DIVOC

Open Source Digital Infrastructure for Verifiable Open Credentials

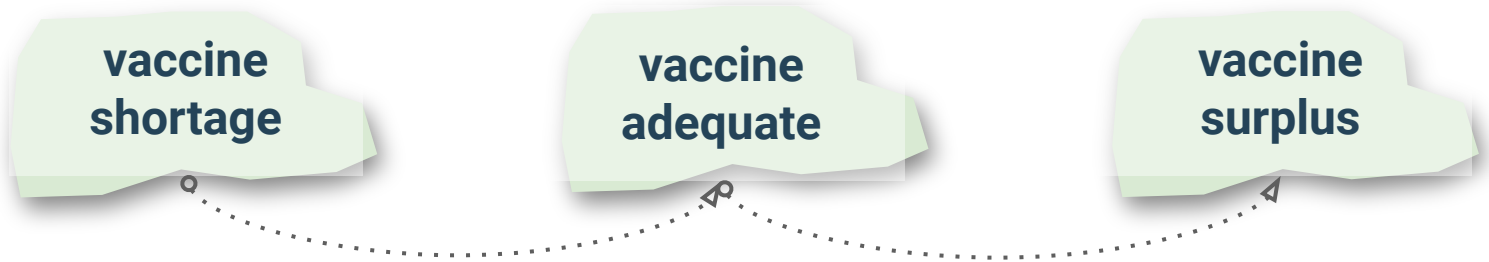
Pronounced \ dī-vōk \

DIVOC

SHARED VISION

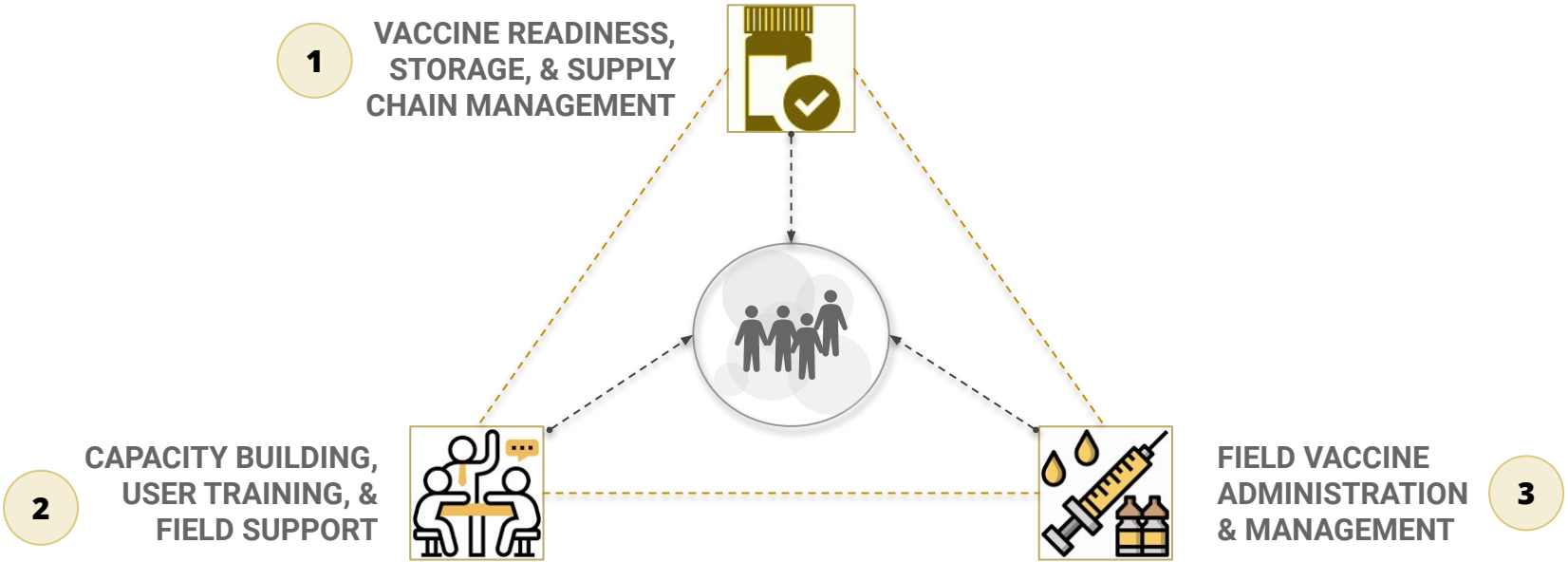
Enable countries to digitally orchestrate
large scale vaccination certification programs
using open source digital infrastructure as a public good.

