The Kafkaization of the Economy

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I write while waiting for my App Store reviewer to deny my app's Auto-Renewing Subscription for the 17th time in 22 days. I'm right, he's wrong; my monetization strategy is clearly kosher.[1] It doesn't matter, though. The only way out is to get him to click "Approve." It's been 22 days.

It took only 2 days to build the app.

> **Austen Allred** ✓ 🔴
> @Austen
>
> The difference between something being 100% automated and 99% automated is outrageously large
>
> 11:23 AM · Jan 23, 2022

When a task is "99% automated," it is actually 0% automated, now consisting solely of whatever subtask used to be 1% of it. This makes it 100x as valuable to spend time doing that task.

The chief antagonist of system optimization is **the tyranny of the weakest link**. In cumulative-yield pipelines like marketing funnels (where steps' yields are multiplied), *one* zero zeroes out the entire process, but honing any step to absolute perfection has essentially irrelevant return. In cumulative-cost pipelines like manufacturing[2] (where steps' costs are added), driving a cost to zero deletes it, and from then on has zero effect; but *one* ballooning input kills your margin.

To stay alive and optimize a system, you must run with your hair on fire from one bottleneck to another, spewing out one quick and mediocre solution after another until pressure moves on. There is *always* a bottleneck; you cannot permanently win. And if you fail, even *once*, at *any* random challenge, the ANDs collapse into FALSE. You lose. Game over. Better luck next time!

This process is spiritually degrading. It punishes you for ever honing anything to perfection. One threat, then another, rushes towards you, of death: if you escape, your reward is the next; no credit, no thanks, no pause. Just another mouthful of glass. A different corner of the abyss.

Let's say that in the halcyon days of old, designing and coding an app took 80% of the time, and getting it past the otherwise-unemployable authoritarians at the App Store a mere 20%.

Review just took me 90% of the time. Imagine, in the future, AI drives build time down to 0%: all you have to do is describe it in a sentence and it's ready to stand in line before Saint Peter.

What would time cost to app launch actually look like, over time? Here it is, to accurate scale:

- 🔵 Review
- 🟢 Building

Today → 100% AI

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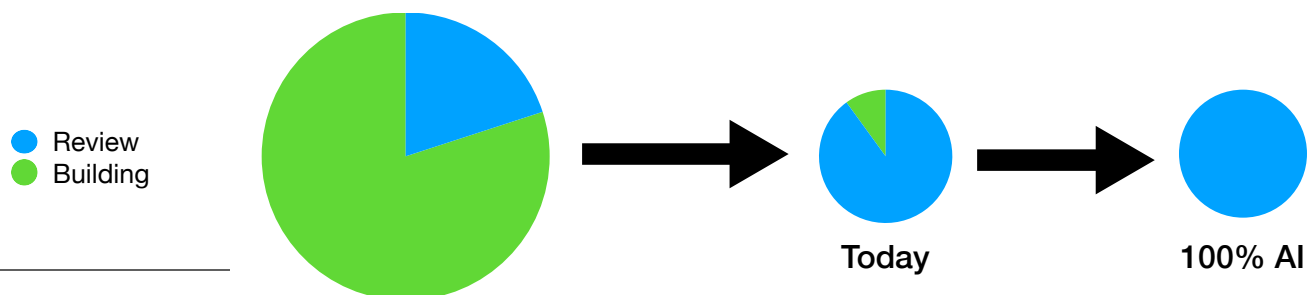
[1] contact me for details

[2] of course, manufacturing is also (& often more aptly) modelable as a cumulative-yield pipeline, but go with me

What it means is that we're pretty much *already at* the level of AI that would be transformative, because it is *App Store review* that is limiting the production and release rate of new apps, instead of any meaningful technical difficulties. Snap my fingers, have app? Only 10% faster.[3]

This is what perfect AI will look like in every regulated sector of the economy. In the limit, as physical limits to technological achievement evaporate, progress is rate-limited by paperwork.

The funny thing? **This has already happened**, *everywhere in the economy except software.*

Snap your fingers and have a perfect nuclear reactor design? Then snap them again and have a fleet of AI-powered robots who can build it overnight for free? Have fun waiting 42 months (to get the design approved) + 30 months (to get a license) + 36 months (for a construction permit) + 36 months (for work authorization) = *over 12 years* before your reactor can boot up![4] (But only if you first pay a $500 million invoice for the diligent paperwork-reviewers' attention!)

