

Microsoft CityNext²

台灣微軟智慧城市發展藍圖



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議程大綱

- 城市數位轉型的趨勢與挑戰
- 智慧城市數位轉型應用案例
- 利用物聯網，大數據與人工智慧創新城市發展
- 智慧城市發展策略藍圖與架構

Microsoft CityNext

城市的未來發展

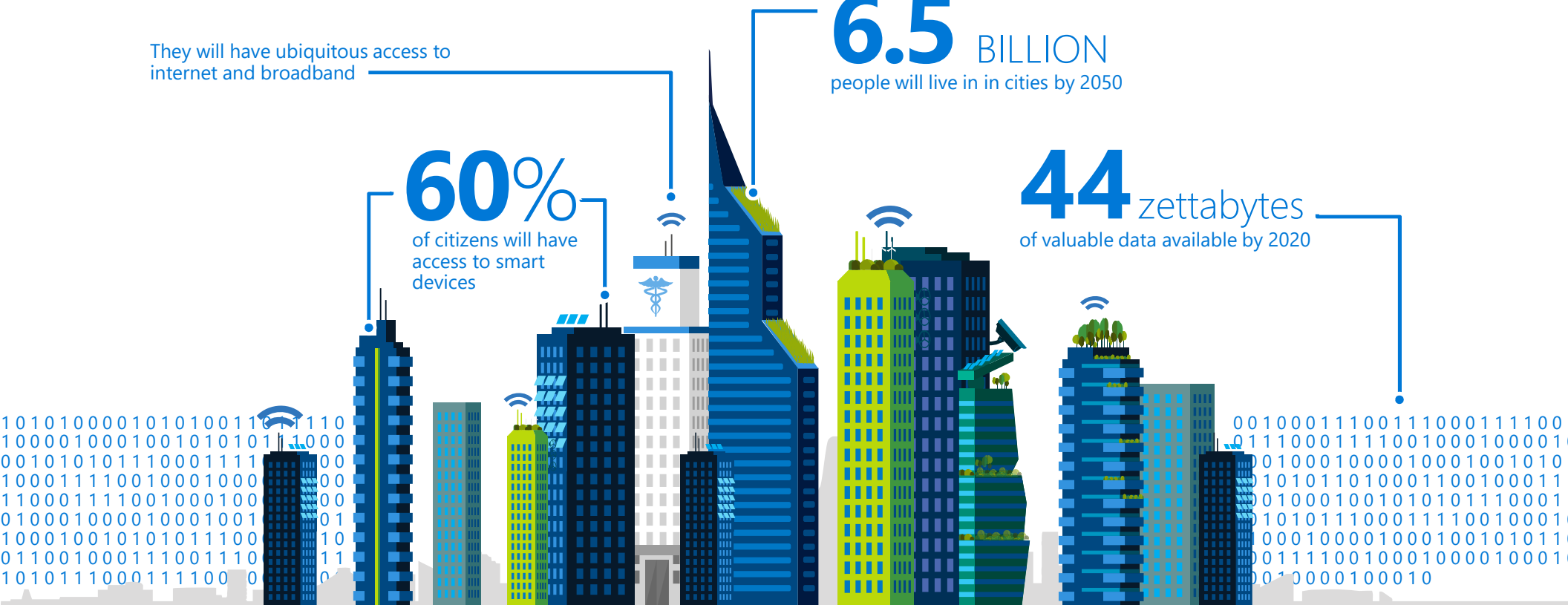
EMPOWERING CITIES & CITIZENS

They will have ubiquitous access to
internet and broadband

60%
of citizens will have
access to smart
devices

6.5 BILLION
people will live in cities by 2050

44 zettabytes
of valuable data available by 2020



都市樣貌的改變 所帶來的挑戰



Microsoft CityNext

新科技帶來的機會

TECHNOLOGY ENABLES MORE THAN EVER BEFORE



Cloud



Big Data



IoT



Mobile

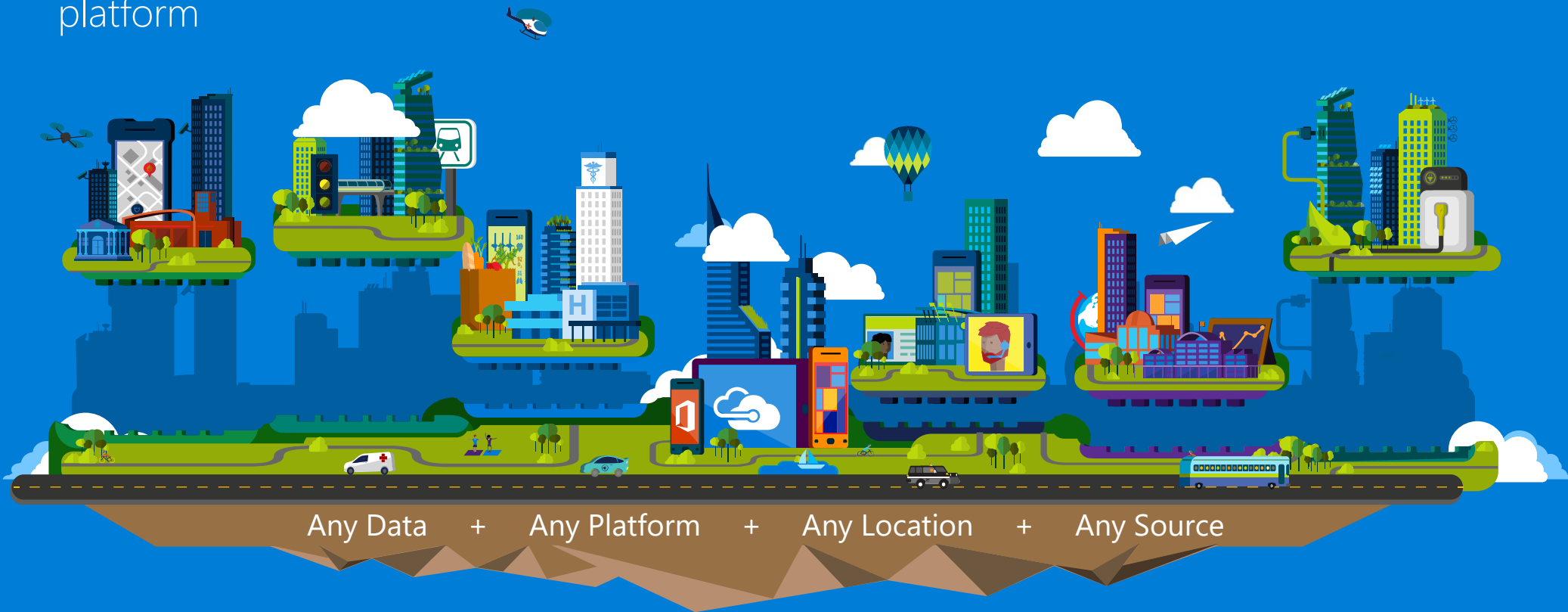


Social

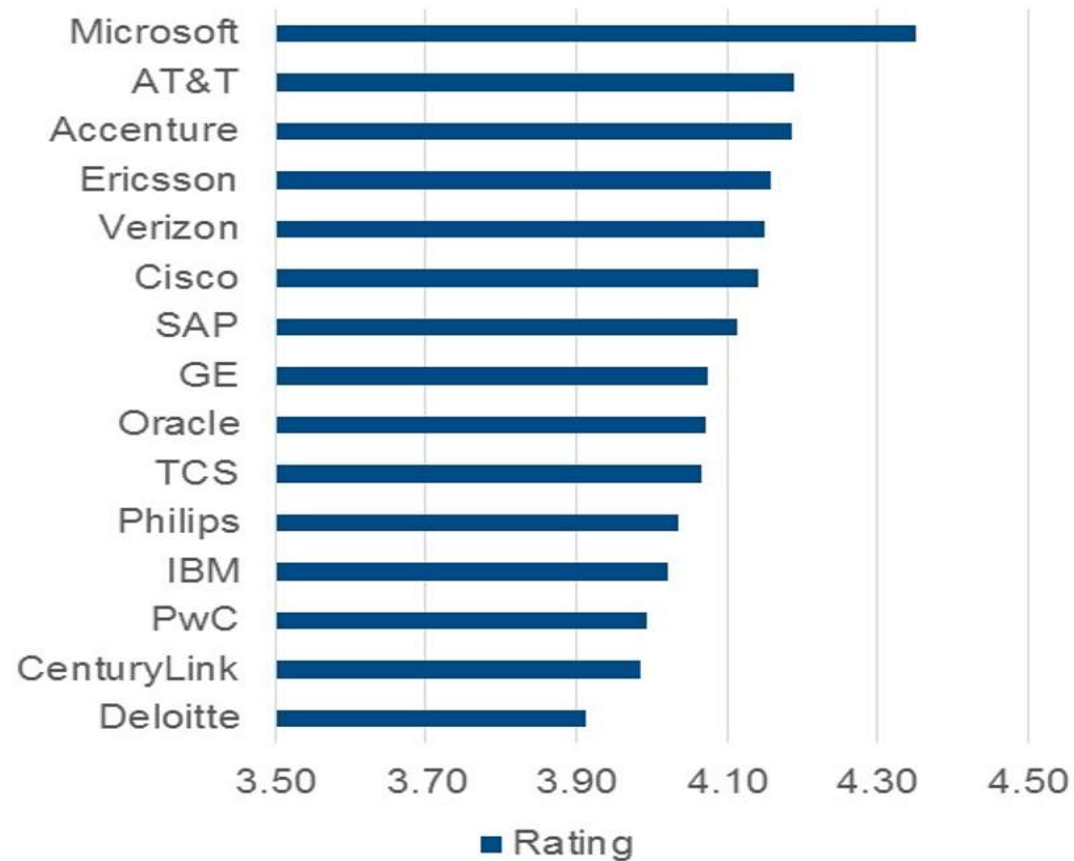
Microsoft CityNext

利用模組化建構新一代智慧城市

Cities can leverage their current infrastructure with the Microsoft trusted cloud platform



