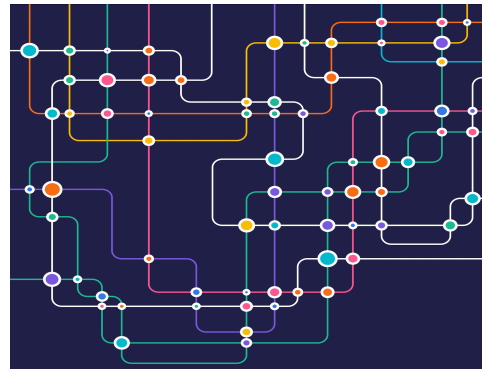


Ensuring POEMs is Decentralized

Briefing

Legislation establishing POEMs (Public Official E-Markets) should enforce safeguards against centralization of control over the platform. This builds trust in the system, allowing its operators to become part of the checks and balances in a modernized, democratically overseen, economy.



THE DANGERS OF CENTRALIZATION

Online markets are more vulnerable to centralized control than purely physical public infrastructure. Their structures, rules, processes, and release of data can be influenced with hard-to-detect nuance. Influence may be driven by commercial priorities, political ideology, short-term operational imperatives, or just conformist groupthink within management.

Centralization paves the way to distortion of market activity, to favor predetermined outcomes for example, or operators entering the political fray, punishing a government perhaps by dampening economic activity in the run up to an election. It is a particular risk within POEMs because operators are likely to be foreign; only a few countries can muster the finance, technological resources, and know-how to launch such a platform purely from domestic corporations.

This briefing outlines ways [legislation](#) enabling POEMs could foster federated control, with internal checks and balances, and diverse operators running the markets united only by a strong incentive to fight on behalf of the jurisdiction’s micro-economy participants.

OVERVIEW: A Framework for Decentralized Control 2

1) Structural Precautions Against Centralization..... 2

 a) Criteria for bidders 2

 b) Embedding Decentralization in the Technology 3

 c) Ensuring Independence from Government..... 4

2) Operational Precautions Against Centralization: Enforced Franchising 5

 a) Background to Franchising 5

 b) Aims of franchising 5

 c) What would franchisees do?..... 6

 d) Rules governing franchising 7

 e) Further decentralization: Splitting of franchises..... 8

3) External Forces for Decentralization: The Role of Apps..... 10

 a) How apps could work..... 10

 b) Benefits of apps 10

OVERVIEW: A Framework for Decentralized Control

Barring of centralized control should be considered core to [legislation](#) enabling POEMs. Under terms of the concession, platform operators must be forbidden from buying, selling, or taking any position in any market they oversee. No data about market activity can be compiled but not shared publicly; so operators have no insights denied to general users.

To enforce that, market operators must be stopped from gaining undesirable power, not from accruing potentially enormous profits. By removing any possibility of caps on income, or windfall taxes, but coupled with enforcement of decentralization and transparency, a concession creates the playbook for an operating consortium: maximize revenue by growing micro-economic activity, knowing that trying to distort activity in any way could result in loss of license. The "*freedom to make huge profits*" rule would also engender predictability; operators' motivations could be reliably assumed by anyone checking system probity. The rule must of course be counterbalanced by a competitive process, open to all comers, for selecting the consortium that wins a concession. Awarding a 15-year license to operate POEMs, with all its officially-bestowed benefits, to the companies committing to the lowest, fixed percentage, mark up within each transaction as their sole return would deliver this.

Concentration of power among market operators is just one risk. Government control could also be subtle, achieved perhaps through implicit promise of concession renewal or half-hearted regulation. There is learning available from regulation of broadcasters - as example - whose business depends on a government issued license but who are vital to the balances in a democratized society.

A lasting way of ensuring splintered control of POEMs in any jurisdiction is a rule enforcing a split between a consortium, likely international, operating core servers and independently financed franchisees who each operate one market-sector. This model appears to have been perfected by McDonald's Hamburgers who used it to underpin rapid growth and organizational dynamism, while lowering start-up costs. In POEMs' case, franchising of each market sector would create powerful disincentives for collusion among the entities who shaped the platform's inner workings.

