

Future Strategies and the Impact APIs has on Telco Industry - The Telecom Italia Experience

Submitted To: TP

Date: 31 August 2015

Availability: **Public** **OMA Confidential**

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Source: Telecom Italia

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TELECOM ITALIA GROUP

OMA meeting – Looking Forward session

Saigon, 31st August 2015

Future Strategies and the Impact APIs has on Telco Industry

The Telecom Italia Experience

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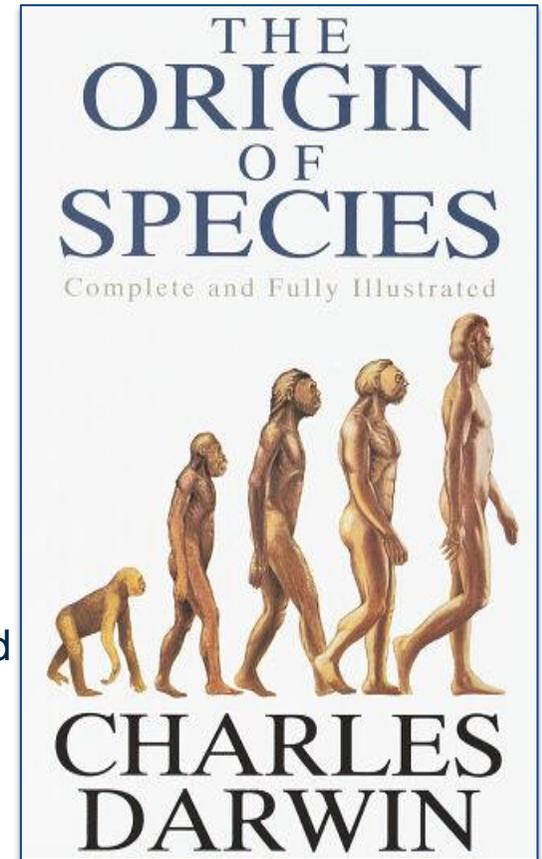


Agenda

- ▶ **The origin of the Telecom Italia Network API Platform**
- ▶ **Telecom Italia Network API Platform today**
- ▶ **Looking ahead towards the Easy API Layer**
- ▶ **EasyAPI @ Expo2015**
- ▶ **Conclusions**

The origin of the Telecom Italia Network API Platform

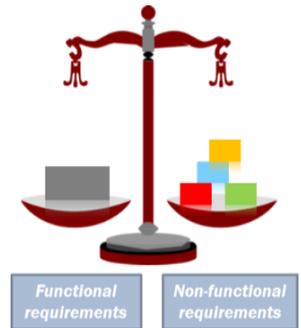
- About 15 years ago: Telecom Italia started to provide to its customers the first VAS (Value Added Services) in collaboration with partner Content Providers (CPs), such as delivery of news, horoscope, logos, ring tones, music.
 - the Web Service protocols were not as popular as today and then the protocols exposed toward the CPs were mostly network protocols (e.g. UCP for SMS-C).
- After a while... it become needed to provide VAS based subscription, so the Telecom Italia platforms had to enable such subscription-based services.
- In 2008, it come out the need to identify a solution for MVNOs, and the need to integrate MVNO service platforms with Telecom Italia network.
 - E.g. A2P e P2A SMS/MMS, USSD, IT/BSS services
- It was the right time to start the activity on what will become the **Telecom Italia Network API Platform** (formerly Service Exposure Framework)



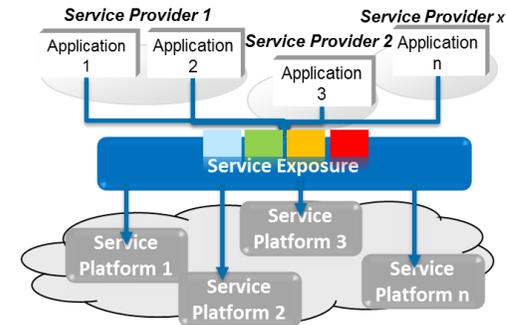
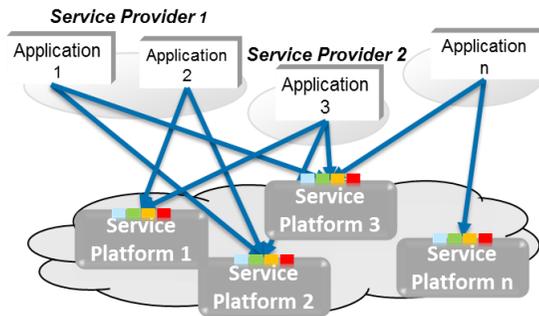
How to deploy APIs: non functional req. and architecture

Exposing an API does not mean only implementing an application interface fulfilling functional requirements, but it is needed to consider also supporting non-functional capabilities:

Authentication and Authorization, Infrastructural Policy, Business Policy, Assurance, Accounting.



