Eligibility rules service

10x Phase 3 ($650k) Funding Request
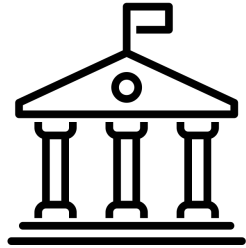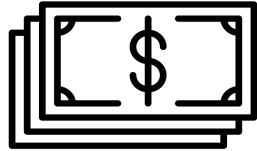
18F TEAM
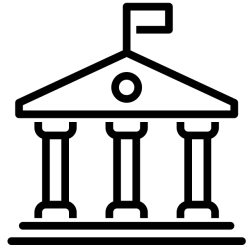
Ed Mullen, Alex Pandel, Shawnique Muller, Catherine Devlin
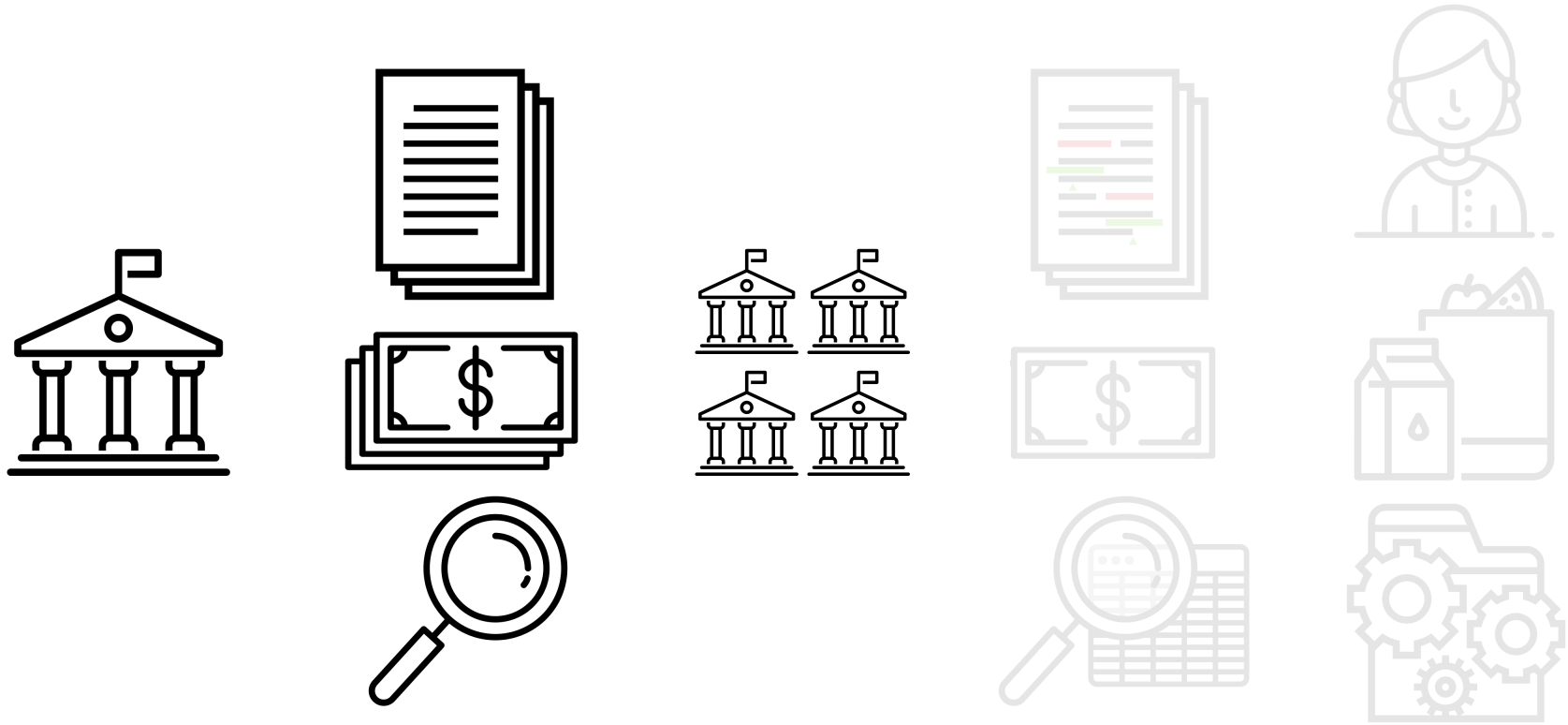
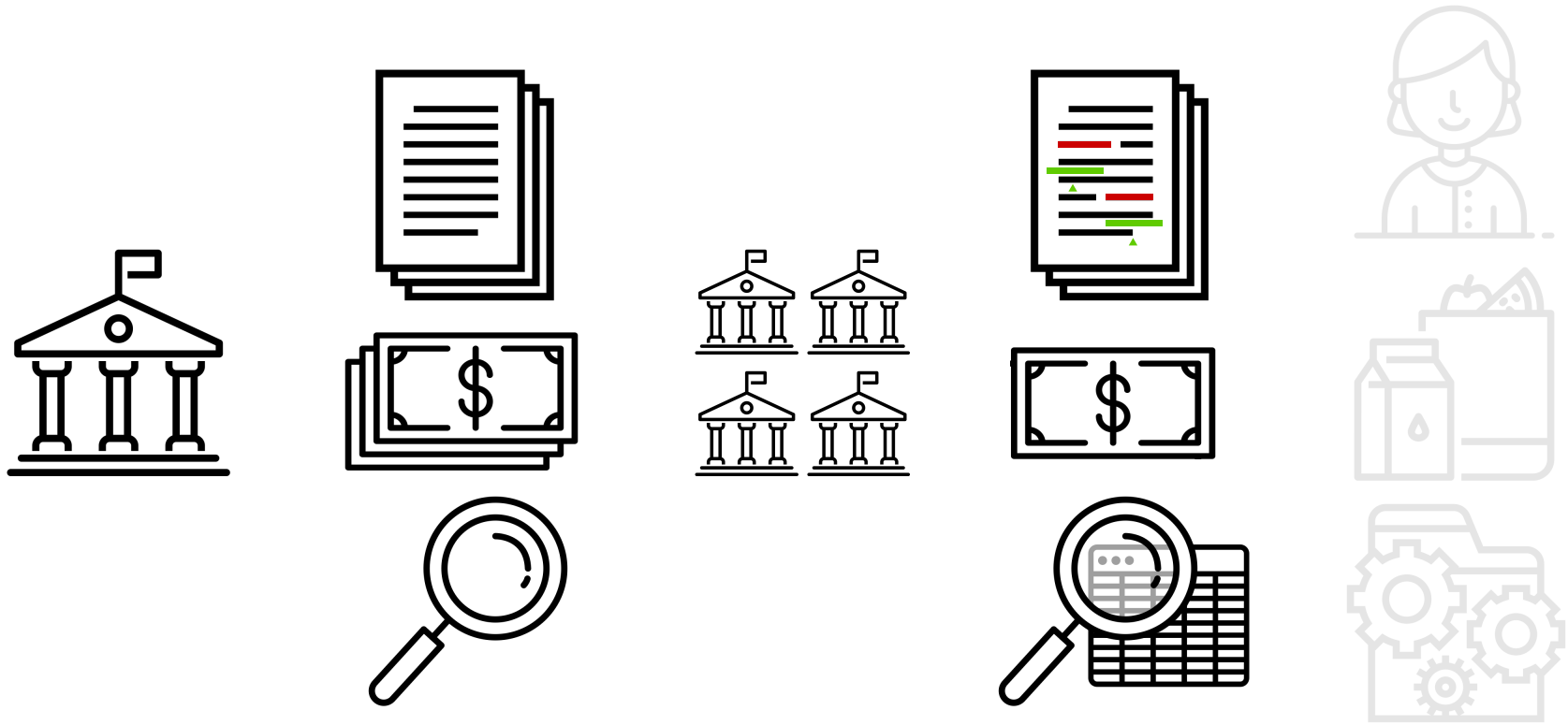# The problem

(very much simplified)

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Health and human services programs are managed by *federal* agencies...