1) Structural Precautions Against Centralization

a) Criteria for bidders

Protectionist politicians may wish to favor domestic companies when considering how to allocate a concession to operate POEMs. From a decentralization perspective, this is undesirable. Creating a vibrant, publicly scrutinized, and thorough request for bids which attracts multiple competing bidders should be a cornerstone of fragmented control; it protects against any shoo-in winner who may be close to the politicians initiating the process.

Minimum criteria for bidders will inevitably be a part of any concession. Some criteria will test readiness, financial status, or operational experience for example. But there could also be an explicit non-concentration requirement: single-entity bidders could be prohibited. Only consortia comprising at least, perhaps, four otherwise unconnected companies with comparable clout in the consortium's

decision making might be entertained. To refine this further, it could be specified each must have the bulk of their operations, or be genuinely headquartered, in separate nations.

This stipulation would protect against operators from a regime cozy with the initiating jurisdiction dominating. It also minimizes possibilities for politicians in the jurisdiction leaning on counterparts elsewhere to pressure a company in their jurisdiction to act in line with a political agenda.

Imagine - as a random example - the concession to operate a country's markets system was won by a consortium comprising MacQuarrie Bank (Australia), Red Hat software (Canada), Oracle databases (US), 1&1 Ionos hosting (Germany), Thales payment systems (France), and Dentsu front-end design (Japan). Each would have set up a standalone entity for a joint venture, to comply with a concession's stipulation of independence from external control; but these kinds of internationalists are big enough to withstand governmental bullying, and sufficiently brand sensitive to be jeopardized by any suspicion they were in the pocket of politicians or destabilizing democracy anywhere.

Inspection of POEMs' technology and organizational structures could likewise be multi-national. Assuming code running the system is published, any organization could decide to check its integrity, perhaps in response to a specific concern. These organizations should be from across the political spectrum, their probing constrained by verifiable system security concerns. The aim is a situation akin to Mastercard or Visa's checking on banks issuing their cards, any lowering of standards immediately becomes public. (TBCNONSEQUITER)

b) Embedding Decentralization in the Technology

As part of their public service obligations, the consortium running POEMs may be compelled to publish (a) the specifications for software running the platform, what it does, and how (b) the code currently in use (c) logs of upgrades to the code (d) a parallel instance of the current platform on which anyone can set up an account at any level using a fictitious identity and test any theory about distorted outcomes. By encouraging skeptics to constantly kick POEMs' tires, a bulwark against centralized control is created.

For example, a user may believe interest rates in POEMs' peer lending markets have been tweaked by a back-office user rather than being set by the market as the legislation demands. He can check the specifications to see where any such control might legitimately be possible, parse the code to show how it could have diverged from the specifications, log in as a superuser to the parallel platform and try to influence the rate in any given market.

Other tools to inhibit aggregation of power might include whistleblower pages. Posts on these screens, within a System Integrity section accessible on the menu of every user, can only be made by people with a staff login. Anything posted cannot be expunged, only responded to by operators.

With this kind of transparency mandated, tools such as double or triple keying for any intervention by operators might be enforced. So, for example, there may be legitimate reasons to intervene in price setting in a market of which government has lawfully, publicly, taken control, perhaps as a short-term measure (vaccine distribution during a pandemic being one example). So, the system will legitimately require tools that allow market rates to be overridden. But the code may ensure that three unrelated superusers must, in a specific sequence, authorize such a move and an alert to users is immediately generated if they do. Use of operators' power in the markets could be made as challenging as launching an intercontinental missile.

c) Ensuring Independence from Government

Trustworthy POEMs' implementation requires politicians willing to cede control of the platform they initiate. By doing so they remove possibilities for spying on citizens and temptation to manipulate market activity, to create a pre-election economic boom for instance, or stifle data regarded as unfavorable. The logic is comparable to the case for independent central banks, able to plan and act for the long term rather than responding to cycles of politics.

Legislation should give a winning consortium, the legally enforceable right (not just assurances) of freedom from government interference outside the legitimate lawmaking process. Consortium management should be mandated to report anything that smacks of undue attempts at influence on pages they maintain for reporting system integrity issues to users.

Operators will of course want favors from policymakers. These should be requested transparently in documents shared on system integrity pages. The consortium, for example, may seek tax breaks for sellers in particular sectors, or public funds used for subsidies to particular purchases on the platform; they should be expected to present the case for scrutiny. The rules should make clear, any ask around changing the terms of the concession after an award has an extremely high bar for success, and may require judicial review.