Not trivial at all!

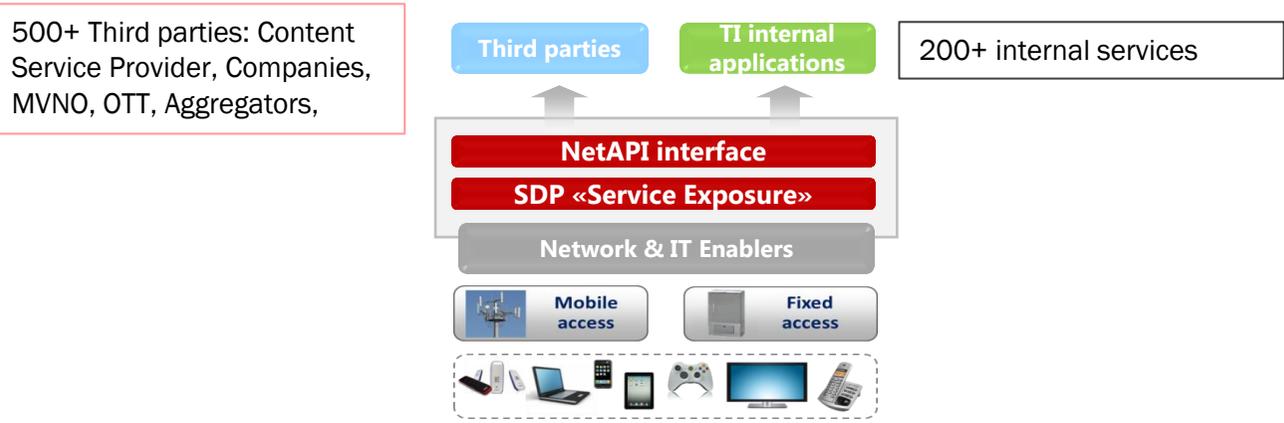


A centralized intermediation layer, sharing and reusing a unique instance of non-functional features needed to expose several and different APIs, avoiding duplication

There are **PROS** and **CONS**: benefits become much more substantial as more applications use an API

Telecom Italia Network API Platform today

Flexible intermediation layer to virtualize, rationalize and protect the Telco infrastructure, ensuring access control and security through enforcement of policy and SLA management



