TAPPS

Trusted **Apps** for open CPSs

Actility and Marketplace

Market Place Platform & Methodology for Critical Environments

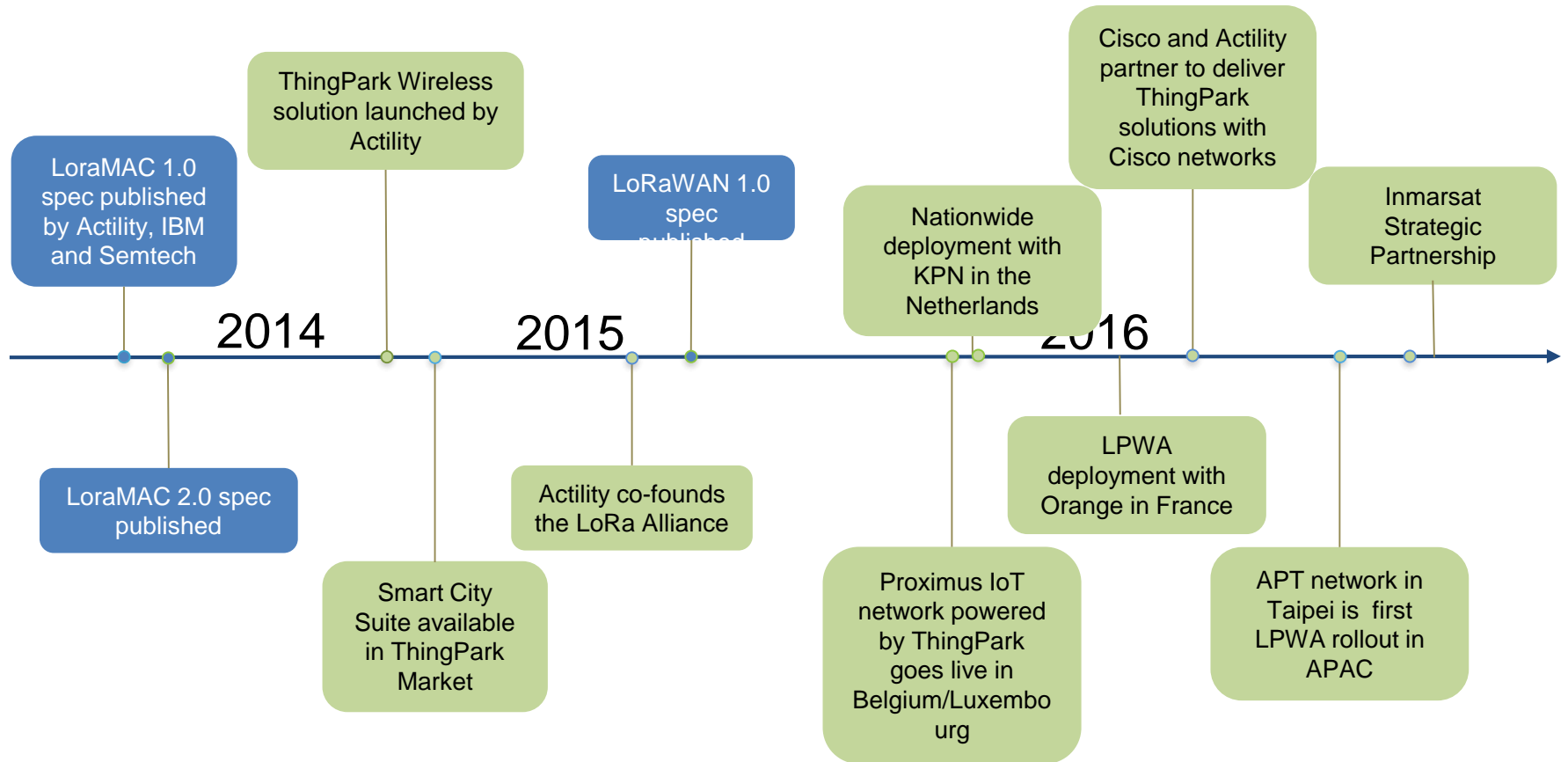# Agenda

Where are we from?

