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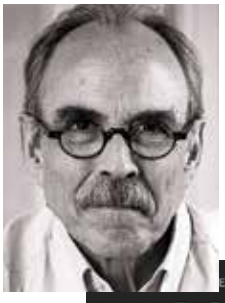
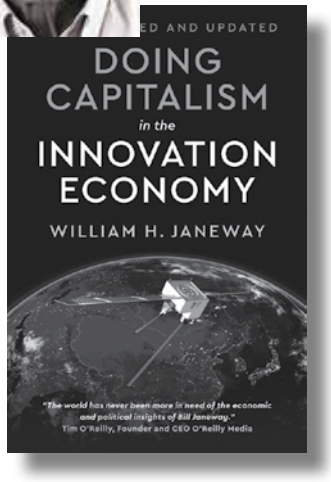
Mastering Capitalism *in the* Digital Economy

Top tech investor Bill Janeway updates his powerful book.





An excerpt from the new edition of **Doing Capitalism in the Innovation Economy: Reconfiguring the Three-Player Game between Markets, Speculators and the State** *by William H. Janeway (Cambridge University Press, 2018)*

During the half-decade since *Doing Capitalism* first went to press, the Three-Player Game has continued to evolve, indeterminate and problematic as ever. This is the term I use to characterize the complex, reciprocal interactions between the state, financial capitalism, and the market economy. Out of this dynamic, successive technological revolutions have transformed the conditions of life over more than 200 years.

In the context of today's disruptions, it is essential to recognize that the Three-Player Game can have very different outcomes, as I wrote in the Introduction to the first edition:

> *From this dynamic and unstable configuration of political, economic, and financial forces … has emerged a world in which state investment in fundamental research induces financial speculation to fund construction of transformational technological infrastructure, whose exploitation, in turn, raises living standards for everyone dependent on the productivity of the market economy. But the three-player game is also responsible for a world in which bubbles and crashes in the financial system spill over and liquidate both the employed and their employers, generating appeals to the political process for redress and relief. In yet another version, we find ourselves in a world where "malefactors of great wealth"—to invoke Theodore Roosevelt's epithet—are able to exploit the political process in order to preserve and protect their exploitation of the market economy.*

So two overlapping sets of institutions—markets and the political process—compete in the allocation of resources and the distribution of the income and

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wealth generated by their application. Those who win in one arena have the opportunity to assert their power in the other; contrariwise, the losers in one can seek redress through participation in the other. Of course, the potential that the losers in the market would use the political process to redistribute the market's outcomes motivated resistance to extension of the franchise for generations—centuries. But history records that the economically and financially powerful have had at least as much success in bending the political process to their advantage.

The digital revolution is barely half-done.

The structural fragility of the Three-Player Game was demonstrated during the 1930s. That fragility is again evident in the haphazard response to the second great globalization. And here lies a second irony. Globalization, both in the late nineteenth century and over the past generation, has been enabled by technological innovations that have radically reduced frictions in the cross-border movement of goods and services and people and capital. The same technologies—be they steamships and the telegraph or the internet in its commercial and social forms—that unequivocally increase the efficiency with which resources are allocated challenge the political system's ability to buffer the increased flows that they enable.

However, even while international trade and migration are targets of populist outrage, the primary engine of economic and social disruption is coming from within, from the maturation of the digital revolution that itself has been the result of the most productive collaboration in human history between state investment and financial speculation. Specifically, the decline in manufacturing jobs has continued at a rapid pace, from the United States to Germany, as the developed world continues to absorb the effects of China's fullbore entry into the world economy. But automation, not "bad trade deals," was responsible for the vast majority of job losses in manufacturing. And, beyond manufacturing, inequalities of income and wealth rebounded with the stock market after 2009, especially in the United States.

Failure of the state to play its post-World War II role in underwriting the demand side of the economy raises the need for critical review of its historic and strategic role in financing the scientific research that ultimately drives the supply side. Here, too, political paralysis in Washington and general commitments to austerity have dominated. For two key examples, funding of the National Institutes of Health slowed markedly during the fiscal years leading to 2015 and remained flat at about $31 billion (declining in real terms in the context of modest inflation) until Congress approved a roughly 6 percent increase for fiscal year 2016. And the annual budgets of the Energy Department's Advanced Research Projects Agency ("ARPA-E"), which could have been the point of the spear in an appropriately massive state-sponsored response to climate change, have never exceeded a meager $300 million since inception.

All this is to say that, even before the Trump Administration took office, the U.S. federal government had markedly reduced its participation in the Innovation Economy. One initiative, however, deserves mention. The initial fiasco surrounding the launch of the Affordable Care Act's online portal, www.healthcare.gov, on October 1, 2013, generated a crisis response now legendary within the IT community. In turn, that response was institutionalized in the U.S. Digital Service, dedicated to "using design and technology to deliver better services to the American people." But note: here the federal government was playing catch-up with the digitalized private sector, not leading the wave of innovation as it had done from the first projects to construct computers through the conception and launch of what became the internet. Even so, as of this writing, the fate of the U.S. Digital Service remains, at best, uncertain.

Unfortunately, there is no uncertainty about the attitude of the Trump Administration with respect to science and its relevance to public policymaking. A simple comparison of two websites—that of the Office of Science and Technology Policy in the outgoing Obama Administration and that of OSTP eighteen months into the Trump Administration—provides definitive, graphic evidence.

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Beyond the federal government and across the world, the digital revolution has taken on a life of its own. In fact, as Uber and Airbnb establish themselves as exemplars of the "sharing economy," the relationship has inverted: now the need is for responsive but responsible amendment of established regulatory frameworks for the provision of

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services in the real, physical economy, and in the terms of employment of those who deliver them. The digitalization of work and its management by algorithm is driving that radical liberalization of labor markets, long sought by the advocates of free markets, to unsustainable extremes. Contrariwise, the formation of guilds of Uber drivers and Facebook-friend collectives among Walmart employees may be the first signs of an endogenous response to the ultimate commoditization of labor by algorithm.

In fact, the digital revolution is barely half-done. Once again, it has taken fifty years to deploy its transformational fixed and mobile broadband networks, just as it took roughly the same time to construct the railways and the electricity grids of previous technology-driven new economies. And the layers of abstraction required to insulate users from the complexity of the network infrastructure are just now becoming demonstrably available by way of the increasingly thick and rich "cloud" that delivers computing resources of all sorts and the mobile apps that provide access to them. As with those prior revolutions, we may expect that it will take another fifty years to realize the full economic and social consequences of digitalization. While the speed with which innovations can be deployed globally has undoubtedly accelerated, definition of the underlying inventions that will become economically significant is likely to be subject to the same latency—constrained by the human imagination, not by machine learning—that delayed introduction of retail mail order to the railway economy. Any realized acceleration may be attributed to the absolute increase in the humans that are doing the imagining and the enhanced ease with which they can communicate with each other.

There remains one other exposure at the foundations of the Innovation Economy—indeed, at the foundations of market capitalism. Five years ago I wrote: "Loss of authority by those charged with directing the state will always undermine the confidence of participants in the markets of financial capitalism." I was thinking then specifically of the collapse in the credibility of political leadership in the United States and Germany in 1931–1932 and, more recently, in the feedback from Watergate to the stagflationary world in which I served my own apprenticeship more than forty years ago. Writing today, it is impossible not to anticipate a comparable crisis of confidence in American leadership. It is already possible to imagine that, in retrospect, the most lasting legacy of this administration will have been its contribution to accelerating China's advance to global leadership, assuming its own version of the Three-Party Game with Chinese characteristics remains sufficiently stable. ◆