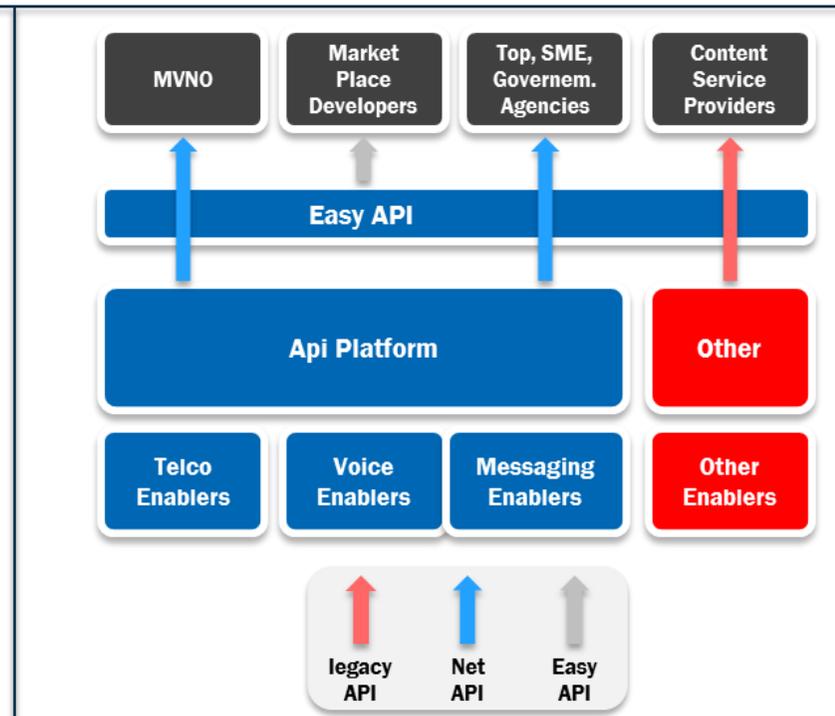
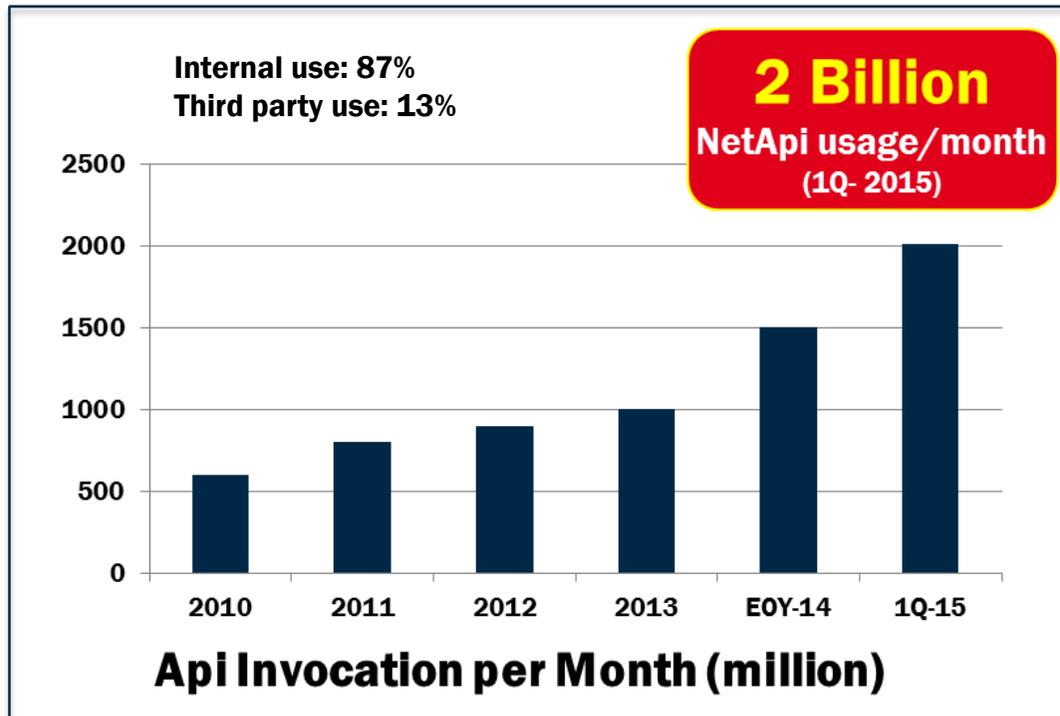
500+ Third parties: Content Service Provider, Companies, MVNO, OTT, Aggregators,

200+ internal services

Voice	Multimedia	Localization	UserIdentity	Premium & Billing	Messaging	MVNO	Advertising	Internet of Things
<ul style="list-style-type: none"> •Conferencing •ClickToCall •WebToCall •Voice Services 	<ul style="list-style-type: none"> •Delivery: licenses •Distribution: Protection encoding, VOD, EPG 	<ul style="list-style-type: none"> •Network Localization •Mobility Pattern 	<ul style="list-style-type: none"> •OTP •Password •PIN •MOO •Profile Synchronization •IP2CLI •IP2MSISDN (APIUNICA) 	<ul style="list-style-type: none"> •Attivaz/Disattivaz VAS Premium •Billing VAS •Attivazione Carte Servizi •InfoBundle 	<ul style="list-style-type: none"> •SMS A2P •Mail •USSD •MMS 	<ul style="list-style-type: none"> •Provisioning •MobileNumberPortability •CDR •Change Service 	<ul style="list-style-type: none"> •Banner Injection 	<ul style="list-style-type: none"> •M2M Geo-Localization

