Episode Book

EPISODE #6481

Why Universal Standards Fail

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SYNOPSIS

State backing, committee consensus, and official decrees are often not enough to make a standard stick. Exploring notable failed standardization attempts reveals distinct failure mechanisms: popular non-compliance against French Revolutionary decimal time, institutional vetos stalling Esperanto at the League of Nations, complexity sinking the OSI networking model against TCP/IP, and entrenched sunk costs blocking universal European electrical plugs.

TRANSCRIPT



Corn

This show has spent a lot of airtime defending standardization. Threads, protocols, voltages, tape — you name it, we've argued for the one true way. Today we pay the other side of the bill.



Herman

With interest.



Corn

Daniel's prompt, and I'm paraphrasing him badly on purpose: every so often the world gets formally invited to converge on one way of doing something — committees, governments, official backing, the whole apparatus — and the answer is simply no. He wants the five most glorious failures of that. Not the quiet committee give-ups. The ones with real institutional muscle behind them that lost anyway.



Herman

And there's an angle hiding under the list, which is what makes it worth doing. These failures aren't the same disease. If you look closely, they fail for completely different reasons, and the reasons tell you when standardization is the wrong tool entirely.



Corn

The screw episode, back in the archive, was us cheering for the winners. Today is the museum of the defeated.



Herman

Some of them defeated very expensively.



Corn

Let's set up the framework before we get into the cases, because it's what stops this being trivia. My read is there are at least five distinct failure mechanisms at work. Popular non-compliance — the people just refuse. Institutional veto — the people want it, one powerful actor kills it. Complexity without working code — the standard is designed beautifully and nobody can run it. Sunk costs — the installed base makes the transition math insane. And voluntariness — a mandate with no mandate behind it.



Herman

The bar for glorious matters too. Every one of these had governments, international bodies, or decades of committee work, and still lost. A standard that dies in a working group meeting isn't glorious, it's Tuesday.



Corn

There's also a recurring tell across all of them, and I want to plant it now so you hear it each time. Very often the body deciding the standard is dominated by the people who benefit from the status quo. The standards organization is the incumbents' clubhouse.



Herman

That one comes back three times today, and it's never a coincidence.



Corn

So — the taxonomy is set, the bar is set. Start with the one where the state had a guillotine and still couldn't get people to change their clocks.



Herman

French Revolutionary decimal time. October seventeen ninety-three. The Convention decrees a complete rebuild of time itself. Ten hours in the day. One hundred minutes to the hour. One hundred seconds to the minute.



Corn

A ten-hour day. Perfectly decimal, perfectly revolutionary, perfectly mad.



Herman

It came bundled with the Republican calendar — twelve months of three ten-day weeks, so the week itself was abolished too, replaced by the décade. And the clocks, Corn. They actually made dual-dial clocks, watches with both systems on the face, specifically, in the Bibliothèque nationale's words, to familiarize the public with the new customs. There was a decree in February seventeen ninety-four launching a competition for practical decimal timepieces.



Corn

The unfamiliarity problem solved with a second clock face. Bold.



Herman

Nobody bought them in any number, is the thing. The reform became non-mandatory in April seventeen ninety-five. Seventeen months. The BnF blames it, directly, on the difficulty of imposing the reform on the population. And that's the French state at the height of revolutionary fervor — the most powerful government in Europe, with the guillotine running. Napoleon put the calendar itself out of its misery in eighteen oh six.



Corn

Seventeen months is shorter than most software migrations.



Herman

Right, and here's why it's the purest case of popular non-compliance on the list. Time isn't one standard among many — it's the standard embedded in every other human coordination. You can't run a market, a shift, a church service, or a rendezvous on a clock nobody else owns. If the state decimalizes the meter and you keep measuring your fields in toises, you're an inconvenience. If it decimalizes the hour and you keep living in twenty-four of them, the state is an inconvenience.



Corn

And everyone made the same calculation at once. The Terror was real, but it couldn't arrest everyone who owned a clock.



Herman

Especially when the clocks were the evidence. You'd have to confiscate the entire horological output of France.



Corn

That's popular non-compliance, then. Case two is the opposite shape — near-unanimous support, killed by one man with a veto.



