

Shifting to an API economy: dare to share



frank.robben@mail.fgov.be



@FrRobben

<https://www.ksz-bcss.fgov.be>

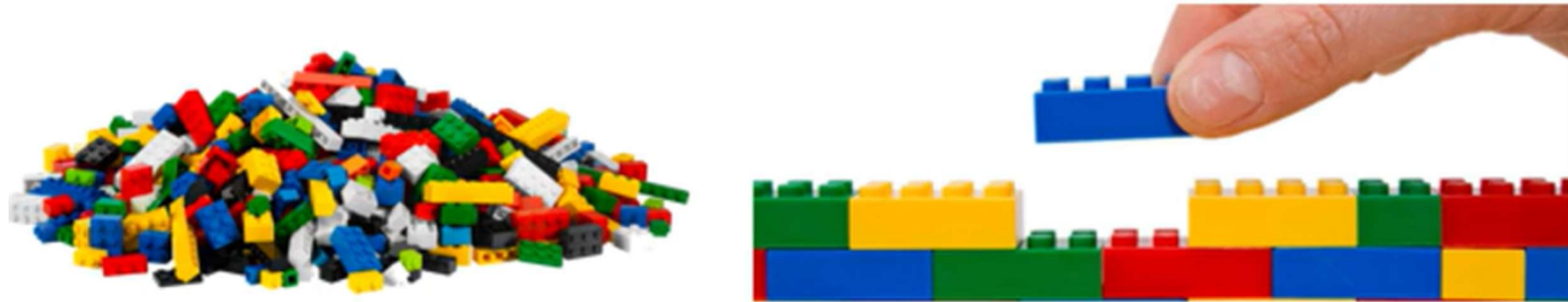
<https://www.socialsecurity.be>

<https://www.ehealth.fgov.be>

<https://www.frankrobbe.be>

About API - Application Programming Interface

- An API is a programmatic interface to data or some set of functionality
- Thanks to API's it is possible to use the data or functionality behind it and continue to build on it
- API = a software building block

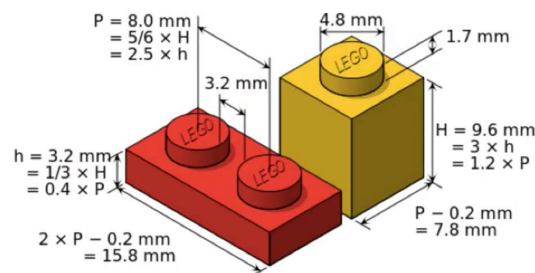


About API - Application Programming Interface

- Providers vs consumers
 - when an API is offered over a network, the service that offers the API is called the “provider”
 - the “consumer” of the API is often a software application
- The consumer may outsource the requirement for data or functionality by “calling” API’s
 - billing
 - identity
 - storing
 - image processing
 - all sort of (authentic) data sources
 - ...

About API - Application Programming Interface

- Consumers can connect to an API of a provider and use it's data or functionality as long as the “technical contract” has been respected

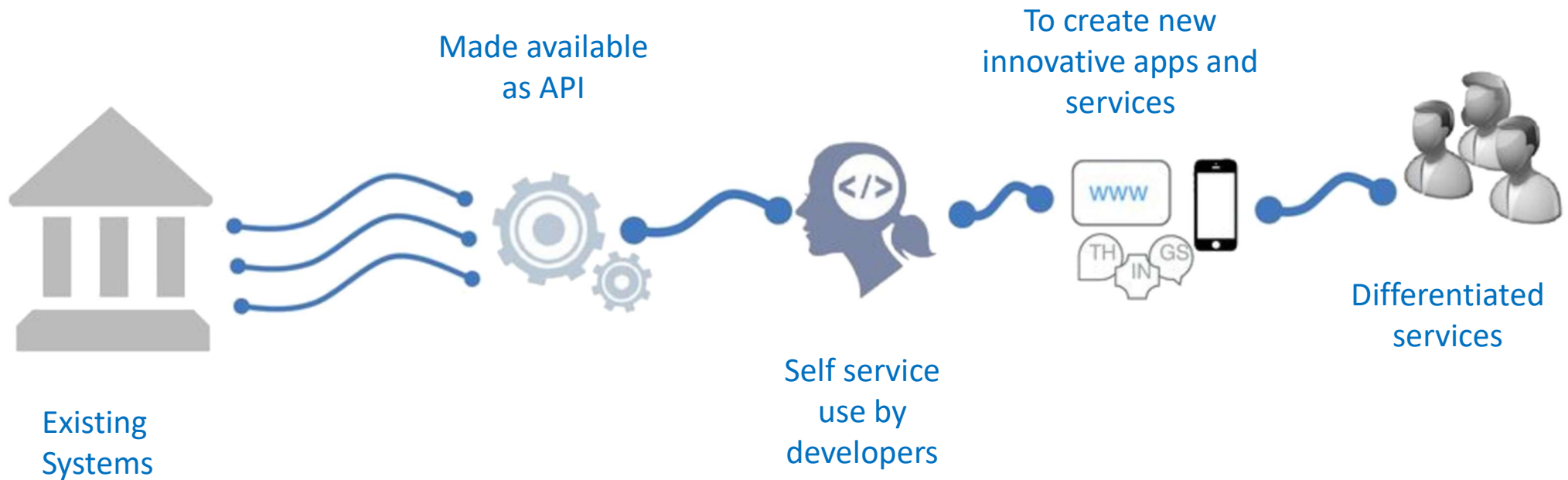


- Consumers don't need to know the technical details behind the functionality
- API's can be written in any possible programming language

Why are API's important ?

- Cost reduction by reusability: consumers don't need to rewrite what already exists!
- Complexity reduction: no more big, monolithic systems
- Decoupling: consumers and providers can continue to connect as long as the technical contract is followed → ex. less impact in case of migrations
- Driver of innovation: new products raise, based on existing API capability
- Stimulation of partnerships
- Stimulation of standardization

Shifting to an API economy: the value chain



Today the API economy is becoming a reality



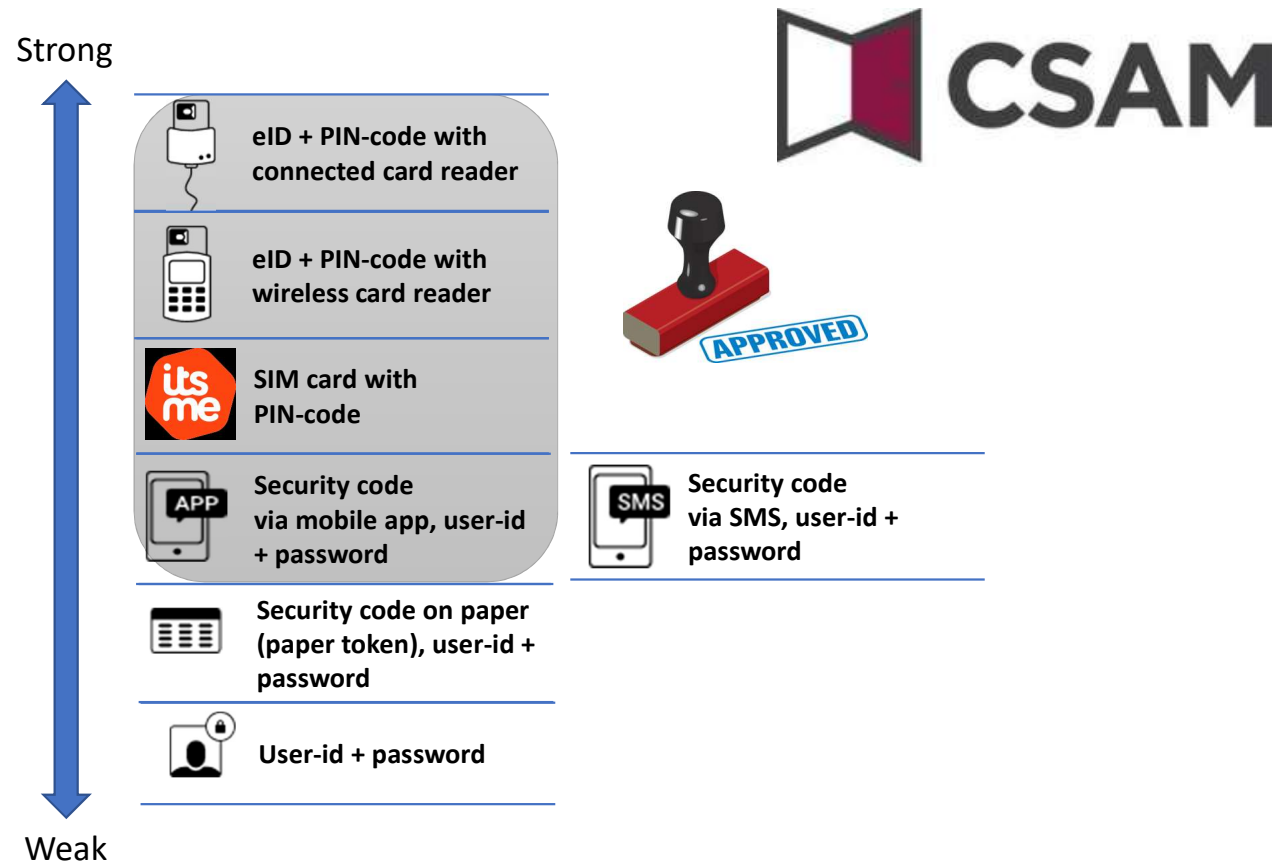
Everything connects to everything

API's & Belgian eGovernment



- API's drive today's business processes in Belgian eGovernment
- API's are key in real-time information sharing between partners
 - public institutions
 - companies
 - citizens
- With a strong focus on
 - API management
 - standardization
 - security

