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Cloud platforms today are pressurizing politics and economics, policies and predictions, proliferating interactions between bodies and transactions across borders. But platform powers and promises are by no means new. Modern logics and logistics—mass production and consumption, standardization and rationalization, extraction and excavation, calculation and coordination, capitalization and consolidation—not only scaffold cloud platforms, but also prefigure them. Old problems pervade current configurations; new paradigms expose precluded parts of previous orders. Prior platform experiments are a precedent for future platform designs.

Platforms are foundations, physical structures or technological architectures. They make things visible or legible, accessible or connected. They ostensibly open space, save time. As a particular type of dynamic system, platforms are best apprehended by their behavior. "They are what they do."¹ Platforms organize, synchronize, mediate, aggregate, coordinate, amplify, integrate, accelerate. Fixed protocols enable rapid emergence. Simplification can breed complexity. Enhanced autonomy can generate contingency. Synchronization can hasten dispersion. Redundancy yields idiosyncrasy. Independence advances interdependence.

Critics of contemporary cloud platforms tend to focus on the predatory aspects of capital platform participation. They argue that platforms proselytize sharing and connectivity by way of attention capture and information extraction, promoting precarity and surplus accumulation, centralizing power via monopolization and homogenization. Platform optimists, conversely, see the potential for platforms to disrupt dysfunctional processes and inefficient systems, their capacity to reroute legacy formations and barbaric habits, to distribute power and facilitate hybrid assemblages. These polarizations tend to overlook the vagaries and vicissitudes of socio-technical transformations, the ways that platforms perform ideologies as a matter of practice as well as principle.

Late modern histories reveal a particular platform genealogy: that *information is transportation, and transportation is information*. From this perspective, platforms are mobility mechanisms, spacetime compressors that precipitate movement, migration, motion, mass, and mob.² Platforms mobilize people, things, groups, and ideas in expeditious assembly. Fordist automobility provides an exemplary domain for probing deviant platform proclivities, in that its peculiar subsumption of profit to production undermines presumed political categories and predictable party lines.

Henry Ford was a platform protagonist, a geopolitical platform logician who propelled automobility to planetary scale. Ford applied his horological genius to global proxemics. "An artist-master of mass production,"³ he connected the science of internal combustion to an international

re-engineering of supply and demand. Ford choreographed and orchestrated the automotive paradigm into being. He constructed markets and circumvented monopolies, exploiting national financial loopholes to install “smarter” systems. By transforming a luxury toy into a ubiquitous utility, the Fordian empire locked the world into an automotive ecosystem, up and across the value chain.

Ford might be viewed as a pragmatic speculative designer who realized a possible future in the present. He combined measured time (*chronos*) and timing (*kairos*), insight and foresight, projection and prediction. He deployed his inventions via vision and practicality, cunning adaptation and continuous iteration. “Plotting combines reckoning with the environment in its present state with imagining how it could be different, with the same set of representational strategies straddling the actual and the proposed.”⁴ Ford constructed a platform ecosystem of personal hardware device, mass assembly production, media participation, network proliferation, and program curation. Motorcar tech might have been inevitable, but Ford accelerated its development by harnessing the rhythms of an ever-evolving milieu.

The Model T was a motorized vehicle for the masses. The chassis, a frame composed of a wheel shaft and driving stick, soon came to be called a platform in industry lexicon: a simple reproducible base upon which various designs and plug-ins can be specified and applied.⁵ Standardized component parts composed a standardized consumer product. “You can have a Model T in any color as long as it’s black,” Ford famously quipped, proselytizing functional use over formal ornamentation. The freedom not to decide on technical specs and detailed aesthetics enabled access and customization for new driver populations.