Need for a generic Market place

Inside the hood

Our TAPPS symbiosis

Enabling the internet of *every*thing

Actility is a pioneer in IoT networking technology and business

LoraMAC 1.0 spec published by Actility, IBM and Semtech

ThingPark Wireless solution launched by Actility

LoRaWAN 1.0 spec published

Cisco and Actility partner to deliver ThingPark solutions with Cisco networks

Inmarsat Strategic Partnership

Nationwide deployment with KPN in the Netherlands

LoraMAC 2.0 spec published

Actility co-founds the LoRa Alliance

LPWA deployment with Orange in France

Smart City Suite available in ThingPark Market

Proximus IoT network powered by ThingPark goes live in Belgium/Luxembourg

APT network in Taipei is first LPWA rollout in APAC

2014   2015   2016

TAPPS

Actility Profile

Team – 160 Headcount (Jan 2017)

Mike Mullica
President & CEO

Previously:
President Real Networks (Nasdaq. RNWK)
CEO Openwave (Nasdaq. OPWV)
President Synchronoos Technologies
CEO Fusion one

Olivier Hersent
Founder – Chairman & CTO
Previously:
CTO Comverse.
Founder Netcentrex

Management team : senior executives with previous key positions in global technologies companies - Orange, Comverse, Google, SFR.

R&D team : seasoned engineers with strong expertize in large scale IT infrastructures, OSS/BSS software platforms & energy management systems
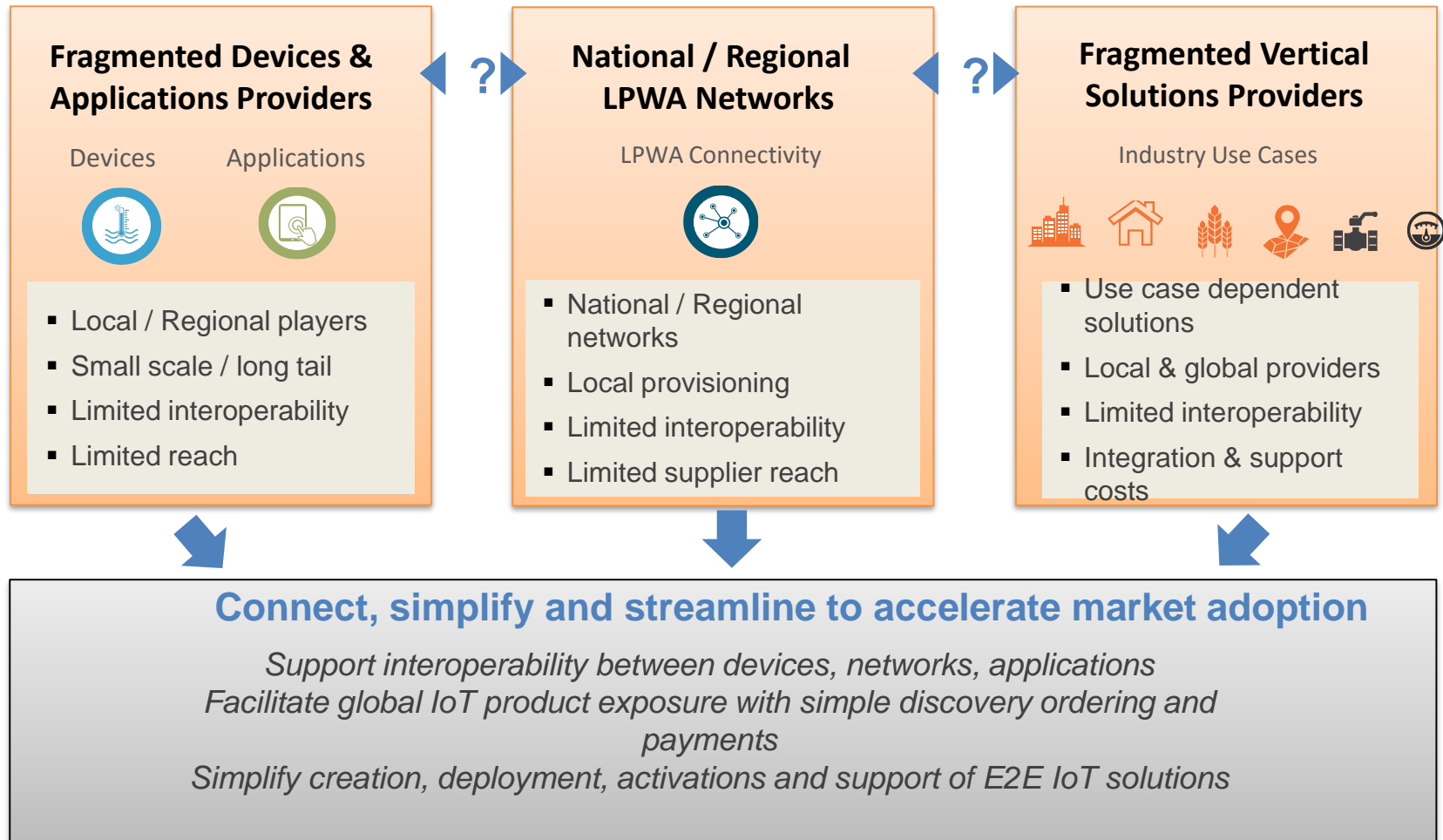
Investors & funding rounds