Telecom Italia Network API Platform

Architecture, governance and KPI



Telecom Italia Network API Platform – looking ahead

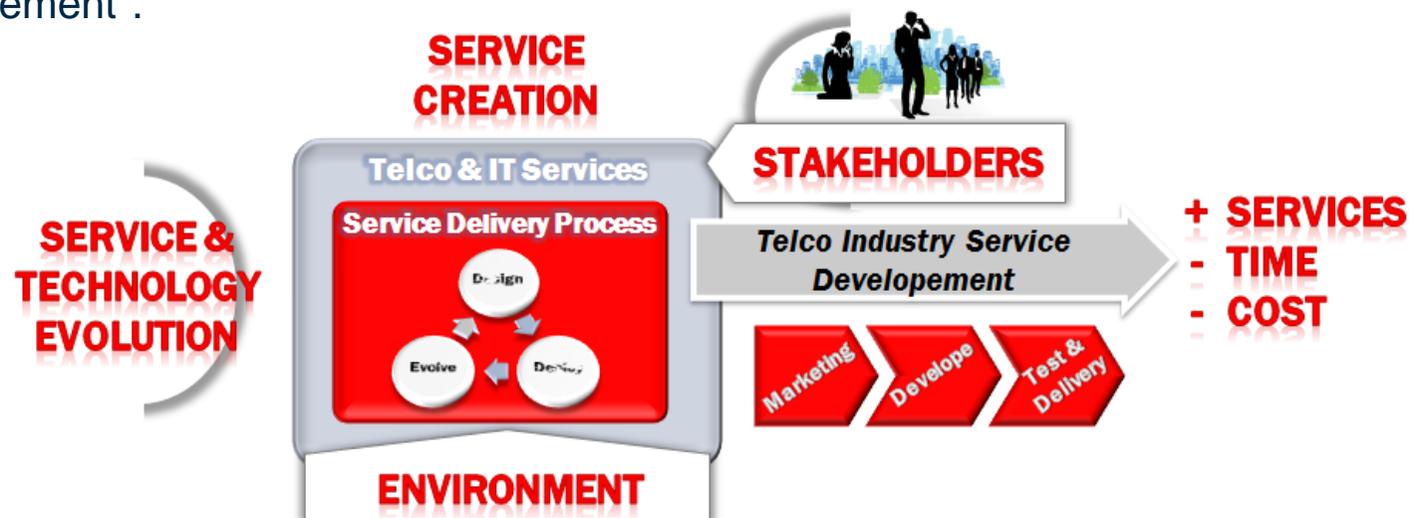
- The API approach is somehow stabilized and the Network API Platform has allowed to explore new business relationships ...
- Time to think to



- On designing the evolution of the Telecom Italia Network API Platform, we have been considering some factors ...

Telecom Italia Network API Platform – the ecosystem

- Operator's TCO for traditional business increases due to BB sizing costs, VoIP evolution, and other ineluctable tech trends
- Strong competition among operators and consolidation of "OTT" phenomenon cause the Telco market saturation and reduction of its profitability, forcing business strategy changes, goal shifts, compelling search for competitive advantages (new technologies, new services and offerings, ...) while reducing time to market.
- Operators need **agility** on creating new services and also on proposing service offering to customer, in a way that is selective and profile oriented, more effective in enabling new offerings, in improving the effectiveness of current offerings, in increasing the "customer engagement".

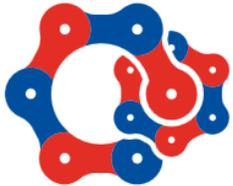


Telecom Italia Network API Platform – to an «Easy API»

- Considering the new ecosystem and targeting an **agility platform**, we identified requirements for the evolution of the Network API Platform:
 - Easy development and integration of new NetAPIs
 - Enabled from the technological evolution or to satisfy specific marketing requests
 - Make it more effective the usage of NetAPIs
 - Simplify process for provisioning, test, deploy and use of APIs (NetAPI lifecycle management)
 - Uniform and easy NetAPI consumption (self service model)
 - Enable a fast prototyping environment for internal/external use
 - Enabler Market Place towards third parties
- The result is the **Easy API Layer**

