

串聯整合 倍速開發-API管理

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台灣IBM軟體事業處

高級技術顧問

2014 IBM 開發者大會

開發速戰，行動速決！



Topic

- **API的歷史和演進**
- **為什麼企業組織要關注 APIs Economy**
- **API 的商業模式**
- **IBM API Management的解決方案**
- **總結**
- **Q&A**



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- **Q&A**



API的歷史和演進



APIs for operating systems

- Create application for OS
- Attract developers
- Enlarge customer base
- Limited to big software companies

1985 – 2001



Application Services APIs

- Build new functionalities
- Trouble-free interoperability
- Accessible to big companies

1990s



Infrastructure services APIs

- Allows companies to externalize IT infrastructures
- Access to computing power
- Available to anyone

2002



facebook

Web services APIs

- Share data or services internally and externally
- More unified communication protocol
- Accessible to any company
- Easy integration

2004-2006

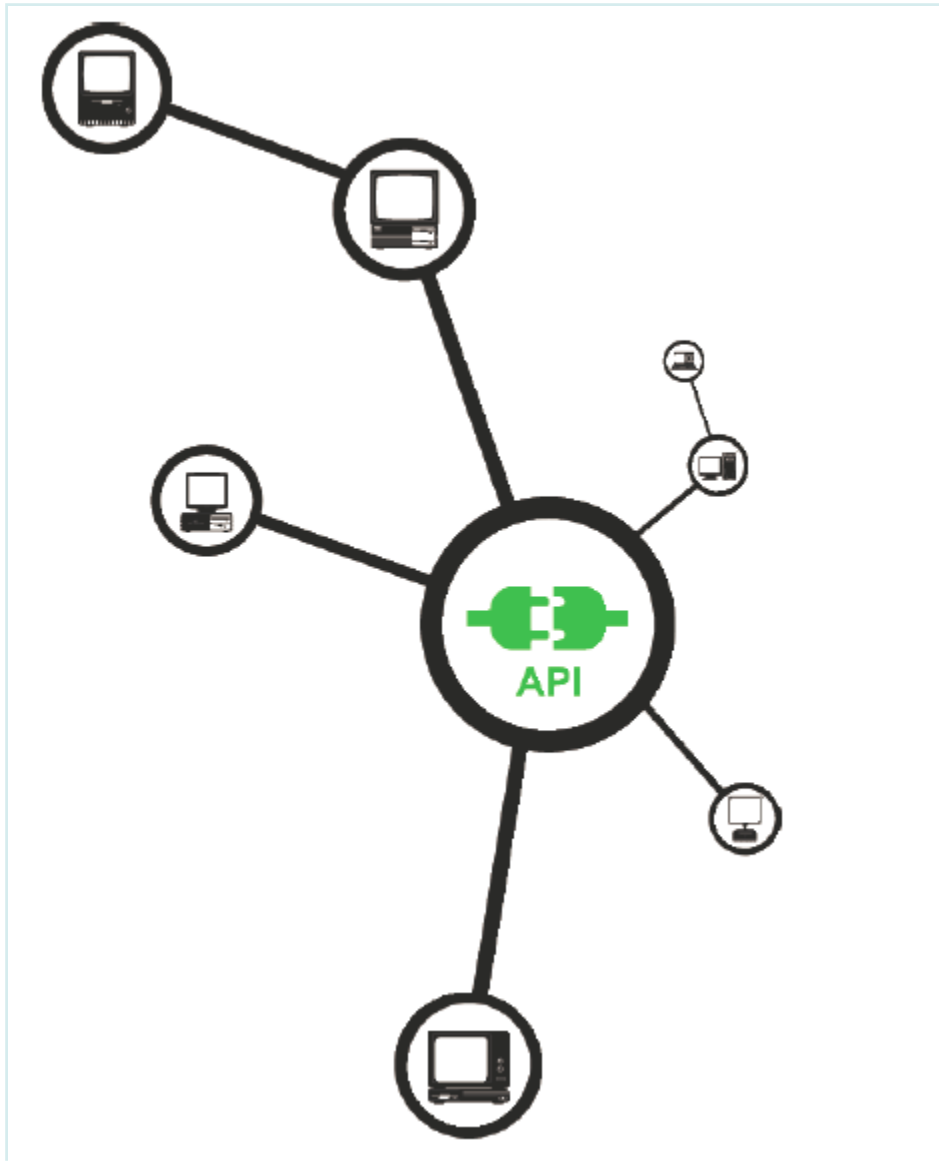


Internet of Things APIs

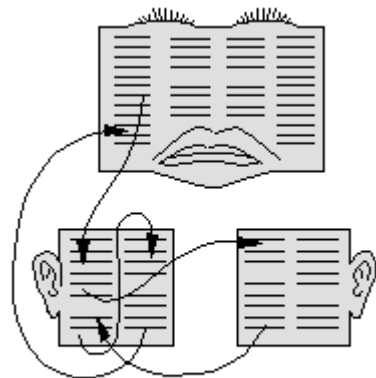
- Share data or services internally and externally
- Generate new data and optimize objects usage
- Get real-time information on objects usage

2014

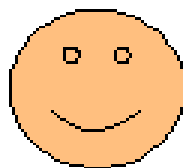
90's的 APIs



90's的 APIs



PROGRAMS TALK TO EACH OTHER!



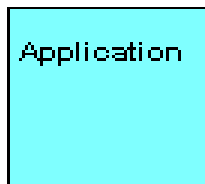
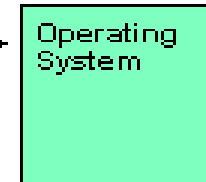
User Interface

The user talks to the computer via the commands, menus and buttons on the user interface.



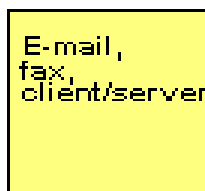
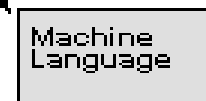
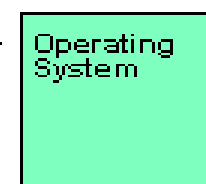
Application Programming Interface

The application talks to the operating system via the API, which defines the parameters that are passed between them.



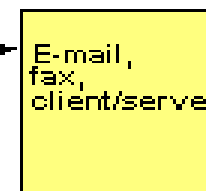
Application Binary Interface

The application talks to the computer via the operating system APIs and by being in the machine language of the computer it is running in. The combination of OS and machine is the ABI.

