Antwerp City Platform

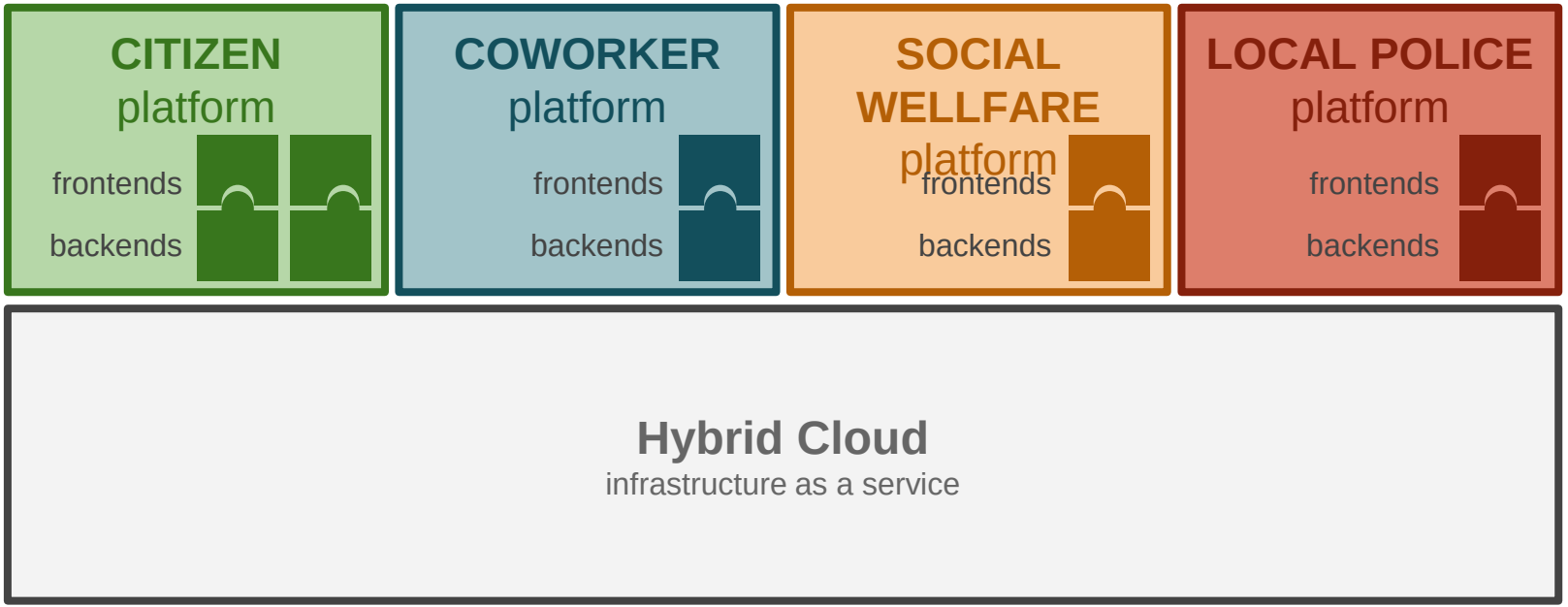
as a Service

ACPaaS

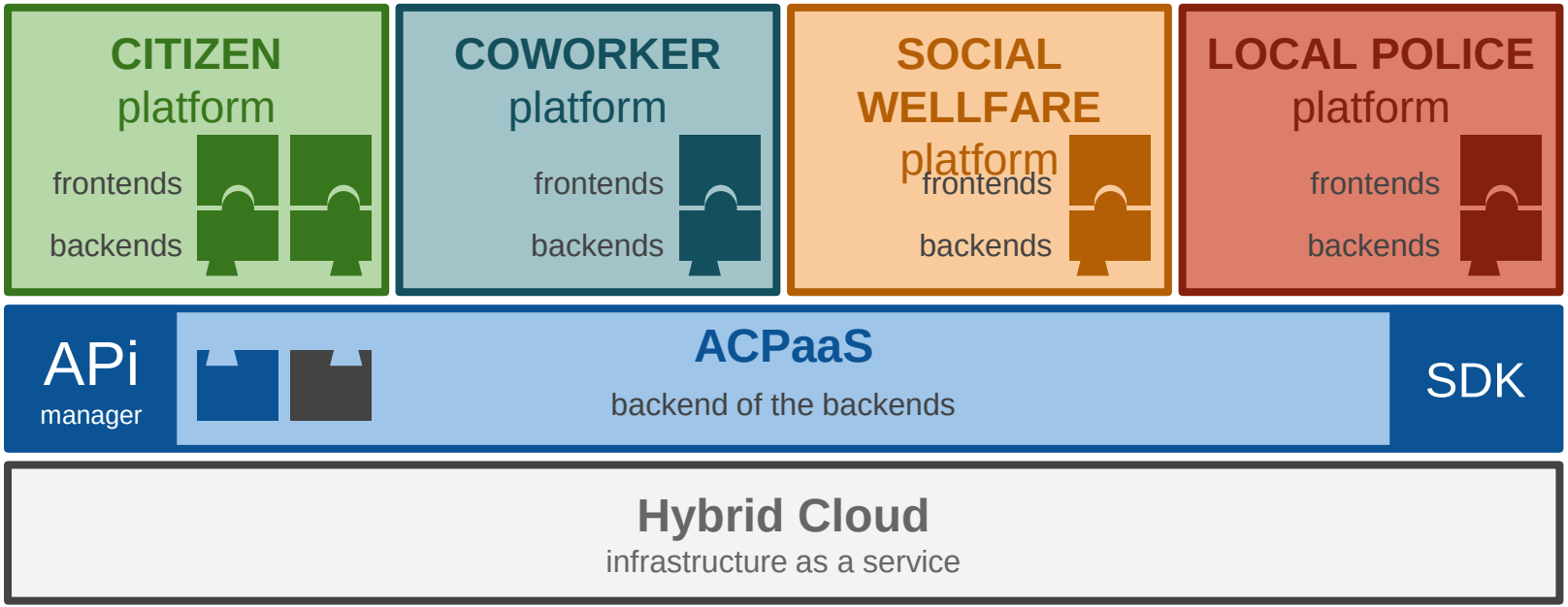
a technical platform for accelerating the development of tailor-made applications