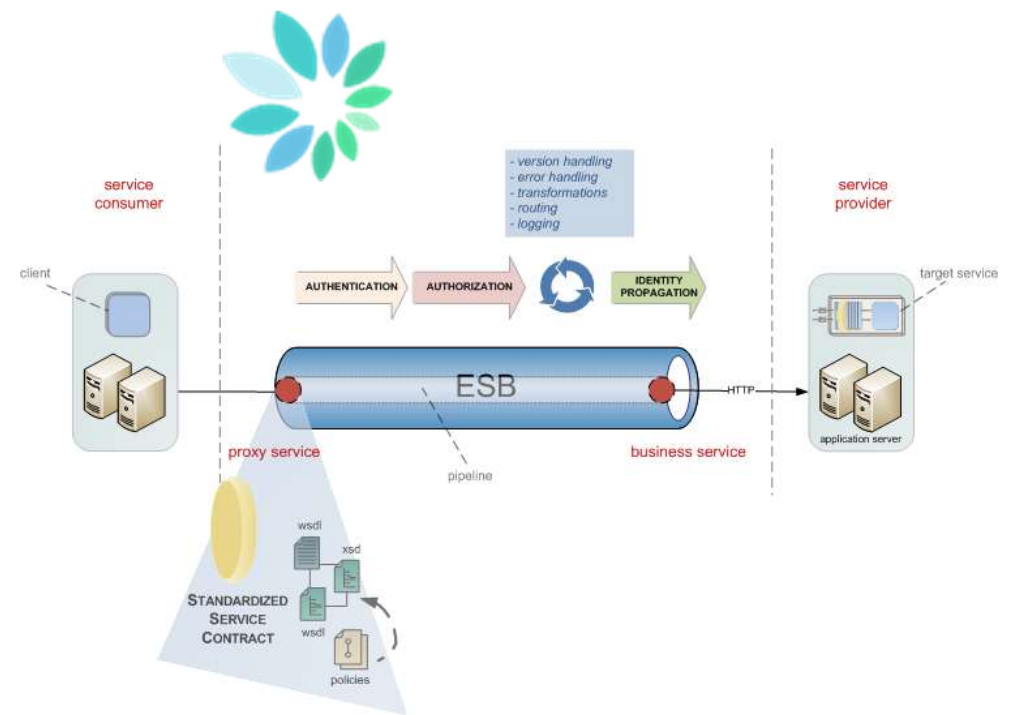
Example: CSAM authentication services



Example: SocialSecurity.be portal services

The Social Security service platform was created in 2009 to support managing business processes in

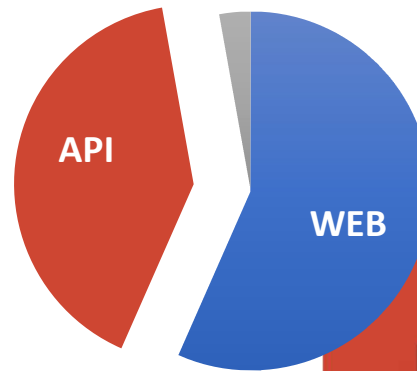
- temporal/permanent employment
- unemployment
- work related risks and insurances
- child benefits
- social assistance and benefits
- ...



Example: realtime presence registration for construction workers



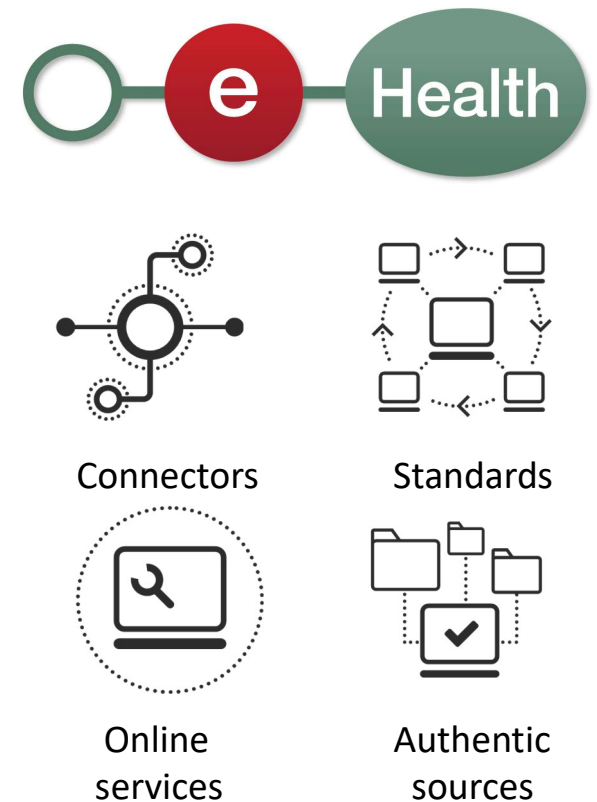
✓ CHECKIN AT WORK



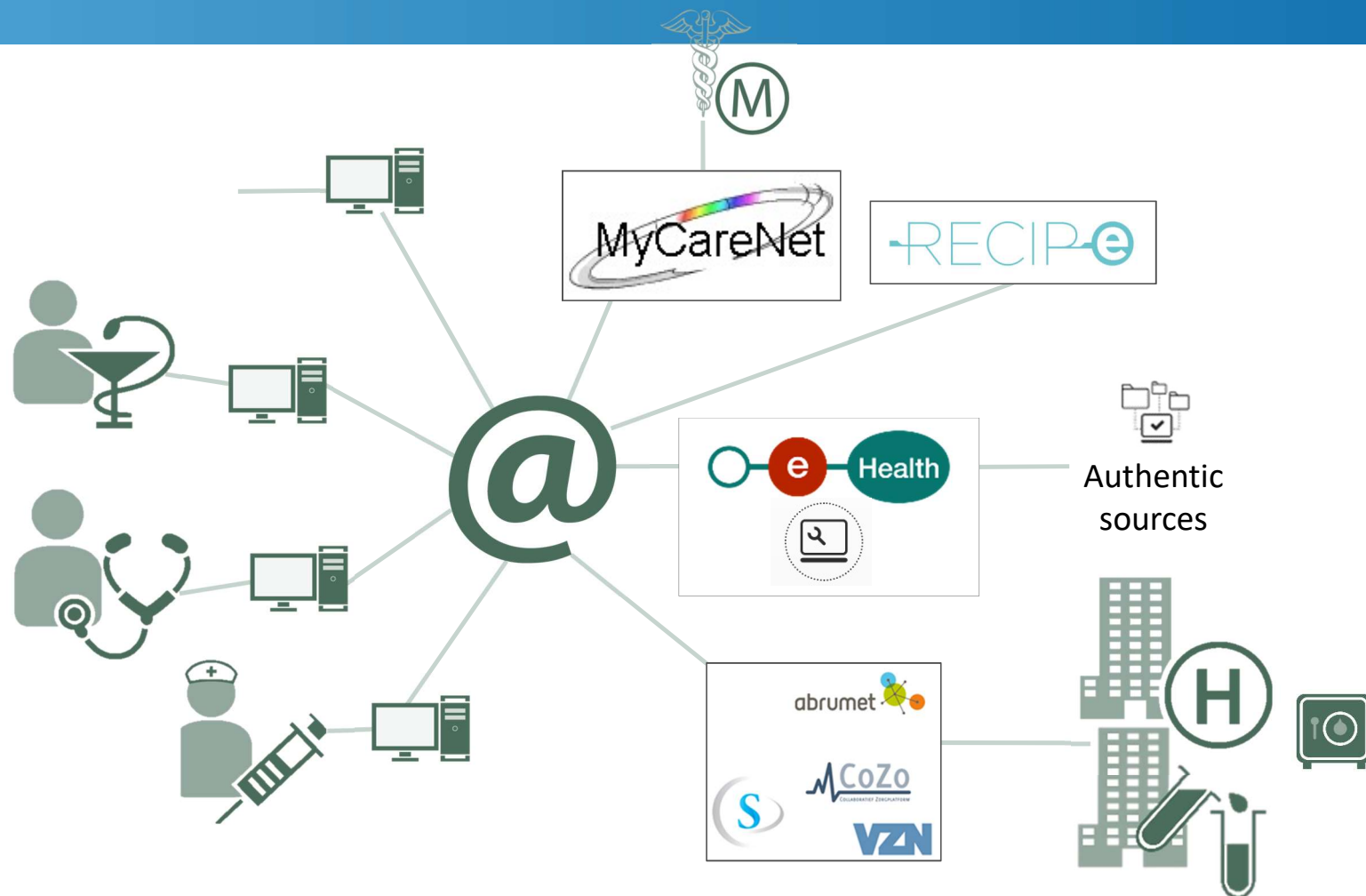
Example: eHealth-platform

Public Federal institution founded in 2008 for facilitating well-organized, mutual electronic service and information exchange between all actors in health care

