

Is Informationalization Good for the Middle East?

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Nearly all studies and most opinion about new media and information technologies in the Middle East have held that they are a boon in an environment of information-averse regimes, state-controlled media, and limited communications. New media, in this reckoning, open communications to new voices, foster an expanded public sphere,¹ break the molds of old patterns not only of communication but also of thought,² or modify media ecologies³—all of which erode state monopolies and shift balances from state-cultivated models of citizenship to citizens' taking charge.⁴ Skeptical voices have been few, redundantly focused on multiple means of censorship to offset the benefits of new media, or cautioning against jumping to conclusions about new media impacts.⁵ Early pessimistic assessments of the prospects for informational freedom in the digital age have been largely assimilated, such as Kalathil and Boas' demonstration that the malleability of the Internet is also available to authoritarian states,⁶ while more recent, more global, and more famous critiques have yet to influence research priorities in the Middle East.⁷ None of these has strayed far from global views of epochal, structural transformation in open networks beyond noting lingering Middle East exceptions, especially lagging numbers of participants by comparison to other regions and to the rest of the world. Regionally as well as globally, open communications, network flows, and other notions of informationalization generally seem to be embraced as an unalloyed good by most analysts, if not by all actors.

“Informationalization” is a concept formulated by the Spanish sociologist Manuel Castells as a key characteristic of the “information age,”⁸ in which the balance of production that shifted from agriculture to manufacture with industrialization and then from manufacturing to service industries, shifts in post-industrial society toward information services and information technologies as dominant forces in economic, political, social and cultural change—or as Castells put it, “the new social morphology of our societies.”⁹ Notions of informationalization penetrate extensively into thinking about business, economic development and politics independently of Castells' prolific treatments that linked it particularly to networked society. A turn-of-the-century favorite was the concept of “knowledge work” as a new denominator for development in post-industrial economies that the first *Arab Human Development Report* recommended for Arab countries to turn their “human resources” into human capital by embracing information and communications technology (ICTs).¹⁰ We don't hear much about knowledge workers any more, as attention to ICT-driven change has shifted to social media-enabled youth and from prosperity, which seems more elusive than ever, to freedom, which again seems just around the corner, so long as the tools and their users can stay a step ahead of its adversaries.

By the mid-2000s, Arab rulers had embraced informationalization, whether prompted by the AHDRs, by Castells' vision of networked society and others like it circulating through consultants' reports, or by brushing shoulders with industry representatives and celebrity experts at venues such as the World Economic Forum. Governments from the Gulf to Egypt rushed to build media and tech "cities"—now in the UAE, Jordan, Egypt—that combine features of industrial parks with free-trade zones devoted to media and ICT development. Cynics might suggest that this enables governments to keep tabs on potentially socially disruptive technology, and cynics might be right; but these Internet and media cities embody policy goals to capture the values, and especially the value added, of an informationalized economy by promoting Internet use and computer skills through training, particularly in computer skills, and public access, particularly to the Internet. Implementing policies have ranged from making Internet access virtually free in Egypt and unregulated in Jordan and Egypt (albeit with lapses, from Egypt's shutting off Internet connections during the Tahrir Square demonstrations to Jordan's new licensing law) to limiting Internet access to business purposes, reminiscent of the Chinese model of an Internet behind proxy servers, to industrial policies to leverage Internet service to promote ICT-based businesses. Much of this was in place by the early to mid-2000s and it facilitated the burst of social media that figured in the uprisings in Tunisia and Egypt that more restrictive government policies on who could use the Internet and what they could access, such as in Syria, impeded.¹¹ But we cannot say that determined regimes can match tech-savvy individuals.¹²

The drama, and thus media attention, shifted from knowledge work to informationalization in politics with a new generation that seemed to make their own work and to remake politics as a kind of information work on open-network models afforded by networked communications. They took advantage of margins of informational freedom through more open communications that were more accessible to alternative voices through Internet technologies and techniques, which Howard has finally shown through rigorous comparison, may not create civil society but are definitely among its means, such that civil society does not emerge in authoritarian states without them.¹³ So stated, this seems common sense: freedom of information and its free flow into the public sphere should spread agency and enhance it. That informed citizens are essential to democratic regimes of government is a base premise of modern political science's foundational commitment to popular sovereignty, to understanding it, and to promoting it or at least to identifying threats to that sovereignty.