2010	2015	2017
€ 10M	€ 25M	€ 75M
bpifrance	Ginko	Creadev Meaningful Capital PARIS · SHANGHAI · NEW YORK
CDCEntreprises	FOXCONN	BOSCH
ELECTRANOVA CAPITAL	orange	inmarsat
DSO Truffle Capital	kpn	
	swisscom	
	idinvest PARTNERS	

Global presence
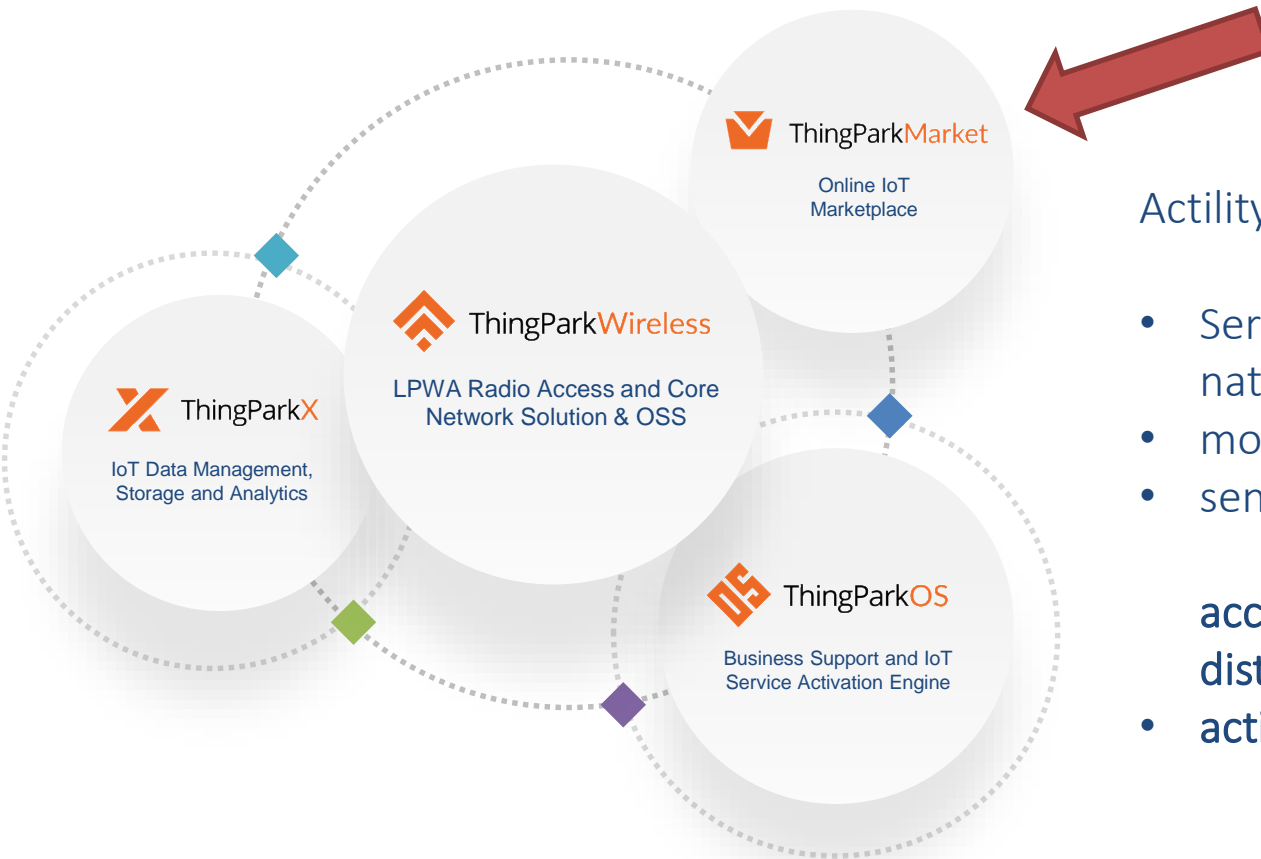
Offices & Teams

Paris
London
Brussels
Amsterdam

Singapore
Hong Kong
Taipei
Sydney

San Diego
Toronto

TAPPS

IoT is a complex value chain
with limited interoperability & scalability

Fragmented Devices & Applications Providers

Devices   Applications

- Local / Regional players
- Small scale / long tail
- Limited interoperability
- Limited reach

?

National / Regional LPWA Networks

LPWA Connectivity

- National / Regional networks
- Local provisioning
- Limited interoperability
- Limited supplier reach

?