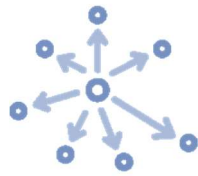
The e-Health platform provides necessary guarantees with regard to information security, privacy protection and professional secrecy



eHealth: landscape



eHealth: technical choices



Decentralization



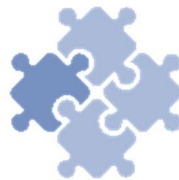
API



Security



Standardization

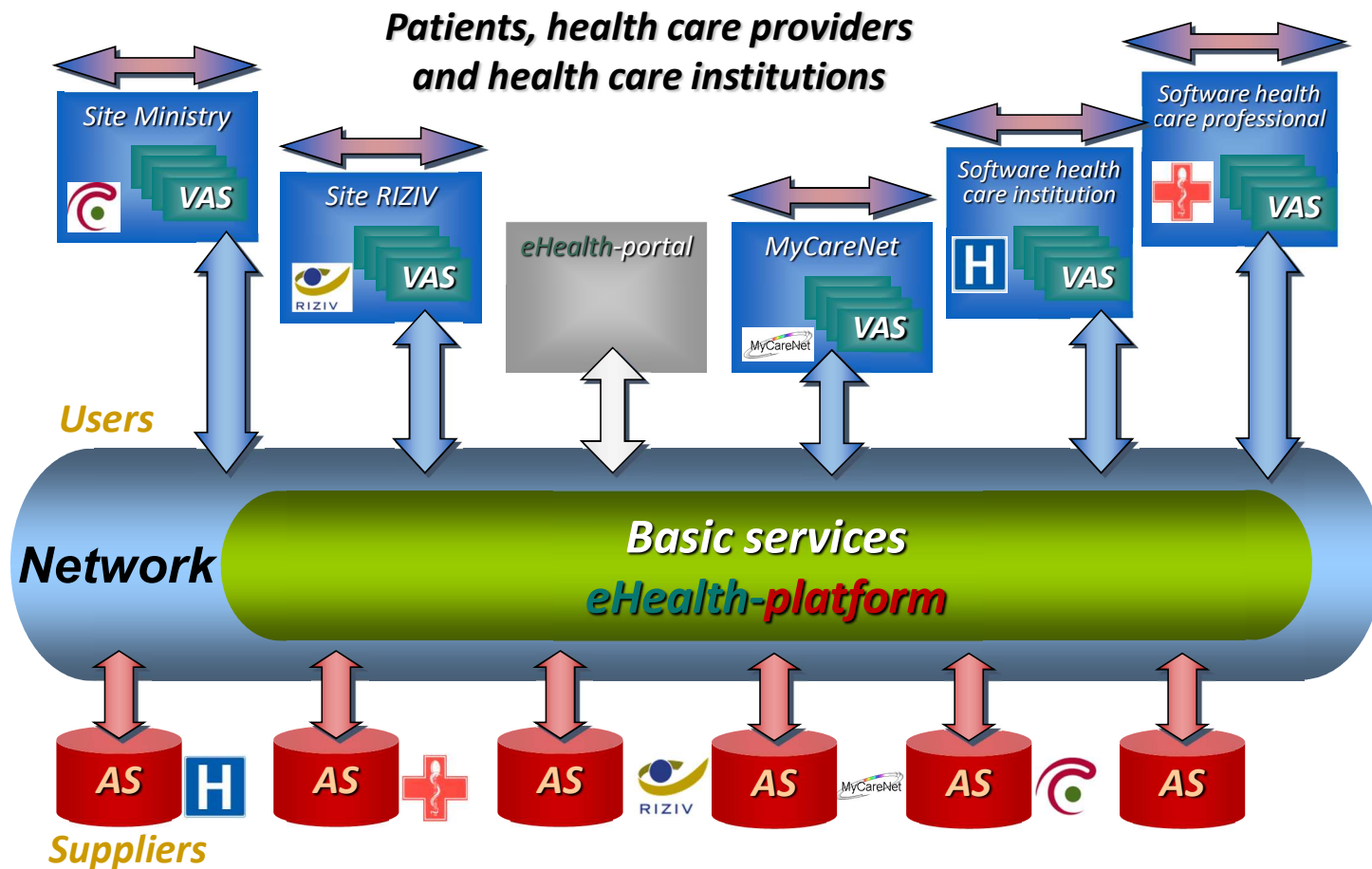


Integration



ReUse

eHealth: architecture



eHealth-platform : basic services & API's



Coordination of the electronic processes



Portal



Integrated user and access management system



Management of loggings



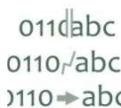
System for end-to-end encryption



eHealthBox



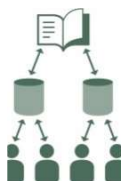
Timestamping



Coding and anonymising



Consultation of National register and CBSS registers

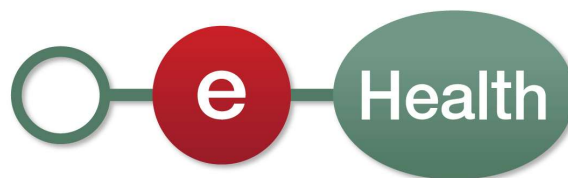


Reference directories (hub-metahub system)

Electronic information sharing: some figures



>76%
Belgian citizens'
Informed Consent



13.300.000.000
Digital transactions annually



+62%
went digital



84 million
Messages / year
via secure eHealthBox

Electronic Prescriptions



5 million / month



14.000



4.800

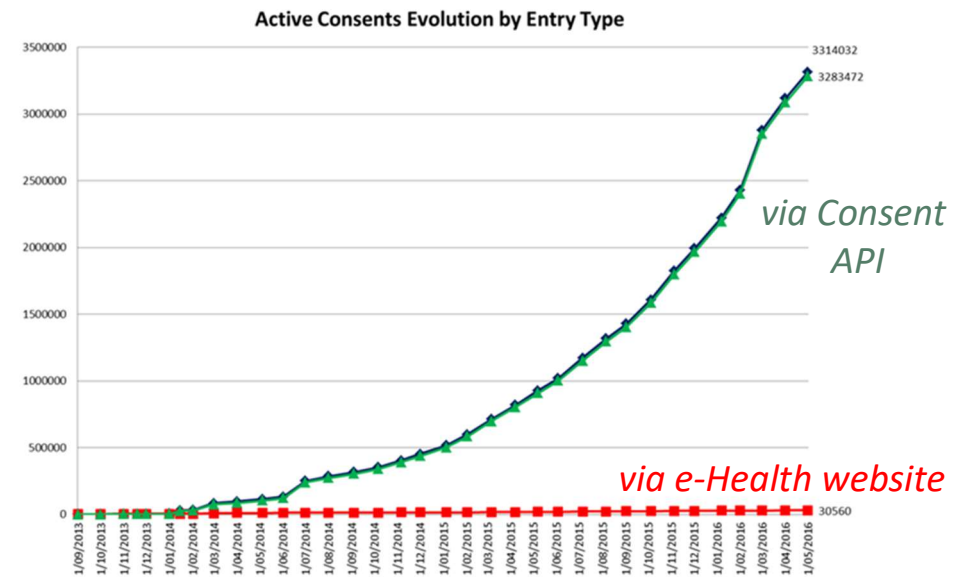
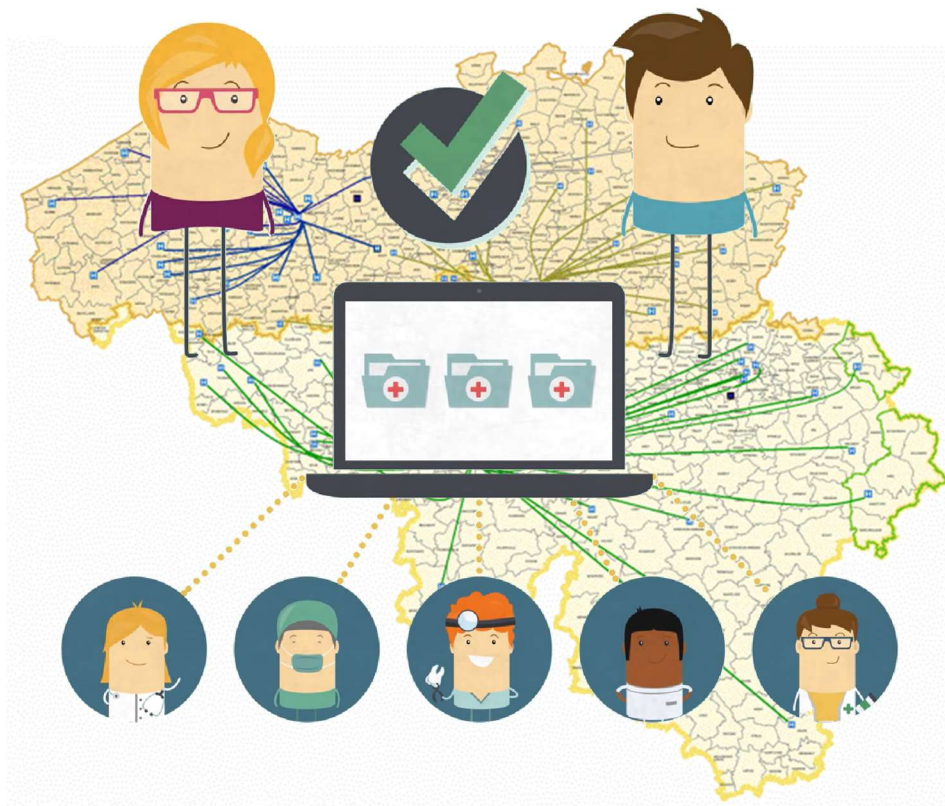


200 million
electronic documents available
at hospitals and clinical labs



3,5 million
Belgian patients with
Summary Electronic Health Records in
health vaults