Sharing & Reuse Conference, March 29th 2017
Nicolas Uzelac, Digipolis Antwerp

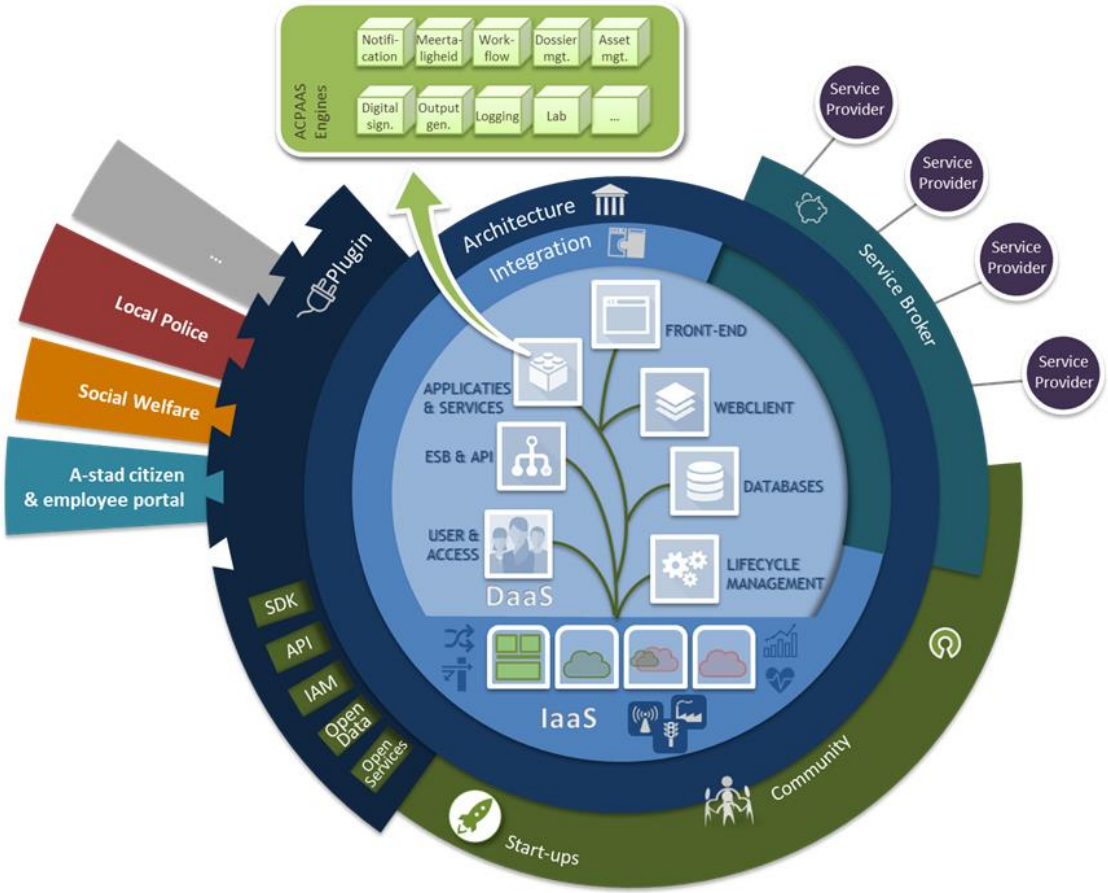
Optimisation of the development of the 4 major platform applications (2015)