Running on what was at the time called a “planetary engine,” the Model T was designed to interoperate on various kinds of fuel. E. B. White noted that this use of “planetary” referred to its “epicyclic” gear rotation mechanism, but also to a new “erratic” state of “wandering.”⁶ The Model T traversed counties, countries, and continents, subsuming territories world-over into its fold. Just like the mobile phone—which added nomadic slack to the sapien tether—or the watch, which linked the body to capital time, the Model T was a personal prosthetic, an auto-motive appendage that simultaneously expanded and contracted movement. It enacted anthropocentric planetary bondage via proclamations of liberation, foreclosing a multitude of far more efficient modes of public transportation.

Motorcar proliferation was made possible by an incredibly low price, which was made possible by the assembly line’s revolutionary platform of moving mass production. The line was contingent on an almost computational precision, electric

power for motorized conveyance, scientifically-timed robotic labor, worker surveillance, and paternalistic regimentation. Assembly production requires international coordination of material supplies, and a surplus stockpile in case of transit backlogs or market fluctuations. Assembly time relies on a relentless stream of workers willing to succumb to mind-numbing labor, which Ford secured via an unprecedentedly high wage and openly hiring migrants, people of color, and women, which in turn brought the company heaps of public fame. Workday reductions from nine to eight hours enabled the line to run faster, in three continuous round-the-clock shifts. The new, two-day time block called “the weekend” expanded desire for leisurely pleasure expeditions while ensuring the restoration of muscular power. Company logistics benefited circular logics. Workers worked to save up to buy their very own Ford, so they could drive to work and back again.

The Fordist platform built new markets through media manipulation, bridging latent rural need with constructed urban demand. The Ford Motion Picture Unit—the largest industry film production company of its day—created films for worker education and inculcation, distributing free weekly newsreels to movie theaters worldwide. Black cars came to populate cinema screen and everyday scene alike, merging modern reality and moving picture. Yet the car was not only a product looking to be sold; it was also a vehicle for political propaganda. The *Ford Independent*, a weekly paper drafted at the Ford Motors central office, was a required offering at every Ford dealership. The paper pushed Ford’s populist ideals and fascistic purity rackets, his pacifist WWI peace ship folly and failed folk presidency run. Meanwhile, exhibitions and pamphlets at world fairs, trade shows, and factory sites depicted detailed assembly line operations in open-source demonstrations, garnering advanced technical feedback while converting scientific innovations into popular entertainments.

Fordian network effects propagated by intentional provocation and “autopoietic” propulsion.⁷ Since there were constantly more Ford vehicles in circulation, people learned to trust that in case of a break-down, help could always be found. Ford dealerships became sites for not only service and maintenance, but also connection and education. They reduced barriers to market entry, enabling new motorists, especially women, to enter the ownership fray. Ford Motors did their best to distribute financial risk to the periphery. Quasi-independent dealers purchased cars directly from the factory and paid cash on delivery, which protected the company from market dips and depreciation at points of sale.

Platforms beget platforms. Forums, conferences, alliances, unions, and lobbies addressed the emerging needs of this auto-motive complex, like insurance, infrastructure, streets, and safety.

The outcome was concrete and causeways, pavement and parking lots, suburbs, strip malls, and petrol extractions. Geopolitics bent to the preservation of horsepower. Wherever you go, Ford is where you are. You can't get there without it.

By 1927, when Ford Motors opened the River Rouge plant in Dearborn, Michigan, the family company had invested unprecedented profits into unprecedented production capacity. The River Rouge was equipped with every instrument for converting raw materials into automotive parts. Resources of all kinds flowed in and out by river, road, and company-owned rail. It was a completely vertical, integrated production enterprise. Smoothed volatilities made longer term planning possible. But cars are also one of the first consumables to signal impending economic depressions. By the time the Rouge opened, the books were showing a strong downturn in US sales.