Microsoft #1 to Enable Smart City Digital Transformation



Microsoft CityNext and our Partners'

解決方案情境

Trusted Cloud Platform

Cloud + Productivity + Windows & Devices + Security & Privacy



Sustainable Cities

Transport

- Traffic Management
- Asset & Fleet Management
- Toll & Fare Management
- Transportation Safety
- Operations Management
- Parking Management

Energy & Water

- Smart Grids
- Energy Management & Analytics
- Water & Wastewater Management
- Carbon Management

Buildings, Infrastructure, Planning

- Smart Buildings
- Street Lighting
- Waste Management
- Parcel, Zoning, and Land Use



Digital Cities

Government Admin

- Tax & Revenue
- Citizen Sentiment Analysis
- Document & Records Management
- Virtual Town Hall
- Open Data
- Citizen and Business Services
- City Financial Management
- City Dashboard
- Grants Management

Tourism, Recreation, Culture

- Mobile Tourism Apps
- Tourism portals
- Destination management Systems



Safer Cities

Public Safety & Justice

- Command & Control
- Neighborhood Management
- Video Management
- Emergency Management
- Intelligence and Analysis
- Court & Judicial Management
- Prison & Offender Management



Educated Cities

Education

- Devices, Mobility, & Apps for Learning
- Education Analytics and Research
- School and Campus Administration
- Learning Systems

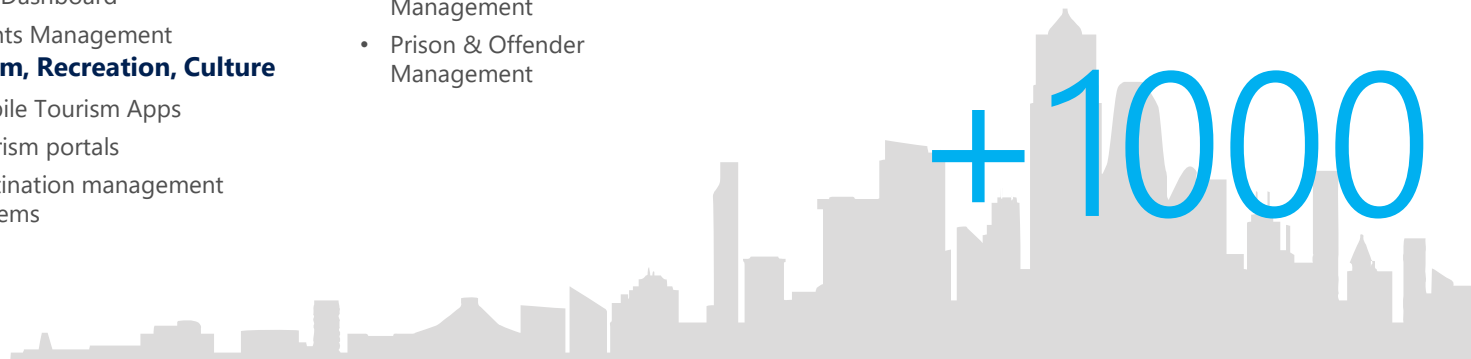


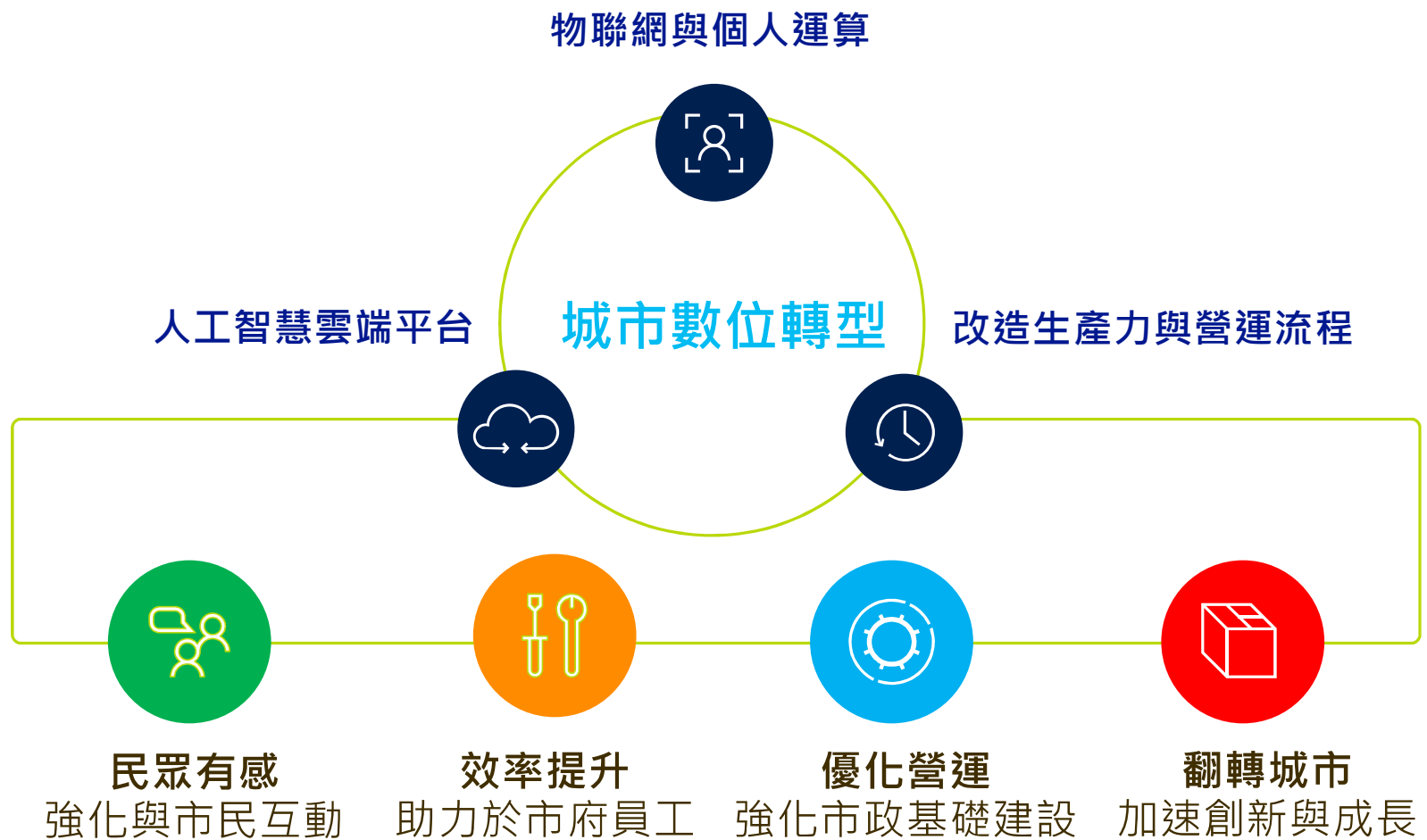
Healthier Cities

Health & Social Services

- Population Health Management
- Remote Monitoring & Preventive Care
- Virtual Health

+1000





各國政府擁抱數位轉型



"We've been able to deliver **better services** from the new workplace environment for our **civil servants**."

— Manel Sanromá, CIO of the City of Barcelona



"We can get **more information** much faster out of the social environment – enabling us to make **smarter decisions** in the future."

— Sebastian Saxe
Hamburg Port Authority
Chief Digital Officer



"Tasks now take **less time**, which means we can provide the **same level of service faster**."