Can informationalization be one of those threats? While professionals and practitioners working at the intersection of media studies and political science in the Middle East seem to think not, there is substantial critical opinion that sees informationalization as degradation, or as false promise.¹⁴ Most of these critiques are rooted in cultural studies' attunements to technology more as trope in a tradition that goes back to Arthur Kroker and Michael Weinstein's *Data Trash*,¹⁵ which took a gimlet-eyed view of the emerging information age as an economic formation that drains value from the system in meaningless activity. The values that they do assign to technology are, for the most part, cultural, social, and political, which raises the question: would

this even matter where so little economic activity is transacted in informational goods and services by comparison to other regions and political economies?

Informationalization in Middle Eastern Economies

Emma Murphy reminds us that political economy in the Arab Middle East is more political than economic.¹⁶ That is, while politics in fully capitalist states of the West are driven by economics, from voter preferences to fundamental structures of power, politics typically dominate Arab state economies, in which regulation, licensing, national champions, and extra-legal or informal direction guide investment and even operations. Murphy's analysis focuses on telecommunications, describing a structure of limited cross-border investments in new telecoms in neighboring countries that respond to requirements for divestment of state PTT monopolies and for opening markets in telecommunications in order to qualify for accession to the World Trade Organization on trade and tariffs.¹⁷ This is particularly apparent in the proliferation of companies that provide mobile telephony, which incumbents mobilize to limit while seeking to expand in neighboring national markets.¹⁸

It is not just that Arab states and their allies have sought to protect their informational domains, to filter and manage access, and to direct its benefits to social and economic elites, or that the short-term result has been relative under-development of regional infrastructure that places the Internet within telecom infrastructure that Murphy points out. It also means that the first value extracted from the Internet is extracted by the telephone companies. With the partial exception of Egypt, to which I will return, telephone companies not only capture the monetary value of Internet service but capture it more reliably than retail Internet Service Providers (ISPs), for whom telecoms are the points of connection to the international grid, as well as frequently to customers.¹⁹ Internet service, from a telephone company's point of view, is telecom reselling, and many early business plans to provide it in the Middle East amounted to little more. This is why we have seen fitful campaigns against Skype and other VoIP (Voice over Internet Protocol) services, which ISPs in some Arab countries have been technologically prevented from offering.

Channeling value in Internet service goes further. After half a decade or more of experimentation with limited Internet roll-out, Arab countries, by the early 2000s, settled on regimes that made the Internet available to the wider public, and much of the ensuing interest in starting ISPs was driven by prospects of capturing a new source of rent. In Saudi Arabia, for example, more than a hundred proposals and applications for licenses came forward, about thirty were granted out of those that were qualified and, of those, barely a dozen actually started businesses. The reason was that Saudi policy settled by 1999 sought to foreclose rent-seeking by fixing both wholesale costs and retail prices and by requiring that ISPs be linked to ICT businesses to support their development. Egypt's more aggressive policy of licensing numerous ISPs that would provide connection for the cost of a telephone call,²⁰ with a portion remitted to the ISP (as a sort of customer bounty), had a similar effect but in an opposite direction, i.e. to

direct investment toward “backbone” services connecting ISPs to the grid outside the telephone lines. At least one of these services was spun off a government project as a private company, while others were sponsored by companies rolling out alternative mobile phone services and television channels.²¹

All of these flows might not matter apart for maintaining the state in positions also to control and monitor content. These structures might be an early-stage phenomenon, justified as necessary for getting a physical infrastructure in place, where the story before 2000 had been lack of such infrastructure that prompted opening the sector to alternative, private, and to some extent to international investment. In Jordan, for instance, France Telecom bought a share of the divested PTT, abandoning an initial partnership with Sprint and Deutsche Telekom to create a separate company but taking on its commitment to enhance Internet availability. In the Gulf, most investment came from partially corporatized but still or largely state-owned telcos’ establishing branches in neighboring countries. The pattern of restricting competition seems relatively entrenched, thanks to friendly regulation and to the example set by international champions’ pleading its efficiencies, such as Verizon in the US, which famously reassembled half the old Bell system broken up in 1996 (with ATT taking the other half). Critics dispute claims of efficiency and point instead to “regulatory capture,”²² which outside the US takes the form of policies to soften the impact of globalization through national direction (known as “social market” policies in Europe). In other words, the subordination of economics to politics that Murphy pointed to as a characteristic of peripheral capitalism could mean that it is a feature of the margins and not the core departure of informationalization.