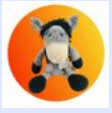
Herman

Esperanto at the League of Nations. Quick setup — Zamenhof publishes the language in eighteen eighty-seven as a universal second language, and by the nineteen-twenties it's the most serious candidate anyone has ever fielded for a neutral international tongue. The Persian delegation brings a draft resolution to the League in December nineteen twenty. There's a favorable report from Nitobe Inaz, a League official who'd actually gone and studied the Esperanto congresses. Ten delegates on the committee accept the proposal. One voice against.



Corn

Let me guess which country.



Herman

France. Gabriel Hanotaux, the French delegate, invokes France's veto on December eighteenth, nineteen twenty. He saw Esperanto as a threat to the position of French as the leading international language — and at that moment French was the language of diplomacy. It was the thing France had instead of colonies it'd already lost.



Corn

One delegate, one national insecurity, motion dead.



Herman

Not quite dead. It kept twitching. The proposal came back in nineteen twenty-one with thirteen co-sponsors, and the Assembly forwarded the whole question to the Committee on Intellectual Collaboration in nineteen twenty-two — where French-led opposition rejected it, six votes out of ten. Same year, the French education minister, Léon Bérard, banned Esperanto from French schools, calling it — this is a quote — one of the favorite mediums for spreading Communistic propaganda.



Corn

A constructed language with no country, banned as foreign agitation.



Herman

There's a paper on exactly this episode arguing that nationalism inside the League gave outsized weight to powers like Britain and France at the expense of the smaller and non-European nations who actually wanted the thing. The bureaucracy then slow-walked it into a committee, which is where the League sent problems it didn't want to solve.



Corn

So the failure mechanism is the institutional veto. Popular support was there — ten to one on the first vote. The structure turned one country's stake into a full stop.



Herman

And Esperanto survived as a community, never as a standard. Nobody has ever adopted it officially, anywhere. Speaker estimates today run from about a hundred thousand to, if you believe the Esperantists themselves, two million — with no one able to settle it since a real effort was last made in two thousand four.



Corn

Two million is a rounding error with a flag.



Herman

It has a flag, a currency joke of its own, and about two thousand native speakers, which is sweet but is not a world language.



Corn

Okay. Third case, and it's the one you've been sitting on since I said the word standardization.



Herman

Because it's the best one. OSI versus TCP/IP. Open Systems Interconnection. In the nineteen-seventies, a dedicated group of computer industry representatives in Britain, France and the United States set out to design a complete, open, multilayered networking standard — the reference model that networking courses still teach as the seven layers. Published as an international standard in nineteen eighty-four.



Corn

I did wonder whether we'd get through an episode on failed standards without the seven layers.



Herman

Andrew Russell's retrospective in IEEE Spectrum has a passage I want to get right because it's the setup for everything. Thousands of engineers and policymakers got involved. They had the support of everyone who mattered — computer companies, telephone companies, regulators, national governments, international standards agencies, academic researchers, even the U.S. Department of Defense. By the mid-nineteen-eighties, worldwide adoption of OSI appeared inevitable.



Corn

Everyone who mattered. Underline the word mattered.



Herman

Because the people who didn't matter were the ones running the thing that won. By the early nineties OSI had all but stalled against a cheap, agile alternative, and it was effectively over by the mid-nineties. The U.S. Department of Commerce had mandated OSI for government purchases after August nineteen ninety — and even a procurement mandate couldn't save it.



Corn

Hold on. The government required OSI, and the government ended up on TCP/IP anyway?



Herman

Broadly, yes. Waivers happened. The mandate outlived the standard's prospects. And the internet-history crowd, when Russell's piece came out, made the blunt version of the point — IP had deployed useful code and OSI did not, and OSI was massively more complicated than the Internet stack.



Corn

That's the failure mechanism. Complexity without working code. The standard that had everything except something you could install.



Herman

Einar Stefferud said it best: OSI is a beautiful dream, and TCP/IP is living it.



Corn

There's a prequel to this one, isn't there. The thing that happened before OSI.



Herman

There is, and it's where the incumbents'-clubhouse tell shows up in its rawest form. The International Network Working Group forms in nineteen seventy-two — Vint Cerf is its first chairman, Louis Pouzin and Hubert Zimmermann are in it, the people who would invent the field. They argue for three years, reach agreement on a protocol in nineteen seventy-five, and submit it to the CCITT — the international telecom standards body.