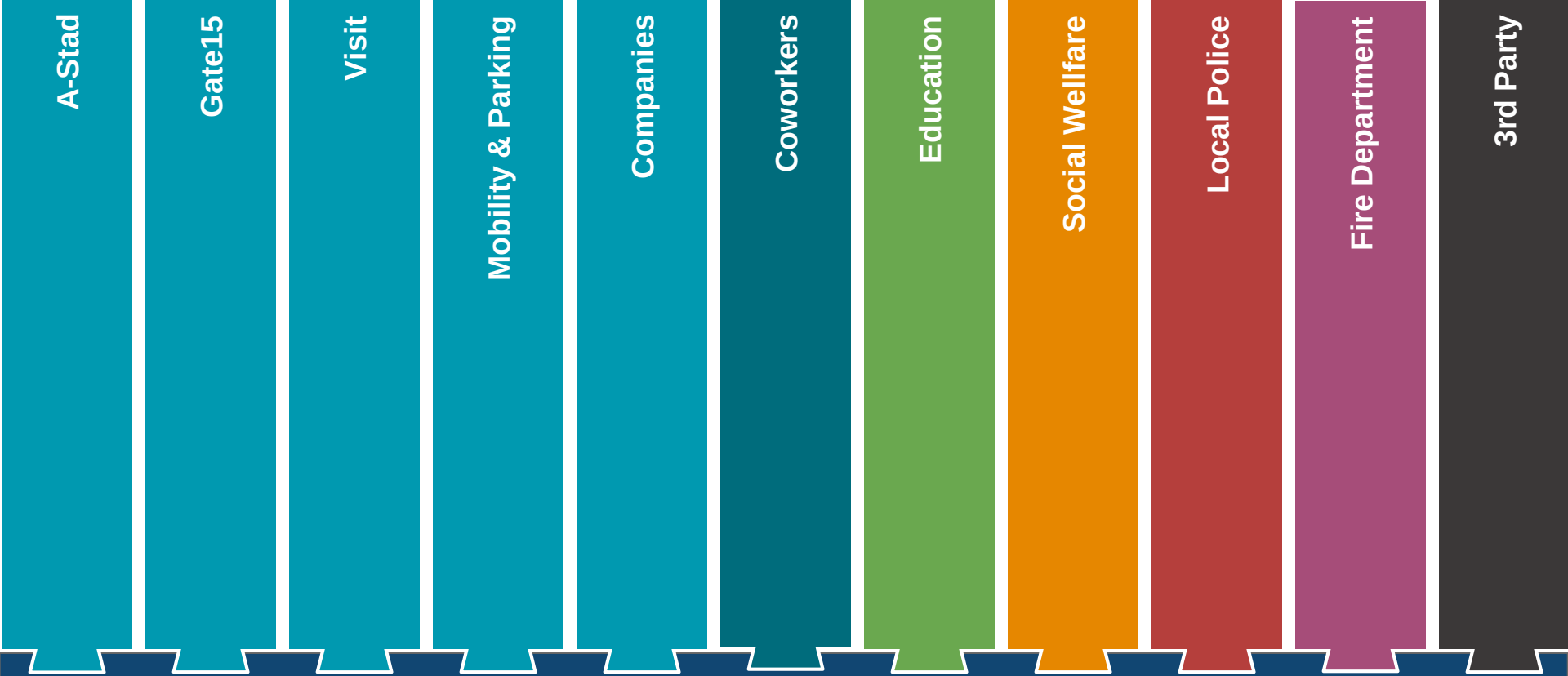
Antwerp City Platform as a Service (2016)