Informationalization as Business Model

This latter argument has tended to come from the software industry and its Silicon Valley exegetes, whose vision of freedom of expression argues the free exchange of goods via the Internet as its contribution to informationalization. In a sense, their information age started and grew, and some maintain now grows naturally, through information provided free to users.²³ Certainly, this was true for the early Internet of engineers and scientists who discounted the costs of producing the information they provided freely to each other. Chris Anderson, editor of *Wired* magazine, noting the effects of piracy (notably in music) and new social media business models (in which advertising allows use to be free) formulated the now widely accepted argument that the Internet is over-determined not just to deliver free goods but to stimulate their production; by providing endless choice, the Internet creates unlimited demand.²⁴ This is the business plan for social media that was given formal expression by the marketing firm and publishing house that first defined social media as “user-contributed content.”²⁵

Returning to the Middle Eastern context, one might ask what could be wrong with a system of free, user-contributed content? Haven’t social media empowered a new generation, a new array

of voices, and at least added to the pressure for social change? Haven't social media provided arenas for the cultivation and refinement of civil society by providing opportunities for skills development and networking, including with the international press and civil society-promoting NGOs such as Global Voices Online, Creative Commons, or the Heinrich Boell Stiftung that sponsored a series of blogger conferences to consolidate and focus development in that sector? Concerns about social media providers' snooping on users' communications might seem precious or secondary when compared to manifestly deeper interests of the security sectors in authoritarian states. In any event, social media companies are less interested in their users' information than in information *about* it, in the traffic, which in those companies' terms are "meta-data" and what they want to capitalize. Whether it is Google's drive to scoop up "all the world's information,"²⁶ or more limited "walled gardens" (e.g., Apple's well-tended constellation of iTunes, iCloud, seamlessly integrated with iPods and iPads) or clever social engineering (such as Facebook), their goals are to mine meta-data less about users than about user behavior and to identify probabilities and correlations that can be used to refine their own services and to sell to advertisers.

Again, one would think that free social media would be a boon in a region that still has low percentages of people on-line and where e-commerce is less developed in the estimations of would-be developers because of underdeveloped, underused and, most important, under-trusted payment and delivery systems. These last have been a persistent complaint by developers and key rationalization for why e-commerce has not "taken off" in the Middle East, notwithstanding growing middle classes with their presumed demands for bargains and demonstrated demands for cosmopolitan goods.²⁷ That also could be a negative from the point of view of fostering development, which on the Internet means software development, and so remaining, as Murphy put it, "on the periphery of the informational capitalist system" because "the Arab region is not generating the core technologies."²⁸

Here, the "so what" question is decisively answered by all countries of the region making it explicit policy to foster local software development as an export sector. This goal overtook and sought to build on a generation of public sector technocrats' efforts to implement Internet-based schemes for e-government and e-education by the end of the 1990s. As the Internet took off globally in that decade, and Arab governments advanced plans for public access in order to leverage informationalization as a "leapfrog" technology that could reverse the region's relative decline in the industrial period, additional plans came forward for fostering local software development that would tap a generation-long spread of higher education to create an economy based on "knowledge workers." The most sublime expression of this vision was in the first *Arab Human Development Report* (2002), authored by members of the region's technocrat generation. More mundane operationalizations came in the form of plans for Internet-, tech-, and media-cities and for participation in the growing out-sourcing trade already brought by globalization. The argument was that countries that lacked primary capital (i.e., mineral wealth) had instead human capital in abundance, thanks to decades of investment in education, and were thus

uniquely positioned to localize software to Arabic and to distinctive Arab-country accounting and business standards. Also, the reasoning went, Arab countries could become suppliers to international corporations that would be more reliable customers than those in the local retail market, which was rife with unlicensed software and, as Arab software developers put it to me, “Even the most popular software only sells a few copies here. The rest are copied. But [international corporations] pay for Arabization and for other out-sourced modules for their programs that we can produce cheaper than elsewhere or to a better standard, and actually get paid for it.”

More ambitious—and more Silicon Valley—strategies to make money by selling the firm rather than the product met some initial success in the sale of the first Arabic-enabled email company, maktoob.com (founded in 1999) to Yahoo in 2009 and the sale of the first pan-Arabic web-news portal, Arabia On-Line, to Saudi businessman Prince Al-Waleed bin Talal’s media conglomerate. In the wake of sales like these, hopes to replicate the venture capital model met with middling success and turned instead to investor-led “incubator” firms (that lend advice as well as first-stage financial support), some established by returning Silicon Valley veterans. While it seems that an industrial base in software development is developing—Jordan has won a reputation for it, as has Egypt to a certain extent, while the UAE remains problematic—even the success stories may be problematic. At the time when out-sourcing was linked to telecoms divestment as its prime example and condition, a Jordanian investor described that nexus to me as a “businessmen’s version of reality...”