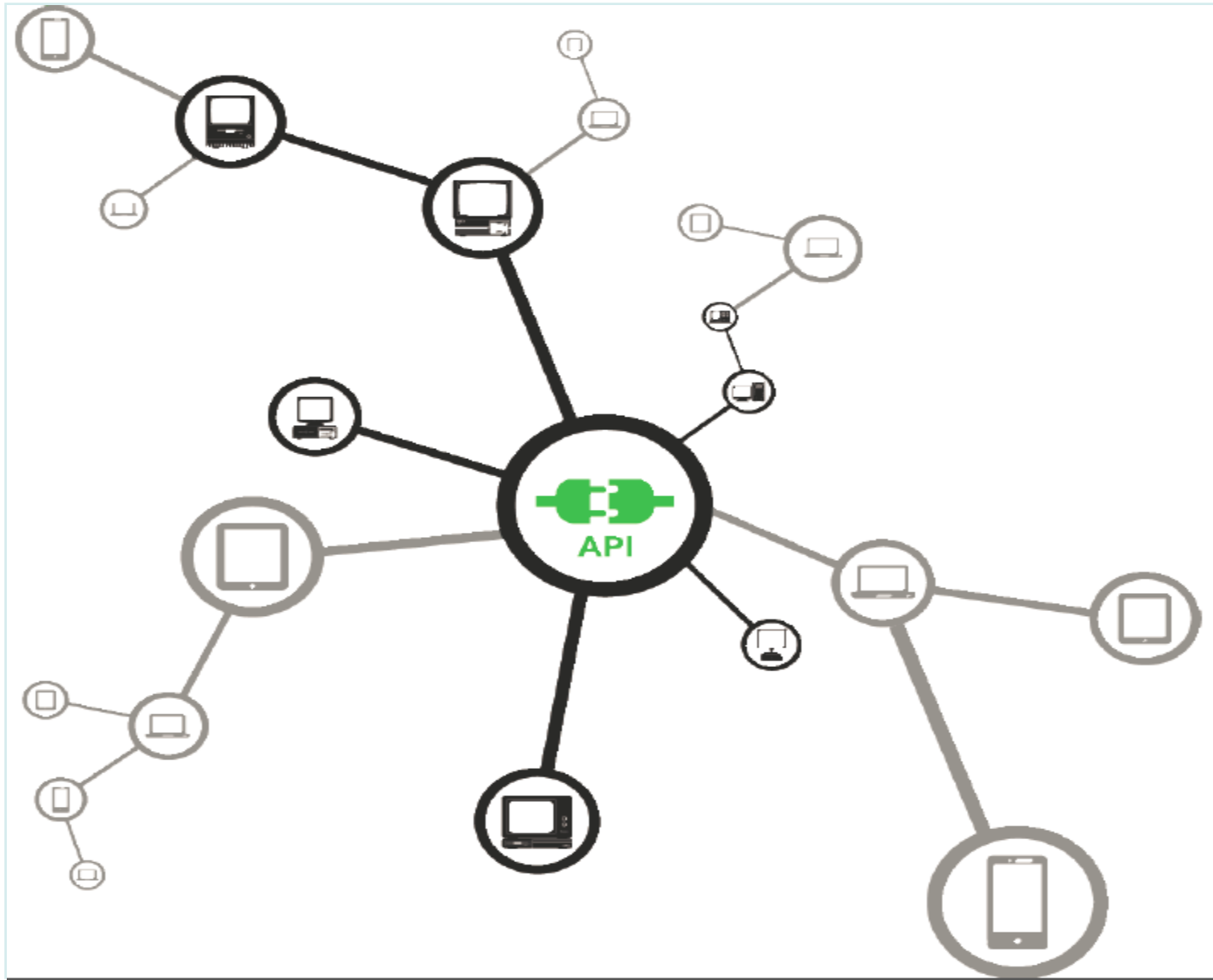


Protocol

Applications use protocols to connect to a network. The network software uses additional protocols, all of which make up the communications interface. See *OSI model*



今天的 APIs



今天的 APIs

返回

進行認證

手機號碼:

身份證號碼:

運營商:

遠傳電信

亞太電信

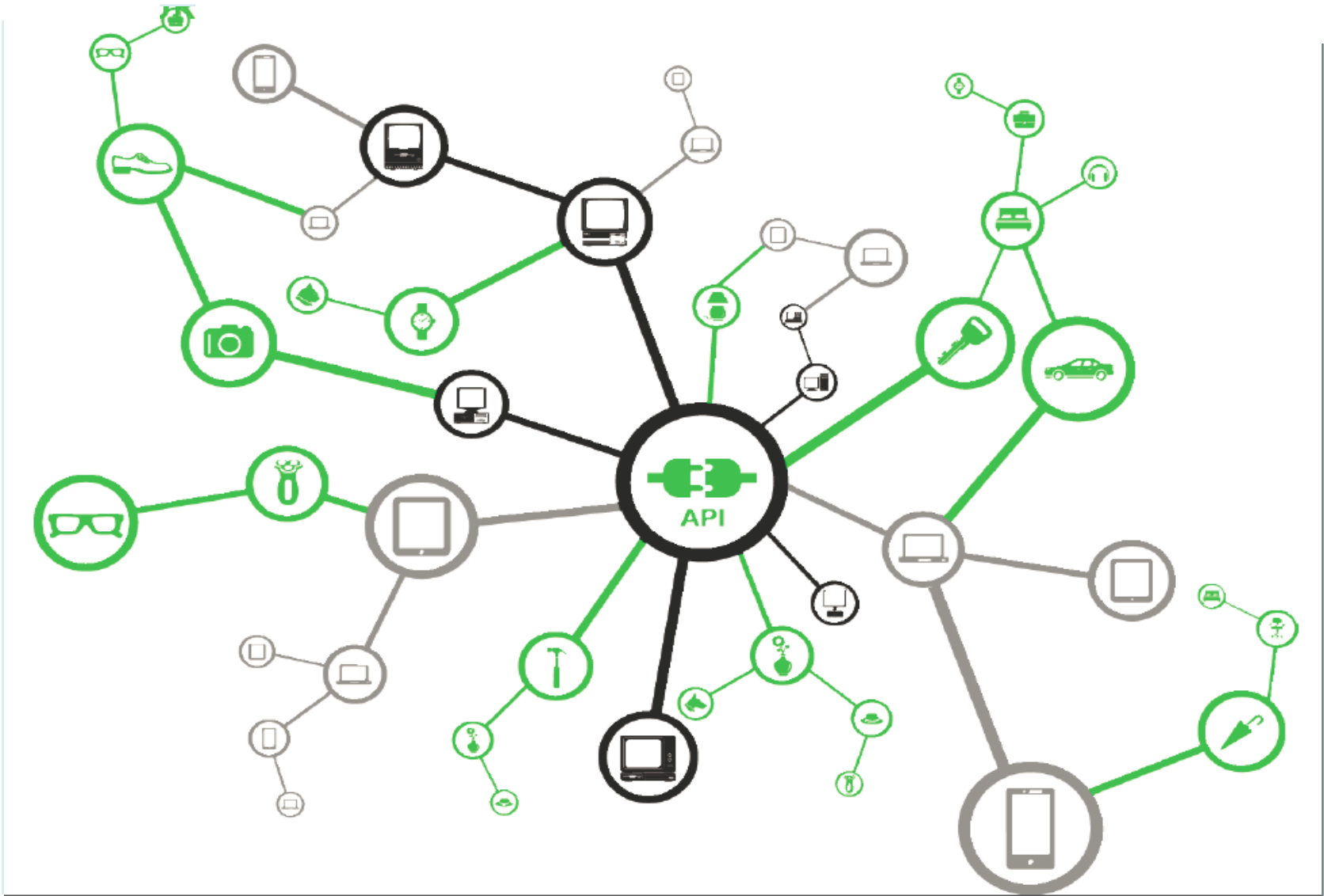
威寶電信

下一步

本服務限遠傳電信/亞太電信/威寶電信號碼使用。

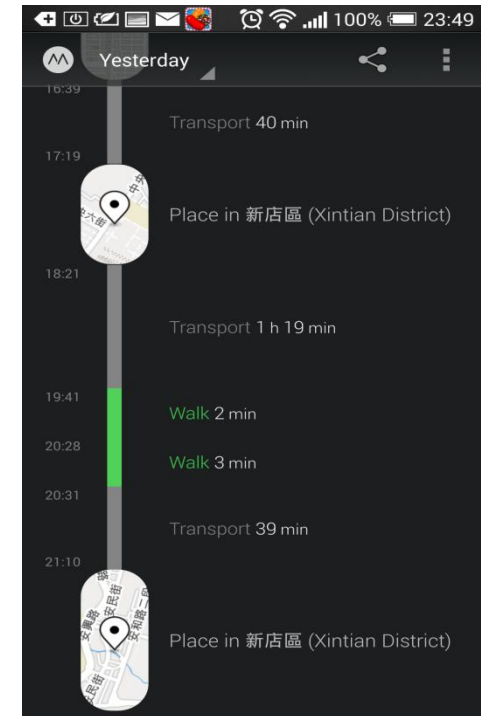
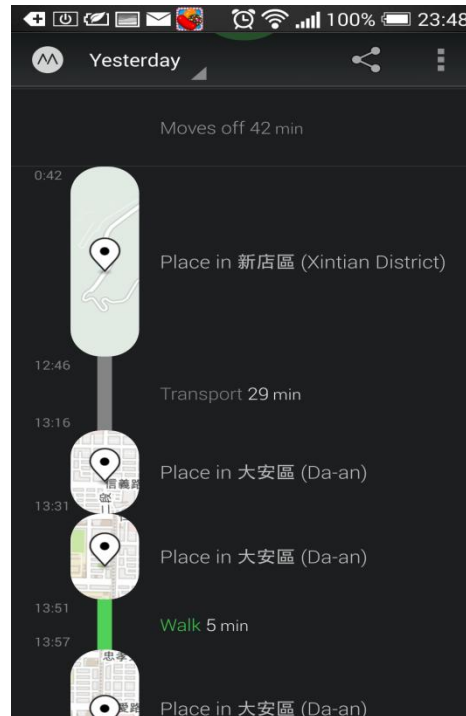
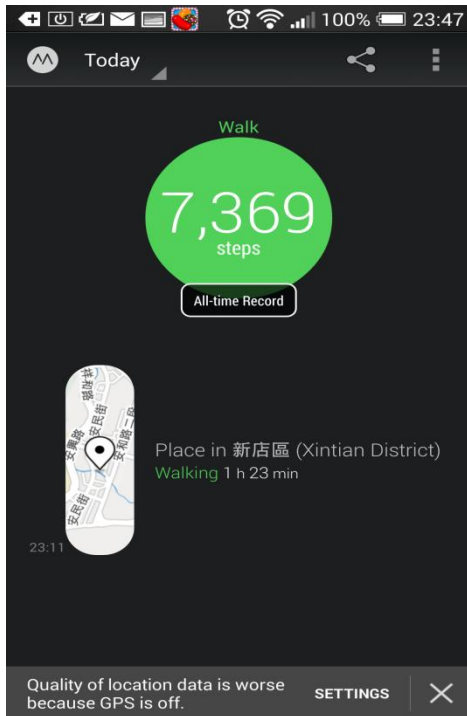
· 網址內空開碼請洽網址客服，若為交易開碼請撥打02126510754。