Ultimately the best protection against operators and politicians working in concert is an informed citizenry that understands POEMs has joined the institutions expected to ensure fair play for regular people alongside law enforcement and the courts. Technology tools, outlined below, can then be used to test any suspicions around changes to the platform that align with prevailing politics.

The key functionality protecting users from centralized control may be a "right to leave": any user can de-register and exit POEMs at any time, wiping their details as they do. This keeps operators in fear of a situation akin to a run on a bank after perceptions of instability circulate.

Broadcasting faced issues over independence from government similar to POEMs' situation. Countries license TV and radio stations so transmission spectrum can be allocated. Many politicians want to determine editorial boundaries of coverage and might expect threat of license non-renewal to be a lever for that. But an informed population can act as counterweight.

In Britain for example, government in 1988 [legislated](#) that leaders of Irish Republican groups could not be heard on regulated airwaves. The BBC, funded by an annual license fee paid by viewers, and its advertising-reliant competitors, united to subvert the restriction. Republican leaders were interviewed as normal then muted as an actor lip-synched their words. Viewer trust in the broadcaster's impartiality was too important for compliance with the new law. (The ban was withdrawn in 1994.) POEMs users need to expect similar determination from operators of the technology.

Actors became so skilled in lip-synching sound clips for news bulletins that viewers barely noticed the dubbing. Equity members earned up to £120 a session.

Guardian: Sept. 30, 2014

2) Operational Precautions Against Centralization: Enforced Franchising

a) Background to Franchising

McDonald's Hamburgers is the best-known organization that harnessed franchising to achieve consistency and high operating standards while expanding rapidly. The corporation evolved a thoughtful rulebook that allows suitably qualified individuals to purchase the right to operate a McDonald's in a given area. It ensures a replicable brand experience married with local drive and innovation.

We don't need to know any of this to enjoy a Big Mac and Fries. Customers simply intuit that a McDonald's anywhere in the world will be predictable, clean, and understandably priced. It's the same for POEMs; users likely won't care how the system's operating entities are structured. But, if franchising works, they should instinctively feel the dynamism-within-consistency of a wide-ranging operation.

There are many reasons POEMs should be federated between a core consortium running central servers and an ever-evolving network of franchisees designing and growing each front-end market. POEMs' rulebook would be determined by the [enabling legislation](#) and priorities of the winning consortium. It will have to manage complexities far beyond issues in fast-food. But the McDonald's model offers a useful pathfinder.

What eventually separated McDonald's from the rest of the pack was [the founder's] ability to marshal the efforts of hundreds of other entrepreneurs – his McDonald's franchisees.

McDonald's Behind the Arches: 1986

b) Aims of franchising

Legislation initiating a privately funded POEMs could broadly mandate two options for the structure of entities who deliver the service:

- **No controls**: A consortium who win the concession to operate POEMs are free to run the system as a monolithic entity, directly controlling every aspect of the service.
- **Franchising mandated**: The core consortium is permitted only to design, fund, build, and run the enormously sophisticated servers POEMs requires. But each sector within POEMs is to be overseen by an independent franchisee who exclusively purchases a stretch of "virtual storefront" from the consortium. One person buys Sports Tuition, another purchases Construction Equipment, a third takes over Rental of Musical Instruments, and so on.

The second option offers compelling advantages. Why not simply allow a winning consortium to operate the entire POEMs system as they wish?

- **Dissipated control**: If a POEMs instillation succeeds, it could transact 30% or more of GDP. That is too significant a chunk of the economy to be at the mercy of one organization or a small cluster of organizations. Franchisees who have purchased a stake in the business and need to

grow their part of the operation provide a counterweight to incompetence or corruption in the core consortium.

- **Local ownership:** The consortium that wins a POEMs concession will need large-scale finance, technology and operations. Providers are likely to be multi-national. That can be good; international companies are less likely to be cowed in event of any unwarranted interference by government. But POEMs needs to reflect the geography it serves. Franchisees turn it into a **federation** of local businesspeople underpinned by an international consortium.
- **Innovation within the system:** McDonald's Fillet-O-Fish was invented by a Cincinnati franchisee worried his largely Catholic customers were avoiding his outlet on Fridays. POEMs needs this ear-to-the-ground sensitivity across its diverse array of sectors.
- **Lower start-up costs:** Franchisees buying their front-end market would provide early revenue for the core consortium.

c) What would franchisees do?