WE EXPECT 3 PHASES



Infrastructure should seamlessly allow these transitions

Large scale vaccination needs multiple systems interplaying seamlessly and orchestrated digitally



A digitally verifiable vaccination certificate is critical to open up economy and countries can also use this to launch their immunization certificate registry

DIVOC

VACCINATION CERTIFICATES,
CERTIFICATE ACCESS,
CERTIFICATE VERIFICATION,
DASHBOARD & ANALYTICS
1-CLICK FEEDBACK CAPTURE
1-CLICK ACCESS TO INFORMATION
SECURE & MASSIVELY SCALABLE

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1 VACCINE READINESS, STORAGE, & SUPPLY CHAIN MANAGEMENT

2 CAPACITY BUILDING, TRAINING, & FIELD SUPPORT

FIELD VACCINE ADMINISTRATION & MANAGEMENT 3

COUNTRIES NEED

An approach that works at scale (10 million vaccinations/day) and scales what works (choice of vaccines, process improvements, etc.)

An elastic system (from 10,000 vaccinations a day to 10 million a day)

Digital first design that is evolvable

A system which is agile and responsive

Real time observability is key through telemetry and analytics

DIVOC is a **flexible & extendable** software — use across multiple programs, contexts, geographies

that helps countries to **digitally orchestrate** — facilities, programs, vaccines across regions

large scale **vaccination certification** — digital certificate issuance, access, and management

using **open source** technologies — built in India for the world as a digital public good

that is **standards driven, scalable, & secure** — built for population scale using global standards

Guiding Principles

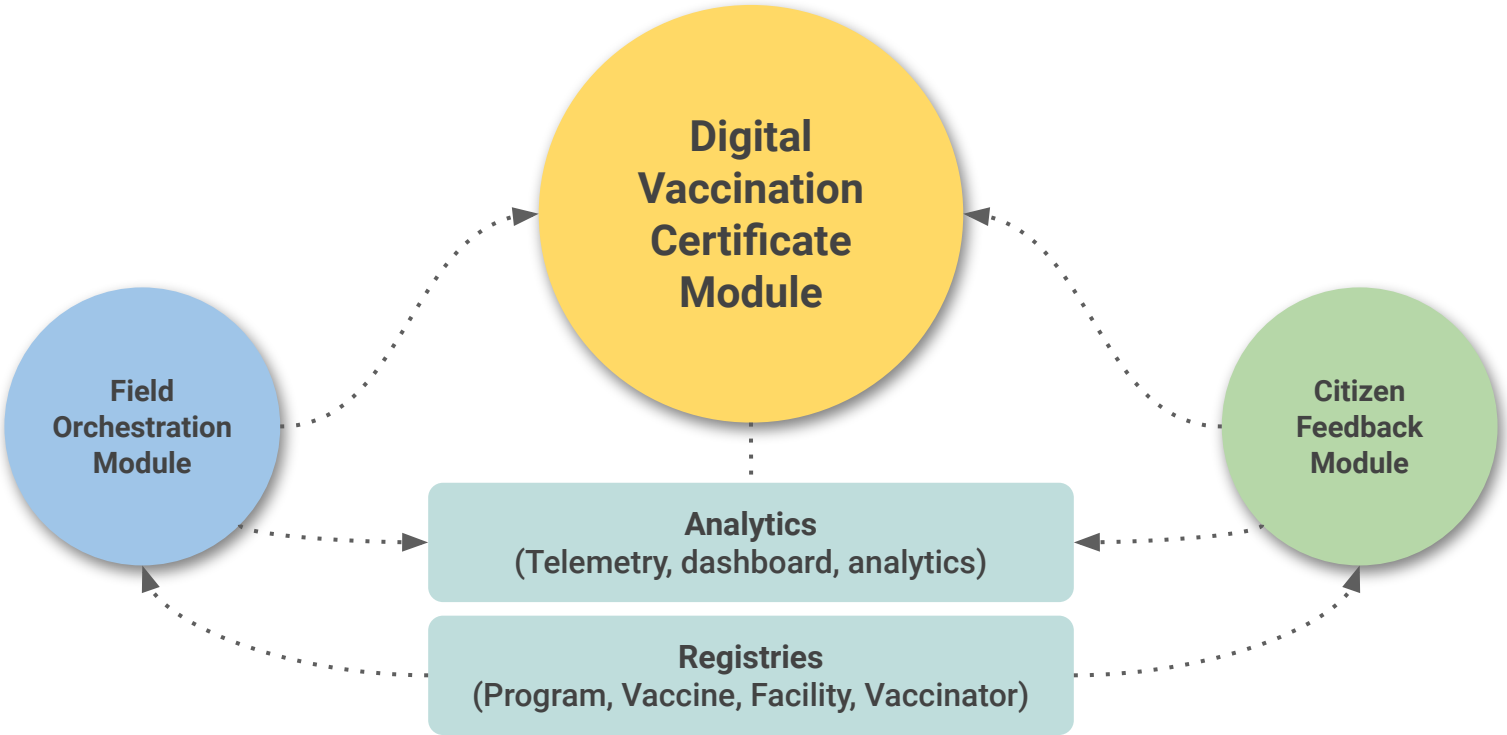
- Versatile
- Allows for plug & play
- Trustworthy
- Citizen-centric approach

