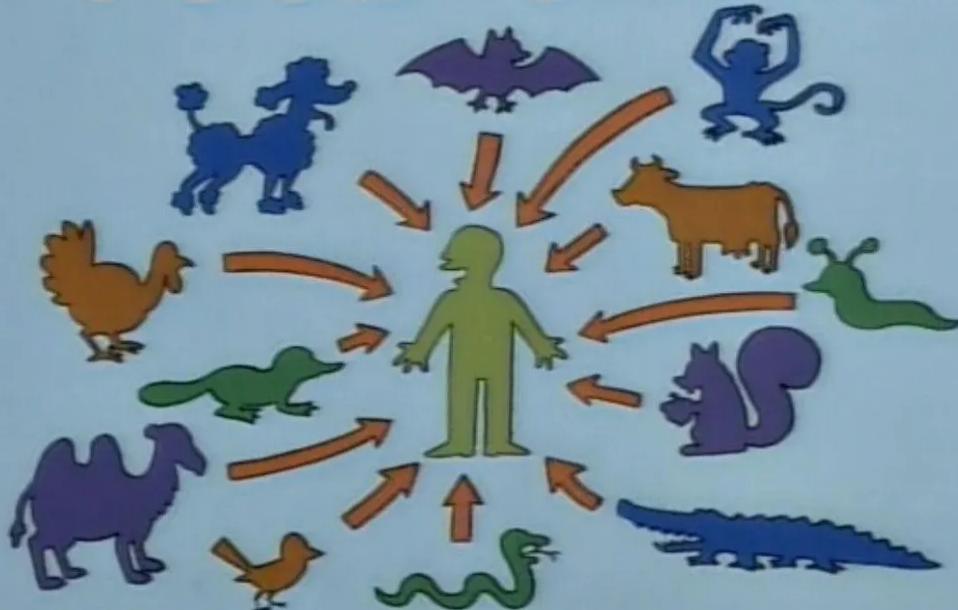
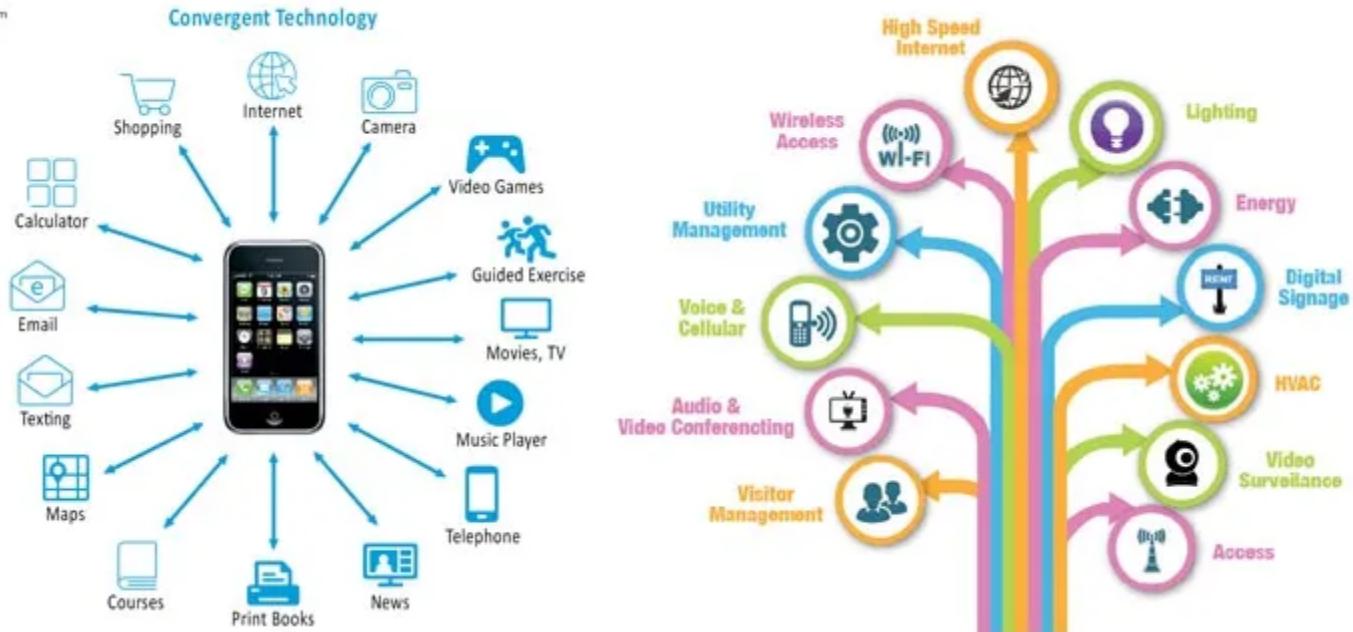


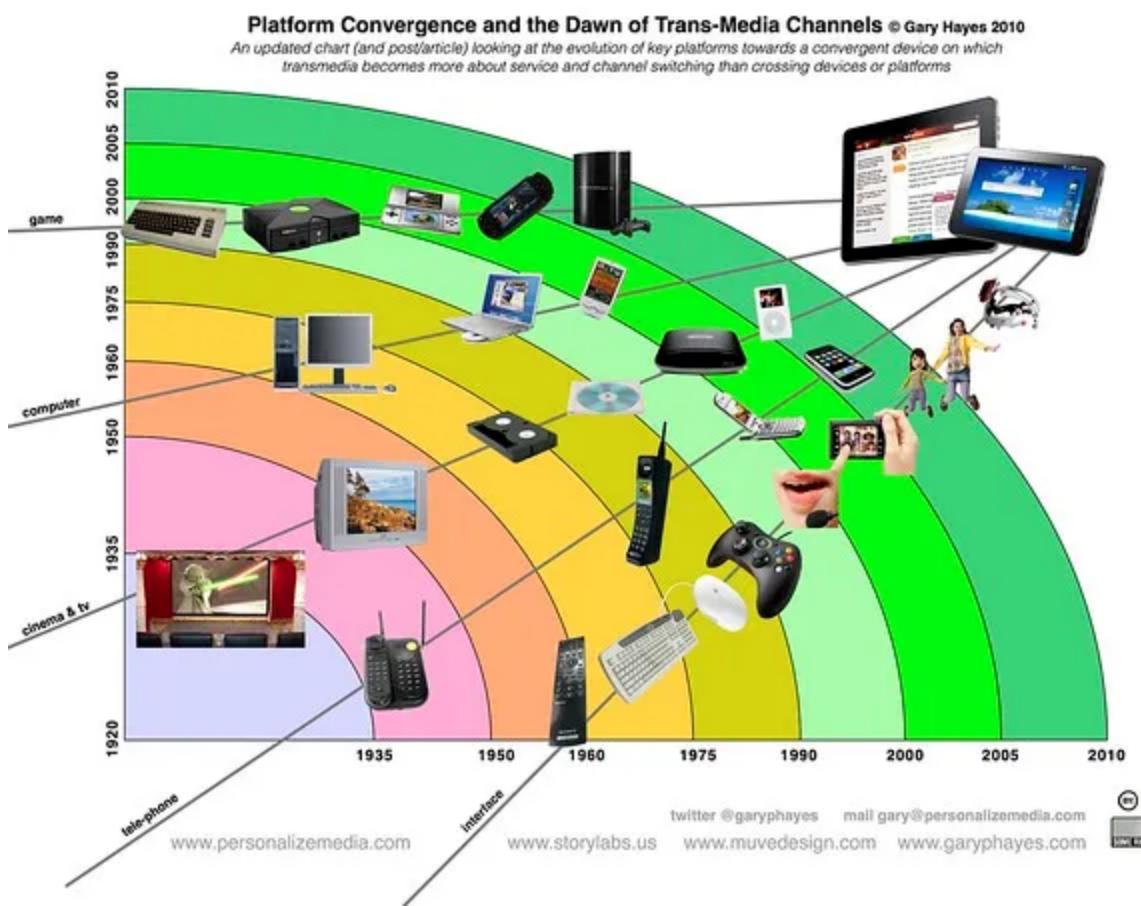
FOOD CHAIN



The modern phone today is an omnivorous apex predator of apex predators.

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Souce: <https://www.thecanadianencyclopedia.ca/en/article/media-convergence>

Nicholas Negroponte may have had the wrong product in mind when he set out to develop the OLPC. The OLPC laptop was certainly influential, in that it inspired many developers to bridge access to technology, but it had some major flaws, as has already been covered in the [press](#) and in books like “[The Charisma Machine](#),” by Morgan Ames.

“Ames reveals that the laptops were not only frustrating to use, easy to break, and hard to repair, they were designed for “technically precocious boys”—idealized younger versions of the developers themselves—rather than the children who were actually using them.”

In Stanislaw Lem’s *Solaris* 2002 adaptation by Stephen Soderbergh, there is a line,

“We’re proud of ourselves.
But when you think about it,
our enthusiasm’s a sham.
We don’t want other worlds. We want mirrors.”

If you were confused by what I meant by Golden Records, *Solaris* shows that space exploration is more like space colonization. When a product is sold without any consideration to its users, it becomes a projection of ones own desires, as seen in the OLPC. It’s wrong to assume that everyone is precocious, but it’s also wrong to assume that no one is precocious.