ACPaaS Design Principles

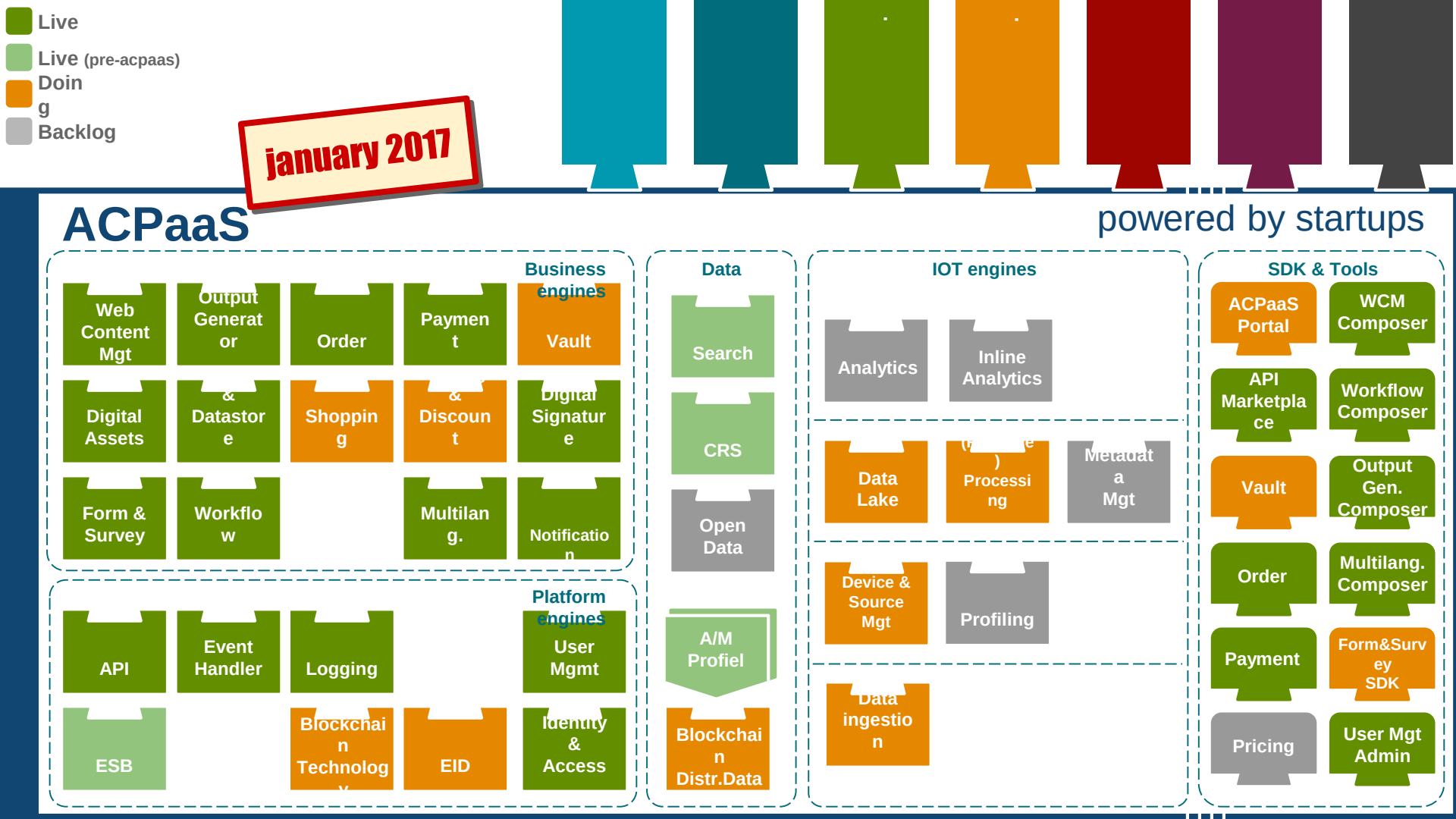


- ❏ Technical Platform for Applications
- ❏ Plug-in Architecture
- ❏ Open Services (RESTful **API**)
- ❏ Microservices-oriented
- ❏ **Open Source First**
- ❏ As a Service (brokerage role)
- ❏ Digipolis Antwerp Appl. Stack (DaaS)
- ❏ On top of a Hybrid Cloud (IaaS)
- ❏ **E42** (engines-for-two)
- ❏ Community collaboration
- ❏ **Startup-friendly**



ACPaaS

Antwerp City Platform as a Service


Live
Live (pre-acpaas)
Doing
Backlog
january 2017
ACPaaS
powered by startups
Business engines
Web Content Mgt
Output Generator
Order
Payment
Vault
Digital Assets
& Datastore
Shopping
& Discount
Digital Signature
Form & Survey
Workflow
Multilang.
Notification
Platform engines
API
Event Handler
Logging
User Mgmt
ESB
Blockchain Technology
EID
Identity & Access
Data
Search
CRS
Open Data
A/M Profiel
Blockchain Distr.Data
IOT engines
Analytics
Inline Analytics
Data Lake
Processing
Metadata Mgt
Device & Source Mgt
Profiling
Data ingestion
SDK & Tools
ACPaaS Portal
WCM Composer
API Marketplace
Workflow Composer
Vault
Output Gen. Composer
Order
Multilang. Composer
Payment
Form&Survey SDK
Pricing
User Mgt Admin