Each franchisee should be motivated to grow activity in that sector using a combination of sales and aligning POEMs' array of software tools with the needs of their sellers, buyers and other market actors. Take, as an example, the franchisee running POEMs' market for Laboratory Rental.

That person starts with the benefits of official backing for POEMs. So, government operations covering forensics, food safety, pathology, and academia are driven to buy/sell any laboratory capacity in POEMs. From that starting point, an ambitious franchisee will want to:

- **Prioritize a list of further prospects:** Food companies, pharmaceuticals suppliers, independent medical facilities, researchers, and testing institutions for instance.
- **Raise POEMs' profile with prospects:** Speak at their conferences, seek coverage in their publications, meet with industry leaders.
- **Understand how transactions work in the sector.** What mechanisms will best lubricate trading? Auctioning of lab. time? 3D displays of laboratories based on sellers' inputs? What issues tend to derail intended lab. rental bookings? How can POEMs' [suite](#) of display, transaction, and ancillary tools best serve the sector and attract activity to the platform?
- **Research current market dynamics:** Over-supply? Uncertain demand? Poor quality? Lack of pricing data? POEMs is going to apply its core tools to every sector, doing much to solve any of the above. But a communications plan, perhaps selling benefits of by-the-day lab. hire could widen activity further.
- **Map reliance on supporting sectors.** POEMs supports "chain transactions"; seamless purchases combining resources from across multiple sectors. What dovetailing into other markets could be especially facilitated for lab. rental? Transport of samples from operating theatres to testing laboratories, for example, is a specialized part of the courier market. Should lab. owners be encouraged to enter fast-track instructions for getting a body part to the scientist's bench? Could some franchisee collaboration seamlessly make that part of POEM's market for medical couriers?

- **Seek new sources of supply or demand.** Might there be a market for home-laboratory facilities traded between amateur scientists? Could high-school science classrooms grow the market? Are back-of-a-van portable labs a viable sub-sector? POEMs [Maximum Average Transaction Size](#) formula incentivizes franchisees to constantly unearth small resources like this.

As at McDonald's, each franchisee will be tweaking a standard offering rather than designing a service. POEMs will have a library of display components from which each franchisee assembles their front-end, just as a McDonald's manager must use on-brand furniture, signage, point of sale material, and kitchen equipment. There should also be resources at the core. It's likely the consortium will have departments liaising with organizations such as universities across each institution's varied range of activities that could touch a POEMs' market. A franchisee might bid for a share of the consortium's national advertising budget by building a business case for promotion to laboratory managers specifically.

The consortium should be free to select franchisees as they wish; likely based on previous business experience and knowledge of the sector they seek to run. Franchisees will be in "co-opetition" with adjoining franchisees; as three McDonald's outlets in one town might draw business from each other, but unite in competing with Burger King or KFC.

d) Rules governing franchising

To achieve the aims above, legislation enabling POEMs could mandate:

1. **Two sets of entities:** Any reference to POEMs' "Operators" in the [legislation](#) covers a combination of (a) a core consortium who win the concession to operate POEMs (b) their franchisees who buy part of the business. Both must operate within the legislation.
2. **Defined functions:** Members of the consortium are not permitted to design or oversee any screen with which users (other than the consortium's staff) interact. Franchisees may not commission or operate any processing functionality that sits behind a screen or design their own screen elements; they can only draw on the consortium's library of functionality and display elements.
3. **Rights of both parties:** The consortium decide how to divide sectors for franchising, who is permitted to be a franchisee and on what grounds a franchisee can be replaced. Franchisees can form associations as a counterweight to the consortium's power.
4. **Characteristics of franchisees:** Franchisees must be individuals, perhaps they have to be citizens of the country, or region, initiating the service. Each franchisee may only operate one market-sector, but it can be delineated to encompass a wide spectrum of trading.
5. **Revenue share:** System income from a specific sector is shared between the consortium and the sector franchisee. The formula for this is at the discretion of the consortium but operating the front-end themselves is not an option; they have to attract franchisees. (This income is derived from the 2% or so flat-rate mark-up added to the price paid by the buyer for each transaction.) The consortium may also be obligated to fund a franchisee for any non-revenue services mandated in the [legislation](#).