“too focused on outsourcing, which is a species of trading, not an industrial policy. It’s dependent on others rather than on producing something that others need and come to us for. They’re traders with a trader’s approach, not an industrial wealth-creating one.”

Some soft support for this assessment came from a simultaneous enthusiasm for developing such businesses for initial public offerings (IPOs), which was dashed by the dot.com investment bust that began in 2000. But it is worth taking the statement seriously as more than a claim about regional business culture biases in favor of trading, and about banking being more oriented to trade financing than to investment. This has to do with the economic role of “free” goods shifting where value ends up in informational capitalism.

The Value Shift in Free Goods

As explained by industry insiders and exegetes, the vision of “free” goods and services on the Internet hinges on an informational model in which users are not customers but instead the goods delivered to the real customers who pay for the meta-data that users generate. Google’s searches that have been compared to a geography of otherwise shapeless cyberspace, blogging which effectively allows users to create their own Web portals (some of which support businesses), eBay which is free to browsers and buyers (but not to sellers), Facebook and other social

networking software (like LinkedIn) not only aggregate and analyze that data. They aggressively pursue strategies of quickly and at whatever cost growing their user bases (“eyeballs” in the industry jargon) that in time can be “monetized” by trading not the users’ information, which is given away, but trading in information about it. This monetization has been compared by another industry insider, Jaron Lanier, to the Wall Street practice of creating “derivatives” of underlying values by bundling—say—mortgages, loans, or other valuables into securities, and then creating derivatives of them for trading, which the financial crash of 2009 showed transferred added value to the top of the stack where it was then harvested by creators of those derivatives.²⁹

Lanier’s comparison may appear strained (or it may be brilliant); but in terms of informationalizing an economy it does point out that the underlying goods, the initial point of value, on social media sites come from volunteer labor: all the information that users post becomes “data” to the site owners, whether they claim that “user-contributed content” (like Facebook) or not (like Google). This is overtly the case with Wikipedia, which is organized as a non-profit and supported by financial donations; but Lanier points out that free circulation of information crowds out not just other providers (from encyclopedias to, increasingly, newspapers) but also *any* return to content creators other than informal gains of reputation. How this works can be seen in the de-monetization of the music industry through free circulation of musicians’ products *and* the futile efforts of the industry to recapture revenue through live performances, which is in practice chimerical for all but a vanishingly few new entrants. Similar informalization of primary production is already evident in journalism and on the horizon for education because the current structure of the Internet makes “free” easy to find but fees hard to collect when value is harvested only from meta-data (data about data, classifications essentially).

Tellingly, Lanier sees regulation as the only way around this upward transfer and concentration of value at the top while informalizing the economy at ground level. He argues that regulation should take advantage of the two-way flow in networked communication to make collecting residuals (payments for reuse, as in the entertainment industries) automatic and universal, since neither copyrights nor software protections really work.³⁰ Such a system might raise other flags in the Middle East, where regulation is more for security purposes and another example of Murphy’s subordination of economics to politics in peripheral capitalism. Moreover, from the perspective of ISPs in the region, security agency demands for monitoring users represent direct costs in addition to the opportunity costs of discouraging customers, which are still incurred if the agencies do the monitoring and enforcement themselves. Furthermore, how valuable to Google or Facebook are meta-data about so few users relative to other parts of the world? Especially in a region where there isn’t much market for their goods anyway because so little marketing is itself informationalized? Or, for the conspiracy-minded, isn’t that market the *mukhabarat* anyway?

The question of whether informationalization is good or bad in the Middle East usually turns on arguments that Arab governments already do this, whether as in Syria or in pre-uprising Tunisia,

by actively monitoring Internet content, or more innocently in telecoms' monitoring traffic for management purposes, or in Egypt's and Saudi Arabia's tolerance of on-line forums as controlled release and means of spreading habits of self-censorship. The counter argument has been that sheer volumes of data to monitor will overwhelm the effort or, in the more subtle analysis by Howard, that informationalization will grow a sector that becomes self-sustaining as its practices become integrated into civic engagement that becomes inseparable from economics.³¹ Yet another perspective might come from drilling back down to the activity on social media, by which I mean to include more traditional but still widely popular web forums in the Middle East, for another view of the relations between numbers of users and practices of users that lead pessimists to dismiss them for not having impacts they look for but unable to account for new ones.