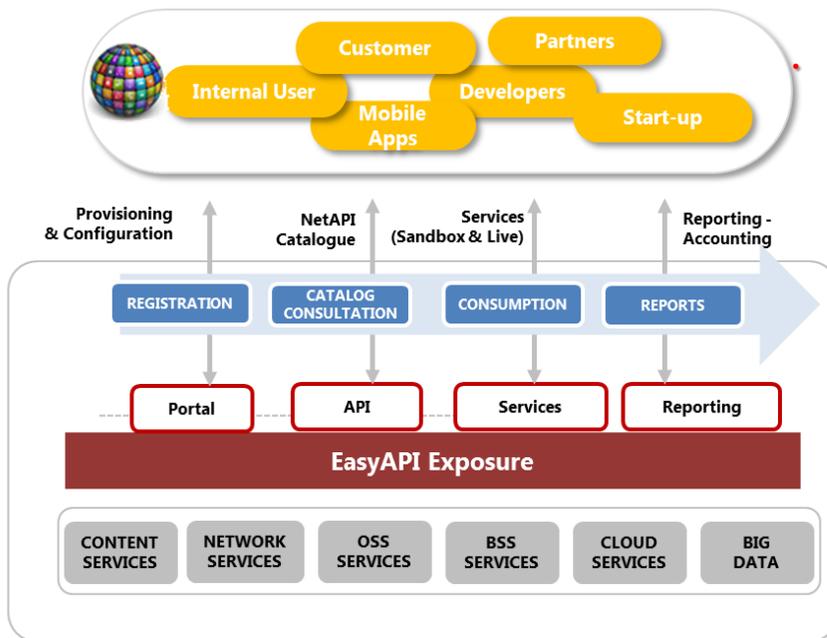
Easy API

Simplifying the API Experience



EasyAPI

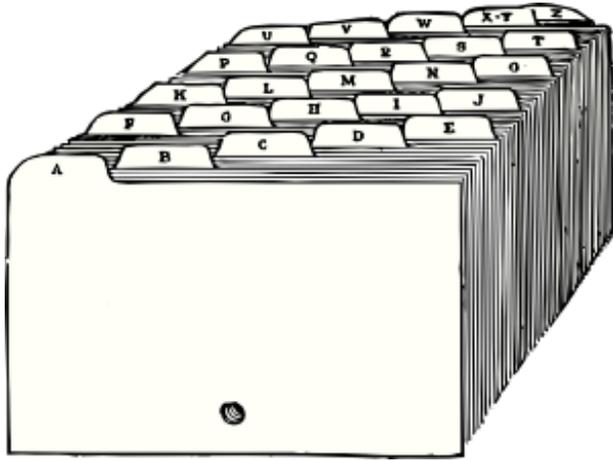
- The *EasyAPI* layer has the aim to make uniform the NetAPI management and it is meant to be on top of (any) API platform, making more efficient the usage of NetAPIs, with a usage model that is simple, self-service, unique and homogeneous for both internal and external usage.



EasyAPI allows to decouple the logic of the API Platform from the way the APIs are exposed (separating the exposure back-end and the front-end), making interfaces uniform from a technical point of view with a uniform supply (REST), with a unique authentication mechanism (based on token), and a unique set of error codes, making it possible to apply business policies and SLA in a uniform way for all APIs.

Easy API

API Catalog



- In addition to the infrastructure working at run-time when APIs are invoked, *EasyAPI* comprises a catalog usable online by external developers but also internally, for example by marketing departments. The catalog includes technical details for APIs and usage examples (“ready to use” approach). A further relevant feature enabled by *EasyAPI* is the homogeneous report/documentation on the usage of APIs that the framework can produce: the «event data record» produced are uniform for any API used through *EasyAPI*, and these records may be provided to the billing systems.
- The catalog, in addition to the reporting functionality, has also a “self-provisioning” functionality, that the user (that has an account on the *EasyAPI* system, and has successfully logged in) may use to access the APIs, select which APIs he/she is interested in, and enable the usage of such APIs from his/her applications.

Easy API

Benefits



From the NetAPI consumption point of view, the EasyAPI infrastructure enables a **facilitation** for processes, a **time-to-market reduction** through supporting tools (e.g. easy-configure, easy-to-add), a **simplification** for the processes to configure and integrate NetAPIs into digital services (developed internally or by third parties) and their **integration** in web marketplace, in order to facilitate the scouting of new markets and new business models (e.g. B2B2C).