Architecture Principles

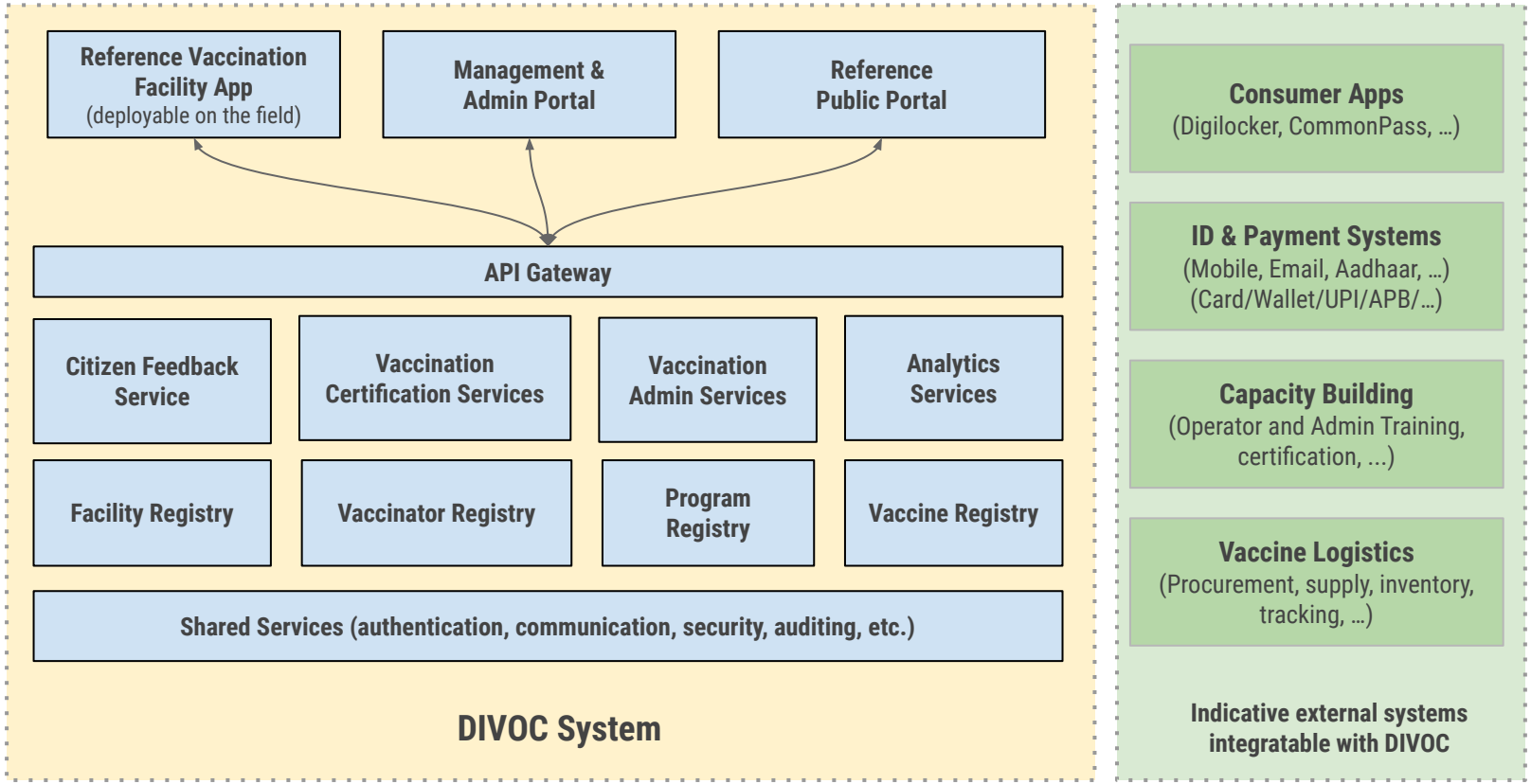
- Micro-services & API based
- Interoperable
- Scalable
- Flexible & Configurable
- Observable
- Resilient
- Privacy & Security by design
- Open Standards
- Trustable
- Internationalizable