Fragmented Vertical Solutions Providers

Industry Use Cases

- Use case dependent solutions
- Local & global providers
- Limited interoperability
- Integration & support costs

Connect, simplify and streamline to accelerate market adoption

Support interoperability between devices, networks, applications
Facilitate global IoT product exposure with simple discovery ordering and payments
Simplify creation, deployment, activations and support of E2E IoT solutions

TAPPS

Actility's ThingPark suite is the leading LPWA & IoT platform

ThingParkMarket

Online IoT Marketplace

ThingParkWireless

LPWA Radio Access and Core Network Solution & OSS

ThingParkX

IoT Data Management, Storage and Analytics

ThingParkOS

Business Support and IoT Service Activation Engine

Actility's ThingPark Suite helps

- Service Providers roll out national or local LPWA networks
- monetize connectivity,
- sensor data management

accelerate the on-boarding, distribution

- activation of IoT solutions.

TAPPS

ThingPark complete & modular

Industrial IOT Apps by Industry	Utilities / Smart Communities — Industrial IOT Apps by domain — Location Services — Data Management Apps
Data Analytics & Control Framework	ThingParkX
Central Orchestration Service (Device, Network and Application)	ThingParkOS
LPWA Core Network	ThingParkWireless

ThingParkMarket

Global IoT Market Place/Stores For

- Applications
- Data
- Services
- Devices

TAPPS

A generic, secured and multitenant platform

A need for a Central Station
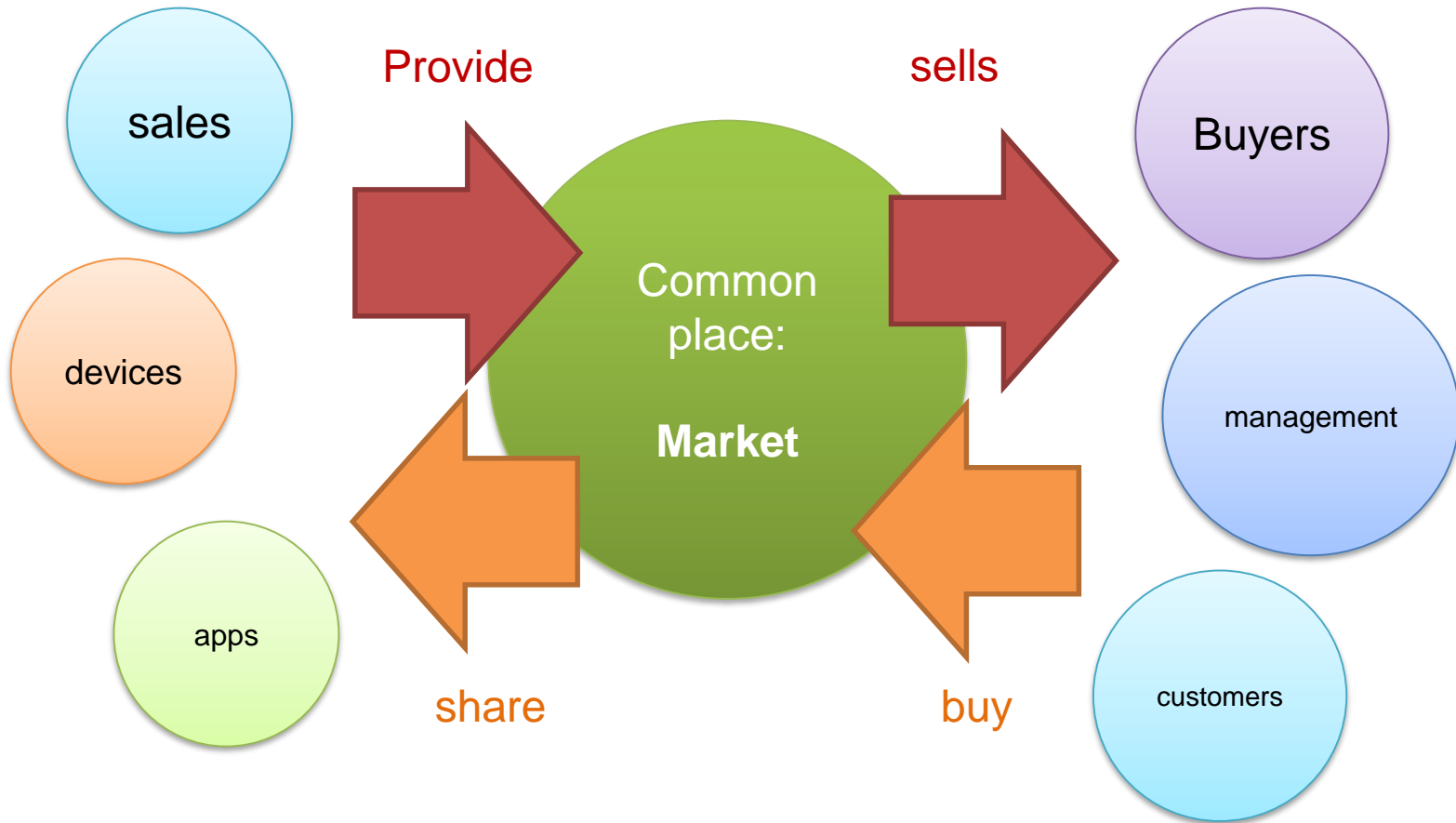
Roles brings security

