

The Geopolitics of Technology in Digital Capitalism
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For the political economy, the rise of digital capitalism signifies a phase-change.¹ The form and location of production processes, the composition of capital investment, the commodities that generate high profits, the valued categories of labor, the profile of consumption: since the 1970s all have altered. At the same time, long-engraved imperatives of profit-maximization, cost efficiency, and labor control have carried forward.

Nor have capitalism's crisis tendencies been overcome. Nine years after the crash of 2008, stagnation persists.² We see manufacturing overcapacity, sluggish investment, high unemployment, surging debt, declining trade volumes, and continued financial stress.³ Digitization's overriding achievement, we might say, has been to modernize the contradictions of capitalism.

Amid the stagnation, two poles of profitable growth stand out. One is demarcated by an industry: digital technology. During the past decade, the U.S. tech sector's contribution to total corporate dividends paid to investors by S&P 500 companies increased from 5.6% to 15%.⁴ The other pole of growth is territorial: China's domestic market. If we strip out China's GDP growth for 2016, the world economy would be in recession.⁵ Profit-seeking around these two poles of growth is ferocious. Indeed, it has incited a snowballing geopolitical struggle. My quick world tour of the geopolitics of technology begins with the United States: the historical source of digital capitalism and still its major structuring force.

The Structural Profile of U.S. Digital Capitalism

The U.S. Government has underwritten a ramifying process of digitization, beginning with the birth of the modern computer. Enormous military R&D funding and procurement coupled, beginning in the late 1960s, with liberalized policies for the U.S. domestic market and aggressive economic diplomacy all the way through, have been the essential ingredients.

The number of U.S. employees in IT occupations increased tenfold between 1970 and 2014 – to 4.6 million people.⁶ Labor was set to work imagining, designing, manufacturing, operating, and repairing digital systems throughout U.S. industry; the concomitant was a consistent upward swing in U.S. capital investment in information processing equipment and software.⁷ James Cortada cites an internal IBM estimate that ICT outlays increased from 38 to 55 percent of *all* U.S. equipment spending between 1990 and 2001.⁸ The digitization drive has persisted even through the slump.⁹ In 2007, U.S. capital expenditures on information processing equipment and software totaled \$264 billion; in 2013, they came to \$331 billion.¹⁰ For purposes of comparison, only 35 countries possess GDPs larger than this.

During the 19th and early 20th centuries, capitalist industrialization reorganized *every* major industry while also creating new ones; so today, the digital growth pole has been activated *generally*. To understand digital capitalism requires us to alter our perspective, to include not only consumer markets and the familiar tech suppliers, but also corporate *users on the demand side*. Digital systems and services have been bolted to *all* segments of the political economy. Industries as disparate as finance, manufacturing, retailing, and agriculture provide confirmation.

By 2006, JP Morgan boasted an IT staff of 20,000 and a tech budget over \$7 billion¹¹; a decade later, the crash notwithstanding, JP Morgan's tech outlays had increased to over \$9 billion.¹² Just one big U.S. automaker, General Motors (GM), spends upwards of \$3 billion a year on outsourced IT services¹³; GM's European competitor, Volkswagen, employs 9300 IT specialists and pours \$4 billion annually into information technology. Agribusiness giants Monsanto and Deere are enhancing tractors with software to collect micro-climate- and soil data directly from farmers and feed them into Monsanto's data analytics application, *Climate Field View* – for sale back to farmers.¹⁴ The world's largest single tech-company spender on IT in 2014 was Walmart, which pumped in over \$10 billion.¹⁵

The information industry accounts for the largest sectoral share of U.S. technology investment.¹⁶ But this fact is often misconstrued. The tech companies are vital *because* they are supplying materials for recomposing the larger political economy, that is, *because* they are applying digital technology to spearhead new commodification projects (both with, and against, other businesses). Their efforts are currently progressing on several crisscrossing paths. Cloud computing, the Internet of Things, 5G wireless, data analytics, and artificial intelligence are buzzwords used to gesture toward a prospectively great surge of commodification into new areas. Capital has in its sights so-called smart cities, transport, online education, cultural heritage, biotechnology and medicine, and e-government.¹⁷ Established fields of commodity production – think autos – and mechanisms for the circulation of capital – that is, finance – are also being remade. We are nowhere near the end of the line: unless it is halted as a result of political mobilization, digital capitalism has a long way to go.