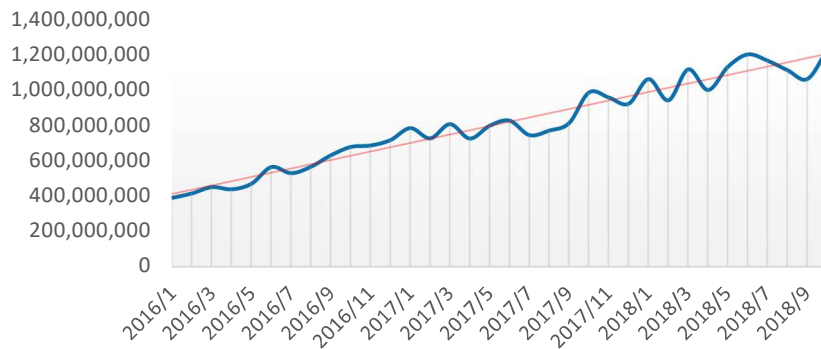
Global medical file & patient consent



API in health and social sector: some statistics and evolution

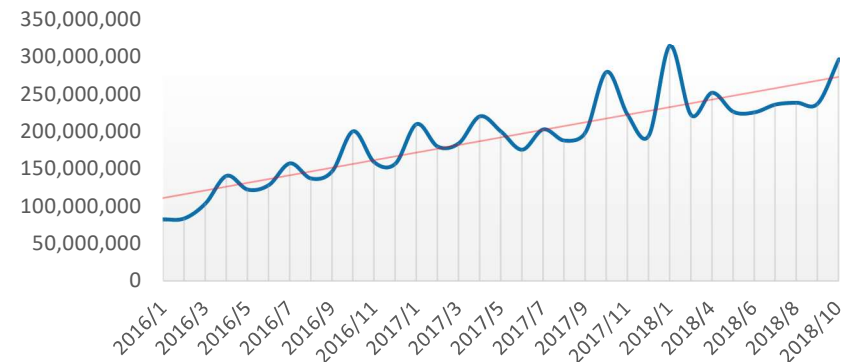


- 100+ APIs
- Most consumers are external (# 20,000-24,000)
- Peak load 2000-3000 req / s
- 1.200M transactions / month



social security

- 200+ APIs
- Consumers mostly internal applications/services (# 200-300)
- Peak load 1000-1500 req / s
- 300M transactions / month

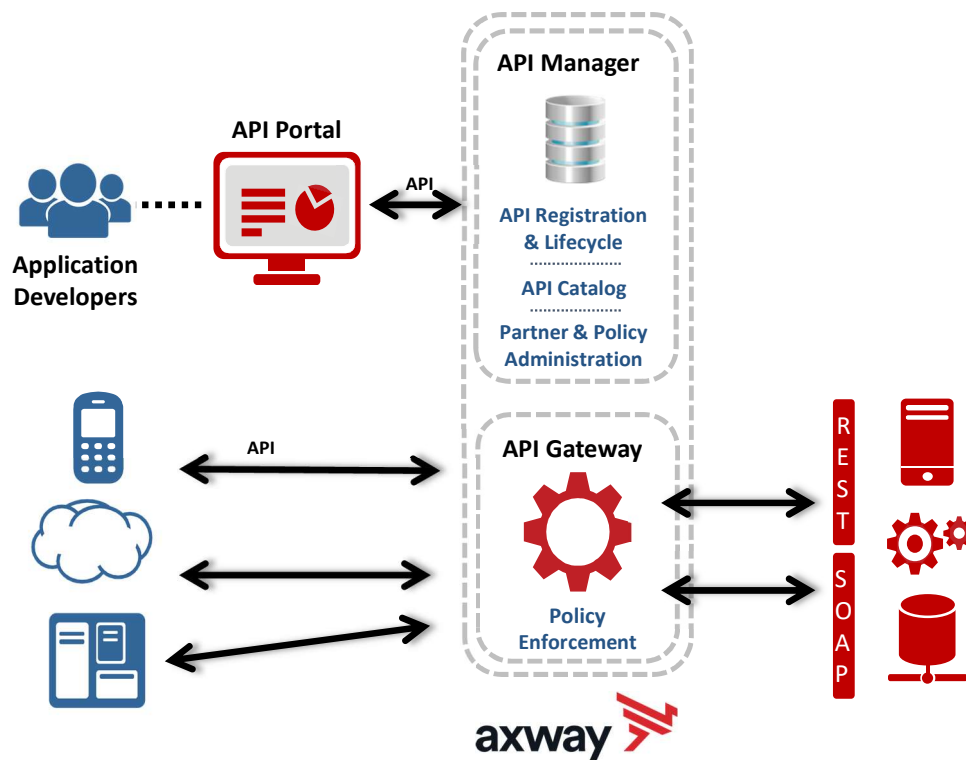


Disclaimer: metrics listed since 2016 are for all ESB + gateway platforms. Migration to Axway APIM in progress since Q3 2018. (eHealth currently 30% APIs migrated, Social Security gradually does onboarding on APIM for all new APIs and API evolutions)

API standards

- API standards in eGovernment are based on industry standards and best practices
- A pragmatic approach to designing RESTful APIs
- Collaborative effort organized in several workgroups
 - REST API modelling
 - security (OAuth)
 - functional/business vocabularies (temporal, location, person, enterprises)
- REST style guide
 - <https://www.gcloud.belgium.be/rest/>

API management



- Importance of good API management
 - transparent migration of legacy services
 - ready for today's standards, but supports our legacy as well
 - from ESB-technology to API gateway
 - parallel platform
 - zero-impact migration
- Faster implementation of new services
 - flexible to extend and customize
 - accelerates time-to-market

Different types of sharing & reuse

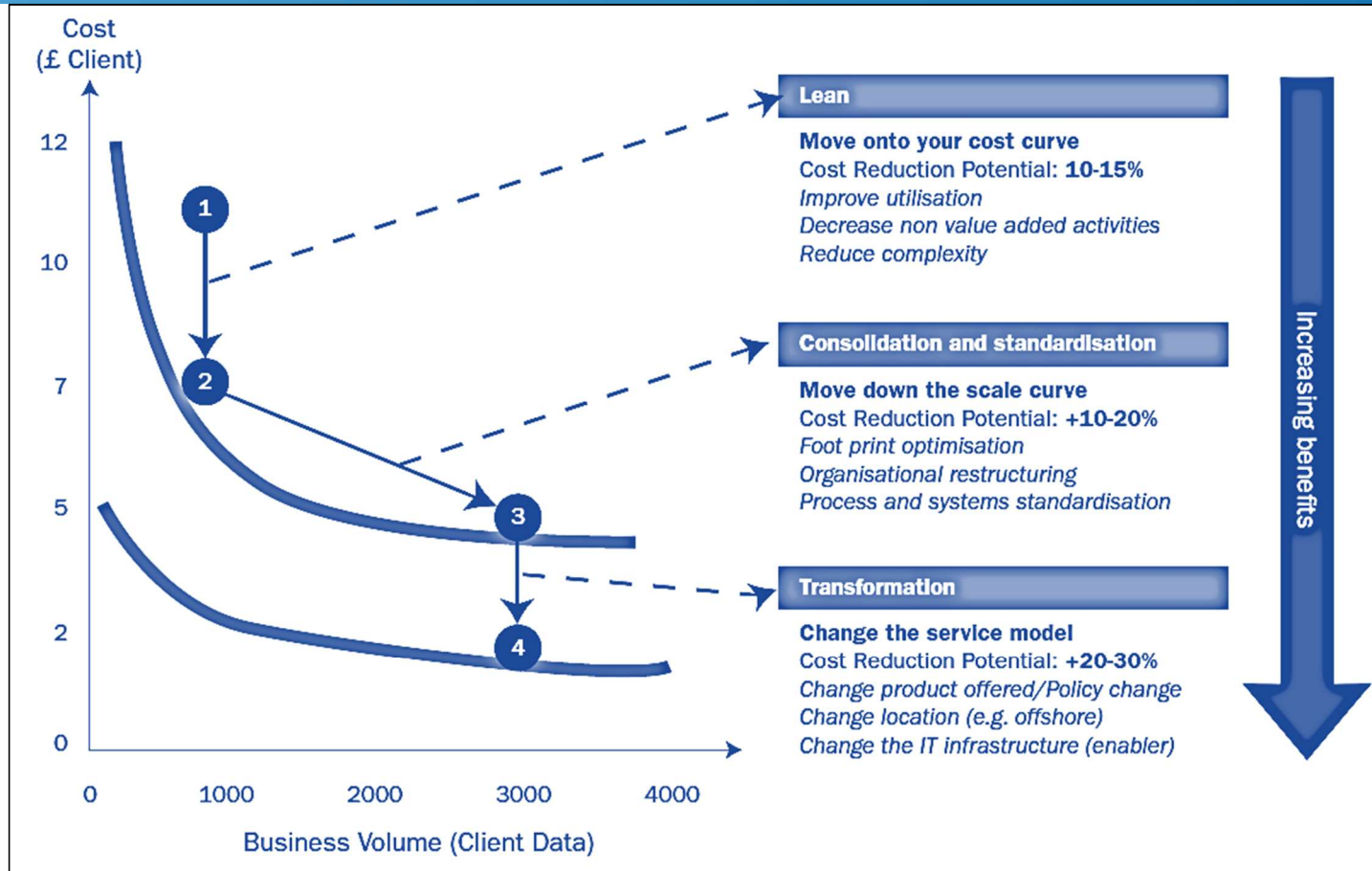
- Infrastructure
 - hard infrastructure
 - soft infrastructure
 - platforms
- Common vendor contracts
- Federal ICT Community
- Business
 - knowledge & experiences
 - business functionality
 - business data
 - complete business services



Important to know
what already exists
→ catalogues!