Corn

Which was full of whom?



Herman

Telecom engineers. Circuit-switching men. And they rejected it as too risky and untested. Pouzin's line about the CCITT is the quote of the episode — members do not object to packet switching, as long as it looks just like circuit switching.



Corn

As long as the revolution keeps the old wiring diagram.



Herman

The consequences were personal, too. Cerf was so discouraged by his international adventures in standards-making that he resigned as INWG chair in late nineteen seventy-five, left Stanford, and went to ARPA — to build the protocols in an environment he could control, the small community of ARPA contractors. The open committee lost the man, and the closed research program got the internet.



Corn

And Pouzin?



Herman

Complained publicly about the arm-twisting of the national monopolies — meaning the French telecom authority — and French government funding drained out of his network project, Cyclades, between seventy-five and seventy-eight, when his involvement ended. They didn't beat his argument. They defunded the arguer.



Corn

Worth flagging for listeners who liked that one: that story has a cousin. Volapük, the constructed language before Esperanto, collapsed from two hundred fifty clubs to four within two years — not because the market rejected it, but because its own founder kept a veto over the language and the reform faction walked. Sometimes the standard is killed by its governance, not its rivals.



Herman

Version control, but for a whole language, in the eighteen-eighties. Schleyer was a one-man CCITT.



Corn

So we've had non-compliance, veto, and complexity. The next two are about money and about teeth — sunk costs, and voluntariness. Which one's the plug?



Herman

The plug is sunk costs, and it is my favorite failure in modern European history because of how baldly everyone admitted what was happening. Setting: the mid-nineteen-nineties. There is no harmonized household plug anywhere in Europe — domestic mains plugs and sockets are explicitly excluded from the Low Voltage Directive. But there's momentum. CENELEC, the European electrotechnical standards body, has technical experts working on it.



Corn

CENELEC's technical experts agree on specifications. Then what?



Herman

Their own commercial wing shoots it down. CENELEC rejected harmonization proposals twice within two years. Politico reported in November ninety-six that vested interests were blocking the introduction of a single European plug even though a tested prototype already existed. Their source inside the Commission — a Commission official — said, quote, only the people who make plugs and sockets are holding it up.



Corn

The clubhouse tell, in one sentence, from inside the building.



Herman

It's the cleanest example on the record. The plug manufacturers were the members of the body deciding the plug standard, and every mould in every factory was sunk capital. The German electrical engineers' association, the VDE, estimated conversion at around two hundred fifty billion Deutschmarks, and Der Spiegel's headline on the vote was — I'll translate — nonsense stopped.



Corn

Two hundred fifty billion marks to change the least interesting object in the home.



Herman

And then the punchline, twenty years later. In twenty seventeen an Italian citizen who'd moved to the UK and been impressed by British plugs petitioned the EU's own better-regulation body, the REFIT Platform, to recommend harmonization. REFIT declined. Reasoning — strong social and economic impact on citizens without evident benefits in terms of safety. But the sentence that ends the argument is this one: current systems are heavily dependent on existing infrastructure, which cannot be changed without a transitional period of coexistence of systems of more than seventy-five years.



Corn

Seventy-five years.



Herman

Of two plug systems coexisting.



Corn

A seventy-five-year transition period is a polite way of saying never.



Herman

Never, with a Gantt chart.

L

Larry

Friends, are you tired of standards that just will not harmonize? Then you need the Decimal Time Esperanto Plug, the one adapter that finally unifies your clock, your language and your wall socket into a single glorious standard. It starts at nine hundred and ninety nine of your old money, but listen, the price is dropping right now, seven hundred, five hundred, three hundred, and for the first two hundred callers I will throw in a metric calendar, a committee of incumbents who will never approve anything, and a commemorative guillotine letter opener. The price just fell again, one hundred, forty, twelve, and the deal ends in ten, nine, eight, seven, six, five, four, three, two, one, sorry, the offer has expired. Was that too fast for you? That is the whole point.



Herman

Was the first two hundred callers thing even plausible for a market that size? If you're harmonizing all of Europe you'd expect...



Corn

Herman. Leave the guillotine letter opener alone; it's done more committee work than CENELEC.