With vertical integration almost perfected, Ford portended the challenges and limits of total centralization, developing a quasi-horizontal network of "village industries" along rivers near and far. The sites hosted research experiments in autonomous management and technical education, seasonal work for rural farmers, chemurgical products, and hydroelectric power. Hemispherical productions could bypass market inconstancies while testing social designs and material processes, all linked by water networks. Seats and seat belts were sewn in Dagenham, England; tractor knock-up kits were assembled in Cork, Ireland; Ford Europe models were manufactured at Ford-Werke in Cologne and Berlin. Two company towns sought to bring Fordism to city scale: a rubber plantation called Fordlandia was attempted on the Amazonian Tapajós River, and Nizhny-Novgorod, the first-ever Soviet-designed city, was constructed in tandem with the Fordist NAZ factory (Nizhegorodsky Avtomobilny Zavod) on the River Volga.

Ford is most commonly associated with rigid hierarchy and extractive capital, a litany of modern violations against both environment and man. But Fordism also elicited a radical twentieth century red refrain. Lenin, Trotsky, and Stalin alike realized that Ford had unleashed productive forces that could mobilize a new communist nation. His instruments could provide the capacity to rapidly urbanize a peasant population and support utopian state realization. The Soviet automotive industry would bypass the politics of consumption, producing tractors and trucks to empower a planned economy. Mobility machines were produced not for individual transit, but for distributing resources across an expansive terrain.

In *Americanism and Fordism*, Gramsci famously reviewed Fordist production as a practical step on the path towards socialist autonomy; workers could afford to buy and own the products they made. Factory labor expanded technical capacity and class consciousness, but Gramsci

saw that mass production would meet resistance in many cultural domains.

Alexandre Kojève, in "Capitalism and Socialism: Marx is God, and Ford is his Prophet," also lauded the Fordist project for its subversive dimensions. Kojève celebrated Fordism for its capacity to actualize a full employment program, rendering socialist distribution schemes of predictive planning null and void. Kojève argued that Ford had responded to the capitalist tensions Marx diagnosed by sharing profits with workers. By implementing a peaceful response to the internal contradictions of capitalism, Fordism delayed, if not denied, the social revolution Marx had presaged. Fordist designers and technologists "behaved like Marxists without believing in Marx." According to Kojève, the only political project of the twentieth century that performed like modern socialism was Fordism.

When accused of international collusion in the period preceding the Cold War, Ford argued that business objectives surpassed political agendas. In more philosophical contexts, Ford portended a ubiquitous model of standards and rational provisions. Ford imagined a global production system in which national industry fulfills all basic economic need supply, enabling advanced international specialization and co-operative exchange. "When every nation learns to produce things which every nation can produce then we shall be able to get down to a basis of serving each other along those special lines in which there is no competition."⁸

A Soviet entourage toured the Rouge factory soon after it opened, gleaning insights unburdened by capitalist ideology. Wilbert Austin of the Austin Company, the most reputable US automotive factory contractor of the day, noted after their visit: "I have met many members of European delegations over here to try to get the secret of our industrial supremacy; but none that I have ever met grasped the idea so quickly or so completely as the Russians. They have no industrial traditions to bind them. They are starting fresh, building up with nothing to tear down."⁹

The 1929 contract between the Soviet company Autostroy and Ford Motors supplied the complete knowledge and infrastructure for developing Fordist plants in Moscow and Nizhny Novgorod. From Ford, the contract ensured technical assistance, maintenance, and supervision; from the Soviets, a guaranteed yearly purchase of Ford automobiles, tractors, trucks, and parts. The Nizhny Novgorod project not only provided an income stream during the US depression, but it also satisfied Ford's obsession with eliminating waste at all scales. Soviet assembly lines were constructed using outmoded Model A car and AA truck production equipment. Vehicle designs were adapted for the Russian context, prepared to handle collective labor, heavy resources, and brutal weather.

In Soviet Russia, as in the US, Ford took on mythical status. Ford was lauded as a purveyor of progress and social liberation. What was originally built on the principle of individual ownership and personal aspiration became a socialist instrument for population mobilization, productive accumulation, and equitable distribution. The Fordist auto-body prospect was converted from a private possession to a collective engine.