- **Marketplace is segmented in roles**

Subscriber
- Buy on Marketplace
- Own devcies and applications

Vendor
- Fill market place from Suppliers
- Administrates the eshop
- Control and Sells to subscribers

Supplier
- Interfaces devices or applications, set a price

Operator
- Manage the whole platform

Motorbike Trolley
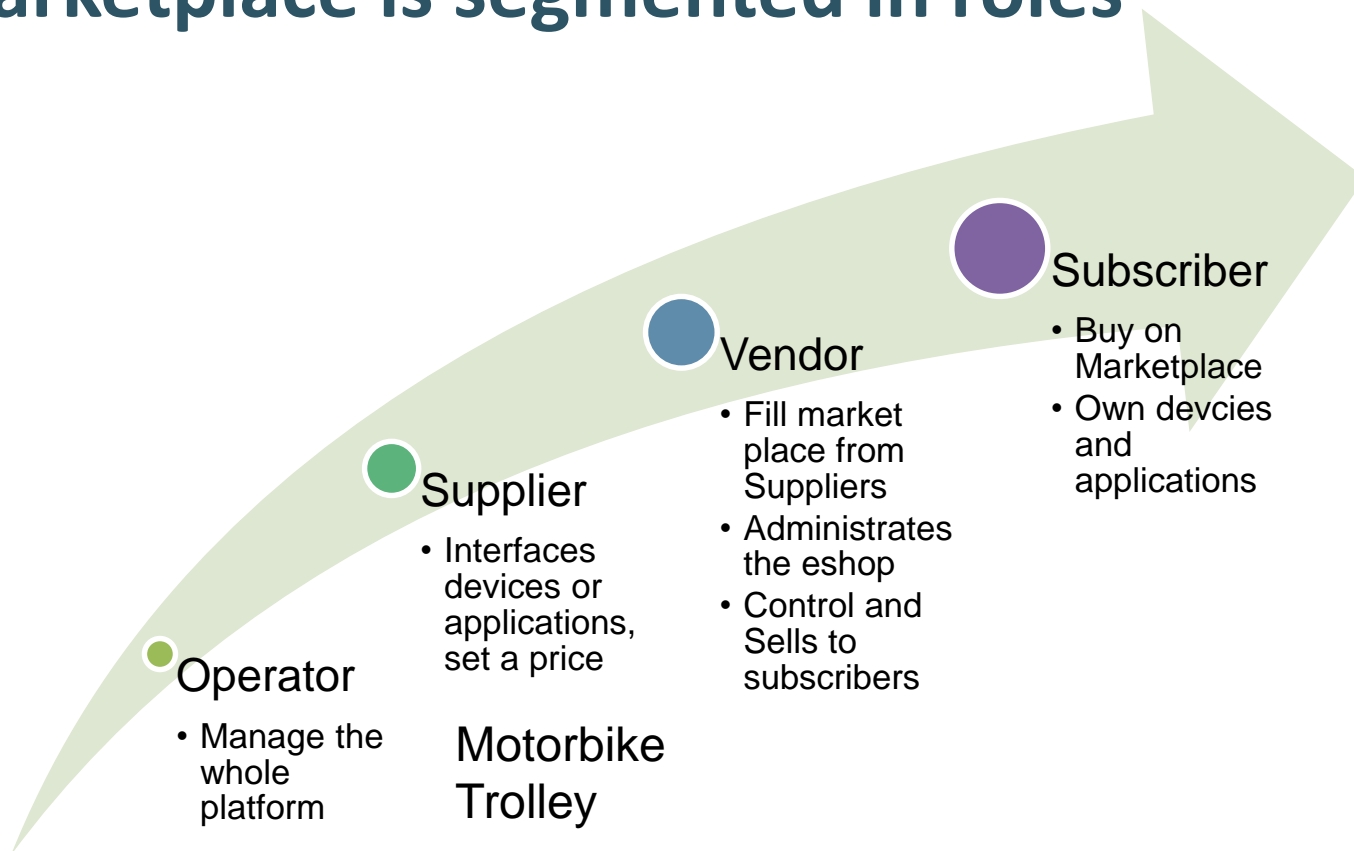
Operator

- **Manage the hardware**

- **Deploy software**

- **Warrant of the platform integrity**

- **Create others roles**

Suppliers

- **Application and devices Onboarding**
  - Create connectors to a service TAPPS server that will manage an application from a marketplace instance
  - API Call back management
  - Permission management
- **Publishes application and/or devices to Vendor**