From an industry perspective, social media succeed in proportion to their numbers of users. High user numbers earn them reputation and work through the network effect that users attract more users (not just uses)—“Be there or be square” is a core attraction of social media. And while users are not their customers but are goods that social media deliver to their real (paying) customers in the form of advertisers or—in US politics—to political marketers, something more is in play. That is socialization into a process not only of accessing free goods but also into acquiring the habitus of producing them, which informalizes the digital economy by breeding acceptance of free and freely provided labor. For some, this may be balanced against a longer-term prospect of cashing in on skills (and networks) developed in the process. This is not a hypothetical prospect: open-source software developers are at pains to point out that they do use freely available tools, such as Linux, as opposed to proprietary ones, and they do share results with each other, but with the goal of creating something else that can be sold. For them, free access to means of production does not mean producing for free; it means drawing the line where their work becomes products. Rising interest in open-source software development in the second half of the past decade (that was invisible in the first half) makes this as real as anxieties of earlier software developers that writing programs for the local market meant selling into a market for many copies, but only one of which would be paid for.

These passages between informal and formal economy are not peculiarities of local and regional market cultures, piracy, or of biases toward trade and entrenched conglomerates based in trade and transport that populate Middle East economies. They are features of informationalization that in current network architecture drives down the cost of goods and pushes upward the extraction of value from their combination, which is not in composite products as under industrialization, but in networks. The difficulty of capitalizing on these networks, of “monetizing” their features, is arguably exacerbated in Arab political economies that subordinate economics to politics, as the examples of telecoms and Internet Service providers shows: each depends on regulation to fix their markets. An economist might argue that these economies have simply not “matured” enough, which in neoliberal terms means that they have not been released enough from government control, regulation, even participation. But a deeper structure

might be fostering a habitus at the basic actor level that links informationalization, which is supposed to make production of goods and services virtually infinite, with real informalization of its core actions and attitudes into an “iron cage” of the Information Age. “The Puritan,” whom Max Weber observed, “wanted to work in a calling, but we are forced to do so,”³² may find an echo in the social media user who wants to produce information freely but is likewise forced to do so as that becomes the rule with the spread of informationalization throughout the economy.

This may seem fanciful, even perverse, and it is certainly speculative; but two studies of the value flows in informational goods may bring it into comparative perspective. First, in a study of Indian IT workers, Biao Xiang described how surplus programmers, the “hard” core of this population, were recruited by “body-shops” that placed them in jobs contracted with international corporations; the corporations were thereby relieved of hiring and taking responsibility for the programmers.³³ The body shops were not just labor brokers, such as in the Middle East construction trades, but employers who took on responsibility for the programmers, yet did not pay them when there was no work. Instead, the body shops charged the programmers for upkeep, or in some cases morphed into training centers, exacting fees, or into contract programming shops paying the “migrant” rate in the “long tail” of the international migrant IT worker populations, only a few of whom obtained the coveted high-paying jobs in the US or Europe. What drove the programmers into these arrangements were family values, specifically needs to recoup family investments in their educations that were undertaken as family strategies of upward mobility that, when they worked, would additionally place their daughters higher in the marriage market for husbands like their sons. In this example, informationalization that makes IT workers fungible and extracts their value upwards interacts with family dynamics that, while different in the Middle East, have already over-produced graduates there in other fields relative to local market demand, to which one response has been a proliferation of private colleges offering an alternative mix of business and computer training.

Far from alienating IT workers, the labor scheme that Biao Xiang described only increased their motivation to pursue such careers and thorough-going identification with its organization of work, a phenomenon which Gina Neff in a study of Silicon Alley workers in social media start-ups has termed “venture labor.”³⁴ “Venture labor” occurs when IT workers not only take on the risk of working for entrepreneurial start-ups in the information economy, but do so willingly and identify strongly with its valorization of risk. This risk is accepted not just as a condition of the industrial sector (as in the fashion industry and other bastions of freelancing), but as “natural” and so applying to themselves as employees. By Neff’s account, it entails more than the bait of riches from sharing in potential IPOs, because firms they worked for before the Silicon Alley investment bust did not take responsibility for them or morph into something else, like Biao Xiang’s body shops. They simply folded—in economic terms liquidating promises of riches as unsecured liabilities in bankruptcy. Neff traces this model to Silicon Valley, where failure has been celebrated as learning experience and credibility-enhancement, but in a context of high job mobility where workers routinely think of themselves as working “for the Valley” more than

working for particular companies,³⁵ and recycling in the next round.³⁶ The iron cage is not just a job trap but, like Weber's original demonstration, a cognitive entrapment that is affirmed rather than undermined by contradictory experience, making it immune to challenge on ideological grounds.