明天的 APIs



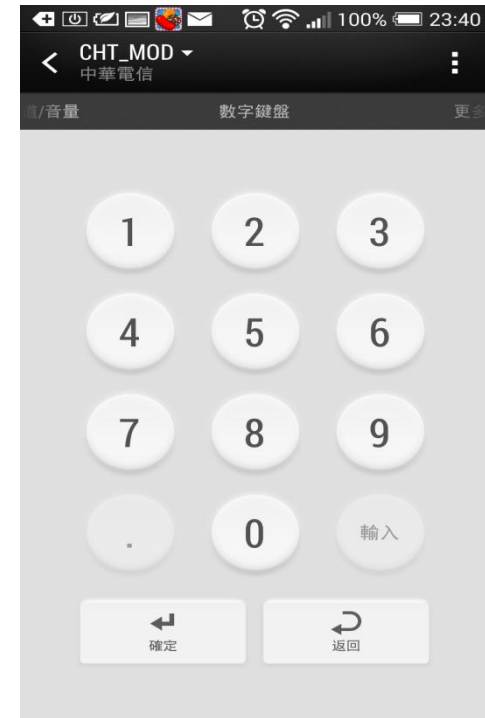
使用APIs建立新的Value chain & 商業模式 (1)

What's the difference between a **API(gluecode of things)** and a Things as a service ?



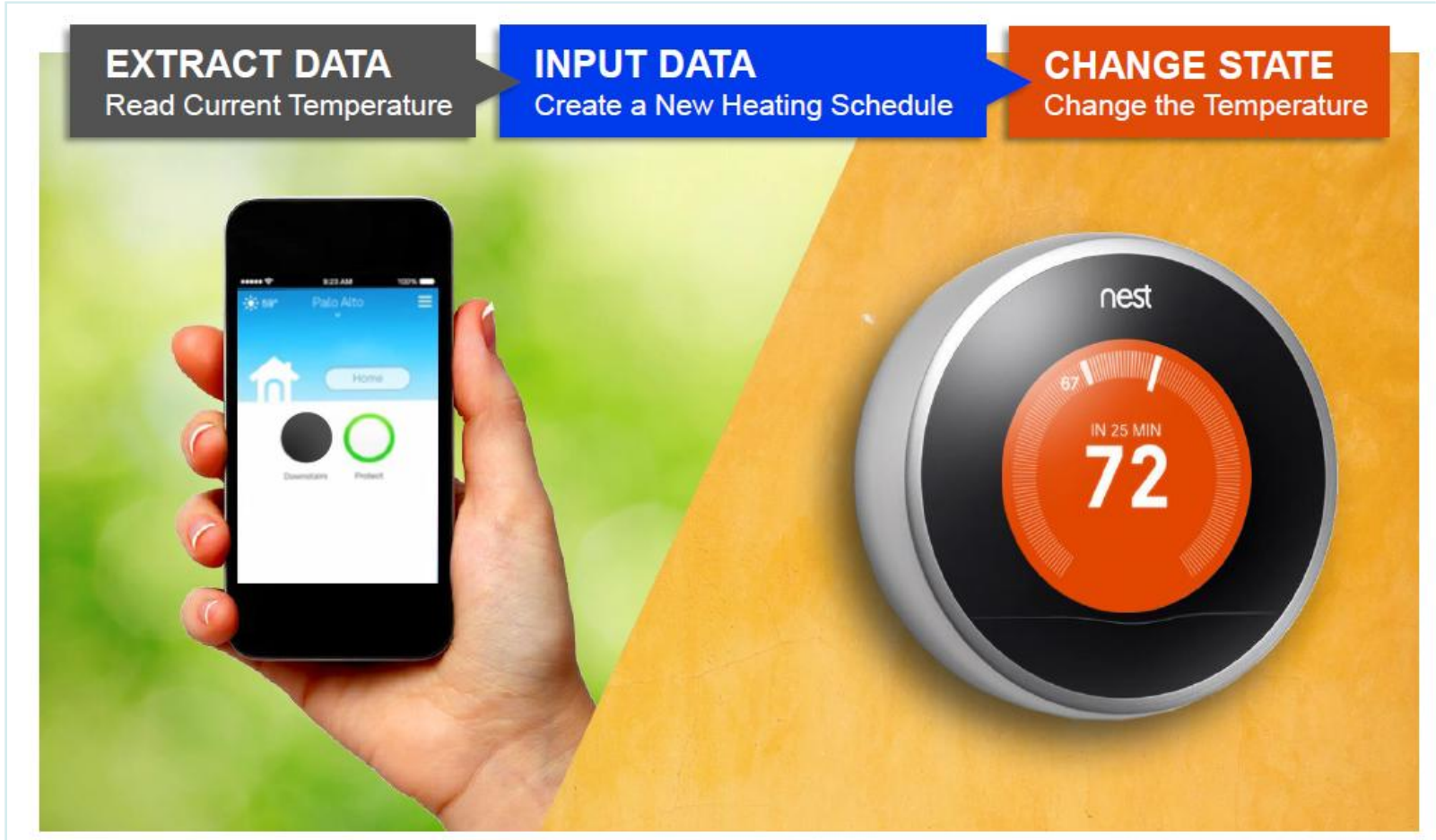
使用APIs建立新的Value chain & 商業模式 (2)

What's the difference between a API(gluecode of things) and a **Things as a service** ?



使用APIs建立新的Value chain & 商業模式 (3)

What's the difference between a API(gluecode of things) and a **Things as a service** ?



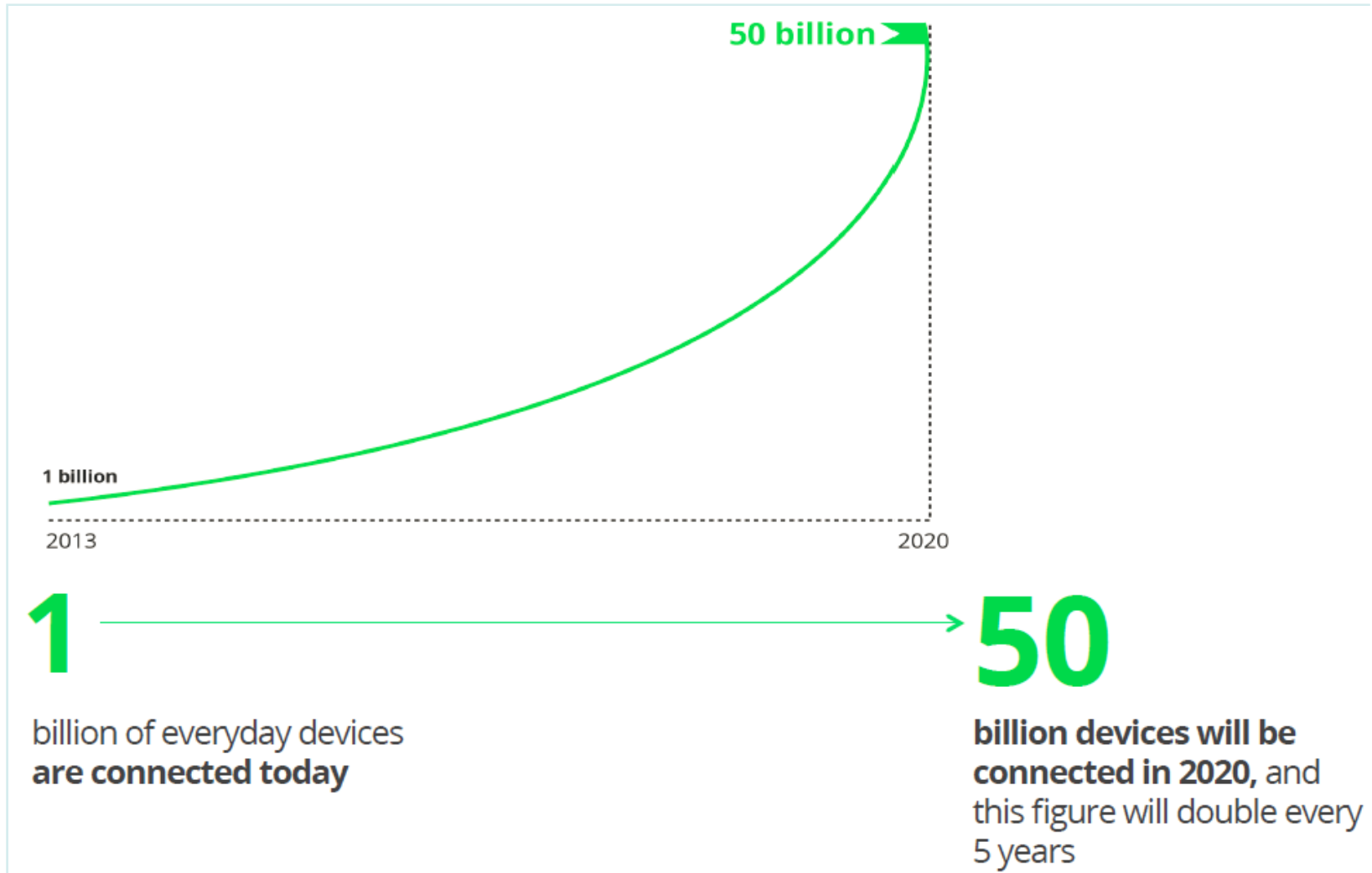


使用APIs建立新的Value chain & 商業模式

What's the difference between a API(gluecode of things) and a **Things as a service** ?