Viewed in this context, one could argue that the failures of the OLPC in the 2006-2012 era should not be reason to abandon the concept/goals of an OLPC- that is, a ubiquitous, affordable, and durable communication device to promote literacy, one remains out of reach for many. It is also within the context of datacenters and AI in 2022 being prioritized and given less scrutiny than abandoned digital access programs that OLPC “Charisma Machines” should be weighed against. That is, in 2022, industrialized countries have little opposition to datacenters consuming megawatts to become our personal AI chat assistants, but few startups are attempting to bring revolutionary hard-tech like solar autarkic phones and laptops to the developing world.

From this [article](#):

“Okay, so Plato's *Phaedrus* is a very important dialogue. He said the exact same thing that you are about to say, but not with machines—with writing. He said, "What? You are going to put all the information we have into a library?" So, you have a library—say, the Library of Alexandria—and the totality of human knowledge is encoded here, and so we don't need professors anymore. Everyone is becoming unemployed. It's terrible! [*laughs*]. You know, there were more than 3,000 people in Paris in the 18th century whose job it was to bear water to people. Then, they invented plumbing, and ah! They lost their jobs! It's terrible!”

(The interviewee was making a joke in the last sentence. He was stating that disruptive technology should be a cause for concern, or Luddism.) Hypothetically, if mobile phones became decoupled from multimedia, and there was less need for telecommunication infrastructure maintenance economy, the jobs lost to disruptive technologies, like AI, would most likely find other sources of income, and innovation would probably be another byproduct. Thus, while the promotion of disruptive decentralized infrastructure may lead to some reduction in telecommunications, the industry itself has repeatedly seen transformations across two centuries, from the telegraph, to copper lines, to VOIP. Thus telecommunications hardware has evolved in many more ways than just bandwidth speeds- it could be argued that maximizing access to decentralized internet could help improve developing nations more than other types of vertical investments. Projects like the Civilian Conservation Corps in the 1930s were responsible for the creation of thousands of jobs, while constructing state parks, roadways, and public infrastructure. The limitation of employment due to fear of disruptive technology is limited more by governance than any specific technology. In response to the fear of AI appearing to replace certain types of service industry professions, these types of programs could see rekindled interest. During the 2008 recession, the types of blog posts that I read had mentioned the CCC on more than one occasion.

Today, desktop PC and laptop usage is a minority of electronic communication devices. By comparison, a recent [estimate](#) places 91% of the world’s population as an owner of a cell phone

(this includes both smartphones and feature phones). If one only counted smartphones (devices with more than a handful of apps like Snake, Calender, Contacts, and a calculator), the number decreases to 83.32%.



6.64Billion

smartphone users in the world today



83.32%

of people have smartphones today

According to Statista, the **current number of smartphone users in the world today is 6.648 billion**, meaning **83.32% of the world's population owns a smartphone**. This figure is up considerably from 2016, when there were only 3.668 billion users, 49.40% of that year's global population.

How Many People Have Mobile Phones In The World?



7.26Billion

mobile phone users in the world today



91.00%

of people own mobile phones today

In 2022, including both smart and feature phones, **the current number of mobile phone users is 7.26 billion**, which makes **91.00% of people in the world cell phone owners**. Feature phones are the basic cell phones without apps and complex OS systems, more prominent in developing countries.

NUMBER OF MOBILE CONNECTIONS

The machines have officially taken over with almost 3.002 billion additional mobile connections than there are people – To put this in perspective, since the cell phones inception in 1973, mobile device connections have surpassed the number of people in the world, making it the fastest-growing human-made technology phenomenon ever.



10.98Billion

IoT cellular connections



7.97Billion

current world population

According to GSMA real-time intelligence data, there are **now over 10.98 Billion mobile connections worldwide**, which surpasses the **current world population of 7.978 Billion** implied by UN digital analyst estimates. This data means there are **3.002 billion more mobile connections than people worldwide**.

Negroponte's words weren't the gentlest, either:

"And Negroponte was losing interest in hardware. After he outlined a dramatic (and ultimately metaphorical) plan to drop tablets out of helicopters, the OLPC Foundation distributed mass-

market Motorola Xoom tablets in two Ethiopian villages as a new experiment. In 2012, [it reported](#) that children had learned the alphabet within two weeks, and within five months, they had “hacked Android” — which referred to turning off software that disabled the camera. As Android phones and tablets became more sophisticated, [Negroponte abandoned](#) development of an OLPC solar-powered XO-3 [tablet](#). He joined the newly founded Global Literacy XPrize soon after, effectively putting OLPC behind him.”

From PC Mag link above, quoting Negroponte after an Open Mobile Summit on November 2, 2011, he doubled down: ““We will literally take tablets and drop them out of helicopters,” and return a year later to see if the effort was a success, Negroponte said. A new tablet design can withstand a 30-foot drop, and even be left out in the rain.

“When I say no people, I mean absolutely no people,” he added, when asked if he was serious. “When I say I drop out of the helicopters, I mean it... it's like a Coke bottle falling out of the sky,” he said, apparently referring to the [1982 movie, *The Gods Must Be Crazy*](#). In that movie, however, a bushman is convinced that the Coke bottle's embodiment of the concept of property is evil, and leaves his village to dispose of it.”

One of the points the narrator in the 1982 movie makes is that because there is only coke bottle, there is not enough to share, and it creates problems and conflict. But as mentioned above, 91% of the world owns a phone. Whether it is reliable is another issue, but one solar aims to address. The futurist or utopian belief of a [post-scarcity](#) economy, even in the face of an earth with dwindling resources, is a reaction to real or perceived [artificial scarcity](#).

According to a quote from earlier that year, in June 2011 at the Social Innovation Summit, OLPC News, Wayan Vota says,

“And yet he is still talking about dropping XO laptops from the sky. Just listen to him at the United Nations [Social Innovation Summit 2011](#) at around the 1 hour mark:

“So you've got a hundred and fifty to two hundred million kids [not going to first grade], and so here's the question: Can you, either literally or metaphorically, drop out of a helicopter, which is exactly what we plan to do, with tablets into village, where there is no school, but there's kids, at least eight to ten kids?

And then go back a year later - are they reading? And if the answer is yes, that would be transformational. Then people might pay more attention. And then it would apply to places where there are schools, so on and so forth.”

Thus, Negroponte may have corrected himself before the emphasis was placed on the metaphorical in the 2018 Verge's article, but he was at least open to the idea at sometime before the November PC Mag stating only the literal.

In any case, dropping anything out of a plane is not a great idea. A one time [Dumbo drop](#) should not be an expensive design feature if there are less impersonal delivery methods, but leaves too much of an impression that the machines are designed for surviving impact, rather than surviving its users. But while I'm on the topic, anything dropped from a plane or helicopter should have a parachute, or fall out like a swarm of biomimetic bats so as not to injure someone below. What if The OLPC was instead a One-Phone Per Person project? That is, each individual could receive a solar powered phone?

I think of that phrase:

Like the old saying, "Give a person a fish, you'll feed him for a day. Teach a man to fish, and you'll feed him for a lifetime. "

Give a person a laptop, in a rural village with no running electricity, and he'll run out of battery in a day. Give a person a solar powered phone, he'll never need a USB or Lightning charger again.

"Negroponte, who [delivered the very first TED talk](#) in 1984 and co-founded the MIT Media Lab in 1985, envisioned a program that would bridge both the access and usage divides. In a 2006 TED talk, he shared a personal anecdote from a remote village in Cambodia:

"...a village that has no electricity, no water, no television, no telephone, but has broadband Internet now. And these kids, their first English word is "Google" and they only know Skype. They've never heard of telephony. They just use Skype. And they go home at night—they've got a broadband connection in a hut that doesn't have electricity. The parents love it, because when they open up the laptops, it's the brightest light source in the house."

This ideal can be contrasted with the costs of maintaining a solar network- [in 2006](#):

“\$5,000 - 15KVa electricity generator

\$3,000 - VSAT dish

\$50 - WiFi access points

\$100 - electrical wiring of the classrooms

\$600 - solar panels

\$250 - gang charger

\$9,000”

Pardon my [M'waukeean](#) accent, but that's fizzed up, like soda!

By contrast, Solar Low Tech Magazine, as linked above (but [here again](#)) describes that the means to build a solar network not rest on expensive solar charging equipment. Once mass production of solar-autarkic [ASSPs](#) can be developed, the infrastructure to maintain a decentralized WAN would be significantly reduced. Instead of all internet bandwidth travelling through large centralized towers, a backup network dedicated just for vital communications could be installed in parallel wherever infrastructure can support it. An option to limit bandwidth to “essential” texts and minimum data packages could guarantee some form of a social safety net, in terms of access to job bulletins, marketplace negotiations, and other kinds of communications that would not necessarily require expensive cell towers to relay. A village that doesn't need a large cell tower might be able to install a small 200-400 watt solar panel with a battery capable of running a [community-shared](#), mutually distrustful, high throughput [router](#) capable of tens of thousand of SMS-like and [SIP](#) connections per day, using advanced QoS techniques that limits all non-essential internet use, and costing less than \$400 worth of equipment. A used 200watt solar panel can be had for less than \$100, while a LiFePO4 battery capable of running a router at 10-20watts for 24 hrs at 100 % utilization may run over \$100, while solar charge controllers and DC-based routers, or an inexpensive inverter should be the most basic unit of a wifi network. The goal here is low-tech: not low-tech in the Neanderthal sense (that would be an insult to Neanderthals), but high-tech in the relativistic emphasis on 2D GUIs with text-based communication over graphically accelerated, multimedia-centric operating systems. Thus 90's era communication should be a goal post that remains stable until resilient, autarkic infrastructure can be delivered for worldwide access. Then, and only then, should the goal posts be moved towards 3D and more graphically demanding hardware- Most people would prefer to have a feature phone over nothing at all, but surely there are some that would snub at the idea. I do not view this concept as a charity, but rather an opt-in platform, since it's likely many will continue to prefer to use battery-or outlet dependent devices.