Nizhny Novgorod was the first official city of the USSR, intended to be the ultimate manifestation of Fordist practicality and Soviet rationality. Designs were produced via student and international competition. Plans were grand, sweeping, comprehensive. The city included “centralized schooling, clubs, hospitals, bakeries, kitchens, laundries, and other services for its 18,000 employees in communal blocks of 300 residences each—a symmetrical phalanstery on a modern industrial site.”¹⁰ Facilities were devised with the promise of ease and efficiency, contrived to restructure relations between family and factory, life and learning, self and state.

As often goes with master plans, Nizhny Novgorod’s divinations were confronted by deleterious compromise. The designs over-prescribed the parametrics of its architectural and urban program, installing efficiencies at every step to the point of ineffectuality. Like so many other failures to interpret Fordist principles, human activity was irrationally rationalized, predicted, and planned based on pure abstractions. Functionalism proves fickle when priorities submit to stylistic and symbolic forms. Cultural reticence was also at issue, with the aspiration of ubiquitous technological conveniences retreating to relativism in one domain and corner-cutting in another. “Elevators were ruled out, both because of the extra expense and because of the frankly acknowledged fact that the Russian people are still distrustful of such contrivances.”¹¹

Platforms often pose a logistical puzzle in sequencing primary operations, and the construction of Nizhny Novgorod was no exception. Just as platforms beget platforms, platforms also require platforms to produce them. Transport requires transport. Storage facilities require storage facilities to store the materials for building them. Building housing requires housing for workers to build it. Incoming materials were piled haphazardly by the Volga, high quality materials mixed in with scrap and refuse, all susceptible to the whims of snow and thaw. Occupants moved into incomplete housing projects. Electrification promises never came to fruition. The structuralist dreams of post-nuclear communes and shared kitchens dissipated within the first rituals of arrival. Interim conditions quickly calcify into code.

Once operational, platforms produce their own momentum. The factory at Nizhny Novgorod (renamed GAZ, or “Gorky” in 1932) did

get up and running, but it never reached the grand production quantity or quality originally imagined. One setback was education: a labor force used to rudimentary farming tools didn’t know techniques for interacting with machines. A book-length manual doesn’t teach workers how to hammer a nail.¹² Most setbacks resided in attempts at synchronization. It was often unclear how and when new supplies would arrive, leading to continuous stops and starts on the line. Without personal watches or clocks on their walls, Soviet workers never fully habituated to round-the-clock production time. Decision-making by committee was slow and elusive. A 1930 letter from Austin reads: “Yesterday according to official notice, Daylight Savings Time came to an end ... Today comes word from Moscow that this is a mistake and the time should have been left as it was ... It will probably take a Soviet committee some time to decide what time is the right time to change the time, and what time it should be changed to, etc. Meanwhile any time is the right time.”¹³

There were of course unexpected subtle infiltrations and ingenious modifications, the kind that come with reverse engineering a platform already in play. In Detroit the assembly process was contrived through years of modifications, tweaks, and adjustments. Here, the challenge was connecting existing protocols with new social know-how in the shortest amount of time. Before the company’s official arrival in Nizhny Novgorod, some Soviet technophiles had already begun pirating and hacking Ford tractors and their parts. “*Priviazka*, directly translated, is a tightening, or binding; in the Soviet architectural context it came to mean the modification of a standardized design to meet specific site conditions.”¹⁴ Mass production too required tolerance to imperfections.

GAZ operated according to proletariat principles, which meant unpredictable bouts of worker defection and dedication. State proclamations of collective interest without adequate provisions regularly gave way to pronouncements of autonomous assembly. There were regular uprisings and strikes calling for better conditions. Disaffected unionists and communists in the US moved to Russia upon being fired from their posts in Detroit, spurning agitation. Other workers would stay committed to the cause, even if their paycheck was weeks late. Without a clear management hierarchy aside from inconsistent Moscow orders, it became increasingly complicated to know with whom to communicate when things went awry.