6. **Transparency:** As with all POEMs' operations; details of franchisees, their remuneration formula, and turnover is published on the System Integrity pages available to any user.

e) Further decentralization: Splitting of franchises

There is a further refinement of POEMs' franchising that maximizes the aims of a federated system. McDonald's originally upheld standards by eschewing territorial franchises. You could buy the right to operate a McDonalds at one location, but not the right to run all McDonald's across New York City.

This limited the impact of an underperforming franchisee while ensuring motivation on the front line. POEMs could adopt the same principle. But it will have to respond to what could be rapid growth in some sectors. Even a tightly defined early franchise in POEMs could turn into an unforeseen land-grab if a sector grew unexpectedly.

Splitting of franchises offers a way to keep franchisees financially rewarded but without any one person gaining the power to control a vast swathe of the system. The model below assumes that a POEMs consortium – like McDonald's - fosters training and external sources of finance for potential franchisees. This ensures there is a constant pool of putative takers when a new franchise is made available.

Rules to enforce splitting might then stipulate:

- **Flat rate:** Each franchisee pays a **set fee for their franchise**. For this example, we will assume each pays the consortium \$50,000 to get an exclusive franchise for one sector covering the duration of the POEMs concession. They can sell all, or part, of their franchise to other approved franchisees at any time.
- **Trading of franchises:** The consortium must maintain a neutral aftermarket in which approved franchisees can buy or sell franchises among themselves.

Motivating franchisees to split

A rule could be set that each franchisee can earn only up to a ceiling in transaction income from their market. However, they are able to sell off part of their market to approved franchisees waiting for a franchise and there is no limit on this income. To make this tangible, assume the cap on each franchisee's share of income from markup on transactions is \$200,000 (\$200K) a year, adjusted for inflation.

At launch, the consortium divide their directory of initial sectors into a list of franchises. They are aiming to create franchises that will each reach \$200K in earnings for the franchisee within 12 months. The percentage split of system revenue for each franchise could be decided by bidding between the pool of franchisees perhaps in an internal reverse auction that stops when no lower bid is forthcoming.

So, a market that is specialized with little growth potential such as "Handmade cakes" will probably only find a franchisee if that person retains 90% of the system's mark-up on transactions. The remaining 10% goes to the consortium. But a sector like "Overnight accommodation" clearly has enormous room for growth. The consortium may find a qualified franchisee who will buy it for only 5% of the revenue generated.

If a franchisee exceeds \$200K in their share of revenue in any year, the surplus is diverted from them to the system's surplus fund. This is their motivation to split as activity grows.

Splitting in action: an example

- On day one of POEMs, Dan has purchased the franchise for "Drivers" by paying his \$50,000 and agreeing to 7.5% as his share of each transaction mark-up in this sector. He immediately starts outreaching to goods haulers, bus operators, limousine companies, and others who hire licensed vehicle operators.
- Dan's sales outreach is successful and within a few months he is earning \$10K a week from his 7.5% cut of operators' markup on each transaction. He needs to split his franchise before those earnings reach \$200K over a year. He decides to focus on commercial vehicle drivers and sells off the part of his franchise for car drivers (taxis, limousines). It's on a trajectory to fast growth so a pre-approved franchisee pays him \$200K for this exclusive territory within POEMs.
- Now Dan has three categories of drivers to focus on: passenger vehicles, trucks, and agricultural. Doubling down on the trucking industry, bus/coach operators, and farmers organizations he is soon again in danger of passing \$200K in earnings from even the new reduced franchise. So, he decides to retain Bus/Coach drivers and sell the rest of his spectrum. Able to show convincing growth potential, the sale nets him \$500K.
- Again, he accelerates growth in passenger vehicle drivers and must let part of the market go. He sees the most potential in minibus drivers and sells the rest of his sector (bus and coach drivers) for \$1m as it becomes clear how useful POEMs is becoming for short term hire of drivers.
- When minibus drivers deepens to the point he must split, he might chose to focus on specialized minibus drivers; those qualified to operate vehicles with lifts for the disabled or amphibious tourist craft or drivers who double as tourist guides and so on. If even that small sector grows to the point where 7.5% of operators' income exceeds \$200K, the logical next split might be geographic: Dan retaining the south of POEMs' territory and selling the north.
- Dan's hard work has netted him many hundreds of thousands of dollars. But - crucially- his level of control of any sector have remained commensurate with the scale of that market.
- If he underperforms, a waiting franchisee, will likely offer to purchase his business and grow it themselves. If the driver market contracts, after autonomous vehicles are widely permitted perhaps, it can shrink smoothly. Dan can buy out adjoining franchisees, likely cheaply, as long as his earnings from transactions markups remain under \$200K a year.