— Jill Bailey, City of London
Access to Services Programme Manager

GET CLOSER TO CITIZENS



助力於市府員工

利用數位雲端科技，增進跨局處協同合作，在安全的前提下增加生產力與工作效率。

IMPROVE

organizational efficiency
and communication

ENABLE

mobile work
experiences

REDUCE

operating costs

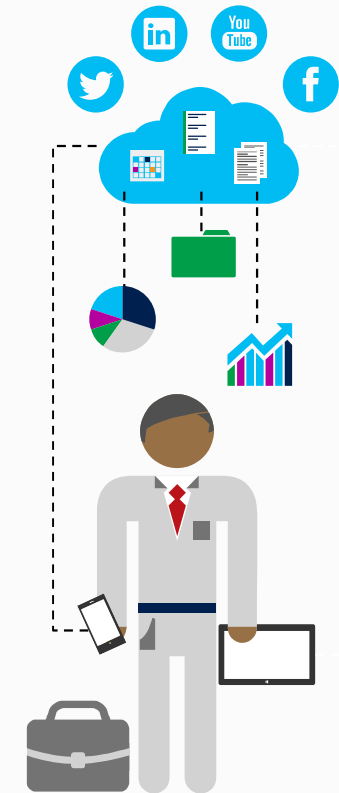
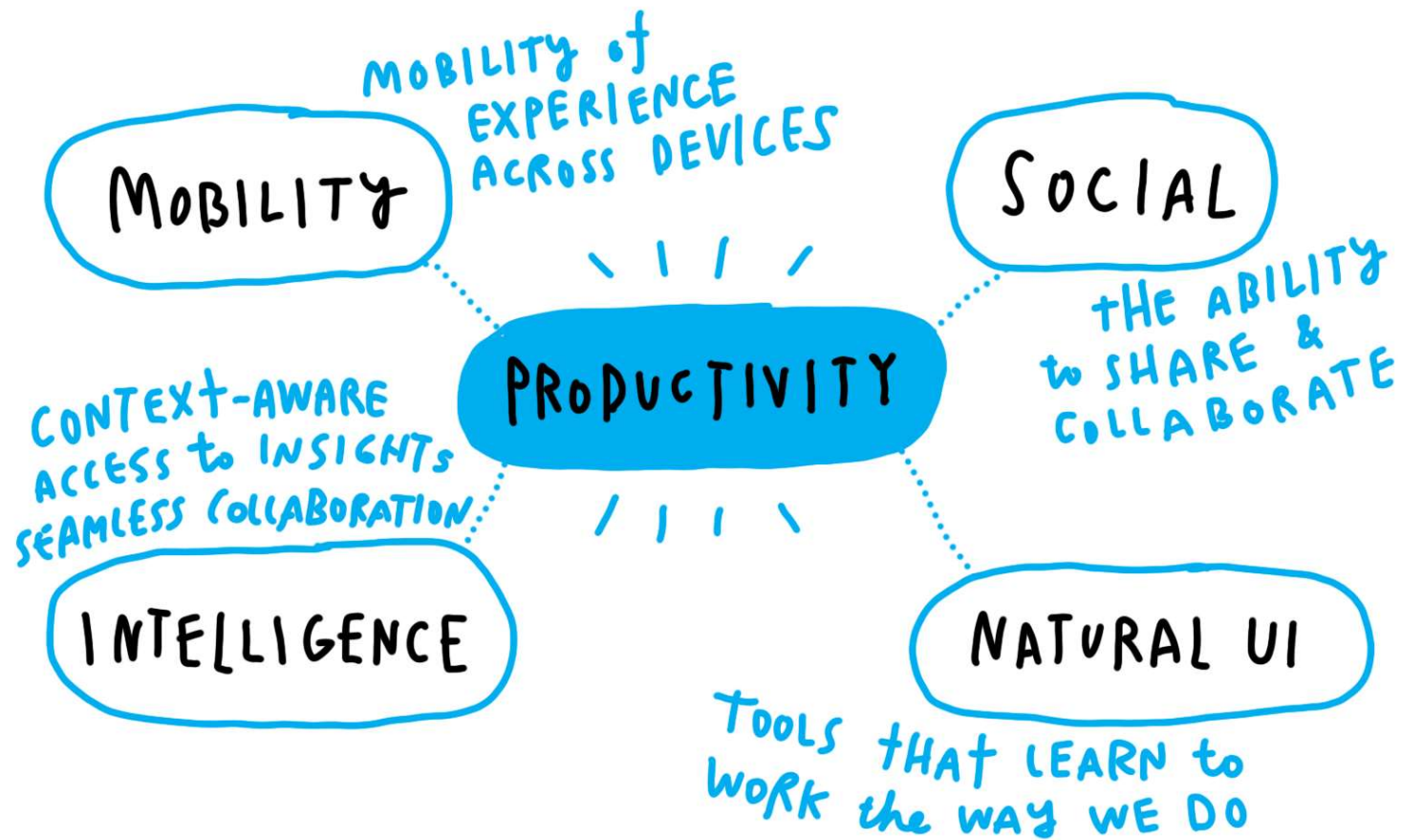
DELIVER

new citizen
experiences



新型態的工作方式

雲端至上，行動優先的公務人員



Cloud, Big Data, Mobile, Social

Microsoft CityNext: Digital Cities

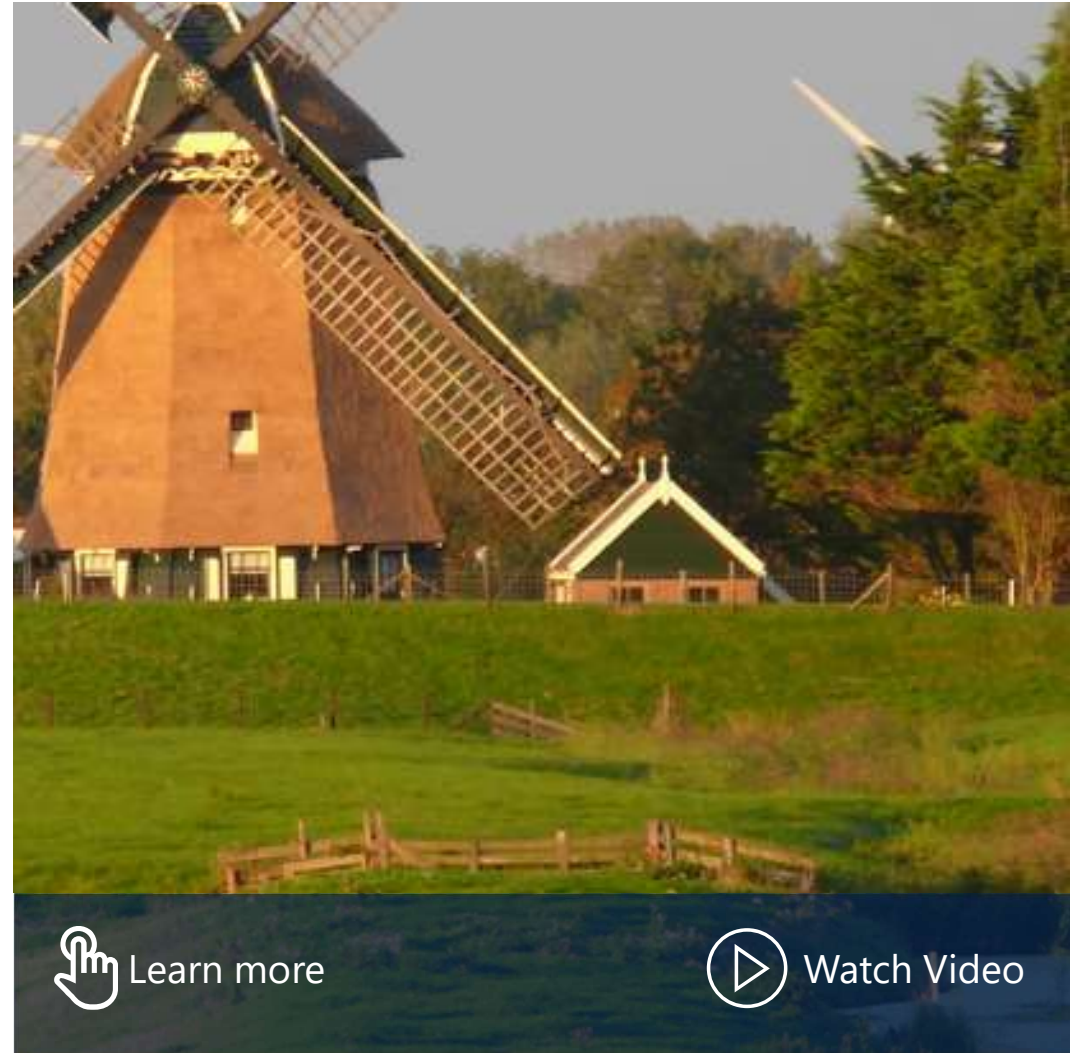
HOLLANDS KROON

Dutch city moves to the cloud;
improves employee morale, decreases
costs and absences, and increase
citizen satisfaction by 37%.

"We are well aware that society is changing, so we are focused on
strengthening the accountability and self-reliance of both our
employees and our citizens."