Building applications using ACPaaS engines

ACPaaS

powered by startups

Business engines

Web Content Mgt

Output Generator

Order

Payment

Vault

Digital Assets

Form & Survey

Data

Search API

IOT engines

Analytics

Inline Analytics

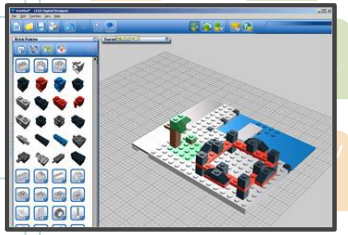
Metadata Mgt

SDK & Tools

ACPaaS

WCM

Composer



API

Event Handler

Logging

User Mgmt

ESB

Blockchain Technology

EID

Identity & Access

A/M Profiel

Blockchain Distr.Data

Data ingestion

Pricing

User Mgt Admin

~~ACPaaS integration-~~ components

ACPaaS engines

powered by startups

Business engines

Web Content Mgt

Output Generator

Order

Payment

Vault

Digital Assets

Form & Survey

Data

Search API

A/M Profiel

Blockchain Distr.Data

IOT engines

Analytics

Inline Analytics

Metadata Mgt

Data ingestion

SDK & Tools

ACPaaS

WCM

Composer

Pricing

User Mgt Admin

API

Event Handler

Logging

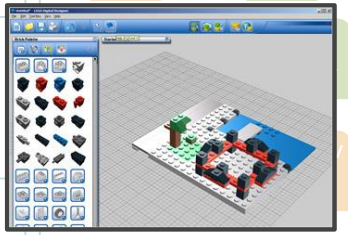
User Mgmt

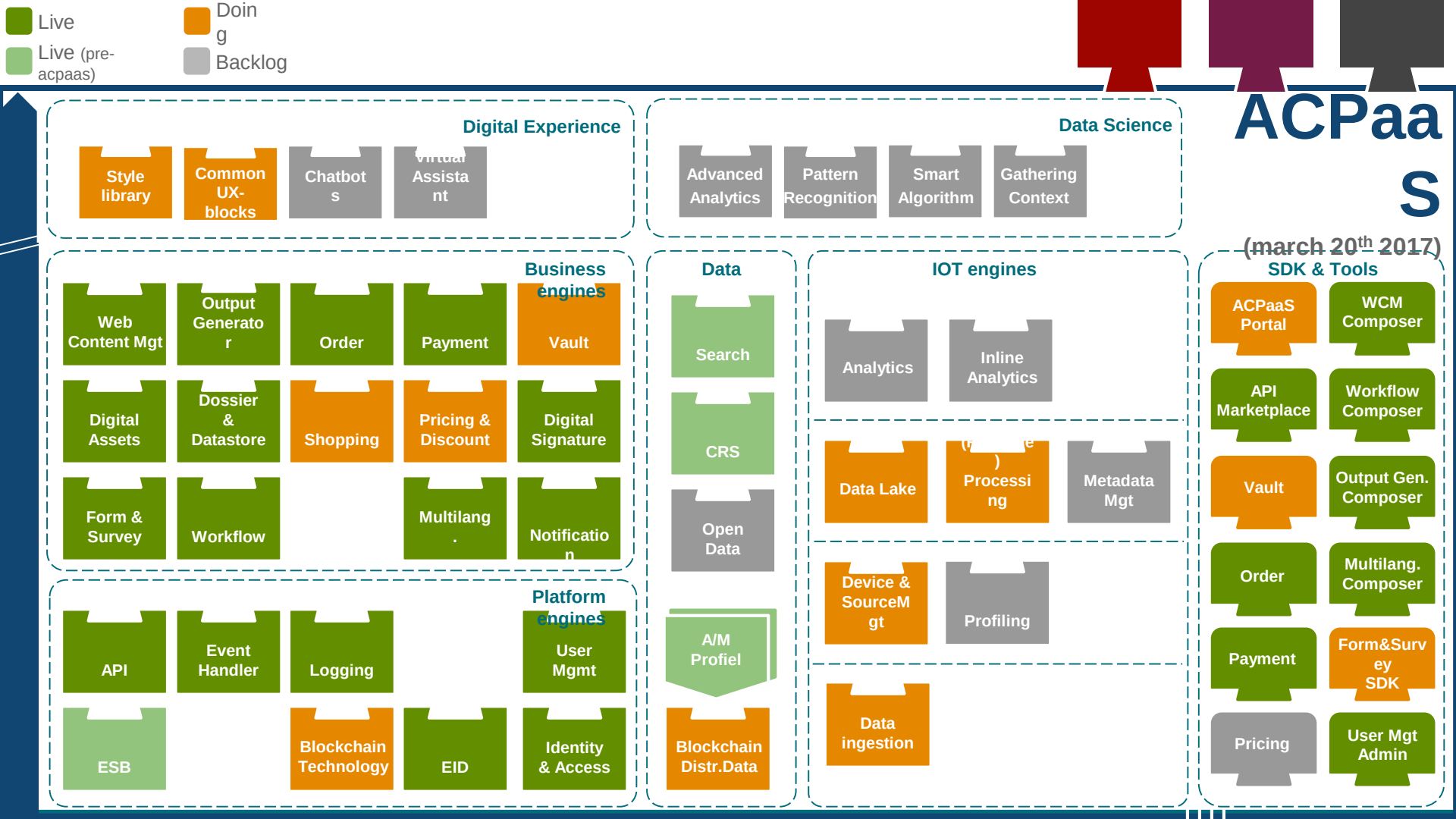