DIVOC consists of core certificate module and supporting modules

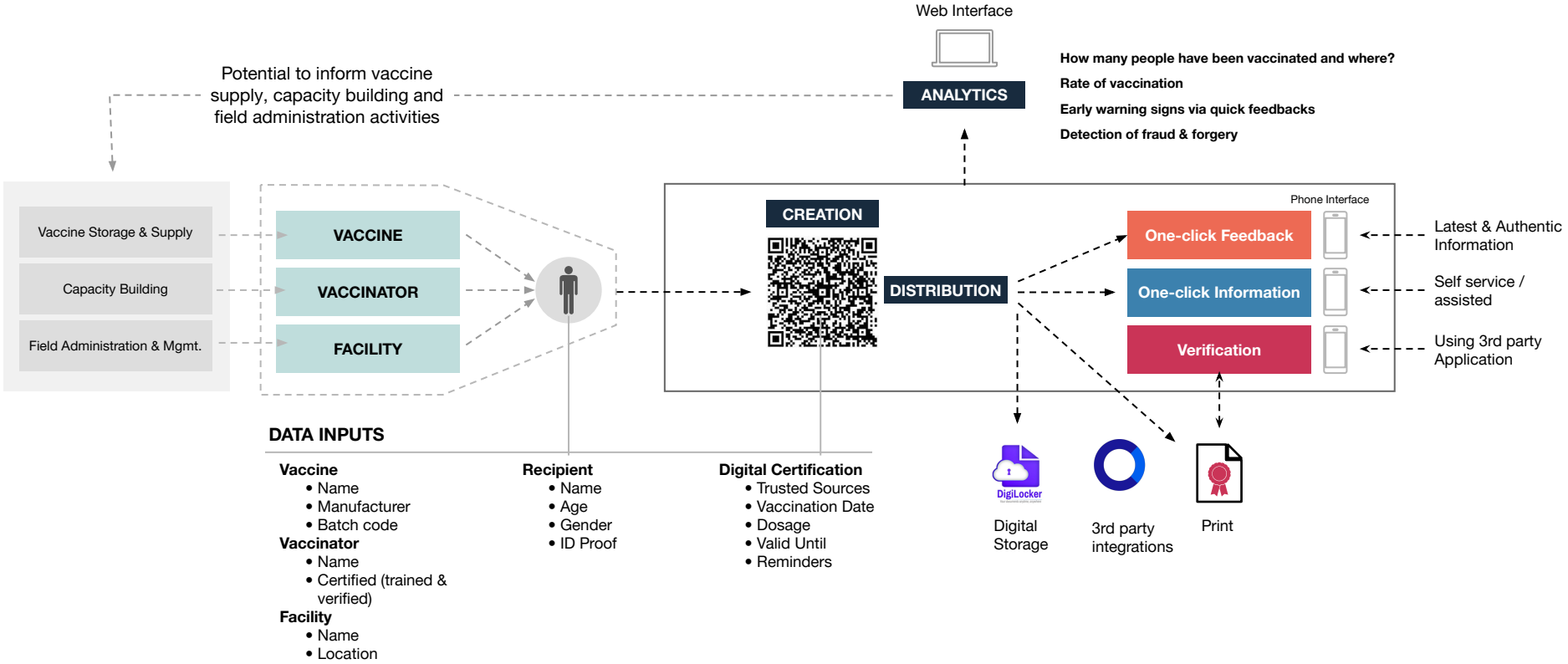
each of which can be used independently or together and also integrated with other external systems



HIGH LEVEL ARCHITECTURE



SYSTEM DETAILS



VACCINE

FACILITY

VACCINATOR

RECIPIENT

DIVOC Orchestration

API / CSV

Create Certificate

Facility Printing

Triggers SMS / Email

SMS

Self service

Download your Vaccination Certificate

You would need your Aadhaar number and Mobile number to verify OTP in order to access your digital certificate.

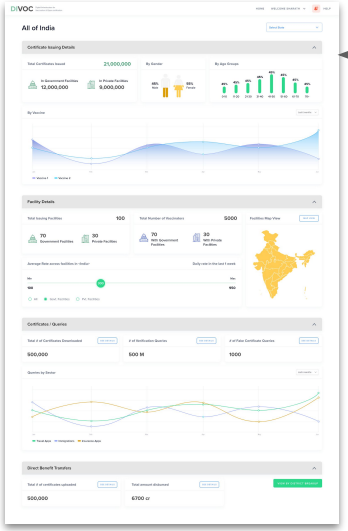
Download

Verify your Vaccination Certificate

Ensure that your vaccination certificate is a authentic by digitally verifying it here.