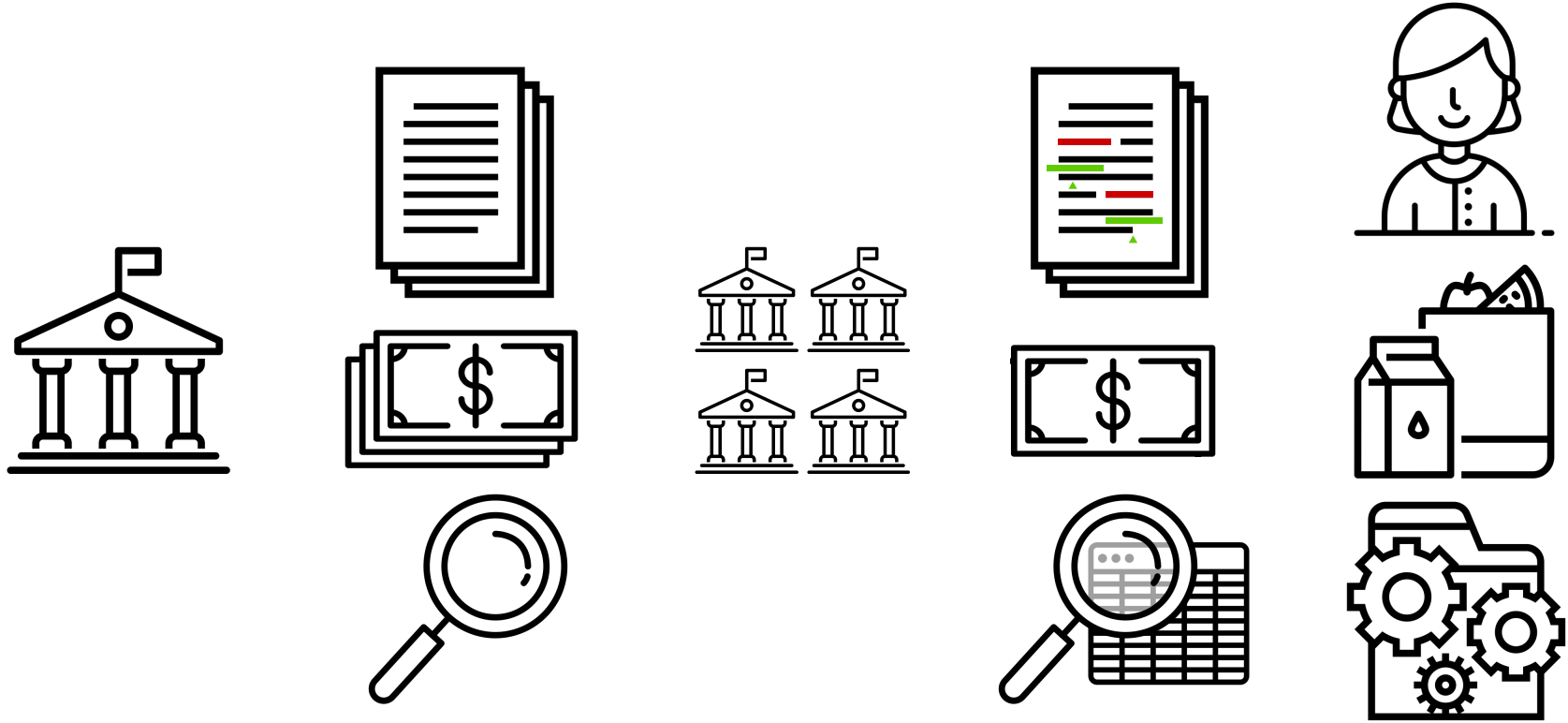...who define policy, provide funding, and oversee...

...the administration of these programs at the *state* level.

States adjust & implement policy, spend funds, and comply with oversight...

...to operate the program (and the tech it runs on) and deliver services to beneficiaries.

We're going to focus on the technology part, particularly eligibility systems.
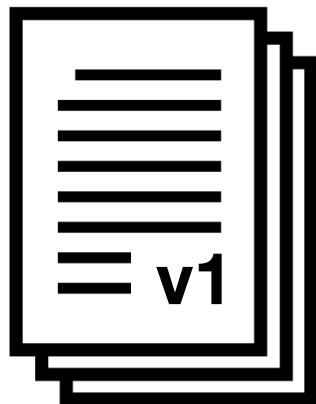
Sometimes the federal policies change.
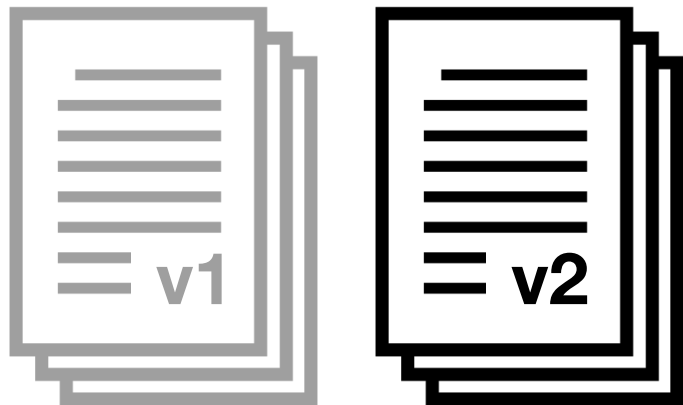
When this happens...