The realization that digitization will play an outsized role in any recuperation of capitalism has turned the geopolitics of technology into a combat zone. On one side, the U.S. is determined to extend its entrenched market advantages. On the other side, competing interests are trying to horn in. Is there a serious challenge to U.S. dominance?

Inter-Capitalist Competition

The apex of today's global political economy – the transnational companies that control 30% of global production and 80% of world trade - is being rebuilt around digital structures and dynamics.¹⁸ Who will seize the profits generated by new or reshaped commodities? Who will reengineer production processes? Who will be overlord of digital capitalism?

I turn first to the wealthy capitalist countries.

From the era of mainframe computers to smartphones today, European nations have repeatedly attempted to be peer-competitors in digital technology. However, again and again, they have been thwarted. US economic statecraft, huge US military R&D and procurement spending, the unmatched scale of the liberalized US domestic market, the first-mover advantages and network effects built by the U.S. tech industry, and the U.S.-led NATO alliance have combined to stunt Europe's capabilities. It is not an accident that Google commands a greater share of the search market in Europe – more than 90% - than it does in the United States.¹⁹

Europe's policymakers are aware, of course, that concerted action is needed if they are to get back into the game. Germany's Angela Merkel insists that European digitization needs to be invigorated.²⁰ European antitrust investigations have acquired fresh momentum – three competition cases are pending against Google alone²¹; and an encompassing “digital platforms” inquiry is underway.²² With new “ePrivacy” guidelines, the European Commission has moved to tighten its grip on “over-the-top” online services like Microsoft's Skype and Facebook's WhatsApp, which are cutting into the revenues of Europe's network operators.²³ The EC's²⁴ aim is, unmistakably, to open space for European capital.

The U.S. has reciprocated by charging Europe with “protectionism.”²⁵ U.S. President Obama declared that: “We have owned the internet. Our companies have created it, expanded it, perfected it. [European companies] who you know, can't compete with ours, are essentially trying to set up some roadblocks.”²⁶ He is boastful, but not wrong.

Persistently depressed economies and financial shocks, the knock-on effects from the U.S. wars on Iraq, Libya and Syria, and Britain's vote to exit the EU, have destabilized European integration – and the election of Donald Trump in the US only adds uncertainty. Despite the EC's efforts, therefore, the prospect of a pan-European challenge to U.S. digitization still seems remote.

Next, consider Japan. By the 1970s, Japan's state-directed policies had established an advanced mainframe computer industry, while its consumer electronics companies were taking over the global market.²⁷ Despite these successes, starting early in the 1990s, Japan's economy fell into deflation; this coincided with the rise of the U.S.-centered pole of growth around the Internet. Japan's participation in the tech industry became notably non-commensurate with its status as the world's second- (now third-) largest economy.

There are pockets of strength: domestic ecommerce,²⁸ and games and virtual reality products. Softbank is a high-profile transnational telecom, tech and investment company²⁹; and Sony and Nintendo also continue to be significant. However, Japan remains what historian Gavin McCormack calls a U.S. client-state,³⁰ and thus again it seems unlikely to threaten U.S.-centric digital capitalism.