Verify

Analytics Dashboard



Print

Export

DigiLocker

Download

Certificate Successfully Verified

Name	Vivek Singh
Age	52
Gender	Male
Certificate ID	DI45SSRI0233
Date of Issue	DD/MMM/YYYY
Valid Until	DD/MMM/YYYY
Facility Name	Vaccination Facility Name
Facility Location	Facility location

DIGITAL CERTIFICATE MODULE

VACCINATION CERTIFICATE

- Conforming to WHO/IHR guidelines* based on W3C verifiable credential* specifications
- Aligns with FHIR or ICD codifications.
- Authenticity verifiable via digitally signed QR code
- Available digitally on smartphone with QR code
- Printable for non-smartphone users
- Multilingual templates (for data and layout)
- Ability for users to download/print after vaccination either at facility or from home in self/assisted modes
- Integratable to health Lockers and certificate lockers
- Easy integration with immunization e-registry

IHR guideline, page 53: https://www.who.int/ihr/publications/9789241596664/en/
W3C verifiable credentials: https://www.w3.org/TR/vc-data-model/

ENERGIZED VACCINATION CERTIFICATE

MACHINE READABLE
PRINTABLE
DIGITALLY VERIFIABLE
MULTILINGUAL
PRIVACY PROTECTING
EXTENSIBLE

ONLINE VERIFICATION

Online & Offline verification
Manage revocations
Access taxonomy
Access reference app

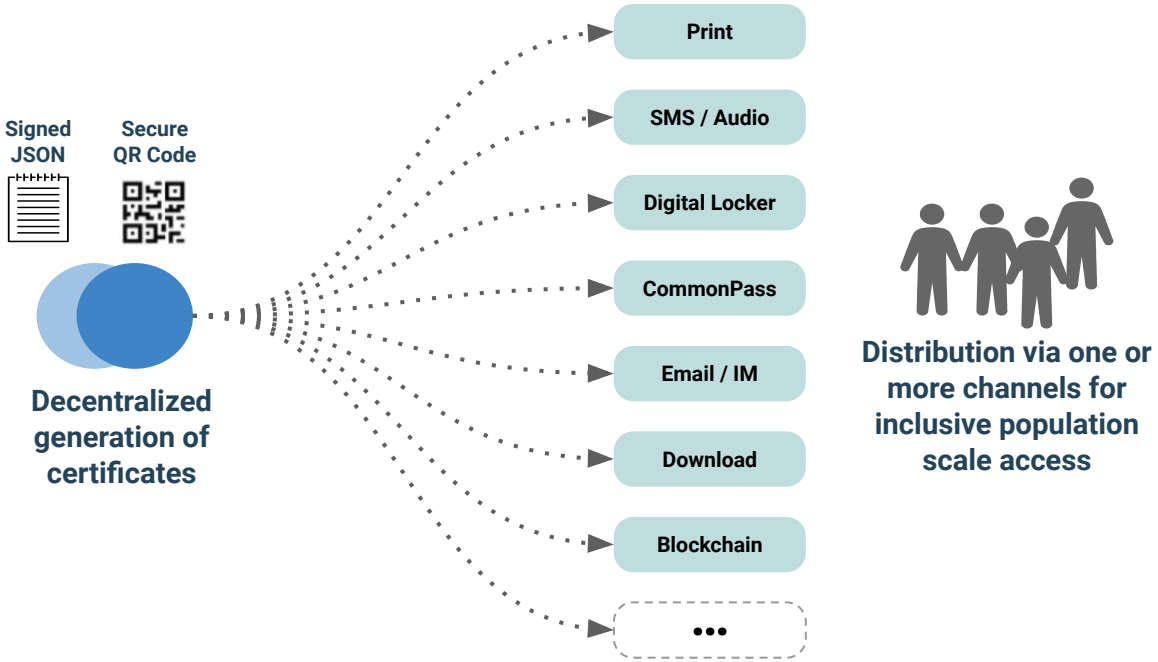
FEEDBACK PORTAL

Single click access to feedback portal
Get real time feedback
Access to download
Get reminders

INFORMATION PORTAL

Single click access to information portal
Fight fake news and information asymmetry
Dynamic information update
Awareness and courses