ESB

Blockchain Technology

EID

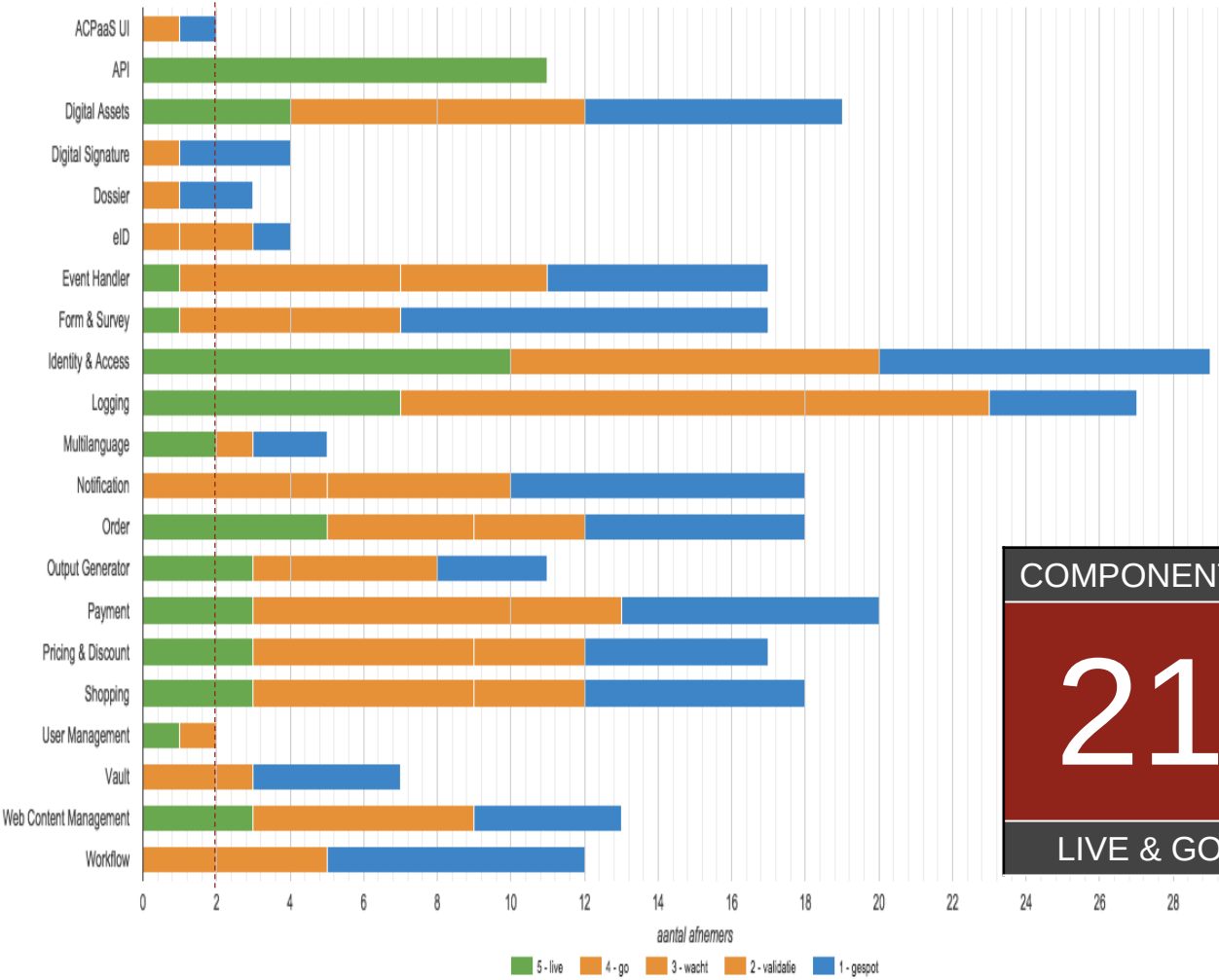
Identity & Access




Live
Live (pre-acpaas)
Doing
Backlog
ACPaaS
(march 20th 2017)
Digital Experience
Style library
Common UX-blocks
Chatbots
Virtual Assistant
Data Science
Advanced Analytics
Pattern Recognition
Smart Algorithm
Gathering Context
Business engines
Web Content Mgt
Output Generator
Order
Payment
Vault
Digital Assets
Dossier & Datastore
Shopping
Pricing & Discount
Digital Signature
Form & Survey
Workflow
Multilang.
Notification
Platform engines
API
Event Handler
Logging
User Mgmt
ESB
Blockchain Technology
EID
Identity & Access
Data
Search
CRS
Open Data
A/M Profiel
Blockchain Distr.Data
IOT engines
Analytics
Inline Analytics
Data Lake
Processing
Metadata Mgt
Device & SourceMgt
Profiling
Data ingestion
SDK & Tools
ACPaaS Portal
WCM Composer
API Marketplace
Workflow Composer
Vault
Output Gen. Composer
Order
Multilang. Composer
Payment
Form&Survey SDK
Pricing
User Mgt Admin