Middle Eastern Echoes

In the Middle East, it is not just government policies and IT-training and promotion policies that draw recruits, or even want of alternative employment prospects. Their informationalizing economies are arguably already drawing value upwards, and even without crony capitalism that hogs the returns from opening up to globalization. There is also an international reference group for Internet users as well as for IT workers that not only beckons but provides examples and even instruction, even when none are needed, even when social media are “just for socializing.” In her intriguing account of how “bloggers become activists and activists bloggers,” Courtney Radsch described the emergence of a “blogger elite” and highlighted the example of Esraa Abdel Fattah, who co-created a Facebook page for the April 6 Youth Movement in support of a workers' strike in 2008.³⁷ She knew how from working for a DVD company and having joined Facebook in her spare time to keep up with her friends, follow favorite singers and the national soccer team. When the Facebook page soared in popularity and earned her the sobriquet “Facebook girl,” she was arrested. Upon being released, she recanted and was in turn disavowed by her co-creator and his political associates.³⁸ Radsch goes on to describe the aftermaths of retreating into “virtual enclaves” documenting their own digital activities,³⁹ again—although Radsch does not explicitly say so—by volunteer labor on “free” goods, no less than blog posts that international news organizations recycled or mined for story leads and sources during the events. Few leveraged the experience into new careers.

The example affirms Lanier's argument that the return on free goods is to be placed in the informal sector, while value, and capturing it, moves up the food chain of informationalized political economy. Neither Esraa nor the bloggers were paid for their work. Theirs, like hers, was volunteered labor. The only value returned to them was reputational and, presumably, the experience, while its economic value was extracted by journalists and analysts paid to aggregate it or able to sell aggregations of it which places value on data about data. These features of informationalization merit our attention and attempts to modify it bear watching for several reasons.

More adept players are those farthest from primary production, whether those are, in geographical terms, Google or Facebook or in structural terms telecommunications companies, who are paid for connectivity and paid more for more of it. A common view of the information age, namely that it transcends the economics of scarcity, should direct out attention to what remains or becomes scarce in an informationalized economy. That could be access; it was in the past and remains so through political direction of investment as well as in overt regulation and

struggles over it, including struggles to channelize the Internet or prioritize its streams. Telephone companies are particularly good at ROI (return on investment) and in regulatory struggles to align Internet Service Providers' interests with their own, while ISPs drive into "value-added" services such as providing email or website-building to secure their customers. Both move away from commodity businesses in a business where the core commodity is information and getting it is the first step in developing something to sell.

While a macro-theorist might see flows of data from what used to be called in center-periphery terms the Global South to the Global North, where the value is extracted and traded as fortunes not unlike the East India Companies,⁴⁰ a bit closer to the ground we might see the emergence of a habitus around volunteer labor and free goods that drives the value of all primary informational work into informal sectors of the economy. Democratic theory would hold this a good thing for getting informational work out of the economy and into civil society, into getting *it* working. This, at least, has been the celebration in political analyses that highlight erosions of authority. But to the extent that erosion is what spreads—and if information is free, wouldn't its spread theoretically be infinite?—what of "knowledge workers," not their authority but what they author? The comparative evidence is that they are marginalized, as "venture labor" in the "long tail," some embracing informationalization's risks while more are forced to do so, with increasingly many facing the marginal rate where wages are trivial in comparison to capital gains if transactions in information grow and the cost-to-user of information drives toward zero.

Cultural critics have focused on this curve toward zero value in their domains, but upward extractions of value merit attention, too. Business models for social media have foregrounded advertising: gather an audience and sell to segments identified by user-contributed content and automated feedback on actual behavior. Even if the samples are only partial, networked communication continuously expands them. If value lies in those identifications, then what bears watching about informationalization are claims to ownership, arguments over where it lodges, and struggles over that, which do not de-politicize the informationalized economy so much as re-politicize it.

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Notes

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⁵ Jon B. Alterman, "The Revolution Will Not Be Tweeted," *Washington Quarterly* 34, no. 4 (2011).

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³⁰ This is not always the case. Seemingly out of the blue, I have received payments, very modest ones, from the Copyright Clearance Center, which I didn't even know existed, for reprints of earlier articles, for which I am grateful to those who paid.

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⁴⁰ I'm grateful to Emma Murphy for this provocative analogy, although it is not a direction I would take the present analysis.