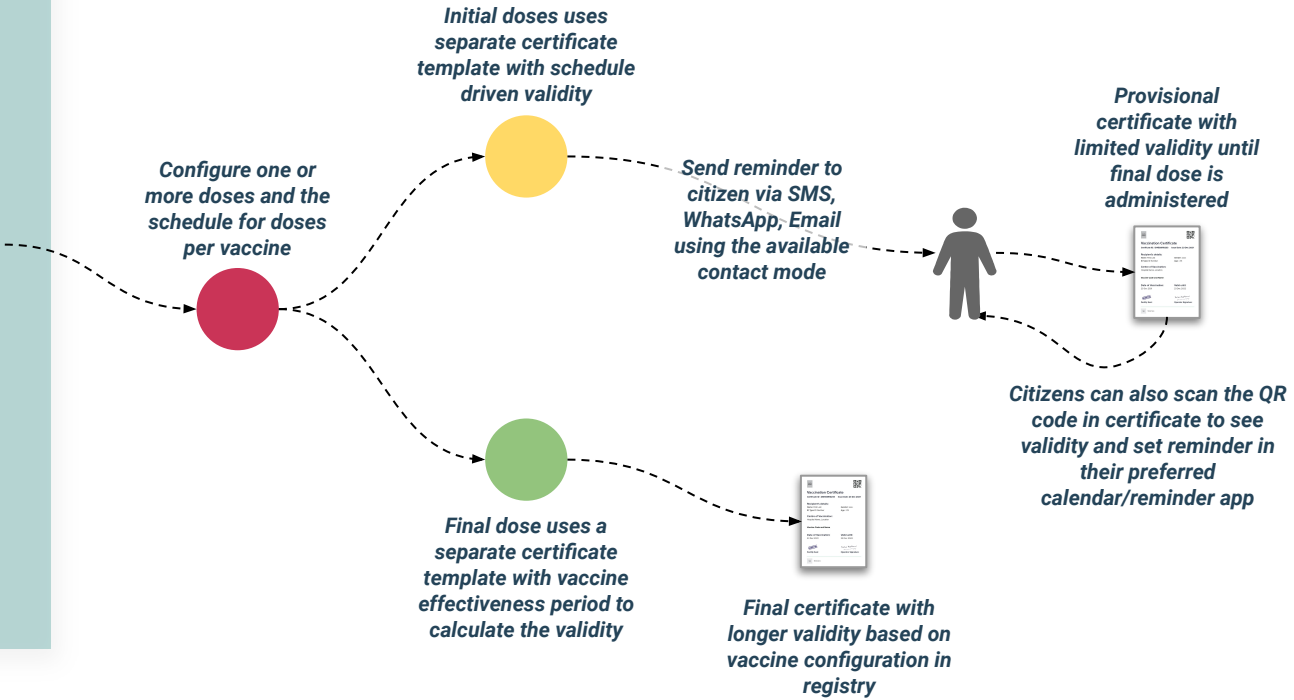
ONCE THE CERTIFICATE IS ISSUED, MULTI-CHANNEL DISTRIBUTION AND PRINT CAN BE ENABLED TO ENSURE INCLUSIVE ACCESS AND USAGE



HANDLING MULTIPLE DOSES AND REMINDERS

VACCINE REGISTRY

- Approved vaccines
- Active Status
- Vaccination schedule
- Batch deny list
- Max retail price
- Filter Rule if any
- Vaccination Method



BENEFITING ALL

For the individual

1. Proof of vaccination
2. Verify authenticity offline/online
3. Reminder for doses
4. Meet people, get back to work
5. Get info via QR code
6. Provide feedback via QR code

For the society

1. Opens up functions, meetings, businesses
2. Opens up economy
3. Track towards regional herd immunity

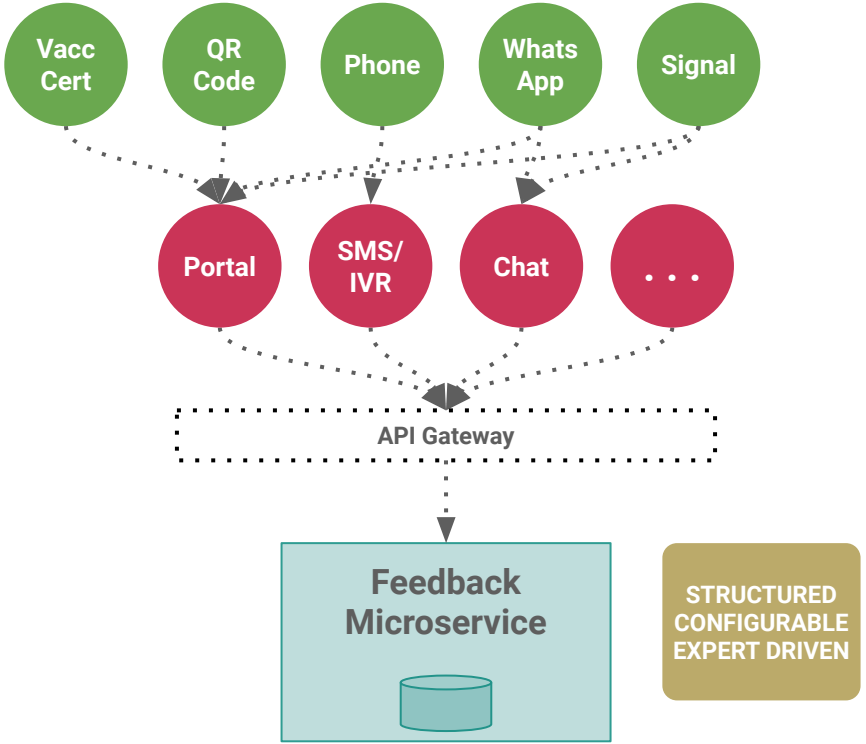
For the world

1. Open up travel, events
2. Opens up trade
3. Incorporate certificate into travel passes
4. Opens global economy.

CITIZEN FEEDBACK MODULE

POST VACCINATION FEEDBACK

- Structured feedback
  - Configurable, expert driven
- Feedback Types
  - Vaccination response feedback
  - Facility/Vaccinator rating & feedback
- Multi channel, multi-lingual
  - Public portal, inbound sms, IVR, WhatsApp, other apps via API
  - Multiple languages
- Self service and assisted modes
- Integratable with AEFI systems and processes.