Synergies - transformations



G-Cloud Portfolio

SOFTWARE - STANDARD COMPONENTS AND APPLICATIONS

| | | | |
|-------------------------------|---|-----------------------|-------------------------------------|
| BABELFED | UCC SHAREPOINT BASIC O365 | REGISTER | IT SERVICE MANAGEMENT |
| BECONNECTED | SHAREPOINT COMMUNITY PLATFORM | CSAM AANMELDEN | IWF INTELLIGENT WEB FORMS |
| WEB CONTENT MANAGEMENT | | | |

PLATFORM - DEVELOPMENT AND SPECIALIZED TECHNICAL TOOLS

| | | | |
|---------------------------------------|--------------------------------------|--------------------------------|-------------------------|
| GREENSHIFT OPEN SOURCE PAAS | YELLOWSHIFT MICROSOFT PAAS | BLUE STACK DB IBM DB | SERVICE PLATFORM |
|---------------------------------------|--------------------------------------|--------------------------------|-------------------------|

INFRASTRUCTURE - SERVICES ("SOFT" INFRA)

| | | | |
|--|-----------------------------------|--------------------------------------|------------------|
| UCC VOICE/IM | UCC EXCHANGE ON PREMISE | SHAD SHARED DIRECTORY | ARCHIVING |
| UCC CONTACT CENTER | UCC EXCHANGE O365 | INTERNET ACCESS PROTECTION | BACKUP |
| UCC MOBILE DEVICE MANAGEMENT | | | |

INFRASTRUCTURE- FOUNDATION ("HARD" INFRA)

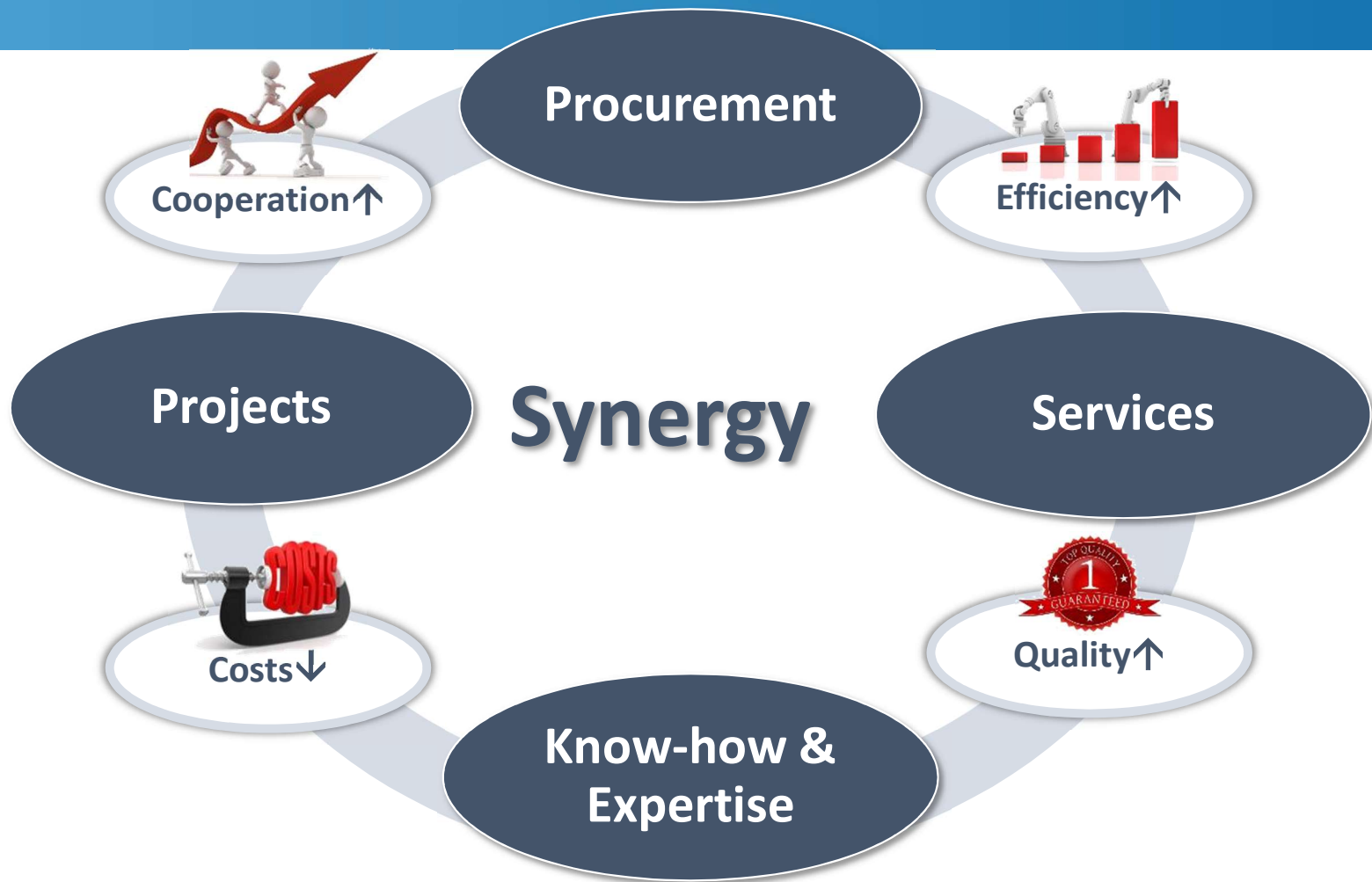
| | | | |
|--------------------------------|----------------|---------------|----------------|
| COMPUTE VIRTUAL MACHINE | HOUSING | FEDWAN | STORAGE |
| COMPUTE HYPERVISOR | | FEDMAN | |