Jaap Nawijn
Mayor
Hollands Kroon
The Netherlands

 @MSFTCityNex Microsoft.com/CityNext
t



Learn more



Watch Video

Spark^{ed}

DECOS



CLOUD CITIZEN SERVICES



強化與市民互動

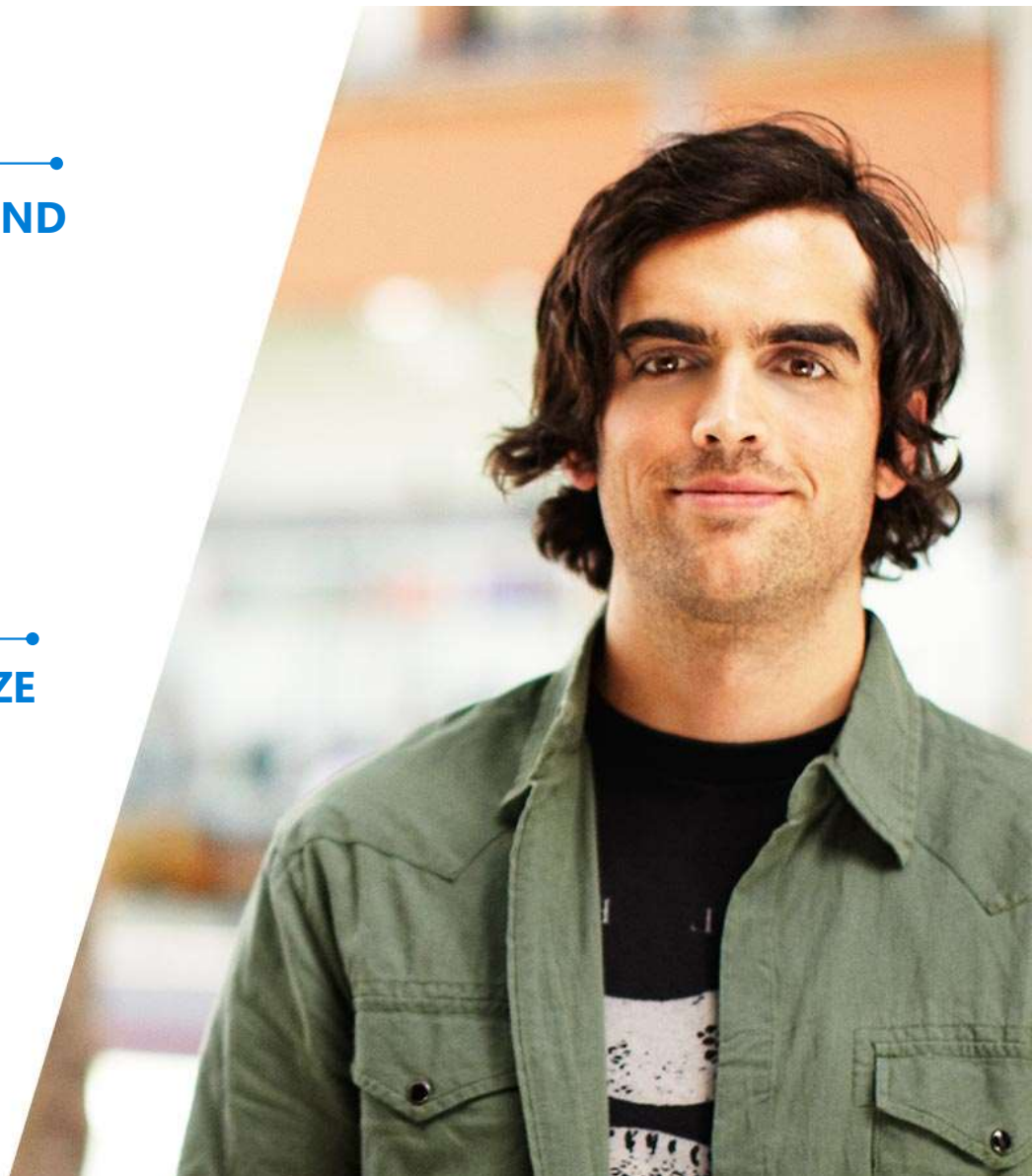
經由雲端科技與行動通訊，
協助將市民及企業與政府進行
更有效的連結。

BETTER UNDERSTAND
citizen needs

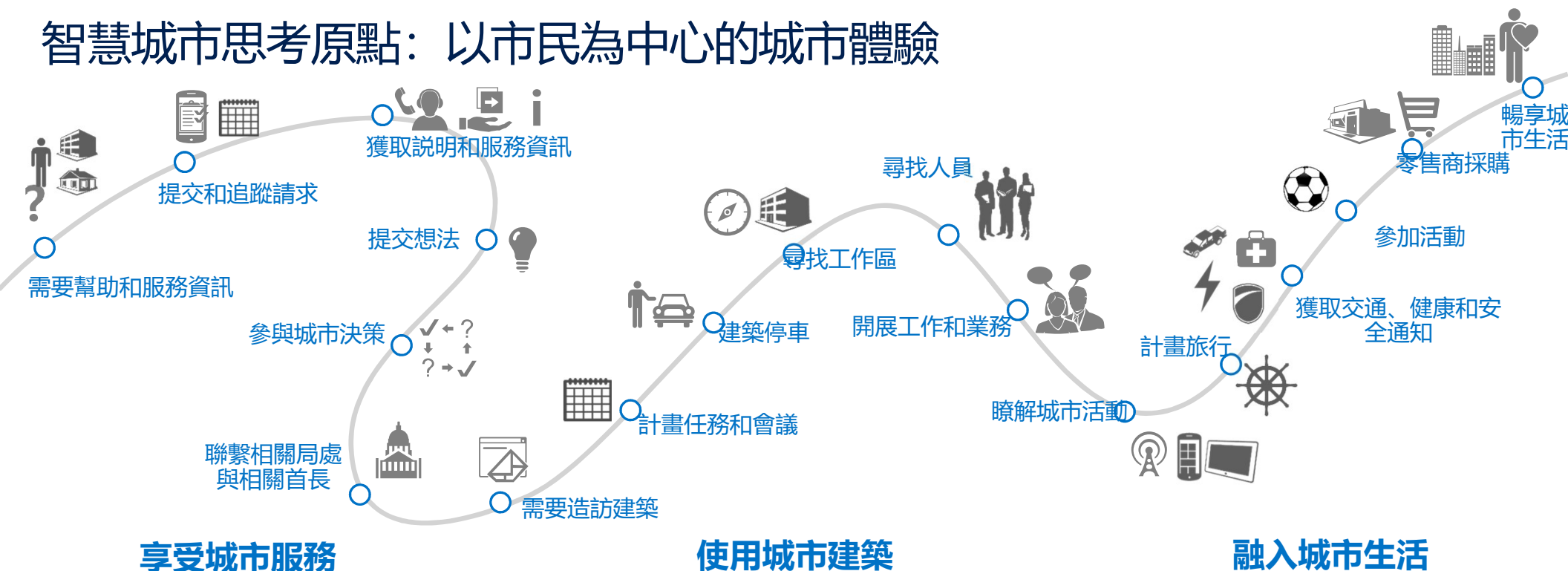
INCREASE
citizen reach

PERSONALIZE
citizen services

IMPROVE
citizen satisfaction



智慧城市思考原點：以市民為中心的城市體驗



數位熱點

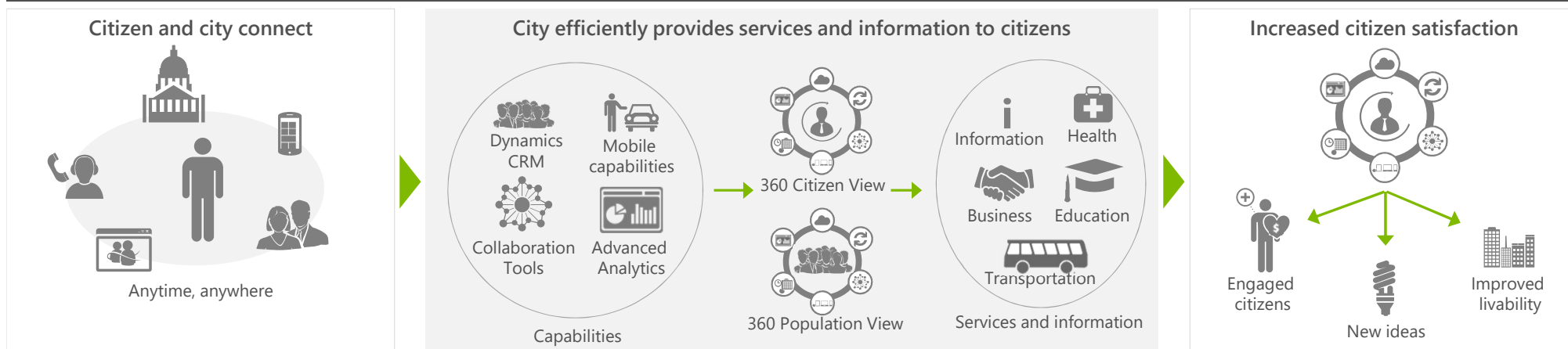
- 感知器網路和城市儀錶板
- 開放數據門戶
- 智慧停車系統

- 智慧建築系統
- 智慧路燈
- 社交聆聽和情感分析系統

- 整合市民關係管理系統的各種服務
- 學生資訊系統和學生分析
- 人口健康管理解決方案
- 擴增實境解決方案

全方位市民服務核心 – 360 度觀點 (Dynamics 365)

Citizens can use many channels to interact with the city, use city services, request help, and convey concerns and ideas to city leaders.



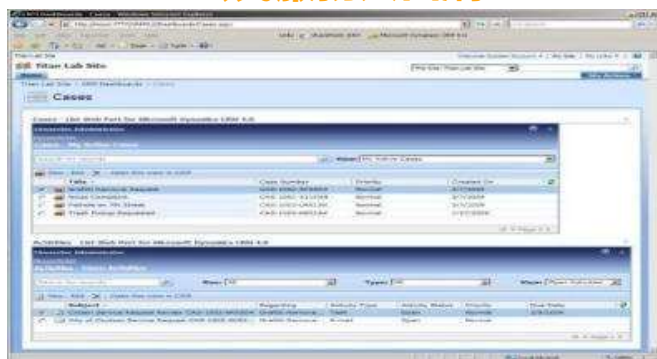
Top-line Impact

Benefits	Start	Stop	Continue
- Improve citizen's ability to interact with government agencies - Improve agency's response time to citizen requests - Improve citizen satisfaction and productivity	- Increasing transparency - Delivering efficient real-time services - Improving the decision making capabilities of city leaders and all city employees	- Frustrating citizens with unresponsiveness and complexity - Inefficient workflows for handling citizen requests - Inefficiently allocating resources	- Supporting citizen self-service - Improving the attractiveness of the city to citizens and businesses - Addressing the needs of citizens and businesses in the city