The screenshot shows the 'theThings.io BETA DASHBOARD' for user 'Marc Pous'. It features a navigation bar with 'Apps (3)' and 'Devices (5)'. A large '5 INSTALLED DEVICES' counter is on the left, with buttons for 'Add new app' and 'Add new device'. Below this is a 'DASHBOARD STATUS' section showing 'WORKING' and 'LAST UPDATED: 10 MIN AGO' with a 'REFRESH ALL' button. A 'BAZAAR' section promotes finding new apps. The main area displays five device cards: LIFX (blue smart bulb), Philips HUE (white smart bulb), Withings Scale (black scale), Nike+ (red Nike logo), and Arduino (blue PCB). An inset image in the bottom right shows a collection of various black remote controls.

未來的 APIs



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APIs是新興跨所有產業- APIs Economy正在破壞現有的商業模式



能源及
公用事業



政府



健康及醫療



運輸



零售



銀行



保險



電信



化學及石油



電子

APIs影響的商業模式對產生利潤至關重要

商業模式的進化



商店



(0800)090 ###s



web sites



Web APIs 最新、
成長最快速的
通路



為eBay旗下的第三方支付系統，用PayPal進行支付的交易約佔eBay交易總數的70%。2010年營收為34億美元，eBay預計PayPal營收到2013年將達60億美元至70億美元之間。(MoneyDJ理財網)

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Send your inventory to
ALL CHANNELS

When your item sells on one channel,
it is auto-removed from the other channels!



Tweet 1 | googleplus 0 | reddit 1

已超越傳統網站帶來的流量

list)

Start your free trial today!

Our no obligation trial allows you to evaluate our software this month.

Get Started!

Software for Pawn Shops

See our web-based solution for
Pawn Shop Inventory Management. >

“羊、行動運算主宰” 的時

selling hotel reservations:

Robert Scoble (Author of tech blog Scobleizer)

交易型和內容型APIs建立新的商業模式 (零售業&銀行業)

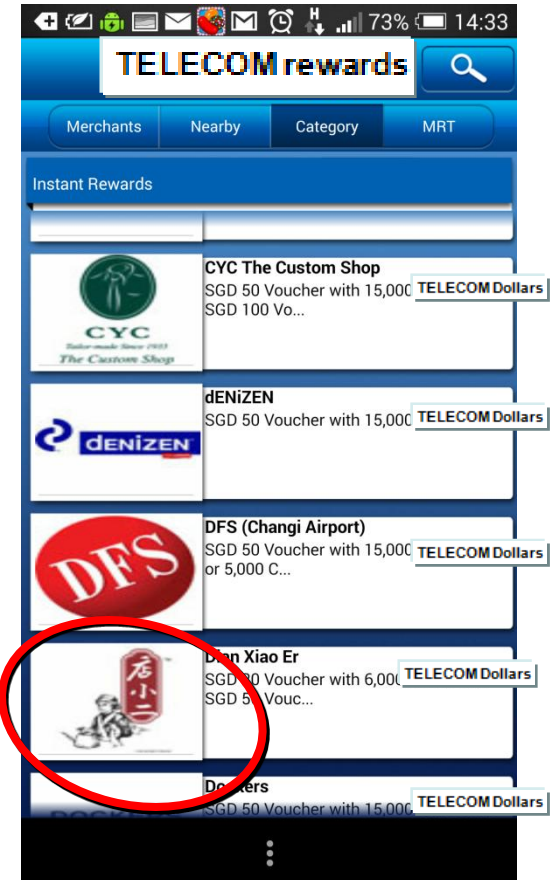
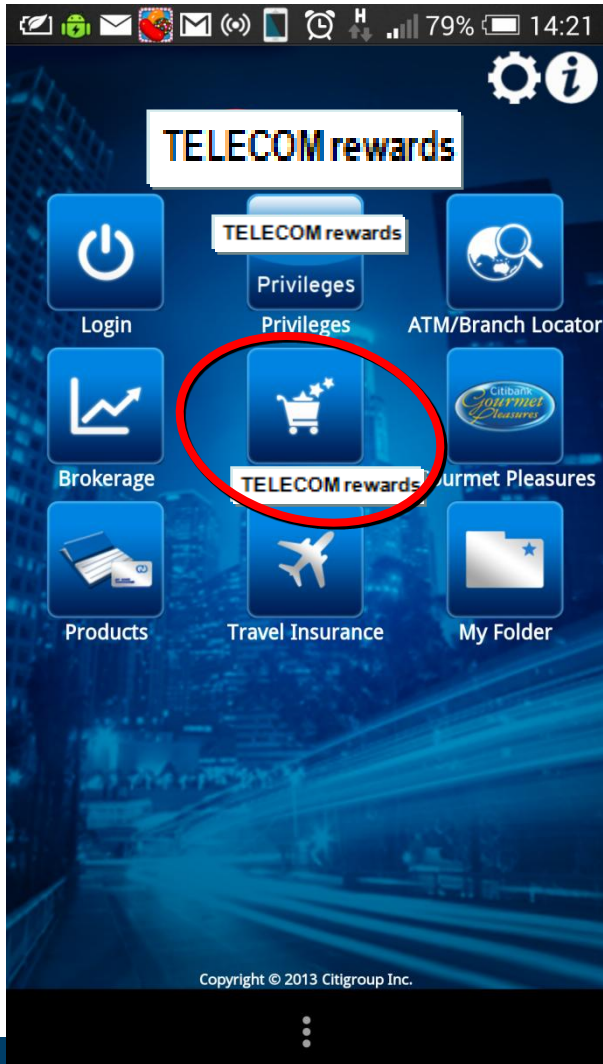


What's the difference between a content API and a **transactional API** ?

Task	Operation	URI
Insert new item into the cart	POST	http://api.shopping.com/cart/cartName
Delete item from the cart	DELETE	http://api.shopping.com/cart/cartName/item/itemName
List everything in the cart	GET	http://api.shopping.com/cart/cartName
Get an item in the cart	GET	http://api.shopping.com/cart/cartName/item/itemName
Replace an entire item	PUT	http://api.shopping.com/cart/cartName/item/itemName
Delete the whole cart	DELETE	http://api.shopping.com/cart/cartName