This chart on the right has been going around for quite a while. It shows that since 2000, some things have gotten cheaper (toys, TVs, software), but many have gotten more expensive (medicine, college, childcare, food, housing). What is the difference between these? Has America forgotten how to manufacture drugs, or build houses, or make food?!

Obviously not. The difference is that technology keeps advancing, getting capabilities in every industry constantly ever-closer to "snap fingers get thing" level. So what drives costs? Paperwork!

Hospitals are extremely regulated, and need to submit paperwork to get every purchase individually approved. College degrees are arbitrarily required for many jobs (turns out patient compliance with dumb paperwork has economic value!). Housing production is notoriously shackled by arbitrary rules and approvals, and it's often *illegal* to build what consumers want where they want it. The list goes on, and on. We aren't short on housing, or food, or medicine, or knowledge, or energy because we've lost the know-how. We have shortages because our processes are all paperwork-limited, the economy has already squeezed all juice in its power, and only inflexible paperwork remains.

This has not historically been the case with software or electronics or toys. It will be, soon, as the ease of software creation accelerates to the point where even the minor approval burdens posed by things like App Store review become prohibitively limiting to new software launches.

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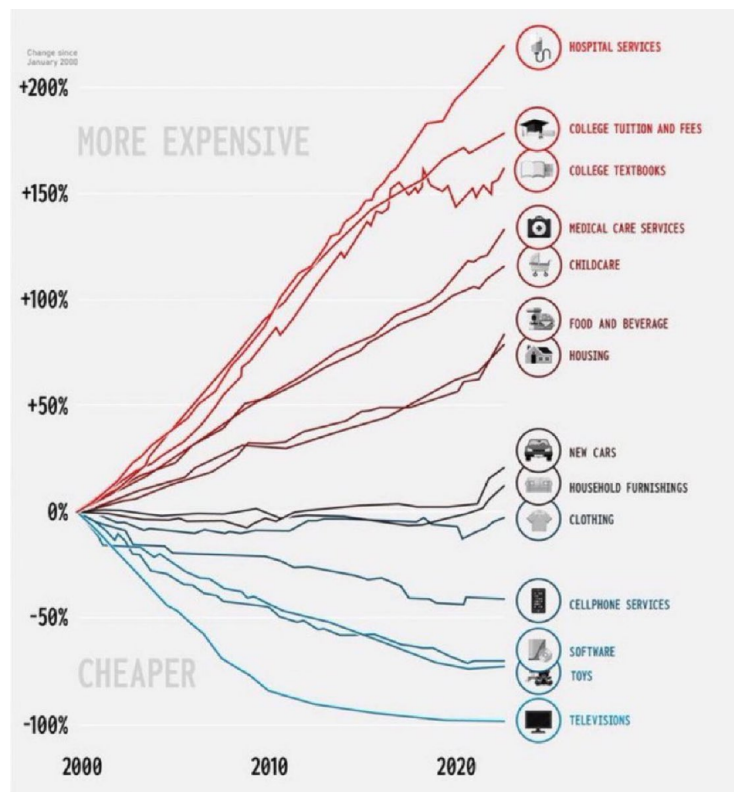
[3] obviously AI will help with the review-getting process too; but even then, you're limited by how fast the reviewers (1) respond to your requests and (2) read the guidelines correctly, and if they irrationally disagree you're stuck

[4] https://www.nrc.gov/about-nrc/generic-schedules.html. Assuming part 52 LWR, and no amendments required. I'm probably wrong about all the steps that are necessary and/or duplicated and/or parallelizable, but you get it. Even if it was literally design approval + construction permit, that's 6.5. *You can't get permission in <5 years!*

So then: as technology makes object-level tasks faster, fixed meta-level costs (mostly related to paperwork) take up a larger proportion of the total cost of production. This has two effects.