Splitting takes some unknowables out of POEMs' launch. Neither Dan or the operating consortium can deduce the eventual value of the Drivers market up-front. So full purchase of the entire market could easily lead to an over or under bid. Either is potentially destabilizing; a franchisee underwater financially will be as demotivated as one who is effortlessly earning far more than anyone anticipated for minimal effort. Splitting of franchises ensures franchisees get increasingly specialized and responsive to their sector as markets grow.

3) External Forces for Decentralization: The Role of Apps

POEMs should function as a transaction engine for Apps developed externally that can perform any number of functions while drawing on basic POEMs' processes. These apps can charge users what they like and are not regulated by POEMs' operators who must allow anyone to tap into system processes unless corruption of those processes can be proved.

a) How apps could work

Examples of the value-added services that enterprising app designers might launch include:

- **Curated collections:** This might include - as example - booking of Methodist babysitters. There is - quite rightly - no official repository of individuals' religions, so POEMs can't provide much for parents who want co-believers to cover a Saturday night out. But a Methodist newspaper might allow its subscribers access to their app that runs a babysitting transaction on POEMs but filters returns to favor other subscribers.
- **Data blending:** An app may pick out garments for rent on POEMs that align with what celebrities are currently wearing. Image search of paparazzi photo's is applied to POEMs interfaces to make recommendations with the app owner adding maybe 15% to purchases.
- **Data monetization:** POEMs can't carry adverts, but someone willing to let an app track their purchases on POEMs might get a small fee for allowing related advertising on their POEMs' journeys conducted through the app.
- **Changed appearance:** POEMs' mandate for accessibility will likely give it a slightly stuffy feel for many users. Anyone should be able to market "skins" that overlay system screens with fresher designs.

POEMs will continue to take its flat-rate percentage as transactions go through its markets, whether via an app or not, but app owners capture all the additional wealth they generate. There should be no costs for having an app feed transactions into POEMs, or take data out of POEMs.

POEMs operators should be obligated to provide a directory of apps that have linked to POEMs. System functionality should include a way of generating a code that proves to an app user that POEMs really is underpinning the transaction they are seeing through the app.

b) Benefits of apps

- **Counterweights:** If Dan, running the Drivers market in the example above, is desultory in his outreach or customer service, an entrepreneur might set up an app that accesses POEMs' Drivers market while adding perhaps another 2% to the charge. She can then get to the big buyers of drivers before Dan does, locking them in. The market is being served. She may then

even want to get approval as a franchisee and buy Dan out, relinquishing her app as a conflict of interest of course.

Apps could be an additional element in the checks and balances around POEMs, they allow users to congregate on an alternative system while enjoying all the benefits of POEMs trading. Any of those other platforms might market themselves to their customer base as a direct replacement for POEMs, inviting users to switch to trading outside POEMs through the app. This could punish any complacency or inferior service by POEMs' operators.

- **Eco-system of innovation**: Apps can trial possibilities for services built on POEMs that could, if a deal could be reached with POEMs, be then sold to operators for incorporation into the main platform if popular. So, there is a vibrant universe of innovators outside franchisees and the consortium.
- **Extended functions**: As a regulated public utility, POEMs has to be solid and conservative, not permitted to speculate with funds in its loan markets for example. But speculation, like advertising which POEMs can't carry, can be good; opening new markets and sources of income. By fostering apps which can have edgier business models for users who retain their core POEMs trading record and features while using the app, a less regulated hinterland of possibilities can be opened for more adventurous users.