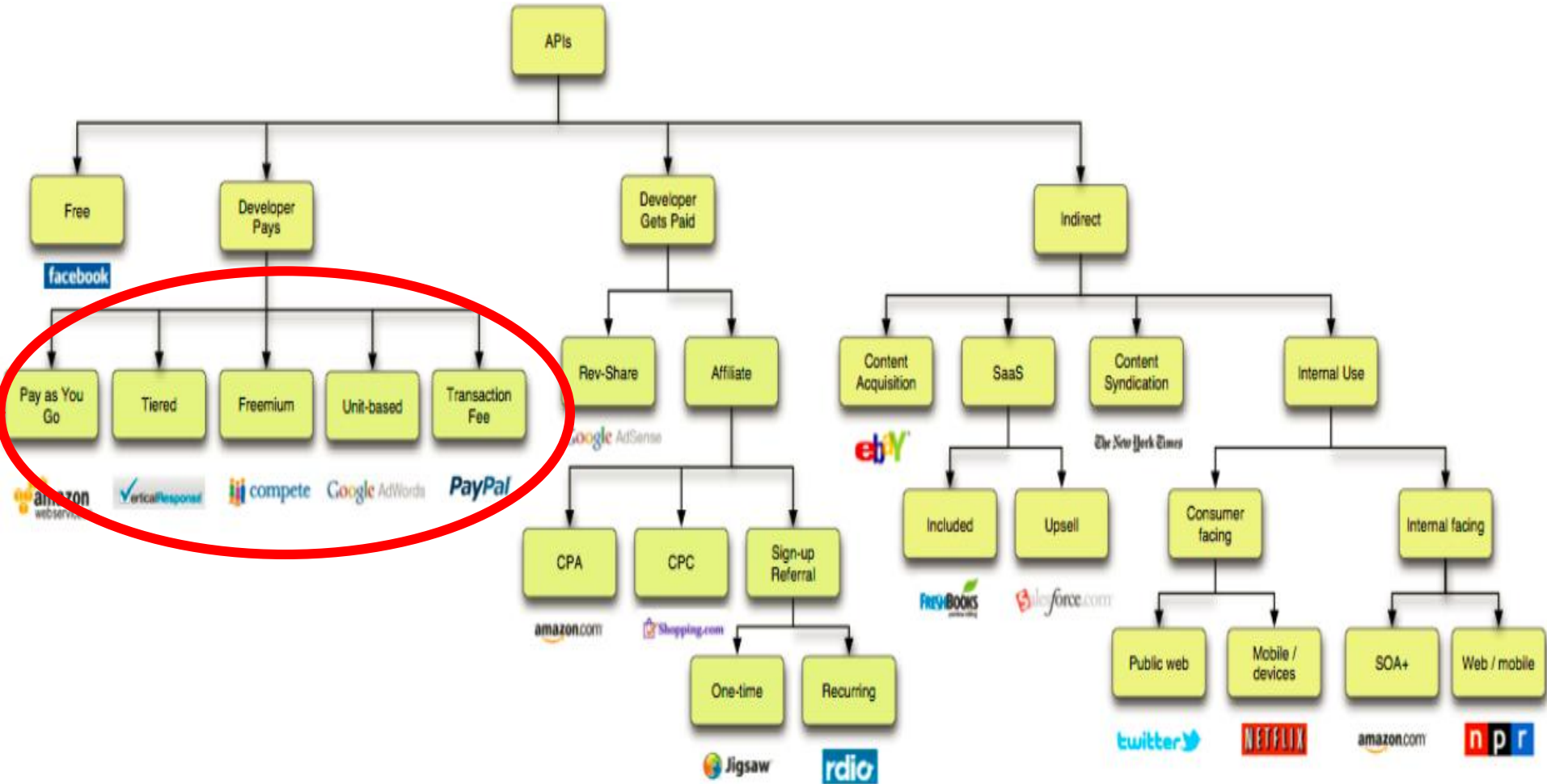
電信獎勵 - 即時兌換獎賞@招商 - 1



Topic

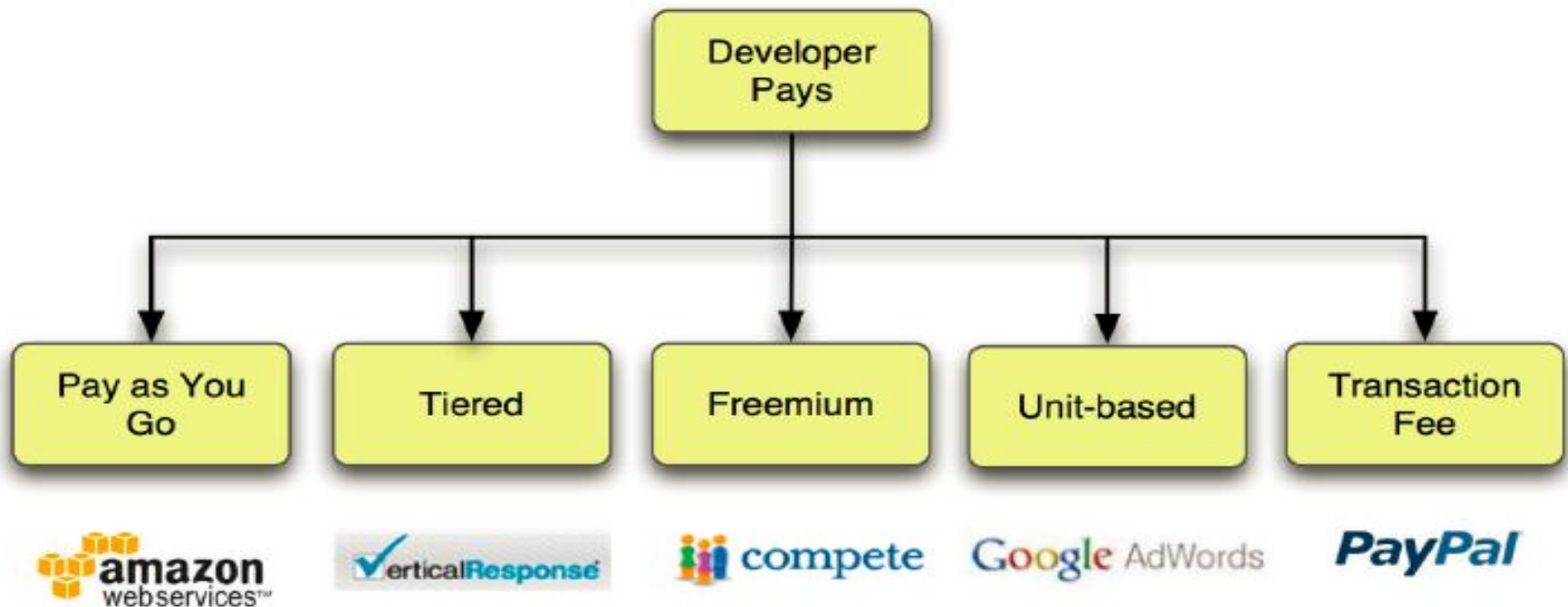
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API的商業模式更加精細



API 範例

Developer Pays



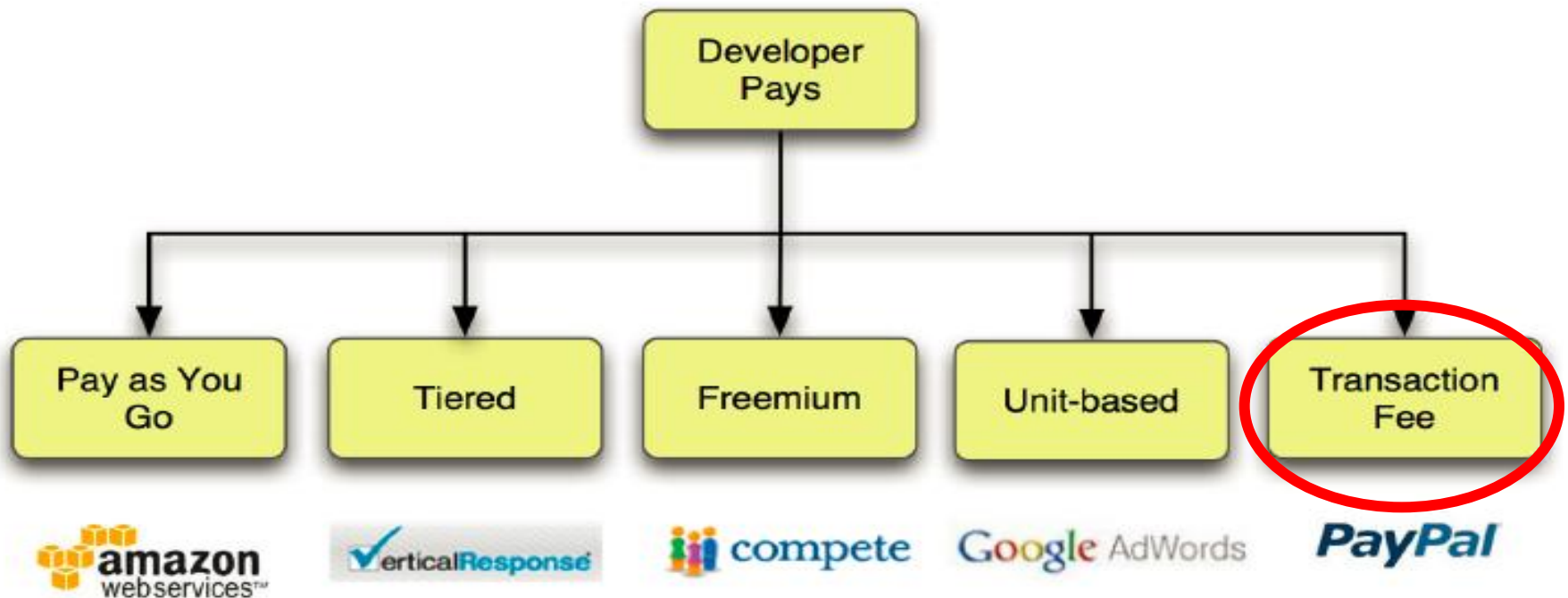
API範例– Google Maps (cont')



Features	Maps API	Maps API for Business
Street View	✓	✓
Geocoding Web Service	2500 requests per 24 hour period	100 000 requests per 24 hour period
Directions Web Service	2500 requests per 24 hour period with 10 waypoints per request	100 000 requests per 24 hour period with 23 waypoints per request
Distance Matrix Web Service	100 elements per query 100 elements per 10 seconds 2500 elements per 24 hour period	625 elements per query 1000 elements per 10 seconds 100 000 elements per 24 hour period
Elevation Web Service	2500 requests per 24 hour period with 25 000 samples per 24 hour period	100 000 requests per 24 hour period with 1 000 000 samples per 24 hour period
Static Maps API maximum resolution	640 x 640	2048 x 2048
Static Maps API maximum scale	2X	4X
Street View Image API maximum resolution	640 x 640	2048 x 2048
Analytics		✓