Vendor

- **Create subscribers**
- **Create offers**
  - Bind application and/or devices to offer
  - Possibility of depencies
  - Bind license to offer
- **Manage the eShope front + back end**
- **Fullfil orders and payments**

Orders management

eShop backend

eShop Front end

Subscriber
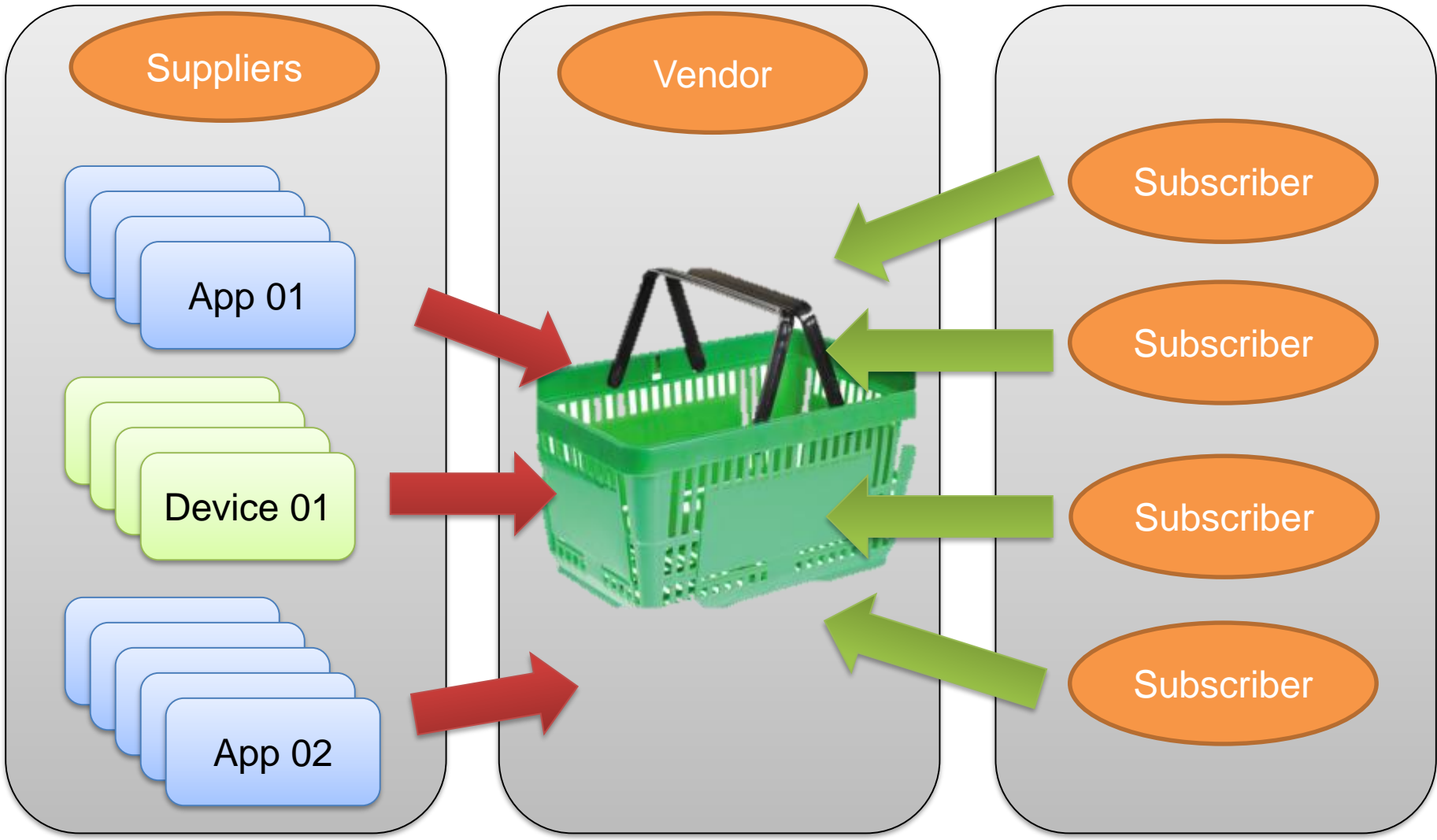
- **Buy offers**

- **Manage the floats**