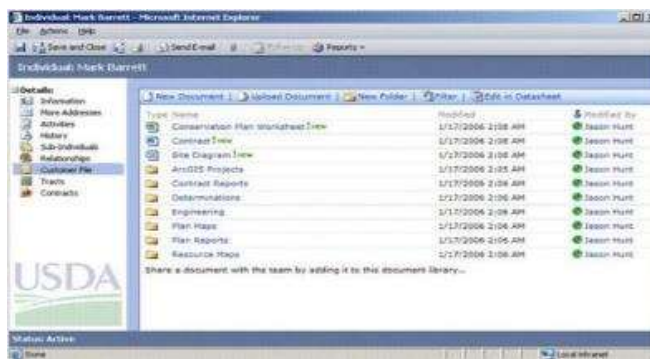
一個平臺: 多個應用

在政府應用 Dynamics 365 的界面示例

公民服務入口網



養護管理



公民案件管理



CSP 追蹤



農業管理

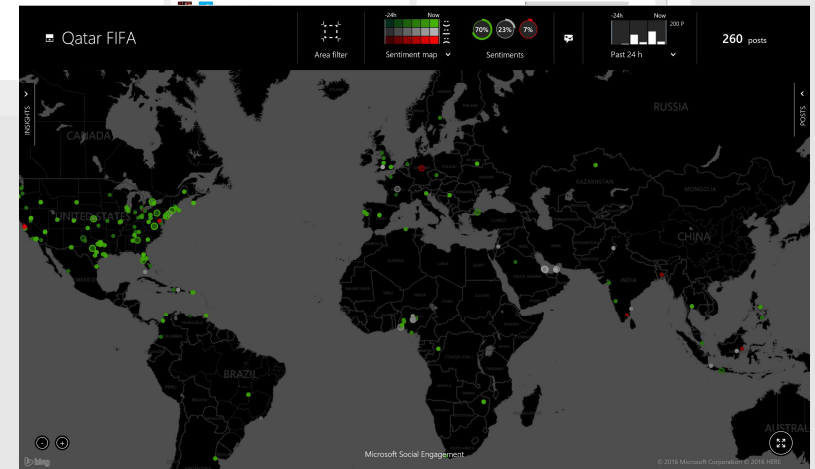
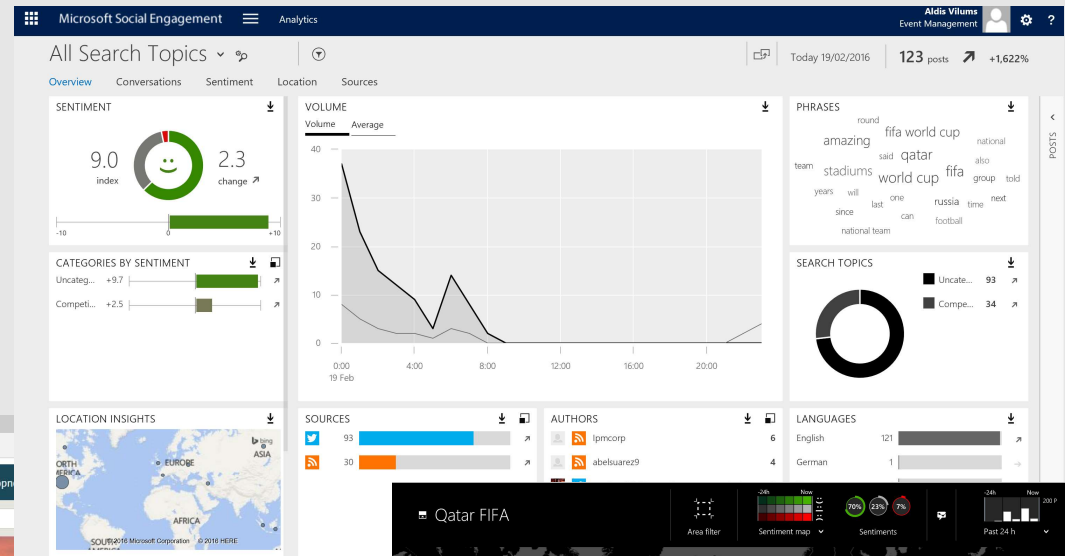
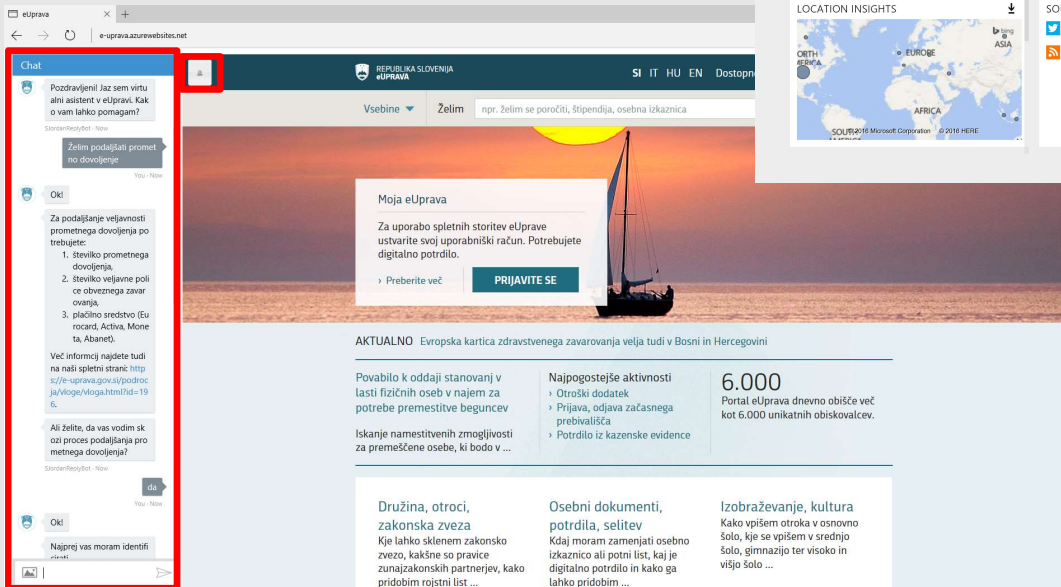


災害管理



社群應用情境

文字溝通互動



社交探索 Social engagement

從社群網路媒體網站收集資料，並以圖表和圖形呈現資料，
您可以使用這些資料發現人們留言
(不論是正面、負面還是中性) 中的新興趨勢

哥本哈根

Serving Citizens as ONE city government



20 different case management systems being consolidated into a single view, transforming citizen interaction and reducing time and costs. Now on the Cloud!