Can the 91% of the world with a phone be considered a globalized cohort? Does the fact that 91% of the world owns a phone signify that humanity has some shared acceptance that technology is not some anti-traditional disruptive innovation? I don't really concern myself with those questions very often. I view solar phones not as a one-time [techno-solutionism](#), as some critics of a technological fix might suggest, but rather a de-emphasis on technologies that should have been transitioned away decades ago, but for [various](#) reasons- political, economic, or [otherwise](#), were not.

“The technological fix is the idea that all problems can find solutions in better and new technologies. It now is used as a dismissive phrase to describe cheap, quick fixes by using

inappropriate technologies; these fixes often create more problems than they solve, or give people a sense that they have solved the problem.[\[3\]](#)"

In the past, research funding for projects like the OLPC seemed to flow much more freely. Would a project like this be granted funding today, if MIT or some other organization had a 2nd chance? Why should a new generation of idealists who grew up with solar calculators be denied the chance to one-up a flawed plan that relied on only on 2005 era transistors? When the exascale computers at national labs were planned years in [advance](#), more than 10 years [ago](#), claiming a 20MW TDP, they were done with consultation with the leading foundries. The OLPC used what was currently available. Thus, the MIT approach looks Quixotic in retrospect (though admirable, as Don Quixote said he preferred to ride on a donkey instead of horse to remain lower to the height of people in *Man of La Mancha* [\(1972\)](#), obviously to keep an ear to the ground, and the will of his constituents). Thus, I take the exascale approach towards solar powered computers- the long view. The actual figure of 20MW is arbitrary, and not being compared for the sake of consumption, but the fact that some projects announce a TDP goal at all. This design consideration is equally crucial for philanthropic or community funded initiatives. Anything less than setting a TDP would appear to support [vested](#) interests. If the OLPC continued their development and licensed AMD's Geode on 32nm at reduced speed (200mhz, with a low-ram OS), would they still have all the issues with charging the devices on 100% solar in say 2015? Probably not. But they'd be a lot closer to arriving there had they stayed the course. Now it seems politically incorrect to renew interest in it. And I seek to find out to what extent.

It's not all about "full system efficiency"-some components need to be efficient- MIPS/joule for example- while others, such as energy harvesting, are relativistic. An internal combustion engine is 34% efficient. A generator/turbine, likewise may be as well. A solar panel, on the other hand, may be 15%, but energy independence is priceless. Let consumers decide.

I think what people seem to forget is, that before homes were equipped the 1900s with electricity and [incandescent](#), the only people who could read past dusk were those who had a large stockpile of candles. I remember reading this article from [2010](#), just over 12 years ago, where small solar panels +LEDs and a small battery, essentially extended the reading time of villagers far from the city or utility grids. There is still a large part of the world, 100 years later, that is living in an almost pre-Victorian time. And many more who may have acquired a cell phone at some point, but are unable to charge it or use it frequently, because they do not live near reliable

power. This is because with all the technology and foundries available to chip designers, none of them are developing a product that accomplish basic communications while making use of the other side of Moore's Law- the lower power to accomplish those tasks, so low, that it does not require the same size battery.

"And, one of the things I've always found is that you've got to start with the customer experience and work backwards for the technology. You can't start with the technology and try to figure out where you're going to try to sell it." - Steve Jobs

At the moment of PARC's founding, computers were viewed much differently from the way they are now. They were exasperatingly difficult to use, the tools of a cult of professional engineers and designers who seemed to take a perverse pride in making them as obscure and intimidating as the oracles of ancient Greece. (This was, after all, exactly what gave those same engineers and designers their special status.)

The scientists of PARC changed all that. They took it as their credo that the computer must serve the user rather than the other way around. That it must be easy and intuitive to operate. That it must communicate with the user in human terms and on a human scale, even if at supernatural speeds. They were determined to

These principles were rehearsed through the three generations of Psion operating systems leading up to the creation of EPOC and eventually of Symbian OS. But they were driven also by a product vision. The company was driven by the vision of creating products aimed squarely at ordinary users, which would entice them and charm them and become indispensable pocket companions.

Charles Davies:

We were building products. We were working from an idea of the user experience that we wanted. So we didn't just do pre-emptive multitasking because we thought we wanted to do an operating system and that was the fun thing to do, although there was that element to it too, if we're being honest. But we had a vision that you shouldn't have to wait for boot up, that this would be an instantly available, instant-on device and one where you didn't have to exit one application before you could run another one, because that wasn't an appropriate user experience for a handheld device.

We also thought that multitasking was a good thing for writing robust software. We had this ethic of robustness, that the product didn't go wrong and that you didn't have to be a techie to use it. Because in those days you know, I remember the first 5 MB hard disk we bought for £6000. £6000! And you went on a training course to learn how to use it! And that was not the vision of the product that we had. We had a vision of a product used by somebody who wasn't stupid, but who wasn't going to read the manual, a device where the operating system did the work for you rather than the other way around.

So it was based from the user experience backwards; the technology was in support of the user experience. That was in the bones of the product vision. We didn't think of ourselves as producing an operating system and an application suite. We thought of ourselves as producing a product that would sell. It would walk off the shelves because people wanted it and it would be hard to imitate because we'd put some good technology in it.

With hindsight, the prehistory of the company looks very much like a dress rehearsal for a category of device which did not then exist – the mobile phone.

Starting with the customer experience in the rural area:

BEYOND FOSSIL FUELS

African Huts Far From the Grid Glow With Renewable Power

[Give this article](#)

Thanks to this solar panel, Sara Ruto no longer takes a three-hour taxi ride to a town with electricity to recharge her cellphone. Ed Ou/The New York Times

By [Elisabeth Rosenthal](#)

Dec. 24, 2010

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KIPTUSURI, Kenya — For Sara Ruto, the desperate yearning for electricity began last year with the purchase of her first cellphone, a lifeline for receiving small money transfers, contacting relatives in the city or checking chicken prices at the nearest market.

Charging the phone was no simple matter in this farming village far from Kenya's electric grid.

Every week, Ms. Ruto walked two miles to hire a ~~tolerated by certain institutions or individuals (e.g. hospitals, emergency services), those with BiPAP machines.~~ Therefore, those usually seek additional backup power solutions, such as generators (if afforded by the individual).

The concept of a solar powered phone or computer is rooted partly in the idea that an energy grid is any of the three: a) non-existent/unavailable b) unreliable/susceptible to damage and c) available and reliable, but a high/singular dependence on it creating a possible future risk/high load. Therefore, it adopts the zero-trust model of computer security, by not assuming the grid is available and reliable. It does not assume the energy is accessible- it may opt for a dual-charging system-USB and solar panels, at a higher premium of a bill of materials. It could also rely just on solar power to lower the cost of materials, or some other energy source.

3.1 Design Goals and Architecture

Architecture is goal driven. The architecture of a system is the vehicle through which its design goals are realized. Even systems with relatively little formal architecture, such as Unix,¹ evolve according to more or less well-understood principles, to meet more or less well-understood goals. And while not all systems are ‘architected’, all systems have an architecture.

Symbian OS follows a small number of strong design principles. Many of these principles evolved as responses to the product ethos that was dominant when the system was first being designed.² That ethos can be summarized in a few simple rules.

- User data is sacred.
- User time is precious.
- All resources are scarce.