- **Credentials are shared with thirdpart servers (i.e. TAPS Application server)**
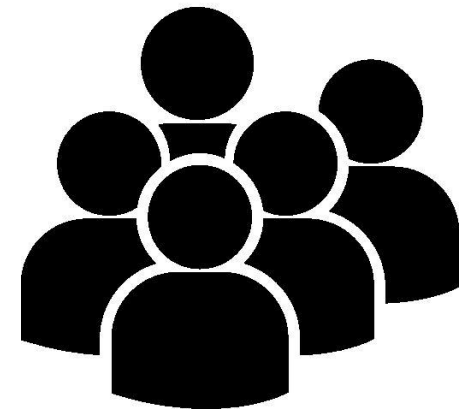
Workflow

Buying process

Subscriber
- Buy items in basket

eShop Frontend
- Handle payment
- Transmit details to vendor

Vendor Backend
- Process order

Supplier
- Honor order
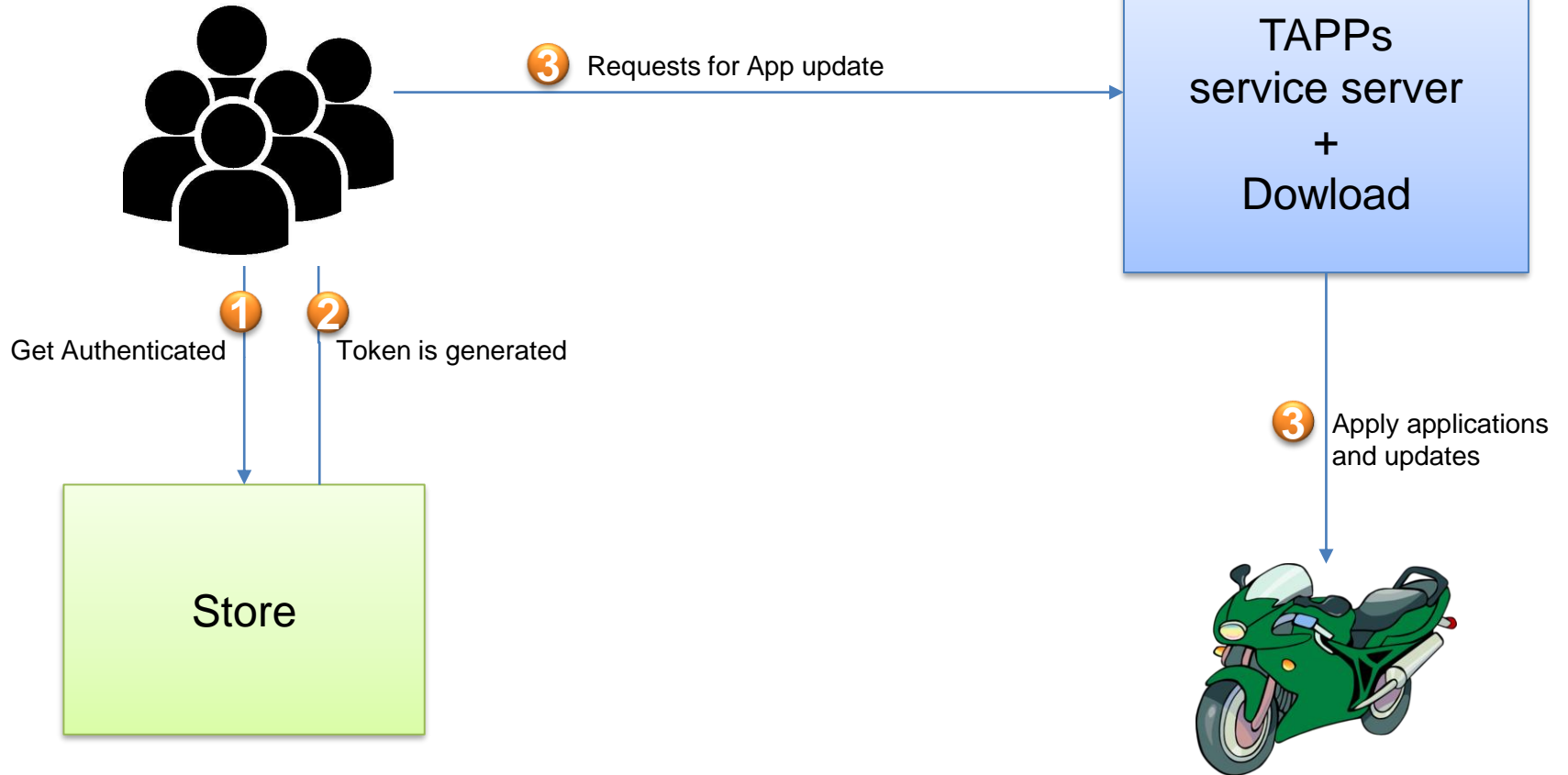- Activation and shipement
- Receives share