ACPaaS Consumers

(march 20th 2017



COMPONENTS	CONSUMERS	AVERAGE RATIO
21	118	5.6
LIVE & GO	LIVE & GO	LIVE & GO

325
STARTUPS

991
ENROLLMENTS

385
PITCHES

263
OFFERS

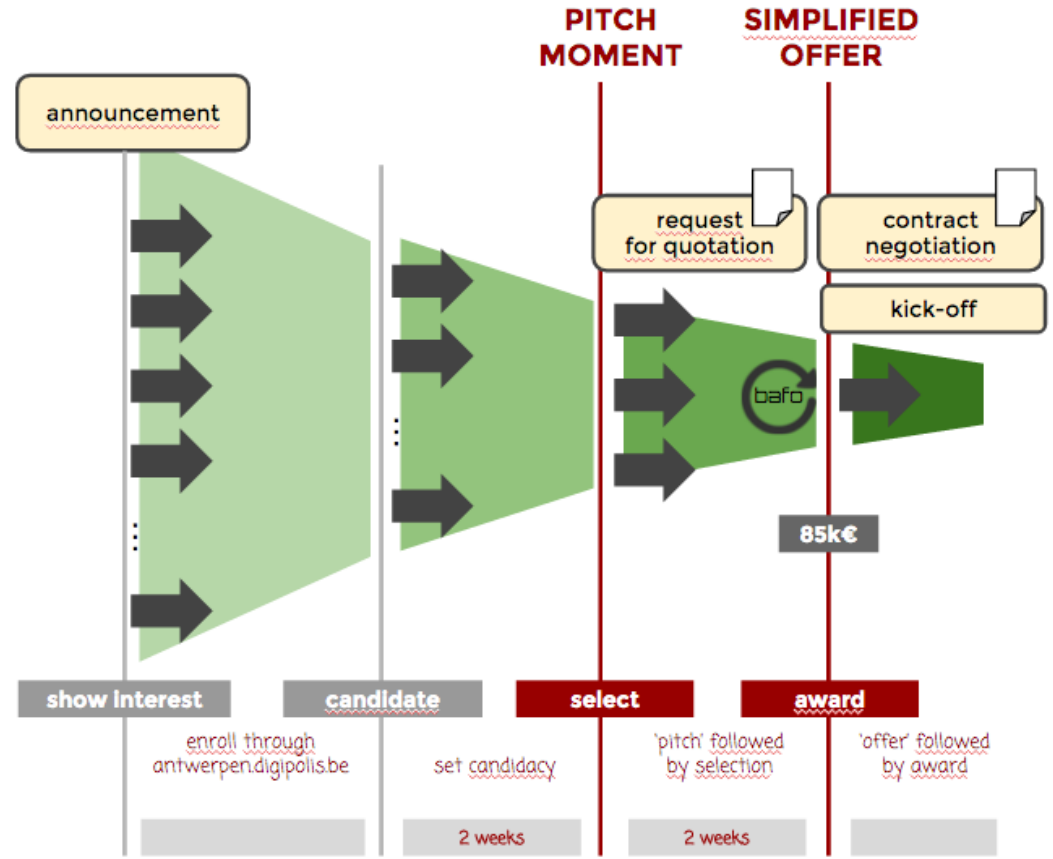
Next Steps

1. **Integration** of engines to replace ‘legacy’ applications
2. **ACPaaS by default :** new applications are built ‘by default’ on ACPaaS
3. **ACPaaS-UI** : build reusable frontend libraries
4. Identification and realisation of **new engines & consumers**
5. Intention to **share ACPaaS** with all Flemish cities

if time permits ...

Powered by Startups

inspired by Pre-Commercial Procurement



PREPARATION

ANNOUNCEMENT
- ❑ antwerpen.digipolis.be

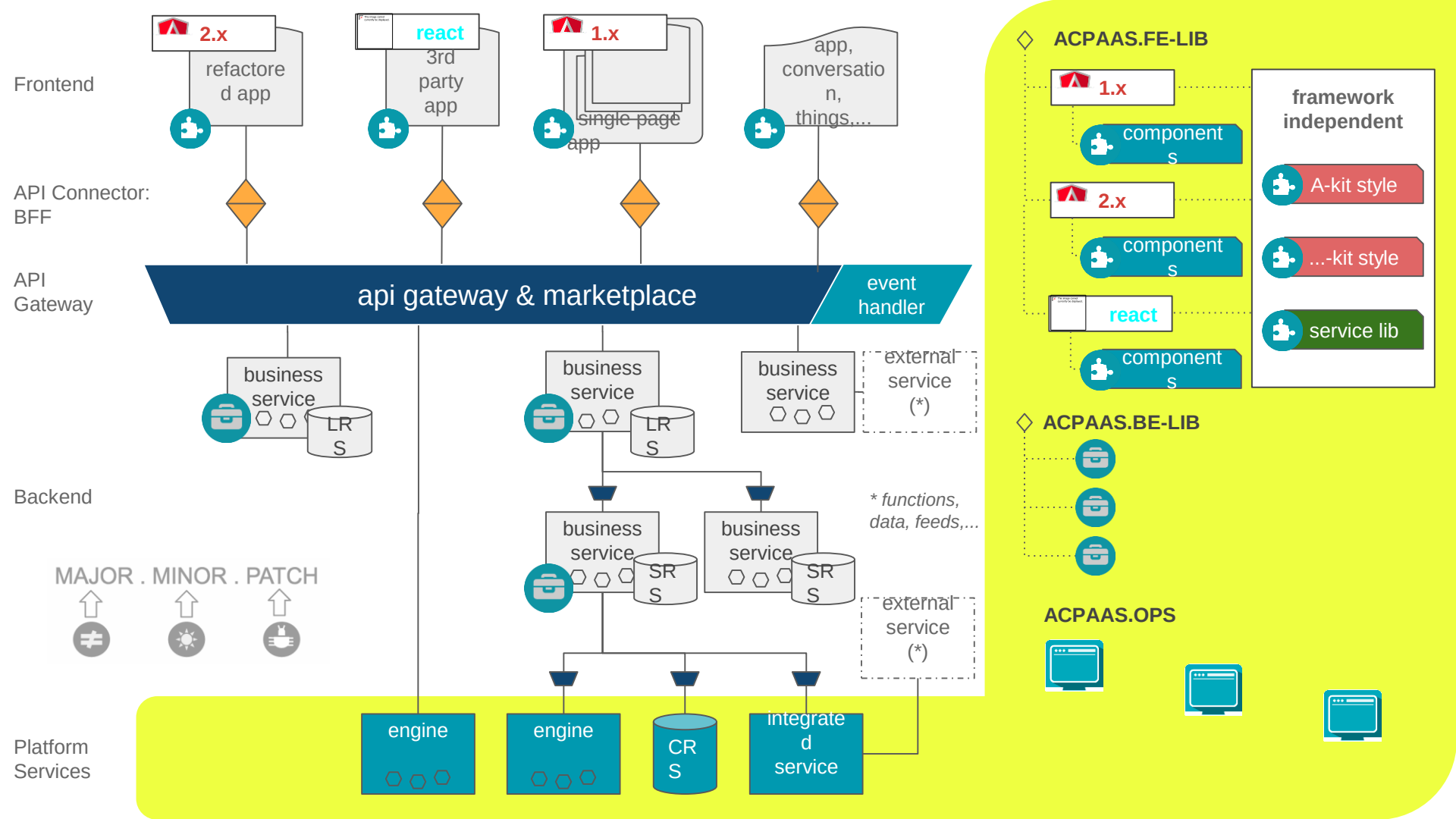
SET CANDIDACY
- ❑ prepare pitch
- ❑ schedule slot (30min)