PREPARATION

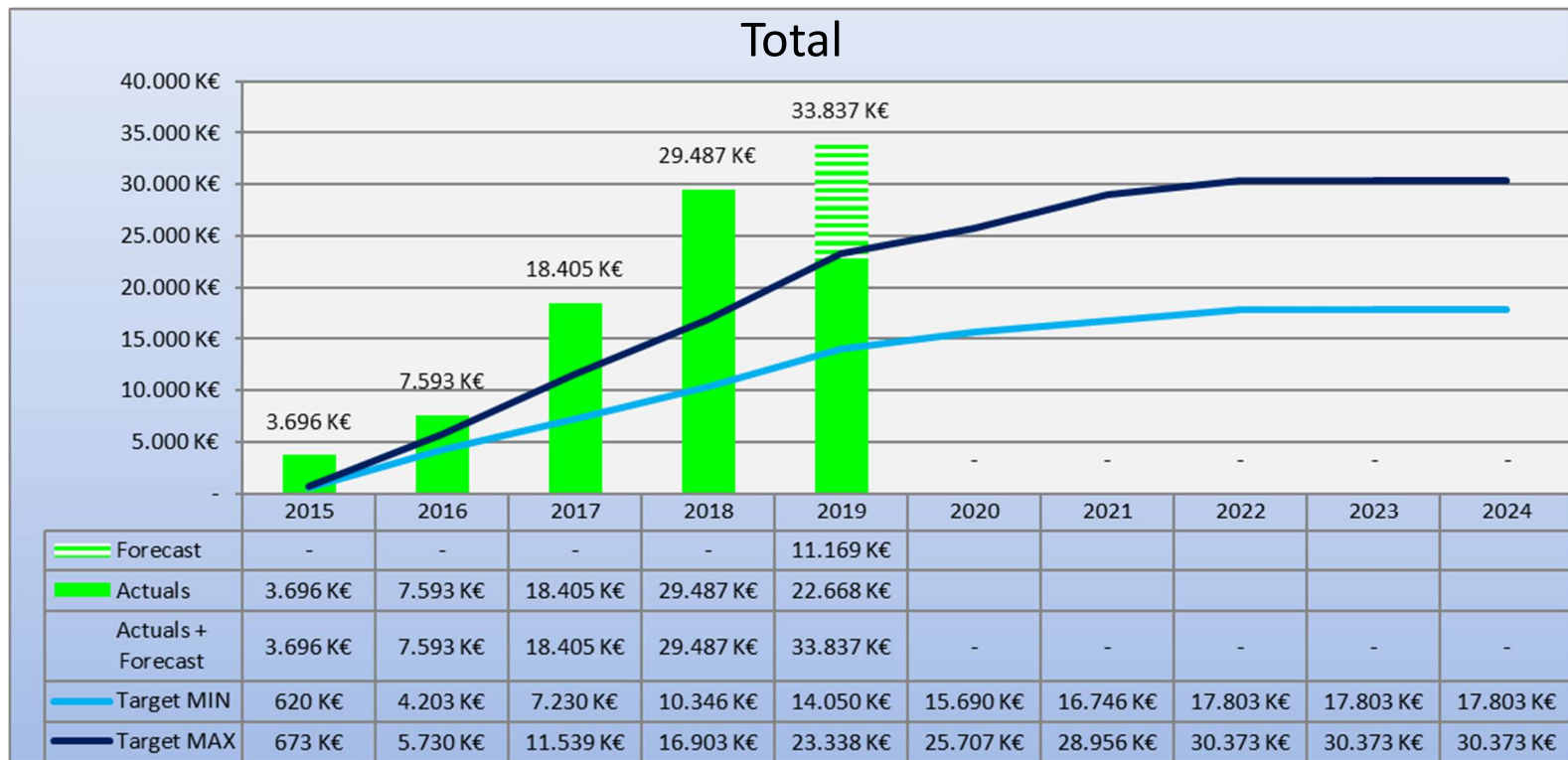
ELABORATION

SERVICE

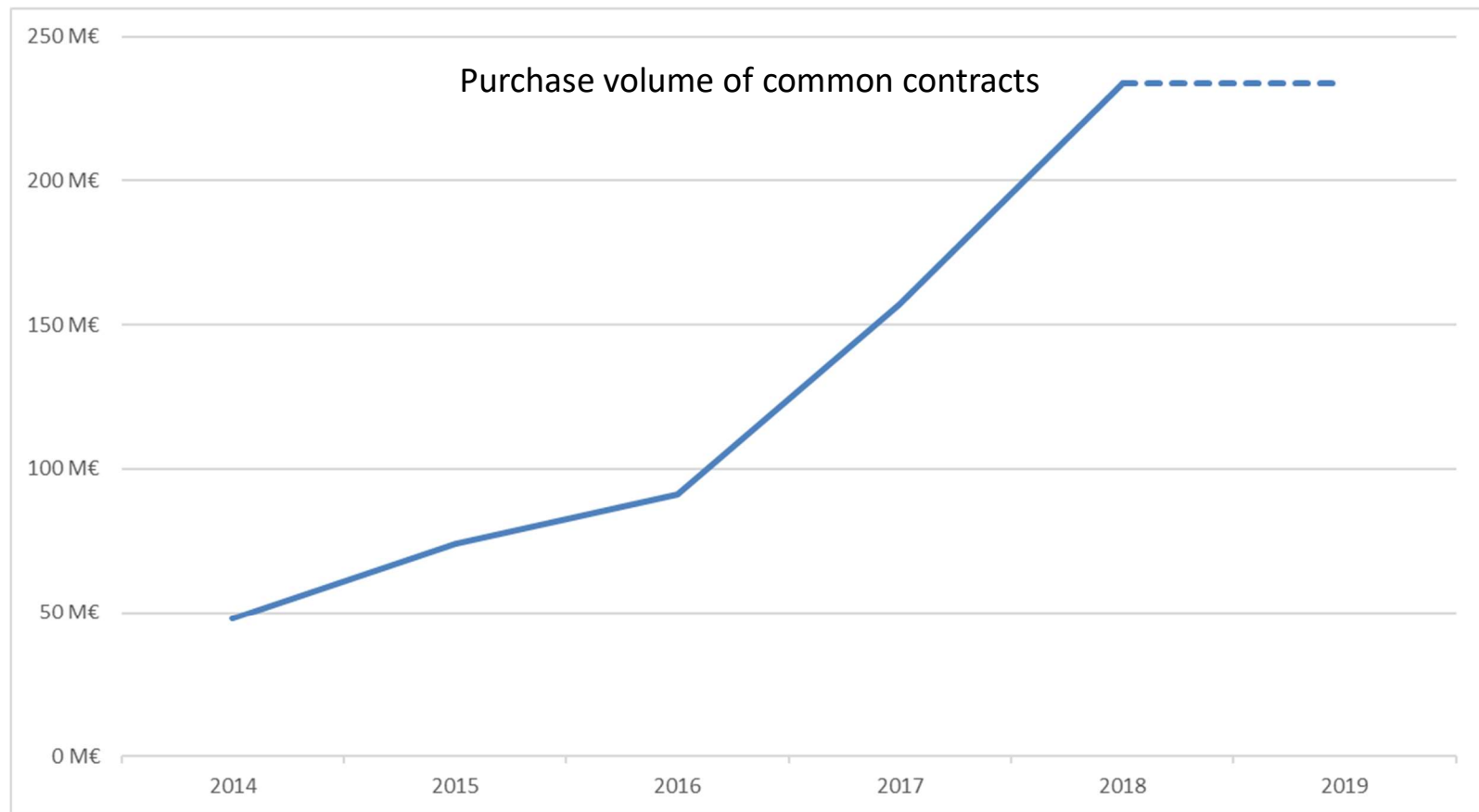
ON HOLD



G-Cloud ROI



G-Cloud - reuse of contracts



Source: Smals

G-Cloud IAAS/PAAS in numbers



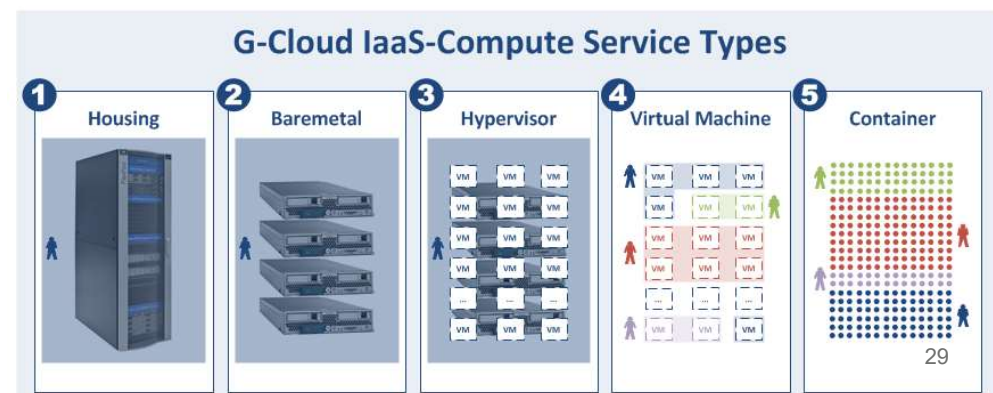
4 datacenters

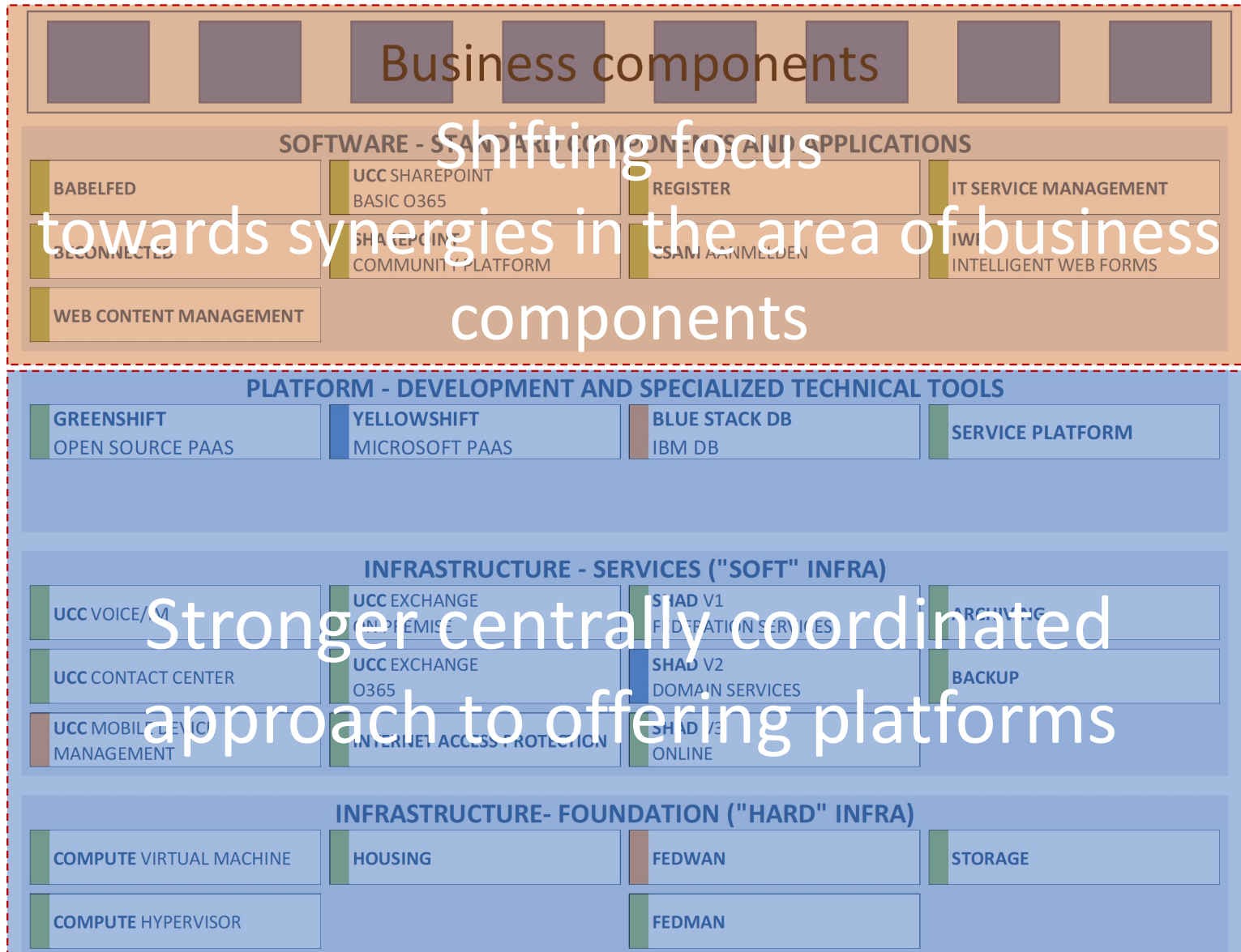
24 tenants

834 compute nodes

7843 virtual machines

8039 docker containers





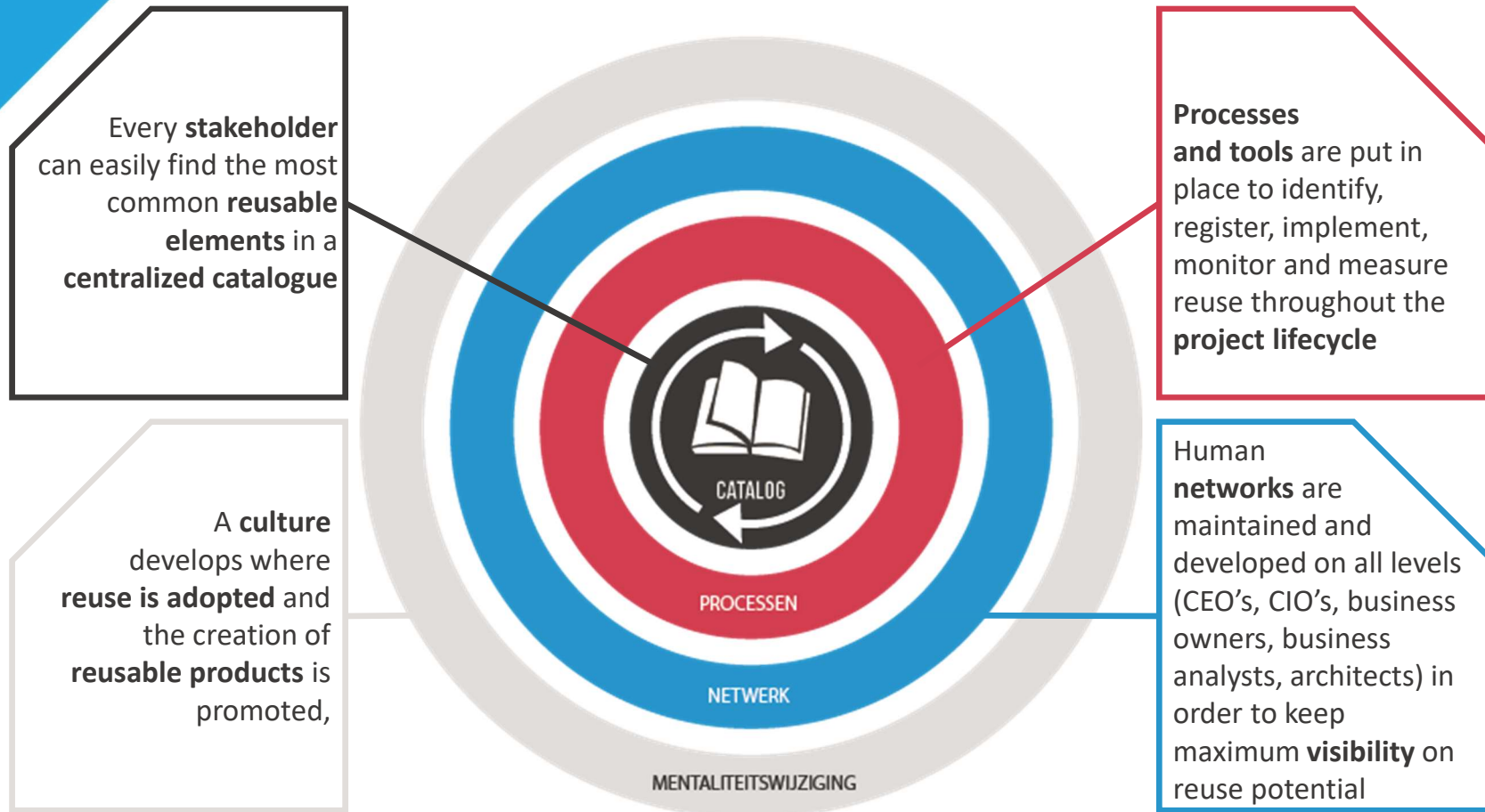
Reuse of business components

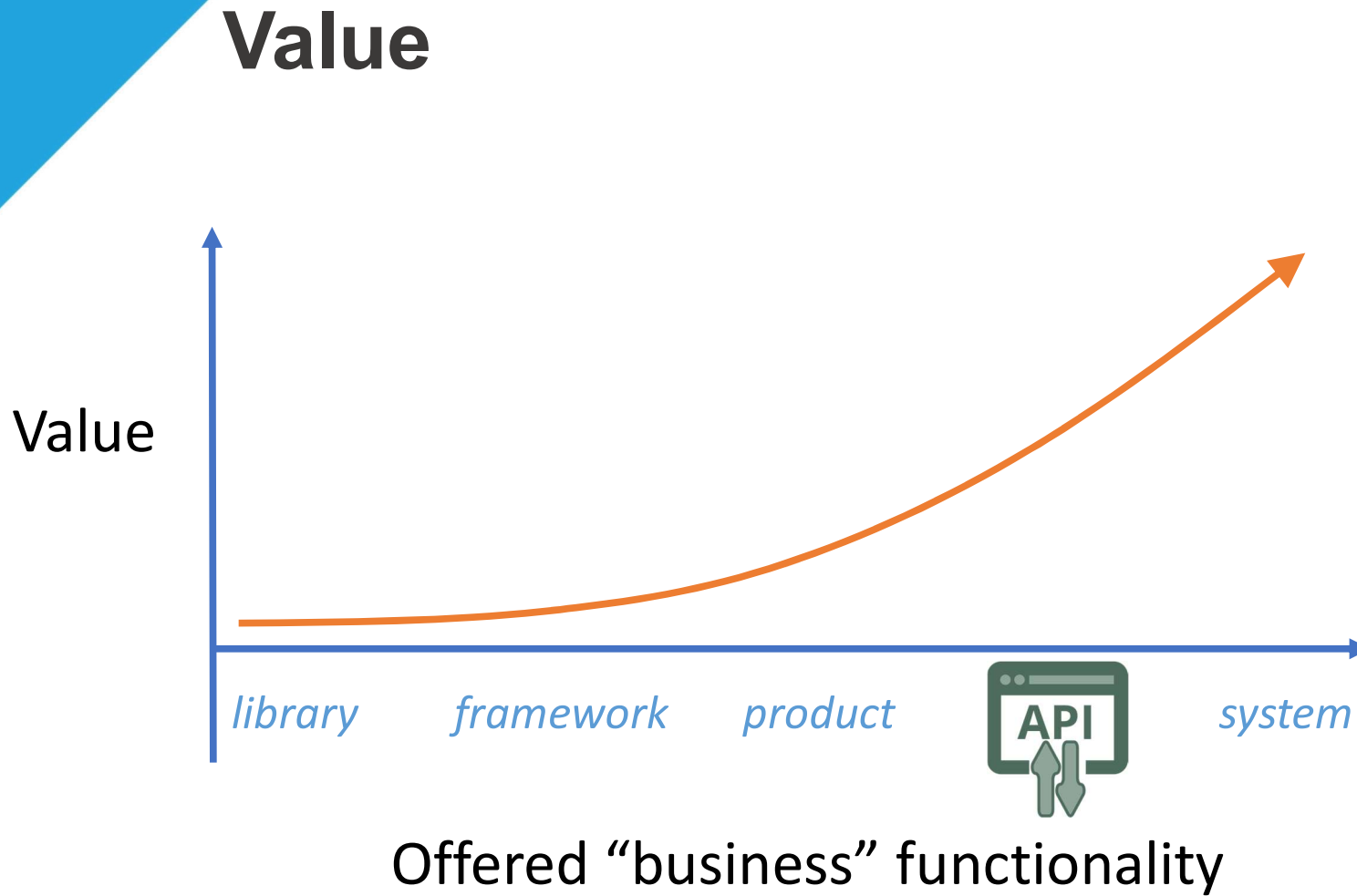
About the initiative



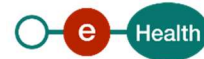
- Initiative within the public social security institutions & Smals
- Purpose
 - ▲ synergy around (technical) business components
 - ▲ and thus save costs by avoiding multiple development of components
- Regardless of whether development takes place by
 - ▲ the institution's own ICT department
 - ▲ Smals
 - ▲ subcontractors
- Creation of a competence center within Smals in order to maximally integrate and support the reuse of business components within Smals, its members, partners and domains in which Smals is active

ReUse – Vision





So... dare to share!



SOFTWARE REUSE CATALOGUE



Framework Library Product Service System



How? with the new Software Reuse Platform!

<https://www.ict-reuse.be>



New project? consult the Software Reuse Catalogue



The software platform for smart makers

FR

Accueil Catalogue Initiatives Contact

Catalogue des logiciels réutilisables

Smals et ses membres ont pour objectif de favoriser la réutilisation de composants logiciels existants et encouragent le développement de nouveaux composants réutilisables. Ce catalogue offre un aperçu des composants réutilisables existants.