24小時自動化智慧市民諮詢服務



計畫於臺中市政府官網、1999網站提供問答入口



計畫於市府相關APP、Line、FB與其他市府相關APP管道提供問答入口



於市府指定場域(市府大廳、觀光景點)提供實體機器人問答諮詢

多元前端諮詢入口



智慧機器人
24小時市民
諮詢服務

智慧機器人系統



機器人完成自助服務



機器人無法回答，轉由專員回覆民眾



真人輔助服務

CLOUD-ENABLED DATA CENTERS



優化市政營運

透過市政各系統與數據的整合，連結各局處的行政人員，將有效優化市政營運與基礎建設。

GAIN

actionable insights

MAINTAIN

assets more predictably
and reliably

INCREASE

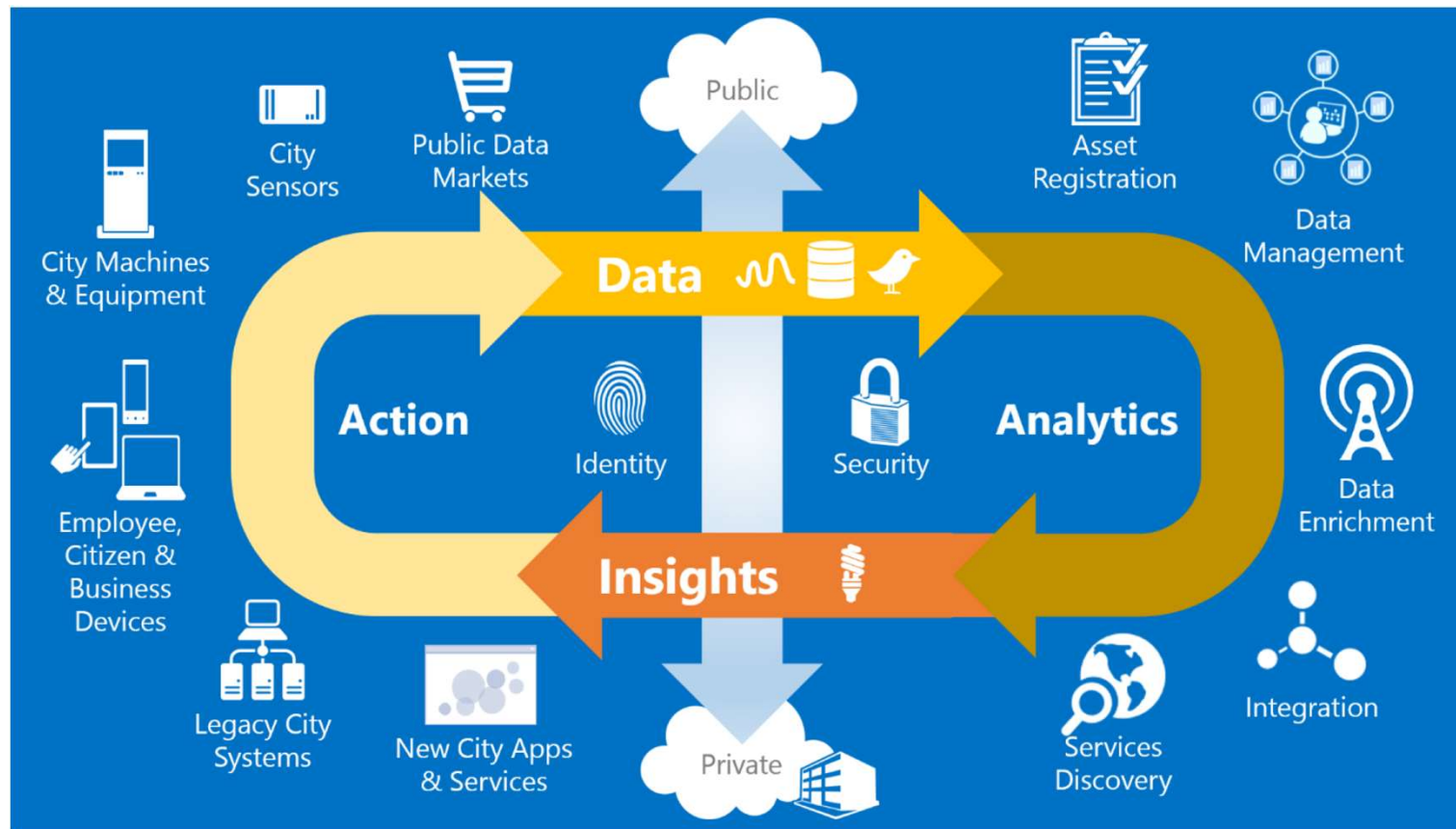
efficiency in city
operations

IMPROVE

accessibility to
information



智慧城市核心 – 透過數據做出決策與行動

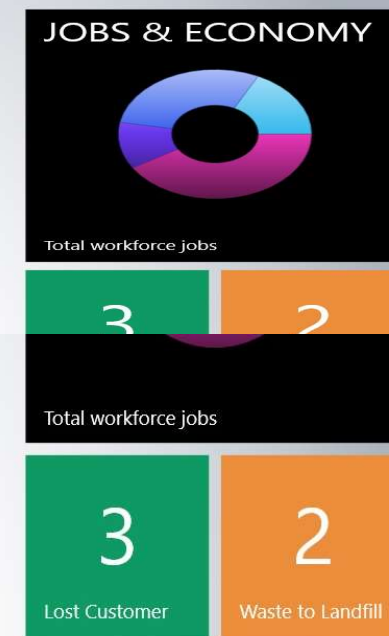


市政儀表板

KPIs



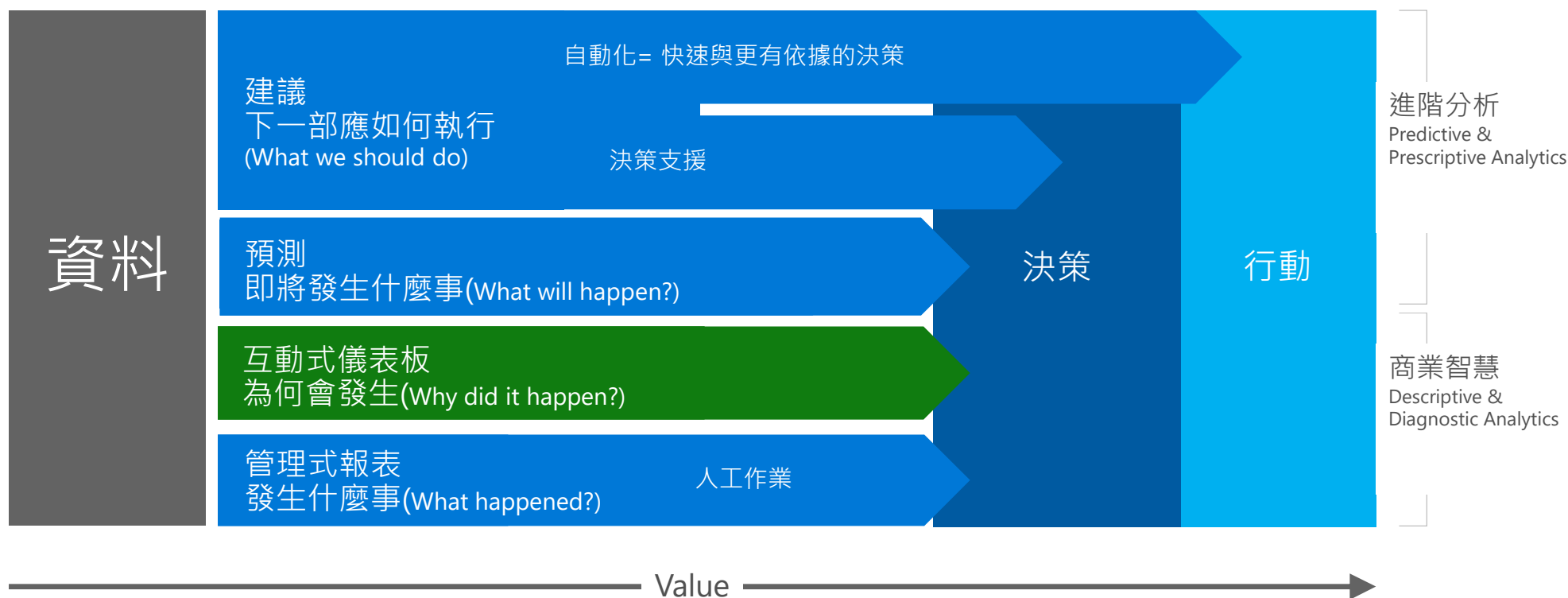
Favorites



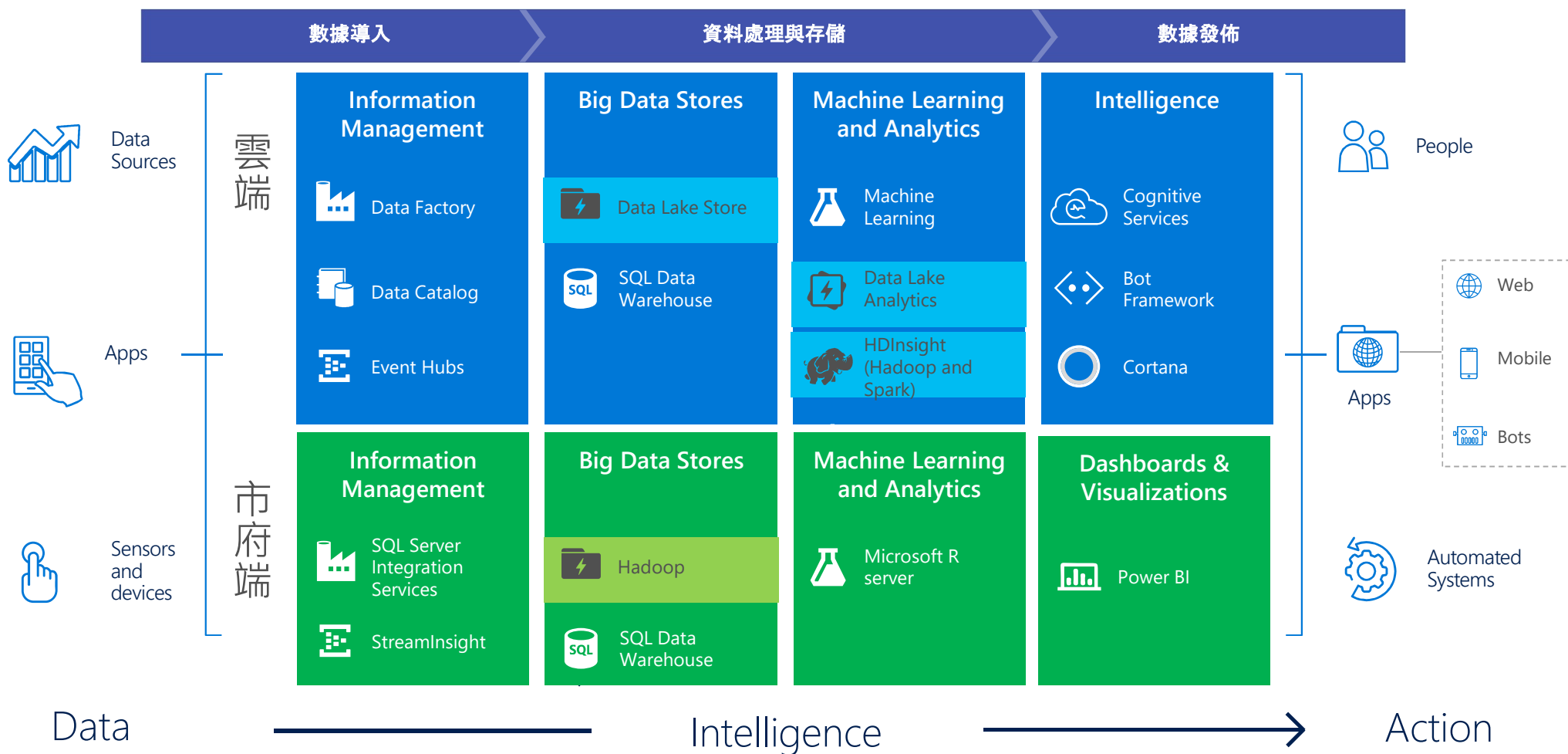
緊急狀況儀表板



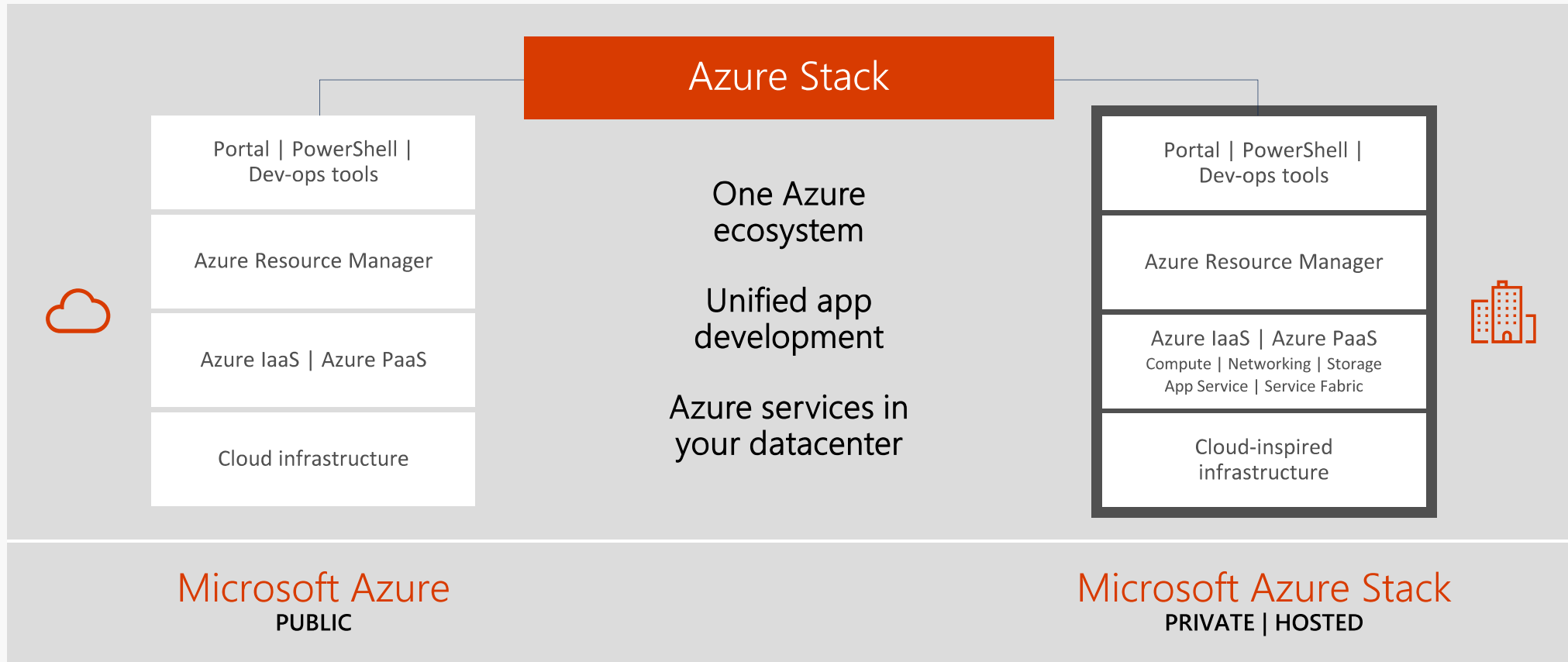
透過數據做出決策與行動 創造價值



大數據混合雲架構



Azure Stack 將微軟公有雲落地



NEW CLOUD DATA SERVICES



翻轉城市

利用物聯網，雲端科技，大數據與人工智慧，加速創新與經濟成長。

HARNESS

the power of the cloud

ATTRACT

new talent and
businesses

DELIVER

education excellence

DRIVE

city innovation



開放資料創造經濟價值



\$3T

annual economic value that open data has the potential to unleash

\$160B

total direct and indirect gains from easier public sector information re-use across the EU, annually