States review the changes...
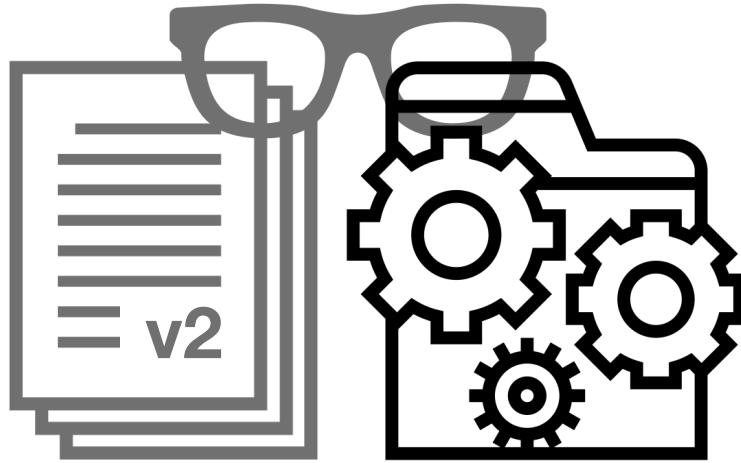
...identify needed system changes to implement the policy...
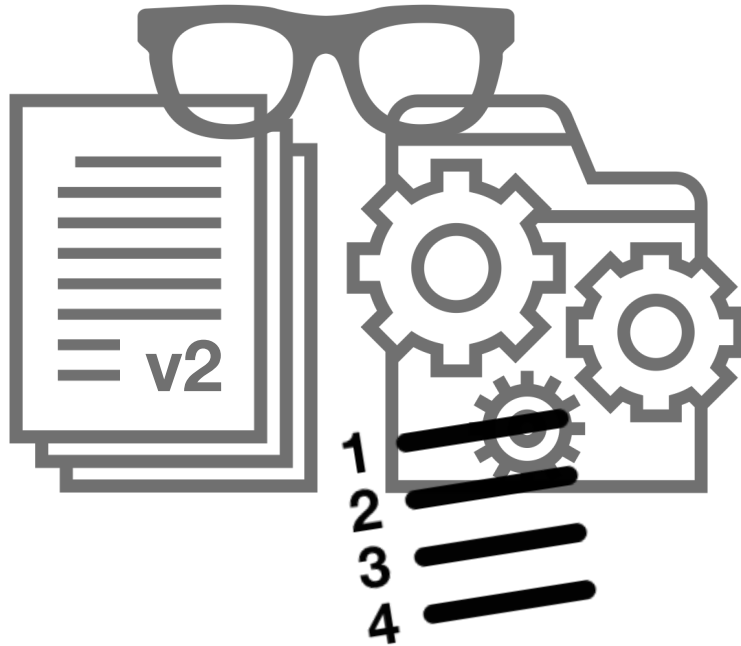
...prioritize system changes against all their other work...
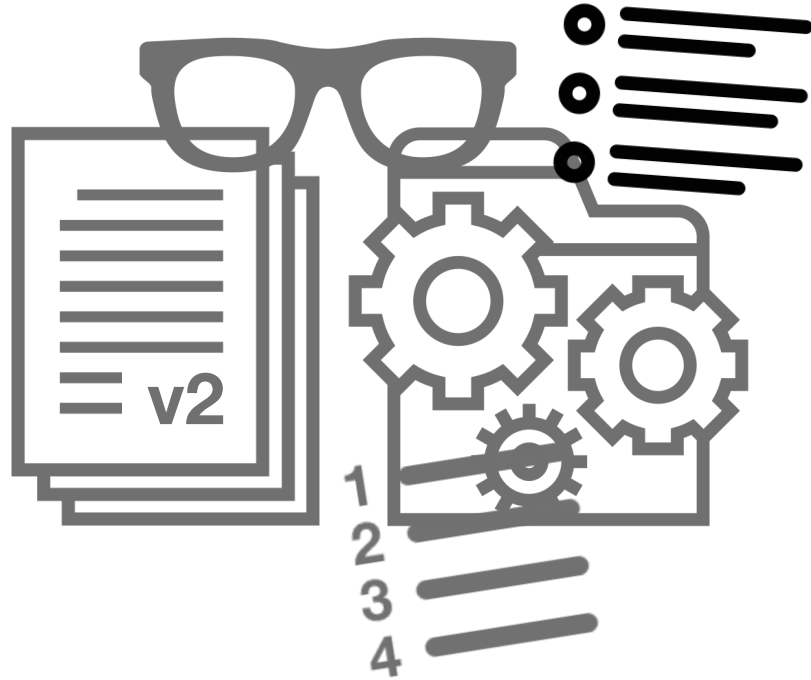
...turn policy into business requirements...
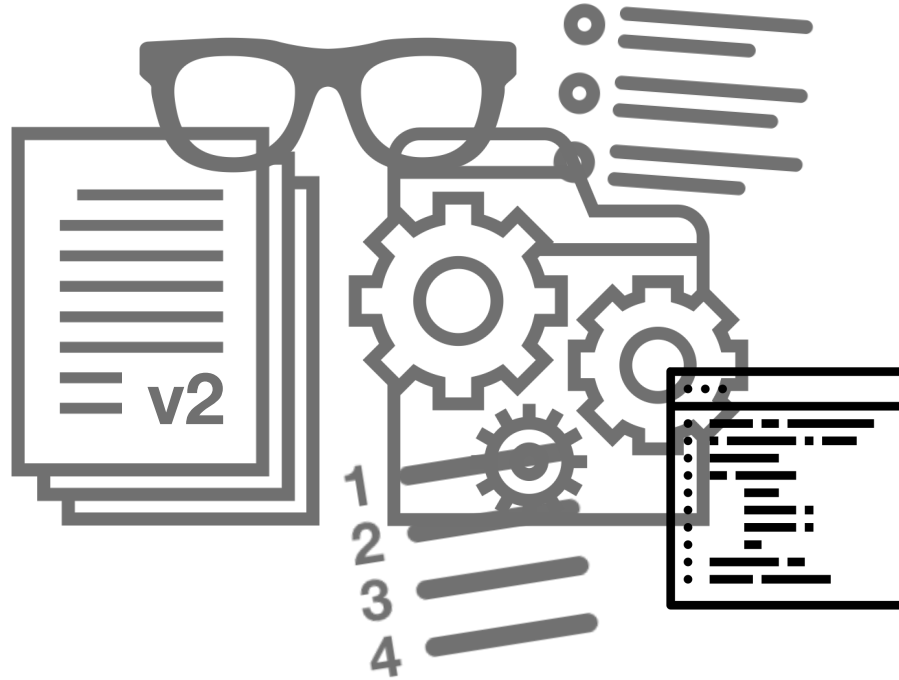
