Technological change is continuous. What makes a period a “technological revolution” is when a major change or set of changes helps to transform the mode of production, the social relations of production, and the class structure outside as well as inside the industry in which it occurs. That is what is happening now.

Klaus Schwab, founder of the World Economic Forum and the Davos spectacle, has dubbed what the world is experiencing the “fourth industrial revolution.” But this is at least the sixth. The first was in the thirteenth century, with the invention of the water mill, which cemented feudalism and fostered a village-based economy, with a feudal class structure and a localized time regime. The second was in the 1770s, with Richard Arkwright’s water-powered factories, producing mill towns and canals linking up towns and spreading time zones. The third was in the 1820s, ushering in the age of rail, steam, and coal.

The fourth was in the 1870s, known as the engineering age, based on Andrew Carnegie’s use of the Bessemer process, leading to mass production of steel, revolutionizing transport and building. The fifth began in 1908, with Henry Ford’s assembly lines, linked to Frederick Taylor’s “scientific management,” leading to mass proletarianization and the separation of the “conception” and “execution” of labor.

The sixth revolution began in the 1970s, dubbed the “Internet age” or “digitalization age.” With military origins, it became transformational with Tim Berners-Lee’s World Wide Web in 1990. It coincided with the rise of the newly hegemonic paradigm of “neo-liberalism” or “the Chicago
school of law and economics," based on the Mont Pelerin Society and etched into the political landscape by Ronald Reagan and Margaret Thatcher.

The key was financial liberalization. As Karl Polanyi understood, financial capital takes hold in the early phase of a transformation, when the economy is out of control by society. It soon generates such inequalities and insecurities that there is a threat of the annihilation of civilization. But in this era, its tentacles coincided not just with technological breakthroughs but with expansion of US capital, led by Big Pharma, Big Tech, and Big Finance.

Full transition to rentier capitalism came in 1994, with the passage of TRIPS (Trade-Related Aspects of Intellectual Property) by what became the World Trade Organization (WTO). This globalized the US intellectual property rights (IP) system. Henceforth, in an unprecedented way, every technical change produced huge rental income, giving their owners monopoly income for twenty years or more and the power of hoovering patents and other forms of IP, fostering conglomeration, higher price mark-ups over production costs, plutocratic corporations, and a plutocracy manipulating politics, the media, our education, and our consciousness. By 2020, over 15 million patents were in force, and over 3 million are filed each year.

As with previous technological revolutions, a new class structure has emerged, with a new mass class, the precariat, facing patterns of exploitation and oppression unlike the old proletariat or earlier mass classes, the remnants of which persist. The insecurities, interests, and aspirations of the vanguard of this class differ profoundly from those of the proletariat when it was confronting Fordism and Taylorism.

Meanwhile, globalized finance is aiding global corporate capital, led by virulent forms of finance, notably private equity, the business model of which is maximization of short-term profits via asset stripping, resource depletion, and disregard for the commons. There is no hope of reversing global warming and the rush to extinction as long as finance is in charge.

For years, the world’s governments and financial bodies have been dominated by Goldman Sachs alumni. Now, the most powerful is BlackRock, ex-executives of which occupy three of the top four economic posts in the Biden administration. Through its algorithm Aladdin, it manipulates the world’s stock markets.
Financialization is destabilizing, as is globalized information technology. Connectivity is linked to defining features of our age—chronic uncertainty and pandemics. Nassim Taleb conceptualized the idea of “black swans”—rare, unpredicted events with devastating consequences. But we have moved into an era of predictable unpredictability. COVID-19 is the seventh pandemic of this century, and the gap between them is shrinking. Financial crises abound as well. Technologies are more disruptive. As such, we are living with chronic uncertainty, eroding individual, societal, and global resilience. We must combat that by building a system of ex ante social protection.

The Tech-Pharma-Finance complex has made this technological revolution unique in terms of its global reach, speed, and monopolization. Although Pharma was the architect of the IP system, and has thrived in the pandemic, Big Tech provides most “innovations” that can be turned into intellectual property as rent-seeking devices. Neither could have gained their absurd opulence without Big Finance.

Aided by it, Big Tech does not compete in product markets; it simply buys hundreds of firms as commodities. Until the 1990s, the number and value of acquisitions were miniscule, but by 2021 they amounted to over $5 trillion, up 44% from 2020 and 21% from 2015. Big Tech corporations swallow hundreds of start-ups, many of which are Unicorns funded by Venture Capital. Similarly, private equity snaps up thousands of corporations, loads them with debt, strips them of assets, and then declares bankruptcy or sells them at a nominal loss. Big Tech, Big Pharma, and Big Finance are a rent-extracting alliance.

For example, Pfizer did no research into a COVID-19 vaccine; it took no risks, meant to be the justification for patents. It initially turned down the offer of collaboration from Biotech, the Turkish-German inventor of the vaccine, but then did so, mobilizing finance to become the world’s primary “owner” of COVID-19 vaccines, blocking others from using the technology they “own.” The answer is not to push for a vaccine waiver in the WTO, as President Biden and others have proposed, knowing there is minimal chance of success. The answer is to dismantle the intellectual property rights system, which is what makes this technological revolution uniquely regressive and ecologically destructive.
It is also producing neo-mercantilism that is generating a militarization linked to proxy wars and regional tensions. Although the USA set up TRIPS for the advantage of US capital, at a time when China was excluded, China joined the WTO in 2001, and has rapidly become the leading country in registering intellectual property. Now, the US and Chinese governments are pouring subsidies into their national champions and expanding their zones of interest. Managing the tensions will be the decade’s biggest geopolitical challenge.

China is the world’s leading rentier economy, generating a massive precariat and gross inequalities and insecurities. As in “the West,” those will generate internal discord, which by themselves technological changes will exacerbate.

Today’s is the most unfree market economy in history; aided by AI, the panopticon and banopticon governance system marches on. The only hope lies in dismantling rentier capitalism. The plutocracy and their politicians will not do that unless we threaten them with the proverbial pitchforks. The vanguard of the precariat may lead the way.
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