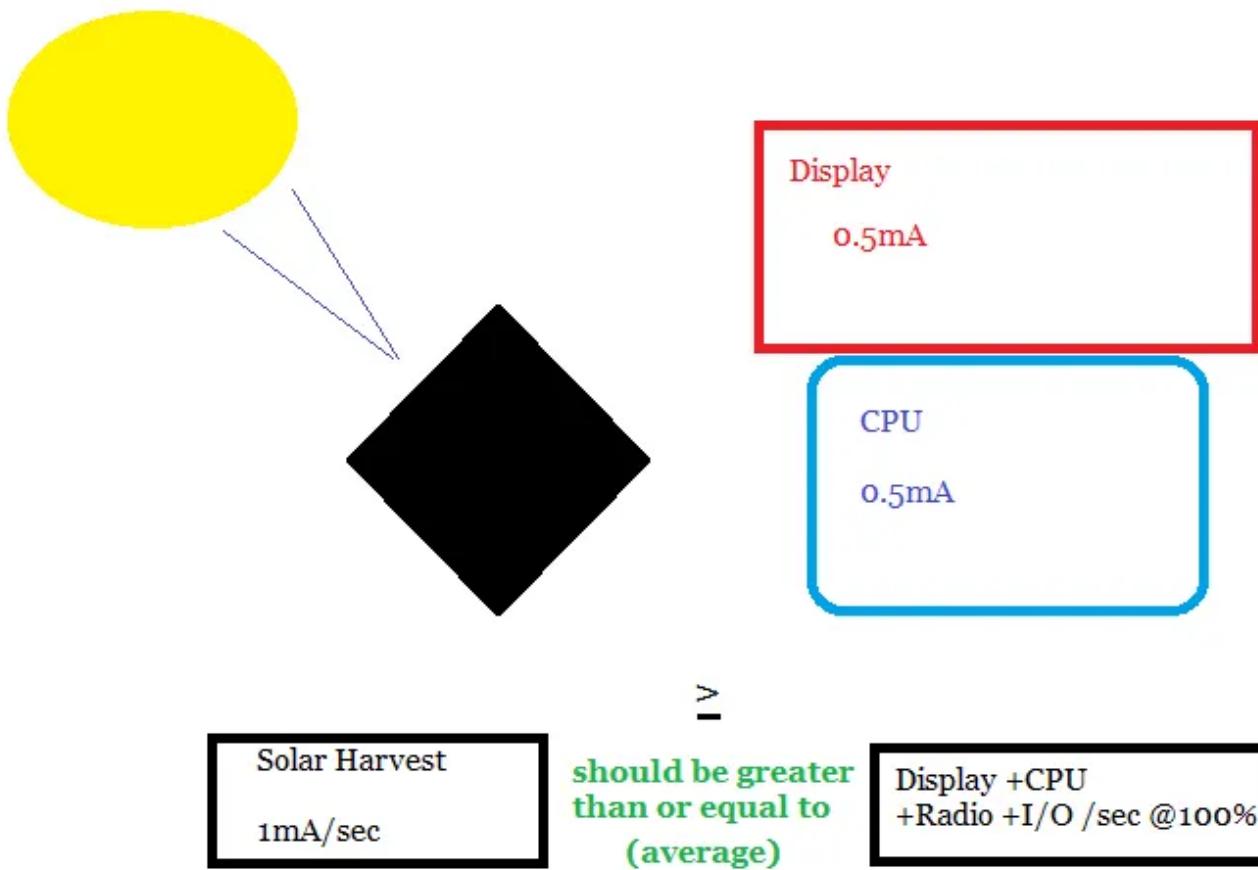
And perhaps this one too, ‘while beauty is in the eye of the beholder, elegance springs from deep within a system’.

In Symbian OS, that mantra is taken seriously. What results is a handful of key design principles:

- ubiquitous use of servers: typically, resources are brokered by servers; since the kernel itself is a server, this includes kernel-owned resources represented by R classes

In essence, solar powered phones and laptops use zero trust in their energy production systems because on-device power generation (whether a modular, plug and play PMIC and panel, or an integrated solar panel) brings energy access to the individual, and allows the individual to rely even less on infrastructure to communicate autonomously. That is, they still may depend on the manufacturing of the product somewhere else, but as solar panels can last 25 years, they may not need to replace any parts of the device, or recharge it with a cable or outlet in its lifetime.

In a household, with 5 residents, access to an outlet may be relatively easy, even in a 2 bedroom home. With each home having multiple



outlets, there is usually no shortage of outlets to charge a device. In some areas, only one access to an outlet may be available for 10 users. Would anyone expect 10 users to share that outlet, even if it were less expensive to produce one panel that charge 10 devices faster than 10 small panels individually? The 1967 Incompatible Timesharing System ([ITS](#)) was named because it was a joke on the 1961 MIT Compatible Time-Sharing System (CTSS). Implicitly, it also acknowledges the human aspect to computers- people do not always share, and systems (both hardware and software), products and frameworks can be developed to better allow individuals to have all or as many components of the [means of computing](#) as possible, including energy generation to operate autonomously (and autarkic).

Too cheap to meter, too cheap to matter (1950-present)

https://en.wikipedia.org/wiki/Too_cheap_to_meter

Too cheap to meter refers to a [commodity](#) so inexpensive that it is cheaper and less bureaucratic to simply provide it for a [flat fee](#) or even [free](#) and make a [profit](#) from associated services. Originally applied to [nuclear power](#), the phrase is also used for services that can be provided at such low cost that the additional cost of itemized billing would outweigh the benefits.

The phrase was coined by [Lewis Strauss](#), then chairman of the [United States Atomic Energy Commission](#), who, in a 1954 speech to the [National Association of Science Writers](#), said:

It is not too much to expect that our children will enjoy in their homes electrical energy too cheap to meter, will know of great periodic regional famines in the world only as matters of history, will travel effortlessly over the seas and under them and through the air with a minimum of danger and at great speeds, and will experience a lifespan far longer than ours, as disease yields and man comes to understand what causes him to age.[\[1\]](#)[\[2\]](#)

Sadly, this never happened, and now it sounds like a cruel joke. Wired wrote about it 15 years ago, even wondering/hoping Thorium could take its stead. <https://www.wired.com/2008/02/ff-free/> <https://www.wired.com/2009/12/ff-new-nukes/>

Encoragain (portmanteau of Encore and Again)

There is a missing angle, or worse, a false dichotomy being presented in recent debates about AI, Effective Altruists, and “longtermism.”

“**Longtermism** is an ethical stance which gives priority to improving the long-term future. It is an important concept in effective altruism and serves as a primary motivation for efforts to reduce existential risks to humanity.[\[1\]](#)”

For one, it’s unclear what economic system proponents of long termism believe in, as it would reveal much about their approach to the long-term. Some academics have observed a [preferential](#) status for elite planners among Effective altruists, adhering to a “techno-utopian approach” to planning and [development](#).

“2.1.2 Defining Existential Risk under the TUA Bostrom provides two general formulations of existential risk. He initially defined it as “where an adverse outcome would either annihilate Earth-originating intelligent life or permanently and drastically curtail its potential”¹³. Later, he provided a more refined definition: “one that threatens the premature extinction of Earth-originating intelligent life or the permanent and drastic destruction of its potential for desirable future development”

“By leaving “value” and “potential” undefined, these latter definitions theoretically avoid the charge of existential risk as being a project of a niche philosophical view”

“First, in practice, value is still expressed in techno-utopian terms. For example, the last chapter of *The Precipice* expands on a vision of humanity’s potential: transhumanist space expansion receives ample attention and adoration. Unrecoverable civilisational collapse (a state in which

technological progress is not ensured) is described as an existential risk. Here, “civilisational collapse” refers to a permanent reversion back to non-agricultural ways of living. It is not explained why the presence of agriculture, or many of the commonly assumed trappings of “civilisation”, such as urbanism, writing, and states (although these rarely came as a coherent package, see Graeber and Wengrow⁵²) would increase the likelihood of reaching our potential. For a techno-utopian, it does. For others who value virtue, freedom, or equality, it is unclear why a long-term future without industrialisation is abhorrent: it all depends on one’s notion of potential. The definition is seemingly agnostic in the abstract, but in practice there are numerous signals that it expresses the same commitment to total utilitarianism and transhumanism.

Secondly, we need to define what our potential is before we can identify threats to it. How else would we know which risks to address? This is an inherent tension within The Precipice since we are supposed to achieve existential security before undertaking the Long Reflection. It is difficult to know if we have achieved existential security if we haven’t defined what an existential risk is, since we haven’t undertaken the Long Reflection to define our potential. A reasonable counter could be that, in theory, there are certain futures that almost no one would like to live in (such as nuclear winter), and that there may be certain risks (for instance, an asteroid strike) that would take lots of plausibly good options off the table. Extinction may indeed be an outcome which we could assume most people would agree we should avoid. Beyond this point of convergence, there may be far more disagreement on what futures are worth protecting”

I know what you’re thinking. I’m promoting post-apocalyptic tech. But I’m not the one advocating for nuclear power. If you think about where your purchases go, they support chip manufacturers that apparently have no interest in designing energy efficient devices that are affordable, ones that can help people stay in contact with employers in a [winter](#) storm where the power is out, and not give the impression that they quit or not on their way. This kind of tech has every day uses. The hard truth is that not many people can maintain a good charge on their phone and it’s not always their fault. I’ve survived a 5 day power outage in 4 feet of snow using a trusty 2004 era Nokia in 2006, turning it off most of the day. Thanks to Nokia. No thanks to Android, which fortunately did not exist at the time and would not have stood a chance. There is also [term](#), that resists the typical narrative of declining living standards. There is also a [different](#) viewpoint, which rejects it altogether, and attributes it to stale cyberpunk dystopias.

For one, the counterview to AI, and by extension, EA (since EA will use AI to their needs, unless it is open source and distributed (Stability AI), would be the concept of collective intelligence:

From [Pierre Levy](#)’s 2015 Vice [interview](#), "Collective intelligence is a research project about making people smarter with computers, and not making computers smarter than people."

““The machines are built by people, the software are programmed and designed by people, and so on. They are just the media of our will, our intentions, and so on. ””

I write more about collective intelligence [here](#) and in this short essay, “Do Ant Colonies [Dream](#) of Economic Systems?” (titled after “Do Androids Dream of [Electric](#) Sheep?”)

How Pure Play is Pure Play, Exactly?