First, as technology gets way better, **a larger % of the economy becomes "paperwork,"** because—as it is now *increasingly* the bottleneck—the returns to doing paperwork *explode!*

This is a little unintuitive. Let's visualize it by narrowing in on a hypothetical housing example:

Imagine, in a less-technological past or present, that it took 99,000 man-hours to build a house, and only 1,000 to get it permitted. 1% of the economy, simplifying, was paperwork! But then someone invented a manufacturing process, or some robots, or some technology that brought a 99x improvement in construction: it now takes 1,000 hours to build. Guess what? Houses are a *lot* cheaper, but a staggering *50%* of their man-hour cost is paperwork. In a dream-world scenario where it takes you 1 hour to say "build a house" and approve some pictures before your swarm of nano-bots go and construct it, house cost is 99.9% paperwork.

The better technology gets, the less time we have to spend waiting on it, and therefore *by definition* the more *proportional* time we must spend asking for permission, or (more relevantly, as the "asking" time will also be whittled down) *waiting for* authorities to *give us* permission.

This new paperwork-doing-time is incredibly valuable. In the third scenario, here, 1000 hours of paperwork is *all it takes* to get a *house!* If some other sector of the economy still had a 99:1 building:paperwork ratio, "doing paperwork to get permission for robots to insta-build houses" now produces 100x more[5] value-per-hour than either building or paperwork there, so it will steal labor; wages will stabilize onto house-paperwork-value, and the other thing will cost 100x more. Even if some industries don't technologize, labor flows into paperwork if *any* do.[6]

Second, within that paperwork, **more time will be spent on more "Kafkaesque" processes:** the processes (you know the ones!) that are most absurd, slow, unreasonable, even inhuman.

Why? It's simple. Sensible, fast, common-sense processes… are sensible, fast, and common-sense! They're easy. You do them and you're done. Only when you "get stuck" do you spend lots of time. Therefore, most of your time is spent "getting stuck." The defining feature of a Kafkaesque process is that it "sticks" you to an absurd degree: so these will fill the most time.

Concretely: if App Store review was a sensible process, it would have taken 5 minutes and I'd have moved on. It's taken three weeks for this in-compliance app, in a Kafkaesque horror show. This time delta is so huge that, inevitably, we cruise through simple paperwork until we get stuck on the monstrosities; and the bulk of effort is spent on unreasonably stupid issues.

Together with the first point: it is an *inevitable* result of the increasing efficiency of technology that we will spend more of our lives dealing with inhumanly absurd bureaucratic processes. In the limit, perhaps, economic life will resemble a nonstop Kafka book, as sensible or concrete activity is fully automated and instantly comes to be solved, leaving only irrational blockers.[7]

Third: as paperwork becomes limiting to the economy, **economic differences across jurisdictions are increasingly a direct function of the navigability of their regulatory regimes.** Costs will *equal* paperwork costs. If it takes half as long to get approval, a place does twice as much. If 10x as long, 10x less. **This is more important the more technology improves.** The fewer stupid rules a place has, the more it will be able to do. In the future more than ever!
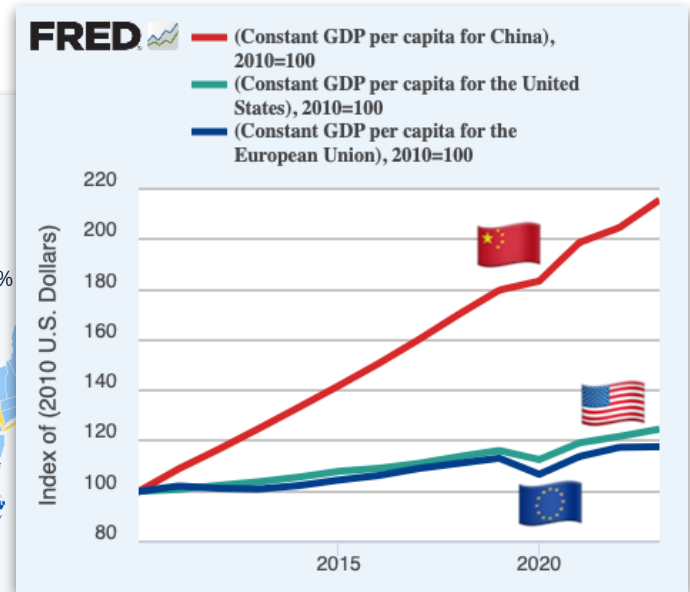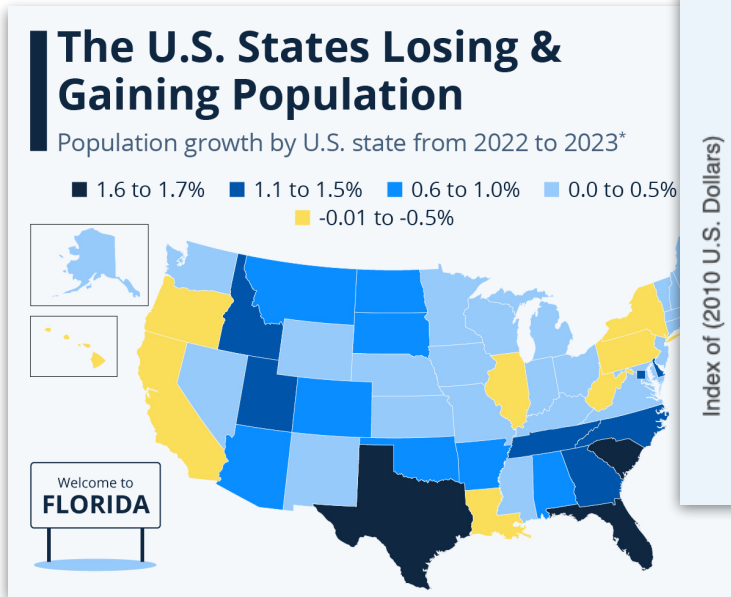
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[5] 100 * their value ratios before technological progress in house-building, whatever that used to be