What about the BRICS? During the 1970s, some of the BRICS countries had participated in the Third World's call to foreground a New International Information Order (NIIO) within a wider movement for global economic redistribution. Beginning in the mid-1950s China and the then-Soviet Union brought information technology into their wider programs for economic development; India and somewhat later Brazil introduced import-substitution and "market reserve" policies for ICTs. Their successes, though incomplete, strengthened their tech industries to adapt to the neoliberal era that followed. What likelihood is there that the BRICS countries may build on these foundations and reshape the current global order in technology "as an emerging power bloc"?³¹

First, Brazil. Under the Workers Party government of President Dilma Rousseff, measures to bulwark Brazil's "cyber-security" attained prominence after Edward Snowden disclosed in 2013 that US intelligence agencies were spying on Rousseff, alongside other heads of state. Rousseff's outrage, powerfully expressed before the United Nations General Assembly, electrified the movement to internationalize the management of the US-centric Internet.

However, this challenge quickly cooled. The U.S. induced Brazil to separate from China and Russia in preparations for NETmundial, "the Global Multistakeholder Meeting on the Future of Internet Governance," held in Sao Paulo in 2014.³² Brazil's leaders thus opted for a seat at the table over a concerted collective challenge. Two years later, amid a full-scale depression triggered by falling commodity prices, a right-wing coalition backed by Brazil's multimedia conglomerate Globo (which had supported the 1964 military coup) saw its chance. Impeaching President Rousseff, the right moved against the elected government and attacked its social welfare agenda.³³ In the aftermath, political conflict continues – making it less likely that the world's ninth-largest economy³⁴ will try to disestablish U.S. digital dominance.

Moving on, South Africa's is also facing a domestic crisis. With an unemployment rate of 27%, the country's largest trade union (NUMSA – National Union of Metalworkers) has broken with the corrupt and capital-friendly government of the ANC, and thrown support to the Economic Freedom Fighters party.³⁵ From a different side, a few months ago a neoliberal party, the Democratic Alliance, was voted in to govern the nation's capital city (Pretoria). Though South Africa's economy is much smaller than those of the other BRICS countries, so that its direct impact on the Internet growth pole is modest (its annual budget for broadband connectivity, for example, is in the vicinity of \$120 million), the country is headquarters for two sprawling Internet, telecom and ecommerce conglomerates: MTN and Naspers, which possesses minority equity investments in Russian (Mail.ru), Indian (Flipkart) and Chinese (Tencent) Internet companies.³⁶ The state's priorities, set more by local and foreign transnational capital than by the country's black working class, are fiercely contested and, amid battle for state institutions, the ANC government's strategy of "talk left, walk right"³⁷ may become untenable.³⁸ What, if anything, might replace it remains an open question.

Now the world's seventh-largest economy, India is the premier destination for foreign direct investment³⁹ - and its Internet industry has been a part of this growth. Tata

Consulting, Wipro, Infosys and other Indian tech companies grew by developing business process outsourcing services for U.S. and European capital.⁴⁰ Domestic market opportunities also have opened. The Reliance Industries conglomerate is undertaking the largest investment program ever by an Indian company: a \$20 billion rollout of 92,000 wireless towers spread across the country and connected by high-capacity fiber optic cables.⁴¹ Prime Minister Modi has showcased a “Digital India” initiative, backed by state expenditures of up to \$7 billion in 2016.⁴² While, as the *Financial Times* reports, Google, Facebook, Twitter and increasingly Amazon “have won dominant positions in India, limiting the space for local players,”⁴³ foreign portfolio investors have also pumped in billions of dollars, inflating the valuations of some Indian e-commerce, ride-hailing, advertising and restaurant booking companies.

India’s impact on the tech growth pole therefore is significant. However, Prime Minister Modi has broken with his predecessors and aligned India strategically with the United States. India will grant the US military routine access to its ports and military bases; the U.S. in turn has recognized India as a “Major Defense Partner,” enabling India to purchase advanced US weaponry.⁴⁴ Military cooperation, Modi and Obama have specified, applies in all “domains... land, maritime, air, space and cyber.”⁴⁵ India has followed up by siding against China with respect to territorial claims to the South China Sea.⁴⁶ Though it recently hosted the eighth BRICS Summit, India under Modi seems an unreliable ally for those who seek to build a non-U.S.-centric digital formation.⁴⁷