API 範例 – 交易型API

Developer Pays



Amazon (亞馬遜)& Startbuck(星巴克)的交易型API

Amazon樹立行動付款服務典範

3 Simple Steps to Shop with Amazon Payments

- 1 Go to your favorite site
 - 2 Add to your shopping cart
 - 3 Pay using information from your Amazon.com account
- 



亞馬遜的「登入付款」服務

資料來源：Amazon Payments

行動支付大餅，星巴克也來參一腳

Starbucks's Mobile Payments Volume

(United States)



Source: Starbucks's Statements, BI Intelligence Estimates

資料來源：BI Intelligence

2013年星巴克行動支付營收

2014 IBM雲端創新落實論壇

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Tangerine APIs 的解決方案

The screenshot displays the Tangerine API documentation website. The top navigation bar includes the Tangerine logo, 'API Documentation', 'Applications Disabled', 'My Homepage', and 'admin@apidemo'. The main content area shows a REST client interface for the 'GET status' endpoint of the 'Tangerine Mobile Banking' application. The interface includes a 'Test' button, a 'Parameters' section with 'No parameters', and a 'Request Headers' section with 'customer-id' set to '333333'. The 'Returned Response' section shows a '200 OK' status, and the 'Response Body' section displays the following JSON data:

```
{  "Account Information": {    "Account": "4000333333 3000333333 3401333333",    "Balance": "61870.13",  }}
```

PitneyBowes 的 APIs Telecom GIS 解決方案



telecommunications providers can better analyze network coverage→**A picture is worth a thousand words.**
Customer location intelligence

IBM API 管理解決方案



Secure, Control, Optimize (Gateway)



DataPower
XG45(With DIM) or
XI50/XI52 and the AO Option

REQUIRED component

- Physical or HVE
- Purchase new or re-use existing appliances

Create, Manage, Socialize



IBM API Management

- Management Node
- Analytics Node
- Deployable as HVE

Create (Assemble)



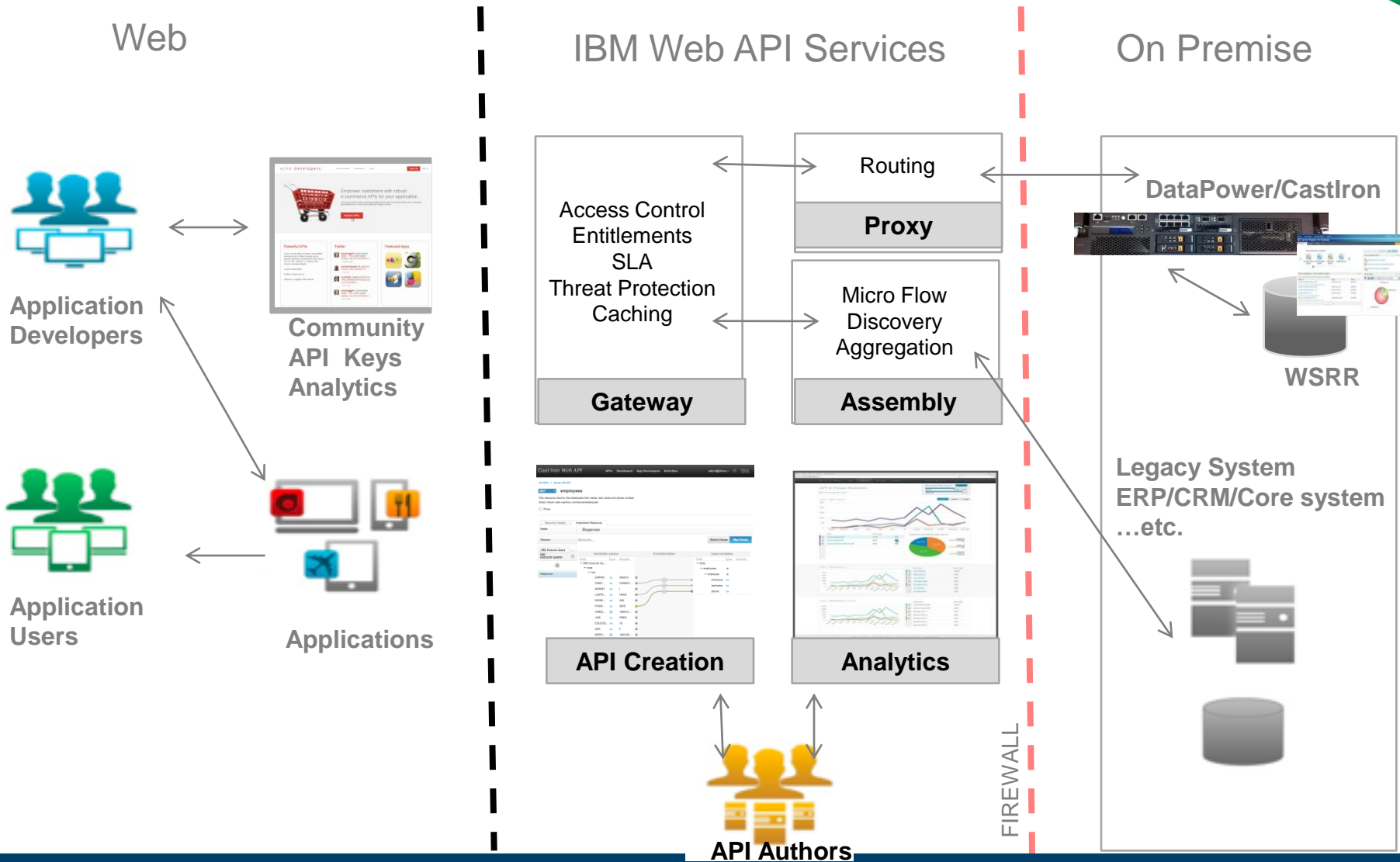
Assemble component

- Physical or HVE

Required for:

- SOAP to REST
- Assembly (DB, SOAP, REST, Salesforce.com)

IBM API 管理參考架構



IBM API Management - 只要4 步驟



1

Design & Assemble API



2

Set entitlement and security levels



3

Analytics & Developer Portal



4

Monitor use and SLAs



IBM API Management for 多租戶, 只要3步驟



1

Support many organizations with one solution



Owner	Account Name	Type	Status	Actions
Select	Acme Business Unit 4	API Provider		Activate
Steve Smith	Acme Business Unit 1	API Provider	Active last login: 2 hours ago	
Steve Smith	Acme Business Unit 2	API Provider	Invitation Pending... Resend Invitation	
Steve Smith	Acme Business Unit 3	API Provider		
Andre Adams	Andre Inc.	Consumer		
Sam Takahashi	Toyota	Consumer		
Kris Knoll	Krispy Inc.	Consumer		
Chris Casper	Cucumber Smith	Consumer	Active last login: 2 hours ago	Upgrade
Lillian Lawrence	Lynchicious	Consumer	Active last login: 2 hours ago	Upgrade

- Multi-tenant support for multi-provider organizations
- Provider and Consumer organization Visibility
- Alerts & notifications
- Send email directly through tool

2

Single Dashboard health monitoring



Gateway Cluster (Gateway)
CPU: 5%, Memory: 7%, Disk: 5%

Management Cluster (Management)
CPU: 5%, Memory: 15%, Disk: 13%

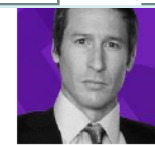
Overall Metrics (Last 24 hours):
CPU: 0%, Memory: 7%, Disk: 4%

Overall Metrics Throughput:
Transaction Rate (Completed Requests / Second)
Mean Transaction Time (Milliseconds)

- Consolidated super admin view
- View system health
- DataPower load balancing
- SSL certificate Management
- Server scaling

3

Setup in minutes



Select DNS Scheme: Do not use Dynamic DNS, Use Dynamic DNS

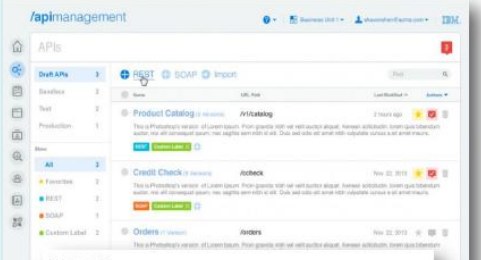
Set Up Identity Provider: Authenticate Using LDAP

Set Up Email: Hostname (smtp.sendgrid.net), Port (587), Username, Password, Sender Address (apikey@ca.ibm.com), Sender Descriptive Name (APIManager)