Dedicated supplier service

- **TAPPS Application server is the link between the marketplace, versioning and users.**
  – Acts as portal user authentication
  – Allows application 'payload' version management
  – Application or devices details are retrievd by API Marketplace.
  – Interacts with TAPPS CPS / installation allowance

Auth workflow

subscriber

(3) Requests for App update

TAPPs
service server
+
Dowload

(1) Get Authenticated (2) Token is generated

Store

(3) Apply applications and updates

Service Server interfaces

Welcome $USER
Users management:

name	**type**	**last connection**
admin	local	*last connection*
○ user 01	subscriber	*last connection*
○ user 02	subscriber	*last connection*
○ user 03	subscriber	*last connection*

[ADD] [EDIT] [DELETE] [back to admin]

DEVICE MANAGEMENT

logged as: *user01*
Selected device: [device01 ▼]

	Activated	Version	upgrade
app 01	☐ 1.2	1.3	[dropdown ▼]
app 02	☐ 1.2	1.3	[dropdown ▼]
app 03	☑ 1.2	1.3	[dropdown ▼]

[Cancel]   [OK]

APPLICATION $APP_NAME MANAGEMENT
logged as: *user01*

Name: *name*
id: *id*
versions: *sum of versions avail.*

Versions available:

	Version	**host**	**login**	**Binary file**	**protocol**
○	1.0	ftp.myserver.org	toto42	app01.deb	ftp
○	1.1	ftp.myserver.org	toto42	app01.deb	ftp
○	1.2	ftp.myserver.org	toto42	app01.deb	ftp
○	1.3	ftp.myserver.org	toto42	app01.deb	ftp

[ADD] [EDIT] [DELETE] [back to admin]

TAPPS

What defines an application?

- **An application is available when it's published on the Thingpark Marketplace.**

- **Several steps are required to get ready for the Thingpark Marketplace.**
  - Set it active or not
  - Set a price
  - Set details (marketing picture, info, etc.)

Components of an application?

1. **Payload delivered to CDN**
   - Contains manifest.json
   - Zip or APK file

2. **Application onboarding on Thingpark (via Supplier interface)**
   - Setup application's attributes (name, images, permissions)
   - Register callback URIs toward T-AS
   - Publish it (change state to 'Active')

3. **Offer activation on Thingpark (via Vendor interface)**
   - Create a new offer and add an application to it.

4. **Application registry on T-AS**
   - Define entry into database
   - Specify URI and credentials to CDN

TAPPS

TAPPS - Market place symbiosis

Contribution to TAPPS

- **Front-end with multi-seller interface and customer relation**

- **Complete design of e-shop env.**

- **End-to-end secured provisioning workflow**
  - Ecosystem API for resources provisioning in a distributed architecture (cf OpenAPI)
  - Prototype a trusted middleware distribution platform

- **Secure customer privacy for Applications and Devices**
  - User acceptance for data access by Application using secured onboarding and credentials distribution and ACL mechanism

Benefits from TAPPS

- **Understanding Manufacturers problematics**
  - Apprehend embedder software topics
  - Deliveries & shipment constrains expertise

- **Create a fully functional service server**
  - Need to improve our ACL mechanism using best practices from oAuth call flow

- **Improve our business role definition**
  - make the user partner experience better

- **Tests a Customer's journey**
  - Ensure more open and business insertion for a business Marketplace

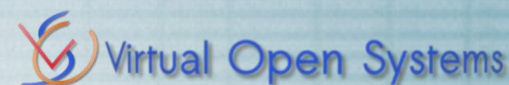# Evolutions perspectives (out of current scope)

- **Full Automation**
  - provisioning of supplier Interaface via API
  - One pushbutton interface.
- **More common API integrations**
  - ETSI M2M & ONG browser & gateway
  - Integration common Cloud interfaces (Azure, AWS, etc)
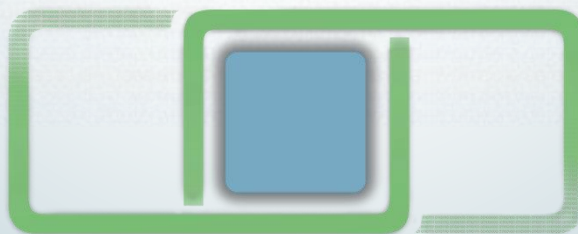
TAPPS

Partners of TAPPS

Third parties

Contact

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