So, what does this have to do with mobile phone development? Well, e-waste is an existential risk. One may be for EA’s support of AI research, while cautioning against its applications. These involve the continued development of ever-increasing semi-conductors, which in turn can result in a competition for an edge in AGI. Remember Net-neutrality? And how there was all that discussion on fast lanes and slow internet lanes? Well, imagine [foundry neutrality](#) issues, where [pure-play](#) foundries giving preferential treatment to AI and other ML research, while small-time developers and consumer products from fabless startups can’t get enough fundraising to get a seat at the leading edge node. AGI may not benefit individuals immediately as quickly as it can benefit organizations. Though as mentioned in a previous post- time sharing of open source AI is likely and already available. Edit 3/8/2023: My predictions have been echoed!: <https://www.techradar.com/news/just-when-we-thought-we-were-safe-chatgpt-is-coming-for-our-graphics-cards> After a quick query, I only found 2 Google [search results](#) that mention “foundry neutrality” other than my own:

About 3 results (0.31 seconds)



17th Shard

<https://www.17thshard.com> › forum › topic › 4279-k...

⋮

Knighthawk Foundry - The Reckoners - 17th Shard

Oct 9, 2013 — ... Epics control most military power and would collectively oppose the Reckoners, who are apparently confident in the **Foundry's neutrality**.

24 posts · The Knighthawk Foundry is probably the most enigmatic organization mentioned so...

Leaderboard - 17th Shard, the Official Brandon Sanderson Fansite Nov 19, 2020

Leaderboard - 17th Shard, the Official Brandon Sanderson ... Nov 1, 2018

More results from www.17thshard.com



Images for "foundry neutrality"

⋮



Feedback

[View all →](#)



EE Times

<https://www.eetimes.com> › china-fabless-verisilicon-to...

⋮

China Fabless: VeriSilicon touts shift to design lite - EE Times

Sep 4, 2012 — VeriSilicon's strengths lay in its **foundry neutrality** (VeriSilicon works with SMIC, IBM, Grace Semiconductor, Taiwan Semiconductor ...)



google.com

<https://books.google.com> › books

The Foundry Trade Journal

1925 · Founding

Until this point of tion badly and often give troubles in iron **foundry neutrality** is reached the slag , if functioning at practice , being useless from the ...



Substack

<https://iotmote.substack.com> › remaking-the-nokia-6110... ⋮

Remaking the Nokia 6110 and Psion Series 3 on 22nm

Nov 6, 2022 — Well, imagine **foundry neutrality** issues, where pure-play foundries giving preferential treatment to AI and other ML research, ...

In order to show you the most relevant results, we have omitted some entries very similar to the 3 already displayed.

If you like, you can repeat the search with the omitted results included.

of the chips for AI and surveillance, enabling a head start on a [digital panopticon](#) government as well as ensuring [sousveillance](#) is impossible through centralized smart grid control, limiting the charging or use of electronic devices during only state sanctioned activities/work. Thus developing a solar powered communication network that is essentially off grid and untraceable would certainly find its opponents in at least some well-known agencies.

““While these techniques may be led by one sector, interest is spreading. “The hyperscalers are motivated by one thing — power,” says Rob Knoth, product management director in Cadence’s Digital & Signoff Group. “The energy footprint of a data center is not something you can just hide. It is a very clear cost — the thermal impact, and carbon footprint. There’s a strong motivation. But if you look at something like an embedded system, especially with edge-based intelligence, there is a very different cost in terms of battery life. This trickle-down of technology, tools, and methodology means they are able to leverage those exact same things that the hyperscale customers are using, but they’re doing it in a much smaller footprint and much more fine-grain method and achieving their own benefits.” from this [article](#).

Thus, hyperscalers want to leverage a foundries’ tech, using power as a design feature, but a designer might want to reserve all the tooling to create multicore chips- over 64 cores (which admittedly would be more power efficient than an earlier transistor). But if the foundry only has so much tooling to design wafers for a single customer using a very special instrument, then there could be potential scarcity and competition for a FinFET lithography technique for NTV, which could be repurposed for manufacturing single core chips- which could serve many customers instead of one data center.

Another way of thinking of a hyperscaler is a hedgefund. You need at another 1 billion, 470 million capital to have a seat at the “big boy” ISDA table.

A no-name short investor from Colorado isn't going to get a serious consideration, unless you know Ben Ricker, as in this scene:

Chip design is even harder than “simply” having the funds or access to invest like an ISDA.

Comparing this to the Raspberry Pi, a minimum order quantity of 5 million units [was still not enough](#):

"With enough direct customers, VC funding may not even be needed. This is a preferred route that is not unreasonable and has been achieved before in the Silicon Industry.

This is a POWER PI candidate, but why was the Raspberry Pi successful?

As a dedicated Set-Top Box / IPTV solution, the initial Pi processor, the 700 mhz ARM11 BCM2835, was only available from Broadcom in Minimum Order Quantities (MOQ) of 5 million and above. As a specialist Vertical Market Applications Processor, it was *not available* for use in products on the general market.

The *only reason* that it went into the Raspberry Pi at all (selling in far smaller quantities) was because Eben Upton was an employee of Broadcom and had access to NDA'd internal datasheets. Crucially: on learning that it was to be deployed in an Educational market, Broadcom could not exactly say "no."

In eight years, 36 million "Pi" units have been sold. However this is not all the same processor: there are four variants (Model A/B thru Pi 4). Thus actual quantities sold through the Pi Foundation of any one given processor average only around a million units, each processor. As above: 1 million sales barely covers the NREs.

In the intervening years, despite persistent requests on Pi Forums, even efforts by the Raspberry Pi Foundation themselves to see a non-Broadcom processor be developed and deployed have not been successful because a Pi-only-centric processor *does not have a large enough market share to justify the NREs*.

The lesson here is that a low-cost processor must cover multiple markets to be successful.

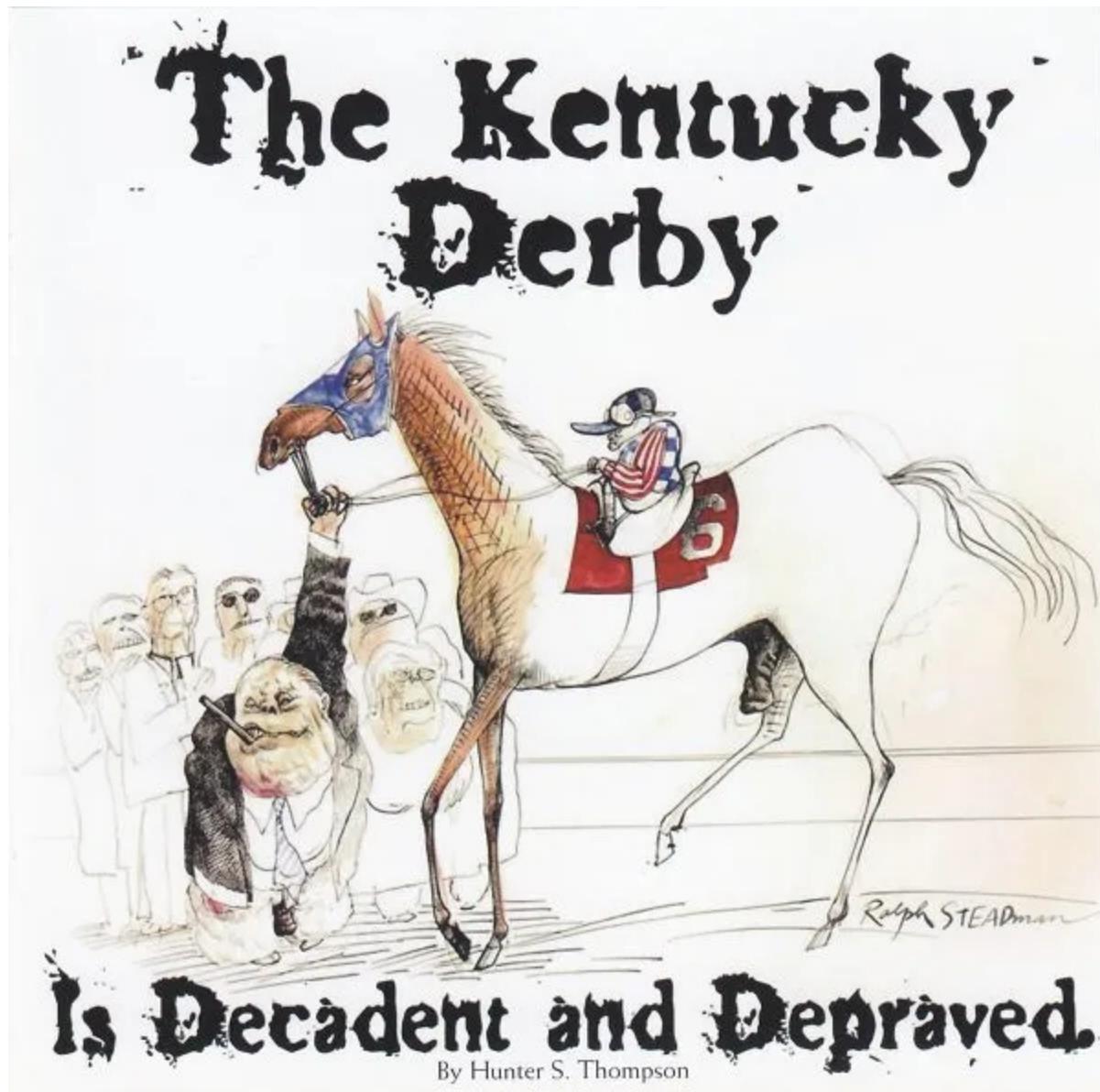
Consequently the Libre-SOC "POWER Pi" is designed to enter multiple disparate large-volume markets: the Educational and Open aspects may thus be considered an essential part of the P.R. rather than as major sales opportunities."