- From an organizational point of view the keyword is **collaboration**.
- The chosen solution to progress is to prove and demonstrate to the internal stakeholder the benefit of this collaborative methodology in terms of speed up partner & service integration while reducing effort, complexity and cost
- Some structural process changes are needed, changes that enable market responsiveness.

Easy API Portal

Easy Api Store

- ✓ **EasyApi Catalog** enables selection of capabilities and application configuration with specific SLA

EasyApi Catalog

The screenshot shows the EasyAPI STORE interface. At the top, there's a search bar and a 'LOGIN' button. Below the search bar, there's a 'Recently Added' section with a list of APIs: CustomerProfile-v1, HowTo-v1, MobilityScan-v1, Otp-v1, and SMS-v1. The main area is titled 'APIs' and displays a grid of API icons: CustomerProfile, IP2MSISDN, MobilityScan, and Otp. A 'Tags' section is visible on the right side.

The screenshot shows the EasyAPI STORE interface for the OTP API. The title is 'EasyAPI STORE' and the API name is 'OTP'. The description is 'Consente di inviare via SMS una One Time Password e di verificare il codice ricevuto.' The version is '1.0.0'. The host is 'PRODUCTION: easyapi.telecomitalia.it:8248 - SANDBOX: easyapilab.telecomitalia.it:8248'. The URI is '/otpv1' and the protocol is 'https'. The produce is 'application/xml'.

Risorse

- / `post`
- /{address} `get`

POST

Invia una OTP

Parametri

Nome	Obbligatorio	Posizione	Tipo	Descrizione
Authorization	SI	header	string	Esempio: Basic realm="realmname"
otp	SI	body	otp	

Risposte

Stato HTTP	Descrizione	Contenuto
200		string

Esempio

Richiesta

```
POST /otp/v1 HTTP/1.1
Accept: application/xml
Host: example.com
Authorization: Basic realm="realmname"
```

EasyApi html documentation

- ✓ **Easy Api html documentation** enables third party to easy develop and configure needed application and test them in staging environment

«Easy API»: Expo Milano 2015



NUTRIRE IL PIANETA
ENERGIA PER LA VITA

MILANO 2015



Expo Milano 2015 is a non-commercial Universal Exposition. It is more than an exhibition, a process around the theme of Feeding the Planet, Energy for Life. Open from May 1 to October 31, 2015.

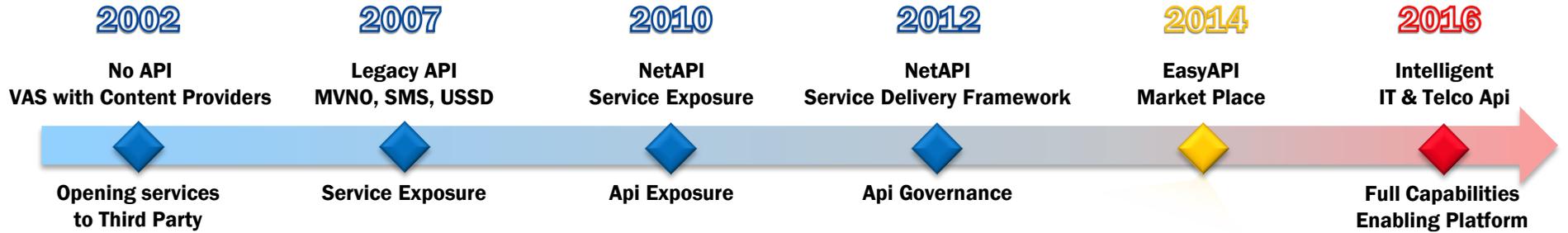
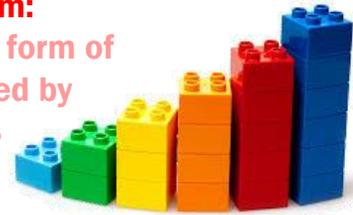
E015 is an initiative aiming to enable innovators to make available applications/contents to build E015 applications.