...and procure or conduct implementation work.
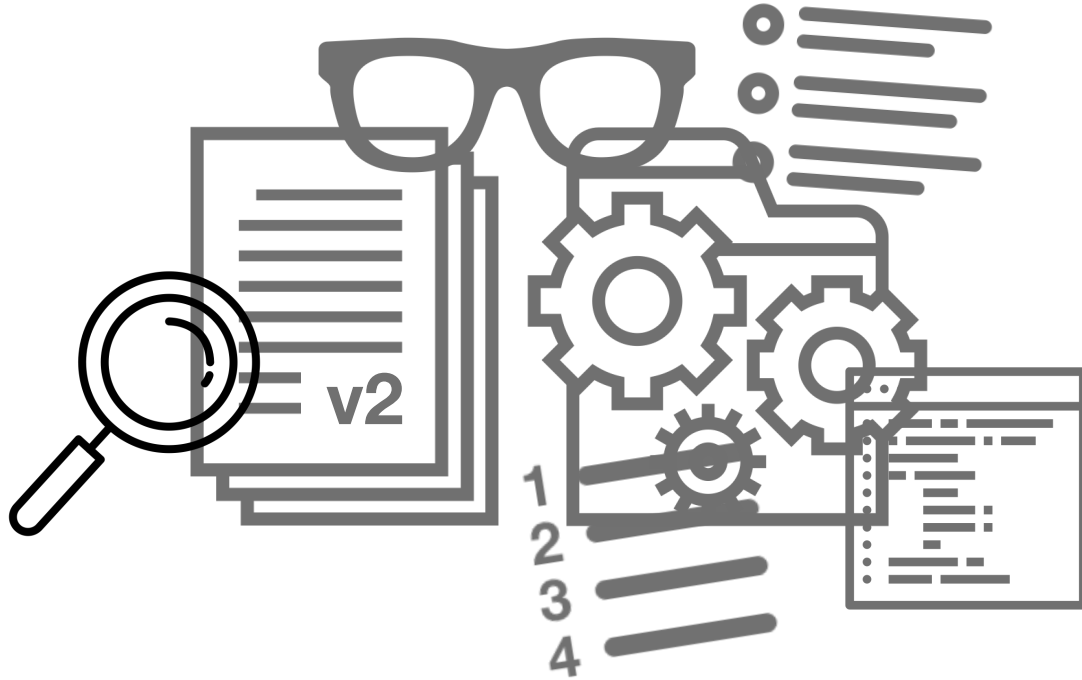
Federal oversight of this progress happens all along.
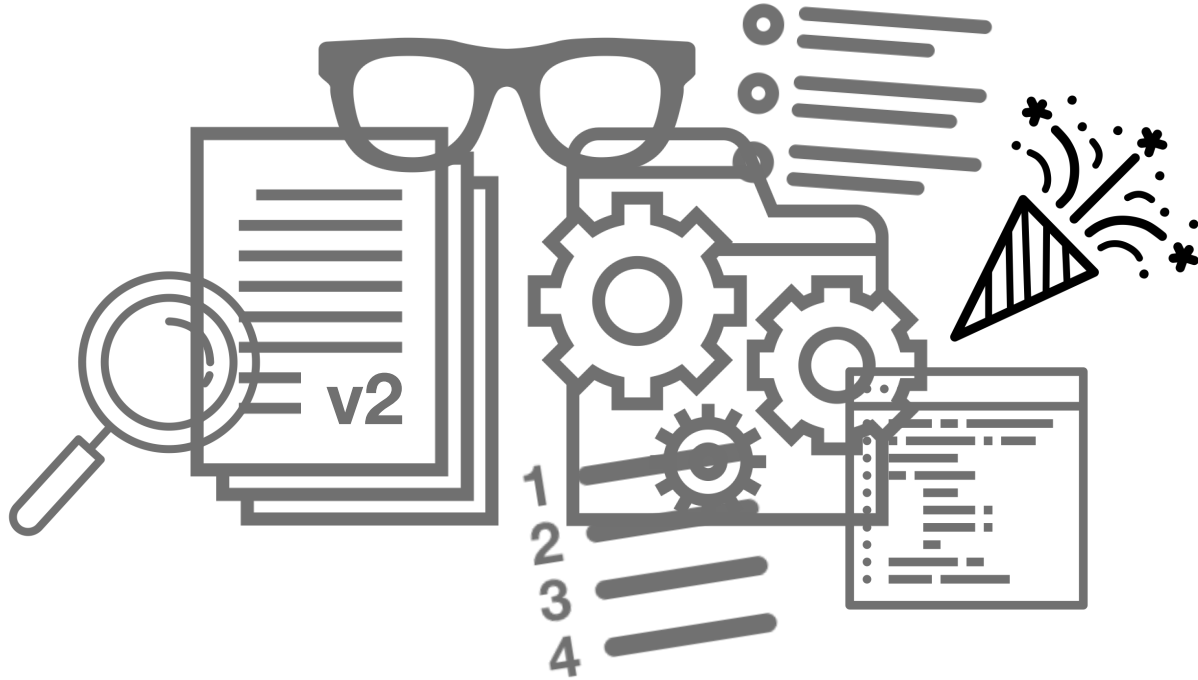
And after all the time, effort, and money, sometimes the process is a success...
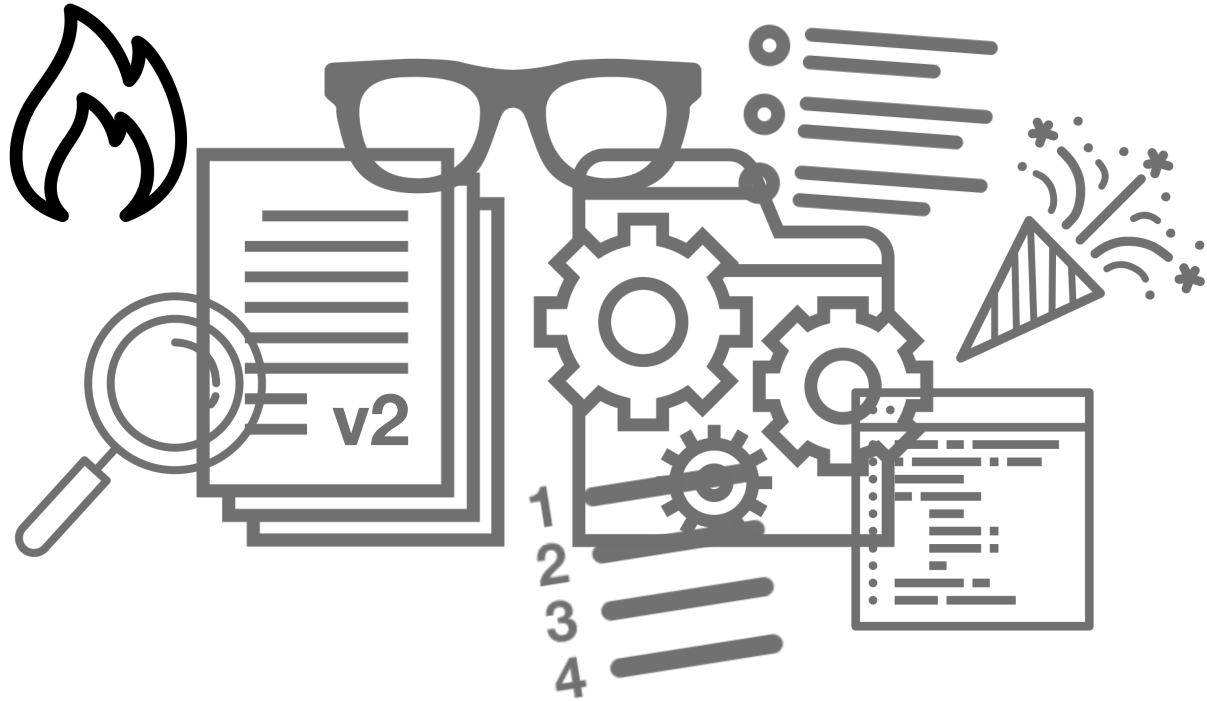
...and sometimes it's not.
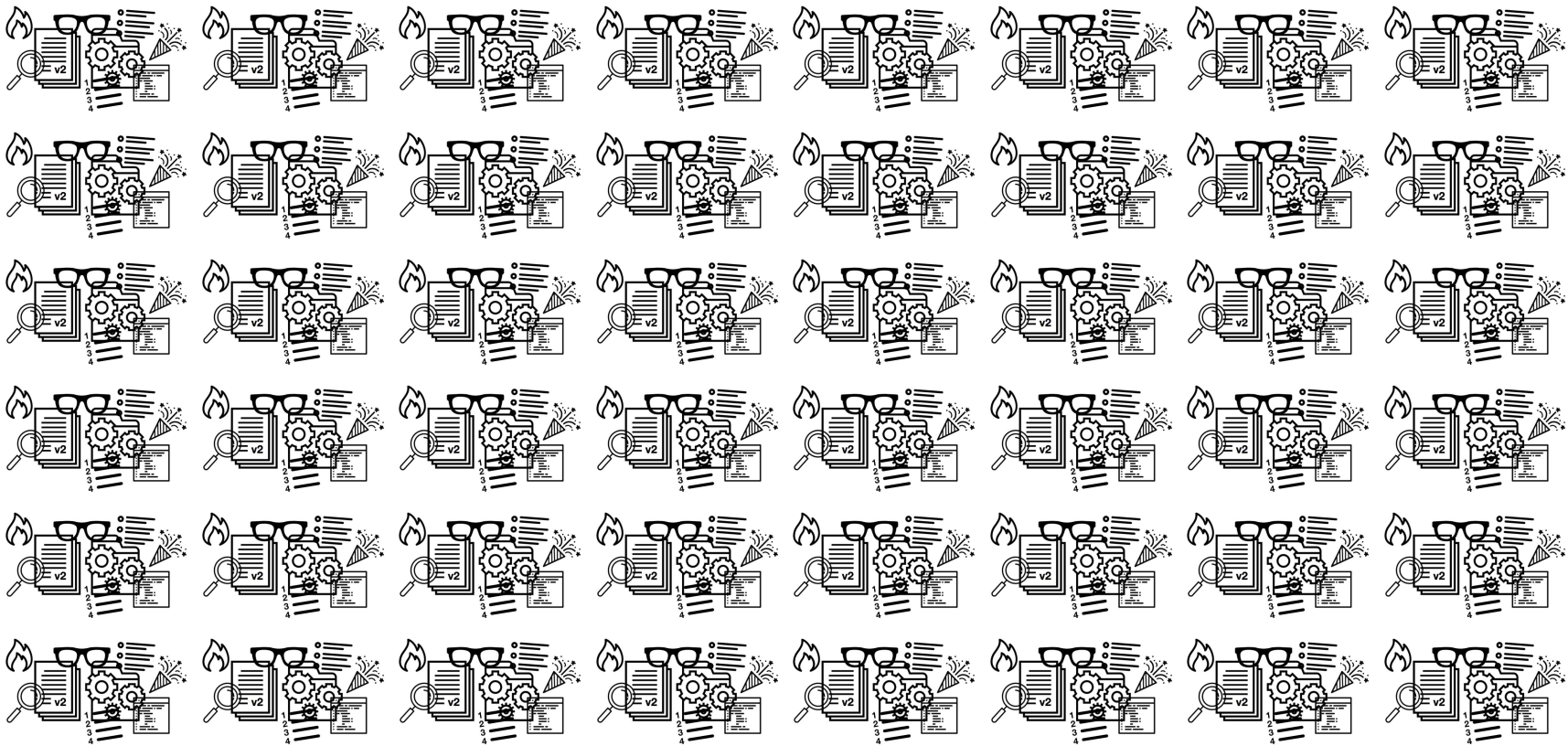