Kojève was right in that political theories in practice perform perverse affiliations. But his prophetic review overlooked the ways that the internal contradictions didn’t ultimately culminate in peaceful resolutions. In Detroit, what was once the ultimate source for high wages and incentivized middle-class participation failed to keep up with inflation, and Fordist ideals of middle-class mobilization reached progressive stagnation.

Worker claims of shared wealth and fair standards eventually came to blows. United Auto Workers activists Victor and Walter Reuther, Americans who had spent time at the Ford factory in Russia, came back and helped to organize union rebellions in Detroit. When the Communist hunger marchers stormed the Rouge, the visiting Russian engineers were protected, safe inside the plant. “You are stoning your own fellows up there,” manager Henry Bennett told protesters.¹⁵

The case of Ford in Soviet Russia shows the persistence and precarity of legacy systems; how, by reform or revolution, perversion or conversion, a capital tool can become a social instrument, if deployed with radical intention and patient infiltration. Precedence can be tyrannical; an alibi for refusing to attempt again a previously failed endeavor. It can also be prototypical; connecting vision and capacity with exceptional conditions. As Ford said, “You can sit and look at the fading out of all that made the old era, and you can wail about the calamity to come, or you can stand up and watch the new era come in, looking for your place in its ranks.”¹⁶

This Fordian case provides an example of platform appropriation and reconfiguration, the potential for working with current or outmoded systems rather than starting anew. Lenin was a fan of Ford because he found a way to mobilize productive forces, combining centralization and decentralization, horizontal and vertical integration. Technologies by themselves offer no panacea. Co-opting platform technologies as public utilities presents a plausible starting premise for social redesign.

- 1 Stafford Beer famously coined the term “The purpose of a system is what it does (POSIWID)” during an address to the University of Valladolid, Spain, October 2001, while Benjamin H. Bratton has more recently written “Platforms are what Platforms Do.” Benjamin H. Bratton, *The Stack: On Software and Sovereignty* (Cambridge: MIT Press, 2015), 41.
- 2 John Urry, *Mobilities* (Cambridge: Polity Press, 2013), 8.
- 3 Buckminster Fuller, *Critical Path* (New York: St. Martins Press, 1981), 85.
- 4 Benedict Singleton, “The Long Con,” in *When Site Lost the Plot*, ed. Robin Mackay (Falmouth, United Kingdom: Urbanomic, 2015), 107.
- 5 Marc Steinberg, *The Platform Economy: How Japan Transformed the Consumer Internet* (Minneapolis: University of Minnesota Press, 2019), 85.
- 6 E. B. White, “Farewell my Lovely,” *The New Yorker*, May 16, 1936.
- 7 John Urry, “The ‘System’ of Automobility,” *Theory, Culture & Society* 21, no. 4–5 (October 2004): 25–39.
- 8 Mira Wilkins and Frank Ernest Hill, *American Business Abroad: Ford on Six Continents* (Cambridge: Cambridge University Press, 2011), 211.
- 9 Sidney Harcave, *Russia, A History* (Chicago: Lippincott, 1956), 551.
- 10 Richard Stites, *Revolutionary Dreams: Utopian Vision and Experimental Life in the Russian Revolution* (New York: Oxford University Press, 1992), 139.
- 11 Richard Cartwright Austin, *Building Utopia: Erecting Russia’s First Modern City* (Kent: Kent State University Press, 2017), 53.
- 12 Thanks to Egor Kraft for sharing the anecdote about a Soviet-made, hundred page Fordist manual on how to hammer a nail.
- 13 Austin, *Building Utopia*, 92.
- 14 Christina E. Crawford, “Soviet Planning Praxis: From Tractors to Territory,” *Centerpiece* 29, no. 2 (Spring 2015).
- 15 Austin, *Building Utopia*, 23.
- 16 Wilkins and Ernest Hill, *American Business Abroad*, 211.