Vous pouvez directement effectuer une recherche par mot-clé ou naviguer via la catégorie ci-dessous.

Rechercher



Sources authentiques

Composants liés à des bases de données de référence gérées par le propriétaire des données concernées.

[Voir les composants liés](#)



Communication

Composants liés aux techniques qui permettent de communiquer, d'accéder aux sources d'information, de stocker, de manipuler, de produire et de transmettre l'information.

[Voir les composants liés](#)



Interfaces

Composants liés à l'interaction entre les utilisateurs et les systèmes.

[Voir les composants liés](#)



Gestion des utilisateurs et des accès

Composants liés à la gestion des habilitations des utilisateurs à accéder à un système d'information ou à une application.

[Voir les composants liés](#)



Sécurité

Composants liés à la protection de l'intégrité et de la confidentialité des informations stockées dans un système informatique.

[Voir les composants liés](#)



Gestion de dossiers

Composants liés au traitement de dossiers suivant la réglementation ou les procédures en vigueur.

Next Slide

Share your success stories...and become an ambassador for reuse!

<https://www.ict-reuse.be>



Comment participer ?

Enrichir le catalogue

Vous avez un composant réutilisable qui pourrait intéresser d'autres institutions ?

[Proposez-le-nous !](#)

Participer à nos évènements

Vous aimeriez échanger au sujet de la réutilisation ? Des évènements sont régulièrement organisés.

[Inscrivez-vous ici !](#)

Recevoir la newsletter

Inscrivez-vous à la newsletter pour suivre l'actualité autour de la réutilisation.

[Inscrivez-vous ici !](#)

Partager votre expérience

Réutiliser un composant vous a aidé à transformer un projet en réussite ?