And this happens over and over, in every state...
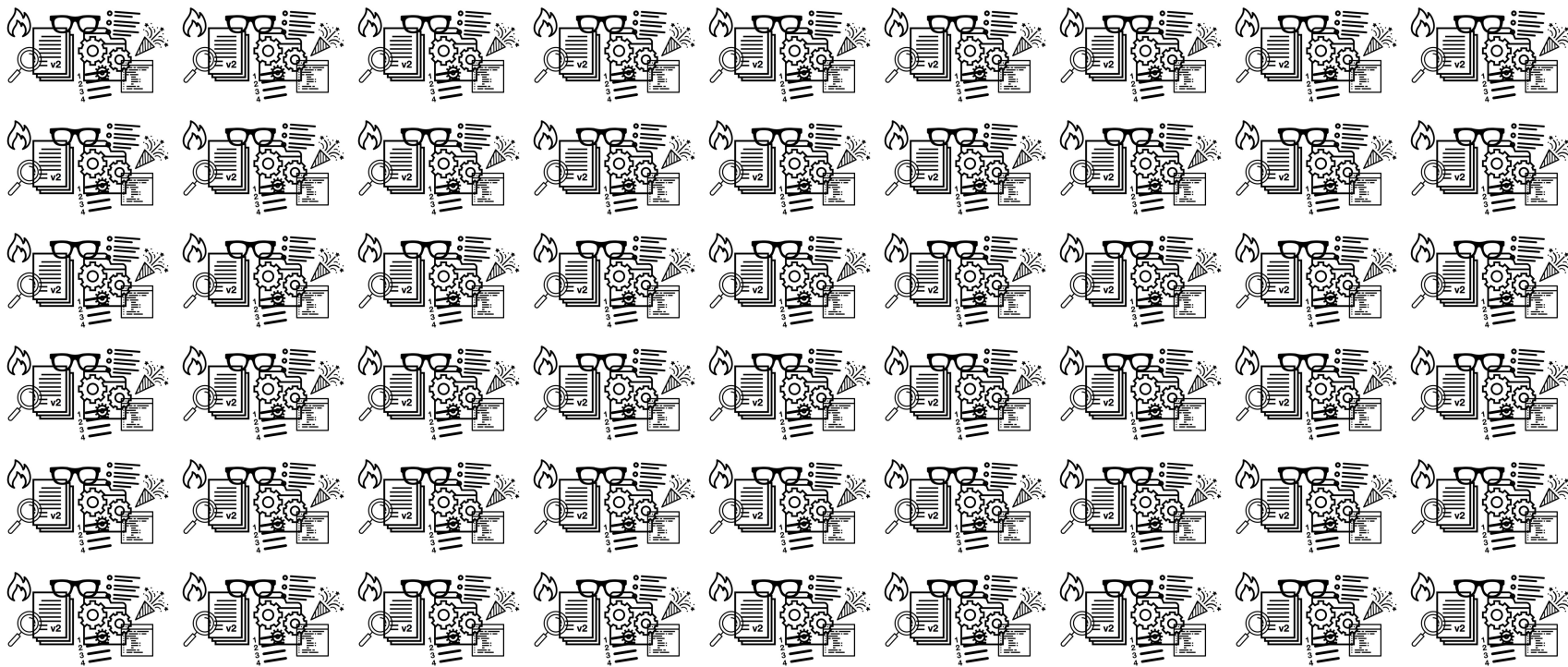
...and every territory.
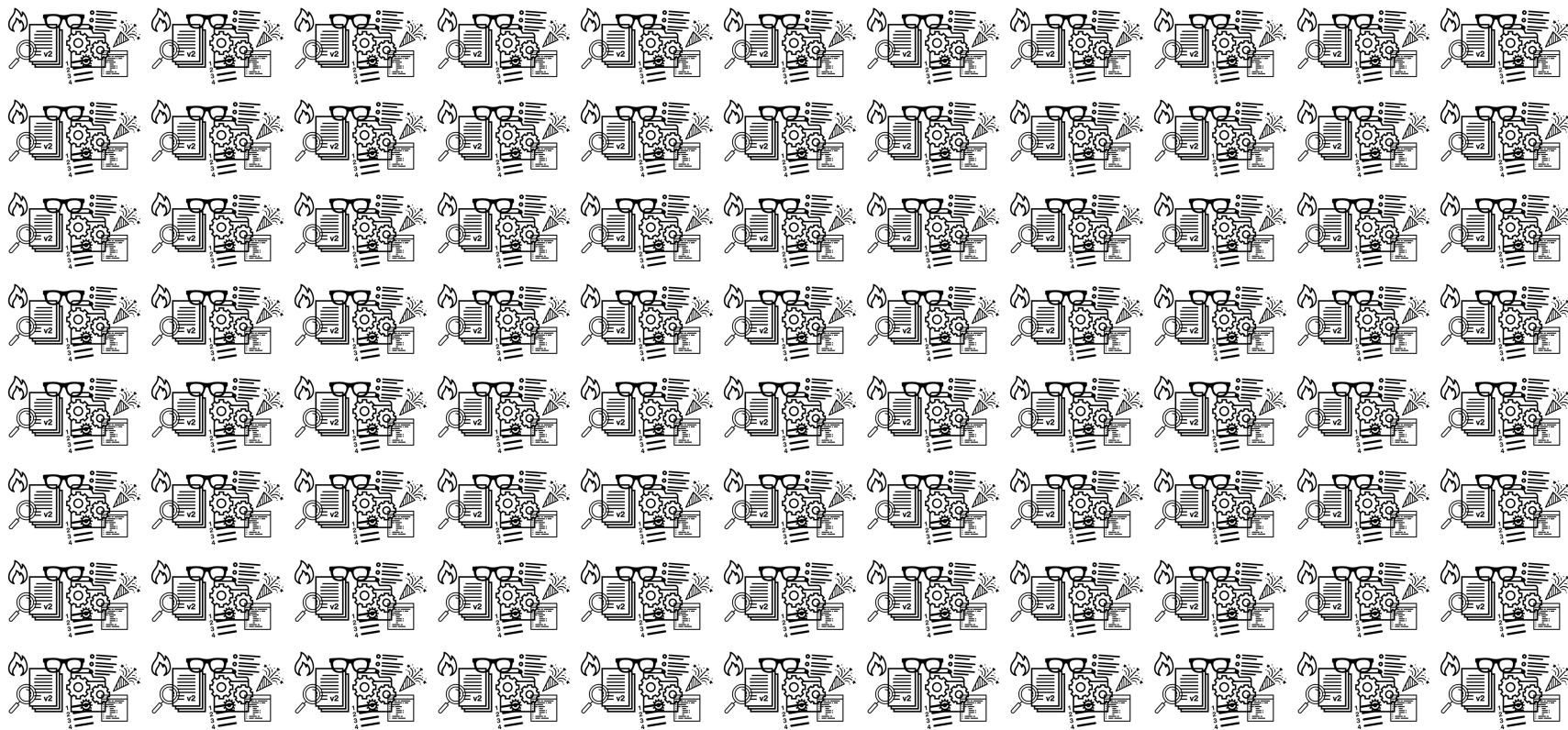
...and sometimes in tribal organizations as well.
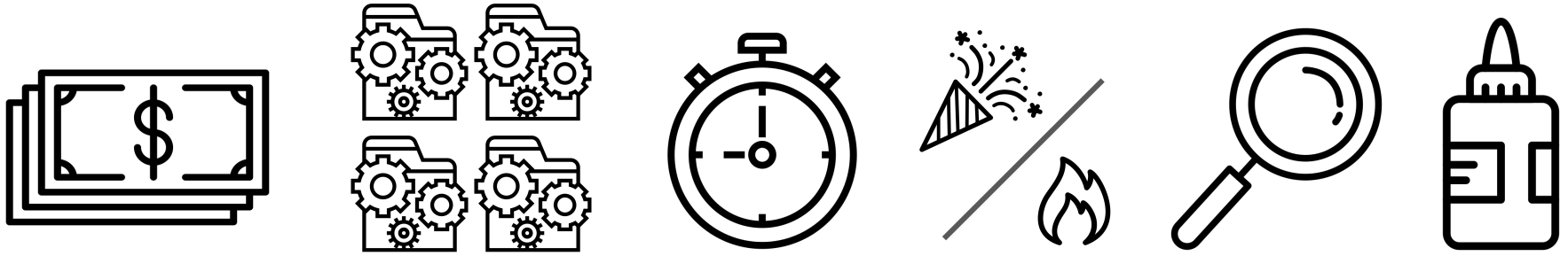
It's expensive, duplicative, slow, risky, and leads to heavy oversight and vendor lock-in.