Herman

Fine. Where the plug case ends is actually where it gets interesting, because something did survive. Not the standard — the compromise. The Europlug, that flat two-pin thing rated at two and a half amps, fits most continental sockets. And CEE seven slash seven, the hybrid plug that mates with both the German Schuko socket and the French one. Nobody won. Everybody adapted.



Corn

Last case, then. The longest-running failure on the list.



Herman

American metrication. And this is the one with the biggest misconception attached, so let me dismantle it first. The claim that the U.S. never adopted metric — false in an important way. Metric has been legal in U.S. trade since the Metric Act of eighteen sixty-six. The U.S. was an original signatory of the Metre Convention in eighteen seventy-five. And since the Mendenhall Order of eighteen ninety-three, the customary units themselves are defined in terms of metric standards. Since twenty twenty-three the foot has had a single definition — exactly zero point three zero four eight meters.



Corn

The American foot is a metric unit with a costume on.



Herman

And it's the fun of it. An inch is just twenty-five point four millimeters wearing a hat. The failure isn't of definition. It's of consumer metrication. By nineteen seventy-five the U.S. was the only industrialized nation not committed to metric, and Congress acted — the Metric Conversion Act created the United States Metric Board to coordinate a voluntary changeover, planned for about ten years.



Corn

Voluntary.



Herman

Voluntary. Public resistance plus the Board's complete lack of authority stalled everything, and Reagan abolished the board in nineteen eighty-two. Then they tried again — the Omnibus Trade Act of nineteen eighty-eight declared metric the preferred system of weights and measures for U.S. trade and commerce, and Executive Order twelve seven seventy, in nineteen ninety-one, directed federal agencies to use it where economically feasible.



Corn

Preferred. Directed where feasible. Every verb in that sentence is a sofa cushion.



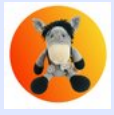
Herman

And the GAO checked. April nineteen ninety, report on federal metric conversion. They surveyed thirty-seven agencies. Six had completed metric guidelines. Two had prepared detailed transition plans. Twenty-seven of the thirty-seven had done less than a quarter of the required transition work — and GAO warned that remaining the only major industrialized nation with a non-metric system risked serious competitive disadvantage in global markets.



Corn

Twenty-seven out of thirty-seven under a quarter done, on a program with a preferred system and a sofa-cushion executive order. The prediction that failed here wasn't about units.



Herman

The result is the split you see today, and it's stable, not transitional. Science, medicine, pharmaceuticals, electronics, vehicle manufacturing, the military — metric. Road signs, weather, cooking, construction, and what Americans say when they step on a scale — customary. The woman who runs the federal metric program at NIST put it well: it's been legal to use the metric system in the United States since eighteen sixty-six. A hundred and sixty years of legal permission.



Corn

Permission is the tell. Compare the two countries that actually did it.



Herman

Australia. Started in nineteen seventy-one under a Metric Conversion Board, disbanded in eighty-one, with imperial units withdrawn from general legal use between nineteen seventy and nineteen eighty-eight. SI units are now the only legal units of measurement in Australia. Done, finished, and nobody there thinks about it.



Corn

And Canada?



Herman

Canada is the control group. Metric Commission starts in nineteen seventy, abolished in eighty-five, and Canadians today live exactly where the voluntariness model predicts — metric for temperature, fuel, speed limits and road distances; imperial for height, weight, cooking, and what the meat counter charges per pound. A bilingual measurement system in a country that never made either one compulsory for daily life.



Corn

So voluntariness is the most reliable predictor of failure on the whole list. The standards that succeeded are the ones with teeth. Australia had legislation and a deadline; America had preference and feasibility.



Herman

Before we pull the five together, one warning about the genre itself, because the most famous standardization failure in economics might be a myth. QWERTY versus Dvorak. The story everyone knows — inferior layout locked in by path dependence, proof that markets pick bad standards.



Corn

I know the version with the Navy study.



Herman

The nineteen forty-four Navy study. Fourteen typists. Not randomized, and the QWERTY control group was measured inconsistently — retrained typists went from thirty-two to fifty-six words per minute, which the proponents waved around. Then Earle Strong's nineteen fifty-six study for the General Services Administration retrained typists properly and found no Dvorak advantage — his Dvorak typists needed twenty-five days of four-hour training just to catch up. Liebowitz and Margolis went through the whole history in nineteen ninety and concluded the market-rejection story doesn't survive the records. And Dvorak, it should be said, was selling the keyboard.