Assuming a NTV application processor could even be produced, a chip designer wouldn't justify the cost unless at least 5 million could be produced, AND it could be justified for some philanthropic purpose- for [LMIC](#).

The funding model of the OLPC was "[Give 1, Get 1](#)", that someone in a first world country could purchase two, each for \$200 (\$400), and donate the other to someone in need.

Imagine the same with a solar powered phone- Considering a lower bill of materials, a dumbphone might cost \$100 each, and to make the purchase profitable to the chip designer foundry, they'd need 1st world countries to buy 2 or three to help reach the MOQ, and to recoup the investment.

The Chip Industry is Decadent and Depraved



Existential risk arises can arise out of unsustainable product cycles- you've heard of fast food, fast fashion, disposable cameras, disposable phones, and now fast furniture. What was once considered a permanent fixture in a homes has now transformed into into a completely wasteful way of planning for the future. While it is true that the cost of natural and solid woods has increased in price and scarcity, the cheaper particleboard and plastic substitutes for furniture should not be an excuse to wish a short life-cycle. The preservation of manufactured goods should last as long as its functional ability withstands. In lieu of merely repeating ideas about how social reform could be implemented, I would promote the use of a basic universal phone,

similar to a guaranteed minimum income (or universal basic income, UBI). The difference, is that even though a guaranteed minimum income will not be able to cover even a majority of one's rent, that money would undoubtedly be used one day to purchase a new phone. The phone itself may not have software updates after 3-4 years, placing it at risk of vulnerabilities. However, by reducing the attack surface in designing a feature phone, a phone could last 30-40 years, if not 50. This could also encourage users to maintain their devices for much longer, rewarding users for their preservation, rather than rewarding conspicuous disposal culture (the last stage of the cycle of conspicuous consumption).

Italian American actors such as Espera Oscar de Corti (1904-1999) care just as much about the [environment](#) as natives. My ancestors were living in Italy at the time of this video, thus were not responsible for disposal of litter.

There should a separation between the basic necessity of a phone, and a mobile device that today is primarily used to run apps. Yes, it is not always the case that someone may need to send a text to anyone locally or to use the call function. Apps are just as important as SMS & calls. However, in a bread and butter kind of way, texts and calls are important at the *local level*. For being able to communicate nearby is integral to a resilient network that can load share and develop overengineered redundancy with decentralized systems. The disruptive innovation of IRC & VOIP certainly reduced the cost of a long distance call to the cost of maintaining the infrastructure, because it can now be done with off-the shelf components, if one really needed to. Thus just as important as a UBI, and universal and affordable housing, is a universal basic phone. But just as important as the software is the hardware, and prioritizing energy independence at the portable level could be a more effective way at assisting users who possess such a phone from no longer needing to crowd a Starbucks or a library to charge their phone.

They can do it wherever they are, provided there is sunlight. A user could treat a phone like a credit card, storing it in their wallet due to how thin it could be made (Just don't sit on your wallet or pack it with too many [free](#) guitar lesson coupons). Developing a long-lasting phone isn't so much longtermism and building a resilient network, so much as it is building an [anti-fragile](#) one.

“Ubiquitous computing (or "ubicomp") is a concept in software engineering, hardware engineering and computer science where computing is made to appear anytime and everywhere. In contrast to desktop computing, ubiquitous computing can occur using any device, in any location, and in any format. “The underlying technologies to support ubiquitous computing include Internet, advanced middleware, operating system, mobile code, sensors, [microprocessors](#), new I/O and user interfaces, computer networks, mobile protocols, location and positioning, and new materials.

This [paradigm](#) is also described as [pervasive computing](#),[\[1\]](#) [ambient intelligence](#),[\[2\]](#) or "everyware".[\[3\]](#) Each term emphasizes slightly different aspects. When primarily concerning the objects involved, it is also known as [physical computing](#), the [Internet of Things](#), haptic computing,[\[4\]](#) and "things that think".

Before I delve into ubiquitous computing, I should emphasize that userspace apps like phone calls and texts are just one instance of the potential of the emergence of ubiquitous computing. The solar autarkic capabilities of ultra-low power microcontrollers represents one of the first commercially available instances of enough processing power to run human user interfaces without a battery. Microcontrollers with less than a Cortex M3 are unlikely to have much capability for an HMI (Human machine interface) outside of sensor networks and PLCs, Hardware designers such as EmCraft, who previously built uLinux on Cortex M4s, have also confirmed this. Thus the Ambiq Micro Apollo4's Cortex M4, and other FOSS SoC designs using [MIPS](#), and low power RISC-V represents a way for developers to design circuits for individuals, and not just machines to compute ubiquitously. Meeting all energy autarkic requirements of ubiquitous computing first requires designing just the minimum amount of architecture and software to run singular apps (or a series of apps), so that computing requires far less stationary charging (USB/AC outlet) or connectivity (Ethernet/Wifi)- as opposed to long-range wireless-4G/LoRA, etc than fully featured multi-core chips used to run very large modern kernels.

A New Era of Solar Convergence & Multimedia-Deconvergence

The development of advanced multimedia and memory intensive software (apps that require more than 4MB of RAM), should be placed on a lower/non-priority in the initial development towards an autarkic userspace kernel, such as Symbian's EKA2. The development of EKA2

consolidated signal stacks (telephony) and Personal Information Management PIM stacks using a single processor core (Sales, 2005), forming a pillar of energy efficient design.

1.3.2.4 Personality layer

We designed the nanokernel to provide just enough functionality to run a GSM signaling stack. The idea behind this was to allow mobile phone manufacturers to run both their signaling stacks and their personal information management (PIM) software on a single processor, providing considerable cost savings over the usual two-processor solution.

The UniSOC T117 appears to be one of the only commercially available phone chips (used in the Nokia 225 4G) in 2022 that eschews the multi processor SoC found in favor of a single core processor core which appears to use a single RTOS, which suggests it follows in the tradition of the Symbian OS era, if not being a spiritual successor (although not in a very transparent SDK). Of course these processors all use anywhere from 16-64MB of RAM, which is far more than what an Ambiq Apollo4 uses. Thus one approach would be to recreate the early EKA1-era Nokia 7650, being the first Symbian OS 6.1 S60 phone from 2001 which used just 4MB of RAM. However, with the EKA2 being released in 2005, it is not clear if the 7650 was using a two processor chipset.

Using just [104Mhz](#), a fully native port to Ambiq Apollo4 would not be impossible (it runs between 96mhz and 192mhz).

And for the real conclusion. <https://semiengineering.com/a-power-first-approach/> :

“Are there enough people who care about this planet to make that a priority? As engineers, are we in some way responsible for the energy consumption of the products we create? I do see more people who care about these things, but I also see many technological advances that are a total waste of power, where the sole motivation is profit.”

“Albee described the inspiration for the title:

I was in there [a saloon in New York] having a beer one night, and I saw "Who's Afraid of Virginia Woolf?" scrawled in soap, I suppose, on this mirror. When I started to write the play it cropped up in my mind again. And of course, who's afraid of Virginia Woolf means who's afraid of the big *bad* wolf . . . who's afraid of living life without false illusions. And it did strike me as being a rather typical, university intellectual joke.[\[8\]](#)

A Tale of a Tub

Who's afraid of asking, not just what we can do for our foundry (e.g. [SkyWater PDK](#)) but what our foundry can do for my [bespoke near threshold voltage](#) interests?

From the bespoke article, a couple key points:

““The original idea is that bespoke is tailored,” said Ansys’ Swinnen. “However, we’re seeing the blending or blurring of that, like in the TPU. When does bespoke also become something you can buy on the commercial market? Cisco recently came out with their networking chip. They finally built their own networking chip, but they’re also selling it on the market. So how bespoke is bespoke? If you can buy it, it’s a standard product.”

by standard, it is referring to [ASSP](#). But also:

“If you can afford to make your own silicon and make it run faster than anything else out there, you’ve got to wonder at some point **how much of a general market is going to be left for others**,” Swinnen said.

Now, I will speculate but not accuse anyone, that what this sounds like is an opportunity of startups and established, resourced companies to engage in product fixing. This is like [price fixing](#) (for established products), but before products are even made. Now, price fixing (another related term is “gentleman’s [agreement](#)”) might actually be interpreted as healthy, since it promotes the existence of more than one vendor, *except....in cases where the minimum performance of both products TDP are far more power consuming than one that is designed to use as little as power as possible*. But the fact that there is even a concern about how much a market would be left reveals that a limited number of players seem to still wield control over the pace of innovation, as opposed to a [saturated](#) 3rd party hardware market, where awareness of a product has not only passed the niche phase, but has led to significant numbers of rivals to make control over design much less vertically integrated. For example, if there was never an IBM-[compatible](#) standard, there might not be a Gigabyte, Biostar, Asus company manufacturing ATX motherboards. If, for example, Apple became a computer monopoly like AT&T and was the sole supplier of computer hardware, users wouldn’t be able to mix and match 3rd party hardware (e.g. a video card from MSI, a monitor from Asus), because Apple’s hardware wouldn’t support it- it would be a walled hardware garden. See “Plato’s ideal” above. Thus a “freer” market would be one where there are many more designers that target general purpose *and* the lowest thermal power design- that could represent the Plato’s ideal and the physical limit (“Everybody to the limit”) of computation per watt.