How might we address this?
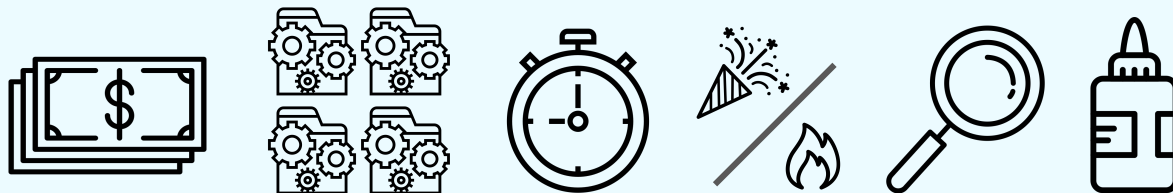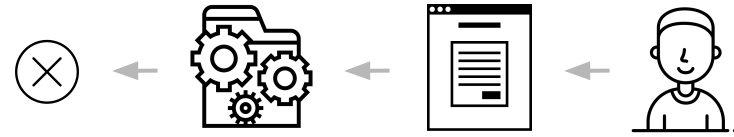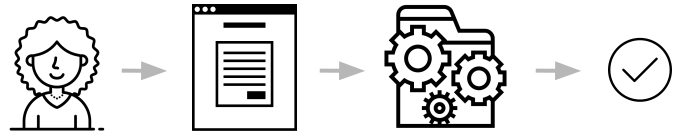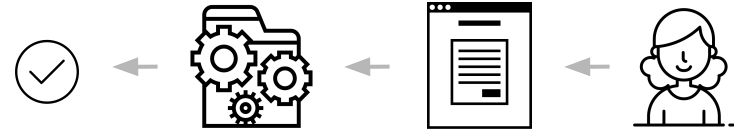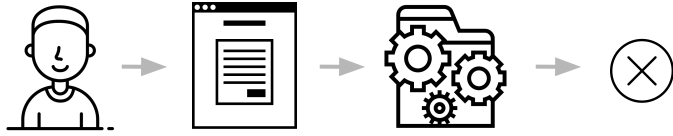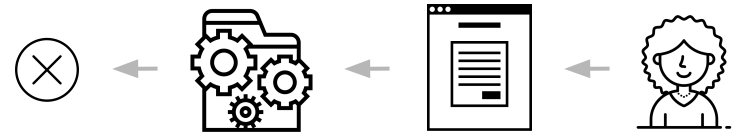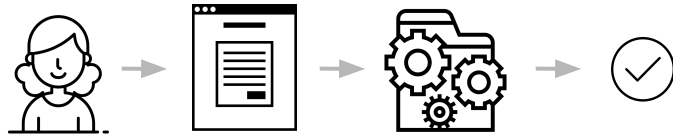
When someone applies to a program, their data is evaluated against eligibility criteria by a rules engine the state operates. Most states operate their own.
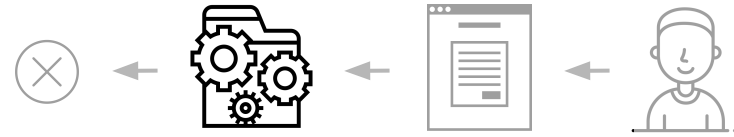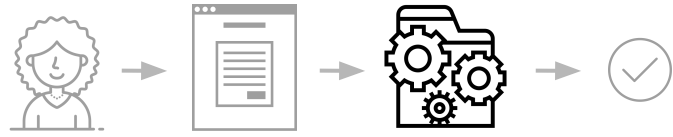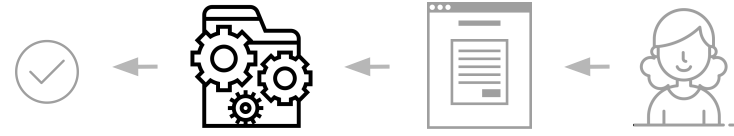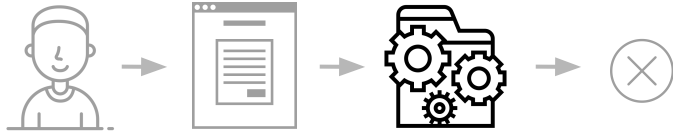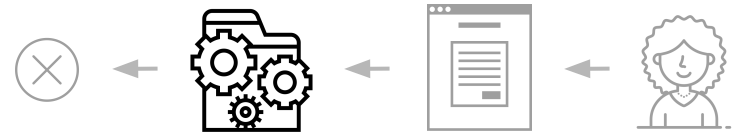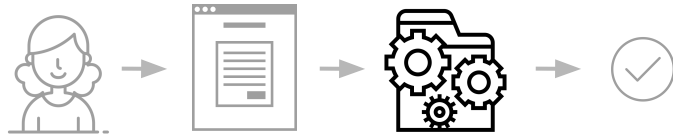