Corn

So the canonical failure story may itself be the failure. A study of fourteen people, done by the man with the competing product, and forty years of economics papers citing it as settled.



Herman

Present it as a live dispute and it becomes the sixth lesson: check who funded the study before you file the case as a market failure.



Corn

So the pattern, across all five. What actually won, every time?



Herman

Partial, ugly, pragmatic compatibility. Europe never got one plug and got the Europlug instead. America never went metric and got customary units defined by metric standards, with a metric military and metric medicine inside an imperial supermarket. TCP/IP itself won as the ugly thing people could run. Total harmonization fails; partial harmonization is what you get.



Corn

Which raises the question I keep circling — is that a failure of standardization, or the only kind of standardization that was ever going to work? Nobody ever adopts the clean version. They adopt the adapter.



Hilbert

Adapter is the wrong word, Herman.



Corn

Is it?



Hilbert

It's a converter. An adapter suggests something temporary. I've had mine eleven years. The boiler in this building takes a G three-eighths fitting and the loop the plumber wanted to install in twenty nineteen takes half-inch. Not the same thread, whatever the man at the counter says. Half-inch BSP is twenty millimeters on the outside, but the pitch is wrong, twenty-eight threads to the inch against the G's nineteen. He kept telling me they were the same because they both say nineteen on the packet. I had the calipers out on the counter.



Herman

What did you end up doing?



Hilbert

There's a brass reducing bush that bridges them. Nobody lists it. You have to ask for it by the old imperial designation, which one wholesaler in Talpiot keeps in a drawer because the boiler manufacturer went under in twenty fourteen and nobody updated the part catalogues. My neighbour wanted the same fitting for the flat below — same boiler, same building. I told him the designation and he came back with a packet of washers and an apology from the shop. He ended up getting it from me. I'd bought three.



Corn

You bought three reducers for one job.



Hilbert

You buy three because the day you need one is the day the drawer is empty. That's the part your European plug people never put in the report. I ran cable for a living for a while, you learn it or you learn to go home. The washers, mind, I gave him nothing. He can buy his own washers.



Corn

So the lesson is, sometimes the standard is simply the wrong answer, and no committee can save it.



Herman

Nothing in that drawer had a standard. It had a designation and a man who knew which drawer.



Corn

Which is, I suppose, the real complement to today's list. The five failures all lost to an installed base, and the thing that serves an installed base isn't a standard at all — it's a drawer with a part number in it.



Herman

If you take one thing from today, take the mechanism, not the list. Five different diseases: the people said no, one delegate said no, the code said no, the walls said no, and permission said no. Same obituary, different causes of death.



Corn

The sharpening version, for me, is that the winners were never clean. Europlug, CEE seven seven, a foot defined as zero point three zero four eight meters. The world doesn't converge on the standard. It converges on the bridge.



Herman

And here's the open question I'd leave with Daniel. Every case we covered today predates twenty twenty. The next decade of standards fights — AI interoperability, charging connectors, data formats — will run on exactly the machinery that failed here: committees of incumbents, voluntary adoption, enormous installed bases. Either the lessons hold, or the clubhouses have learned nothing and we're about to watch decimal time happen again with model weights.



Corn

My money's on the clubhouse. It always has the guillotine, and it never has the clock.



Herman

Producer credit where it belongs: Hilbert Flumingtop, who has been turning the dials all episode, and who has apparently been out-voting European standards bodies from a drawer in Talpiot. If this was your kind of episode, go back for episode twelve thirty-nine, Why Can't We All Use the Same Screw; episode nine, Benchmarking Custom ASR Tools - Beyond The WER; and episode three, Safetensors or something else. This has been My Weird Prompts — the human-AI collaboration podcast, with myself, Herman Poppleberry...



Corn

...and Corn. If today's museum of defeated standards worked for you, the archive lives at my weird prompts dot com, and there are six thousand-some episodes in it.



Herman

We'll be back soon. Until then — synchronize your clocks. Both dials.

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