FIELD ORCHESTRATION MODULE

ORCHESTRATION CONTROLS

USING REGISTRIES

PROGRAM REGISTRY

- Programs that are being rolled out
- Active Status
- Allowed vaccines
- Start and end dates
- Certificate Templates

VACCINE REGISTRY

- Approved vaccines
- Active Status
- Vaccination schedule
- Batch deny list
- Max retail price
- Filter Rule if any
- Vaccination Method

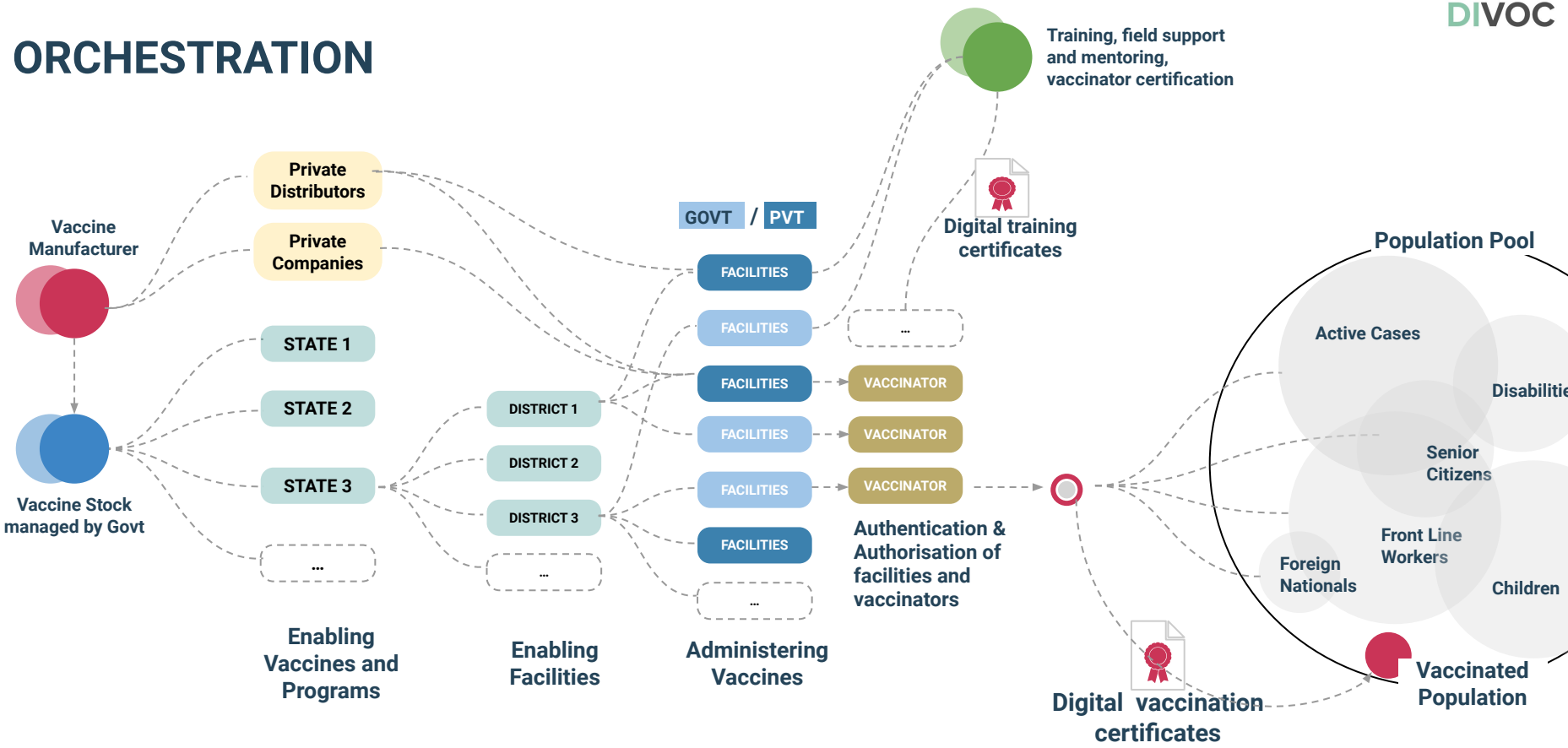
FACILITY REGISTRY

- Approved facilities
- Location (state, district, postal code)
- Active Status
- Vaccination daily rate
- Max vaccination stations
- Total supply (if available)
- Rating & feedback