Russia, by contrast, stands determinedly outside the U.S. orbit. President Vladimir Putin is contending not only with U.S. sanctions,⁴⁸ but also a protracted slump in oil prices and plunging real monthly incomes. His government has responded by passing draconian budget cuts, which are likely to stoke disaffection; but Putin’s popularity is based significantly on the fact that he has refused to kneel – to accept the peripheral status that the U.S. and Europe are determined to impose.⁴⁹

The U.S. and the EU are running frightening risks in trying to subordinate Russia,⁵⁰ because Russia’s independence harbors serious geopolitical implications – including in cyberspace. Russia’s military hacking capabilities are well-recognized.⁵¹ Possibly less familiar is that, unlike Brazil or India, Russian antitrust authorities did not require a complaint from Microsoft or Facebook to find that Google had broken competition rules – or, more recently, to prohibit LinkedIn from operating.⁵² Russia possesses a thriving consumer Internet, which relies on a homegrown search-engine (Yandex) and a domestically-run social network (Vkontakte) – albeit with minority ownership interests held by South African and Chinese companies (Naspers and Tencent).⁵³ “Russia has become Runet-dependent and Runet-centered,”⁵⁴ one writer concludes, using the .ru country code to underline the Internet’s domestic orientation.⁵⁵ The country’s significance in the contest to shape digital capitalism, however, also owes to its uneasy alliance with China.⁵⁶ Might Sino-Russian cooperation underpin a prospective multipolar order - even if, as a columnist for *The Hindu* observed after their recent meeting in Goa, the always-divided BRICS as a whole seem to be “running out of steam”?⁵⁷

If so, it will be because the pole of growth around China has converged with the pole of growth that is digitization.

Coming In and Going Out

For China's party-state, the financial crash of 2008 underlined the urgency of transforming China's export-processing political economy. Alterations to China's development model accelerated.⁵⁸ Digital technology lies at the heart of this unfinished transition.

Even before 2008, through propitious timing and assertive state policies – and increasingly under the rubric of “security” - access by foreign capital to high-growth portions of China's market has been partially withdrawn.⁵⁹ This has caused dismay and anger among U.S. business and political leaders.⁶⁰ While Chinese state agencies have leveraged the world's otherwise-slow growth both to extract greater concessions from foreign capital,⁶¹ as Yu Hong explains, they also have targeted ICTs and related fields as “pillar industries”: the 13th Five Year Plan for 2020 indeed makes ICTs the “highest priority” sector.⁶² Both state funding and top-level policy direction have been rolled into the government's recent “Internet Plus” initiative.⁶³

The result has been to build a powerful tech industry. It is symptomatic that, in 2015, six of the world's 20 most valuable Internet companies were domiciled in China.⁶⁴ China is the world leader in ecommerce, with a retail ecommerce market valued at over \$900 billion in 2016, and 400 million people buying daily over their phones.⁶⁵

If China's tech industry is robust, however, then its growth has been limited mainly to China's domestic market and, as recently as 2013, Peter Nolan could assert that Chinese capital would be unable to carve a place within a political economy dominated by foreign transnational corporations.⁶⁶ The first-mover advantages and market power enjoyed by these units of big capital, he argued, could not be easily dislodged. Since then, other barriers have been raised, via investment-policing measures by U.S. and European state authorities (like CFIUS).⁶⁷

Despite this, Chinese foreign direct investment (FDI) has grown very large. Facebook's 2014 acquisition of a second messaging service (beside Messenger), WhatsApp, for \$22 billion provides an example. Though details remain sketchy, the goal of Facebook's investment reportedly was to preempt one of China's top Internet companies, Tencent, from bidding for WhatsApp.⁶⁸ Why? - Because WhatsApp might have provided to Tencent a stepping-stone into the international market: a means of competing more directly with Facebook. WhatsApp possesses 100 million users in Brazil and 70 million in India; it is used by 8 of every 10 Mexicans who possess smartphones (three-quarters of the population) and it competes - with Facebook Messenger - as the most downloaded app in Kenya.⁶⁹ Both features are portents: that Facebook held onto its market; and that Tencent came close to seizing it.