Each state's rules engine needs to change when the policies change how eligibility is determined. (This is where all the effort and risk comes in.)
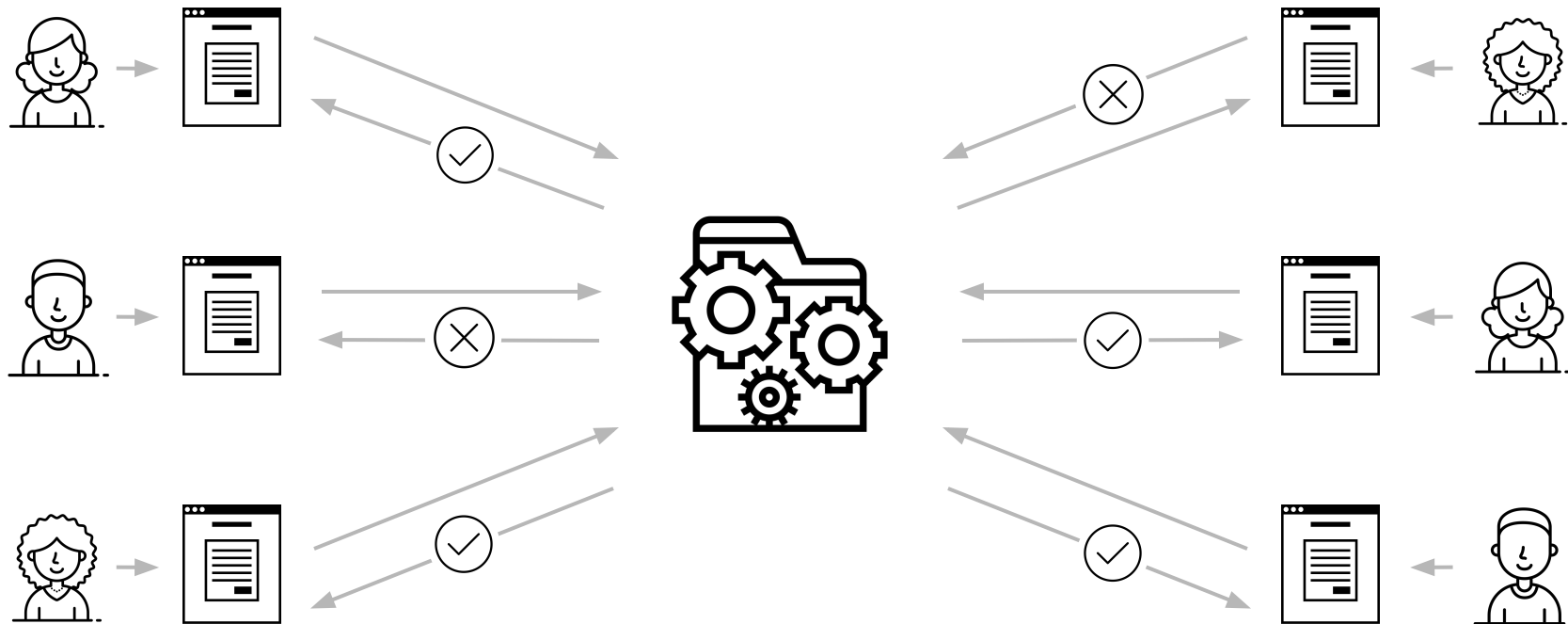
But there is a way that **a single, central rules service** could be accessed by many states so they wouldn't have to manage their own.
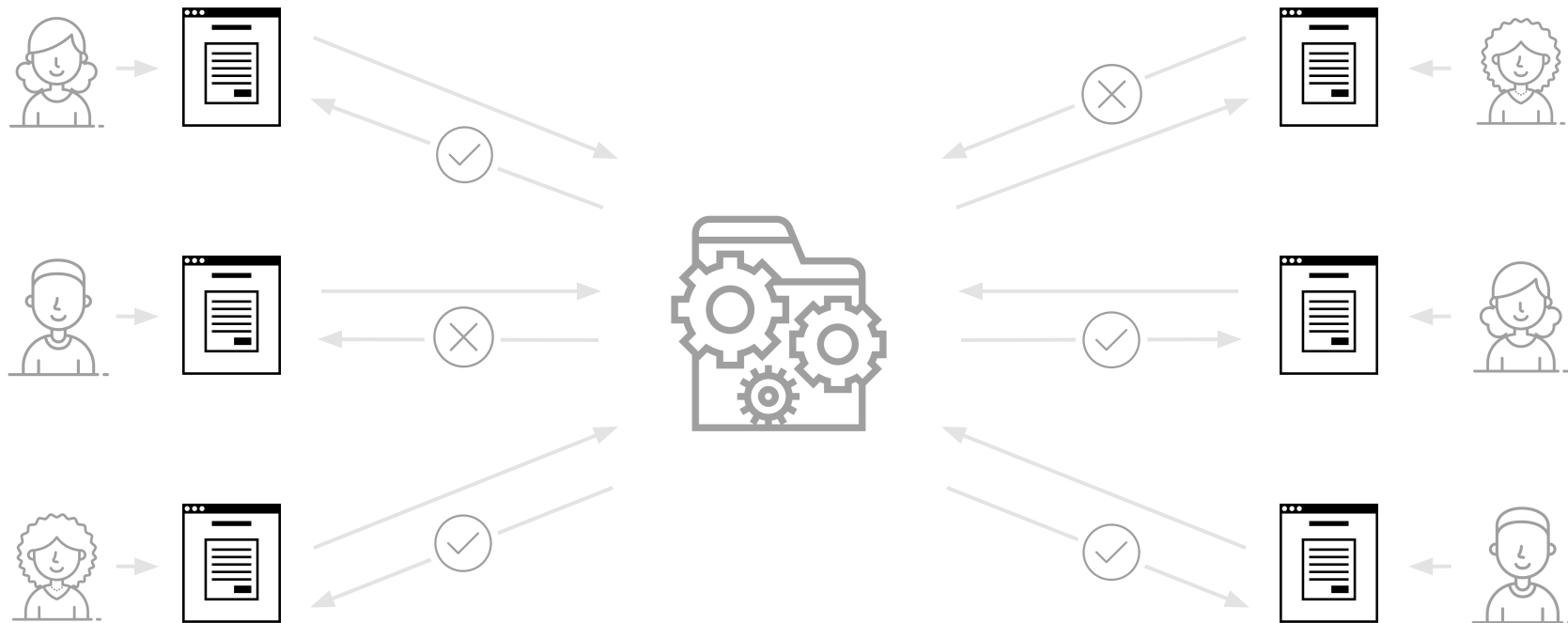
States would still have their own systems...
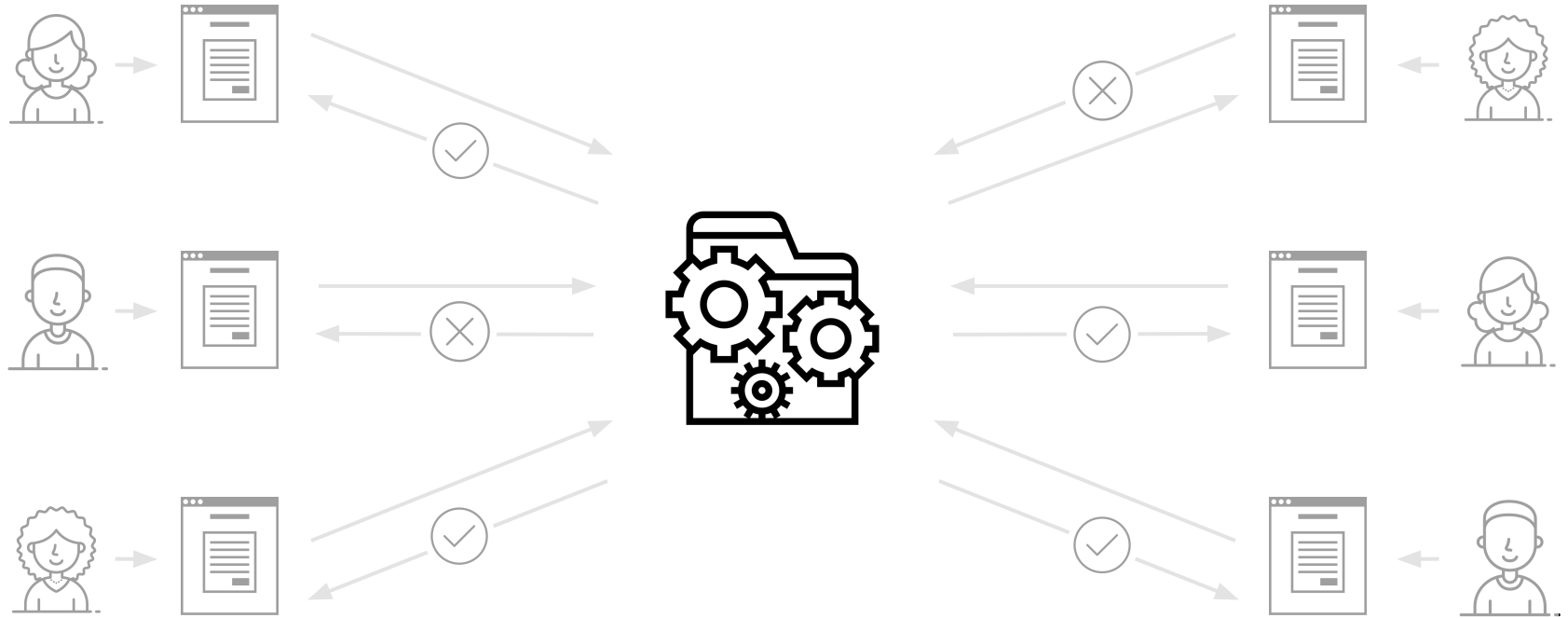
...but the rules part would be handled by a central rules service which would be managed by the federal agency.
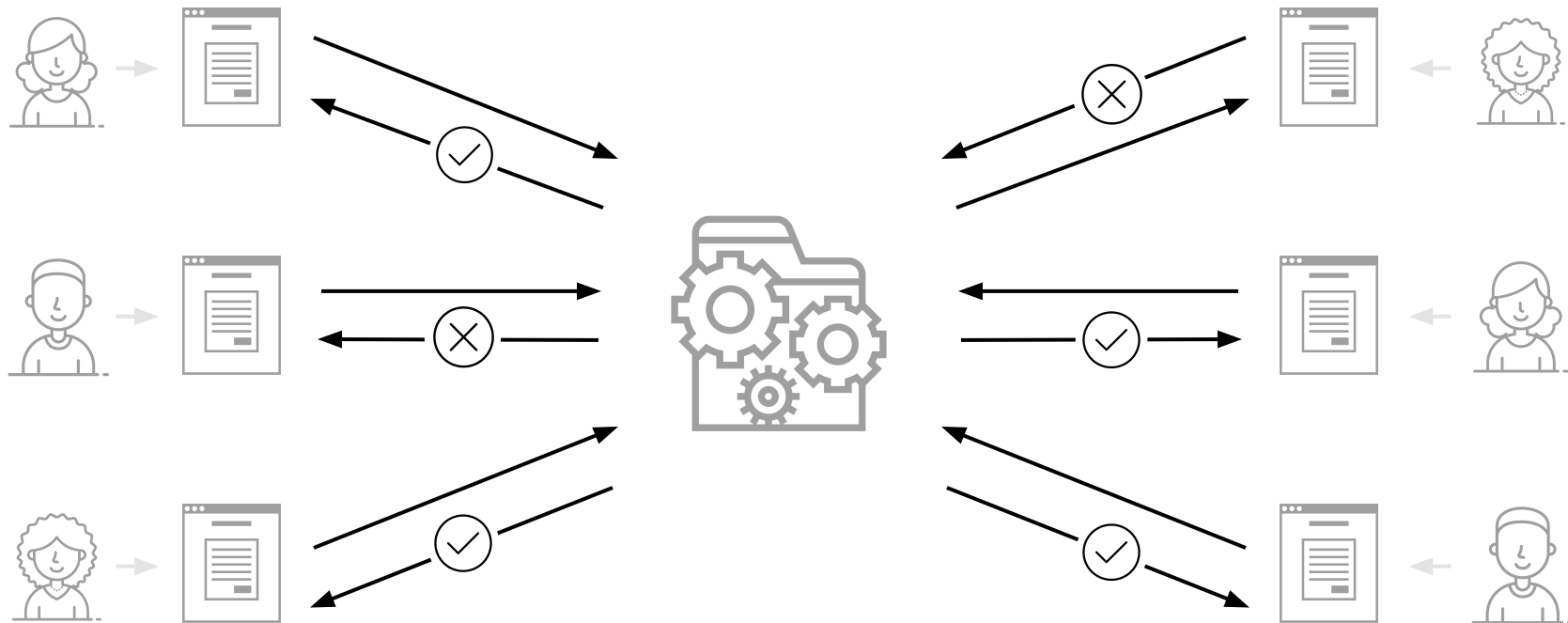
The state systems would talk to the rules service over the internet using an *application programming interface* or API.