Having studied some action potentials in biology, coursework in college, I very familiar with the natural ion channels that comprise cellular membranes and dendrites. I do think this certainly could lead to more power efficient computing, using biomimetic, (and hopefully not [sentient](#)

computing), but general purpose non-von Neumann computing appears to be quite far off. One paper says it is Turing Complete, [though](#). I think technology is trying to accomplish far too much with biomimicry of the brain before computers can be given to each human, which can serve as an offline encyclopedia, something I had in [1996](#), before I even had access to the internet. It seems a lot fairer for all humans to have access (you could say, an inalienable right) to information before computers are built using synapses for the few.

“I predict that within 100 years, computers will be twice as powerful and a thousand times larger and so expensive that only the five richest kings of Europe will own them.”

““We are all now talking about systems of systems,” said Gupta. “As we look to these companies, we’re seeing they have a system of systems mindset. They’re not just talking chips. They’re talking chips in a software stack, plus the end system.”

“While these techniques may be led by one sector, interest is spreading. “The hyperscalers are motivated by one thing — power,” says Rob Knoth, product management director in [Cadence’s](#) Digital & Signoff Group. “The energy footprint of a data center is not something you can just hide. It is a very clear cost — the thermal impact, and carbon footprint. There’s a strong motivation. But if you look at something like an embedded system, especially with edge-based intelligence, there is a very different cost in terms of battery life. This trickle-down of technology, tools, and methodology means they are able to leverage those exact same things that the hyperscale customers are using, but they’re doing it in a much smaller footprint and much more fine-grain method and achieving their own benefits.”

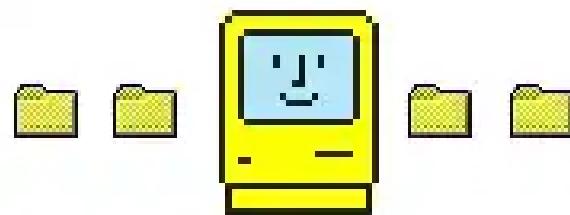
What I'm reading from that above paragraph, is that this is the chance of a generation of environmental computer engineers to organize and develop new "system of systems", ones that integrate new energy sources, such as solar, low power displays, antennas, and an [all-star team](#) of low power PCB components instead of iterations of hyperscaling, which are more or less saving money for an establishment of datacenters and expensive chips, rather than lowering the barriers to entry and allowing this technology to trickle down into single or low-core chips consumer devices by those who ordinarily would need to charge their phones/laptops.

What's that you say? Oh, you didn't reach that same conclusion/product idea? Ah, yes, I know that, and I know why. The same was said about [Gopher](#).

"The team, in 36-hour sessions fueled by beer, pizza, and speed metal, finished writing Gopher in about three weeks. They installed the first computer running a Gopher server — a Mac SE/30, a little droid of a computer with an iPad-size monitor built in — in a narrow hallway between their offices and the showroom, in a closet with metal shelves. It became known as the Mother Gopher.

The committee meeting where the team first presented the Gopher protocol was a disaster, "literally the worst meeting I've ever seen," says Alberti. "I still remember a woman in pumps jumping up and down and shouting, 'You can't do that!'"

Among the team's offenses: Gopher didn't use a mainframe computer and its server-client setup empowered anyone with a PC, not a central authority. While it did everything the U required and then some, to the committee it felt like a middle finger. "You're not supposed to have written this!" Alberti says of the group's reaction. "This is some lark, never do this again!" The Gopher team was forbidden from further work on the protocol."



Oh, I see, you didn't want that technology to end up in layman's devices. You wanted this big server, maybe because you're insecure? That's what I'm reading. I'm not assuming, I'm psychic. Just kidding.

This kind of thinking may be Freudian, and Russell [Brand](#) could be psychic. There was a video where a news anchor [squeezed](#) her water bottle; he noticed, and she freaked. Brand's lexicon suggests he is a modern day Chaucer or Shakespeare.

Imagine someone saying, there can only be one car, for the king. And then:

Sadly, no one wants a solar panel

Another wise person once said, that it's "not about desensitizing, but *re-sensitizing*." If a \$75,000 education programmed one to ignore low signal to noise ratios, then desensitization is only going to have situational awareness of what's in the box. A good institution would teach you quite the opposite-consider *all* signals, however weak. The lack of detecting a signal depends on the sensitivity of the instrument, rather than the stimuli/particle. The above Lara Bingle "The Project" interview covers that- if you watch the whole interview. Some things can't be quantized. It requires intuitive instinct, and in some cases, a really good nose. There also isn't a huge job market for psychics and mystics; the elimination of the Romanov family in 1917 eliminated the position of Rasputin. [Jim Joe Kelly](#)'s funding ran out quite quickly, at \$500k/week, and Tyrion Lannister's wits involve likely involve compromising his soul, with lust for [power](#): "*If I were capable of tricking Father, I'd be emperor of the world by now.*"

Rather, I look to Shakespeare's [Fool](#) as an inspiration, who were commoners with no particular thirst for power, just enough to subsist and to serve as a barometer for nobility surrounded by yes-men and echo chambers of mass discontent.

"The "groundlings" (theatre-goers who were too poor to pay for seats and thus stood on the 'ground' in the front by the stage) that frequented the Globe Theatre were more likely to be drawn to these Shakespearean fools. However they were also favoured by the nobility. Most notably, Queen Elizabeth I was a great admirer of the popular actor who portrayed fools, [Richard Tarlton](#). For Shakespeare himself, however, actor [Robert Armin](#) may have proved vital to the cultivation of the fool character in his many plays."

Perhaps King Lear has one of the most prominent appearances of the Fool:

"Writes Jan Kott, in *Shakespeare Our Contemporary*,

The Fool does not follow any ideology. He rejects all appearances, of law, justice, moral order. He sees brute force, cruelty and lust. He has no illusions and does not seek consolation in the existence of natural or supernatural order, which provides for the punishment of evil and the reward of good. Lear, insisting on his fictitious majesty, seems ridiculous to him. All the more ridiculous because he does not see how ridiculous he is. But the Fool does not desert his ridiculous, degraded king, and accompanies him on his way to madness. The Fool knows that the only true madness is to recognize this world as rational."

Another thing I noticed about Brand's videos are, his appearances are entirely improvised. It takes wit to invent clever quips; which makes me wonder- how frequent others choose to live a life according to notecard-prepared dialogue.

Ethnographers observe from the outside, and can dissociate themselves from almost any culture or society, to academia's benefit (and sometimes, to the detriment of the subject).

Comedians also speak from the outside- at least some understand this: "Rivers accepted such criticism as the price of using social satire as a form of humor: "I've learned to have absolutely no regrets about any jokes I've ever done ... You can tune me out, you can click me off, it's OK. I am not going to bow to political correctness. But you do have to learn, if you want to be a satirist, you can't be part of the party."[\[111\]](#)"

"[Hari Kunzru](#) wrote, "The true voice of Thompson is revealed to be that of American moralist ... one who often makes himself ugly to expose the ugliness he sees around him."[\[4\]](#)"

Is having this capability a good thing? Can this capability be used for good?

I am not so sure I would want to go so far with that, especially if one has a propensity for indulging in the very practices they seek to expose. At least one notable informant led to an entirely new rule to keep out new informants.

I think it is possible to use [inductive](#) reasoning, [deductive](#) reasoning, and [abductive](#) reasoning to triangulate hypotheses in non-invasive ways- one way of doing this is open-source intelligence ([OSINT](#)). OSINT can also be used to reverse engineer software, and reprogram it to use the good parts, which should be [neutral](#) software and hardware, like a Hippocratic Oath.

There seems to be an inverse correlation with the pre-occupation with Eschatology and the view that the Tower of Babel is a gift, rather than a curse, if only one views the glass half-full. The study of [primal](#) worldviews is a sincere effort to bridge understanding of what divides great nations. The repeal of the [fairness doctrine](#) in 1987 appears to have resulted in a decline in critical news journalism, as well as viewership preferences. One of the things that makes the world great is the existence of foreign languages. The person who views the glass half-empty, may take the flawed view that the inability to understand a foreign language necessarily suggests some kind of enmity. As Leo Tolstoy wrote, the Kingdom of God is within you. I recall watching a PBS video of manual farming in 1980s in China, saying they do not use tractors because the purpose of life is not to be idle (understandably, a low tech way to keep 1 billion employed). A single language would certainly cause idleness in the world, and one might get the impression that one's entire vocation in life is to climb up the Tower of Babel, like Humpty Dumpty.

Humpty Dumpty sat on a wall,
Humpty Dumpty had a great fall.
All the king's horses and all the king's men
Couldn't put Humpty together again.

Foreign languages certainly hold only the potential for translations, but not everything can be translated if one language has no equivalent in another. Some might try to climb back up the Tower of Babel, ignoring what can't be translated, even with the help of foreigners, but reaching the top of the tower is not a metaphorical restoration of some kind of Garden of Eden.

Earthbound for SNES was a rare example of eccentric mainstream success. Taming/Normalizing a hippie? The absurdity of the idea made it no less fun.



