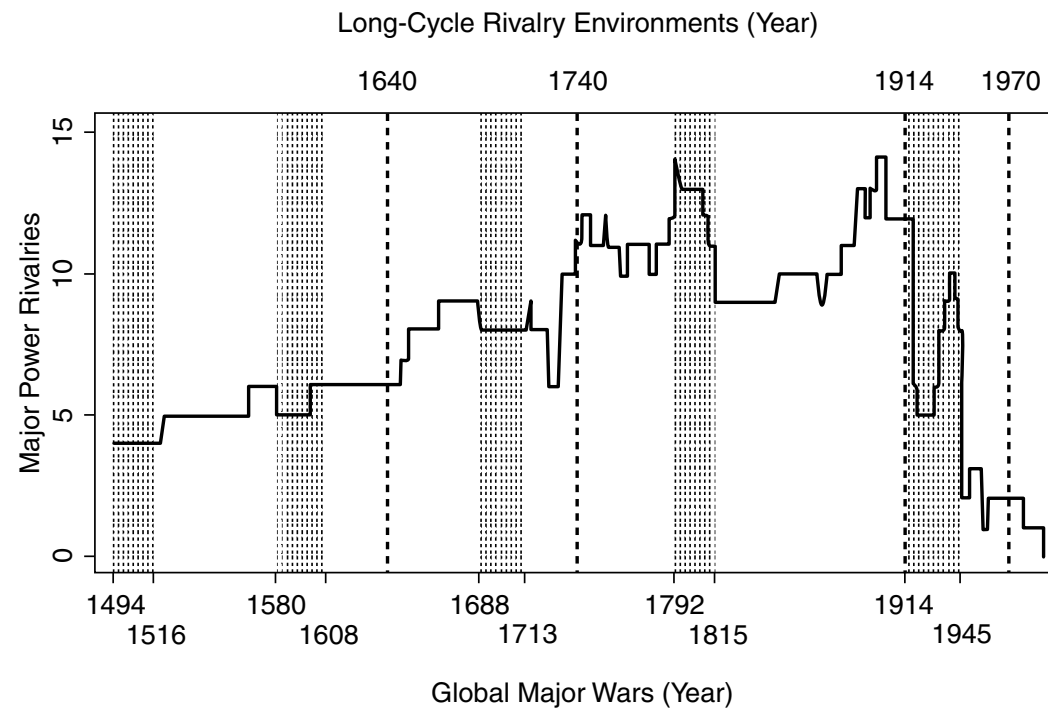


Figure 5.1 Major Power Rivalries, Major Power Wars, and Rivalry Environments, 1494–2000

Source: Rivalries based on data in table 5.1. Major Global Wars based on data in table 5.2. Rivalry Environments based on data in tables 5.3 and 5.4.

Key Developments 2000 – 2022

- Digitality taken concrete shape(s)
 - Digitalization & datafication
 - Reterritorialization
 - Ruling bits & flows
- Rise in commercial and strategic rivalries > (digital) sovereignty
- Regionalization ("de-globalization")
- Shift (back) to Asia (Khanna, 2019)

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3 Digital Sovereignty Models

- US (Commercial Power)
- China (State Power)
- EU (Regulatory Power)

Key Ethical Challenges

- Might makes right
- Standardization
- Digital & physical reterritorialization
- Environmental burden (energy source power)
- AI-ization

Thanks!

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Bibliography

- Austin, G. (2014). *Cyber policy in China*. Polity Press.
- Chen, H., & Greitens, S. C. (2021). Information capacity and social order: The local politics of information integration in China. *Governance, Advance Online Publication*. <https://doi.org/10.1111/gove.12592>
- Khanna, P. (2019). *The future is Asian: Global order in the twenty-first century*. Simon & Schuster.
- Liu, L. (2021). The rise of data politics: Digital China and the world. *Studies in Comparative International Development*, 56(1), 45–67. <https://doi.org/10.1007/s12116-021-09319-8>
- Modelski, G. (1979). International Content and Performance among the World's Largest Corporations. In G. Modelski (Ed.), *Transnational corporations and world order: Readings in international political economy* (pp. 45–65). San Francisco, CA: W. H. Freeman.
- Modelski, G., Devezas, T. C., & Thompson, W. R. (Eds.). (2008). *Globalization as evolutionary process: Modeling global change*. London: Routledge.
- Morris, I. (2010). *Why the West Rules—for Now: The Patterns of History, and What They Reveal About the Future*. New York: Macmillan.
- Rennstich, J. K. (2004). The Phoenix-cycle: Global leadership transition in a long-wave perspective. In T. E. Reifer (Ed.), *Globalization, hegemony and power: Antisystemic movements and the global system* (pp. 35–53). Boulder, CO: Paradigm.
- Rennstich, J. K. (2005). Chaos or reorder? The future of hegemony in a world-system in upheaval. *Journal of World-Systems Research*, 11(2), 209–238. <https://doi.org/10.5195/jwsr.2005.390>
- Rennstich, J. K. (2007). Is globalization self-organizing? In G. Modelski, T. Devezas, & W. R. Thompson (Eds.), *Globalization as evolutionary process: Modeling, simulating, and forecasting global change* (pp. 87–107). London: Routledge.
- Rennstich, J. K. (2008). *The making of a digital world: The evolution of technological change and how it shaped our world*. New York: Palgrave Macmillan. <https://doi.org/10.1057/9780230611061>
- Schmidt, E., & Cohen, J. (2013). *The new digital age: Reshaping the future of people, nations and business*. Knopf.
- Thompson, W. R., & Zakhirova, L. (2018). *Racing to the top: How energy fuels system leadership in world politics*. New York, NY: Oxford University Press.
- Zuboff, S. (2018). *The age of surveillance capitalism: The fight for a human future at the new frontier of power*. PublicAffairs.