\$600M

economic value of publishing data on adult cardiac surgery in the UK

\$1.5B

estimated value of open weather data in applications in the secondary insurance market

\$19M

annual value of releasing UK's geospatial data as open data

\$30B

saved by the US annually, coming from accurate weather predictions

數位經濟：開放資料加速創新



Foster
entrepreneurship
with new apps

+



Access information
anywhere at
low cost

+



Increase government
accountability with
access to records

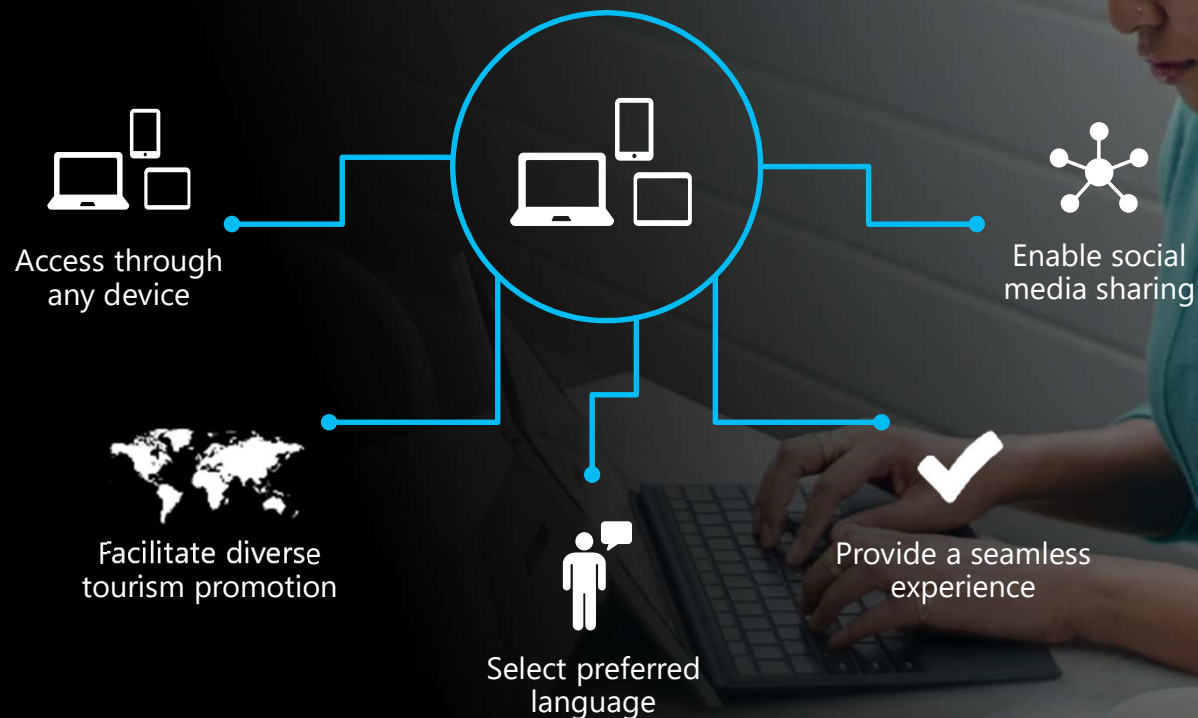
=

Enhanced
transparency by
fueling digital
economy

連結本地商家與旅客以提升本地經濟



Geo-positioned tourism
information hosted in Azure



連結本地商家與旅客以提升本地經濟 SmartDestination



Can you imagine arriving at your holiday destination, and receiving a smart route proposal, totally aligned with your passions, tastes, budget and available time?

Smart Destination analyzes big amounts of data generated around the cities to provide the **best experience** and enjoy the **best vacation** of your life.

All of this in terms of entrance delays at **monuments**, scheduled **events**, **gastronomic** offers, **hotel** occupation, **traffic** status, **weather** conditions, comments in the **social media**, etc.

This powerful application developed by **Bismart**, supported by **Microsoft**, **Barcelona** City Council, and the **Sagrada Família**, captures, processes and correlates data from multiple and complex sources.



We gather large amounts of data generated in the city, sensors, legacy systems, opendata, the social media, and so on, to offer the best experience for tourists and citizens

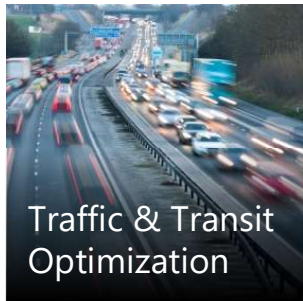
- ✓ The entrance delays at monuments
- ✓ The scheduled events
- ✓ The ticket prices
- ✓ The traffic status
- ✓ The weather conditions
- ✓ The public transport
- ✓ The comments in the social media
- ✓ The gastronomic offers
- ✓ The hotel occupation
- ✓ Stores
- ✓ And so on

And all of these in real time!!!

Enjoy the tourist experience by downloading the WinPhone app [here](#), or Android [here](#)



市民大數據與雲端平台解決方案情境案例



- Manchester, London
- Frankfurt, Darmstad
- Malpensa, Schiphol



- Helsinki
- Barcelona



- UK Pensions
- Madrid Metro
- RDW (NL) Car plates



- Barcelona
- Porto
- Ireland



- London
- Madrid Metro
- Utrecht, Eindhoven



- Mexico
- Sweden
- Finland



- Amsterdam
- Barcelona
- Copenhagen



- Amsterdam
- Munich
- Leipzig (BMW)



- Breda (NL)
- Electric Grid (SWI, NOR, SPA, IRE, DK)



- Brussels
- Iceland
- Dutch Police

城市基礎建設的數位轉型

能源



水資源



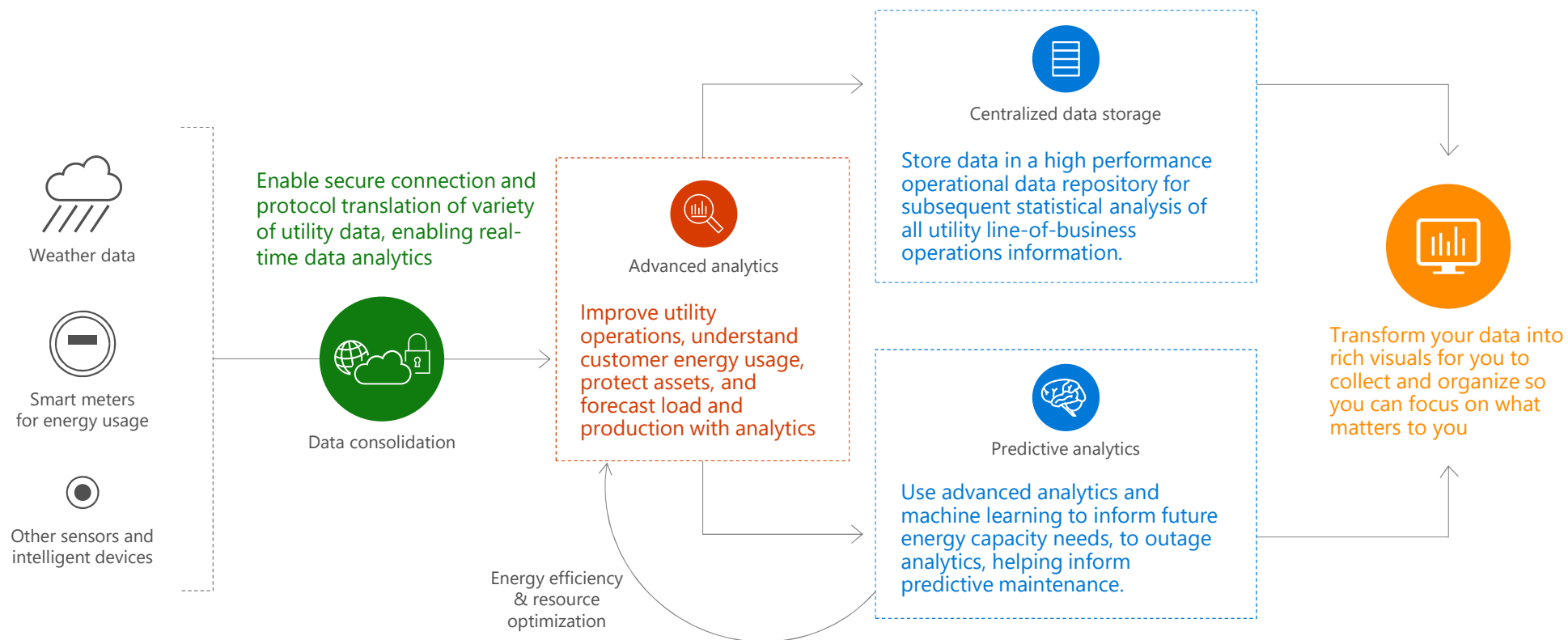
交通



智慧建築



優化再生能源創新商業模式



Azure Data Lake

Azure IoT
Device Hub

Azure SQL

Azure
Machine Learning

Analytics
Platform System

Power BI

Energiekoplopers in the Municipality of Heerhugowaard

Smart Energy Service Platform



微軟總部智慧建築與節能

In 2012...