In fact, companies headquartered in China are propelling themselves headlong into foreign markets. Outpacing inbound FDI for the last several quarters, China's \$146 billion in nonfinancial outbound investment during just the first ten months of 2016 has already outstripped last year's record (\$121 billion).⁷⁰ Chinese FDI prominently includes tech.⁷¹ Large and dynamic Internet companies, Baidu, Alibaba, Tencent, Huawei and others are advancing rapidly beyond China's borders.⁷²

The PRC's One Belt One Road initiatives afford a glimpse of this process from a different angle.⁷³ OBOR – which contemplates expansion across 65 countries through Central Asia, the Middle East, and beyond⁷⁴ - accords importance to telecommunications and the Internet. An “Information Silk Road,” the Xinhua news service specifies, includes “cross-border optical cable networks, improved satellite information passageways and transcontinental submarine optical cable projects.”⁷⁵ Interlocking with OBOR are recently established financial institutions, such as the Asian Infrastructure Investment Bank.⁷⁶

Care needs to be taken in interpreting these developments. China's expansion into Central Asia comes partly in response response to domestic industrial overcapacity (cement, steel, perhaps even fiber optic networks). And though Russia has not been uncooperative, its strategic vision for Eurasia is not the same as China's. China's rise is thus often overestimated and cast as contradiction-free. There is no question, however, that China is advancing, and allying with other countries behind the goal of a multipolar order.⁷⁷

Obstacles to this endeavor stand sharply revealed in the context of managing the global Internet.

Internet Governance

A bright thread of opposition to US dominance of international communications runs forward from the era of the Non-Aligned Movement; it wrapped around the emerging U.S.-centric Internet during the late 1990s and early 2000s. What one scholar calls “the global war for Internet governance,” though often opaque, thus accompanied the Internet's international ascent.⁷⁸ Since the crash in 2008, this conflict has intensified.⁷⁹

Political economic control of the Internet encompasses more than the Internet's address book, that is, more than just its Domain Name System, which provides the unique identifiers for interoperating networks and host computers. Yet the DNS has drawn insistent controversy. A U.S. nonprofit corporation, ICANN, was established late in the 1990s to manage this system, and – vitally – did so (via the so-called Internet Assigned Names and Numbers functions) under contract to the U.S. Commerce Department.

Many countries found this arrangement objectionable. Beginning early in the 2000s, China and other countries turned to a Geneva-based United Nations agency, the ITU, in a campaign to bring Internet oversight within this multilateral jurisdiction.⁸⁰ Determined to prevent such an outcome, the U.S. insisted that ICANN's mechanism of “multi-

stakeholder” governance be retained. This multi-stakeholder model, which purports to permit corporations, governments, and civil society organizations to interact as equals, actually has operated to upgrade corporate power and to downgrade the role of governments – with the glaring exception of the U.S. Government.

At a meeting of the ITU late in 2012, a majority of governments (89 of them) resolved to invite member-states to discuss “international internet-related technical, development and public policy issues within the mandate of the ITU.”⁸¹ This modest move toward multilateralism was too much for the U.S., which refused to sign the outcome document. Months later, however, Edward Snowden’s disclosures crashed into the debate over the Internet, tipping the balance against the United States. The U.S. had cast its stewardship of the global Internet as a matter of high moral principle: human rights and freedom of information, including, in particular, Internet freedom.⁸² After Snowden, however, the self-serving nature of these appeals stood revealed.⁸³ It is not that we do not need Internet freedom - but that the U.S. may not validly be considered its custodian.

Was the U.S.-centric mechanism of Internet governance implicated in the U.S.’s ability to conduct global mass surveillance?⁸⁴ Opposition to the existing arrangement strengthened.⁸⁵ In 2015, a Chinese Internet administrator formally protested.⁸⁶ That his letter was addressed to the U.S. Commerce Department exemplified the prevailing power-asymmetry.