If you remember the 90s, you *were* there. Not everything fits in a box; This has been known for decades. Why then, is society pre-occupied with commercializing things that fit in a box? The vast majority of AAA games today are appeal to the lowest common denominator (LCD)- Call of Duty, Battlefield, Grand Theft Auto- it isn't to say there are necessarily bad gamers much like there are [bad fans](#), but outliers serve society no less than things that fit in a box. I recall years back, watching [Saints Row](#) developers talk about how their game was a reaction to the stale AAA designs. The fact that the game was revolting to some, suggests they succeeded at [identifying](#) what makes mainstream products a LCD. (For the record, I don't play Saint's Row but can understand its appeal) This isn't to say LCD mainstream products can't be fun, they surely are, but that formulaic design that attempts to capture mass appeal will always fall short of some unrealistic market share, suggesting obvious limits to [trying](#) to achieve a monopoly on creative IP and talent, which I assume some would concede is impossible.

And what happened to all that [weird TV](#)?

"A few years after Stefan Urquelle's swan song, Meyer summed up contemporary TV comedy as "a bunch of people who hang around in some generic urban setting having conversations and sniping at each other.""

'As the sitcom format matured, the subject matter narrowed. There might be an occasional show about a space alien living with humans (*Mork & Mindy* and *Alf*), but shows increasingly focused on coworkers or families without any extraterrestrial, cybernetic, or superhuman interference.[2](#)

When the multi-camera sitcom faded away, shows became even more realistic. Several were framed as documentaries (*The Office*, *Parks and Recreation*, *Modern Family*, *Abbott Elementary*)."

You can thank Network TV, a stale AAA game dev industry, and an uninspired academic-corporate industrial complex for thwarting out of this world research. I don't think I sound so sarcastic in comparison.

Hacker philosophy can be found [here](#). This is one of those cases where [primary sources](#) are really, really important.

"The whole GNU project is one big hack" at 1:21:00":

Skateboarders who do tricks, are also like hackers of other skater's tricks:

https://www.ted.com/talks/rodney_mullen_pop_an_ollie_and_innovate

And what happened to 2015?

My dream is to become a community organizer, project manager, chief architect for high-tech cpu design, the Stan Lee of superhero sketches, the Q of MI6, in a world dominated by Starship Troopers and ruthless anti-literacy campaigns.

I've covered all the pre-emptive defense mechanisms (most of which aren't positive). I understand my words are considered snarky , but I am not convinced I that could have said this criticism in a nicer way.

Reconciling the cognitive dissonance of old and new:

<https://github.com/readme/featured/vintage-computing> “What we can learn from vintage computing” “Thanks to open source, no technology ever has to become obsolete, so long as a community remains to support it”

17 Equations That Changed the World

by Ian Stewart

1.	Pythagoras's Theorem	$a^2 + b^2 = c^2$	Pythagoras, 530 BC	
2.	Logarithms	$\log xy = \log x + \log y$	John Napier, 1610	
3.	Calculus	$\frac{df}{dt} = \lim_{h \rightarrow 0} = \frac{f(t+h) - f(t)}{h}$	Newton, 1668	
4.	Law of Gravity	$F = G \frac{m_1 m_2}{r^2}$	Newton, 1687	
5.	The Square Root of Minus One	$i^2 = -1$	Euler, 1750	
6.	Euler's Formula for Polyhedra	$V - E + F = 2$	Euler, 1751	
7.	Normal Distribution	$\Phi(x) = \frac{1}{\sqrt{2\pi\rho}} e^{\frac{(x-\mu)^2}{2\rho^2}}$	C.F. Gauss, 1810	
8.	Wave Equation	$\frac{\partial^2 u}{\partial t^2} = c^2 \frac{\partial^2 u}{\partial x^2}$	J. d'Almbert, 1746	
9.	Fourier Transform	$f(\omega) = \int_{\infty}^{\infty} f(x) e^{-2\pi i x \omega} dx$	J. Fourier, 1822	
10.	Navier-Stokes Equation	$\rho \left(\frac{\partial \mathbf{v}}{\partial t} + \mathbf{v} \cdot \nabla \mathbf{v} \right) = -\nabla p + \nabla \cdot \mathbf{T} + \mathbf{f}$	C. Navier, G. Stokes, 1845	
11.	Maxwell's Equations	$\nabla \cdot \mathbf{E} = 0$ $\nabla \times \mathbf{E} = -\frac{1}{c} \frac{\partial \mathbf{H}}{\partial t}$	$\nabla \cdot \mathbf{H} = 0$ $\nabla \times \mathbf{H} = \frac{1}{c} \frac{\partial \mathbf{E}}{\partial t}$	J.C. Maxwell, 1865
12.	Second Law of Thermodynamics	$dS \geq 0$	L. Boltzmann, 1874	
13.	Relativity	$E = mc^2$	Einstein, 1905	
14.	Schrodinger's Equation	$i\hbar \frac{\partial}{\partial t} \Psi = H\Psi$	E. Schrodinger, 1927	
15.	Information Theory	$H = - \sum p(x) \log p(x)$	C. Shannon, 1949	
16.	Chaos Theory	$x_{t+1} = kx_t(1 - x_t)$	Robert May, 1975	
17.	Black-Scholes Equation	$\frac{1}{2} \sigma^2 S^2 \frac{\partial^2 V}{\partial S^2} + rS \frac{\partial V}{\partial S} + \frac{\partial V}{\partial t} - rV = 0$	F. Black, M. Scholes, 1990	

On a deeper level, both software,, programming languages, and microprocessors operate on instruction sets, which are algorithms. Is anything really old, if our machines depend on

equations that are nearly 1500 years old? While it doesn't make marketing sense to advertise a product that Pythagoras' Theorem was used in a CAD file to produce a laptop chassis, consumers have no problem staring at a beer bottle that says "Since 1818" or "Since 1887," imagining they are in some all-wooden English tavern where everyone knows your name.

Fear and Loathing in Silicon Valley

A Savage Journey to the Heart of the American Foundries

If anything, bespoke silicon is revealing that FOSS and open silicon is a potentially true [disruptive innovation](#), community efforts can make progress to bridge the [Digital Divide](#) faster than complicated IP packages with red tape can. Although [RISC-V](#) is certainly shaking up the higher performance market (I consider embedded mmus hpc):

'Ultimately, Ventana's strongest selling point is bringing the incremental cost of custom silicon to tens of millions of dollars from the current hundreds. When hyperscalers only buy some chiplets from fabless firms and the rest of their silicon directly from the foundries, the incremental cost per deployed package for a specific workload is significantly lower.'

If you enjoyed this post, don't subscribe. Contact your Congressman or Congresswoman and ask them to support solar powered phones.

Technology is like a Casino. When you acquire new chips, do you cash out? Or bet your earnings for more?

If I really was a “tankie”, which sounds like a term used by someone who grew up from late Millennial and Gen Z era, with anthropomorphized Transformer movies by Michael Bay may have indirectly suggested, you would have to listen to this speech in the [hot Havana](#) sun. Hope you brought a lawn chair, if the government stipend allows you to afford one(Yes, I understand that if I am implying that if I was the head of a state with access to a records of citizen's salary, I should know whether someone can afford a lawn chair, but even panopticon governments aren't immune to bureaucracy and clerical errors). Plus this technology would make it harder to censor anyone or control their power supply, contradicting Tankie tracks of thought. One additional way to empower a community's social media is to literally empower their devices and mobile servers. Every tangent that I liberally took in the post was taken to lead back to this point.

[From](#) *The Dealers of Lightning* (1999), by Michael A. Hiltzik:

One more thing: Each Alto was to serve a single individual. This was a revolutionary concept to users whose experience consisted exclusively of sharing the precious resources of university mainframes with hundreds of other users. With the Alto there was to be no waiting in line for a turn to run one's own program. To use a term coined by Alan Kay, the PARC scientist who was one of the machine's principal conceptualizers, the Alto was to be a "personal computer."

Every one of these specifications violated the accepted wisdom of computer science. Computers were big because their hardware circuits took up room. They were slow because they were serving scores or hundreds of users at once. And they were shared because digital technology was so expensive its cost had to be diffused among many users per machine. It was the same rationale by which the airlines covered the cost of aircraft and fuel by transporting 300 passengers at a time in Boeing 747s. One computer per person? To contemporary designers this seemed an

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act of outrageous profligacy. The computer memory necessary to support a single user would cost nearly ten thousand dollars. Squandering so much money would be like giving every passenger from Boston to San Francisco an individual plane.

But to Thacker and his colleagues such objections missed the point. The Alto aimed to be not a machine of its time, but of the future. Computer memory was horrifically expensive at the moment, true, but it was getting cheaper every week. At the rate prices were falling, the same memory that cost ten grand in 1973 would be available in 1983 for thirty dollars. The governing principle of PARC was that the place existed to give their employer that ten-year head start on the future. They even contrived a shorthand phrase to explain the concept. The Alto, they said, was a time machine.

A solar panel costs far less than a computer, yet the idea- a solar panel- a *power plant*, that is, for each phone/laptop still sound fanciful today. How bold PARC was to suggest the kitchen sink-a PC for every *user*. Today, there are no labs for scientists to think 10 years into the future, because their budgets only allow for 3 years. I'm thinking 10 years into the future. Are you?



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*Don DeLillo warned against novelty intellectualism. A bit presumptuous that *homo sapiens* is physiologically adapted to accept the graft donation of high bandwidth 16-bit color+ through several generations of express speeds in less than a century of evolutionary adaptation to the ophthalmologic tolerance to artificial LED emissivity. Strunk and White was consulted for this obfuscatory footnote.

Outtro

Comments



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