Telecom Italia offers two APIs in the E015 marketplace:

- «Mobility Scan API» that exposes reporting containing the density of the presence of the TIM mobile customers in specific area, in real time and at specific intervals
- «Send/Receive SMS API» to send/receive SMS to users

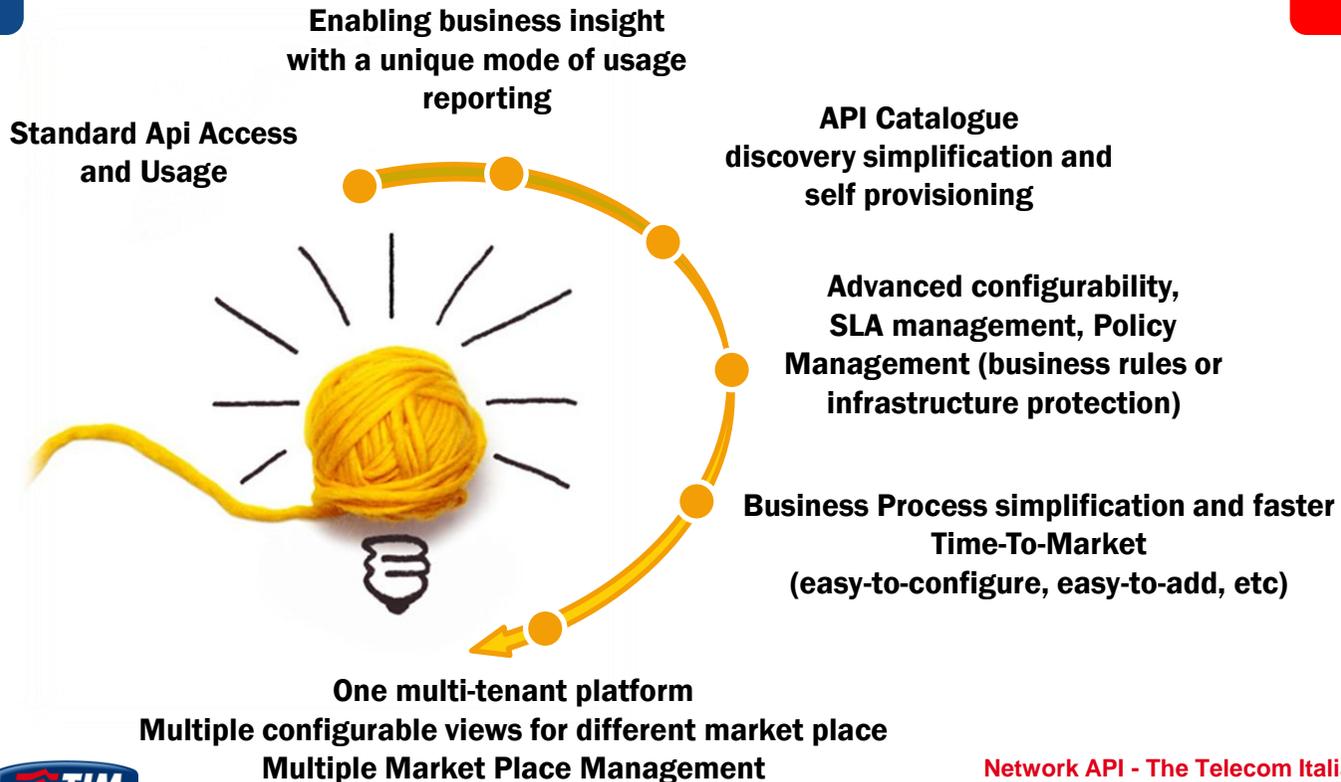
Telecom Italia Network API Platform

Full Capabilities Enabling Platform:
a "library" of IT & Telco Api in the form of modular building blocks to be used by third party and internal platforms



Monetization through services

Capabilities Monetization



Conclusions

- Telecom Italia Network API Platform is not a "black box", rather it is an approach to platform design and service integration built and evolved over the years.
- The Network API Platform plays a key role inside the Telecom Italia, by increasing abstraction through functional decomposition while ensuring security, performances and differentiated SLA to fulfill heterogeneous (internal and external) third party needs and business models
- The API approach has allowed to explore new business relationships and promise to enable more and more smart usage of the network resources.
- It is time to consolidate our experience, and make it more fruitful



Keep it **easy**

Q&A

“[Telecom Italia is] Generally considered within the Telecom community to be the most successful API implementation of any operator.”

Alan Quayle, “[Independent Review of Telecom APIs](#)”, October 2014

Thanks!

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Grazie



Engineering & Tilab – Video & Service Platform
Smart Pipe & Net API

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