The U.S. had repeatedly pronounced an intention to privatize the Domain Name System, by cutting it free of Commerce Department oversight – but, over a span of eighteen years, it had never done so. In the face of spiking international pressure after Snowden, proponents pushed again to grant freedom for ICANN and its “multi-stakeholder” model.

The Obama Administration resolved the issue: by a unilateral decision, ICANN’s contract with the Commerce Department was permitted to lapse, on 1 October.⁸⁷ A journalist explained that “Lawrence Strickling, the Department of Commerce official handling the transition, warned that abandoning or delaying the plan would cause a backlash from foreign governments who have agitated for the US to step back. That would result in the internet falling under the control of the UN or other government-controlled group.”⁸⁸

Had the U.S. not acted in this way, the result might have factored in to the trend to enlarged multilateral oversight of the Internet. At the ITU’s World Telecommunications Standardization Assembly, held in Tunisia less than one month after the DNS privatization, the U.S. resisted a renewed push in this direction. Amid what the Internet Society characterizes as “stalemates” and “regional polarization,” nonbinding recommendations were passed, to modestly expand ITU jurisdiction over the Internet.⁸⁹ Richard Hill writes that this merely “pave[s] the way for discussions on proposals for international agreements that would result in governments having an increased regulatory role across a broad range of emerging issues believed to have an economic impact on the revenues of legacy telecommunication operators.”⁹⁰ Continuing conflicts are nearly

certain, and may or may not surface as early as the ITU's Plenipotentiary Meeting in 2018.

ICANN's multi-stakeholder management therefore remains in place and, with it, corporate power - while the wider battle to institute one-nation-one-vote procedures over regulation and policy for the global Internet likewise continues. China may take a larger role within ICANN, but it has not yet been able to internationalize global Internet governance.

This mixed result does little to reduce U.S. political-economic power over technology. In 2010, overall U.S. expenditures on ICTs exceeded those of the China, Japan, the UK and Russia combined; and the U.S. accounted for more than half of global ICT R&D spending. According to U.S. authorities, "The United States captures more than 30 percent of global Internet revenues and more than 40 percent of net income."⁹¹ The aggregate capitalization of the five largest U.S. tech companies, by late 2016, was over \$2.2 trillion – at least twice that of the five largest Chinese tech companies.⁹² Nevertheless if, as Xi Jinping, Robert Zoellick and Henry Kissinger agree, the world has reached a hinge moment (of which the election of Donald Trump perhaps is both a symptom and a cause),⁹³ then the question continues to loom: who will rule digital capitalism?

Conclusion

The U.S. is still the number-one country, as Herbert Schiller called it in 2000.⁹⁴ However, today it is facing a serious challenger – China – and US power confronts chaos as well as stagnation. Because big capital demands stability, as well as growth, we may ask whether the U.S. and China are destined to be adversaries – Or, whether they might try instead to reconstruct digital capitalism *together*, perhaps on the model of the "special relationship" forged by the U.S. and Britain during and after World War Two?

Although it must be said that, overall, U.S. elite opinion about China has recently hardened,⁹⁵ one longstanding member of the U.S. establishment, Zbigniew Brzezinski, called earlier this year for the U.S. to pursue a "Sino-American accommodation." Brzezinski holds that "As its era of global dominance ends, the United States needs to take the lead in realigning the global power architecture." Ignored by the U.S. media, his proposal⁹⁶ offers a credible sign that flexibility of mind has not disappeared in the citadels of U.S. power. I am skeptical that a U.S.-China rapprochement will become an official policy goal - for either country - but the possibility exists.

Historically, depressions act as bearers of structural transformation. There are certain to be additional attempts to re-impose order of a kind that is congenial to capital. It is therefore urgent to demand that the outcome of the present slump do more than merely resolve conflicts over who captures the profits from digitization.

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