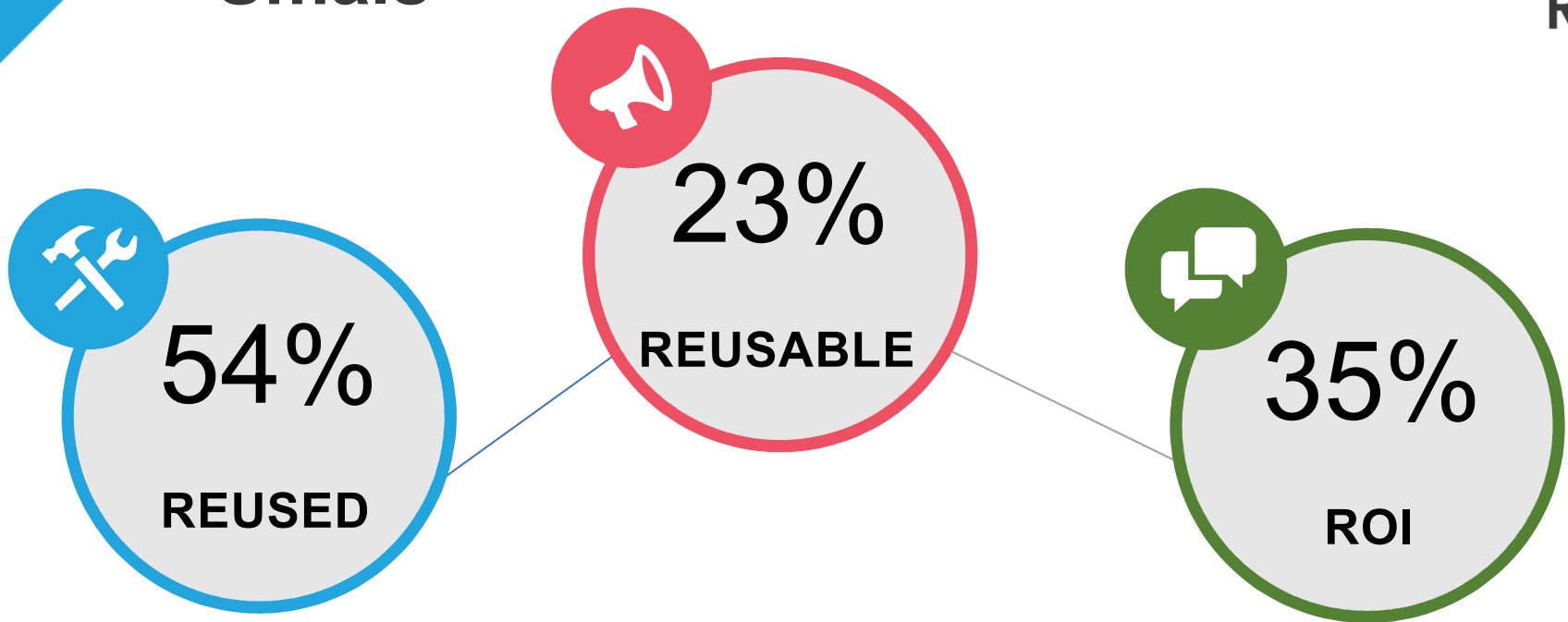
[Faites-nous part de votre expérience !](#)

ROI of reuse



- You can only improve what you measure
- Reuse is embedded in the "project life cycle" of projects carried out by Smals
- This makes it possible to compare the project cost without reuse and with reuse and to calculate the ROI

ROI 2019 for projects carried out by Smals



10.000.000 €

Challenges

- Use the power of the network of institutions
- Deal with interdependencies
- Focus on the essence, not on "bells and whistles"
- Deal with the (un)availability of (critical) services
- Strive for uniformity of technological solutions / use of site licenses

Future opportunities – Government as a Platform (GAAS)

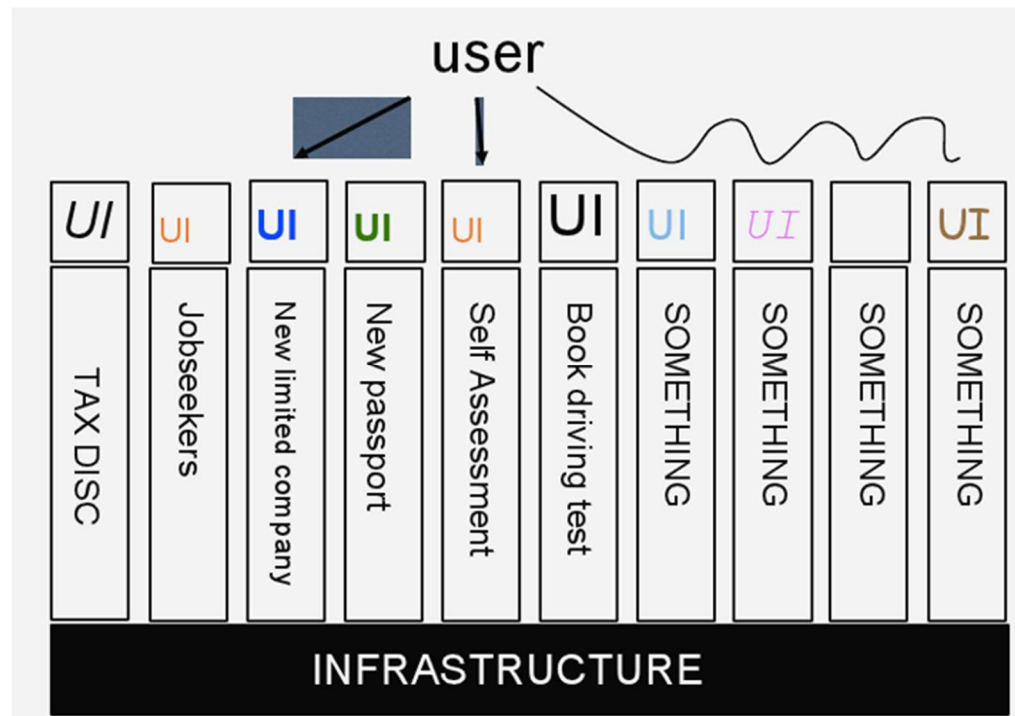


We live in a platform economy:

- eBay, Amazon
- YouTube
- Google, Baidu
- Paypal, Alipay
- iOS, Android
- Airbnb, TripAdvisor
- Uber
- LinkedIn, Glassdoor

Future opportunities – Government as a Platform (GAAS)

- Governments still have many diverse and complex legacy systems and processes, too many of them still operating in silos
- As a consequence, government often looks something like this

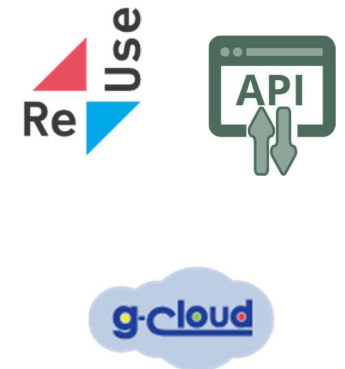
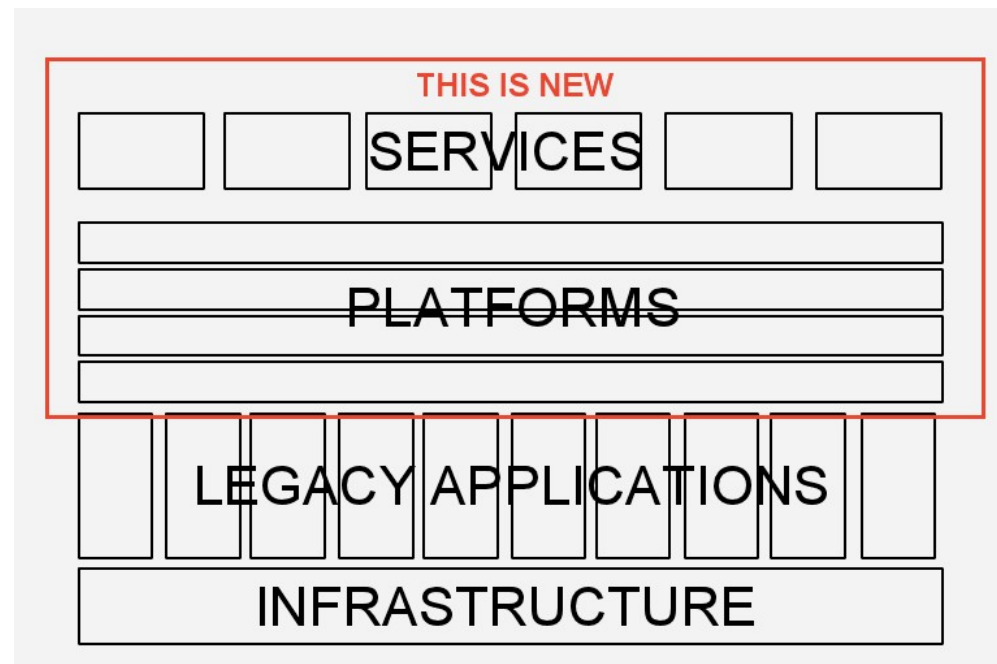


Future opportunities – Moving to the platform model

- The real mark of success for government will be when government establishes the baseline set of things that it absolutely needs to do and then exposes a robust, rich set of service end points that will let people in the private sector add value to that minimal “must do” set
- Then we can hit some real magic because we will get more and more services for citizens with more and more ingenuity, without any procurement at all because the government made it possible for people outside to build interesting things

Future opportunities – Moving to the platform model

- A platform provides essential technology infrastructure, including core applications that demonstrate the potential of the platform
- The core platform provider enforces “rules of the road” (such as the open technical standards and processes to be used) to ensure consistency, and that applications based on the platform will work well together





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