VACCINATOR REGISTRY

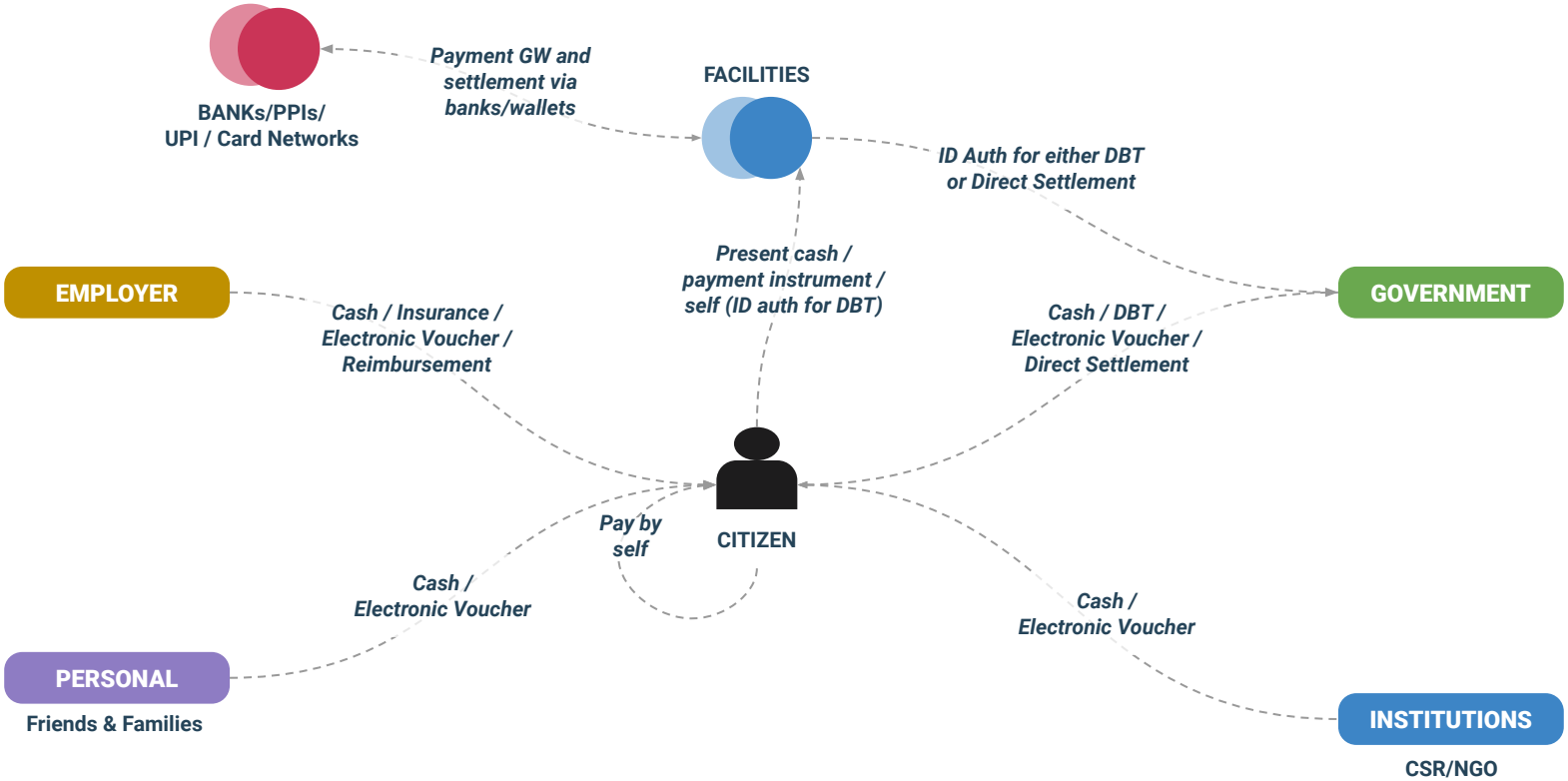
- Trained vaccinators
- Active Status
- Training certificate
- Associated facilities
- Rating & feedback

ORCHESTRATION



A platform to orchestrate the complexity within an ecosystem of diverse players to administer a vaccine program across the country successfully.

LEVERAGING MULTIPLE PAYMENT MECHANISMS



DIVOC

An open source, global digital public good
From the team who have built population scale platforms

DIVOC ENABLES COUNTRIES TO EASILY BUILD DIGITAL CERTIFICATE INFRA FOR VACCINATION AND OTHER PROGRAMS

along with other optional supporting modules,
integrate with existing systems, extend it, and use it freely.

For more details, visit

https://divoc.egov.org.in/

THANK YOU