

The Third Industrial Revolution: How Lateral Power Is Transforming Energy, the Economy, and the World by Jeremy Rifkin

The Third Industrial Revolution (TIR) by Jeremy Rifkin is both a grand vision of the future of the world and an economic development model. He presents a comprehensive and plausible plan on how to attain a sustainable post-carbon era. He consistently backs up his claims with historical evidence and comparisons with previous industrial revolutions which clarified why things happened the way they did and strengthened the feasibility of his suggestions. Rifkin draws on many different disciplines such as history, economics, thermodynamics, evolutionary biology throughout the book. He also talks about cities that are currently implementing parts of the Third Industrial Revolution plan like Rome, Monaco, and Utrecht Netherlands which are interesting from a planning viewpoint.

Rifkin says that “great economic revolutions in history occur when new communication technologies converge with new energy systems” (Introduction, paragraph 3, loc. 86/6043). The First Industrial Revolution of the 19th century arose from the new energy regime of steam power and the new communication tool of fast, inexpensive printing. The Second Industrial Revolution or the carbon era of the 20th century arose from the oil-powered internal combustion engine converging with electrical communication innovations like the telephone, radio, and television. The Third Industrial Revolution, which we are now entering, is due to the new communication technology of the Internet and the new energy regime of renewable (green), distributed energy. If we resist moving into this next era we will not only run out of fossil fuels but ruin the environment and risk extinction.

The Third Industrial Revolution will fundamentally change every aspect of the way we work and live. The biggest being the transformation from a conventional top-down organization (hierarchical power) of society to one of distributed and collaborative relationships (lateral power). Rifkin uses these words “distributed and collaborative” a LOT. He builds the foundation of his plan on five pillars “(1) Shifting to renewable energy; (2) Transforming the building stock of every continent into micro-power plants to collect renewable energies on site; (3) deploying hydrogen and other storage technologies in every building and throughout the infrastructure to store intermittent energies; (4) using Internet technology to transform the power grid of every continent into an energy-sharing intergrid that acts just like the Internet (when millions of buildings are generating a small amount of energy locally, on site, they can sell surplus back to the grid and share electricity with their continental neighbors); and (5) transitioning the transport fleet to electric plug-in and fuel cell vehicles that can buy and sell electricity on a smart, continental, interactive power grid” (Ch. 2-The Five Pillars of the Third Industrial Revolution, loc. 676/6043). In a nutshell “in the coming era hundreds of millions of people will produce their own green energy in their homes, offices, and factories and share it with each other in an “energy Internet,” just like we now create and share information online. The democratization of energy will bring with it a fundamental reordering of human relationships, impacting the very way we conduct business, govern society, educate our children, and engage in civic life.” (Introduction, paragraph 4, loc. 80-99/6043).

Rifkin describes the process of implementing his TIR in chapter 3-Turning Theory to Practice. Master plan workshops were held consisting of members from leading TIR companies such as IBM, Philips, GE, Siemens, global policy members such as the former secretary of the

California EPA, president of the International Council on Clean Transportation, and members of world-renowned green architectural firms and urban planning companies. Plans were drawn up for Monaco, Rome, and Utrecht in Netherlands. Rifkin says that while the First Industrial Revolution favored dense vertical cities and the Second favored decentralized suburban developments, the Third will bring a totally different configuration. The master plans embed the existing urban and suburban spaces inside a biosphere envelope with thousands of biosphere nodes connected by TIR energy, communications, and transport systems, in a network that spans continents (Ch. 3, Preparing Master Plans for the World, paragraph 5, loc. 1470/6043). The goal of the five pillar TIR infrastructure is sustainability. He describes in more detail these biospheres for the Rome plan. This chapter is very planning related and discusses the Roman biosphere being made up of 3 concentric rings; inner historic and residential neighborhoods, an industrial and commercial ring with many open spaces, and an outside ring of agricultural and rural region surrounding the metropolitan city. The biosphere model emphasizes a contiguous relationship with the rings connected by locally generated, renewable energies shared across a smart, distributed electricity grid. The Rome plan includes revitalizing the city core by converting surplus office space and defunct commercial buildings to residential blocks and creating thousands of small public gardens. The industrial circle will be a model of the low-carbon economy with businesses aimed at TIR commerce. Rifkin talks about not only of renewable energy infrastructure and electric cars but also how our dietary choices have a significant impact on a city's ecological footprint. The Rome plan highlights state of the art ecological farming practices and agricultural research centers. All of these innovations are designed to rejuvenate the Roman biosphere and transform the region into a self-sufficient,

sustainable ecosystem that can provide the food and energy to maintain the Roman population.

Rifkin's ideas don't stop at reconceptualizing metropolitan areas and their surrounding regions. His plan reimagines the economy, the education system, the types of jobs we will do, the concept of nations, and the move of society from authoritarian structures to collaborative ones. In the TIR conventional geopolitics that have governed the affairs of nations will give way to emergent biosphere politics of pancontinental civilizations networked together in a global economy. The TIR economy will stress access over ownership and be more intimately attached to sustainability, a sharing economy already beginning with car-sharing services and open source software. The TIR will "transform education from a competitive contest to a collaborative and empathic learning experience..." (Ch. 8, Biosphere Consciousness, paragraph 4, loc. 4327/6043). Even the long-held notions of innate human nature are challenged: Human beings as selfish creatures, continuously in pursuit of an autonomous existence, in the TIR, is replaced by the need for sociability and the quest for community. Technological advances will shrink market employment and instead we will work in the not-for-profit civil society creating social capital. Some parts of the vision seem utopian but other parts are feasible and attainable, especially those relating to renewable energy.

The Third Industrial Revolution is extremely relevant to the planning profession since this vision is a reimagining of human's relationship with our environment in many, many ways. Rifkin specifically called out "engineers, chemists, ecologists, biologists, architects, and urban planners" (Ch. 7, Rediscovering Space and Time, paragraph 22, loc. 4183/6043) as disciplines that will be instrumental in the transformation. The TIR will affect every sector of planning,

physical (infrastructure, land-use, built environment), social (equity, inclusiveness, equal access to knowledge, technology, and opportunity), environmental, and governing arrangements (local, state, federal, continental, global). Building a strategy to take advantage of the opportunities and manage risks will be challenging for all cities and regions. A planner's job is to guide their communities into the future and so need a solid vision of that future and I believe in this one.

I highly recommend *The Third Industrial Revolution* by Jeremy Rifkin be added to the Urban & Region Planning curriculum and specifically to the introductory courses. It will excite students and attract them to careers in planning. This book changed the way I think about the future of the world. It inspired me and made me proud that my chosen profession has such an important role in shaping our destiny. For another class I had to read the East Lansing Comprehensive Plan-The Bigger Picture and I thought to myself "ick, what is this?, they should be planning for the TIR!" It's really making me think big but first baby steps, getting through UP433.

References:

Rifkin, J. (2011). *The Third Industrial Revolution: How Lateral Power Is Transforming Energy, the Economy, and the World* [Kindle version]. New York: Palgrave Macmillan. Note: no page numbers in book.