- Disparate applications and systems
- No ability to holistically manage our infrastructure and prioritize maintenance activities
- Labor-intensive reporting
- Two full-time employees running a manual maintenance program
- \$60 million estimated cost to retrofit to integrated equipment



145 structures



Multiple building systems



58,400 housed heads



\$55M annual utility spend



15M SF office & lab space



2M connection points



50-55 megawatt hour average

智慧建築效益



Easier system coordination



Improved technician efficiency with **32,300 work orders per quarter**



48% of faults are corrected within **60 seconds**

Lower energy consumption



Forecasted energy savings of **10–11%** over three years

Reduced cost



Saved \$2 million in its first year

City of Antwerp

Changing Citizen Commuting behavior with MaaS platform

The city of Antwerp (Belgium) chooses Microsoft Azure-based Be-Mobile technology to build “SlimNaarAntwerp” Platform. This tool is providing citizens with a MaaS solution to find best way to make their trip by combining different means (car, train, shared bikes, foot). Plan is to avoid 20.000 car movements to city center during rush hours while improving satisfaction. Be-Mobile MobiGo solution uses real-time, historical and in-depth traffic information to enable smart accessibility in and around the city.

We want to adapt citizens mobility behavior to real traffic issues by seducing them to commute differently. First step on this strategy is a Route Planner tool based on Be-Mobile Microsoft Azure – based realtime Traffic Analysis.

Koen Kennis
Alderman for finance and mobility
city of Antwerp (Belgium)

 @MSFTCityNext Microsoft.com/CityNext



 [Learn more](#)

 [Watch Video](#)



智慧交通與運輸

天眼智慧運輸管理雲-智慧城市運輸最佳解決方案



Microsoft Azure

雲端計算平台與服務



智慧運輸管理平台

影像車機MDVR整合車隊管理系統，提供即時影像監控及行車軌跡異常時段自動回播。



大數據分析

運用演算法及巨量資料分析技術，提高車隊運作績效，降低營運成本。



駕駛注意力監控

採用影像辨識分析技術，偵測司機疲勞/分心或偏離車道、車距過短(碰撞)、急轉彎、側翻等狀況，透過警示音提醒司機及通報後端平台。

災害防救：救護車/消防車

· 救災車輛管理系統 · 派遣輔助系統

救災救護車輛管理系統

系統軟件清單

紀錄時間：2017/06/02 09:00 ~ 2017/06/02 10:00

案件編號	報警時間	案件類別	案件地點	分派單	呼號	警務狀態
400010	13:07:56	交通事故	南港區 南港路口	吳興	91	出動
400009	13:07:23	交通事故	和平路二段10號	吳興	92	出動
400008	12:47:01	治安糾紛	研究路三段	吳興	91	出動
400007	12:21:33	車禍糾紛	民權路三段10號	吳興	91	到達現場
400006	11:59:40	車禍糾紛	長安路三段10號	吳興	93	到達現場
400005	11:20:30	交通事故	南港區 南港路口	吳興	92	離開現場
400004	11:05:07	交通事故	復興路三段10號	吳興	91	出動
400003	10:44:10	交通事故	仁愛路二段10號	吳興	92	離開現場(10分鐘未歸)
400002	10:42:09	車禍糾紛	復興路二段10號	吳興	91	到達現場
400001	10:35:40	交通事故	復興路二段10號	吳興	91	到達現場

Page size: 10

宗教禮俗：遶境活動

· 媽祖遶境進香定位服務
· 進香路線管理平台



便民服務：清潔車/拖吊車

· 清潔車便民服務系統及APP
· 拖吊業務管理系統及APP



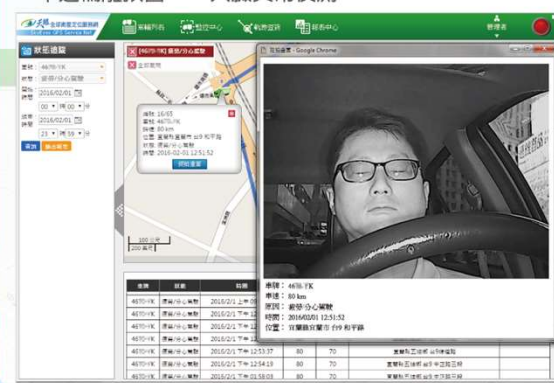
Microsoft



天眼 衛星科技股份有限公司
SkyEyes GPS Technology Co., Ltd.

大眾運輸：市區公車/國道客運

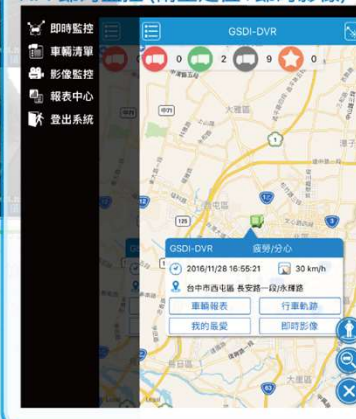
· 前方碰撞預警 · 疲勞/分心駕駛偵測 · 危險駕駛偵測
· 車道偏離預警 · 人臉異常偵測



運輸管理平台(衛星定位+即時影像)



APP即時監控(衛星定位+即時影像)



光寶與微軟攜手 透過最綿密的路燈網絡 打造全球智慧IOT開放API平台

LITEON®

THE SMART CITY



LETOEK
STREET LIGHT

Data Processing
and Analytics

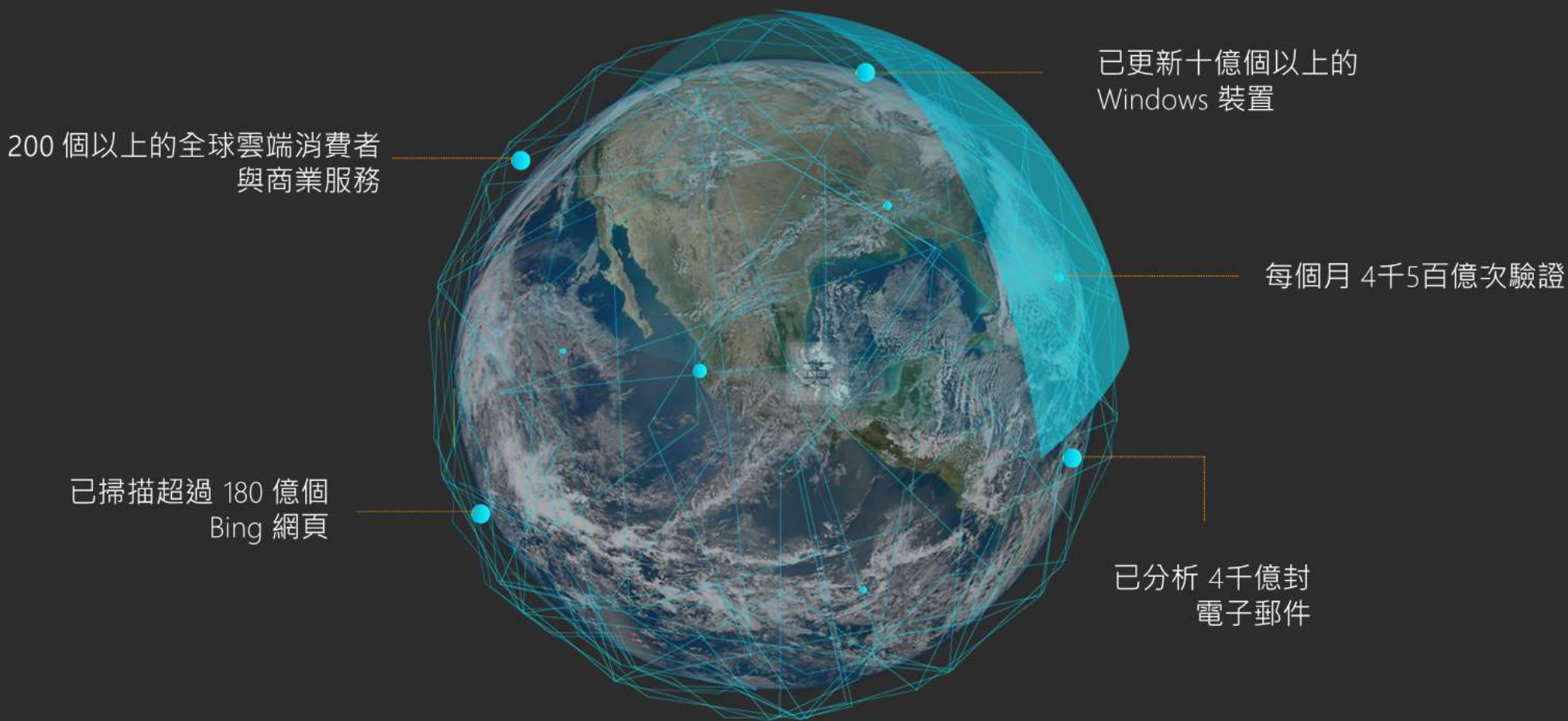
Central Management
Via Smart Device



LITEON®

An Integrated Lighting Solution Provider

智慧資安



資訊安全暨產業及各國法規遵循

GLOBAL



ISO 27001



ISO 27018



ISO 27017



ISO 22301



SOC 1 Type 2



SOC 2 Type 2



SOC 3



CSA STAR
Self-Assessment



CSA STAR
Certification



CSA STAR
Attestation

US GOV



Moderate
JAB P-ATO



High
JAB P-ATO



DoD DISA
SRG Level 2



DoD DISA
SRG Level 4



DoD DISA
SRG Level 5



SP 800-171



FIPS 140-2



Section 508
VPAT



ITAR



CJIS



IRS 1075

INDUSTRY



PCI DSS
Level 1



CDSA



MPAA



FACT UK



Shared
Assessments



FISC Japan



HIPAA /
HITECH Act



HITRUST



GxP
21 CFR Part 11



MARS-E



IG Toolkit UK



FERPA



GLBA



FFIEC

REGIONAL



Argentina
PDPA



EU
Model Clauses



UK
G-Cloud



China
DJCP



China
GB 18030



China
TRUCS



Singapore
MTCS



Australia
IRAP/CCSL



New Zealand
GCIO



Japan My
Number Act



ENISA
IAF



Japan CS
Mark Gold



Spain
ENS



Spain
DPA



India
MeitY



Canada
Privacy Laws



Privacy
Shield



Germany IT
Grundschutz
workbook

智慧城市策略發展藍圖