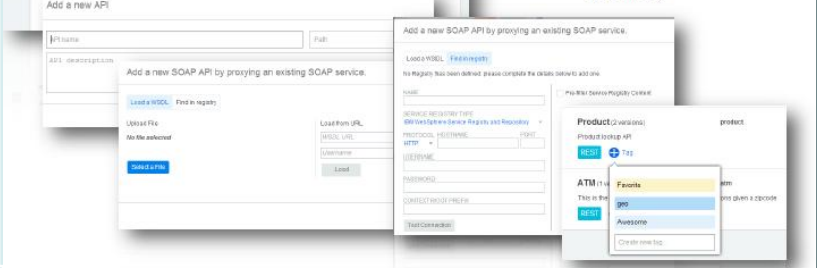
- Easy out of the box setup
- LDAP or internal identity provider support

IBM API Management for assembly-只要4步驟

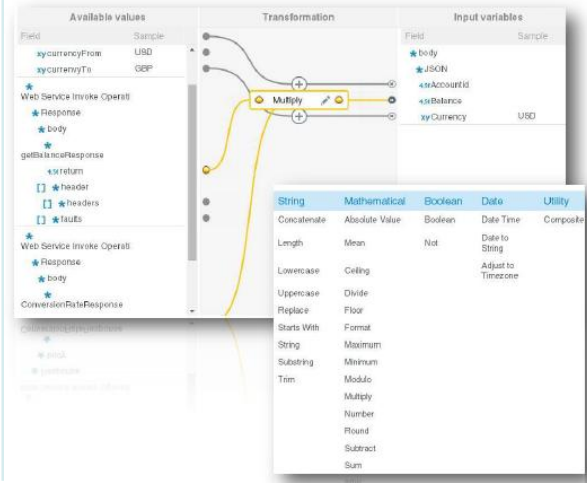
1 Easily create, find REST and SOAP APIs



- Define the **REST** or **SOAP API** you wish to expose
- Import** from a registry
- Search** for, add custom **tags** to, and mark **favorite** APIs for easier discovery

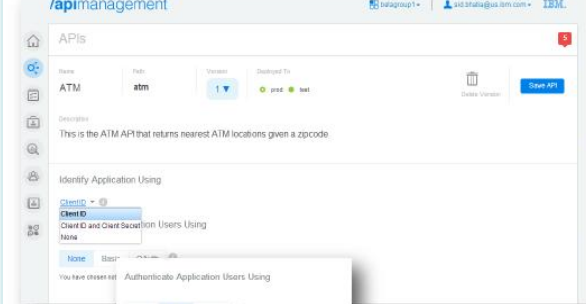


2 Assemble New APIs Through Configuration

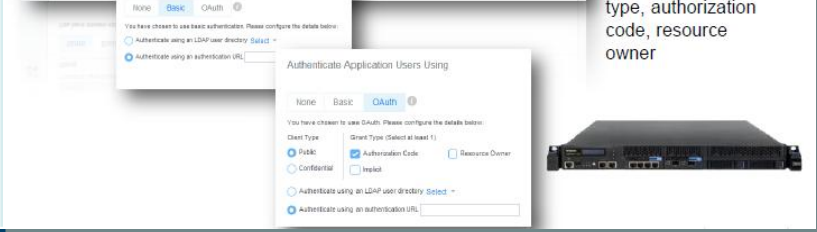


- Assemble a new API by combining multiple REST or SOAP services into a **composite API**
- Provide examples** of the request and response messages, headers and parameters
- Drag and connect** linking the request and response messages
- Transform** the message elements with a click

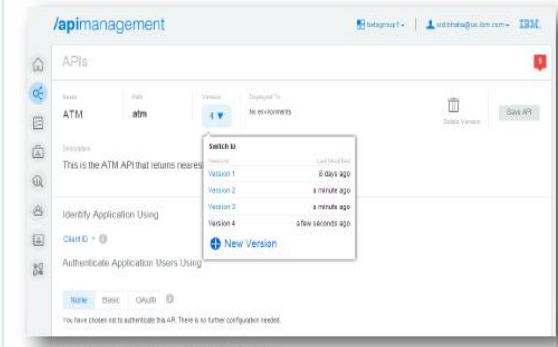
3 Secure the API



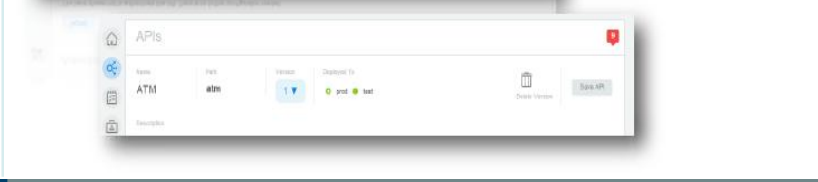
- Identify application with **Client ID & Secret**
- Authenticate using **LDAP** or **Authentication URL**
- Authorize using **OAuth 2.0** support with implicit grant type, authorization code, resource owner



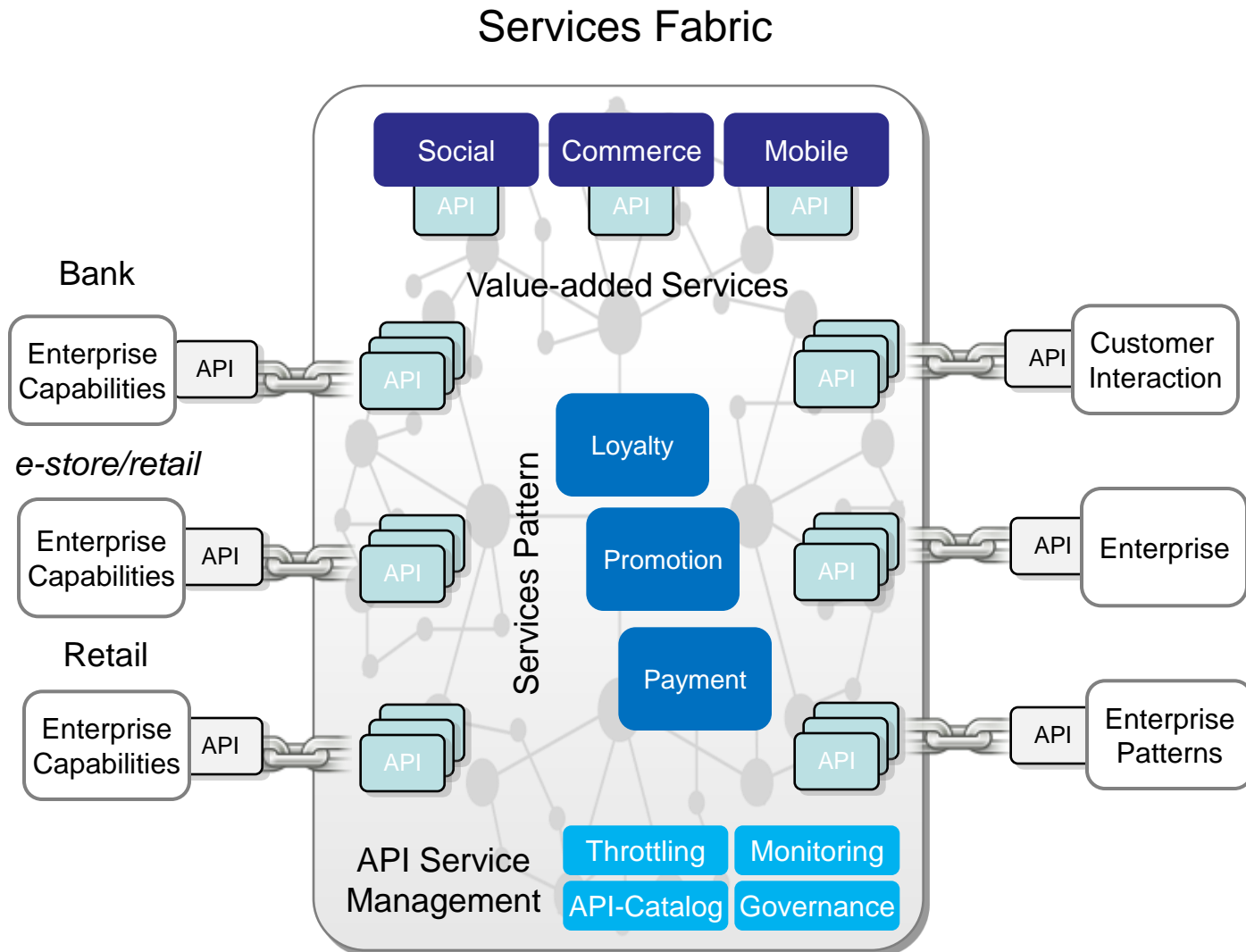
4 Version the API for iterative development