[6] to the extent labor is fungible across industries and is capable of transitioning from building into paperwork

[7] I haven't read Kaczynski, but wouldn't be surprised if this was the same extrapolation he was unhappy about.

Herein lies the silver lining: **Darwin's laws will do their work.** Super-regulatory regimes will achieve proportionally less, be left behind, and die at the hands of the free. Kafkaesque bureaucracy is evolutionarily maladaptive in a technological word, *in the future more than ever!*[8]

You can see where I'm going with this, right?

The U.S. States Losing & Gaining Population

Population growth by U.S. state from 2022 to 2023*

■ 1.6 to 1.7% ■ 1.1 to 1.5% ■ 0.6 to 1.0% ■ 0.0 to 0.5%
■ -0.01 to -0.5%

Welcome to **FLORIDA**

FRED — (Constant GDP per capita for China), 2010=100
— (Constant GDP per capita for the United States), 2010=100
— (Constant GDP per capita for the European Union), 2010=100

Texas, the global nerve center of the fossil fuel industry, deploys more solar than California, the global nerve center of complaining about fossil fuels and advocating their replacement. Why? It's not because they care more. Lol. It's because you're *allowed to build things there!*

China, global nerve center of "not letting paperwork get in the way of actually building things," has doubled economic output in under 15 years, and is well on their way to leaving the US and our slightly-stupider older sibling Europe in their economic (and therefore military!) dust.

Remember how it would take 12 years to get permission to build a nuclear reactor in the US even with an omniscient AI and infinite fleets of automated workers? China *builds* them in 5.[9] Wow, what revolutionary tech does *that?!* Their innovative design is called the "CAP1000," which literally stands for "Chinese AP1000." The AP1000 they copied? An American design. Which was first built in China. 5 years before the first one in America. Really makes you think!

The limiters that software is about to hit aren't new. They're *at least* 50 years old, during which time our centuries-long exponential trend in economic progress has essentially been paused. A crown lies in the gutter, for the states who take on Kafka's mantle and scuttle forth to battle.

Who'll it be? Probably China > red States > blue States > Europe. I'd guess. On Earth, that is.

But also… there aren't *any* rules in Space! And there's no end to urgent problems to solve. And there'll be a lot of technological capability. And smart people. And desire to wield power, to defend their umbilical sovereignty. Paperwork will be a luxury, won't it, and only come late?

Even for regulatory reasons, It wouldn't shock me if The Expanse is partially right, and future Humanity is ruled by a race of wealthy Martian technologists, all with Chinese-Texan accents.

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[8] Note that even in the best regimes most time will be spent on Kafkaesque bureaucracy. There will just be less of it required in those, so each Kafka-protagonist-hour will unlock more real action, so the economy will boom.

[9] https://www.world-nuclear-news.org/articles/containment-vessel-heads-in-place-at-two-cap1000-units