PITCH
- ❑ select candidates

REQUEST FOR QUOTATION
- ❑ publish lean RfQ
- ❑ prepare offer
- ❑ schedule slot (2h)

PRESENT OFFER
- ❑ present offer + evaluation
- ❑ BAFO(s) + evaluation

CONTRACTING
- ❑ contract negociation
- ❑ project kick-off


Frontend
2.x
refactored app
react
3rd party app
1.x
single page app
app, conversation, things....
API Connector: BFF
API Gateway
api gateway & marketplace
event handler
Backend
business service
LRS
business service
LRS
business service
external service (*)
business service
SRS
business service
SRS
external service (*)
* functions, data, feeds,...
MAJOR . MINOR . PATCH
Platform Services
engine
engine
CRS
integrated service
ACPAAS.FE-LIB
1.x
components
2.x
components
react
components
framework independent
A-kit style
...-kit style
service lib
ACPAAS.BE-LIB
ACPAAS.OPS

A-STAD: CITIZEN PORTAL

PLATFORM | E-DESK | CONTENT | OTHER

AS-IS

Kaai

- A-Profiel 1.0 — profile
- User Management 0.1 — identity & access
- Notificaties 0.1 — notification
- Search — search
- Assets — digital assets
- E-loket 1.0
- Meldingen
- Afspraken — planning
- e-ID — e-id
- Redactie
- Helpcenter
- Overzicht
- Stadsplan
- Uit
- Photobooth
- A-kaart
- Ophaalkalender — planning

BACKLOG

Kaai 2.0

- A-Profiel 2.0 — profile
- User Management 1.0 — identity & access
- Notificaties 1.0 — notification
- A-stad design 2.0
- SMS Communicatie — notification
- Rapportering — output generator
- Personalisatie (datamodel) — profile
- Kluis documentenbox — digital vault
- Formbuilder — formbuilder
- Webshop (+ ticketverkoop) — webshop | payment
- E-loket 2.0
- (Zaal)zoeker & Reservering — planning
- Balie toepassing
- Ticket app & Workflow
- Kanalen (flex.home)
- Meertaligheid (content) — multilanguage
- Contactboek verenigingen
- Personalisatie (content) — profile
- Nieuwsbrieven — notification
- Meertaligheid (app) — multilanguage
- Apps from Antwerp — api/sdk | open data
- Bib
- Kalender (persagenda) — planning
- Crisis-communicatie — notification
- (*) Perswebsite
- (*) Lage Emissie Zone
- (*) Opsinjoren
- Uit export
- Aanpassingen Blinde &Slecht... — accesibility

1 identification of common components accross different platforms

2 identification and isolation of reusable **'engines'**

3 engine(s) as leverage for accelerated and efficient realisation of platforms and applications

ACPaaS engines

profile | search | planning | digital assets | e-id | notification | open data | api/sdk | digital vault | iot | formbuilder | multilanguage | output generator | webshop | payment | accesibility | identity & access

325	991	385	263	63
STARTUPS	ENROLLMENTS	PITCHES	OFFERS	CONTRACTS

ACPaaS is Future Proof

1. **Flexible** IT development thanks to modularity of engines
2. **Shared cost** for the development and support of engines
3. **Quicker realisation** because of the reuse of existing components
4. Engines are easier, faster and cheaper **to modify or replace**
5. Much **faster** to adopt new and emerging technologies
6. **Innovation** by partnering with entrepreneurs