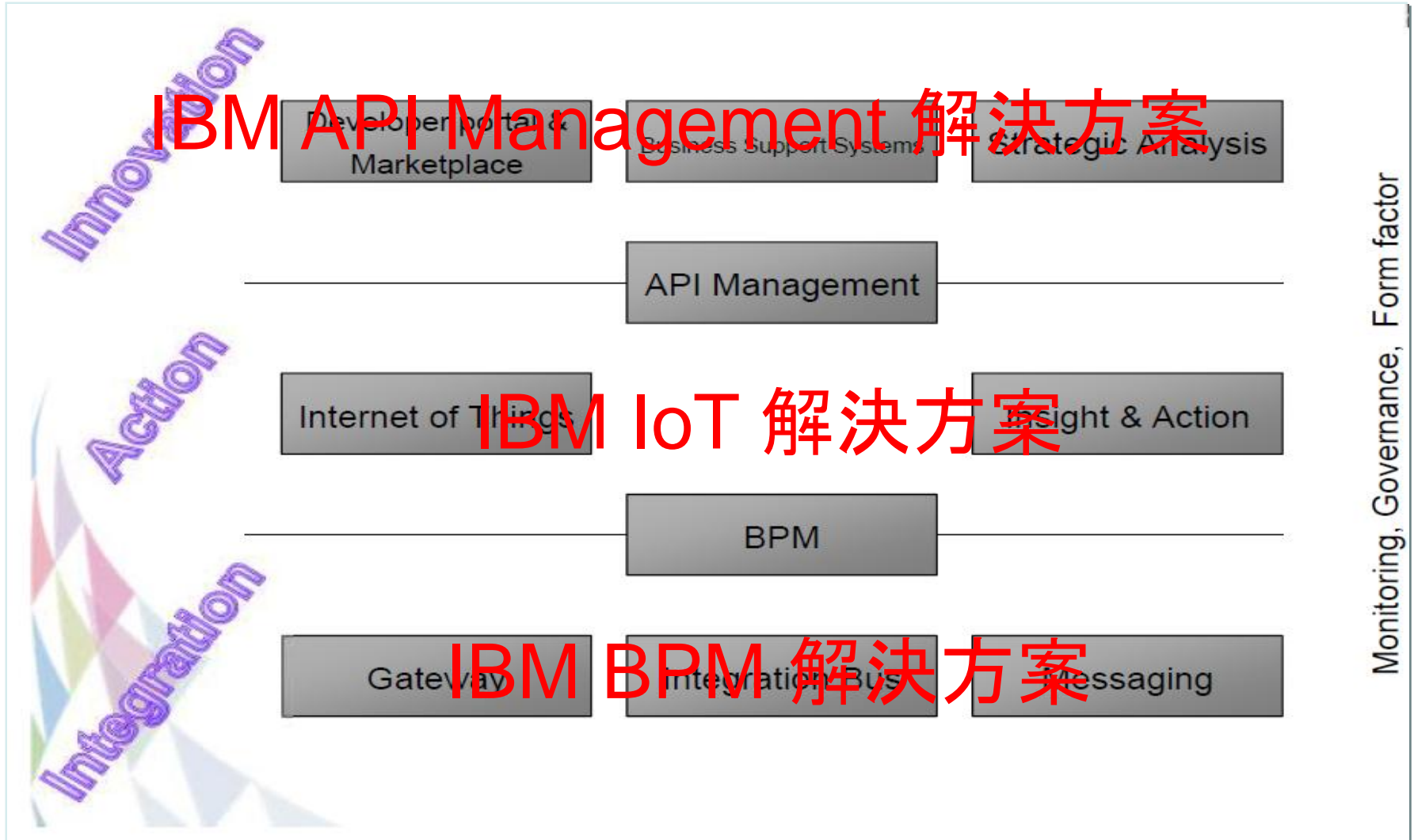
- Version** the API configuration in just one click
- Revert** prior version



延伸開放企業的內部IT服務，並上架到開發者市集 (Ecosystem)

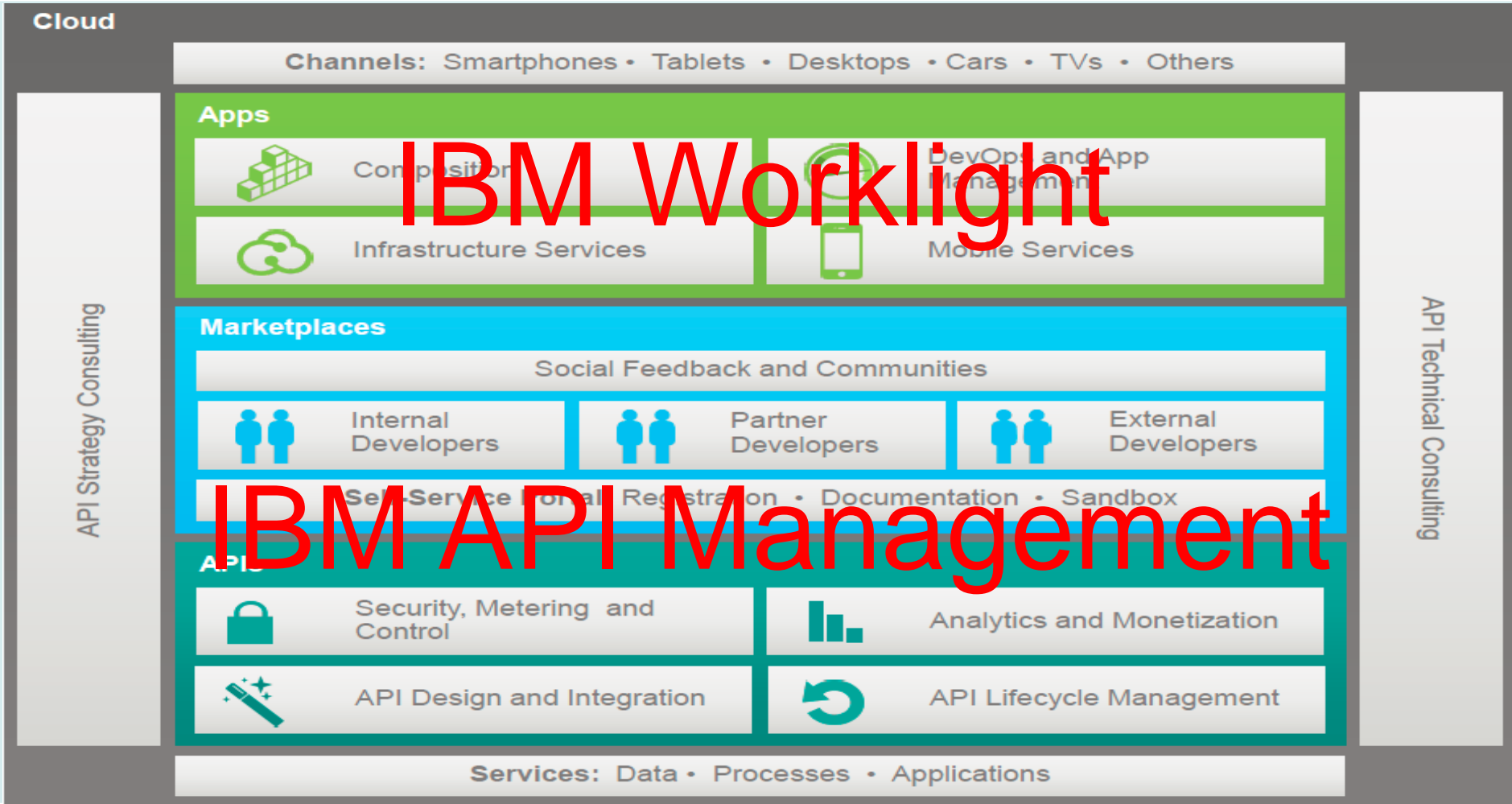


Service & Messaging & Info 的交換





成功的API Economy需要end-to-end的產業服務



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IBM API Management 解決方案的關鍵能力

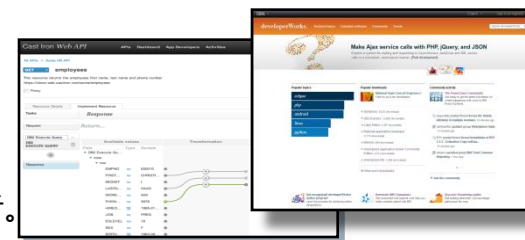


一個解決方案就提供行業內最好的安全和整合

- 以IBM領先市場的DataPower Gateway為基礎
- 以服務的方式提供給使用者，並提供無風險的，全功能的，沒有限制的實體機&虛擬機體驗
- 5分鐘內完成從登錄到部署API

只需配置，無需編碼

- 快速創建/定義和部署一個新的API
- 快速創建/定義一個開發者入口，將創建的API以社交化的方式推廣到超過1百萬開發者。
- 快速實現投資回報(傳統方式需要數月甚至數年)**



開箱即用的業務分析能力和操作洞察力

- 尋找精準關鍵的市場波動，並找到與您業務的相關性
- 向下存取請求和回應訊息的調用測試資訊，在產品化和開發過程中減少API中定位問題的時間

支援連續的反覆運算開發

- 在最小化影響或者不影響API使用者的條件下更新API
- 在幾分鐘內測試小的修復，並發佈到商業運轉環境
- 只要點擊一下按鈕就可以回復到任何一個先前的版本**





Q&A



THANK
YOU