Why should *we* address this?
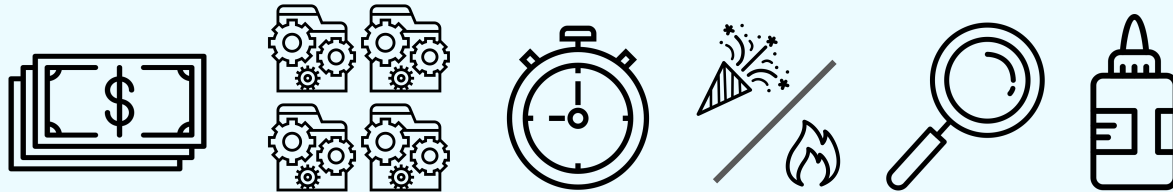
We can deliver high impact

Significant cost savings

- **Save millions of federal dollars** spent on buying, building, and overseeing duplicative rules engines and systems
- **Save states significant time and effort** procuring/building individual rules engines

Increased program integrity

- **Increase consistency of policy interpretation** across states
- **Increase program integrity** through minimizing erroneous or delayed policy interpretations

Reduced oversight

- **Reduce workload for federal agencies** overseeing state program administration
- **Reduce compliance effort for states** to correctly implement policy changes themselves

Reduced state burden

- **Reduce technical complexity** to manage, minimizing necessary staff/contractor time

Improved beneficiary experience

- **Increased eligibility assessment opportunities** by making rules service integration easy

We can deliver at scale

Medicaid, CHIP, TANF, LIHEAP, SNAP, WIC, and SSI are programs that serve around 115 million people.

Numbers have not been de-duplicated. Sources: SSI, TANF, Medicaid & CHIP, WIC, SNAP, LIHEAP

We have the expertise

TTS's extensive and growing body of work in the human services space has allowed us to develop domain expertise that supplements our well-established technical and design expertise.

Acquisition play

- ● CA ---------------------------- Child Welfare modular procurement -------------- https://goo.gl/MLKw8d 🔒
- ● CA ---------------------------- Medicaid Eligibility modernization ------------- Readme 🔒
- ● HHS/ACYF w MS, CT, MD ---------- Child Welfare path analysis ------------------- https://goo.gl/XiqFHg 🔒
- ● HHS/CMS w MO, MN, & WY -------- Medicaid Mgmt Info System (MMIS) path analysis -- https://goo.gl/kMZoqJ 🔒
- ● MO ----------------------------- MMIS modernization --------------------------- https://goo.gl/bBm4RV 🔒
- ● AK ----------------------------- Eligibility & Enrollment (E&E) --------------- https://goo.gl/cwnVyJ
- ● VT ----------------------------- E&E modernization --------------------------- https://goo.gl/Q2vt89 🔒
- ● AK ----------------------------- Child Welfare modernization ------------------ https://goo.gl/31Vuyk 🔒

Design / Build play

- ● HHS/CMS ----------------------- Multi-program enrollment prototype ------------ research | Prototype
- ● USDA/FNS/Child Nutrition ------- School Lunch app prototype -------------------- https://goo.gl/F6nV13
- ● DOL/Women's Bureau ------------ Paid Family Leave system prototype ------------ https://goo.gl/nDwNso
- ● SSA ---------------------------- Disability case processing system ------------- https://goo.gl/ZMBP1B 🔒
- ● 10x ---------------------------- E&E investigation ---------------------------- https://goo.gl/D6vUv6 🔒
- ● 10x & USDA/FNS/WIC ------------- Eligibility rules service --------------------- GitHub
- ● HHS/CMS ----------------------- Advance Planning Document(APD) modernization ---- https://goo.gl/PrFYmQ 🔒

Upcoming / Potential

- ● USDA/SNAP --------------------- State waiver path analysis -------------------- Staffing issue 🔒
- ● 10x & USDA/FNS/Child Nutrition - 10x data validation and State application

🔒Only visible within TTS

Eligibility rules service

PHASE 2
What we've done

Could a single, centralized rules web service serve multiple state programs instead of each state implementing their own rules engine?

To answer this, we...

- Talked with CMS, FNS' Child Nutrition and WIC, AZ and OR WIC

- Identified federal (FNS) and state partners (AZ)

- Identified an appropriate program for our exploration - The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)

- Interpreted WIC policy (Fed & AZ)

- Built a functional prototype rules service to evaluate applicant eligibility for WIC

Testing our assumptions

PHASE 1	✓ **Validated**	TTS has a role to play in the eligibility space
	✓ **Validated**	A finite piece of work appropriate to TTS can be identified
PHASE 2	✓ **Validated**	Partners will want to collaborate with us to make this happen
	✓ **Validated**	States will want to collaborate with us to make this happen
	✓ **Validated**	Building or repurposing a rules service is technologically advisable
	✓ **Validated**	A rules service can be built that allows multiple states with varying eligibility rules to use it
		TTS's current strategy and direction is aligned with pursuing an effort like this
PHASE 3		States have technical pathways to adopting a web service-based approach to rules
PHASE 4		A rules service offers a faster and cheaper way for states implement rules in their systems

3 key lessons

The problem is real. Every person said implementing policy changes are exceedingly difficult.

Policy can be codified in code. Some limits. Where the line gets drawn between a service and the end product is important.

An eligibility rules service is technically feasible. We built our WIC rules service in 4 weeks.

Eligibility rules service

Demonstration

Could a single rules web-service serve multiple state programs instead of each state implementing a rules engine?

Yes it could.

PHASE 3
Our request

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Our exit strategy

We envision that the federal agencies who run the programs and set the policies would be the eventual owners of these systems. TTS is in a good position to *incubate* this kind of product, but **the ultimate goal is for federal agencies to codify their policy in code and offer a web service that states can easily use to implement that policy.**

This is new territory for our agency partners, so we recognize there are many unanswered questions including funding, staffing, and authority.

We've designed Phase 3 to help us answer these questions, and carve a clear path forward to our eventual exit.

Potential impact

Significant cost savings

- **Save millions of federal dollars** spent on duplicative, custom rules engines
- **Save states significant time and effort** procuring/building individual rules engines

Increased program integrity

- **Increase consistency of policy interpretation** across states
- **Increase program integrity** through minimizing erroneous or delayed policy interpretations

Reduced oversight

- **Reduce workload for federal agencies** overseeing state program administration
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Reduced state burden

- **Reduce technical complexity** to manage, minimizing necessary staff/contractor time

Improved beneficiary experience

- **Increased eligibility assessment opportunities** by making rules service integration easy

Goals of Phase 3

- **Assessing the feasibility of integrating the rules service with state MIS (Management Information Systems)**, through prototyping those connections with our current prototype with a few state partners.
- **Building and iterating on the product itself**, informed by what we learn through prototyping with states.
- **Developing the business around the product** in anticipation of a real-life pilot in the next phase.

Phase 3 spend plan

Start up / logistics - 2 people ½ time - Coordinate logistics w partners, travel prep, solidify partner participation

Integration prototyping - 3 people full time - Working with state / federal partners try integrating our prototype with different states to assess technical feasibility and data compatibility. Go / No-go checkpoint.

Product development - 2.5 people full time - Based on learning iterate rules service product for pilot.

Market validation & biz development - 1.5 people full time - Develop business model, operations decisions w partner, secure pilot users

Phase 3 team makeup

Strategist / researcher

- Navigate human services landscape
- WIC policy
- Engagement lead
- Help define business model
- Navigate legal authorities and eventual ownership transition to WIC
- Starts week 1

Product manager

- Define product scope, focus, and needs
- Help define business model
- Organize the work
- Experience building a data product
- Starts week 1

Engineer 1

- Technical discovery - investigating state systems
- SQL, SQL, SQL (pretty hard-core)
- Django-rest-framework, including basic hardening for security and performance (nothing extraordinary, though)
- Cloud.gov deployment
- JSON Schema
- Starts week 5

Engineer 2

- Similar skills as Engineer 1, but not necessarily as deep.
- Front-end dev skills nice, but not necessary
- Starts week 13

Bonus!

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States do not need a rules engine to determine eligibility

Through our prototyping we have shown that human services programs can avoid costly licensing of proprietary rules engine products by adopting a rules-engine free approach, codifying rules as SQL. **This lesson has implications on the scale of hundreds of millions of dollars across the human service landscape** that we can work to spread.

BUSINESS DEVELOPMENT

Potential new partnerships

Our discussions with potential partners for this project have already led to one potential paid engagement for 18F that the Agency Partnerships team is currently exploring.

Thank you

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Image credits

Open source icons from The Noun Project